WOODS HOLE GROUP

US Army Corps of Engineers
New England District

FINAL
SUMMARY REPORT

New Bedford Harbor Long Term Monitoring V

Contract No. W912WJ-09-D-0001-0018

Prepared For:
United States Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

Prepared By:
Woods Hole Group, Inc.
81 Technology Park Drive
East Falmouth, MA 02536

November 2010

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81 Technology Park Drive
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(508) 540-8080

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1.0 INTRODUCTION

1.1 SITE NAME, LOCATION, AND DESCRIPTION

The New Bedford Harbor Superfund 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 areas 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, with contaminant gradients decreasing from north to south. From the 1940s into the 1970s two electrical capacitor manufacturing facilities, one located near the northern boundary of the site and one located just south of the New Bedford Harbor hurricane barrier, discharged PCB wastes either directly into the harbor or indirectly via discharges to the City's sewerage system. The Site has been divided into three areas – the upper, lower and outer harbors – consistent with geographical features of the area and gradients of contamination. The Site is also defined by three state-sanctioned fishing closure areas extending approximately 6.8 miles north to south and encompassing approximately 18,000 acres in total.

The City of New Bedford, located along the western shore of the Site, is approximately 55 miles south of Boston. During most of the 1800s, New Bedford was a world renowned center of the whaling industry and attracted a large community of immigrants from Portugal and the Cape Verde islands. Including the neighboring towns of Acushnet, Fairhaven and Dartmouth, the combined 2000 population was approximately 151,000. New Bedford is currently home port to a large offshore fishing fleet and is a densely populated manufacturing and commercial center. By comparison, the eastern shore of New Bedford Harbor is predominantly residential or undeveloped. A large (approximately 70 acre) salt marsh system has formed along almost the entire eastern shore of the upper harbor.

The Acushnet River's 16.5 square mile (43 km^2) drainage basin (VHB, 1996) discharges to New Bedford Harbor in the northern reaches of the Site, contributing on average relatively minor (except during high periods of runoff) volumes of fresh water to the tidally influenced harbor. Numerous storm drains, combined sewer overflows (CSOs) and industrial discharges as well as smaller brooks and creeks also discharge directly to the Site. The upper and lower harbors are areas of net groundwater discharge and are generally described as a shallow, well-mixed estuary.

The upper harbor comprises approximately 187 acres, with current sediment PCB levels ranging from below detection to approximately 4,000 parts per million (ppm). Prior to the removal of the most contaminated hot spot sediments in 1994 and 1995 as part of EPA's first cleanup phase, sediment PCB levels were reported higher than 100,000 ppm in the upper harbor. The boundary between the upper and lower harbor is the Coggeshall Street Bridge where the width of the harbor narrows to approximately 100 feet. The lower harbor comprises approximately 750 acres, with sediment PCB levels ranging from

below detection to over 100 ppm. The boundary between the lower and outer harbor is the 150 foot wide opening of the New Bedford hurricane barrier, constructed in the mid-1960s. Sediment PCB levels in the outer harbor are generally low, with only localized areas of PCBs in the 50-100 ppm range near the Cornell-Dubilier plant and the City's sewage treatment plant's outfall pipes. The southern extent of the outer harbor and the Site is an imaginary line drawn from Rock Point (the southern tip of West Island in Fairhaven) southwesterly to Negro Ledge and then southwesterly to Mishaum Point in Dartmouth.

1.2 SITE HISTORY AND ENFORCEMENT ACTIVITY

Identification of PCB-contaminated sediments and seafood in and around New Bedford Harbor was first made in the mid 1970s as a result of EPA region-wide sampling programs. Total PCB usage in New Bedford at this time was around two million pounds per year (Nelson et al., 1996). In 1978, the manufacture and sale of PCBs was banned by the federal Toxic Substance Control Act (TSCA). In 1979, the Massachusetts Department of Public Health promulgated regulations prohibiting fishing and lobstering throughout the Site due to elevated PCB levels in area seafood. Elevated levels of heavy metals in sediments (notably cadmium, chromium, copper and lead) were also identified during this time frame. Due to these concerns, the Site was proposed for the Superfund National Priorities List (the NPL) in 1982, and finalized on the NPL in September 1983. Pursuant to 40 CFR 300.425(c)(2), the Commonwealth of Massachusetts nominated the Site as its priority site for listing on the NPL.

EPA's site-specific investigations began in 1983 and 1984 with the Remedial Action Master Plan (Weston, 1983) and the Acushnet River Estuary Feasibility Study (NUS, 1984). Site investigations continued throughout the rest of the 1980s and early 1990s, including a pilot dredging and disposal study in 1988 and 1989 (Otis et al., 1990), which field tested different dredging and disposal techniques for upper harbor sediments. Site investigations also included extensive physical and chemical computer modeling of the Site (Battelle, 1990). These Site studies are summarized in more detail in the ROD for the hot spot areas of the Site (EPA, 1990) and in the 1990 Feasibility Study for the Site (Ebasco, 1990).

Collectively, these investigations identified the Aerovox facility as the primary source of PCBs to the Site. PCB wastes were discharged from Aerovox's operations directly to the upper harbor through open trenches and discharge pipes, or indirectly throughout the Site via CSOs and the City's sewage treatment plant outfall. Secondary inputs of PCBs were also made from the Cornell-Dubilier Electronics, Inc. (CDE) facility just south of the New Bedford hurricane barrier.

Figure 1. Site Map

In April 1990, EPA issued the ROD for the hot spot operable unit of the Site. The hot spot ROD called for dredging and on-site incineration of the Site's most highly PCB-contaminated sediments located adjacent to the Aerovox facility. The ROD specified a 4,000 ppm PCB level to define the sediments to be dredged (sediments below this 4,000 ppm threshold were to be left in place). Dredging of these sediments – about 14,000 cubic yards (cy) in volume and 5 acres in area – began in April 1994 and was completed in September 1995. However, due to a vehement and congressionally-supported reversal in local support for on-site incineration during the initial mobilization stage, EPA suspended the incineration component of the hot spot remedy (EPA, 1995). The dredged hot spot sediments were therefore placed in interim storage in a shoreline confined disposal facility (CDF) near Sawyer Street in New Bedford, and ultimately transported in 1999 to an offsite TSCA landfill.

In September 1998, EPA issued ROD 2, the ROD for the upper and lower harbor operable unit (EPA, 1998). ROD 2 called for the dredging of approximately 450,000 cy of PCB-contaminated sediments, and disposal in four shoreline CDFs. Two localized areas of PCB-contaminated sediment located just south of the hurricane barrier were also included in ROD 2 (as illustrated by Figure 22 of ROD 2). Both areas are in the general vicinity of the pilot sub-aqueous cap installed by EPA in 2005. Further investigation of the outer harbor area of the Site is underway, as part of operable unit three (OU-3), to determine whether additional remediation is appropriate for this area.

On August 15, 2002 EPA issued a change to the 1998 harbor cleanup plan using a process known as an Explanation of Significant Difference (ESD) (EPA 2002). This ESD, which follows an earlier ESD issued in September 2001, eliminates CDF "D", the largest of the four CDFs (confined disposal facilities), and instead sends the dredged sediment slated for it to an offsite landfill. This ESD as well as other site information is available for review at the New Bedford Free Library (reference section), at EPA's Boston Records Center and on-line at the New Bedford Harbor Superfund Site website at www.epa.gov/ne/nbh.

1.3 PURPOSE AND SCOPE OF STUDY

In order to assess the effectiveness of the New Bedford Superfund remediation efforts, a long term environmental monitoring plan has been developed by the US Environmental Protection Agency's Research Laboratory, Atlantic Ecology Division in Narragansett, Rhode Island (AED). The plan incorporates an intensive sampling and analysis effort for the purpose of quantifying the long-term environmental effects of reduced PCB levels in the sediments and water column of the New Bedford Harbor estuary as a result of remediation efforts. The four previous sampling rounds for this program include the "baseline" sampling event conducted in October 1993 (LTM I), a second event (LTM II) conducted immediately after removal of the "hot spot" sediments in OU#2 during October of 1995, a third event conducted in 1999 (LTM III), and a fourth event conducted in 2004 by Battelle (LTM IV). The fifth event was conducted in 2009 (LTM V). This Summary Report describes the field and laboratory components of the LTM V

program, and presents the LTM V data. Sample collection was completed in September of 2009 by Woods Hole Group, Inc., the prime contractor for this work.

The typical suite of analyses for LTM assessments historically included water quality measurements, sediment analyses for PCB congeners, metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium), acid volatile sulfides (AVS), total organic carbon (TOC), grain size, sediment toxicity testing, and benthic biology assessments. Sediment analyses for metals, AVS, and toxicity were not pursued in LTM V due to budgetary constraints.

2.0 METHODS

2.1 QUALITY ASSURANCE

Quality Assurance (QA) for this project is presented in detail in the Quality Assurance Project Plan (QAPP) developed for the LTM V survey (Woods Hole Group, 2009a).

2.2 FIELD METHODS

Detailed accounts of field sampling events and methods are provided in the NBH LTM V Field Sampling Report (Woods Hole Group, 2009b).

The field sampling program followed the guidelines and protocols (Strobel, 2000) developed for the Environmental Monitoring and Assessment Program (EMAP), an EPA program developed to monitor and assess the status and trends of national ecological resources over multiple spatial and temporal scales. Sampling was conducted at 79 separate stations located in three distinct geographical areas of New Bedford Harbor.

- **Area I:** Woods Street to the Coggeshall Street Bridge (27 stations)
- **Area II:** Coggeshall Street Bridge to the Hurricane Barrier (29 stations)
- **Area III:** Hurricane Barrier to the edge of Fishing Closure Area 3 (23 stations)

A hexagonal sampling grid was established by EPA AED within each of the three sampling areas (Figure 2). In order to obtain representative samples, the hexagonal sampling grid was proportionally adjusted to scale with the progressively larger sampling areas. The hexagons in Area I (Upper Harbor) have a radius (center to side mid-point) of 88m; the hexagons in Area II (Lower Harbor) have a radius of 175m; the hexagons in Area III (Outer Harbor) have a radius of 793m.

The target sampling stations and as-sampled stations are shown in Figures 3 through 5. As-sampled stations are displayed in green and mostly overlap target stations (yellow).

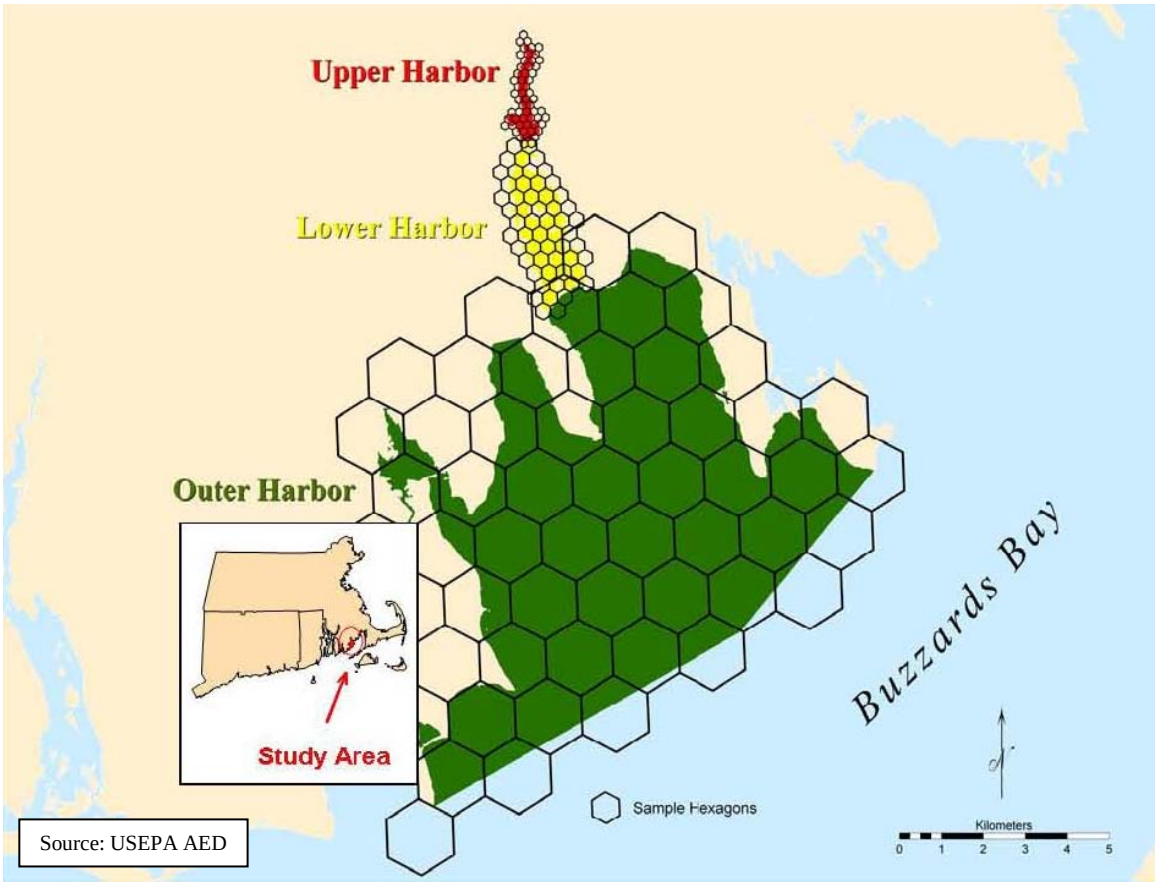

Figure 2. LTM Sampling Areas and Sampling Hexagons

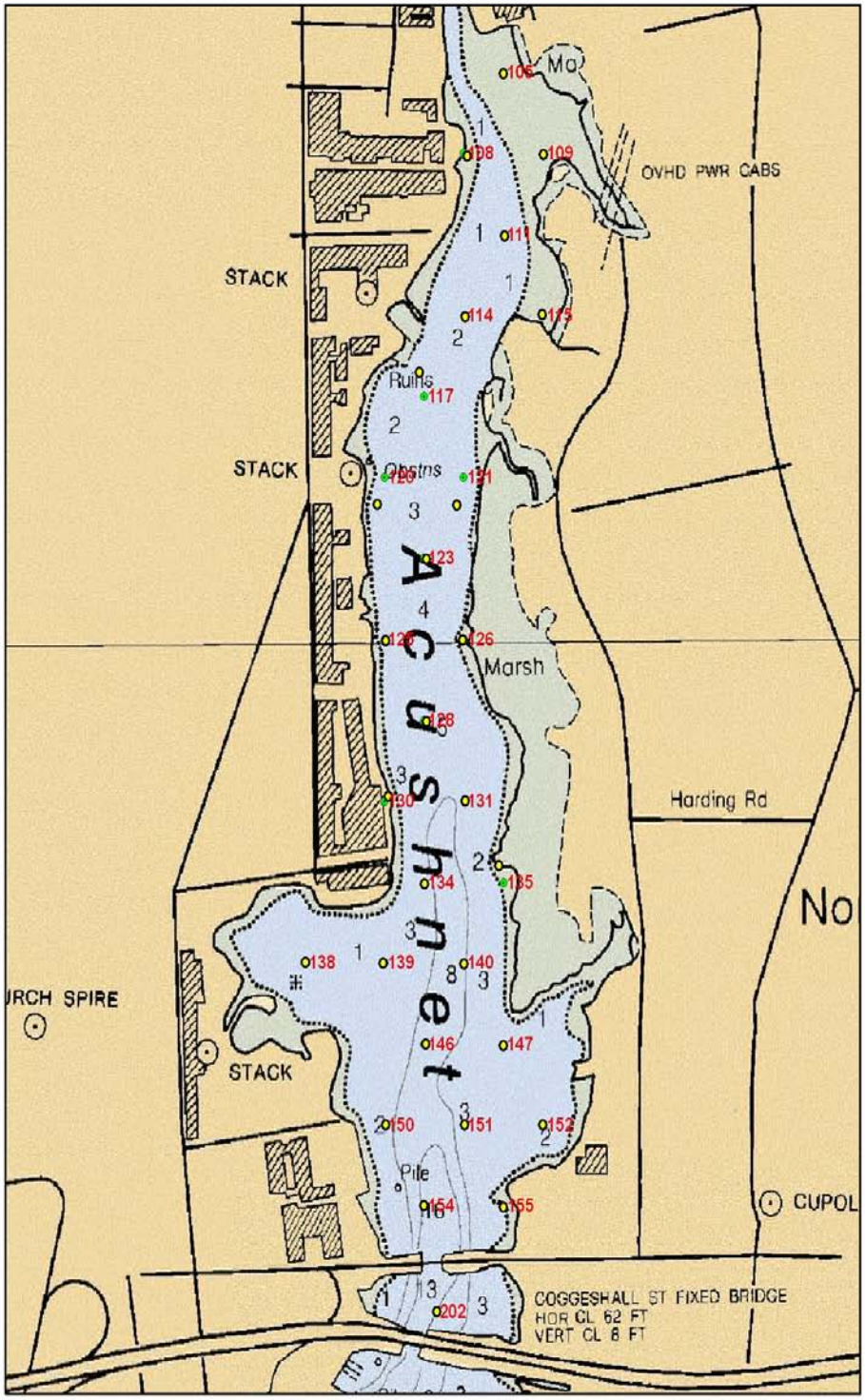

Figure 3. Area I Sampling Stations (Stations 105 – 202)

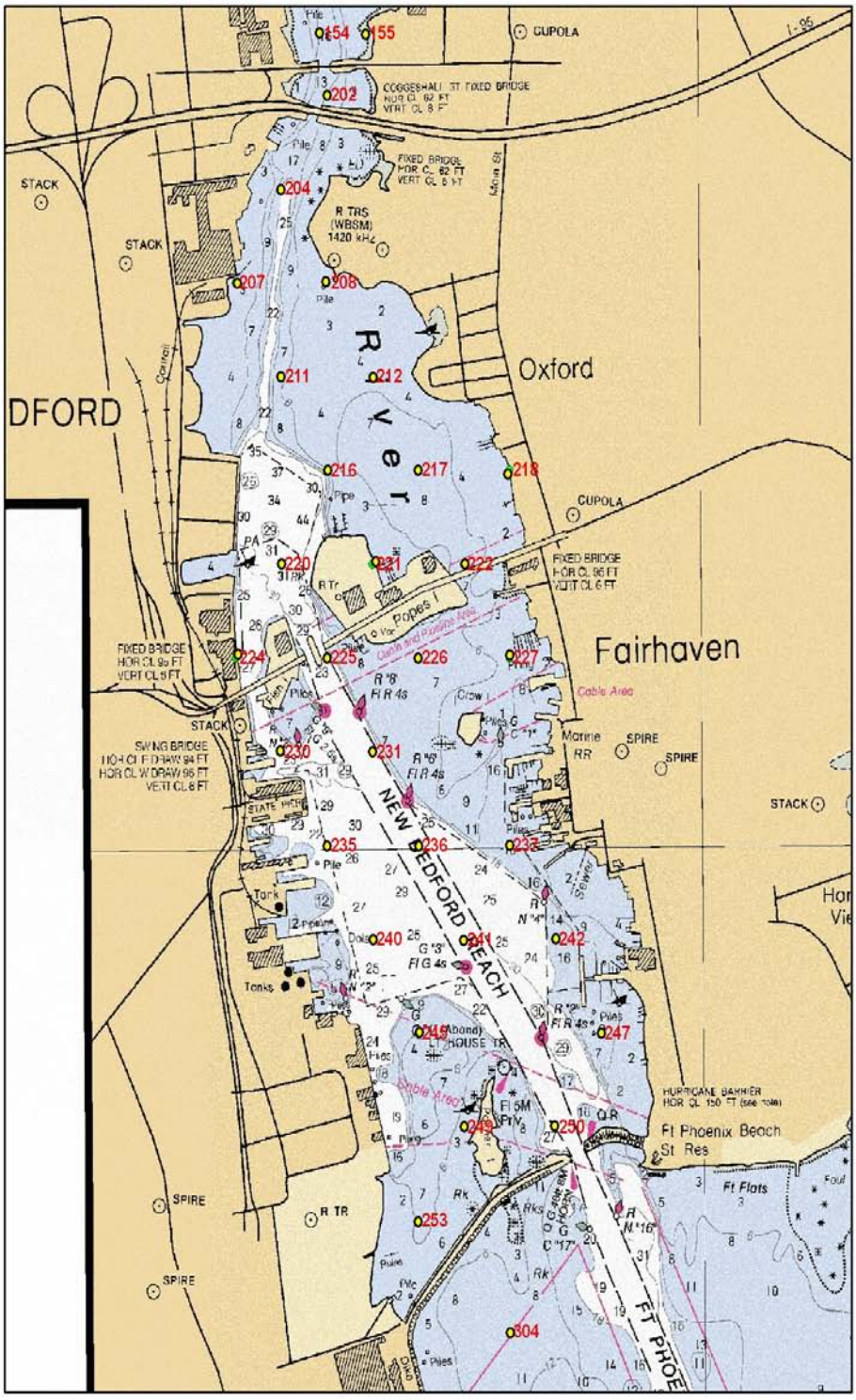

Figure 4. Area II Sampling Stations (Stations 204 – 253)

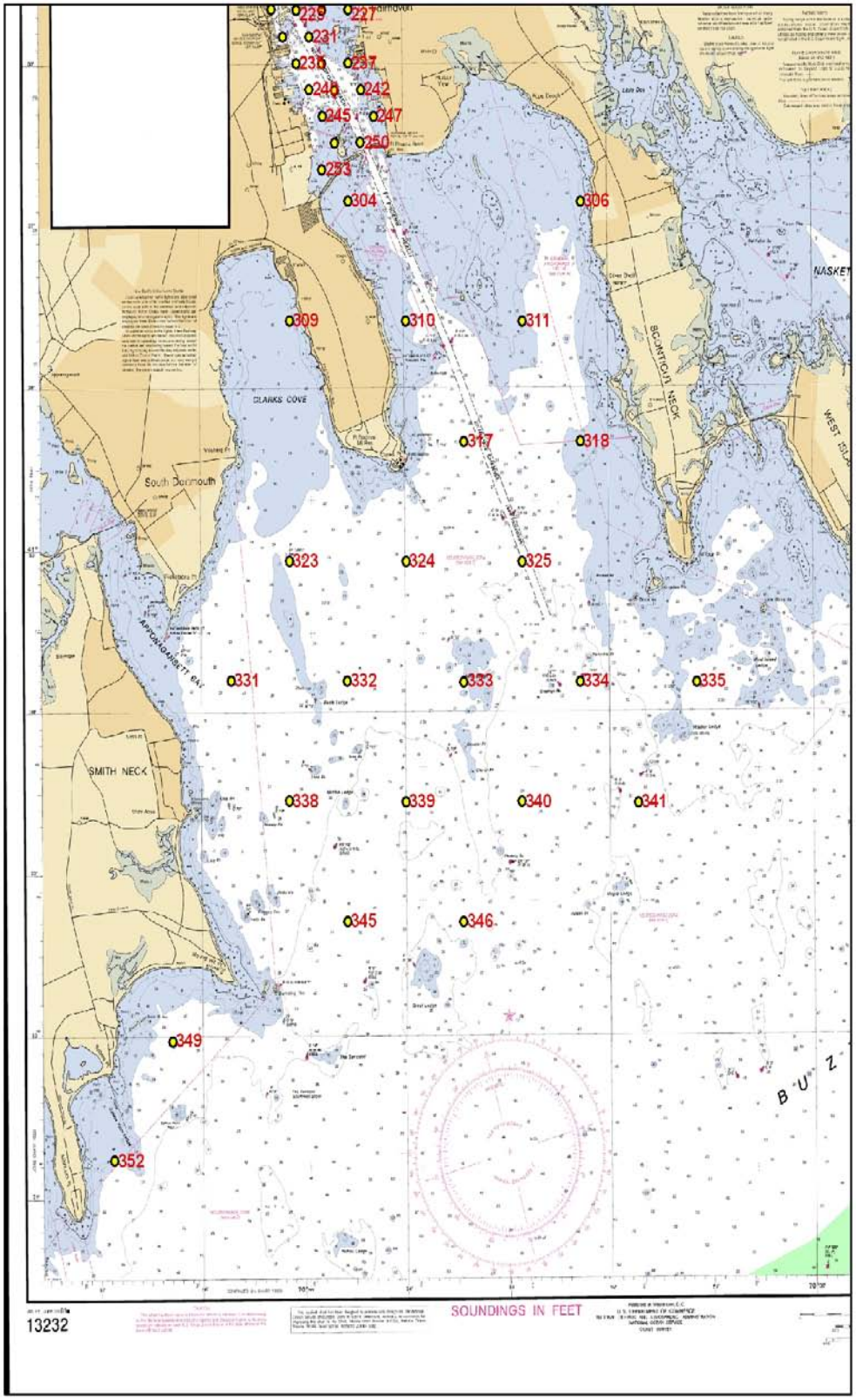

Figure 5. Area III Sampling Stations (Stations 304 – 352)

Navigation was performed using a Differential Global Positioning System (DGPS). Stations were initially located using the target coordinates established during the 1993 and 1995 surveys (Appendix A of the QAPP). In general, the targets were achieved. However, where the target coordinates were either inshore of navigable waters, or were inside the no-spud areas in the dredge area, the sample was relocated to the nearest acceptable location. All as-sampled locations were within the bounds of the associated station hexagon.

At each station, in situ water quality measurements were taken prior to the collection of sediment samples. Measured parameters included salinity, temperature, and dissolved oxygen. YSIs were used to collect water quality data from one meter above the bottom, unless limited by shallow water (in which case measurements were taken just above the bottom). Sediment samples at each station were collected for the analysis of PCBs (18 NOAA Congeners), total organic carbon (TOC), and grainsize. Three benthic biology samples were collected at each station: two for community analysis and one for archiving. A summary of sampling and analysis activities is presented in Table 1.

Grab samples for chemistry analysis were collected at all of the stations using a Kynar® coated 0.1 m^2 Young modified Van Veen grab sampler. Each grab was inspected for acceptability. If the grab was deemed unacceptable (grab was not full; sediment was slumped or washed out) it was discarded over the opposite side of the vessel to avoid contaminating subsequent samples. The equipment was washed with site water before collecting the next sample. Once the grab was deemed acceptable, samples were collected for chemistry (PCBs and total organic carbon), grain size, and an archive from the top 2 cm. Each sample was contained in an 8-oz glass jar with a Teflon-lined lid, and labeled with pre-printed and bar-coded labels. Samples were stored in coolers on ice until being transferred to the sample custodian.

Grab samples for infauna analysis and associated grain size were collected concurrently with the samples described above. The infauna grab samples were collected using a 0.04-m^2 Young-modified Van Veen grab sampler. Triplicate grabs were taken at each station. Once the grab was deemed acceptable, a grain size sample was collected by inserting an open-ended syringe through the entire depth of the core and drawing the sediment out, thereby capturing a known volume of sample representing the entire depth of the grab. The remaining material was transferred to a sieving station and passed through a 0.5 mm sieve by washing with low pressure site water. All material remaining in the sieve was transferred to a clean plastic jar, preserved with buffered solution of 10% formalin and Rose Bengal stain, and identified with pre-printed labels. Grain size samples were also labeled and stored on ice. All benthic samples were transferred to sample custodians at the end of the sampling day.

For both sediment and infauna grabs, the vessel was moved slightly while on station to avoid re-sampling the same location. After each station was completed, the grab samplers were decontaminated with Alconox water solution then rinsed with site water.

Table 1. Summary of Sampling and Analysis Program

Field Collection	Sample Type	Analyses	No. Samples/ Station	Field QC Samples (FDs)	Total No. Field Samples Collected	Lab QC Samples	Total Samples
Sediment sampling at 79 stations within Segments 1, 2, 3 Plus one field duplicate (FD) within each Segment (3 total FDs) for each type of analysis.	Chemistry	PCBs	1	3 FDs	82	5 MS 5 MSD 5 SRM	97
		TOC	1	3 FDs	82	5 MS 5 MD	92
	Chemistry Archive	Organics & Metals	1	NA	79	NA	79
	Physical	Grain size	1/chemistry 1/ea of 3 benthic (4 total)	3 FDs /chemistry	319	4 MD	323
	Biological	Benthic Community analysis (species enumeration)	2	NA	158	NA	158
	Biological Archive	Benthic Community analysis (species enumeration)	1	NA	79	NA	79
Water Column testing at 79 stations (total) within Segments 1, 2, 3	Field measurement	Temperature	1	NA	79	NA	79
		Dissolved oxygen	1	NA	79	NA	79
		Salinity	1	NA	79	NA	79

FD = Field duplicate
MS = Matrix spike
MSD = Matrix spike duplicate
MD = Matrix (lab) duplicate
SRM = Standard Reference Material
NA = Not Applicable

2.3 LABORATORY METHODS

2.3.1 Chemical and Physical Analyses

PCB, TOC, and Grain size analysis were performed by Alpha Analytical in Mansfield, Massachusetts. Table 2 summarizes the analytical methods. Standard operating procedures (SOPs) employed by Alpha Analytical are referenced below and in Table 2, and are provided in Appendix D of the QAPP (Woods Hole Group, 2009a).

2.3.1.1 PCBs

All sediment samples were analyzed for percent solids prior to extraction for PCB analysis. Any sample with less than 50% solids was air-dried and re-analyzed until percent solids exceeded 50%. Alpha Analytical extracted the sediments using the shaker table extraction procedure (Alpha SOP #OP-013) followed by silica gel cleanup (Alpha SOP #OP-014) and then sulfuric acid cleanup (Alpha SOP #OP-010). Extracts were analyzed using gas chromatography/mass spectrometry (GC/MS) in the Selected Ion Monitoring (SIM) mode of operation for the 18 NOAA PCB Congeners (Alpha SOP #O-015). Sample data was quantified by the method of internal standards. PCB congener results were reported on a dry-weight basis (based on the after air-drying percent solids

result). For the LTM V PCB congener analyses, the laboratory used the Reporting Limits (RL) as the detection limits. The RL is the lowest limit of detection for a specific sample and instrument calibration. Results were qualified by the laboratory as non-detect (U) if the result of the analysis was less than ½ the RL; U-qualified data were reported as the full value of the RL. Results were qualified by the laboratory as estimated (J) if the result of the analysis was less than the RL but greater than or equal to ½ the RL; J-qualified data were reported as the value calculated from the instrument. Data from Alpha was not surrogate recovery corrected. This correction, as required by USACE and performed historically for LTM PCB results by the laboratory prior to data reporting, was performed for LTM V during the data validation process by New Environmental Horizons, Inc. Further discussion of surrogate recovery correction is provided in Section 2.4 of this report.

For the purpose of analysis, a Total PCB value was calculated from the PCB congener data. A conservative approach to calculating Total PCBs was implemented in which the 18 NOAA PCB Congeners were summed for each station. All U-qualified data were included in the sum using the full RL value. All J-qualified data also were included in the sum.

Table 2. Analytical Methods

Analyte Group	Laboratory SOP No.	Equivalent EPA or other Agency Method No.
PCBs	Alpha SOP OP-013 (extraction) Alpha SOP OP-014 (silica gel cleanup) Alpha SOP OP-010 (sulfuric acid cleanup) Alpha SOP O-015 (GC/MS-SIM analysis)	Shaker table extraction: performance-based method (NOAA Status and Trends (NOAA 1993) Extract Cleanup: EPA Method 3630C Extract Cleanup: EPA Method 3665A Analysis: SW-846 8270C, modified (EPA, 1996) & EPA 680, modified (EPA, 1985)
TOC	Alpha SOP W-028	SW-846 9060, modified (EPA, 1996)
Grain Size	Alpha SOP W-029 (Grain Size/ Particle-Size with Hydrometer)	ASTM D422-63 (ASTM, 1998)
Percent Solids	Alpha SOP W-001	EPA Method 2540G

2.3.1.2 TOC

Total Organic Carbon (TOC) analysis was performed by Alpha Analytical following EPA SW-846 method 9060 modified for replicate analyses (Alpha SOP #W-028). For this report, the average value of the replicate results was reported for each station.

2.3.1.3 Grain Size

Grain size analysis was performed by Alpha Analytical following ASTM D422-63 (Alpha SOP #W-029). Sediment grain-size was determined with phi-classes for sands using wet sieve analysis based on the methods outlined in ASTM D422-63 (particle-size analysis with hydrometer, ASTM 1998). Wet sieving yielded the following phi-classes: Gravel (>2.00 mm), Very Coarse Sand (1.00-2.00 mm), Coarse Sand (0.50-1.00 mm), Medium Sand (0.25-0.50 mm), Fine Sand (0.125-0.25 mm), Very Fine Sand (0.0625-0.125 mm), and Silt and Clay (<0.0625 mm). Pipette analysis resulted in percents of silt (0.0039-0.0625 mm) and clay (<0.0039 mm).

2.3.2 Benthic Biology Analysis

Benthic biology sorting, enumeration, and identification was performed by Normandeau Associates in Bedford, New Hampshire. Sample processing was performed as described in Appendix E (EMAP Near-Coastal Laboratory Procedures Macrobenthic Community Assessment) of the QAPP (Woods Hole Group, 2009a), with the exception that sample biomass determinations were not performed. At each station, three replicate samples were collected: two for species enumeration, and one for archiving.

2.4 DATA VALIDATION METHODS

New Environmental Horizons, Inc. (NEH) performed an independent validation of the chemical data for PCB congeners and TOC generated during the LTM V. The basis for the validation was the EPA Region I validation guidelines, modified to include project-specific and method-specific criteria as discussed in the QAPP (Woods Hole Group, 2009a), consistent with validation protocols performed historically for LTM data. The data validation reports are provided in Appendix A.

Based on the Tier 1+ validation of the 18 NOAA PCB Congeners and TOC, all results are considered usable for project decisions based on a comparison to the NBH LTMV QAPP requirements. The validation reports (Appendix A) provide an understanding of the potential uncertainty (bias) in the qualified results.

Surrogate recovery correction of PCB data was performed during data validation, which is different from previous LTM procedures. A technical memorandum was produced by NEH to document the methodology used for the surrogate recovery corrections applied during the validation stage for LTM V data, and previous corrections applied directly by the laboratory (e.g., LTM IV). The technical memorandum is presented in Appendix B and current procedures are summarized here. 4,4'-Dibromooctafluorobiphenyl (DBOB) was used as a surrogate for congeners PCB8, PCB18, PCB28, PCB44, PCB52, PCB66, and PCB101. PCB198 was used as a surrogate for congeners PCB105, PCB118, PCB128, PCB138, PCB153, PCB170, PCB180, PCB187, PCB195, PCB206, and PCB209. If these surrogates were recovered within the acceptable criteria range (50% - 130%), as outlined in the QAPP (Woods Hole Group, 2009a), then each congener result (with the exception of non-detects, which were reported at the sample-specific reporting limit) was corrected as follows using the appropriate surrogate recovery percentage:

Corrected Result = Uncorrected Result x (100/(Surrogate % Recovery))

If one of the surrogates was not recovered within the acceptable criteria range, then all congeners were corrected using the surrogate that did meet the criteria. If both surrogates were not recovered within the acceptable criteria range, then no surrogate recovery correction was performed.

Surrogate recovery corrections were applied to 58 samples (and two field duplicate samples). Surrogate recovery corrections were not made to the remaining 21 samples (and one field duplicate sample) as the surrogates were diluted out.

3.0 RESULTS

Sediment samples and water quality parameters were collected from 79 stations in the New Bedford Harbor study area between September 22, 2009 and September 28, 2009. A field duplicate sample was also collected from each of the three harbor areas (Station 146 in Area I, Station 212 in Area II, and Station 323 in Area III. Sample collection dates, times, coordinates and total water depths are presented in Appendix C.

3.1 WATER QUALITY

In situ water quality parameters were measured at all 79 stations in the New Bedford Harbor study area (Upper Harbor, Lower Harbor, and Outer Harbor). Water quality parameters were also taken for the three field duplicates. Salinity, temperature, and dissolved oxygen were measured prior to the collection of sediment samples. Water quality measurement depths and data are presented in Appendix D. Water quality data was not recorded at five field stations (309, 311, 318, 323, 324) and for one of the field duplicates (323 FD) because the YSI exceeded available memory, thereby disabling the continuous data collection function.

Based on the data collected during field sampling, the water quality conditions can be characterized as follows:

- In the Upper Harbor, salinity ranged from 21.43 to 31.33 ppt with a median of 27.04 ppt. Temperature ranged from 18.76 to 21.64 ˚C with a median of 20.57 ˚C. Dissolved oxygen ranged from 6.40 to 10.60 mg/L with a median of 8.16 mg/L.
- In the Lower Harbor, salinity ranged from 23.40 to 27.97 ppt with a median of 26.85 ppt. Temperature ranged from 18.14 to 20.05 ˚C with a median of 19.77 ˚C. Dissolved oxygen ranged from 5.51 to 10.41 mg/L with a median of 7.07 mg/L.
- In the Outer Harbor, salinity ranged from 26.89 to 33.37 ppt with a median of 29.84 ppt. Temperature ranged from 18.12 to 19.79 ˚C with a median of 18.90 ˚C. Dissolved oxygen ranged from 6.69 to 8.06 mg/L with a median of 7.21 mg/L.

In general, salinity was higher in the Outer Harbor than in the Upper and Lower Harbors. This is a result of the seawater from Buzzards Bay in the Outer Harbor mixing with the freshwater inflow to the Upper Harbor. Temperature decreased slightly with increasing depth from the Upper Harbor to the Outer Harbor. This is likely because the sampling was conducted in September, when the shallow water remains relatively warm due to waning summer climatological influences. The temperature gradient from the Upper to Outer Harbor was mild, though, likely due to the onset of cooler fall weather. Mean dissolved oxygen was slightly higher in the Upper Harbor than in the Lower or Outer Harbors, but the low-to-high ranges overlapped substantially, and there was no strong trend. No anoxic conditions were observed, likely because of the early fall conditions during sampling, which tend to be characteristic of increasing dissolved oxygen conditions in the region.

3.2 CHEMICAL ANALYSES

Sediment samples were collected at all 79 stations in the New Bedford Harbor study area (Upper Harbor, Lower Harbor, and Outer Harbor). A field duplicate sample was also collected from each of the three harbor areas (Station 146 in Area I, Station 212 in Area II, and Station 323 in Area III. Sediments were analyzed by Alpha Analytical for the 18 NOAA PCB congeners and TOC. The laboratory data was validated by NEH.

3.2.1 Polychlorinated Biphenyls

At each of the 79 stations, plus the three field duplicate stations, sediment samples were collected for PCB analysis. Surrogate recovery correction of the PCB data was performed by NEH during data validation. Some of the sediment samples, mostly those collected from the Upper Harbor (Area 1), were highly contaminated, necessitating dilution in the laboratory. The surrogates that had initially been spiked into the sample were diluted out in these instances, and consequently no surrogate recovery correction could be performed. Final validated results of PCB analysis are presented in Appendix E.

Calculations of Total PCBs were performed on the validated results. This calculation summed the 18 NOAA PCB congeners, using the RL value for all non-detected (U-qualified) results. The Total PCBs calculation did not utilize a multiplier, and any samples in which surrogate recovery correction was performed for some of the congeners were given a "K" qualifier for the summed result (Appendix E).

Throughout all three study areas, Total PCBs ranged between 9 parts per billion (ppb) and 330,971 ppb. The lowest Total PCB value was at Station 306 in the Outer Harbor; the highest Total PCB value was at Station 125 in the Upper Harbor. Results display a trend of decreasing Total PCBs from the Upper Harbor to the Outer Harbor. Some details include:

- Upper Harbor Total PCB levels were between 570 ppb (Station 202) and 330,971 ppb (Station 125) with a median of 29,840 ppb (Station 138).

- In the Lower Harbor, Total PCB was between 525 ppb (Station 250) and 18,729 ppb (Station 217) with a median of 4,423 ppb (Station 236).
- Outer Harbor Total PCB levels were between 9 ppb (Station 306) and 1,131 ppb (Station 304) with a median of 118 ppb (average of Stations 333 and 335).

This trend of order-of-magnitude decreases in Total PCBs from the Upper to the Lower and into the Outer Harbor is consistent with prior LTM sampling events. High levels in the Upper Harbor are a result of the historical PCB source to the Upper Harbor from the Aerovox facility as discussed in Section 1.2.

3.2.2 Total Organic Carbon

At each of the 79 stations, plus the three field duplicate stations, sediment samples were collected for TOC analysis. In the laboratory, a replicate analysis was performed. The TOC data, presented in Appendix F, are the averages of the laboratory replicates for each sample.

Throughout all three study areas, TOC ranged between 0.05% and 5.15%. The lowest TOC value was recorded at Station 306 in the Outer Harbor; the highest TOC value was recorded at Station 125 in the Upper Harbor. That the lowest and highest levels of TOC corresponded to the lowest and highest Total PCB concentrations, respectively, is consistent with prior analysis that demonstrated a relationship between TOC and PCB levels in New Bedford Harbor. Results display an overall trend of decreasing TOC from the Upper Harbor to the Outer Harbor, also indicative of the Total PCB trend.

In the Upper Harbor, TOC was between 0.10% and 5.15% with a median of 2.52%. In the Lower Harbor, TOC was between 0.33% and 4.06% with a median of 1.81%. In the Outer Harbor, TOC was between 0.05% and 3.28% with a median of 0.97%.

3.3 PHYSICAL ANALYSIS

Sediment samples were collected at all 79 stations in the New Bedford Harbor study area (Upper Harbor, Lower Harbor, and Outer Harbor). A field duplicate sample was also collected from each of the three harbor areas (Station 146 in Area I, Station 212 in Area II, and Station 323 in Area III. Sediments were analyzed by Alpha Analytical for grain size.

At each of the 79 stations, plus the three field duplicate stations, four replicate sediment samples were collected for grain size analysis. One grain size replicate sample originated from the composited grab samples (top 2cm of the grab as specified in the field operations manual (Strobel, 2000)) collected for chemical analyses. The other three replicates were sub-sampled from the three sediment grab samples collected for benthic infauna analysis. An additional three field duplicates were collected in association with the chemistry analyses. The grain size data associated with the chemistry samples are presented in Appendix G. A brief summary of these grain size samples follows.

Total Percent Fines (sum of silt and clay) were highly variable throughout the study area:

- Upper Harbor: Fines ranged from 1% to 86%
- Lower Harbor: Fines ranged from 2% to 84%
- Outer Harbor: Fines ranged from 1% to 83%

Throughout all three study areas, the median grain size (d_{50}) was between 0.0236mm and 1.0943mm, ranging between silt and very coarse sand. The finest median sediment sample was at Station 123 in the Upper Harbor; the coarsest sample was at Station 236 in the Lower Harbor.

In the Upper Harbor, d_{50} was between 0.0236mm and 0.6992mm, ranging from silt to coarse sand. The Lower Harbor d_{50} was between 0.0325mm and 1.0943mm, ranging from silt to very coarse sand. And, in the Outer Harbor, d_{50} was between 0.0270mm and 0.7155mm, ranging from silt to coarse sand.

Grain size data from the benthic community replicate sampling is presented in Appendix H. Grain size distribution curves for all (chemistry and benthic community) analyses are presented in the laboratory reports included in Appendix I. Sample locations ending in "11", "12", or "13" are associated with benthic replicates, while samples locations ending in "26" or "36" are associated with chemistry samples.

3.4 BENTHIC FAUNA

At each of the 79 stations, three replicate sediment samples were collected for benthic community analysis. Two of the replicates were sorted and enumerated, while the third replicate was archived. Benthic community abundance data in the format specified by EPA is attached to the Normandeau report, which is included in Appendix J. Results from one of the sorted and enumerated replicates are summarized as follows.

A total of 96 species and 19,688 organisms were enumerated from 27 samples in the Upper Harbor. The number of species encountered per station in the Upper Harbor ranged from 5 to 43, and the median in Upper Harbor samples was 14 species. Abundance per station in the Upper Harbor ranged from 17 to 4,137, and the median was 441 individuals. The station with the highest abundance (4,137) of any station sampled in LTM V was Station 108 in the Upper Harbor. The dominant species in the Upper Harbor was *Streblospio* benedicti, a polychaete worm. The total abundance of *Streblospio benedicti* in all Upper Harbor samples was 12,996. The next two most abundant organisms throughout the Upper Harbor were Oligochaeta (1,727), oligochaete worms, and *Polydora cornuta* (1,597), a polychaete worm.

A total of 136 species and 10,226 organisms were enumerated from 29 samples in the Lower Harbor. The number of species encountered per station in the Lower Harbor ranged from 4 to 59, and the median was 19 species. The station with the lowest species richness (4) of any station sampled in LTMV was Station 231 in the Lower Harbor. Abundance per station in the Lower Harbor ranged from 10 to 1,123, and the median was 318 individuals. The station with the lowest abundance (10) of any station sampled in

LTM V was Station 240 in the Lower Harbor. As with the Upper Harbor, the dominant species in the Lower Harbor was *Streblospio benedicti*, a polychaete worm. The abundance of *Streblospio benedicti* was 1,822. By comparison to the strong dominance of this species in the Upper Harbor, the *Streblospio benedicti* abundance in the Lower Harbor was much closer to the next two most abundant organisms throughout the Lower Harbor [*Tharyx acutus* (1,052), a polychaete worm, and *Leitoscoloplos sp.* (880), a polychaete worm].

A total of 233 species and 10,687 organisms were enumerated from the 23 samples in the Outer Harbor. The number of species encountered per station in the Outer Harbor ranged from 19 to 82, and the median was 43 species. The station with the highest species richness (82) of any station sampled in LTM V was Station 352 in the Outer Harbor. Abundance per station in the Outer Harbor ranged from 70 to 1,488, and the median was 439 individuals. The dominant species in the Outer Harbor was *Tharyx acutus*, a polychaete worm. The abundance of *Tharyx acutus* was 1,128. The next two most abundant organisms throughout the Outer Harbor were *Macoma tenta* (1,126), the elongate macoma clam and *Cylichna oryza* (902), a sea snail.

Although formal statistics were not computed, the data indicate an increase in benthic community diversity from the Upper to the Lower and into the Outer Harbor. Lists of all species encountered in the Upper, Lower, and Outer Harbors (for Replicate 1 benthic samples) are provided in Appendix K.

4.0 DISCUSSION

The LTM V survey for New Bedford Harbor was completed in September 2009. Sediments were collected for physical, chemical and benthic biology analyses. Water quality parameters were also collected at each station. A total of 79 stations were sampled, and the appropriate field and laboratory QC was conducted.

This LTM V Summary Report presents the data. Provided in the appendices are station locations, water quality measurements, PCB (NOAA 18 Congeners) data, discussion of previous (LTM IV) and current (LTM V) approaches to PCB surrogate recovery correction, total organic carbon data, data validation reports, grain size data, and benthic infaunal community abundance data.

Although a multiplier of 2.6 has previously been developed to correlate the NOAA 18 PCB Congeners to a Total PCB value in the upper and lower harbors, this multiplier was not applied in the current or any previous LTM investigation.

The resulting data were uploaded into the New Bedford Harbor Database and are available for querying and downloading. Surrogate recovery correction was performed during data validation, and not by the laboratory. Surrogate recovery corrected results are identified in the database by a "K" qualifier. PCB Congeners, as obtained from the database, were summed (RL value used for non-detects) to obtain a measure of Total PCBs. TOC replicates, as obtained from the database, were averaged to obtain one result for each station reported herein. All other data were used as obtained from the database.

Although no formal analysis of the data is included in this report, summary observations are provided in Section 3. The results of the LTM V will be used by EPA to assess spatial trends in contaminated sediments. In conjunction with previous LTM data, the information will be used to assess temporal trends in contaminated sediments, and to assess the effectiveness of the New Bedford Harbor Superfund remediation efforts. Previous LTM reports may be found on-line at www.epa.gov/ne/nbh under "Technical Documents", "Long Term Benthic Monitoring". LTM data also are planned for inclusion in the OU #3 Remedial Investigation.

5.0 REFERENCES

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APPENDIX A. DATA VALIDATION REPORTS

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New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab Project: L0912896

Lab: Alpha Analytical
Date Sampled: ~~9/22/09 through 9/27/09~~
Analysis: 18 NOAA PCB Congeners by GC/MS-SIM

No. Samples: 16
Matrix: Sediments

Data Element Acceptable	Preservation & HT	Surrogates %R 50-130%	LCS/LCSD SRM %R 40-140% RPD ≤ 30%	MS/MSD %R 40-140% RPD ≤ 30%	FD RPD≤ 30% SW RPD≤ 50% SED	MB < RL or < 5x Conc. in sample	RL meets QAPP req. for matrix?	Issues with Qualifiers?	Other
Yes	√	√		√	NA	√		NA	
No			Estimate (UJ) BZ209 in all samples				Estimate (J) 5 results < RL	Data qualified "D" by the lab for all samples analyzed DF > 1	Surrogate recovery correct 3 samples - see "Surrogate Recovery Correction _L0912896.pdf" and pages 2-3 of this report for details

Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.
Were the %solids acceptable (>30%)? Yes all > 93% solids after air-drying. Prior to air-drying, % solids were 29-82%.

The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 209 PCB Congeners were acceptable unless an issue was raised in the laboratory narrative.

Comments:

Samples were received intact at 2.6C to 4.1C in 5 shipments on the day after sample collection (e.g., samples collected on 9/24 were received on 9/25/09). COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab.

Samples were analyzed for % solids, TOC, and Grain size. All samples were also air-dried and subsequently analyzed for %solids - air-dried and 18 NOAA Congeners.

HT: Air-dried samples were extracted on 10/5/09 and analyzed by 10/23/09 - HT met - No action required.

Surrogates: both surrogates (BZ19-C13 and BZ202-C13) were diluted out (0% recovery) due to dilutions made for analysis of the samples (DF ranged from 100 to 1000) for all samples except 501225, 501425, and 502825. For these three samples, surrogates were recovered within criteria - No Action required.

LCS: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners spiked and RPDs between LCS and LCSD all OK except BZ52 LCS recovery high (162%) LCSD and RPD OK, BZ206 LCSD low (39%) LCS and RPD OK, and BZ209 LCS&LCSD both low (20% and 21%) - RPD OK. No Action taken for BZ52 ad BZ206 since recovery OK for one of the spiked and RPD OK - Action required for low BZ209 though.

**ACTION: BZ209 estimated (UJ) in all 16 sediment samples with possible low bias due to low LCS/LCSD recoveries.*

Date: ~~*3/29/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Blank Action: Blanks Reviewed: Method Blank
No EB associated with samples

Blank ID	Contaminant / Level	Matrix Related?	Action Level / Action	Sample and Reported Result	Corrected Result
Method Blank	BZ#18 0.3 J µg/Kg	Y	1.5 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#44 0.257 J µg/Kg	Y	1.285 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#52 0.443 µg/Kg	Y	2.215 µg/Kg	All samples were >>> BAL - No Action required	

Comments:

SRM : NY/NJ Waterway Sediment. %Rec for Congeners in SRM were all within 40-140%; therefore, no Action required.

MS/MSD : performed on sample 500525. Sample, MS and MSD were analyzed at DF=500 ; therefore, spike level (~7 µg/Kg) was too low to be able to evaluate MS/MSD recovery (most recoveries were 0%). Replicate precision (sample, MS & MSD) reasonable (RPD <30%) for all 18 NOAA Congeners; therefore, No Action required.

FD: there were no field duplicates associated with the samples in this SDG - see the other LTMV for FD sample analysis.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that data were surrogate recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting, Alpha's process for reporting, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events.

For samples where the surrogates are not recovered because of the dilution made for analysis of the sample, a DV Comment was added to the validated database file "K2" to indicate that the reported value was not surrogate recovery corrected. For samples with surrogates recovered, a separate excel worksheet has been constructed (Surrogate Recovery Correction _ L09XXXX.xls) showing the lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. Non-detects are reported by Alpha at the Reporting Limit (RL) consistent with the QAPP. Since non-detects will not be comparable between Alpha and Battelle because the basis for the non-detects are different (MDL vs. RL), non-detects and reporting limits are not surrogate recovery corrected in the LTMV data.

For this SDG, three samples, 501225, 501425, and 502825, reported surrogate recoveries. The surrogate corrected values, as shown in Surrogate Recovery Correction_L0912896.pdf, replaced the Lab Result values in the validated database file, the data were qualified "K" to indicate this change to the Lab Result values, and a DV Comment was added, "K1", to indicate that the Reported result was recovery corrected.

Date: ~~3/29/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

Lab: Alpha Analytical

Comments:

The lab reported results for 18 NOAA Congeners + 2 surrogates. All samples were analyzed at DF>1 except for sample 502825; therefore, all RLs for individual Congeners were above the PQLs requested in QAPP Table 1-3 for these diluted sample. The RLs for sample 502825 were < RLs and PQLs requested in the QAPP; therefore, sensitivity was acceptable for these data.

The narrative did not raise any issues affecting quality that were not already addressed.

5 results were reported at levels < RL and were flagged "J" by the lab. These 5 results were accepted within Indeterminate bias due to uncertainty in quantitation at a level below the instrument calibration range

Qualifiers : All data were reported with "D" qualifiers to indicate results reported from a dilution analysis. As instructed by Battelle, these "D" qualifiers were not removed

Date: ~~*3/29/10*~~
Data Reviewer: ~~***Nancy C. Rothman, Ph.D.***~~

Lab: Alpha Analytical

ACTIONS:

Preservation: Cooled to 4 ± 2°C. Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.
HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND
Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)
Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs
Surrogates: % Recovery > 130%, J det/Accept ND; 10% ≤ % Recovery < 50%, J det/J NDs; Recovery < 10%, J det/R NDs.
LCS/LCSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.
MS/MSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.
FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if
Other Qualifiers: Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes either U or J based on actions taken for Method Blank (MB)
% solids: 10% < % solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.
Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated

Reference: Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, Massachusetts, September 2009 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: ~~3/29/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912896

Lab: Alpha Analytical
Date Sampled: 9/22/09 through 9/27/09
Analysis: Total Organic Carbon (TOC) by modified EPA SW-846 Method 9060

No. Samples: 16
Matrix: Sediment

QC Met Criteria?	Preservation 4 ± 2°C	HT 28 days	RL 0.01% (100 mg/Kg)	MB < RL	Solid LCS = SRM 75-125% R	MS 75-125% R	MD RPD ≤ 25%	FD RPD≤ 50%	% Solids > 30%	Other
Yes	√	√	√		√	√	√	NA	√	
No				MB >RL but samples > level in MB						

Calibration criteria: Unless otherwise noted in the laboratory narrative, it was assumed that all initial and continuing calibration verifications (ICV/CCV) and initial and continuing calibration blank (ICB/CCB) results were acceptable (met LTM V QAPP 2009 requirements). In addition, RPD < 25% for two replicates of each sample.

- Method Modification**:** Laboratory analyzed two replicates (burns) for TOC by Method 9060A rather than 4 (as in the method); this is consistent with LTMV QAPP requirements.

Samples were received intact. TOC analysis was performed on the samples "as-received" (i.e., not on "air-dried" sediments). Samples were frozen upon receipt to arrest holding time. Therefore, analyses, conducted on 10/26/09, were considered to have met HT criteria. No Action required.

MS/MD site sample used for QC: 500525. Duplicate burns of MS resulted in acceptable recovery. Sample/MD reported one burn with RPD > 25%; however, a comparison of the average sample and average MD TOC of this sample gave RPD < 25% - No action taken based on professional judgment.

Method blank reported low level TOC (average = 0.0195 %). Since all samples reported TOC > this level, no action required.

Sample/FD site sample IDs: There were no FDs associated with the samples in this SDG - see other LTMV SDGs for FDs

Replicate (duplicate) precision TOC results of each sample all had RPD < 25% - all replicates acceptable - No Action.

Data users should compute the arithmetic average of the two TOC replicate burns for each sample and use this average as the valid TOC result for that sample.

Data Package Completeness:

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with EPA Region 1 present in the data package? **Yes**

2. Were all result forms for all samples listed on the chain-of-custody present in data package? **Yes**

If No, explain and request resubmittals:

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912896

Lab: Alpha Analytical

Data Quality / Usability Issues:

1. Did the Laboratory Narrative contain any issues which may affect data quality or usability that have not been already addressed on page 1? **No.**
If Yes, explain.

2. Explain further any actions taken based on summary QC, as necessary, below.

No further actions required.

All TOC data were accepted as reported by the laboratory and unchanged as a consequence of this data validation review.

QC Actions:

Pres./HT:	HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. Freezing arrests HT. Temperature: outside control limits of 4 ± 2°C: use professional judgment.
Blanks:	Method Blanks and instrument blanks: TOC < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found). Professional judgment used for non-matrix matched blanks (e.g. aqueous blank associated with sediment samples).
Calibration Criteria:	Assume acceptable unless narrated. Exceedances of any calibration criteria will affect accuracy of the data: J detects and UJ non-detects. Severe exceedances of calibration criteria, to be determined based on professional judgment, may require rejection, R, of data.
ICV/CCV:	Assume acceptable unless narrated. If narrated as exceeded: %Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. If severe exceedance <50% recovery: R non-detects.
LCS/SRM:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix.
MS:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level.
MD:	Results > 5xRL: RPD >25%: J / UJ associated results in batch - to be determined using professional judgment. Results < 5xRL: difference > ±2xRL, J / UJ associated results in batch - to be determined using professional judgment.
FD:	Results > 5xRL: RPD >50%: J / UJ FD results only. Results < 5xRL: difference > ±4xRL,, J/UJ FD results only.
% Solids:	10% < % solids < 30%, J detects/R non-detects; % solids < 10%, R all results.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate. QC Limits based on EPA Region 1 Inorganic DV guidance and LTM V QAPP 2009.

References: Quality Assurance Project Plan; New Bedford Harbor Long Term Monitoring V; New Bedford, Massachusetts (September 2009); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; Publication EPA 540-R-04-004, October 2004.

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

Data Validation Report
EPA Region I Tier I+
18 NOAA PCB Congeners by 8270C and TOC by Method 9060

Client/Company:	Woods Hole Group, Inc. (WHG)
Site/Project Name:	New Bedford Harbor Superfund Site – Long Term Monitoring (LTM) V
Laboratory:	Alpha Analytical – Mansfield, MA
Lab Project Number(s):	L0912896
Date(s) of Collection:	September 22, 2009 through September 27, 2009
Number / Type Samples & Analyses	16 sediment samples for 18 NOAA PCB Congeners by EPA SW-846 Method 8270C and Total Organic Carbon (TOC) by Method 9060
Senior Data Reviewers:	Nancy C. Rothman, PhD, New Environmental Horizons, Inc. Susan D. Chapnick, New Environmental Horizons, Inc.
Date Completed: ***Revised:***	March 30, 2010 ***April 12, 2010***

This report was revised to include the Tier 1+ review of TOC data.

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners and TOC was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, MA,* prepared by Woods Hole Group, Inc., September 2009 (LTMV QAPP); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474
Phone: (908) 874-5686 ◊ (781) 643-4294
Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net
www.neh-inc.com

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and comments added based on actions taken; and
- Data Validation Checklists for TOC and PCB Congeners including the Surrogate Recovery Correction worksheet completed during this validation to document the Tier I+ review. The Checklists are an integral part of the DV Report as they contain comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the sample type (e.g., field sample, field duplicate (FD), field equipment blank (EB), as applicable), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
500125	L0912896-01	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500225	L0912896-02	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500325	L0912896-03	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500425	L0912896-04	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500525	L0912896-05	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500625	L0912896-06	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500725	L0912896-07	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500825	L0912896-08	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
500925	L0912896-09	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501025	L0912896-10	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501125	L0912896-11	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
501225	L0912896-12	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502825	L0912896-13	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501425	L0912896-14	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501525	L0912896-15	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501625	L0912896-16	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Analytical method references:
18 NOAA Congeners: *Determination of PCB Homologs, Individual Congeners, and Pesticides by Gas Chromatography/Mass Spectrometry in the Select Ion Monitoring (SIM) Mode (EPA 680 & 8270C),* Alpha SOP O-015, Rev. 2, June 19, 2006.
TOC: SW-846 Method 9060 modified, Alpha SOP W-028

[1] Grain Size analysis was also performed on these samples; however, data validation for this parameter was not required. TOC analysis was performed on "as-received" sediments while the 18 NOAA Congeners were performed using "air-dried" sediments.

II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of the 18 NOAA PCB Congener and TOC sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH LTMV QAPP requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Standard Reference Material (SRM) Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)
- Sample result reporting (including compound lists, reporting limits, and units)

- Calibration criteria* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries*
- Retention Time windows*
- Other method-specific QC if applicable and reported* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.

Based on this Tier I+ validation of the 18 NOAA PCB Congeners and TOC, all results were considered usable for project decisions based on a comparison to the NBH LTMV QAPP requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID_QUAL, VALIDATION_LEVEL, VALIDATION, VALID_DATE, BIAS, and DV_COMMENT.

The remainder of this report documents "exceptions" to the NBH LTMV QAPP criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Validation Checklists.

Sample Receipt and Holding Time

The sediment samples were received at the laboratory intact in five shipments at 2.6°C to 4.1°C. Aliquots of the "as-received" samples were analyzed for TOC, Grain Size, and percent solids. Samples were frozen upon receipt to arrest holding time for TOC analysis. All samples had percent solids content of 29-82%; therefore, these sediment samples were air-dried, as required by the QAPP, prior to Congener analysis. After air-drying, the percent solids content for all samples was greater than 93%.

Accuracy

The Method Blank reported detected results for three of the 18 NOAA Congeners and low level TOC; however, a comparison of the levels reported in the method blank with the levels reported in the samples indicated that blank action was not required.

There was no Equipment Blank required to be collected along with these sediment samples.

All 18 NOAA Congeners recovered within criteria in the LCS and LCSD except for Decachlorobiphenyl (BZ#209), which recovered low in both the LCS and LCSD. The results for Decachlorobiphenyl (BZ#209) were estimated (UJ) with a possible low bias in all sixteen sediments due to the low LCS/LCSD recoveries, as listed in Table 2.

Congener recoveries in the LCS or LCSD were also outside criteria for 2,2',5,5'-Tetrachlorobiphenyl (BZ#52) and 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ#206); however, since one spiked sample recovery was acceptable and since the RPD between the LCS and LCSD was acceptable for these two Congeners, no action to qualify sample data was taken based on professional judgment.

Congener recoveries in the MS/MSD analysis conducted on sample 500525 could not be evaluated since the level of the spike was too low compared to the concentration of PCB Congeners in the field sample (i.e., the sample, MS and MSD were all analyzed at dilution factor (DF) = 500, at this high dilution, the relatively low matrix spike level could not be detected). Therefore, no action was taken based on the MS/MSD recoveries. TOC recovery in the MS analysis of sample 500525 was acceptable, indicating acceptable accuracy for TOC in the site matrix.

The Standard Reference Material for PCB Congeners (SRM NY/NJ Waterway Sediment) and TOC SRM reported acceptable recoveries for all Congeners and TOC certified in these SRMs.

Precision

LCS/LCSD precision was acceptable for all 18 NOAA Congeners indicating acceptable precision in the laboratory analysis of these samples.

MS/MSD precision in the analysis of sample 500525 was acceptable for all 18 NOAA Congeners. All TOC analyses were performed in replicate (duplicate burns), as a method modification consistent with the site QAPP requirements. Sample/MD precision was high for TOC in one set of replicates. Since the average TOC value for 500525 and the average value for the MD had acceptable precision, no action was taken based on professional judgment. Precision between all replicates of TOC reported for each sample was acceptable. These results indicate acceptable precision and representativeness of these sediments for analysis of the NOAA PCB Congeners and TOC.

There were no Field Duplicates (FD) associated with the samples in this SDG. Three sets of Sample/FD were collected and are reported for the overall LTMV program. Data users are directed to the other LTMV DV reports for FD information.

Sensitivity & Reporting

All samples met sensitivity requirements for PCB Congeners and TOC as indicated in NBH LTMV QAPP Table 1-3.

Data users should compute the average of the TOC replicate results (duplicate burns) for each sample and use this arithmetic average as the valid result for TOC.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that Congener data were surrogate-recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate-recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting previous LTM data (LTMIV and prior monitoring data), Alpha's process for reporting LTMV results, and recommendations for adjustment of the current

LTMV data so that these data may be comparable to the data from previous sampling events reported by Battelle.

For Congener samples where the surrogates are not recovered because of analytical dilutions or when results were non-detect, the DV_COMMENT "K2" was added to the validated database file to indicate that the reported value was not surrogate-recovery corrected.

For Congener samples where surrogate-recovery correction was performed, a separate Surrogate Recovery Correction excel worksheet was constructed (as part of the Data Validation Checklist process) showing the original lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. For surrogate-corrected results, the project database file was updated as follows:

1. The surrogate-corrected value, as shown in the Surrogate Recovery Correction worksheet, replaced the lab RESULT value in the validated database file;
2. The qualifier "K" was added to the VALID_ QUAL field to identify the result as surrogate-recovery corrected; and
3. "K1" was added to the DV_COMMENT field as the DV code to further indicate that the reported result was surrogate-recovery corrected.

Non-detects for Congeners were reported by Alpha at the Reporting Limit (RL), consistent with the LTMV QAPP requirements. Since non-detected results are not comparable between Alpha and Battelle because the basis for the non-detects are different (RL *vs*. MDL), non-detects and reporting limits were not surrogate-recovery corrected in the LTMV data.

For this SDG, three Congener samples, 501225, 501425, and 502825, reported surrogate recoveries. Surrogate-recovery correction was performed for these three samples, as documented in *Surrogate Recovery Correction_L0912896*. Actions taken are listed below in Table 2.

Results reported below the sample-specific RLs are considered uncertain because they are below the calibration range. During this review, data below the sample-specific RLs were qualified as estimated (J), as shown in Table 2, and as described in the Data Validation Checklist.

The laboratory reported all results from DF > 1 analyses with a “D” qualifier. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
501225 501425 & 502825	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl & Decachlorobiphenyl	DK / K		Reported value is surrogate recovery corrected
All samples except: 501225 501425 & 502825	All Congeners	D/ DJ/ DU		Reported value is not surrogate recovery corrected

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
500125 & 500425	2,3,3',4,4'-Pentachlorobiphenyl	DJ	I	Reported value is not surrogate recovery corrected + result uncertain below the calibration range
500125 & 500525	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	DJ	I	Reported value is not surrogate recovery corrected + result uncertain below the calibration range
501225 & 502825	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DU / U		Reported value is not surrogate recovery corrected
501425	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DJK	I	Reported value is surrogate recovery corrected + result uncertain below the calibration range
All samples	Decachlorobiphenyl - Homologue	DUJ / UJ	L	Reported value is not surrogate recovery corrected + Low LCS recovery

Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory); K = Result is Surrogate Recovery Corrected.

Bias: L = Low; H = High; I = Indeterminate

Abbreviations used in Table 2:
LCS = Laboratory Control Sample

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT	DETECT_LIMIT
501225	10	34883-43-7	2,4'-Dicb	8	DBOB	85.6	D	126	UG/KG	3.34
501225	10	37680-65-2	2,2',5-Tricb	18	DBOB	505	D	743	UG/KG	3.34
501225	10	7012-37-5	2,4,4'-Tricb	28	DBOB	838	D	1232	UG/KG	3.34
501225	10	41464-39-5	2,2',3,5'-Tetracb	44	DBOB	296	D	435	UG/KG	3.34
501225	10	35693-99-3	2,2',5,5'-Tetracb	52	DBOB	1120	D	1647	UG/KG	3.34
501225	10	32598-10-0	2,3',4,4'-Tetracb	66	DBOB	97	D	143	UG/KG	3.34
501225	10	37680-73-2	2,2',4,5,5'-Pentacb	101	DBOB	412	D	606	UG/KG	3.34
501225	10	32598-14-4	2,3,3',4,4'-Pentacb	105	BZ198	36.9	D	42	UG/KG	3.34
501225	10	31508-00-6	2,3',4,4',5-Pentacb	118	BZ198	323	D	371	UG/KG	3.34
501225	10	38380-07-3	2,2',3,3',4,4'-Hexacb	128	BZ198	46.5	D	53	UG/KG	3.34
501225	10	35065-28-2	2,2',3,4,4',5'-Hexacb	138	BZ198	254	D	292	UG/KG	3.34
501225	10	35065-27-1	2,2',4,4',5,5'-Hexacb	153	BZ198	205	D	236	UG/KG	3.34
501225	10	35065-30-6	2,2',3,3',4,4',5-Heptacb	170	BZ198	34.3	D	39	UG/KG	3.34
501225	10	35065-29-3	2,2',3,4,4',5,5'-Heptacb	180	BZ198	40.9	D	47	UG/KG	3.34
501225	10	52663-68-0	2,2',3,4',5,5',6-Heptacb	187	BZ198	33.8	D	39	UG/KG	3.34
501225	10	52663-78-2	2,2',3,3',4,4',5,6-Octacb	195	BZ198	3.34	DU	NA	UG/KG	3.34
501225	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonacb	206	BZ198	5.74	D	6.6	UG/KG	3.34
501225	10	2051-24-3	DecaCB - Homologue	209	BZ198	3.34	DU	NA	UG/KG	3.34
501225	10	CS-10386-84-2	Dbob			68	D	68	PCT_REC	
501225	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	198		87	D	87	PCT_REC	
501425	20	34883-43-7	2,4'-Dicb	8	DBOB	178	D	209	UG/KG	6.7
501425	20	37680-65-2	2,2',5-Tricb	18	DBOB	1080	D	1271	UG/KG	6.7
501425	20	7012-37-5	2,4,4'-Tricb	28	DBOB	2220	D	2612	UG/KG	6.7
501425	20	41464-39-5	2,2',3,5'-Tetracb	44	DBOB	892	D	1049	UG/KG	6.7
501425	20	35693-99-3	2,2',5,5'-Tetracb	52	DBOB	2860	D	3365	UG/KG	6.7
501425	20	32598-10-0	2,3',4,4'-Tetracb	66	DBOB	296	D	348	UG/KG	6.7
501425	20	37680-73-2	2,2',4,5,5'-Pentacb	101	DBOB	1040	D	1224	UG/KG	6.7
501425	20	32598-14-4	2,3,3',4,4'-Pentacb	105	BZ198	104	D	95	UG/KG	6.7
501425	20	31508-00-6	2,3',4,4',5-Pentacb	118	BZ198	962	D	875	UG/KG	6.7
501425	20	38380-07-3	2,2',3,3',4,4'-Hexacb	128	BZ198	167	D	152	UG/KG	6.7
501425	20	35065-28-2	2,2',3,4,4',5'-Hexacb	138	BZ198	792	D	720	UG/KG	6.7
501425	20	35065-27-1	2,2',4,4',5,5'-Hexacb	153	BZ198	537	D	488	UG/KG	6.7
501425	20	35065-30-6	2,2',3,3',4,4',5-Heptacb	170	BZ198	109	D	99	UG/KG	6.7
501425	20	35065-29-3	2,2',3,4,4',5,5'-Heptacb	180	BZ198	132	D	120	UG/KG	6.7
501425	20	52663-68-0	2,2',3,4',5,5',6-Heptacb	187	BZ198	93	D	85	UG/KG	6.7
501425	20	52663-78-2	2,2',3,3',4,4',5,6-Octacb	195	BZ198	6.64	DJ	6	UG/KG	6.7

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT	DETECT_LIMIT
501425	20	40186-72-9	2,2',3,3',4,4',5,5',6-Nonacb	206	BZ198	11.5	D	10	UG/KG	6.7
501425	20	2051-24-3	DecaCB - Homologue	209	BZ198	6.7	DU	NA	UG/KG	6.7
501425	20	CS-10386-84-2	Dbob			85	D	85	PCT_REC	
501425	20	CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	198		110	D	110	PCT_REC	
502825	1	34883-43-7	2,4'-Dicb	8	DBOB	5.67		11	UG/KG	0.333
502825	1	37680-65-2	2,2',5-Tricb	18	DBOB	27.9		56	UG/KG	0.333
502825	1	7012-37-5	2,4,4'-Tricb	28	DBOB	51.2		102	UG/KG	0.333
502825	1	41464-39-5	2,2',3,5'-Tetracb	44	DBOB	22.1		44	UG/KG	0.333
502825	1	35693-99-3	2,2',5,5'-Tetracb	52	DBOB	70.1		140	UG/KG	0.333
502825	1	32598-10-0	2,3',4,4'-Tetracb	66	DBOB	7.91		16	UG/KG	0.333
502825	1	37680-73-2	2,2',4,5,5'-Pentacb	101	DBOB	30.5		61	UG/KG	0.333
502825	1	32598-14-4	2,3,3',4,4'-Pentacb	105	BZ198	5.14		8.3	UG/KG	0.333
502825	1	31508-00-6	2,3',4,4',5-Pentacb	118	BZ198	26.4		43	UG/KG	0.333
502825	1	38380-07-3	2,2',3,3',4,4'-Hexacb	128	BZ198	4.77		7.7	UG/KG	0.333
502825	1	35065-28-2	2,2',3,4,4',5'-Hexacb	138	BZ198	22.3		36	UG/KG	0.333
502825	1	35065-27-1	2,2',4,4',5,5'-Hexacb	153	BZ198	17		27	UG/KG	0.333
502825	1	35065-30-6	2,2',3,3',4,4',5-Heptacb	170	BZ198	2.78		4.5	UG/KG	0.333
502825	1	35065-29-3	2,2',3,4,4',5,5'-Heptacb	180	BZ198	3.73		6.0	UG/KG	0.333
502825	1	52663-68-0	2,2',3,4',5,5',6-Heptacb	187	BZ198	3.58		5.8	UG/KG	0.333
502825	1	52663-78-2	2,2',3,3',4,4',5,6-Octacb	195	BZ198	0.333	U	NA	UG/KG	0.333
502825	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonacb	206	BZ198	0.466		0.8	UG/KG	0.333
502825	1	2051-24-3	DecaCB - Homologue	209	BZ198	0.333	U	NA	UG/KG	0.333
502825	1	CS-10386-84-2	Dbob			50		50	PCT_REC	
502825	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octacb (Obsolete)	198		62		62	PCT_REC	

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab Project: L0912897

Lab: Alpha Analytical
Date Sampled: ~~9/22/09 through 9/27/09~~
Analysis: 18 NOAA PCB Congeners by GC/MS-SIM

No. Samples	16 + 1FD
Matrix:	Sediments

Data Element Acceptable	Preservation & HT	Surrogates %R 50-130%	LCS/LCSD SRM %R 40-140% RPD ≤ 30%	MS/MSD %R 40-140% RPD ≤ 30%	FD RPD≤ 30% SW RPD≤ 50% SED	MB < RL or < 5x Conc. in sample	RL meets QAPP req. for matrix?	Issues with Qualifiers?	Other
Yes	√			√	√	√			
No		Estimate (J/UJ) all results in 502425, 502625, 503125, & 503225	Estimate (J) BZ28 & BZ52 in all samples				Estimate (J) 1 result < RL	Data qualified "D" by the lab for all samples analyzed DF > 1	Surrogate recovery correct 8 samples - see "Surrogate Recovery Correction _L0912897.pdf" and page 4 of this report for details

Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.
Were the %solids acceptable (>30%)? Yes all > 83% solids after air-drying. Prior to air-drying, % solids were 33-81%.

The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 18 NOAA Congeners were acceptable unless an issue was raised in the laboratory narrative.

Comments:

Samples were received intact at 2.1C to 4.1C in 7 shipments on the day of or day after sample collection (e.g., samples collected on 9/24 were received on 9/25/09). COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab.

Samples were analyzed for % solids, TOC, and Grain size. All samples were also air-dried and subsequently analyzed for %solids - air-dried and 18 NOAA Congeners

HT: Air-dried samples were extracted on 10/5/09 and analyzed by 10/23/09 - HT met - No action required.

Surrogates: both surrogates (BZ19-C13 and BZ202-C13) were diluted out (0% recovery) due to dilutions made for analysis of the samples (DF ranged from 20 to 1000) for all samples except 501725, 502125, 502225, 502425, 502625, 502725, 503125, & 503225. For these eight samples, surrogates were recovered within criteria except DBOB recovered low (34%) in sample 502425, DBOB recovered low (49%) in sample 502625, DBOB recovered low (43%) in sample 503125, and BZ198 recovered high (175%) in sample 503225.

**ACTION: All results estimated (J and UJ) in samples 502425, 502625, 503125, and 503225 due to conflicting Surrogate recoveries.*

LCS: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners spiked and RPDs between LCS and LCSD all OK except BZ28 LCS recovery high (185%) and RPD high (45%) - LCSD OK; and BZ52 LCS & LCSD high (168% & 147%) RPD OK.

**ACTION: BZ28 estimated (J) in all 17 sediment samples due to high LCS recovery and LCS/LCSD imprecision and & BZ52 estimated (J) due to high LCS/LCSD recoveries.*

Date: ~~*3/30/10*~~
Data Reviewer: ~~***Nancy C. Rothman, Ph.D.***~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Blank Action: Blanks Reviewed: Method Blank
No EB associated with samples

Blank ID	Contaminant / Level	Matrix Related?	Action Level / Action	Sample and Reported Result	Corrected Result
Method Blank	BZ#8 0.217 J µg/Kg	Y	1.085 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#18 0.857 µg/Kg	Y	4.285 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#28 1.35 µg/Kg	Y	6.75 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#44 0.493 µg/Kg	Y	2.465 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#52 1.5 µg/Kg	Y	7.5 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#101 0.353 µg/Kg	Y	1.765 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#153 0.193 J µg/Kg	Y	0.965 µg/Kg	All samples were >>> BAL - No Action required	

Comments:
SRM : NY/NJ Waterway Sediment. %Rec for Congeners in SRM were all within 40-140% except BZ#128 had 152% recovery. Since the LCS/LCSD recovery was acceptable for this Congener, no action taken to qualify samples data for this SRM result.

MS/MSD : performed on sample 501325. Sample, MS and MSD were analyzed at DF=100 ; therefore, spike level (~7 µg/Kg) was too low to be able to evaluate MS/MSD recovery (most recoveries were 0% or >1000%). Replicate precision (sample, MS & MSD) reasonable (RPD <30%) for all 18 NOAA Congeners; therefore, No Action required.

Date: ~~3/30/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Comments:

FD pair: 502125 & 508035 - a comparison of results shown below

Field Duplicate Evaluation_ Sample IDs: Sample = 502125 FD = 508035

Analyte Name	DF= 10* RL (µg/Kg)	Sample µg/Kg	Q	Sample Result Level	FD µg/Kg	Q	FD Result Level	RPD	Action
2,4'-Dichlorobiphenyl	3.49	90		> 2 x RL	111		> 2 x RL	20.9	None
2,2',5-Trichlorobiphenyl	3.49	621		> 2 x RL	795		> 2 x RL	24.6	None
2,4,4'-Trichlorobiphenyl	3.49	1750		> 2 x RL	1470		> 2 x RL	17.4	None
2,2',3,5'-Tetrachlorobiphenyl	3.49	654		> 2 x RL	696		> 2 x RL	6.2	None
2,2',5,5'-Tetrachlorobiphenyl	3.49	1738		> 2 x RL	2120		> 2 x RL	19.8	None
2,3',4,4'-Tetrachlorobiphenyl	3.49	154		> 2 x RL	223		> 2 x RL	36.6	None
2,2',4,5,5'-Pentachlorobiphenyl	3.49	886		> 2 x RL	1020		> 2 x RL	14.1	None
2,3,3',4,4'-Pentachlorobiphenyl	3.49	116		> 2 x RL	80.9		> 2 x RL	35.7	None
2,3',4,4',5-Pentachlorobiphenyl	3.49	609		> 2 x RL	699		> 2 x RL	13.8	None
2,2',3,3',4,4'-Hexachlorobiphenyl	3.49	102		> 2 x RL	121		> 2 x RL	17.0	None
2,2',3,4,4',5'-Hexachlorobiphenyl	3.49	513		> 2 x RL	546		> 2 x RL	6.2	None
2,2',4,4',5,5'-Hexachlorobiphenyl	3.49	358		> 2 x RL	389		> 2 x RL	8.3	None
2,2',3,3',4,4',5-Heptachlorobiphenyl	3.49	78		> 2 x RL	90.6		> 2 x RL	14.9	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	3.49	89		> 2 x RL	89.8		> 2 x RL	0.9	None
2,2',3,4',5,5',6-Heptachlorobiphenyl	3.49	77		> 2 x RL	85.8		> 2 x RL	10.8	None
2,2',3,3',4,4',5,6-Octachlorobiphenyl	3.49	3.49	U	RL	6.99	U	RL	NA	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	3.49	3.49	U	RL	6.99	U	RL	NA	None
Decachlorobiphenyl	3.49	3.49	U	RL	6.99	U	RL	NA	None

* FD DF = 20 so RLs for FD are these RLs x (20/10)

FD precision was acceptable for all 18 NOAA Congeners. Note, sample 502125 underwent surrogate recovery correction while FD sample 508035 did not because surrogates were diluted out. No Action required.

Date: ~~3/30/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

Lab: Alpha Analytical

Comments:

An investigation by NEH into previous reporting of LTM data by Battelle indicated that data were surrogate recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting, Alpha's process for reporting, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events.

For samples where the surrogates are not recovered because of the dilution made for analysis of the sample, a DV Comment was added to the validated database file "K2" to indicate that the reported value was not surrogate recovery corrected. For samples with surrogates recovered, a separate excel worksheet has been constructed (Surrogate Recovery Correction _ L09XXXX.xls) showing the lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. Non-detects are reported by Alpha at the Reporting Limit (RL) consistent with the QAPP. Since non-detects will not be comparable between Alpha and Battelle because the basis for the non-detects are different (MDL vs. RL), non-detects and reporting limits are not surrogate recovery corrected in the LTMV data.

For this SDG, eight samples, 501725, 502125, 502225, 502425, 502625, 502725, 503125, 503225 reported surrogate recoveries. The surrogate corrected values, as shown in Surrogate Recovery Correction_L0912897.pdf, replaced the Lab Result values in the validated database file, the data were qualified "K" to indicate this change to the Lab Result values, and a DV Comment was added, "K1", to indicate that the Reported result was recovery corrected. For samples 502425, 502625, 503125, and 503225 , one of the surrogates was recovered outside criteria. For these four samples, the surrogate which was recovered within criteria was used exclusively for correction of the samples data, as indicated in the technical memo of January 29, 2010.

The lab reported results for 18 NOAA Congeners + 2 surrogates. All samples were analyzed at DF>1 except for samples 502625 & 503125; therefore, all RLs for individual Congeners were above the PQLs requested in QAPP Table 1-3 for these diluted sample. The RLs for samples 502625 & 503125 were < RLs and PQLs requested in the QAPP; therefore, sensitivity was acceptable for these data.

The narrative did not raise any issues affecting quality that were not already addressed.

1 result was reported at a level < RL and was flagged "J" by the lab. This 1 result was accepted with Indeterminate bias due to uncertainty in quantitation at a level below the instrument calibration range

Qualifiers : All data were reported with "D" qualifiers to indicate results reported from a dilution analysis. As instructed by Battelle, these "D" qualifiers were not removed

Date: ~~*3/30/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

ACTIONS:

Preservation: Cooled to 4 ± 2°C. Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.
HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND
Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)
Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs
Surrogates: % Recovery > 130%, J det/Accept ND; 10% ≤ % Recovery < 50%, J det/J NDs; Recovery < 10%, J det/R NDs.
LCS/LCSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.
MS/MSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.
FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if
Other Qualifiers: Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes either U or J based on actions taken for Method Blank (MB)
% solids: 10% < % solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated

Reference: Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, Massachusetts, September 2009 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: ~~3/30/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912897

Lab: Alpha Analytical
Date Sampled: 9/22/09 through 9/27/09
Analysis: Total Organic Carbon (TOC) by modified EPA SW-846 Method 9060

No. Samples: 16 + 1FD
Matrix: Sediment

QC Met Criteria?	Preservation 4 ± 2°C	HT 28 days	RL 0.01% (100 mg/Kg)	MB < RL	Solid LCS = SRM 75-125% R	MS 75-125% R	MD RPD ≤ 25%	FD RPD≤ 50%	% Solids > 30%	Other
Yes	√	√	√	√	√	√	√	√	√	
No										Estimate (J) 503125

Calibration criteria: Unless otherwise noted in the laboratory narrative, it was assumed that all initial and continuing calibration verifications (ICV/CCV) and initial and continuing calibration blank (ICB/CCB) results were acceptable (met LTM V QAPP 2009 requirements). In addition, RPD < 25% for two replicates of each sample.

- Method Modification**:** Laboratory analyzed two replicates (burns) for TOC by Method 9060A rather than 4 (as in the method); this is consistent with LTMV QAPP requirements.

Samples were received intact. TOC analysis was performed on the samples "as-received" (i.e., not on "air-dried" sediments). Samples were frozen upon receipt to arrest holding time. Therefore, analyses, conducted on 10/26/09, were considered to have met HT criteria. No Action required.

MS/MD site sample used for QC: 501325. Duplicate burns of MS resulted in acceptable recovery and duplicate burns of sample/MD also gave RPD < 25%. Acceptable precision - no action required.

Sample/FD site sample IDs: 502125 & 508035. FD precision, based on average value for TOC for each sample, was RPD = 17.3%; therefore, FD precision was acceptable - No Action required.

Replicate (duplicate) precision TOC results of each sample all had RPD < 25% except 503125 (values reported for duplicate runs were 0.493% and 0.737% resulting in RPD = 39.7%) - all replicates acceptable except for 503125.

**ACTION: Replicate TOC results for sample 503125 estimated (J) with Indeterminate bias due to Replicate Imprecision.*

Data users should compute the arithmetic average of the two TOC replicate burns for each sample and use this average as the valid TOC result for that sample.

Data Package Completeness:

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with EPA Region 1 present in the data package? **Yes**

2. Were all result forms for all samples listed on the chain-of-custody present in data package? **Yes**

If No, explain and request resubmittals:

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

New Environmental Horizons, Inc.

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912897

Lab: Alpha Analytical

Data Quality / Usability Issues:

1. Did the Laboratory Narrative contain any issues which may affect data quality or usability that have not been already addressed on page 1? **No.**
If Yes, explain.

2. Explain further any actions taken based on summary QC, as necessary, below.

No further actions required.

QC Actions:

Pres./HT:	HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. Freezing arrests HT. Temperature: outside control limits of 4 ± 2°C: use professional judgment.
Blanks:	Method Blanks and instrument blanks: TOC < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found). Professional judgment used for non-matrix matched blanks (e.g. aqueous blank associated with sediment samples).
Calibration Criteria:	Assume acceptable unless narrated. Exceedances of any calibration criteria will affect accuracy of the data: J detects and UJ non-detects. Severe exceedances of calibration criteria, to be determined based on professional judgment, may require rejection, R, of data.
ICV/CCV:	Assume acceptable unless narrated. If narrated as exceeded: %Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. If severe exceedance <50% recovery: R non-detects.
LCS/SRM:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix.
MS:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level.
MD:	Results > 5xRL: RPD >25%: J / UJ associated results in batch - to be determined using professional judgment. Results < 5xRL: difference > ±2xRL, J / UJ associated results in batch - to be determined using professional judgment.
FD:	Results > 5xRL: RPD >50%: J / UJ FD results only. Results < 5xRL: difference > ±4xRL,, J/UJ FD results only.
% Solids:	10% < % solids < 30%, J detects/R non-detects; % solids < 10%, R all results.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate. QC Limits based on EPA Region 1 Inorganic DV guidance and LTM V QAPP 2009.

References: Quality Assurance Project Plan; New Bedford Harbor Long Term Monitoring V; New Bedford, Massachusetts (September 2009); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; Publication EPA 540-R-04-004, October 2004.

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

Data Validation Report
EPA Region I Tier I+
18 NOAA PCB Congeners by 8270C and TOC by Method 9060

Client/Company:	Woods Hole Group, Inc. (WHG)
Site/Project Name:	New Bedford Harbor Superfund Site – Long Term Monitoring (LTM) V
Laboratory:	Alpha Analytical – Mansfield, MA
Lab Project Number(s):	L0912897
Date(s) of Collection:	September 22, 2009 through September 27, 2009
Number / Type Samples & Analyses	17 sediment samples for 18 NOAA PCB Congeners by EPA SW-846 Method 8270C and Total Organic Carbon (TOC) by Method 9060
Senior Data Reviewers:	Nancy C. Rothman, PhD, New Environmental Horizons, Inc. Susan D. Chapnick, New Environmental Horizons, Inc.
Date Completed: ***Revised:***	April 1, 2010 ***April 12, 2010***

This report was revised to include the Tier 1+ review of TOC data.

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners and TOC was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, MA,* prepared by Woods Hole Group, Inc., September 2009 (LTMV QAPP); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474
Phone: (908) 874-5686 ◊ (781) 643-4294
Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net
www.neh-inc.com

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and comments added based on actions taken; and
- Data Validation Checklists for TOC and PCB Congeners including the Surrogate Recovery Correction worksheet completed during this validation to document the Tier I+ review. The Checklists are an integral part of the DV Report as they contain comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the sample type (e.g., field sample, field duplicate (FD), field equipment blank (EB), as applicable), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
501725	L0912897-01	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501825	L0912897-02	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501925	L0912897-03	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502025	L0912897-04	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502125	L0912897-05	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
508035	L0912897-06	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Duplicate of 502125
502225	L0912897-07	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502325	L0912897-08	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502425	L0912897-09	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502525	L0912897-10	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502625	L0912897-11	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
502725	L0912897-12	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
501325	L0912897-13	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
502925	L0912897-14	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503025	L0912897-15	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503125	L0912897-16	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503225	L0912897-17	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Analytical method references:
18 NOAA Congeners: *Determination of PCB Homologs, Individual Congeners, and Pesticides by Gas Chromatography/Mass Spectrometry in the Select Ion Monitoring (SIM) Mode (EPA 680 & 8270C),* Alpha SOP O-015, Rev. 2, June 19, 2006.
TOC: SW-846 Method 9060 modified, Alpha SOP W-028

[1] Grain Size analysis was also performed on these samples; however, data validation for this parameter was not required. TOC analysis was performed on "as-received" sediments while the 18 NOAA Congeners were performed using "air-dried" sediments.

II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of the 18 NOAA PCB Congener and TOC sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH LTMV QAPP requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Standard Reference Material (SRM) Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)

- Sample result reporting (including compound lists, reporting limits, and units)
- Calibration criteria* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries*
- Retention Time windows*
- Other method-specific QC if applicable and reported* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.

Based on this Tier I+ validation of the 18 NOAA PCB Congeners and TOC, all results were considered usable for project decisions based on a comparison to the NBH LTMV QAPP requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID_QUAL, VALIDATION_LEVEL, VALIDATION, VALID_DATE, BIAS, and DV_COMMENT.

The remainder of this report documents "exceptions" to the NBH LTMV QAPP criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Validation Checklists.

Sample Receipt and Holding Time

The sediment samples were received at the laboratory intact in seven shipments at 2.1°C to 4.1°C. Aliquots of the "as-received" samples were analyzed for TOC, Grain Size, and percent solids. Samples were frozen upon receipt to arrest holding time for TOC analysis. All samples had percent solids content of 33-81%; therefore, these sediment samples were air-dried, as required by the QAPP, prior to Congener analysis. After air-drying, the percent solids content for all samples was greater than 83%.

Accuracy

The Method Blank reported detected results for seven of the 18 NOAA Congeners; however, a comparison of the levels reported in the method blank with the levels reported in the samples indicated that blank action to negate or qualify sample data was not required. The Method Blank was non-detect for TOC; therefore, blank action was not required.

There was no Equipment Blank required to be collected along with these sediment samples.

Surrogate recovery did not meet criteria for four samples: 502425, 502625, 503125, and 503225. One of the two surrogates was recovered low, but above 10%, in samples 502425, 502625, and 503125 and one of the two surrogates was recovered high compared to criteria in sample 503225. For these four

samples, the detected results were surrogate-recovery corrected, as required by the LTMV QAPP, using only the one surrogate in each sample that was recovered within criteria. As a consequence of performing this recovery correction calculation, the impact of the surrogates outside criteria on the sample data is uncertain; therefore, all results in these four samples were estimated (J and UJ) due to conflicting surrogate recovery results.

All 18 NOAA Congeners recovered within criteria in the LCS and LCSD except for 2,4,4'-Trichlorobiphenyl (BZ#28) and 2,2',5,5'-Tetrachlorobiphenyl (BZ#52), which recovered high in one or both of the LCS/LCSD. The results for 2,4,4'-Trichlorobiphenyl (BZ#28) and 2,2',5,5'-Tetrachlorobiphenyl (BZ#52) were estimated (J) with a possible high bias, unless other QC issues affected the results, in all seventeen sediments due to the high LCS and/or LCSD recoveries, as listed in Table 2.

Congener recoveries in the MS/MSD analysis conducted on sample 501325 could not be evaluated since the level of the spike was too low compared to the concentration of PCB Congeners in the field sample (i.e., the sample, MS and MSD were all analyzed at dilution factor (DF) = 100, at this high dilution, the relatively low matrix spike level could not be detected). Therefore, no action was taken based on the MS/MSD recoveries. TOC recovery in the MS analysis of sample 501325 was acceptable; indicating acceptable accuracy for TOC in the site matrix.

The Standard Reference Material (SRM NY/NJ Waterway Sediment) reported acceptable recovery for all Congeners certified in this SRM except 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ#128), which was recovered slightly high compared to criteria. Since the LCS/LCSD recoveries for this Congener were within criteria, no action to qualify sample data was taken based on professional judgment. The TOC SRM reported acceptable recoveries for TOC certified in this SRM.

Precision

LCS/LCSD precision was acceptable for all 18 NOAA Congeners except 2,4,4'-Trichlorobiphenyl (BZ#28). All 2,4,4'-Trichlorobiphenyl (BZ#28) data were estimated (J) due to LCS/LCSD imprecision, as shown in Table 2.

MS/MSD precision in the analysis of sample 501325 was acceptable for all 18 NOAA Congeners. Sample/MD precision for TOC analysis of 501325 was acceptable. These results indicate acceptable precision and representativeness of these sediments for analysis of the NOAA PCB Congeners and TOC.

All TOC analyses were performed in replicate (duplicate burns), as a method modification consistent with the site QAPP requirements. Precision between all replicates of TOC reported for each sample was acceptable for all samples except 503125. Replicate precision was not met for the duplicate burns of this one sample; therefore, the replicate values for TOC for 503125 were estimated (J) with indeterminate bias due to the observed imprecision.

Field Duplicate (FD) precision was acceptable for all 18 NOAA Congeners and TOC in the FD pair of 502125 and 508035. These results are an indication of acceptable precision and representativeness of these sediment samples to the site location for PCB Congeners and TOC.

Sensitivity & Reporting

All samples met sensitivity requirements for PCB Congeners and TOC as indicated in NBH LTMV QAPP Table 1-3.

Data users should compute the average of the TOC replicate results (duplicate burns) for each sample and use this arithmetic average as the valid result for TOC.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that Congener data were surrogate-recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate-recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting previous LTM data (LTMIV and prior monitoring data), Alpha's process for reporting LTMV results, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events reported by Battelle.

For Congener samples where the surrogates are not recovered because of analytical dilutions or when results were non-detect, the DV_COMMENT "K2" was added to the validated database file to indicate that the reported value was not surrogate-recovery corrected.

For Congener samples where surrogate-recovery correction was performed, a separate Surrogate Recovery Correction excel worksheet was constructed (as part of the Data Validation Checklist process) showing the original lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. For surrogate-corrected results, the project database file was updated as follows:

1. The surrogate-corrected value, as shown in the Surrogate Recovery Correction worksheet, replaced the lab RESULT value in the validated database file;
2. The qualifier "K" was added to the VALID_ QUAL field to identify the result as surrogate-recovery corrected; and
3. "K1" was added to the DV_COMMENT field as the DV code to further indicate that the reported result was surrogate-recovery corrected.

Non-detects for Congeners were reported by Alpha at the Reporting Limit (RL), consistent with the LTMV QAPP requirements. Since non-detected results are not comparable between Alpha and Battelle because the basis for the non-detects are different (RL *vs*. MDL), non-detects and reporting limits were not surrogate-recovery corrected in the LTMV data.

For this SDG, eight samples, 501725, 502125, 502225, 502725, 502425, 502625, 503125, and 503225 reported surrogate recoveries. For samples 502425, 502625, 503125, and 503225, one of the two surrogates were not recovered within criteria; therefore, the other surrogate, recovered within criteria, was used for correction of all detected Congener results. Surrogate-recovery correction was performed for these eight samples, as documented in *Surrogate Recovery Correction_L0912897*. Actions taken are listed below in Table 2.

Results reported below the sample-specific RLs are considered uncertain because they are below the calibration range. During this review, data below the sample-specific RLs were qualified as estimated (J), as shown in Table 2, and as described in the Data Validation Checklist.

The laboratory reported all results from DF > 1 analyses with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
503125	Total Organic Carbon	J	I	Replicate imprecision
501325, 501825, 501925, 502025, 502325, 502525, 502925, 503025, & 508035	2,4,4'-Trichlorobiphenyl	DJ	I	Reported value is not surrogate recovery corrected + High LCS recovery + LCS/LCSD imprecision
501325, 501825, 501925, 502025, 502325, 502525, 502925, 503025, & 508035	2,2',5,5'-Tetrachlorobiphenyl	DJ	H	Reported value is not surrogate recovery corrected + High LCS recovery
501325, 501825, 501925, 502025, 502325, 502525, 502925, 503025, & 508035	All Congeners except: 2,4,4'-Trichlorobiphenyl & 2,2',5,5'-Tetrachlorobiphenyl	D / DU		Reported value is not surrogate recovery corrected
501725, 502125, 502225, & 502725	2,4,4'-Trichlorobiphenyl	DKJ	I	Reported value is surrogate recovery corrected + High LCS recovery + LCS/LCSD imprecision
501725, 502125, 502225, & 502725	2,2',5,5'-Tetrachlorobiphenyl	DKJ	H	Reported value is surrogate recovery corrected + High LCS recovery
501725, 502125, 502225, & 502725	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DU		Reported value is not surrogate recovery corrected
501725, 502125, 502225, & 502725	All 18 NOAA Congeners except: 2,4,4'-Trichlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DK		Reported value is surrogate recovery corrected

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
502425, 502625, 503125, & 503225	2,4,4'-Trichlorobiphenyl	DKJ / KJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery + High LCS recovery + LCS/LCSD imprecision
502425, 502625, 503125, & 503225	2,2',5,5'-Tetrachlorobiphenyl	DKJ / KJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery + High LCS recovery
502425, 502625, 503125, & 503225	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DUJ / UJ	I	Reported value is not surrogate recovery corrected + Conflicting surrogate recovery
502425, 503125, & 503225	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	DUJ / UJ	I	Reported value is not surrogate recovery corrected + Conflicting surrogate recovery
502625	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	KJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery
502625	Decachlorobiphenyl - Homologue	KJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery + Result uncertain below the calibration range
502425, 502625, 503125, & 503225	All 18 NOAA Congeners except: 2,4,4'-Trichlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DKJ / KJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery

Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory); K = Result is Surrogate Recovery Corrected.

Bias: L = Low; H = High; I = Indeterminate

Abbreviations used in Table 2:
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate

2009 Sampling

Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
501725	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	15.4	D	30	UG/KG
501725	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	93.9	D	181	UG/KG
501725	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	210	D	404	UG/KG
501725	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	87.1	D	168	UG/KG
501725	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	321	D	617	UG/KG
501725	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	35.6	D	68	UG/KG
501725	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	110	D	212	UG/KG
501725	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	12.2	D	12	UG/KG
501725	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	115	D	113	UG/KG
501725	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	3.44	D	3.4	UG/KG
501725	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	90.5	D	89	UG/KG
501725	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	72.5	D	71	UG/KG
501725	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	14.3	D	14	UG/KG
501725	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	15.5	D	15	UG/KG
501725	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	13.4	D	13	UG/KG
501725	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	1.67	DU	NA	UG/KG
501725	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	1.67	DU	NA	UG/KG
501725	5	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	1.67	DU	NA	UG/KG
501725	5	CS-10386-84-2	Dbob			52	D		PCT_REC
501725	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		102	D		PCT_REC
502125	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	75.2	D	90	UG/KG
502125	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	522	D	621	UG/KG
502125	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1470	D	1750	UG/KG
502125	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	549	D	654	UG/KG
502125	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1460	D	1738	UG/KG
502125	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	129	D	154	UG/KG
502125	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	744	D	886	UG/KG
502125	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	100	D	116	UG/KG
502125	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	524	D	609	UG/KG
502125	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	87.8	D	102	UG/KG
502125	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	441	D	513	UG/KG
502125	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	308	D	358	UG/KG
502125	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	67.3	D	78	UG/KG
502125	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	76.5	D	89	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))

Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
502125	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	66	D	77	UG/KG
502125	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.49	DU	NA	UG/KG
502125	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.49	DU	NA	UG/KG
502125	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.49	DU	NA	UG/KG
502125	10	CS-10386-84-2	Dbob			84	D		PCT_REC
502125	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		86	D		PCT_REC
502225	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	62.7	D	114	UG/KG
502225	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	384	D	698	UG/KG
502225	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1180	D	2145	UG/KG
502225	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	380	D	691	UG/KG
502225	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1210	D	2200	UG/KG
502225	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	109	D	198	UG/KG
502225	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	536	D	975	UG/KG
502225	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	45.5	D	48.9	UG/KG
502225	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	409	D	440	UG/KG
502225	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	73.1	D	78.6	UG/KG
502225	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	347	D	373	UG/KG
502225	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	358	D	385	UG/KG
502225	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	47.2	D	50.8	UG/KG
502225	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	57.9	D	62.3	UG/KG
502225	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	57.2	D	61.5	UG/KG
502225	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.32	DU	NA	UG/KG
502225	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.32	DU	NA	UG/KG
502225	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.32	DU	NA	UG/KG
502225	10	CS-10386-84-2	Dbob			55	D		PCT_REC
502225	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		93	D		PCT_REC
502425	10	34883-43-7	2,4'-Dichlorobiphenyl	8	BZ198	39.2	D	57.6	UG/KG
502425	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	BZ198	271	D	399	UG/KG
502425	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	BZ198	781	D	1149	UG/KG
502425	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	BZ198	272	D	400	UG/KG
502425	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	BZ198	814	D	1197	UG/KG
502425	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	BZ198	77.2	D	114	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
502425	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	BZ198	381	D	560	UG/KG
502425	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	42.3	D	62.2	UG/KG
502425	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	265	D	390	UG/KG
502425	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	45.8	D	67.4	UG/KG
502425	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	212	D	312	UG/KG
502425	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	159	D	234	UG/KG
502425	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	30	D	44.1	UG/KG
502425	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	31.7	D	46.6	UG/KG
502425	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	31.2	D	45.9	UG/KG
502425	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.6	DU	NA	UG/KG
502425	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.6	DU	NA	UG/KG
502425	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.6	DU	NA	UG/KG
502425	10	CS-10386-84-2	Dbob			34	D		PCT_REC
502425	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		68	D		PCT_REC
502625	1	34883-43-7	2,4'-Dichlorobiphenyl	8	BZ198	6.3		6.2	UG/KG
502625	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	BZ198	58.6		57	UG/KG
502625	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	BZ198	94.5		93	UG/KG
502625	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	BZ198	53.6		53	UG/KG
502625	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	BZ198	154		151	UG/KG
502625	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	BZ198	18		18	UG/KG
502625	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	BZ198	56.2		55	UG/KG
502625	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	6.78		6.6	UG/KG
502625	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	51.5		50	UG/KG
502625	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	8.48		8.3	UG/KG
502625	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	43.7		43	UG/KG
502625	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	32.6		32	UG/KG
502625	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	4.11		4.0	UG/KG
502625	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	5.02		4.9	UG/KG
502625	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	4.97		4.9	UG/KG
502625	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.328	U	NA	UG/KG
502625	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.854		0.837	UG/KG
502625	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.269	J	0.264	UG/KG
502625	1	CS-10386-84-2	Dbob			49			PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
502625	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		102			PCT_REC
502725	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	53.4	D	103	UG/KG
502725	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	334	D	642	UG/KG
502725	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	923	D	1775	UG/KG
502725	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	259	D	498	UG/KG
502725	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	887	D	1706	UG/KG
502725	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	77.1	D	148	UG/KG
502725	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	406	D	781	UG/KG
502725	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	32.6	D	25.7	UG/KG
502725	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	279	D	220	UG/KG
502725	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	49	D	38.6	UG/KG
502725	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	231	D	182	UG/KG
502725	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	269	D	212	UG/KG
502725	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	34.5	D	27.2	UG/KG
502725	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	37.6	D	29.6	UG/KG
502725	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	37.7	D	29.7	UG/KG
502725	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.41	DU	NA	UG/KG
502725	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.41	DU	NA	UG/KG
502725	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.41	DU	NA	UG/KG
502725	10	CS-10386-84-2	Dbob			52	D		PCT_REC
502725	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		127	D		PCT_REC
503125	1	34883-43-7	2,4'-Dichlorobiphenyl	8	BZ198	6.77		10.0	UG/KG
503125	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	BZ198	35.9		53	UG/KG
503125	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	BZ198	139		204	UG/KG
503125	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	BZ198	40.7		60	UG/KG
503125	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	BZ198	133		196	UG/KG
503125	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	BZ198	15.6		23	UG/KG
503125	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	BZ198	86.6		127	UG/KG
503125	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	13.1		19.3	UG/KG
503125	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	68.1		100	UG/KG
503125	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	12.4		18.2	UG/KG
503125	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	57.6		85	UG/KG
503125	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	43.1		63	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
503125	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	8.27		12.2	UG/KG
503125	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	8.87		13.0	UG/KG
503125	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	8.04		11.8	UG/KG
503125	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.332	U	NA	UG/KG
503125	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.332	U	NA	UG/KG
503125	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.332	U	NA	UG/KG
503125	1	CS-10386-84-2	Dbob			43			PCT_REC
503125	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		68			PCT_REC
503225	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	55.5	D	97	UG/KG
503225	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	404	D	709	UG/KG
503225	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1380	D	2421	UG/KG
503225	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	498	D	874	UG/KG
503225	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1220	D	2140	UG/KG
503225	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	190	D	333	UG/KG
503225	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	960	D	1684	UG/KG
503225	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	166	D	291	UG/KG
503225	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	763	D	1339	UG/KG
503225	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	136	D	239	UG/KG
503225	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	600	D	1053	UG/KG
503225	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	377	D	661	UG/KG
503225	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	80.8	D	142	UG/KG
503225	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	86.8	D	152	UG/KG
503225	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	73.8	D	129	UG/KG
503225	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	3.49	DU	NA	UG/KG
503225	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	3.49	DU	NA	UG/KG
503225	10	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	3.49	DU	NA	UG/KG
503225	10	CS-10386-84-2	Dbob			57	D		PCT_REC
503225	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		175	D		PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab Project: L0912899

Lab: Alpha Analytical
Date Sampled: ~~9/22/09 through 9/27/09~~
Analysis: 18 NOAA PCB Congeners by GC/MS-SIM

No. Samples: 16 + 1FD
Matrix: Sediments

Data Element Acceptable	Preservation & HT	Surrogates %R 50-130%	LCS/LCSD SRM %R 40-140% RPD ≤ 30%	MS/MSD %R 40-140% RPD ≤ 30%	FD RPD≤ 30% SW RPD≤ 50% SED	MB < RL or < 5x Conc. in sample	RL meets QAPP req. for matrix?	Issues with Qualifiers?	Other
Yes	√			√	√				
No		Estimate (J) all detects in 503525, 503925, 504425, 504625, & 504825	Estimate (J) BZ105 in all samples			See page 2	Estimate (J) 4 results < RL	Data qualified "D" by the lab for all samples analyzed DF > 1	Surrogate recovery correct all samples - see "Surrogate Recovery Correction _L0912899.pdf" and page 4 of this report for details

Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.
Were the %solids acceptable (>30%)? Yes all > 70% solids after air-drying. Prior to air-drying, % solids were 34-80%.

The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 18 NOAA Congeners were acceptable unless an issue was raised in the laboratory narrative.

Comments:

Samples were received intact at 2.0C to 3.5C in 6 shipments on the day of or day after sample collection (e.g., samples collected on 9/27 were received on 9/28/09). COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab.

Samples were analyzed for % solids, TOC, and Grain size. All samples were also air-dried and subsequently analyzed for %solids - air-dried and 18 NOAA Congeners

HT: Air-dried samples were extracted on 10/6/09 and analyzed by 10/27/09 - HT met - No action required.

Surrogates: both surrogates (DBOB and BZ198) were recovered within criteria in all samples except BZ198 recovered high (>130%) in samples 503525, 503925, 504425, 504625, and 504825. Since these samples were recovery corrected using the other surrogate (DBOB), it is unclear how these high BZ198 surrogate recoveries would have affected detected results. Since non-detects are not surrogate recovery corrected and since high recovery should not have affected the non-detects, only detected results in these five samples affected.

**ACTION: All detected results estimated (J) in samples 503525, 503925, 504425, 504625, and 504825 due to conflicting Surrogate recoveries.*

LCS: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners spiked and RPDs between LCS and LCSD all OK except BZ52 LCS recovery high (147%) - LCSD & RPD OK; and BZ105 RPD high (51%) but LCS & LCSD OK. No Action taken for high LCS BZ52 since LCSD OK and RPD OK.

**ACTION: BZ105 estimated (J) in all 17 sediment samples due to LCS/LCSD imprecision.*

Date: ~~*4/5/10*~~
Data Reviewer: ~~***Nancy C. Rothman, Ph.D.***~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Blank Action: Blanks Reviewed: Method Blank
No EB associated with samples

Blank ID	Contaminant / Level	Matrix Related?	Action Level / Action	Sample and Reported Result	Corrected Result
Method Blank	BZ#18 0.603 µg/Kg	Y	3.015 µg/Kg	All samples were >>> BAL - No Action required	
Method Blank	BZ#28 0.863 µg/Kg	Y	4.315 µg/Kg	All samples were >>> BAL or ND - No Action required	
Method Blank	BZ#44 0.443 µg/Kg	Y	2.215 µg/Kg	507825 1.02 B	1.02 U
				All other samples were >>> BAL - No Action required	
Method Blank	BZ#52 0.860 µg/Kg	Y	4.3 µg/Kg	507825 2.51 B	2.51 U
				All other samples were >>> BAL - No Action required	
Method Blank	BZ#101 0.373 µg/Kg	Y	1.865 µg/Kg	507825 1.81 B	1.81 U
				All other samples were >>> BAL - No Action required	

Comments:
SRM: NY/NJ Waterway Sediment. %Rec for Congeners in SRM were all within 40-140% except BZ#66 (37%), BZ#128 (157%), BZ195 (234%), BZ206 (181%) . Since the LCS/LCSD recovery was acceptable for these Congeners, no action taken to qualify samples data based on these SRM results.

MS/MSD: performed on sample 507825. Sample, MS and MSD were analyzed at DF=1. All MS & MSD %Rec OK and RPD between MS and MSD acceptable - acceptable accuracy and precision for sample matrix by method of analysis demonstrated - No Action required.

Date: ~~*4/5/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Comments:

FD pair: 503325 & 508135 - a comparison of results shown below

Field Duplicate Evaluation_ Sample IDs: Sample = 503325 FD = 508135

Analyte Name	DF= 10* RL (µg/Kg)	Sample µg/Kg	Q	Sample Result Level	FD µg/Kg	Q	FD Result Level	RPD	Action
2,4'-Dichlorobiphenyl	4.07	179		> 2 x RL	117		> 2 x RL	41.9	None
2,2',5-Trichlorobiphenyl	4.07	1026		> 2 x RL	674		> 2 x RL	41.4	None
2,4,4'-Trichlorobiphenyl	4.07	3172		> 2 x RL	2493		> 2 x RL	24.0	None
2,2',3,5'-Tetrachlorobiphenyl	4.07	1438		> 2 x RL	921		> 2 x RL	43.8	None
2,2',5,5'-Tetrachlorobiphenyl	4.07	3414		> 2 x RL	2192		> 2 x RL	43.6	None
2,3',4,4'-Tetrachlorobiphenyl	4.07	547		> 2 x RL	351		> 2 x RL	43.7	None
2,2',4,5,5'-Pentachlorobiphenyl	4.07	2724		> 2 x RL	1712		> 2 x RL	45.6	None
2,3,3',4,4'-Pentachlorobiphenyl	4.07	305		> 2 x RL	233		> 2 x RL	26.8	None
2,3',4,4',5-Pentachlorobiphenyl	4.07	1266		> 2 x RL	965		> 2 x RL	27.0	None
2,2',3,3',4,4'-Hexachlorobiphenyl	4.07	234		> 2 x RL	177		> 2 x RL	27.7	None
2,2',3,4,4',5'-Hexachlorobiphenyl	4.07	1055		> 2 x RL	796		> 2 x RL	28.0	None
2,2',4,4',5,5'-Hexachlorobiphenyl	4.07	639		> 2 x RL	610		> 2 x RL	4.6	None
2,2',3,3',4,4',5-Heptachlorobiphenyl	4.07	129		> 2 x RL	105		> 2 x RL	20.5	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	4.07	142		> 2 x RL	106		> 2 x RL	29.0	None
2,2',3,4',5,5',6-Heptachlorobiphenyl	4.07	111		> 2 x RL	82		> 2 x RL	30.1	None
2,2',3,3',4,4',5,6-Octachlorobiphenyl	4.07	4.07	U	RL	4.11	U	RL	NA	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	4.07	4.07	U	RL	8.61		> 2 x RL	NA	None
Decachlorobiphenyl	4.07	3.9		< RL	2.49	J	< RL	44.1	None

* The sample and FD were both analyzed at DF=10

FD precision was acceptable for all 18 NOAA Congeners. Note, both samples underwent surrogate recovery correction. No Action required.

Date: ~~4/5/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

Lab: Alpha Analytical

Comments:

An investigation by NEH into previous reporting of LTM data by Battelle indicated that data were surrogate recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting, Alpha's process for reporting, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events.

For samples where the surrogates are not recovered because of the dilution made for analysis of the sample, a DV Comment was added to the validated database file "K2" to indicate that the reported value was not surrogate recovery corrected. For samples with surrogates recovered, a separate excel worksheet has been constructed (Surrogate Recovery Correction _ L09XXXX.xls) showing the lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. Non-detects are reported by Alpha at the Reporting Limit (RL) consistent with the QAPP. Since non-detects will not be comparable between Alpha and Battelle because the basis for the non-detects are different (MDL vs. RL), non-detects and reporting limits are not surrogate recovery corrected in the LTMV data.

All samples in this SDG reported surrogate recoveries. The surrogate corrected values, as shown in Surrogate Recovery Correction_L0912899.pdf, replaced the Lab Result values in the validated database file, the data were qualified "K" to indicate this change to the Lab Result values, and a DV Comment was added, "K1", to indicate that the Reported result was recovery corrected. For samples 503525, 503925, 504425, 504625, and 504825 , one of the surrogates was recovered outside criteria. For these five samples, the surrogate which was recovered within criteria was used exclusively for correction of the samples data, as indicated in the technical memo of January 29, 2010.

The lab reported results for 18 NOAA Congeners + 2 surrogates. All samples analyzed at DF=1 reported RLs for individual Congeners and PQLs below those requested in the QAPP; therefore, sensitivity was acceptable for these data. Samples with DF > 1 also met sensitivity requirements since the DF >1 was performed to ensure that all detects were reported within the instrument calibration range.

The narrative did not raise any issues affecting quality that were not already addressed.

4 results were reported at levels < RL and was flagged "J" by the lab. These 4 results were accepted with Indeterminate bias due to uncertainty in quantitation at a level below the instrument calibration range

Qualifiers : All data were reported with "D" qualifiers to indicate results reported from a dilution analysis. As instructed by Battelle, these "D" qualifiers were not removed

Date: ~~*4/5/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

ACTIONS:

Preservation: Cooled to 4 ± 2°C. Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.
HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND
Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)
Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs
Surrogates: % Recovery > 130%, J det/Accept ND; 10% ≤ % Recovery < 50%, J det/J NDs; Recovery < 10%, J det/R NDs.
LCS/LCSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.
MS/MSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.
FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if
Other Qualifiers: Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes either U or J based on actions taken for Method Blank (MB)
% solids: 10% < % solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated

Reference: Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, Massachusetts, September 2009 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: ***4/5/10***
Data Reviewer: ***Nancy C. Rothman, Ph.D.***

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912899

Lab: Alpha Analytical
Date Sampled: 9/22/09 through 9/27/09
Analysis: Total Organic Carbon (TOC) by modified EPA SW-846 Method 9060

No. Samples: 16 + 1FD
Matrix: Sediment

QC Met Criteria?	Preservation 4 ± 2°C	HT 28 days	RL 0.01% (100 mg/Kg)	MB < RL	Solid LCS = SRM 75-125% R	MS 75-125% R	MD RPD ≤ 25%	FD RPD≤ 50%	% Solids > 30%	Other
Yes	√	√	√	√	√	√	√	√	√	
No										

Calibration criteria: Unless otherwise noted in the laboratory narrative, it was assumed that all initial and continuing calibration verifications (ICV/CCV) and initial and continuing calibration blank (ICB/CCB) results were acceptable (met LTM V QAPP 2009 requirements). In addition, RPD < 25% for two replicates of each sample.

- Method Modification**:** Laboratory analyzed two replicates (burns) for TOC by Method 9060A rather than 4 (as in the method); this is consistent with LTMV QAPP requirements.

Samples were received intact. TOC analysis was performed on the samples "as-received" (i.e., not on "air-dried" sediments). Samples were frozen upon receipt to arrest holding time. Therefore, analyses, conducted on 10/28/09, were considered to have met HT criteria. No Action required.

MS/MD site sample used for QC: 507825. Duplicate burns of MS resulted in acceptable recovery and duplicate burns of sample/MD also gave RPD < 25%. Acceptable precision - No action required.

Sample/FD site sample IDs: 503325 & 508135. FD precision, based on average value for TOC for each sample, was RPD = 10.5%; therefore, FD precision was acceptable - No Action required.

Replicate (duplicate) precision TOC results of each sample all had RPD < 25% - No Action required.

Data users should compute the arithmetic average of the two TOC replicate burns for each sample and use this average as the valid TOC result for that sample.

Data Package Completeness:

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with EPA Region 1 present in the data package? **Yes**

2. Were all result forms for all samples listed on the chain-of-custody present in data package? **Yes**

If No, explain and request resubmittals:

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912899

Lab: Alpha Analytical

Data Quality / Usability Issues:

1. Did the Laboratory Narrative contain any issues which may affect data quality or usability that have not been already addressed on page 1? **No.**
If Yes, explain.

2. Explain further any actions taken based on summary QC, as necessary, below.

No further actions required.

All TOC data were accepted as reported by the laboratory and unchanged as a consequence of this data validation review.

QC Actions:

Pres./HT:	HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. Freezing arrests HT. Temperature: outside control limits of 4 ± 2°C: use professional judgment.
Blanks:	Method Blanks and instrument blanks: TOC < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found). Professional judgment used for non-matrix matched blanks (e.g. aqueous blank associated with sediment samples).
Calibration Criteria:	Assume acceptable unless narrated. Exceedances of any calibration criteria will affect accuracy of the data: J detects and UJ non-detects. Severe exceedances of calibration criteria, to be determined based on professional judgment, may require rejection, R, of data.
ICV/CCV:	Assume acceptable unless narrated. If narrated as exceeded: %Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. If severe exceedance <50% recovery: R non-detects.
LCS/SRM:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix.
MS:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level.
MD:	Results > 5xRL: RPD >25%: J / UJ associated results in batch - to be determined using professional judgment. Results < 5xRL: difference > ±2xRL, J / UJ associated results in batch - to be determined using professional judgment.
FD:	Results > 5xRL: RPD >50%: J / UJ FD results only. Results < 5xRL: difference > ±4xRL,, J/UJ FD results only.
% Solids:	10% < % solids < 30%, J detects/R non-detects; % solids < 10%, R all results.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate. QC Limits based on EPA Region 1 Inorganic DV guidance and LTM V QAPP 2009.

References: Quality Assurance Project Plan; New Bedford Harbor Long Term Monitoring V; New Bedford, Massachusetts (September 2009); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; Publication EPA 540-R-04-004, October 2004.

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

Data Validation Report
EPA Region I Tier I+
18 NOAA PCB Congeners by 8270C and TOC by Method 9060

Client/Company:	Woods Hole Group, Inc. (WHG)
Site/Project Name:	New Bedford Harbor Superfund Site – Long Term Monitoring (LTM) V
Laboratory:	Alpha Analytical – Mansfield, MA
Lab Project Number(s):	L0912899
Date(s) of Collection:	September 22, 2009 through September 27, 2009
Number / Type Samples & Analyses	17 sediment samples for 18 NOAA PCB Congeners by EPA SW-846 Method 8270C and Total Organic Carbon (TOC) by Method 9060
Senior Data Reviewers:	Nancy C. Rothman, PhD, New Environmental Horizons, Inc. Susan D. Chapnick, New Environmental Horizons, Inc.
Date Completed: ***Revised:***	April 5, 2010 ***April 12, 2010***

This report was revised to include the Tier 1+ review of TOC data.

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners and TOC was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, MA,* prepared by Woods Hole Group, Inc., September 2009 (LTMV QAPP); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474
Phone: (908) 874-5686 ◊ (781) 643-4294
Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net
www.neh-inc.com

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and comments added based on actions taken; and
- Data Validation Checklists for TOC and PCB Congeners including the Surrogate Recovery Correction worksheet completed during this validation to document the Tier I+ review. The Checklists are an integral part of the DV Report as they contain comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the sample type (e.g., field sample, field duplicate (FD), field equipment blank (EB), as applicable), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
503325	L0912899-01	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
508135	L0912899-02	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Duplicate of 503325
503425	L0912899-03	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503525	L0912899-04	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503625	L0912899-05	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503725	L0912899-06	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503825	L0912899-07	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
503925	L0912899-08	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504025	L0912899-09	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504125	L0912899-10	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504225	L0912899-11	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
504325	L0912899-12	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504425	L0912899-13	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507825	L0912899-14	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504625	L0912899-15	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504725	L0912899-16	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504825	L0912899-17	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Analytical method references:
18 NOAA Congeners: *Determination of PCB Homologs, Individual Congeners, and Pesticides by Gas Chromatography/Mass Spectrometry in the Select Ion Monitoring (SIM) Mode (EPA 680 & 8270C),* Alpha SOP O-015, Rev. 2, June 19, 2006.
TOC: SW-846 Method 9060 modified, Alpha SOP W-028

[1] Grain Size analysis was also performed on these samples; however, data validation for this parameter was not required. TOC analysis was performed on "as-received" sediments while the 18 NOAA Congeners were performed using "air-dried" sediments.

II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of the 18 NOAA PCB Congener and TOC sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH LTMV QAPP requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Standard Reference Material (SRM) Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)

- Sample result reporting (including compound lists, reporting limits, and units)
- Calibration criteria* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries*
- Retention Time windows*
- Other method-specific QC if applicable and reported* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.

Based on this Tier I+ validation of the 18 NOAA PCB Congeners and TOC, all results were considered usable for project decisions based on a comparison to the NBH LTMV QAPP requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID_QUAL, VALIDATION_LEVEL, VALIDATION, VALID_DATE, BIAS, and DV_COMMENT.

The remainder of this report documents "exceptions" to the NBH LTMV QAPP criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Validation Checklists.

Sample Receipt and Holding Time

The sediment samples were received at the laboratory intact in seven shipments at 2.0°C to 3.5°C. Aliquots of the "as-received" samples were analyzed for TOC, Grain Size, and percent solids. Samples were frozen upon receipt to arrest holding time for TOC analysis. All samples had percent solids content of 34-80%; therefore, these sediment samples were air-dried, as required by the QAPP, prior to Congener analysis. After air-drying, the percent solids content for all samples was greater than 70%.

Accuracy

The Method Blank was non-detect for TOC; therefore, blank action was not required.

The Method Blank reported detected results for several Congeners. Comparisons of the levels reported in the method blank with the levels reported in the samples were made and the following blank actions were taken:

- 2,2',3,5'-Tetrachlorobiphenyl (BZ#44), 2,2',5,5'-Tetrachlorobiphenyl (BZ#52), and 2,2',4,5,5'-Pentachlorobiphenyl (BZ#101) were negated (U) at the surrogate-corrected level found in sample 507825.

There was no Equipment Blank required to be collected along with these sediment samples.

Surrogate recovery did not meet criteria for five samples: 503525, 503925, 504425, 504625, and 504825. One of the two surrogates was recovered high compared to criteria in all five samples. For these samples, the detected results were surrogate-recovery corrected, as required by the LTMV QAPP, using only the one surrogate in each sample that was recovered within criteria. As a consequence of performing this recovery correction calculation, the impact of the surrogates outside criteria on the sample data is uncertain; therefore, all detected results in these five samples were estimated (J) due to conflicting surrogate recovery results.

All 18 NOAA Congeners recovered within criteria in the LCS and LCSD except for 2,2',5,5'-Tetrachlorobiphenyl (BZ#52), which was recovered high in the LCS. Since the LCSD recovery and RPD between the LCS and LCSD were acceptable for this Congener, no action to qualify sample data was taken based on professional judgment.

Congener recoveries in the MS/MSD analysis conducted on sample 507825 were all acceptable indicating acceptable accuracy for PCB Congener analysis of this matrix. TOC recovery in the MS analysis of sample 507825 was acceptable; indicating acceptable accuracy for TOC in the site matrix.

The Standard Reference Material (SRM NY/NJ Waterway Sediment) reported acceptable recovery for all Congeners certified in this SRM except 2,3',4,4'-Tetrachlorobiphenyl (BZ#66), 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ#128), 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ#195), and 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ#206), which were recovered outside criteria. Since the LCS/LCSD and MS/MSD recoveries for these Congeners were within criteria, no action to qualify sample data was taken based on professional judgment. The TOC SRM reported acceptable recoveries for TOC certified in this SRM.

Precision

LCS/LCSD precision was acceptable for all 18 NOAA Congeners except 2,3,3',4,4'-Pentachlorobiphenyl (BZ#105). All 2,3,3',4,4'-Pentachlorobiphenyl (BZ#105) data were estimated (J) due to LCS/LCSD imprecision, as shown in Table 2.

MS/MSD precision in the analysis of sample 507825 was acceptable for all 18 NOAA Congeners. Sample/MD precision for TOC analysis of 507825, as well as precision between all replicates of TOC reported for each sample, was acceptable. These results indicate acceptable precision and representativeness of these sediments for analysis of the NOAA PCB Congeners and TOC.

Field Duplicate (FD) precision was acceptable for all 18 NOAA Congeners and TOC in the FD pair 503325 and 508135. These results are an indication of acceptable precision and representativeness of these sediment samples to the site location for PCB Congeners and TOC.

Sensitivity & Reporting

All samples met sensitivity requirements for PCB Congeners and TOC as indicated in NBH LTMV QAPP Table 1-3.

Data users should compute the average of the TOC replicate results (duplicate burns) for each sample and use this arithmetic average as the valid result for TOC.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that Congener data were surrogate-recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate-recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting previous LTM data (LTMIV and prior monitoring data), Alpha's process for reporting LTMV results, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events reported by Battelle.

For Congener samples where the surrogates are not recovered because of analytical dilutions or when results were non-detect, the DV_COMMENT "K2" was added to the validated database file to indicate that the reported value was not surrogate-recovery corrected.

For Congener samples where surrogate-recovery correction was performed, a separate Surrogate Recovery Correction excel worksheet was constructed (as part of the Data Validation Checklist process) showing the original lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. For surrogate-corrected results, the project database file was updated as follows:

1. The surrogate-corrected value, as shown in the Surrogate Recovery Correction worksheet, replaced the lab RESULT value in the validated database file;
2. The qualifier "K" was added to the VALID_ QUAL field to identify the result as surrogate-recovery corrected; and
3. "K1" was added to the DV_COMMENT field as the DV code to further indicate that the reported result was surrogate-recovery corrected.

Non-detects for Congeners were reported by Alpha at the Reporting Limit (RL), consistent with the LTMV QAPP requirements. Since non-detected results are not comparable between Alpha and Battelle because the basis for the non-detects are different (RL *vs*. MDL), non-detects and reporting limits were not surrogate-recovery corrected in the LTMV data.

For this SDG, all samples reported surrogate recoveries. For samples 503525, 503925, 504425, 504625, and 504825, one of the two surrogates were not recovered within criteria; therefore, the other surrogate, recovered within criteria, was used for correction of all detected Congener results. Surrogate-recovery correction was performed for these eight samples, as documented in *Surrogate Recovery Correction_L0912899*. Actions taken are listed below in Table 2.

Results reported below the sample-specific RLs are considered uncertain because they are below the calibration range. During this review, data below the sample-specific RLs were qualified as estimated (J), as shown in Table 2, and as described in the Data Validation Checklist.

The laboratory reported all results from DF > 1 analyses with a “D” qualifier. At Battelle’s request, these “D” qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
503425, 503625, 503725, 503825, 504125, 504225, 504325, & 504725	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DK / K		Reported value is surrogate recovery corrected
503425, 503625, 503725, 503825, 504125, 504225, 504325, 504725, 503325, 504025, 508135	2,3,3',4,4'-Pentachlorobiphenyl	DJK / JK	I	Reported value is surrogate recovery corrected + LCS/LCSD imprecision
503425, 503625, 503725, 503825, 504125, 504225, 504325, & 504725	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DU / U		Reported value is not surrogate recovery corrected
503325	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl & 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	DK		Reported value is surrogate recovery corrected
503325	2,2',3,3',4,4',5,6-Octachlorobiphenyl & 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	DU		Reported value is not surrogate recovery corrected
504025	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl & 2,2',3,3',4,4',5,6-Octachlorobiphenyl	DK		Reported value is surrogate recovery corrected
504025	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DU		Reported value is not surrogate recovery corrected
507825	2,2',3,4',5,5',6-Heptachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
507825	2,3,3',4,4'-Pentachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + LCS/LCSD imprecision + Result uncertain below the calibration range
507825	2,3',4,4'-Tetrachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	K		Reported value is surrogate recovery corrected

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
507825	2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, & 2,2',4,5,5'-Pentachlorobiphenyl	UK		Reported value is surrogate recovery corrected + Result Negated due to Blank Action
507825	2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected
508135	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl & Decachlorobiphenyl - Homologue	DK		Reported value is surrogate recovery corrected
508135	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DU		Reported value is not surrogate recovery corrected
508135	Decachlorobiphenyl - Homologue	DJK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
503525	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl & 2,2',3,3',4,4',5,6-Octachlorobiphenyl	DJK	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery
503525, 503925, 504425, 504625, & 504825	2,3,3',4,4'-Pentachlorobiphenyl	DJK	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery + LCS/LCSD imprecision
503525	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DU		Reported value is not surrogate recovery corrected
503925 & 504425	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl & Decachlorobiphenyl - Homologue	DJK	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
503925 & 504425	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DU		Reported value is not surrogate recovery corrected
503925	Decachlorobiphenyl - Homologue	DJK	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery + Result uncertain below the calibration range
504425	Decachlorobiphenyl - Homologue	DU		Reported value is not surrogate recovery corrected
504625 & 504825	All Congeners except: 2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DJK	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery
504625 & 504825	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DU		Reported value is not surrogate recovery corrected

Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory); K = Result is Surrogate Recovery Corrected.

Bias: L = Low; H = High; I = Indeterminate

Abbreviations used in Table 2:
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
503325	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	104	D	179	UG/KG
503325	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	595	D	1026	UG/KG
503325	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1840	D	3172	UG/KG
503325	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	834	D	1438	UG/KG
503325	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1980	D	3414	UG/KG
503325	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	317	D	547	UG/KG
503325	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1580	D	2724	UG/KG
503325	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	332	D	305	UG/KG
503325	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	1380	D	1266	UG/KG
503325	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	255	D	234	UG/KG
503325	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	1150	D	1055	UG/KG
503325	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	696	D	639	UG/KG
503325	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	141	D	129	UG/KG
503325	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	155	D	142	UG/KG
503325	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	121	D	111	UG/KG
503325	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	4.07	DU	NA	UG/KG
503325	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	4.07	DU	NA	UG/KG
503325	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	4.23	D	3.9	UG/KG
503325	10	CS-10386-84-2	Dbob			58	D		PCT_REC
503325	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		109	D		PCT_REC
503425	2	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	8.12	D	15.3	UG/KG
503425	2	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	33.9	D	64.0	UG/KG
503425	2	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	112	D	211	UG/KG
503425	2	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	39.1	D	73.8	UG/KG
503425	2	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	103	D	194	UG/KG
503425	2	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	12.6	D	23.8	UG/KG
503425	2	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	64.6	D	122	UG/KG
503425	2	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	12.8	D	16.4	UG/KG
503425	2	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	51.7	D	66.3	UG/KG
503425	2	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	9.72	D	12.5	UG/KG
503425	2	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	45.4	D	58.2	UG/KG
503425	2	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	31	D	39.7	UG/KG
503425	2	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	7.1	D	9.1	UG/KG
503425	2	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	7.82	D	10.0	UG/KG
503425	2	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	7.04	D	9.0	UG/KG
503425	2	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.681	DU	NA	UG/KG
503425	2	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.681	DU	NA	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
503425	2	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.681	DU	NA	UG/KG
503425	2	CS-10386-84-2	Dbob			53	D		PCT_REC
503425	2	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		78	D		PCT_REC
503525	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	110	D	157	UG/KG
503525	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	654	D	934	UG/KG
503525	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	2050	D	2929	UG/KG
503525	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	924	D	1320	UG/KG
503525	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	2030	D	2900	UG/KG
503525	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	435	D	621	UG/KG
503525	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1900	D	2714	UG/KG
503525	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	441	D	630	UG/KG
503525	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	1660	D	2371	UG/KG
503525	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	309	D	441	UG/KG
503525	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	1410	D	2014	UG/KG
503525	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	705	D	1007	UG/KG
503525	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	160	D	229	UG/KG
503525	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	178	D	254	UG/KG
503525	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	122	D	174	UG/KG
503525	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	4.13	DU	NA	UG/KG
503525	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	12.6	D	18.0	UG/KG
503525	10	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	8.22	D	11.7	UG/KG
503525	10	CS-10386-84-2	Dbob			70	D		PCT_REC
503525	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		131	D		PCT_REC
503625	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	2.54		5.2	UG/KG
503625	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	19		38.8	UG/KG
503625	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	71.9		147	UG/KG
503625	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	17.9		36.5	UG/KG
503625	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	61.8		126	UG/KG
503625	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	10.1		20.6	UG/KG
503625	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	40.7		83.1	UG/KG
503625	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	8.46		8.3	UG/KG
503625	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	33.4		32.7	UG/KG
503625	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	6.46		6.3	UG/KG
503625	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	28.5		27.9	UG/KG
503625	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	18.9		18.5	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
503625	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	4.5		4.4	UG/KG
503625	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	3.28		3.2	UG/KG
503625	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	2.75		2.7	UG/KG
503625	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.334	U	NA	UG/KG
503625	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.334	U	NA	UG/KG
503625	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.334	U	NA	UG/KG
503625	1	CS-10386-84-2	Dbob			49			PCT_REC
503625	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		102			PCT_REC
503725	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	19.3	D	37.1	UG/KG
503725	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	115	D	221	UG/KG
503725	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	416	D	800	UG/KG
503725	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	148	D	285	UG/KG
503725	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	378	D	727	UG/KG
503725	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	70.1	D	135	UG/KG
503725	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	276	D	531	UG/KG
503725	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	64.8	D	51.0	UG/KG
503725	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	236	D	186	UG/KG
503725	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	48.1	D	37.9	UG/KG
503725	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	204	D	161	UG/KG
503725	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	139	D	109	UG/KG
503725	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	28.7	D	22.6	UG/KG
503725	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	29.2	D	23.0	UG/KG
503725	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	26.4	D	20.8	UG/KG
503725	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	1.79	DU	NA	UG/KG
503725	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	1.79	DU	NA	UG/KG
503725	5	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	1.79	DU	NA	UG/KG
503725	5	CS-10386-84-2	Dbob			52	D		PCT_REC
503725	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		127	D		PCT_REC
503825	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	34.7	D	57.8	UG/KG
503825	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	130	D	217	UG/KG
503825	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	810	D	1350	UG/KG
503825	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	139	D	232	UG/KG
503825	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	391	D	652	UG/KG
503825	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	80.4	D	134	UG/KG
503825	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	318	D	530	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
503825	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	70.8	D	58.0	UG/KG
503825	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	304	D	249	UG/KG
503825	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	47.2	D	38.7	UG/KG
503825	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	216	D	177	UG/KG
503825	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	196	D	161	UG/KG
503825	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	22	D	18.0	UG/KG
503825	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	30.3	D	24.8	UG/KG
503825	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	24.8	D	20.3	UG/KG
503825	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.6	DU	NA	UG/KG
503825	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.6	DU	NA	UG/KG
503825	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.6	DU	NA	UG/KG
503825	10	CS-10386-84-2	Dbob			60	D		PCT_REC
503825	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		122	D		PCT_REC
503925	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	62.2	D	120	UG/KG
503925	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	355	D	683	UG/KG
503925	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1380	D	2654	UG/KG
503925	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	494	D	950	UG/KG
503925	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1370	D	2635	UG/KG
503925	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	203	D	390	UG/KG
503925	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1010	D	1942	UG/KG
503925	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	237	D	456	UG/KG
503925	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	900	D	1731	UG/KG
503925	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	175	D	337	UG/KG
503925	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	789	D	1517	UG/KG
503925	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	423	D	813	UG/KG
503925	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	98.8	D	190	UG/KG
503925	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	104	D	200	UG/KG
503925	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	81.7	D	157	UG/KG
503925	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	3.68	DU	NA	UG/KG
503925	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	15.7	D	30.2	UG/KG
503925	10	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	3.32	DJ	6.4	UG/KG
503925	10	CS-10386-84-2	Dbob			52	D		PCT_REC
503925	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		168	D		PCT_REC
504025	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	66.9	D	119	UG/KG
504025	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	407	D	727	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504025	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1410	D	2518	UG/KG
504025	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	482	D	861	UG/KG
504025	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1280	D	2286	UG/KG
504025	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	226	D	404	UG/KG
504025	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	971	D	1734	UG/KG
504025	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	216	D	216	UG/KG
504025	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	832	D	832	UG/KG
504025	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	162	D	162	UG/KG
504025	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	712	D	712	UG/KG
504025	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	415	D	415	UG/KG
504025	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	101	D	101	UG/KG
504025	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	107	D	107	UG/KG
504025	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	83.8	D	83.8	UG/KG
504025	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.87	DU	NA	UG/KG
504025	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	10.4	D	10.4	UG/KG
504025	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	4.8	D	4.8	UG/KG
504025	10	CS-10386-84-2	Dbob			56	D		PCT_REC
504025	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		100	D		PCT_REC
504125	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	19.3	D	26.1	UG/KG
504125	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	114	D	154	UG/KG
504125	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	408	D	551	UG/KG
504125	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	149	D	201	UG/KG
504125	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	349	D	472	UG/KG
504125	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	63.7	D	86.1	UG/KG
504125	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	278	D	376	UG/KG
504125	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	70.9	D	93.3	UG/KG
504125	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	250	D	329	UG/KG
504125	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	48.7	D	64.1	UG/KG
504125	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	206	D	271	UG/KG
504125	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	170	D	224	UG/KG
504125	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	23.4	D	30.8	UG/KG
504125	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	28.7	D	37.8	UG/KG
504125	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	15.5	D	20.4	UG/KG
504125	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	1.82	DU	NA	UG/KG
504125	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	1.82	DU	NA	UG/KG
504125	5	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	1.82	DU	NA	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

2009 Sampling
Surrogate Recovery Correction Worksheet

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504125	5	CS-10386-84-2	Dbob			74	D		PCT_REC
504125	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		76	D		PCT_REC
504225	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	88.3	D	147	UG/KG
504225	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	196	D	327	UG/KG
504225	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1210	D	2017	UG/KG
504225	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	260	D	433	UG/KG
504225	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	630	D	1050	UG/KG
504225	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	182	D	303	UG/KG
504225	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	526	D	877	UG/KG
504225	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	160	D	139	UG/KG
504225	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	534	D	464	UG/KG
504225	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	99.9	D	86.9	UG/KG
504225	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	435	D	378	UG/KG
504225	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	250	D	217	UG/KG
504225	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	53.1	D	46.2	UG/KG
504225	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	56.3	D	49.0	UG/KG
504225	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	46.7	D	40.6	UG/KG
504225	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	4.96	DU	NA	UG/KG
504225	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	4.96	DU	NA	UG/KG
504225	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	4.96	DU	NA	UG/KG
504225	10	CS-10386-84-2	Dbob			60	D		PCT_REC
504225	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		115	D		PCT_REC
504325	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	59.5	D	86.2	UG/KG
504325	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	185	D	268	UG/KG
504325	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	958	D	1388	UG/KG
504325	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	229	D	332	UG/KG
504325	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	496	D	719	UG/KG
504325	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	142	D	206	UG/KG
504325	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	498	D	722	UG/KG
504325	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	142	D	116	UG/KG
504325	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	473	D	388	UG/KG
504325	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	91.7	D	75.2	UG/KG
504325	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	397	D	325	UG/KG
504325	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	212	D	174	UG/KG
504325	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	52.8	D	43.3	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504325	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	56.5	D	46.3	UG/KG
504325	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	40.5	D	33.2	UG/KG
504325	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.44	DU	NA	UG/KG
504325	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.44	DU	NA	UG/KG
504325	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.44	DU	NA	UG/KG
504325	10	CS-10386-84-2	Dbob			69	D		PCT_REC
504325	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		122	D		PCT_REC
504425	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	21	D	31.8	UG/KG
504425	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	146	D	221	UG/KG
504425	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	627	D	950	UG/KG
504425	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	179	D	271	UG/KG
504425	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	418	D	633	UG/KG
504425	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	93.1	D	141	UG/KG
504425	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	448	D	679	UG/KG
504425	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	114	D	173	UG/KG
504425	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	385	D	583	UG/KG
504425	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	83.6	D	127	UG/KG
504425	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	351	D	532	UG/KG
504425	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	337	D	511	UG/KG
504425	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	50.7	D	76.8	UG/KG
504425	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	58.6	D	88.8	UG/KG
504425	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	72.8	D	110	UG/KG
504425	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	3.51	DU	NA	UG/KG
504425	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	10.1	D	15.3	UG/KG
504425	10	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	3.51	DU	NA	UG/KG
504425	10	CS-10386-84-2	Dbob			66	D		PCT_REC
504425	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		160	D		PCT_REC
504625	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	35.7	D	44.6	UG/KG
504625	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	170	D	213	UG/KG
504625	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	800	D	1000	UG/KG
504625	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	198	D	248	UG/KG
504625	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	419	D	524	UG/KG
504625	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	86.2	D	108	UG/KG
504625	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	347	D	434	UG/KG
504625	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	102	D	128	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504625	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	325	D	406	UG/KG
504625	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	64.5	D	80.6	UG/KG
504625	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	280	D	350	UG/KG
504625	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	218	D	273	UG/KG
504625	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	36.9	D	46.1	UG/KG
504625	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	29.3	D	36.6	UG/KG
504625	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	30.1	D	37.6	UG/KG
504625	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	4.71	DU	NA	UG/KG
504625	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	4.71	DU	NA	UG/KG
504625	10	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	4.71	DU	NA	UG/KG
504625	10	CS-10386-84-2	Dbob			80	D		PCT_REC
504625	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		156	D		PCT_REC
504725	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	92.7	D	131	UG/KG
504725	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	164	D	231	UG/KG
504725	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	803	D	1131	UG/KG
504725	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	215	D	303	UG/KG
504725	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	510	D	718	UG/KG
504725	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	93.6	D	132	UG/KG
504725	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	460	D	648	UG/KG
504725	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	135	D	108	UG/KG
504725	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	413	D	330	UG/KG
504725	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	97.3	D	77.8	UG/KG
504725	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	394	D	315	UG/KG
504725	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	216	D	173	UG/KG
504725	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	48.8	D	39.0	UG/KG
504725	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	54.6	D	43.7	UG/KG
504725	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	39.8	D	31.8	UG/KG
504725	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	3.46	DU	NA	UG/KG
504725	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.46	DU	NA	UG/KG
504725	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	3.46	DU	NA	UG/KG
504725	10	CS-10386-84-2	Dbob			71	D		PCT_REC
504725	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		125	D		PCT_REC
504825	2	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	5.74	D	7.1	UG/KG
504825	2	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	36.9	D	45.6	UG/KG
504825	2	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	145	D	179	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504825	2	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	36.8	D	45.4	UG/KG
504825	2	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	85.7	D	106	UG/KG
504825	2	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	17.1	D	21.1	UG/KG
504825	2	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	73.7	D	91.0	UG/KG
504825	2	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	20.9	D	25.8	UG/KG
504825	2	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	69.6	D	85.9	UG/KG
504825	2	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	15.2	D	18.8	UG/KG
504825	2	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	63.6	D	78.5	UG/KG
504825	2	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	53.3	D	65.8	UG/KG
504825	2	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	9.94	D	12.3	UG/KG
504825	2	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	12.6	D	15.6	UG/KG
504825	2	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	8.14	D	10.0	UG/KG
504825	2	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	0.68	DU	NA	UG/KG
504825	2	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	0.68	DU	NA	UG/KG
504825	2	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	0.68	DU	NA	UG/KG
504825	2	CS-10386-84-2	Dbob			81	D		PCT_REC
504825	2	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		138	D		PCT_REC
507825	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	0.341	U	NA	UG/KG
507825	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	0.341	U	NA	UG/KG
507825	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	0.341	U	NA	UG/KG
507825	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	0.768	B	1.02	UG/KG
507825	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1.88	B	2.51	UG/KG
507825	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	0.604		0.81	UG/KG
507825	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1.36	B	1.81	UG/KG
507825	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	0.31	J	0.35	UG/KG
507825	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	1.63		1.83	UG/KG
507825	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	0.341	U	NA	UG/KG
507825	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	1.5		1.69	UG/KG
507825	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	1.48		1.66	UG/KG
507825	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.341	U	NA	UG/KG
507825	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.341	U	NA	UG/KG
507825	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.201	J	0.226	UG/KG
507825	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.341	U	NA	UG/KG
507825	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.341	U	NA	UG/KG
507825	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.341	U	NA	UG/KG
507825	1	CS-10386-84-2	Dbob			75			PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
507825	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		89			PCT_REC
508135	10	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	85.3	D	117	UG/KG
508135	10	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	492	D	674	UG/KG
508135	10	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1820	D	2493	UG/KG
508135	10	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	672	D	921	UG/KG
508135	10	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1600	D	2192	UG/KG
508135	10	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	256	D	351	UG/KG
508135	10	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1250	D	1712	UG/KG
508135	10	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	266	D	233	UG/KG
508135	10	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	1100	D	965	UG/KG
508135	10	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	202	D	177	UG/KG
508135	10	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	908	D	796	UG/KG
508135	10	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	695	D	610	UG/KG
508135	10	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	120	D	105	UG/KG
508135	10	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	121	D	106	UG/KG
508135	10	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	93.7	D	82	UG/KG
508135	10	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	4.11	DU	NA	UG/KG
508135	10	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	9.82	D	8.61	UG/KG
508135	10	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	2.84	DJ	2.49	UG/KG
508135	10	CS-10386-84-2	Dbob			73	D		PCT_REC
508135	10	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		114	D		PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab Project: L0912900

Lab: Alpha Analytical
Date Sampled: ~~9/25/09 through 9/28/09~~
Analysis: 18 NOAA PCB Congeners by GC/MS-SIM

No. Samples: 16 + 1FD
Matrix: Sediments

Data Element Acceptable	Preservation & HT	Surrogates %R 50-130%	LCS/LCSD SRM %R 40-140% RPD ≤ 30%	MS/MSD %R 40-140% RPD ≤ 30%	FD RPD≤ 30% SW RPD≤ 50% SED	MB < RL or < 5x Conc. in sample	RL meets QAPP req. for matrix?	Issues with Qualifiers?	Other
Yes	√		√						
No		Estimate (J) detects in 505025, 505325, & 505625		Estimate (J & UJ) BZ153, BZ180 & BZ206 in 505625	Estimate (J) 11 results in 506425 & 508235	See page 2	Estimate (J) 4 results < RL	Data qualified "D" by the lab for all samples analyzed DF > 1	Surrogate recovery correct all samples - see "Surrogate Recovery Correction _L0912900.pdf" and page 4 of this report for details

Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.
Were the %solids acceptable (>30%)? Yes all > 82% solids after air-drying. Prior to air-drying, % solids were 33-82%.
The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 18 NOAA Congeners were acceptable unless an issue was raised in the laboratory narrative.

Comments:

Samples were received intact at 1.6C to 3.5C in 6 shipments on the day of or day after sample collection (e.g., samples collected on 9/27 were received on 9/28/09). COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab.

Samples were analyzed for % solids, TOC, and Grain size. All samples were also air-dried and subsequently analyzed for %solids - air-dried and 18 NOAA Congeners

HT: Air-dried samples were extracted on 10/6/09 and analyzed by 10/27/09 - HT met - No action required.

Surrogates: both surrogates (DBOB and BZ198) were recovered within criteria in all samples except BZ198 recovered high (>130%) in samples 505025, 505325, and 505625. Since these samples were recovery corrected using the other surrogate (DBOB), it is unclear how these high BZ198 surrogate recoveries would have affected detected results. Since non-detects are not surrogate recovery corrected and since high recovery should not have affected the non-detects, only detected results in these three samples affected.

**ACTION: All detected results estimated (J) in samples 505025, 505325, and 505625 due to conflicting Surrogate recoveries.*

LCS: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners spiked and RPDs between LCS and LCSD all OK except BZ105 LCS high (146%) but LCSD and RPD OK. No Action taken for high LCS BZ105 since LCSD OK and RPD OK.

Date: ~~*4/5/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Blank Action: Blanks Reviewed: Method Blank
No EB associated with samples

Blank ID	Contaminant / Level	Matrix Related?	Action Level / Action *	Sample and Reported Result				Corrected Result
Method Blank	BZ#18 0.497 µg/Kg	Y	2.485 µg/Kg	505825		0.369	J	0.369 U
				506325		1.73	B	1.73 U
				506125		1.89	B	1.89 U
				All other samples were >>> BAL - No Action required				
Method Blank	BZ#28 0.740 µg/Kg	Y	3.7 µg/Kg	505825		1.18	B	1.18 U
				506325		3.28	B	3.28 U
				All other samples were >>> BAL - No Action required				
Method Blank	BZ#44 0.193 J µg/Kg	Y	0.965 µg/Kg	506325		0.493		0.493 U
				505825		0.504		0.504 U
				All other samples were >>> BAL - No Action required				
Method Blank	BZ#52 0.587 µg/Kg	Y	2.935 µg/Kg	505825		1.14	B	1.14 U
			(3.97 µg/Kg	506325		3.28	B	3.28 U
			Surrogate	All other samples were >>> BAL - No Action required				
			Corrected)					
*Note : Blank Action Level surrogate corrected (using appropriate surrogates in the MB analysis) if Action Level near level reported in Surrogate corrected samples								

Comments:
SRM : NY/NJ Waterway Sediment. %Rec for Congeners in SRM were all within 40-140% except BZ#128 (166%) and BZ195 (194%). Since the LCS/LCSD recovery was acceptable for these Congeners, no action taken to qualify samples data based on these SRM results.

MS/MSD : performed on sample 505625. Sample, MS and MSD were analyzed at DF=5. Spike level (7.46 µg/Kg) too low for all 18 NOAA Congeners except for BZ195, BZ206, & BZ209 therefore %Recovery results meaningless for all but the last 3 Congeners. % Rec high for BZ206 in MS & MSD and RPD also out for this Congener. Precision between MS & MSD also not acceptable for BZ153 & BZ180. No action for high MS/MSD for BZ206 since unspiked sample was non-detect - action only taken for MS/MSD imprecision.

**ACTION: BZ153, BZ180 & BZ206 estimated (J and UJ) in 505625 due to MS/MSD imprecision*

Date: ~~*4/5/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

Lab: Alpha Analytical

Comments:

FD pair: 506425 & 508235 - a comparison of results shown below

Field Duplicate Evaluation_ Sample IDs: Sample = 506425 FD = 508235

Analyte Name	DF= 1* RL (µg/Kg)	Sample µg/Kg	Q	Sample Result Level	FD µg/Kg	Q	FD Result Level	RPD	Action
2,4'-Dichlorobiphenyl	0.347	6.26		> 2 x RL	13.5		> 2 x RL	73.3	**J Both**
2,2',5-Trichlorobiphenyl	0.347	7.82		> 2 x RL	24.8		> 2 x RL	104.1	**J Both**
2,4,4'-Trichlorobiphenyl	0.347	26.3		> 2 x RL	74.9		> 2 x RL	96.0	**J Both**
2,2',3,5'-Tetrachlorobiphenyl	0.347	12.2		> 2 x RL	24.9		> 2 x RL	68.5	**J Both**
2,2',5,5'-Tetrachlorobiphenyl	0.347	19.7		> 2 x RL	51.6		> 2 x RL	89.5	**J Both**
2,3',4,4'-Tetrachlorobiphenyl	0.347	9.28		> 2 x RL	15.2		> 2 x RL	48.4	None
2,2',4,5,5'-Pentachlorobiphenyl	0.347	18.9		> 2 x RL	47.1		> 2 x RL	85.5	**J Both**
2,3,3',4,4'-Pentachlorobiphenyl	0.347	6.91		> 2 x RL	11.6		> 2 x RL	50.7	**J Both**
2,3',4,4',5-Pentachlorobiphenyl	0.347	20.9		> 2 x RL	37.2		> 2 x RL	56.1	**J Both**
2,2',3,3',4,4'-Hexachlorobiphenyl	0.347	5.06		> 2 x RL	8.05		> 2 x RL	45.6	None
2,2',3,4,4',5'-Hexachlorobiphenyl	0.347	18.6		> 2 x RL	34.3		> 2 x RL	59.4	**J Both**
2,2',4,4',5,5'-Hexachlorobiphenyl	0.347	12.3		> 2 x RL	17.1		> 2 x RL	32.7	None
2,2',3,3',4,4',5-Heptachlorobiphenyl	0.347	1.7		> 2 x RL	2.09		> 2 x RL	20.6	None
2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.347	2.09		> 2 x RL	4.41		> 2 x RL	71.4	**J Both**
2,2',3,4',5,5',6-Heptachlorobiphenyl	0.347	1.73		> 2 x RL	3.09		> 2 x RL	56.4	**J Both**
2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.347	0.347	U	RL	0.346	U	RL	NA	None
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.347	0.347	U	RL	0.346	U	RL	NA	None
Decachlorobiphenyl	0.347	0.347	U	RL	0.346	U	RL	0.3	None

* The sample and FD were both analyzed at DF=1

FD precision was not acceptable for 11 out of 18 NOAA Congeners (result > 2 x RL but RPD > 50%). Note both samples were surrogate recovery corrected prior to this evaluation.

**ACTION: 11 Congeners which exceeded FD precision criteria, as shown above, were estimated (J) in FD pair with indeterminate bias.*

Date: ~~*4/5/10*~~

Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

Lab: Alpha Analytical

Comments:

An investigation by NEH into previous reporting of LTM data by Battelle indicated that data were surrogate recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting, Alpha's process for reporting, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events.

For samples where the surrogates are not recovered because of the dilution made for analysis of the sample, a DV Comment was added to the validated database file "K2" to indicate that the reported value was not surrogate recovery corrected. For samples with surrogates recovered, a separate excel worksheet has been constructed (Surrogate Recovery Correction _ L09XXXX.xls) showing the lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. Non-detects are reported by Alpha at the Reporting Limit (RL) consistent with the QAPP. Since non-detects will not be comparable between Alpha and Battelle because the basis for the non-detects are different (MDL vs. RL), non-detects and reporting limits are not surrogate recovery corrected in the LTMV data.

All samples in this SDG reported surrogate recoveries. The surrogate corrected values, as shown in Surrogate Recovery Correction_L0912900.pdf, replaced the Lab Result values in the validated database file, the data were qualified "K" to indicate this change to the Lab Result values, and a DV Comment was added, "K1", to indicate that the Reported result was recovery corrected. For samples 505025, 505325, and 505625, one of the surrogates was recovered outside criteria. For these five samples, the surrogate which was recovered within criteria was used exclusively for correction of the samples data, as indicated in the technical memo of January 29, 2010.

The lab reported results for 18 NOAA Congeners + 2 surrogates. All samples analyzed at DF=1 reported RLs for individual Congeners and PQLs below those requested in the QAPP; therefore, sensitivity was acceptable for these data. Samples with DF > 1 also met sensitivity requirements since the DF >1 was performed to ensure that all detects were reported within the instrument calibration range.

The narrative did not raise any issues affecting quality that were not already addressed.

4 results were reported at levels < RL and was flagged "J" by the lab. These 4 results were accepted with Indeterminate bias due to uncertainty in quantitation at a level below the instrument calibration range

Qualifiers : All data were reported with "D" qualifiers to indicate results reported from a dilution analysis. As instructed by Battelle, these "D" qualifiers were not removed

Date: ~~*4/5/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

Lab: Alpha Analytical

ACTIONS:

Preservation: Cooled to 4 ± 2°C. Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.
HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND
Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)
Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs
Surrogates: % Recovery > 130%, J det/Accept ND; 10% ≤ % Recovery < 50%, J det/J NDs; Recovery < 10%, J det/R NDs.
LCS/LCSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.
MS/MSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.
FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if
Other Qualifiers: Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes either U or J based on actions taken for Method Blank (MB)
% solids: 10% < % solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.
Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated

Reference: Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, Massachusetts, September 2009 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: ~~4/5/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912900

Lab: Alpha Analytical
Date Sampled: 9/25/09 through 9/28/09
Analysis: Total Organic Carbon (TOC) by modified EPA SW-846 Method 9060

No. Samples: 16 + 1FD
Matrix: Sediment

QC Met Criteria?	Preservation 4 ± 2°C	HT 28 days	RL 0.01% (100 mg/Kg)	MB < RL	Solid LCS = SRM 75-125% R	MS 75-125% R	MD RPD ≤ 25%	FD RPD≤ 50%	% Solids > 30%	Other
Yes	√	√	√	√	√	√	√	√	√	
No										Estimate (J) 505125, 505825, & 506325

Calibration criteria: Unless otherwise noted in the laboratory narrative, it was assumed that all initial and continuing calibration verifications (ICV/CCV) and initial and continuing calibration blank (ICB/CCB) results were acceptable (met LTM V QAPP 2009 requirements). In addition, RPD < 25% for two replicates of each sample.

- Method Modification**:** Laboratory analyzed two replicates (burns) for TOC by Method 9060A rather than 4 (as in the method); this is consistent with LTMV QAPP requirements.

Samples were received intact. TOC analysis was performed on the samples "as-received" (i.e., not on "air-dried" sediments). Samples were frozen upon receipt to arrest holding time. Therefore, analyses, conducted on 10/29/09, were considered to have met HT criteria. No Action required.

MS/MD site sample used for QC: 505625. Duplicate burns of MS resulted in acceptable recovery and duplicate burns of sample/MD also gave RPD < 25%. Acceptable precision - No action required.

Sample/FD site sample IDs: 506425 & 508235. FD precision, based on average value for TOC for each sample, was RPD = 24.2%; therefore, FD precision was acceptable - No Action required.

Replicate (duplicate) precision TOC results of each sample all had RPD < 25% except 505125 (values reported for duplicate runs RPD = 26.9%); 505825 (values reported for duplicate runs RPD = 28.0%); and 506325 (values reported for duplicate runs RPD = 26.9%)- all replicates acceptable except for 505125, 505825, & 506325.

**ACTION: Replicate TOC results for samples 505125, 505825, and 506325 estimated (J) with Indeterminate bias due to Replicate Imprecision.*

Data users should compute the arithmetic average of the two TOC replicate burns for each sample and use this average as the valid TOC result for that sample.

Data Package Completeness:

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with EPA Region 1 present in the data package? **Yes**

2. Were all result forms for all samples listed on the chain-of-custody present in data package? **Yes**

If No, explain and request resubmittals:

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912900

Lab: Alpha Analytical

Data Quality / Usability Issues:

1. Did the Laboratory Narrative contain any issues which may affect data quality or usability that have not been already addressed on page 1? **No.**
If Yes, explain.

2. Explain further any actions taken based on summary QC, as necessary, below.

No further actions required.

QC Actions:

Pres./HT:	HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. Freezing arrests HT. Temperature: outside control limits of 4 ± 2°C: use professional judgment.
Blanks:	Method Blanks and instrument blanks: TOC < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found). Professional judgment used for non-matrix matched blanks (e.g. aqueous blank associated with sediment samples).
Calibration Criteria:	Assume acceptable unless narrated. Exceedances of any calibration criteria will affect accuracy of the data: J detects and UJ non-detects. Severe exceedances of calibration criteria, to be determined based on professional judgment, may require rejection, R, of data.
ICV/CCV:	Assume acceptable unless narrated. If narrated as exceeded: %Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. If severe exceedance <50% recovery: R non-detects.
LCS/SRM:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix.
MS:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level.
MD:	Results > 5xRL: RPD >25%: J / UJ associated results in batch - to be determined using professional judgment. Results < 5xRL: difference > ±2xRL, J / UJ associated results in batch - to be determined using professional judgment.
FD:	Results > 5xRL: RPD >50%: J / UJ FD results only. Results < 5xRL: difference > ±4xRL,, J/UJ FD results only.
% Solids:	10% < % solids < 30%, J detects/R non-detects; % solids < 10%, R all results.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate. QC Limits based on EPA Region 1 Inorganic DV guidance and LTM V QAPP 2009.

References: Quality Assurance Project Plan; New Bedford Harbor Long Term Monitoring V; New Bedford, Massachusetts (September 2009); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; Publication EPA 540-R-04-004, October 2004.

Date: 4/12/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

Data Validation Report
EPA Region I Tier I+
18 NOAA PCB Congeners by 8270C and TOC by Method 9060

Client/Company:	Woods Hole Group, Inc. (WHG)
Site/Project Name:	New Bedford Harbor Superfund Site – Long Term Monitoring (LTM) V
Laboratory:	Alpha Analytical – Mansfield, MA
Lab Project Number(s):	L0912900
Date(s) of Collection:	September 25, 2009 through September 28, 2009
Number / Type Samples & Analyses	17 sediment samples for 18 NOAA PCB Congeners by EPA SW-846 Method 8270C and Total Organic Carbon (TOC) by Method 9060
Senior Data Reviewers:	Nancy C. Rothman, PhD, New Environmental Horizons, Inc. Susan D. Chapnick, New Environmental Horizons, Inc.
Date Completed: ***Revised:***	April 6, 2010 ***April 12, 2010***

This report was revised to include the Tier 1+ review of TOC data.

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners and TOC was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, MA,* prepared by Woods Hole Group, Inc., September 2009 (LTMV QAPP); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474
Phone: (908) 874-5686 ◊ (781) 643-4294
Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net
www.neh-inc.com

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and comments added based on actions taken; and
- Data Validation Checklists for TOC and PCB Congeners including the Surrogate Recovery Correction worksheet completed during this validation to document the Tier I+ review. The Checklists are an integral part of the DV Report as they contain comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the sample type (e.g., field sample, field duplicate (FD), field equipment blank (EB), as applicable), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
504925	L0912900-01	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505025	L0912900-02	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505125	L0912900-03	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505225	L0912900-04	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505325	L0912900-05	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505425	L0912900-06	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505525	L0912900-07	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505625	L0912900-08	9/27/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505725	L0912900-09	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505825	L0912900-10	9/28/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
505925	L0912900-11	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
506025	L0912900-12	9/28/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506125	L0912900-13	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506225	L0912900-14	9/28/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506325	L0912900-15	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506425	L0912900-16	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
508235	L0912900-17	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Duplicate of 506425

Analytical method references:
18 NOAA Congeners: *Determination of PCB Homologs, Individual Congeners, and Pesticides by Gas Chromatography/Mass Spectrometry in the Select Ion Monitoring (SIM) Mode (EPA 680 & 8270C),* Alpha SOP O-015, Rev. 2, June 19, 2006.
TOC: SW-846 Method 9060 modified, Alpha SOP W-028

[1] Grain Size analysis was also performed on these samples; however, data validation for this parameter was not required. TOC analysis was performed on "as-received" sediments while the 18 NOAA Congeners were performed using "air-dried" sediments.

II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of the 18 NOAA PCB Congener and TOC sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH LTMV QAPP requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Standard Reference Material (SRM) Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)

- Sample result reporting (including compound lists, reporting limits, and units)
- Calibration criteria* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries*
- Retention Time windows*
- Other method-specific QC if applicable and reported* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.

Based on this Tier I+ validation of the 18 NOAA PCB Congeners and TOC, all results were considered usable for project decisions based on a comparison to the NBH LTMV QAPP requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID_QUAL, VALIDATION_LEVEL, VALIDATION, VALID_DATE, BIAS, and DV_COMMENT.

The remainder of this report documents "exceptions" to the NBH LTMV QAPP criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Validation Checklists.

Sample Receipt and Holding Time

The sediment samples were received at the laboratory intact in six shipments at 1.6°C to 3.5°C. Aliquots of the "as-received" samples were analyzed for TOC, Grain Size, and percent solids. Samples were frozen upon receipt to arrest holding time for TOC analysis. All samples had percent solids content of 33-82%; therefore, these sediment samples were air-dried, as required by the QAPP, prior to Congener analysis. After air-drying, the percent solids content for all samples was greater than 82%.

Accuracy

The Method Blank was non-detect for TOC; therefore, blank action was not required.

The Method Blank reported detected results for several Congeners. Comparisons of the levels reported in the method blank with the levels reported in the samples were made and the blank actions to negate sample data were applied after surrogate-recovery correction. Blank actions taken are described in the Data Validation Checklist and listed in Table 2.

There was no Equipment Blank required to be collected along with these sediment samples.

Surrogate recovery did not meet criteria for three samples: 505025, 505325, and 505625. One of the two surrogates was recovered high compared to criteria in all three samples. For these samples, the detected results were surrogate-recovery corrected, as required by the LTMV QAPP, using only the one surrogate in each sample that was recovered within criteria. As a consequence of performing this recovery correction calculation, the impact of the surrogates outside criteria on the sample data is uncertain; therefore, all detected results in these three samples were estimated (J) due to conflicting surrogate recovery results.

All 18 NOAA Congeners recovered within criteria in the LCS and LCSD except for 2,3,3',4,4'-Pentachlorobiphenyl (BZ#105), which was recovered high in the LCS. Since the LCSD recovery and RPD between the LCS and LCSD were acceptable for this Congener, no action to qualify sample data was taken based on professional judgment.

Congener recoveries in the MS/MSD analysis conducted on sample 505625 were acceptable for three Congeners that had spike levels appropriate to the sample concentrations. For the remainder of the Congeners, the spike level was too low compared to the concentration of PCB Congeners in the field sample to evaluate recovery. No action was taken based on the MS/MSD recoveries. TOC recovery in the MS analysis of sample 505625 was acceptable; indicating acceptable accuracy for TOC in the site matrix.

The Standard Reference Material (SRM NY/NJ Waterway Sediment) reported acceptable recovery for all Congeners certified in this SRM except 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ#128) and 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ#195), which were recovered outside criteria. Since the LCS/LCSD recoveries for these Congeners were within criteria, no action to qualify sample data was taken based on professional judgment. The TOC SRM reported acceptable recoveries for TOC certified in this SRM.

Precision

LCS/LCSD precision was acceptable for all 18 NOAA Congeners; therefore, no action was required.

MS/MSD precision in the analysis of sample 505625 was acceptable for all 18 NOAA Congeners except for 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ#153), 2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ#180), and 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ#206). The results for these three Congeners were estimated (J and UJ) in the unspiked sample with indeterminate bias due to the observed imprecision. Sample/MD precision for TOC analysis of 505625 was acceptable.

All TOC analyses were performed in replicate (duplicate burns), as a method modification consistent with the site QAPP requirements. Precision between all replicates of TOC reported for each sample was acceptable for all samples except 505125, 505825, and 506325. Replicate precision was not met for the duplicate burns of these three samples; therefore, the replicate values for TOC for 505125, 505825, and 506325 were estimated (J) with indeterminate bias due to the observed imprecision.

Field Duplicate (FD) precision was unacceptable for 11 of the 18 NOAA Congeners in the FD pair of 506425 and 508235. The results for 11 Congeners in these samples were estimated (J) with indeterminate bias, as shown in Table 2, due to the observed imprecision. Precision for TOC was acceptable in this FD pair. These results are an indication of generally unacceptable precision and

representativeness of these sediment samples to the site location for PCB Congeners but acceptable precision and representativeness of these sediment samples to the site location for TOC.

Sensitivity & Reporting

All samples met sensitivity requirements for PCB Congeners and TOC as indicated in NBH LTMV QAPP Table 1-3.

Data users should compute the average of the TOC replicate results (duplicate burns) for each sample and use this arithmetic average as the valid result for TOC.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that Congener data were surrogate-recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate-recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting previous LTM data (LTMIV and prior monitoring data), Alpha's process for reporting LTMV results, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events reported by Battelle.

For Congener samples where the surrogates are not recovered because of analytical dilutions or when results were non-detect, the DV_COMMENT "K2" was added to the validated database file to indicate that the reported value was not surrogate-recovery corrected.

For Congener samples where surrogate-recovery correction was performed, a separate Surrogate Recovery Correction excel worksheet was constructed (as part of the Data Validation Checklist process) showing the original lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. For surrogate-corrected results, the project database file was updated as follows:

1. The surrogate-corrected value, as shown in the Surrogate Recovery Correction worksheet, replaced the lab RESULT value in the validated database file;
2. The qualifier "K" was added to the VALID_ QUAL field to identify the result as surrogate-recovery corrected; and
3. "K1" was added to the DV_COMMENT field as the DV code to further indicate that the reported result was surrogate-recovery corrected.

Non-detects for Congeners were reported by Alpha at the Reporting Limit (RL), consistent with the LTMV QAPP requirements. Since non-detected results are not comparable between Alpha and Battelle because the basis for the non-detects are different (RL *vs*. MDL), non-detects and reporting limits were not surrogate-recovery corrected in the LTMV data.

For this SDG, all Congener samples reported surrogate recoveries. For samples 505025, 505325, and 505625, one of the two surrogates was not recovered within criteria; therefore, the other surrogate, recovered within criteria, was used for correction of all detected Congener results. Surrogate-recovery correction was performed for all samples as documented in *Surrogate Recovery Correction_L0912900*. Actions taken are listed below in Table 2.

Results reported below the sample-specific RLs are considered uncertain because they are below the calibration range. During this review, data below the sample-specific RLs were qualified as estimated (J), as shown in Table 2, and as described in the Data Validation Checklist.

The laboratory reported all results from DF > 1 analyses with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
505125, 505825, & 506325	Total Organic Carbon	J	I	Replicate imprecision
504925, 505225, 505425, 505525, 505725, 505925, 506025, & 506225	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DK / K		Reported value is surrogate recovery corrected
504925, 505225, 505425, 505525, 505725, 505925, 506025, & 506225	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DU/ U		Reported value is not surrogate recovery corrected
505025 & 505325	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	KJ / DKJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery
505025 & 505325	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	U / DU		Reported value is not surrogate recovery corrected
505125	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl	DK		Reported value is surrogate recovery corrected
505125	2,2',3,3',4,4',5,6-Octachlorobiphenyl	DU		Reported value is not surrogate recovery corrected
505625	All Congeners except: 2,2',4,4',5,5'-Hexachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	DKJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery
505625	2,2',4,4',5,5'-Hexachlorobiphenyl & 2,2',3,4,4',5,5'-Heptachlorobiphenyl	DKJ	I	Reported value is surrogate recovery corrected + Conflicting surrogate recovery + MS/MSD imprecision

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
505625	2,2',3,3',4,4',5,6-Octachlorobiphenyl & Decachlorobiphenyl - Homologue	DU		Reported value is not surrogate recovery corrected
505625	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	DUJ	I	Reported value is not surrogate recovery corrected + MS/MSD imprecision
506125	All Congeners except: 2,2',5-Trichlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	K		Reported value is surrogate recovery corrected
506125	2,2',5-Trichlorobiphenyl	UK		Reported value is surrogate recovery corrected + Result Negated due to Blank Action
506125	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected
505825	2,3,3',4,4'-Pentachlorobiphenyl, 2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,4',5,5',6-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected
505825	2,2',4,5,5'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	K		Reported value is surrogate recovery corrected
505825 & 506325	2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, & 2,2',5,5'-Tetrachlorobiphenyl	UK		Reported value is surrogate recovery corrected + Result Negated due to Blank Action

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
505825	2,4'-Dichlorobiphenyl & 2,3',4,4'-Tetrachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
506325	2,3,3',4,4'-Pentachlorobiphenyl & 2,2',3,4',5,5',6-Heptachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
506325	2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl – Homologue	U		Reported value is not surrogate recovery corrected
506325	2,4'-Dichlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	K		Reported value is surrogate recovery corrected
506425 & 508235	2,3',4,4'-Tetrachlorobiphenyl, 2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',4,4',5,5'-Hexachlorobiphenyl, & 2,2',3,3',4,4',5-Heptachlorobiphenyl	K		Reported value is surrogate recovery corrected
506425 & 508235	2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3,3',4,4'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, & 2,2',3,4',5,5',6-Heptachlorobiphenyl	KJ	I	Reported value is surrogate recovery corrected + FD imprecision

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
506425 & 508235	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected

Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory); K = Result is Surrogate Recovery Corrected.

Bias: L = Low; H = High; I = Indeterminate

Abbreviations used in Table 2:
FD = Field Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504925	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	39.9	D	55.4	UG/KG
504925	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	164	D	228	UG/KG
504925	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	568	D	789	UG/KG
504925	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	430	D	597	UG/KG
504925	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	768	D	1067	UG/KG
504925	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	72.8	D	101	UG/KG
504925	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	439	D	610	UG/KG
504925	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	134	D	126	UG/KG
504925	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	372	D	351	UG/KG
504925	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	99.7	D	94.1	UG/KG
504925	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	421	D	397	UG/KG
504925	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	195	D	184	UG/KG
504925	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	48.6	D	45.8	UG/KG
504925	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	54.6	D	51.5	UG/KG
504925	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	36.8	D	34.7	UG/KG
504925	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	2.02	DU	NA	UG/KG
504925	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	2.02	DU	NA	UG/KG
504925	5	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	2.02	DU	NA	UG/KG
504925	5	CS-10386-84-2	Dbob			72	D		PCT_REC
504925	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		106	D		PCT_REC
505025	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	11.4		13.7	UG/KG
505025	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	37.6		45.3	UG/KG
505025	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	138		166	UG/KG
505025	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	45.6		54.9	UG/KG
505025	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	118		142	UG/KG
505025	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	22.2		26.7	UG/KG
505025	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	102		123	UG/KG
505025	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	29.6		35.7	UG/KG
505025	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	102		123	UG/KG
505025	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	21		25.3	UG/KG
505025	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	89.8		108	UG/KG
505025	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	49.3		59.4	UG/KG
505025	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	12.9		15.5	UG/KG
505025	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	11.7		14.1	UG/KG
505025	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	9.29		11.2	UG/KG
505025	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	0.341	U	NA	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
505025	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	0.341	U	NA	UG/KG
505025	1	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	0.341	U	NA	UG/KG
505025	1	CS-10386-84-2	Dbob			83			PCT_REC
505025	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		146			PCT_REC
505125	2	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	25.9	D	33.2	UG/KG
505125	2	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	83.2	D	107	UG/KG
505125	2	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	302	D	387	UG/KG
505125	2	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	91.7	D	118	UG/KG
505125	2	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	219	D	281	UG/KG
505125	2	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	45.1	D	57.8	UG/KG
505125	2	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	187	D	240	UG/KG
505125	2	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	57	D	46.7	UG/KG
505125	2	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	181	D	148	UG/KG
505125	2	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	33.9	D	27.8	UG/KG
505125	2	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	153	D	125	UG/KG
505125	2	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	77.2	D	63.3	UG/KG
505125	2	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	20.4	D	16.7	UG/KG
505125	2	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	16.3	D	13.4	UG/KG
505125	2	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	16.8	D	13.8	UG/KG
505125	2	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.68	DU	NA	UG/KG
505125	2	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	2.71	D	3.17	UG/KG
505125	2	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.83	D	0.20	UG/KG
505125	2	CS-10386-84-2	Dbob			78	D		PCT_REC
505125	2	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		122	D		PCT_REC
505225	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	44.9	D	61.5	UG/KG
505225	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	85.5	D	117	UG/KG
505225	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	421	D	577	UG/KG
505225	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	109	D	149	UG/KG
505225	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	308	D	422	UG/KG
505225	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	72.9	D	99.9	UG/KG
505225	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	300	D	411	UG/KG
505225	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	88	D	73.3	UG/KG
505225	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	301	D	251	UG/KG
505225	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	64.6	D	53.8	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
505225	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	276	D	230	UG/KG
505225	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	148	D	123	UG/KG
505225	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	39.1	D	32.6	UG/KG
505225	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	40.6	D	33.8	UG/KG
505225	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	27.1	D	22.6	UG/KG
505225	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	1.77	DU	NA	UG/KG
505225	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	1.77	DU	NA	UG/KG
505225	5	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	1.77	DU	NA	UG/KG
505225	5	CS-10386-84-2	Dbob			73	D		PCT_REC
505225	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		120	D		PCT_REC
505325	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	63	D	86.3	UG/KG
505325	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	92	D	126	UG/KG
505325	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	487	D	667	UG/KG
505325	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	102	D	140	UG/KG
505325	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	316	D	433	UG/KG
505325	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	76.5	D	105	UG/KG
505325	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	236	D	323	UG/KG
505325	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	69.1	D	94.7	UG/KG
505325	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	264	D	362	UG/KG
505325	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	50.9	D	69.7	UG/KG
505325	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	209	D	286	UG/KG
505325	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	131	D	179	UG/KG
505325	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	29.3	D	40.1	UG/KG
505325	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	34.1	D	46.7	UG/KG
505325	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	27.6	D	37.8	UG/KG
505325	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	1.76	DU	NA	UG/KG
505325	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	1.76	DU	NA	UG/KG
505325	5	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	1.76	DU	NA	UG/KG
505325	5	CS-10386-84-2	Dbob			73	D		PCT_REC
505325	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		138	D		PCT_REC
505425	2	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	8.22	D	12.1	UG/KG
505425	2	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	41.2	D	60.6	UG/KG
505425	2	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	224	D	329	UG/KG
505425	2	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	47.6	D	70.0	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
505425	2	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	138	D	203	UG/KG
505425	2	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	34.2	D	50.3	UG/KG
505425	2	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	122	D	179	UG/KG
505425	2	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	31.4	D	37.4	UG/KG
505425	2	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	115	D	137	UG/KG
505425	2	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	22.4	D	26.7	UG/KG
505425	2	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	87.4	D	104	UG/KG
505425	2	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	82.3	D	98.0	UG/KG
505425	2	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	11	D	13.1	UG/KG
505425	2	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	9.32	D	11.1	UG/KG
505425	2	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	10.1	D	12.0	UG/KG
505425	2	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.678	DU	NA	UG/KG
505425	2	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.678	DU	NA	UG/KG
505425	2	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.678	DU	NA	UG/KG
505425	2	CS-10386-84-2	Dbob			68	D		PCT_REC
505425	2	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		84	D		PCT_REC
505525	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	6.43		8.04	UG/KG
505525	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	21.6		27.0	UG/KG
505525	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	111		139	UG/KG
505525	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	26.4		33.0	UG/KG
505525	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	70.7		88.4	UG/KG
505525	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	10.7		13.4	UG/KG
505525	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	57.4		71.8	UG/KG
505525	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	16		13.0	UG/KG
505525	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	55.5		45.1	UG/KG
505525	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	11.8		9.59	UG/KG
505525	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	48.8		39.7	UG/KG
505525	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	26.2		21.3	UG/KG
505525	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	6.61		5.37	UG/KG
505525	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	6.37		5.18	UG/KG
505525	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	5.28		4.29	UG/KG
505525	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.338	U	NA	UG/KG
505525	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.338	U	NA	UG/KG
505525	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.338	U	NA	UG/KG
505525	1	CS-10386-84-2	Dbob			80			PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
505525	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		123			PCT_REC
505625	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	128	D	173	UG/KG
505625	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	228	D	308	UG/KG
505625	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	822	D	1111	UG/KG
505625	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	249	D	336	UG/KG
505625	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	560	D	757	UG/KG
505625	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	146	D	197	UG/KG
505625	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	573	D	774	UG/KG
505625	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	DBOB	189	D	255	UG/KG
505625	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	DBOB	539	D	728	UG/KG
505625	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	DBOB	103	D	139	UG/KG
505625	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	DBOB	450	D	608	UG/KG
505625	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	DBOB	209	D	282	UG/KG
505625	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	DBOB	48.8	D	65.9	UG/KG
505625	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	DBOB	54.3	D	73.4	UG/KG
505625	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	DBOB	38.8	D	52.4	UG/KG
505625	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	DBOB	1.82	DU	NA	UG/KG
505625	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	DBOB	1.82	DU	NA	UG/KG
505625	5	2051-24-3	Decachlorobiphenyl - Homologue	209	DBOB	1.82	DU	NA	UG/KG
505625	5	CS-10386-84-2	Dbob			74	D		PCT_REC
505625	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		140	D		PCT_REC
505725	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	40.7		50.2	UG/KG
505725	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	79.9		98.6	UG/KG
505725	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	163		201	UG/KG
505725	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	69.9		86.3	UG/KG
505725	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	172		212	UG/KG
505725	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	33.1		40.9	UG/KG
505725	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	112		138	UG/KG
505725	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	33.5		27.5	UG/KG
505725	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	117		95.9	UG/KG
505725	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	21.8		17.9	UG/KG
505725	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	90		73.8	UG/KG
505725	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	76.1		62.4	UG/KG
505725	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	11		9.02	UG/KG
505725	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	11		9.02	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
505725	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	9.03		7.40	UG/KG
505725	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.348	U	NA	UG/KG
505725	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.348	U	NA	UG/KG
505725	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.348	U	NA	UG/KG
505725	1	CS-10386-84-2	Dbob			81			PCT_REC
505725	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		122			PCT_REC
505825	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	0.248	J	0.322	UG/KG
505825	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	0.284	J	0.369	UG/KG
505825	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	0.906	B	1.18	UG/KG
505825	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	0.388		0.504	UG/KG
505825	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	0.877	B	1.14	UG/KG
505825	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	0.176	J	0.229	UG/KG
505825	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	0.554		0.719	UG/KG
505825	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	0.326	U	NA	UG/KG
505825	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	0.665		0.599	UG/KG
505825	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	0.326	U	NA	UG/KG
505825	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	0.502		0.452	UG/KG
505825	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	0.577		0.520	UG/KG
505825	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.326	U	NA	UG/KG
505825	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.326	U	NA	UG/KG
505825	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.326	U	NA	UG/KG
505825	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.326	U	NA	UG/KG
505825	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.326	U	NA	UG/KG
505825	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.326	U	NA	UG/KG
505825	1	CS-10386-84-2	Dbob			77			PCT_REC
505825	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		111			PCT_REC
505925	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	5.84		8.59	UG/KG
505925	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	8.63		12.7	UG/KG
505925	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	34		50.0	UG/KG
505925	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	16.4		24.1	UG/KG
505925	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	27.1		39.9	UG/KG
505925	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	12.1		17.8	UG/KG
505925	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	35.5		52.2	UG/KG
505925	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	13.6		11.8	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
505925	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	44.8		39.0	UG/KG
505925	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	9.83		8.55	UG/KG
505925	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	37.3		32.4	UG/KG
505925	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	32.2		28.0	UG/KG
505925	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	3.03		2.63	UG/KG
505925	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	4.89		4.25	UG/KG
505925	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	3.47		3.02	UG/KG
505925	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.36	U	NA	UG/KG
505925	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.36	U	NA	UG/KG
505925	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.36	U	NA	UG/KG
505925	1	CS-10386-84-2	Dbob			68			PCT_REC
505925	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		115			PCT_REC
506025	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	27		35.1	UG/KG
506025	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	29.2		37.9	UG/KG
506025	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	80.7		105	UG/KG
506025	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	37.1		48.2	UG/KG
506025	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	62.7		81.4	UG/KG
506025	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	15.9		20.6	UG/KG
506025	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	61.7		80.1	UG/KG
506025	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	23.3		18.5	UG/KG
506025	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	62.6		49.7	UG/KG
506025	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	13.8		11.0	UG/KG
506025	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	56.8		45.1	UG/KG
506025	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	37.6		29.8	UG/KG
506025	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	5.84		4.63	UG/KG
506025	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	6.54		5.19	UG/KG
506025	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	4.29		3.40	UG/KG
506025	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.334	U	NA	UG/KG
506025	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.334	U	NA	UG/KG
506025	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.334	U	NA	UG/KG
506025	1	CS-10386-84-2	Dbob			77			PCT_REC
506025	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		126			PCT_REC
506125	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	1.04		1.41	UG/KG
506125	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	1.4	B	1.89	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))

Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
506125	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	4.88		6.59	UG/KG
506125	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	2.02		2.73	UG/KG
506125	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	4.37		5.91	UG/KG
506125	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	1.45		1.96	UG/KG
506125	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	4.69		6.34	UG/KG
506125	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	1.41		1.24	UG/KG
506125	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	4.91		4.31	UG/KG
506125	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	1.19		1.04	UG/KG
506125	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	4.86		4.26	UG/KG
506125	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	4.44		3.89	UG/KG
506125	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.462		0.405	UG/KG
506125	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.501		0.439	UG/KG
506125	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.485		0.425	UG/KG
506125	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.33	U	NA	UG/KG
506125	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.33	U	NA	UG/KG
506125	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.33	U	NA	UG/KG
506125	1	CS-10386-84-2	Dbob			74			PCT_REC
506125	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		114			PCT_REC
506225	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	20.4		27.2	UG/KG
506225	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	22		29.3	UG/KG
506225	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	84.8		113	UG/KG
506225	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	34		45.3	UG/KG
506225	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	71.9		95.9	UG/KG
506225	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	21.6		28.8	UG/KG
506225	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	86.5		115	UG/KG
506225	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	32		30.8	UG/KG
506225	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	94.9		91.3	UG/KG
506225	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	20.4		19.6	UG/KG
506225	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	86.1		82.8	UG/KG
506225	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	40.4		38.8	UG/KG
506225	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	6.62		6.37	UG/KG
506225	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	10.1		9.71	UG/KG
506225	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	6.65		6.39	UG/KG
506225	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.4	U	NA	UG/KG
506225	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.4	U	NA	UG/KG
506225	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.4	U	NA	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
506225	1	CS-10386-84-2	Dbob			75			PCT_REC
506225	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		104			PCT_REC
506325	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	0.776		0.958	UG/KG
506325	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	1.4	B	1.73	UG/KG
506325	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	2.66	B	3.28	UG/KG
506325	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	0.399		0.493	UG/KG
506325	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	2.66	B	3.28	UG/KG
506325	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	0.692		0.854	UG/KG
506325	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1.87		2.31	UG/KG
506325	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	0.31	J	0.290	UG/KG
506325	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	1.71		1.60	UG/KG
506325	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	0.333	U	NA	UG/KG
506325	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	1.63		1.52	UG/KG
506325	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	1.83		1.71	UG/KG
506325	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.333	U	NA	UG/KG
506325	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.333	U	NA	UG/KG
506325	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.266	J	0.249	UG/KG
506325	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.333	U	NA	UG/KG
506325	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.333	U	NA	UG/KG
506325	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.333	U	NA	UG/KG
506325	1	CS-10386-84-2	Dbob			81			PCT_REC
506325	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		107			PCT_REC
506425	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	4.76		6.26	UG/KG
506425	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	5.94		7.82	UG/KG
506425	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	20		26.3	UG/KG
506425	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	9.26		12.2	UG/KG
506425	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	15		19.7	UG/KG
506425	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	7.05		9.28	UG/KG
506425	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	14.4		18.9	UG/KG
506425	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	7.32		6.91	UG/KG
506425	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	22.2		20.9	UG/KG
506425	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	5.36		5.06	UG/KG
506425	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	19.7		18.6	UG/KG
506425	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	13		12.3	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
506425	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	1.8		1.70	UG/KG
506425	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	2.22		2.09	UG/KG
506425	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	1.83		1.73	UG/KG
506425	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.347	U	NA	UG/KG
506425	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.347	U	NA	UG/KG
506425	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.347	U	NA	UG/KG
506425	1	CS-10386-84-2	Dbob			76			PCT_REC
506425	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		106			PCT_REC
508235	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	10.7		13.5	UG/KG
508235	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	19.6		24.8	UG/KG
508235	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	59.2		74.9	UG/KG
508235	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	19.7		24.9	UG/KG
508235	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	40.8		51.6	UG/KG
508235	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	12		15.2	UG/KG
508235	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	37.2		47.1	UG/KG
508235	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	13.4		11.6	UG/KG
508235	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	43.1		37.2	UG/KG
508235	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	9.34		8.05	UG/KG
508235	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	39.8		34.3	UG/KG
508235	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	19.8		17.1	UG/KG
508235	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	2.43		2.09	UG/KG
508235	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	5.12		4.41	UG/KG
508235	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	3.59		3.09	UG/KG
508235	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.346	U	NA	UG/KG
508235	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.346	U	NA	UG/KG
508235	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.346	U	NA	UG/KG
508235	1	CS-10386-84-2	Dbob			79			PCT_REC
508235	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		116			PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab Project: L0912904

Lab: Alpha Analytical
Date Sampled: ~~9/22/09 through 9/26/09~~
Analysis: 18 NOAA PCB Congeners by GC/MS-SIM

No. Samples: 15
Matrix: Sediments

Data Element Acceptable	Preservation & HT	Surrogates %R 50-130%	LCS/LCSD SRM %R 40-140% RPD ≤ 30%	MS/MSD %R 40-140% RPD ≤ 30%	FD RPD≤ 30% SW RPD≤ 50% SED	MB < RL or < 5x Conc. in sample	RL meets QAPP req. for matrix?	Issues with Qualifiers?	Other
Yes	√	√	√	√	NA	√			
No							Estimate (J) 11 results < RL	Data qualified "D" by the lab for all samples analyzed DF > 1	Surrogate recovery correct all samples - see "Surrogate Recovery Correction _L0912904.pdf" and page 4 of this report for details

Did the Laboratory Narrative contain any issues which may affect data quality? Yes; however, all issues were reported in the summary data.
Were the %solids acceptable (>30%)? Yes all > 81% solids after air-drying. Prior to air-drying, % solids were 36-96%.

The data package consisted of a laboratory narrative, data sheets for samples, Method Blanks (MB), laboratory control samples (LCS), Matrix Spike/Matrix Spike Duplicates (MS/MSD), and the executed chain-of-custody. Summary information for initial and continuing calibrations were not present nor were raw data for samples and quality control (QC) reported. This Tier I+ review assumed that initial calibrations and qualitative and quantitative determination of the 18 NOAA Congeners were acceptable unless an issue was raised in the laboratory narrative.

Comments:

Samples were received intact at 1.6C to 3.1C in 4 shipments on the day of or day after sample collection . COC seals were absent from coolers; however, these were picked up from the site by a courier and delivered directly to the lab.

Samples were analyzed for % solids, TOC, and Grain size. All samples were also air-dried and subsequently analyzed for %solids - air-dried and 18 NOAA Congeners

HT: Air-dried samples were extracted on 10/6/09 and analyzed by 11/12/09 - HT met - No action required.

Surrogates: both surrogates (DBOB and BZ198) were recovered within criteria in all samples. LCS reported DBOB below criteria - no action since no direct impact on samples

LCS: %Rec for LCS and LCSD were all within 40-140% for all 18 NOAA Congeners spiked. RPDs were all above criteria (RPD > 30%) though except for BZ105 since LCS recovery, as also shown by surrogate spikes were all low compare dot LCSD. Since the MS/MSD RPDs were all OK, decision made, based on professional judgment, to not qualify sample data for LCS RPDs since LCS recoveries all OK and MS/MSD RPDs OK.

Date: ~~*4/8/10*~~
Data Reviewer: ~~*Nancy C. Rothman, Ph.D.*~~

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

Blank Action: Blanks Reviewed: Method Blank
No EB associated with samples

Blank ID	Contaminant / Level	Matrix Related?	Action Level / Action *	Sample and Reported Result	Corrected Result
Method Blank	None	-	-	No Blank Action required	

Comments:

SRM : NY/NJ Waterway Sediment. %Rec for Congeners in SRM were all within 40-140%, no action required.

MS/MSD : performed on sample 507125. Sample, MS and MSD were analyzed at DF=1. Spike level (7.9 µg/Kg) is appropriate to the matrix. %Rec OK for all 18 NOAA Congeners except BZ66 MS low (38%) - MSD and RPD OK and BZ52 MSD high (141%) - MS and RPD OK. Since the MS or MSD were acceptable and RPDs OK for these two Congeners, no Action taken.

FD: there were no FDs associated with the samples in this SDG. See FD precision in three other LTMV SDGs.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that data were surrogate recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting, Alpha's process for reporting, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events.

For samples where the surrogates are not recovered because of the dilution made for analysis of the sample, a DV Comment was added to the validated database file "K2" to indicate that the reported value was not surrogate recovery corrected. For samples with surrogates recovered, a separate excel worksheet has been constructed (Surrogate Recovery Correction _ L09XXXX.xls) showing the lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. Non-detects are reported by Alpha at the Reporting Limit (RL) consistent with the QAPP. Since non-detects will not be comparable between Alpha and Battelle because the basis for the non-detects are different (MDL vs. RL), non-detects and reporting limits are not surrogate recovery corrected in the LTMV data.

Date: ~~4/8/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

Lab: Alpha Analytical

Comments:

All samples in this SDG reported surrogate recoveries. The surrogate corrected values, as shown in Surrogate Recovery Correction_L0912904.pdf, replaced the Lab Result values in the validated database file, the data were qualified "K" to indicate this change to the Lab Result values, and a DV Comment was added, "K1", to indicate that the Reported result was recovery corrected.

The lab reported results for 18 NOAA Congeners + 2 surrogates. All samples analyzed at DF=1 reported RLs for individual Congeners and PQLs below those requested in the QAPP; therefore, sensitivity was acceptable for these data. Samples with DF > 1 also met sensitivity requirements since the DF >1 was performed to ensure that all detects were reported within the instrument calibration range.

The narrative did not raise any issues affecting quality that were not already addressed.

11 results were reported at levels < RL and was flagged "J" by the lab. These 11 results were accepted with Indeterminate bias due to uncertainty in quantitation at a level below the instrument calibration range

Qualifiers : All data were reported with "D" qualifiers to indicate results reported from a dilution analysis. As instructed by Battelle, these "D" qualifiers were not removed

Date: ***4/8/10***
Data Reviewer: ***Nancy C. Rothman, Ph.D.***

New Bedford Harbor
18 NOAA PCB Congeners Tier I+ Data Validation Checklist

Lab: Alpha Analytical

ACTIONS:

Preservation: Cooled to 4 ± 2°C. Sediments may be frozen for up to 1 year to preserve sample prior to extraction. If temperature outside criteria, use professional judgment.
HT: Extraction: waters -7d <HT< 14 d, J det/ J NDs; HT >14 d, J det/R ND
Extraction: sediment - 14d <HT< 28 d, J det/ J NDs; HT >28 d, J det/R ND (freezing arrests HT)
Analysis of extract: 40d < Extract HT < 60d, J det/ J NDs; Extract HT > 60d; J det/ R NDs
Surrogates: % Recovery > 130%, J det/Accept ND; 10% ≤ % Recovery < 50%, J det/J NDs; Recovery < 10%, J det/R NDs.
LCS/LCSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs. RPD > 30%, J det/UJ NDs.
MS/MSD: %Rec<10%, J det/ R NDs; 10% <%Rec<40%, J det/ J NDs; %Rec >140%, J det/Accept NDs- Unspiked Sample only. RPD > 30%, J det/UJ NDs.
FD: RPD > 30% (waters) or 50% (sediment) for results > 2 x RL, J det/UJ NDs. Use professional judgment for values < 2 x RL.

MBs: If contamination in blank(s) exists, Blank Action Level (BAL)= 5 x Level in Blank (on a sample-equivalent basis). If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.

RLs: Verify RLs are sample-specific and meet PQL given in QAPP Addendum 2009 UFP - Worksheet #15. If result > upper calibration range, J result; if
Other Qualifiers: Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B becomes either U or J based on actions taken for Method Blank (MB)
% solids: 10% < % solids < 30%, J det/R ND; % solids < 10%, R detects and NDs.
Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated

Reference: Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, Massachusetts, September 2009 and Region I, EPA-NE Pesticide/PCB Data Validation Functional Guidelines - Part III, Draft February 2004

Laboratory Data were reported using BZ# only - the following table shows a cross reference of BZ# to Congener Name and CAS Number

Congener Name	BZ #	CAS Number
2,4'-Dichlorobiphenyl	BZ#8	34883-43-7
2,2',5-Trichlorobiphenyl	BZ#18	37680-65-2
2,4,4'-Trichlorobiphenyl	BZ#28	7012-37-5
2,2',3,5'-Tetrachlorobiphenyl	BZ#44	41464-39-5
2,2',5,5'-Tetrachlorobiphenyl	BZ#52	35693-99-3
2,3',4,4'-Tetrachlorobiphenyl	BZ#66	32598-10-0
2,2',4,5,5'-Pentachlorobiphenyl	BZ#101	37680-73-2
2,3,3',4,4'-Pentachlorobiphenyl	BZ#105	32598-14-4
2,3',4,4',5-Pentachlorobiphenyl	BZ#118	31508-00-6

Congener Name	BZ #	CAS Number
2,2',3,3',4,4'-Hexachlorobiphenyl	BZ#128	38380-07-3
2,2',3,4,4',5'-Hexachlorobiphenyl	BZ#138	35065-28-2
2,2',4,4',5,5'-Hexachlorobiphenyl	BZ#153	35065-27-1
2,2',3,3',4,4',5-Heptachlorobiphenyl	BZ#170	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	BZ#180	35065-29-3
2,2',3,4',5,5',6-Heptachlorobiphenyl	BZ#187	52663-68-0
2,2',3,3',4,4',5,6-Octachlorobiphenyl	BZ#195	52663-78-2
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	BZ#206	40186-72-9
Decachlorobiphenyl	BZ#209	52663-77-1

Date: ~~4/8/10~~
Data Reviewer: ~~Nancy C. Rothman, Ph.D.~~

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912904

Lab: Alpha Analytical
Date Sampled: 9/22/09 through 9/26/09
Analysis: Total Organic Carbon (TOC) by modified EPA SW-846 Method 9060

No. Samples: 15
Matrix: Sediment

QC Met Criteria?	Preservation 4 ± 2°C	HT 28 days	RL 0.01% (100 mg/Kg)	MB < RL	Solid LCS = SRM 75-125% R	MS 75-125% R	MD RPD ≤ 25%	FD RPD≤ 50%	% Solids > 30%	Other
Yes	√	√	√	√	√	√	√	NA	√	
No										

Calibration criteria: Unless otherwise noted in the laboratory narrative, it was assumed that all initial and continuing calibration verifications (ICV/CCV) and initial and continuing calibration blank (ICB/CCB) results were acceptable (met LTM V QAPP 2009 requirements).

- Method Modification**:** Laboratory analyzed two replicates (burns) for TOC by Method 9060A rather than 4 (as in the method); this is consistent with LTMV QAPP requirements.

Samples were received intact. TOC analysis was performed on the samples "as-received" (i.e., not on "air-dried" sediments). Samples were frozen upon receipt to arrest holding time. Therefore, analyses, conducted on 10/29/09, were considered to have met HT criteria. No Action required.

MS/MD site sample used for QC: 507125. One replicate of the MS was high outside criteria at 127% recovery but the other replicate MS was acceptable at 105%. No action taken based on professional judment because the average MS recovery for this sample met criteria at 116% recovery and the SRM % Rec was acceptable, indicating acceptable accuracy for the TOC method in the sediment matrix.

Sample/FD site sample IDs: There were no FDs associated with the samples in this SDG - see other LTMV SDGs for FDs

Replicate (duplicate) precision between sample/MD and the replicate TOC results of each sample all had RPD < 25% - all replicates acceptable - No Action.

Data users should compute the arithmetic average of the two TOC replicate burns for each sample and use this average as the valid TOC result for that sample.

Data Package Completeness:

1. Were all required forms (results, summary QC, COC), as required to validate the data in accordance with EPA Region 1 present in the data package? **Yes**

2. Were all result forms for all samples listed on the chain-of-custody present in data package? **Yes**

If No, explain and request resubmittals:

Date: 4/9/10
Data Reviewer: *Nancy C. Rothman, Ph.D.*

New Bedford Harbor
LTM V 2009
TOC Tier I+ Data Validation Checklist

Lab Project: L0912904

Lab: Alpha Analytical

Data Quality / Usability Issues:

1. Did the Laboratory Narrative contain any issues which may affect data quality or usability that have not been already addressed on page 1? **No.**
If Yes, explain.

2. Explain further any actions taken based on summary QC, as necessary, below.

No further actions required.

All TOC data were accepted as reported by the laboratory and unchanged as a consequence of this data validation review.

QC Actions:

Pres./HT:	HT exceedance: J detects; Non-detects: R or UJ based on professional judgment. Freezing arrests HT. Temperature: outside control limits of 4 ± 2°C: use professional judgment.
Blanks:	Method Blanks and instrument blanks: TOC < RL unless all sample results are > 10 blank level. Detected results < matrix-matched blank level report as "U" (non-detected at level found). Professional judgment used for non-matrix matched blanks (e.g. aqueous blank associated with sediment samples).
Calibration Criteria:	Assume acceptable unless narrated. Exceedances of any calibration criteria will affect accuracy of the data: J detects and UJ non-detects. Severe exceedances of calibration criteria, to be determined based on professional judgment, may require rejection, R, of data.
ICV/CCV:	Assume acceptable unless narrated. If narrated as exceeded: %Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. If severe exceedance <50% recovery: R non-detects.
LCS/SRM:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 50%, may R non-detects & J detects but use professional judgment to accept results if MS is in-control indicating acceptable accuracy in sample matrix.
MS:	%Recoveries < lower control limit: J / UJ. %Recoveries > upper control limit: J detects. %Recoveries < 30%, may R non-detects & J detects but use professional judgment if sample concentration > 2x spike level.
MD:	Results > 5xRL: RPD >25%: J / UJ associated results in batch - to be determined using professional judgment. Results < 5xRL: difference > ±2xRL, J / UJ associated results in batch - to be determined using professional judgment.
FD:	Results > 5xRL: RPD >50%: J / UJ FD results only. Results < 5xRL: difference > ±4xRL,, J/UJ FD results only.
% Solids:	10% < % solids < 30%, J detects/R non-detects; % solids < 10%, R all results.

Qualifiers: U = analyte is non-detect at the sample-specific Reporting Limit (RL) (usable); UJ = non-detect is usable as an estimated value; J = result is usable as an estimated value; R = result is rejected due to severe QC exceedance and unusable for project objectives. Bias: L = Low; H = High; I = Indeterminate. QC Limits based on EPA Region 1 Inorganic DV guidance and LTM V QAPP 2009.

References: Quality Assurance Project Plan; New Bedford Harbor Long Term Monitoring V; New Bedford, Massachusetts (September 2009); Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; Publication EPA 540-R-04-004, October 2004.

Date: *4/9/10*
Data Reviewer: *Nancy C. Rothman, Ph.D.*

Data Validation Report
EPA Region I Tier I+
18 NOAA PCB Congeners by 8270C and TOC by Method 9060

Client/Company:	Woods Hole Group, Inc. (WHG)
Site/Project Name:	New Bedford Harbor Superfund Site – Long Term Monitoring (LTM) V
Laboratory:	Alpha Analytical – Mansfield, MA
Lab Project Number(s):	L0912904
Date(s) of Collection:	September 22, 2009 through September 26, 2009
Number / Type Samples & Analyses	15 sediment samples for 18 NOAA PCB Congeners by EPA SW-846 Method 8270C and Total Organic Carbon (TOC) by Method 9060
Senior Data Reviewers:	Nancy C. Rothman, PhD, New Environmental Horizons, Inc. Susan D. Chapnick, New Environmental Horizons, Inc.
Date Completed:	April 9, 2010

This EPA Region I Tier I+ validation for 18 NOAA PCB Congeners and TOC was performed with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Quality Assurance Project Plan, New Bedford Harbor Long Term Monitoring V, New Bedford, MA,* prepared by Woods Hole Group, Inc., September 2009 (LTMV QAPP); Region I, *EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses,* December 1996, including *Part III – Pesticide/PCB Data Validation Functional Guidelines*, Draft February 2004; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to generate an electronic deliverable of validated results with project-specific data validation qualifiers added.

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474
Phone: (908) 874-5686 ◊ (781) 643-4294
Email: nrothman_neh@comcast.net ◊ s.chapnick@comcast.net
www.neh-inc.com

The Data Validation Report consists of three parts:

- This Data Validation Report letter summarizing the actions taken;
- The database file of validated sample results with validation qualifiers, bias, and comments added based on actions taken; and
- Data Validation Checklists for TOC and PCB Congeners including the Surrogate Recovery Correction worksheet completed during this validation to document the Tier I+ review. The Checklists are an integral part of the DV Report as they contain comprehensive details of all quality control (QC) reviewed, the acceptance criteria used, and the professional judgment and actions taken.

I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification analytical parameters reviewed and the sample type (e.g., field sample, field duplicate (FD), field equipment blank (EB), as applicable), are listed below in Table 1.

Table 1. Sample Descriptions and Analytical Parameters Validated

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
506525	L0912904-01	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506625	L0912904-02	9/26/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506725	L0912904-03	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506825	L0912904-04	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
506925	L0912904-05	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507025	L0912904-06	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507125	L0912904-07	9/24/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507225	L0912904-08	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507325	L0912904-09	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507425	L0912904-10	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507525	L0912904-11	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Table 1. Sample Descriptions and Analytical Parameters Validated - *continued*

Sample ID	Lab Sample ID	Collection Date	Matrix	Analytical Parameters[1]	Sample Type
507625	L0912904-12	9/23/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507725	L0912904-13	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
504525	L0912904-14	9/25/09	Sediment	TOC & 18 NOAA Congeners	Field Sample
507925	L0912904-15	9/22/09	Sediment	TOC & 18 NOAA Congeners	Field Sample

Analytical method references:
18 NOAA Congeners: *Determination of PCB Homologs, Individual Congeners, and Pesticides by Gas Chromatography/Mass Spectrometry in the Select Ion Monitoring (SIM) Mode (EPA 680 & 8270C),* Alpha SOP O-015, Rev. 2, June 19, 2006.
TOC: SW-846 Method 9060 modified, Alpha SOP W-028

[1] Grain Size analysis was also performed on these samples; however, data validation for this parameter was not required. TOC analysis was performed on "as-received" sediments while the 18 NOAA Congeners were performed using "air-dried" sediments.

II. Data Validation Report Summary

This Data Validation Report represents a Tier I+ validation of the 18 NOAA PCB Congener and TOC sample results and summary QC (method and matrix), which were used to evaluate accuracy, precision, and sensitivity compared to the NBH LTMV QAPP requirements.

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times and preservation criteria
- Blank results including Method Blanks, Equipment Blanks, & Trip blanks
- Laboratory Control Sample (LCS) recoveries / LCS Duplicate Recoveries
- Standard Reference Material (SRM) Recoveries
- Surrogate Recoveries
- Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Recoveries
- MS/MSD, LCS/LCSD, sample/Laboratory Duplicate (LD), or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)
- Sample result reporting (including compound lists, reporting limits, and units)
- Calibration criteria* (including tune criteria, initial calibration and continuing calibration verification)
- Internal Standard (IS) Recoveries*

- Retention Time windows*
- Other method-specific QC if applicable and reported* (e.g., serial dilution results for metals)
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

* This QC element is reviewed associated with the Tier II-type validation only. For Tier I+ validations this QC element is assumed to be acceptable unless otherwise noted in the laboratory narrative.

Based on this Tier I+ validation of the 18 NOAA PCB Congeners and TOC, all results were considered usable for project decisions based on a comparison to the NBH LTMV QAPP requirements and with the understanding of the potential uncertainty (bias) in the qualified results summarized in Table 2. NEH generated electronic validated results based on the project database file received from WHG for these data, by updating the following database fields for field samples and field QC only: VALID_QUAL, VALIDATION_LEVEL, VALIDATION, VALID_DATE, BIAS, and DV_COMMENT.

The remainder of this report documents "exceptions" to the NBH LTMV QAPP criteria or clarifications of data reported. QC elements not discussed below met all QAPP criteria. The full documentation of all QC elements reviewed during the Tier I+ validation are presented in the attached Data Validation Checklists.

Sample Receipt and Holding Time

The sediment samples were received at the laboratory intact in four shipments at 1.6°C to 3.1°C. Aliquots of the "as-received" samples were analyzed for TOC, Grain Size, and percent solids. Samples were frozen upon receipt to arrest holding time for TOC analysis. All samples had percent solids content of 36-96%; therefore, these sediment samples were air-dried, as required by the QAPP, prior to Congener analysis. After air-drying, the percent solids content for all samples was greater than 81%.

Accuracy

The Method Blank was non-detect for all PCB Congeners and TOC; therefore, blank action was not required. There was no Equipment Blank required to be collected along with these sediment samples.

Congener recoveries in the MS/MSD analysis conducted on sample 507125 were acceptable except for 2,3',4,4'-Tetrachlorobiphenyl (BZ#66), which recovered low compared to criteria in the MS and 2,2',5,5'-Tetrachlorobiphenyl (BZ#52), which recovered high compared to criteria in the MSD. Since the other spike (MSD or MS) was acceptable for these Congeners, no action was taken to qualify the unspiked sample based on professional judgment.

All TOC analyses were performed in replicate (duplicate burns), as a method modification consistent with the site QAPP requirements. The MS recoveries for TOC performed on sample 507125 were high in one replicate and within criteria in the other replicate. No action was taken based on professional judgment because the average MS recovery (of the two replicates) met criteria and the SRM recoveries were in control, indicating acceptable accuracy of the TOC method in the sediment matrix.

The Standard Reference Material for PCB Congeners (SRM NY/NJ Waterway Sediment) and TOC SRM reported acceptable recoveries for all Congeners and TOC certified in these SRMs.

Precision

LCS/LCSD precision was unacceptable for all 18 NOAA Congeners except for 2,3,3',4,4'-Pentachlorobiphenyl (BZ#105), since the LCS recoveries were all low within criteria and the LCSD were all high within criteria. Since the MS/MSD showed acceptable precision and since the imprecision based on high relative percent differences (RPDs) in the LCS/LCSD were obviously related to the LCS having lower extraction efficiency than the LCSD, no action to qualify sample data was taken based on professional judgment.

MS/MSD precision in the analysis of sample 507125 was acceptable for all 18 NOAA Congeners. Sample/MD precision for TOC analysis of 507125, as well as precision between all replicates of TOC reported for each sample, was acceptable. These results are an indication of acceptable precision in the laboratory analysis of this matrix for PCB Congeners and TOC.

There were no Field Duplicates associated with the samples in this SDG. Three sets of Sample/FD were collected and are reported for the overall LTMV program. Data users are directed to the other LTMV DV reports for FD information.

Sensitivity & Reporting

All samples met sensitivity requirements for PCB Congeners and TOC as indicated in NBH LTMV QAPP Table 1-3.

Data users should compute the average of the TOC replicate results (duplicate burns) for each sample and use this arithmetic average as the valid result for TOC.

An investigation by NEH into previous reporting of LTM data by Battelle indicated that Congener data were surrogate-recovery corrected and that non-detects were reported at Method Detection Limits (MDLs). These MDLs were surrogate-recovery corrected during the MDL study but were not corrected again based upon individual sample surrogate recovery results. A technical memo was written by NEH on January 29, 2010 (approved by Lee Weishar, WHG, and Mark Koenig, USACE), explaining Battelle's process for reporting previous LTM data (LTMIV and prior monitoring data), Alpha's process for reporting LTMV results, and recommendations for adjustment of the current LTMV data so that these data may be comparable to the data from previous sampling events reported by Battelle.

For Congener samples where the surrogates are not recovered because of analytical dilutions or when results were non-detect, the DV_COMMENT "K2" was added to the validated database file to indicate that the reported value was not surrogate-recovery corrected.

For Congener samples where surrogate-recovery correction was performed, a separate Surrogate Recovery Correction excel worksheet was constructed (as part of the Data Validation Checklist process) showing the original lab reported result, identification of which surrogate was used for correction of each of the 18 NOAA Congeners, and the Surrogate Corrected Result. For surrogate-corrected results, the project database file was updated as follows:

1. The surrogate-corrected value, as shown in the Surrogate Recovery Correction worksheet, replaced the lab RESULT value in the validated database file;
2. The qualifier "K" was added to the VALID_ QUAL field to identify the result as surrogate-recovery corrected; and
3. "K1" was added to the DV_COMMENT field as the DV code to further indicate that the reported result was surrogate-recovery corrected.

Non-detects for Congeners were reported by Alpha at the Reporting Limit (RL), consistent with the LTMV QAPP requirements. Since non-detected results are not comparable between Alpha and Battelle because the basis for the non-detects are different (RL *vs*. MDL), non-detects and reporting limits were not surrogate-recovery corrected in the LTMV data.

For this SDG, all Congener samples reported surrogate recoveries. Surrogate-recovery correction was performed for all samples as documented in *Surrogate Recovery Correction_L0912904*. Actions taken are listed below in Table 2.

Results reported below the sample-specific RLs are considered uncertain because they are below the calibration range. During this review, data below the sample-specific RLs were qualified as estimated (J), as shown in Table 2, and as described in the Data Validation Checklist.

The laboratory reported all results from DF > 1 analyses with a "D" qualifier. At Battelle's request, these "D" qualifiers were maintained during the DV process.

Table 2. Summary of Data Validation Actions

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
504525	All Congeners except: Decachlorobiphenyl - Homologue	DK		Reported value is surrogate recovery corrected
504525	Decachlorobiphenyl - Homologue	DJK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
506525	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl	K		Reported value is surrogate recovery corrected
506525 & 506625	2,2',3,3',4,4',5,6-Octachlorobiphenyl	U		Reported value is not surrogate recovery corrected
506625	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl & Decachlorobiphenyl - Homologue	K		Reported value is surrogate recovery corrected
506625	Decachlorobiphenyl - Homologue	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
506725	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6 Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	K		Reported value is surrogate recovery corrected
506725	2,2',3,3',4,4',5,6-Octachlorobiphenyl	U		Reported value is not surrogate recovery corrected
506725	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
506825	All Congeners except: 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	K		Reported value is surrogate recovery corrected
506825	2,2',3,3',4,4',5-Heptachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
506825	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected
506925, 507025, 507225, 507325, 507425, & 507625	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	K		Reported value is surrogate recovery corrected
506925, 507025, 507225, 507325, 507425, & 507625	2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected
507125	All Congeners except: 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	K		Reported value is surrogate recovery corrected
507125	2,2',3,3',4,4',5,6-Octachlorobiphenyl & 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	U		Reported value is not surrogate recovery corrected
507125	Decachlorobiphenyl - Homologue	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
507525	2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3,3',4,4'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,3',4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	K		Reported value is surrogate recovery corrected
507525	2,2',3,4,4',5,5'-Heptachlorobiphenyl & 2,2',3,4',5,5',6-Heptachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
507525	2,2',3,3',4,4'-Hexachlorobiphenyl 2,2',3,3',4,4',5-Heptachlorobiphenyl 2,2',3,3',4,4',5,6-Octachlorobiphenyl 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected
507725	2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	K		Reported value is surrogate recovery corrected
507725	2,3,3',4,4'-Pentachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
507725	2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,4',5,5',6-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected

Table 2. Summary of Data Validation Actions - *continued*

Field Sample ID	Analyte	Qualifier	Bias	Validation Comments
507925	2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5,5'-Pentachlorobiphenyl, 2,3,3',4,4'-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, & 2,2',4,4',5,5'-Hexachlorobiphenyl	K		Reported value is surrogate recovery corrected
507925	2,2',3,4,4',5,5'-Heptachlorobiphenyl & 2,2',3,4',5,5',6-Heptachlorobiphenyl	JK	I	Reported value is surrogate recovery corrected + Result uncertain below the calibration range
507925	2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl & Decachlorobiphenyl - Homologue	U		Reported value is not surrogate recovery corrected

Qualifiers: U = Analyte is non-detect at or above the sample-specific reporting limit (RL); UJ = Non-detect is estimated at the RL; J = Result is estimated; EB = analyte detected in associated equipment blank; EMPC = estimated maximum possible concentration (PCB congeners only); R = Result is rejected and is unusable for project decisions; D = result reported from a dilution analysis (added by laboratory); K = Result is Surrogate Recovery Corrected.

Bias: L = Low; H = High; I = Indeterminate

Abbreviations used in Table 2: none

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
504525	5	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	41.9	D	76.2	UG/KG
504525	5	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	196	D	356	UG/KG
504525	5	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	591	D	1075	UG/KG
504525	5	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	192	D	349	UG/KG
504525	5	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	584	D	1062	UG/KG
504525	5	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	78	D	142	UG/KG
504525	5	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	420	D	764	UG/KG
504525	5	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	98.8	D	112	UG/KG
504525	5	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	363	D	413	UG/KG
504525	5	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	71.1	D	80.8	UG/KG
504525	5	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	319	D	363	UG/KG
504525	5	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	192	D	218	UG/KG
504525	5	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	34.1	D	38.8	UG/KG
504525	5	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	47.8	D	54.3	UG/KG
504525	5	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	32.7	D	37.2	UG/KG
504525	5	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	2.48	D	2.82	UG/KG
504525	5	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	3.46	D	3.93	UG/KG
504525	5	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	1.02	DJ	1.16	UG/KG
504525	5	CS-10386-84-2	Dbob			55	D		PCT_REC
504525	5	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		88	D		PCT_REC
506525	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	21.2		28.6	UG/KG
506525	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	51.4		69.5	UG/KG
506525	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	127		172	UG/KG
506525	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	64.8		87.6	UG/KG
506525	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	131		177	UG/KG
506525	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	32		43.2	UG/KG
506525	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	75.5		102	UG/KG
506525	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	28.8		29.7	UG/KG
506525	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	105		108	UG/KG
506525	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	22.2		22.9	UG/KG
506525	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	90.2		93.0	UG/KG
506525	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	56.1		57.8	UG/KG
506525	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	7.1		7.32	UG/KG
506525	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	10.9		11.2	UG/KG
506525	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	6.24		6.43	UG/KG
506525	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.376	U	NA	UG/KG
506525	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.744		0.767	UG/KG
506525	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.44		0.454	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
506525	1	CS-10386-84-2	Dbob			74			PCT_REC
506525	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		97			PCT_REC
506625	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	14.3		18.6	UG/KG
506625	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	14.9		19.4	UG/KG
506625	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	54.3		70.5	UG/KG
506625	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	16.6		21.6	UG/KG
506625	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	36.1		46.9	UG/KG
506625	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	12.7		16.5	UG/KG
506625	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	41		53.2	UG/KG
506625	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	13.8		13.0	UG/KG
506625	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	42.4		40.0	UG/KG
506625	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	9.14		8.62	UG/KG
506625	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	36.8		34.7	UG/KG
506625	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	28.2		26.6	UG/KG
506625	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	2.21		2.08	UG/KG
506625	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	4.72		4.45	UG/KG
506625	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	2.69		2.54	UG/KG
506625	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.379	U	NA	UG/KG
506625	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.383		0.361	UG/KG
506625	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.269	J	0.254	UG/KG
506625	1	CS-10386-84-2	Dbob			77			PCT_REC
506625	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		106			PCT_REC
506725	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	6.72		9.21	UG/KG
506725	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	7		9.59	UG/KG
506725	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	28		38.4	UG/KG
506725	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	8.63		11.8	UG/KG
506725	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	17.2		23.6	UG/KG
506725	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	5.74		7.86	UG/KG
506725	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	19.4		26.6	UG/KG
506725	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	5.81		6.05	UG/KG
506725	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	21.4		22.3	UG/KG
506725	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	5.21		5.43	UG/KG
506725	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	17.8		18.5	UG/KG
506725	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	15.7		16.4	UG/KG
506725	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	1.15		1.20	UG/KG
506725	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	2.46		2.56	UG/KG
506725	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	1.61		1.68	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
506725	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.338	U	NA	UG/KG
506725	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.182	J	0.190	UG/KG
506725	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.176	J	0.183	UG/KG
506725	1	CS-10386-84-2	Dbob			73			PCT_REC
506725	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		96			PCT_REC
506825	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	1.82		2.53	UG/KG
506825	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	1.87		2.60	UG/KG
506825	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	7.04		9.78	UG/KG
506825	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	2.48		3.44	UG/KG
506825	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	5.24		7.28	UG/KG
506825	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	1.75		2.43	UG/KG
506825	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	5.31		7.38	UG/KG
506825	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	2.27		2.52	UG/KG
506825	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	6.29		6.99	UG/KG
506825	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	2.32		2.58	UG/KG
506825	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	6.04		6.71	UG/KG
506825	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	5.04		5.60	UG/KG
506825	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.34	J	0.378	UG/KG
506825	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.569		0.632	UG/KG
506825	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.431		0.479	UG/KG
506825	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.395	U	NA	UG/KG
506825	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.395	U	NA	UG/KG
506825	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.395	U	NA	UG/KG
506825	1	CS-10386-84-2	Dbob			72			PCT_REC
506825	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		90			PCT_REC
506925	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	2.71		3.66	UG/KG
506925	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	3.1		4.19	UG/KG
506925	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	11.7		15.8	UG/KG
506925	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	3.74		5.05	UG/KG
506925	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	9.97		13.5	UG/KG
506925	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	3.41		4.61	UG/KG
506925	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	11.9		16.1	UG/KG
506925	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	3.51		3.69	UG/KG
506925	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	13		13.7	UG/KG
506925	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	3.54		3.73	UG/KG
506925	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	12.4		13.1	UG/KG
506925	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	7.84		8.25	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
506925	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.756		0.796	UG/KG
506925	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	1.96		2.06	UG/KG
506925	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	1.37		1.44	UG/KG
506925	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.355	U	NA	UG/KG
506925	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.355	U	NA	UG/KG
506925	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.355	U	NA	UG/KG
506925	1	CS-10386-84-2	Dbob			74			PCT_REC
506925	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		95			PCT_REC
507025	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	5.4		7.61	UG/KG
507025	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	4.28		6.03	UG/KG
507025	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	20.8		29.3	UG/KG
507025	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	5.4		7.61	UG/KG
507025	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	12		16.9	UG/KG
507025	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	4.61		6.49	UG/KG
507025	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	13.2		18.6	UG/KG
507025	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	4.83		5.68	UG/KG
507025	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	16.4		19.3	UG/KG
507025	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	3.13		3.68	UG/KG
507025	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	12.8		15.1	UG/KG
507025	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	8.12		9.55	UG/KG
507025	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.9		1.06	UG/KG
507025	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	1.88		2.21	UG/KG
507025	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.971		1.14	UG/KG
507025	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.395	U	NA	UG/KG
507025	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.395	U	NA	UG/KG
507025	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.395	U	NA	UG/KG
507025	1	CS-10386-84-2	Dbob			71			PCT_REC
507025	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		85			PCT_REC
507125	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	3.63		4.91	UG/KG
507125	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	3.63		4.91	UG/KG
507125	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	15.4		20.8	UG/KG
507125	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	4.38		5.92	UG/KG
507125	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	10.3		13.9	UG/KG
507125	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	3.78		5.11	UG/KG
507125	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	11.6		15.7	UG/KG
507125	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	3.18		3.74	UG/KG
507125	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	13		15.3	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
507125	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	3.79		4.46	UG/KG
507125	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	11		12.9	UG/KG
507125	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	10.7		12.6	UG/KG
507125	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.715		0.841	UG/KG
507125	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	1.45		1.71	UG/KG
507125	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	1.17		1.38	UG/KG
507125	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.393	U	NA	UG/KG
507125	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.393	U	NA	UG/KG
507125	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.334	J	0.393	UG/KG
507125	1	CS-10386-84-2	Dbob			74			PCT_REC
507125	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		85			PCT_REC
507225	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	3.45		5.48	UG/KG
507225	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	3.5		5.56	UG/KG
507225	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	13.2		21.0	UG/KG
507225	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	4.11		6.52	UG/KG
507225	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	10.8		17.1	UG/KG
507225	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	3.34		5.30	UG/KG
507225	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	11.8		18.7	UG/KG
507225	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	3.8		4.63	UG/KG
507225	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	13.1		16.0	UG/KG
507225	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	3.75		4.57	UG/KG
507225	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	12.9		15.7	UG/KG
507225	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	10.7		13.0	UG/KG
507225	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.753		0.918	UG/KG
507225	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	1.76		2.15	UG/KG
507225	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	1.3		1.59	UG/KG
507225	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.349	U	NA	UG/KG
507225	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.349	U	NA	UG/KG
507225	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.349	U	NA	UG/KG
507225	1	CS-10386-84-2	Dbob			63			PCT_REC
507225	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		82			PCT_REC
507325	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	2.87		4.10	UG/KG
507325	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	2.59		3.70	UG/KG
507325	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	10		14.3	UG/KG
507325	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	2.18		3.11	UG/KG
507325	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	6.75		9.64	UG/KG
507325	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	3.05		4.36	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
507325	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	7.32		10.5	UG/KG
507325	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	2.7		3.03	UG/KG
507325	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	9.23		10.4	UG/KG
507325	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	2.51		2.82	UG/KG
507325	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	7.71		8.66	UG/KG
507325	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	6.54		7.35	UG/KG
507325	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.47		0.528	UG/KG
507325	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.712		0.800	UG/KG
507325	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.672		0.755	UG/KG
507325	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.367	U	NA	UG/KG
507325	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.367	U	NA	UG/KG
507325	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.367	U	NA	UG/KG
507325	1	CS-10386-84-2	Dbob			70			PCT_REC
507325	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		89			PCT_REC
507425	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	3.36		4.87	UG/KG
507425	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	3.29		4.77	UG/KG
507425	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	12.3		17.8	UG/KG
507425	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	2.85		4.13	UG/KG
507425	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	8.21		11.9	UG/KG
507425	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	2.92		4.23	UG/KG
507425	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	9.39		13.6	UG/KG
507425	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	3.32		3.82	UG/KG
507425	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	11.8		13.6	UG/KG
507425	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	2.8		3.22	UG/KG
507425	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	9.79		11.3	UG/KG
507425	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	8.66		10.0	UG/KG
507425	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.713		0.820	UG/KG
507425	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	1.06		1.22	UG/KG
507425	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.845		0.971	UG/KG
507425	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.379	U	NA	UG/KG
507425	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.379	U	NA	UG/KG
507425	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.379	U	NA	UG/KG
507425	1	CS-10386-84-2	Dbob			69			PCT_REC
507425	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		87			PCT_REC
507525	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	0.666		0.912	UG/KG
507525	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	0.696		0.953	UG/KG
507525	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	2.42		3.32	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
507525	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	0.43		0.589	UG/KG
507525	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1.94		2.66	UG/KG
507525	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	0.581		0.796	UG/KG
507525	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1.8		2.47	UG/KG
507525	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	0.532		0.605	UG/KG
507525	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	2.22		2.52	UG/KG
507525	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	0.328	U	NA	UG/KG
507525	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	2.35		2.67	UG/KG
507525	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	1.82		2.07	UG/KG
507525	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.328	U	NA	UG/KG
507525	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.23	J	0.261	UG/KG
507525	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.19	J	0.216	UG/KG
507525	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.328	U	NA	UG/KG
507525	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.328	U	NA	UG/KG
507525	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.328	U	NA	UG/KG
507525	1	CS-10386-84-2	Dbob			73			PCT_REC
507525	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		88			PCT_REC
507625	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	3		4.00	UG/KG
507625	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	3.11		4.15	UG/KG
507625	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	10.7		14.3	UG/KG
507625	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	1.07		1.43	UG/KG
507625	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	7.81		10.4	UG/KG
507625	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	2.13		2.84	UG/KG
507625	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	8.38		11.2	UG/KG
507625	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	3.64		3.87	UG/KG
507625	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	10.6		11.3	UG/KG
507625	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	3.83		4.07	UG/KG
507625	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	10.2		10.9	UG/KG
507625	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	8.59		9.14	UG/KG
507625	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.56		0.596	UG/KG
507625	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	1.53		1.63	UG/KG
507625	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.585		0.622	UG/KG
507625	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.352	U	NA	UG/KG
507625	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.352	U	NA	UG/KG
507625	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.352	U	NA	UG/KG
507625	1	CS-10386-84-2	Dbob			75			PCT_REC
507625	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		94			PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
507725	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	0.486		0.657	UG/KG
507725	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	0.489		0.661	UG/KG
507725	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	1.39		1.88	UG/KG
507725	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	0.326	U	NA	UG/KG
507725	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1.22		1.65	UG/KG
507725	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	0.336		0.454	UG/KG
507725	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1.02		1.38	UG/KG
507725	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	0.254	J	0.265	UG/KG
507725	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	1.23		1.28	UG/KG
507725	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	0.326	U	NA	UG/KG
507725	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	1.12		1.17	UG/KG
507725	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	1.04		1.08	UG/KG
507725	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.326	U	NA	UG/KG
507725	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.326	U	NA	UG/KG
507725	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.326	U	NA	UG/KG
507725	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.326	U	NA	UG/KG
507725	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.326	U	NA	UG/KG
507725	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.326	U	NA	UG/KG
507725	1	CS-10386-84-2	Dbob			74			PCT_REC
507725	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		96			PCT_REC
507925	1	34883-43-7	2,4'-Dichlorobiphenyl	8	DBOB	0.545		0.717	UG/KG
507925	1	37680-65-2	2,2',5-Trichlorobiphenyl	18	DBOB	0.734		0.966	UG/KG
507925	1	7012-37-5	2,4,4'-Trichlorobiphenyl	28	DBOB	2.36		3.11	UG/KG
507925	1	41464-39-5	2,2',3,5'-Tetrachlorobiphenyl	44	DBOB	0.946		1.24	UG/KG
507925	1	35693-99-3	2,2',5,5'-Tetrachlorobiphenyl	52	DBOB	1.91		2.51	UG/KG
507925	1	32598-10-0	2,3',4,4'-Tetrachlorobiphenyl	66	DBOB	0.535		0.704	UG/KG
507925	1	37680-73-2	2,2',4,5,5'-Pentachlorobiphenyl	101	DBOB	1.66		2.18	UG/KG
507925	1	32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl	105	BZ198	0.767		0.816	UG/KG
507925	1	31508-00-6	2,3',4,4',5-Pentachlorobiphenyl	118	BZ198	1.8		1.91	UG/KG
507925	1	38380-07-3	2,2',3,3',4,4'-Hexachlorobiphenyl	128	BZ198	0.424		0.451	UG/KG
507925	1	35065-28-2	2,2',3,4,4',5'-Hexachlorobiphenyl	138	BZ198	2.29		2.44	UG/KG
507925	1	35065-27-1	2,2',4,4',5,5'-Hexachlorobiphenyl	153	BZ198	1.89		2.01	UG/KG
507925	1	35065-30-6	2,2',3,3',4,4',5-Heptachlorobiphenyl	170	BZ198	0.336	U	NA	UG/KG
507925	1	35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	BZ198	0.303	J	0.322	UG/KG
507925	1	52663-68-0	2,2',3,4',5,5',6-Heptachlorobiphenyl	187	BZ198	0.293	J	0.312	UG/KG
507925	1	52663-78-2	2,2',3,3',4,4',5,6-Octachlorobiphenyl	195	BZ198	0.336	U	NA	UG/KG
507925	1	40186-72-9	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	206	BZ198	0.336	U	NA	UG/KG
507925	1	2051-24-3	Decachlorobiphenyl - Homologue	209	BZ198	0.336	U	NA	UG/KG

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

SAMP_ID	DILUTION	PARAM_CODE	DESCRIPTION	BZ#	Surrogate Used for Correction	LAB RESULT	LAB_QUAL	Surrogate Corrected RESULT*	UNIT
507925	1	CS-10386-84-2	Dbob			76			PCT_REC
507925	1	CS-68194-17-2	2,2',3,3',4,5,5',6-Octachlorobiphenyl (Obsolete)	198		94			PCT_REC

*Corrected Result = Lab Result x (100/(Surrogate % Recovery))
Please see the LTMV DV Checklist for a complete description of the surrogate correction issues.

APPENDIX B. PCB SURROGATE RECOVERY CORRECTION TECHNICAL MEMORANDUM

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Technical Memorandum

To: Lee Weishar, Woods Hole Group, Inc.
From: Nancy C. Rothman, New Environmental Horizons, Inc.
Date: January 29, 2010
Re: PCB Surrogate Recovery Correction for LTMV

During the development of the New Bedford Harbor Long Term Monitoring Program V (LTMV) Quality Assurance Project Plan, it was determined that historical LTM PCB Congener data were surrogate recovery corrected by Battelle, at the laboratory level, prior to inclusion of the data into the project database. In December 2009, I had the opportunity of speaking with a chemist at Battelle, who worked on the LTM IV project, and found out the following about their procedures for reporting of PCB Congener data:

- Battelle was aware that samples may require dilution for accurate quantitation; therefore, higher than normal spike levels of surrogates were added to the samples prior to extraction. Quantitation of the 18 NOAA Congeners was performed by Gas Chromatography-Electron Capture Detection (GC-ECD).
- All efforts were made to have surrogate recoveries reported for each sample so that multiple dilutions of some sample extracts were performed to not only quantitate the PCB Congeners but to also quantitate the surrogates.
- Two surrogates, PCB34 and PCB112, were used for recovery correcting sample data. PCB34 was used to recovery correct the following congeners: PCB8, PCB18, PCB28, PCB44, PCB52, PCB66, and PCB101. PCB112 was used to recovery correct the remaining 11 congeners (PCB105, PCB118, PCB128, PCB138, PCB153, PCB170, PCB180, PCB187, PCB195, PCB206, and PCB209).
- Battelle used surrogate recovery information from the lowest valid dilution analysis of an extract to associate with all other dilution data for that extract. For example, if a dilution factor (DF) = 10 were performed resulting in acceptable recovery for surrogates PCB34 and PCB112, yet the extract required a DF=100 to accurately quantitate the 18 NOAA Congeners, the DF=10 surrogate recoveries were used to correct the DF=100 sample data.
- Recovery correction was performed on results retaining all possible calculation values (e.g., if output of the GC-ECD data system reported a result with 10 numbers, the entire data output was used in performing correction).

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474
Phone: (908) 874-5686 ◊ (781) 643-4294
Email: nrothman-neh@comcast.net ◊ s.chapnick@comcast.net
www.neh-inc.com

- If for some reason one of the surrogates was not recovered, or recovered poorly (i.e., below acceptance criteria), all 18 NOAA Congeners were corrected using the one surrogate with acceptable recovery.
- Recovery Correction for detected results occurred as follows:

  Corrected Result = Uncorrected Result x (100/(Surrogate % Recovery))

  For example if an uncorrected congener result was 128.5398 µg/Kg (retaining all values reported by the GC-ECD data system) and the surrogate was recovered at 85.46% (also retaining all values reported by GC system), then the corrected result is:

  128.5398 (100/85.46) = 150.4093 µg/Kg

  If instead the surrogate was recovered at 112.64%, then the corrected result is:

  128.5398 (100/112.64) = 114.1156 µg/Kg

- Battelle reported non-detects at sample-specific Method Detection Limits (MDLs). These MDLs were surrogate recovery corrected when they were generated originally but Battelle did not recovery correct the MDLs on a sample-specific basis for LTMIV.
- Battelle currently has added a comment code to the historical LTM data to indicate that these results have been surrogate recovery corrected.

There are some notable differences in how LTMV data are being generated by Alpha as compared to the Battelle procedures listed above: 1) Alpha did not use higher than normal levels for spiking of surrogates prior to extraction; 2) Alpha has generated PCB Congener results using Gas Chromatography/Mass Spectrometry operated in the Selected Ion Monitoring mode (GC/MS-SIM); 3) the surrogates used by Alpha are 4,4'-Dibromooctafluorobiphenyl (DBOB) and PCB198; 4) all data generated by Alpha for the 18 NOAA Congeners are ***not*** surrogate recovery corrected, as required by laboratory policy; 5) data are reported to 3 significant figures and surrogates to 2-to-3 significant figures at most as required by the methods; and 6) non-detects are reported at the sample-specific reporting limit (RL)

To ensure data comparability between the various phases of the LTM project, it has been decided that the LTMV data need recovery correction. After discussing this issue with the Battelle database administrator, Paul Dragos, it is proposed that NEH will perform this recovery correction during the data validation process. The recommended procedure for this is as follows:

- Alpha/WHG team will electronically deliver data to Battelle and Battelle will generate an electronic deliverable for NEH's use in the project-required database format.
- NEH will perform the data validation choosing results for reporting, if multiple analyses are performed, so that only one result for each of the 18 NOAA congeners for each sample is reported in the validated database file.
- Valid data will be surrogate recovery corrected by NEH using the same logic used by Battelle. DBOB will be used to recovery correct the congeners PCB8, PCB18, PCB28, PCB44, PCB52, PCB66, and PCB101 and surrogate PCB198 will be used to recovery correct congeners PCB105, PCB118, PCB128, PCB138, PCB153, PCB170, PCB180, PCB187, PCB195, PCB206, and PCB209. Alpha's MDL study, performed in August 2009, indicates that this assignment for surrogate to congener is appropriate (i.e., that the surrogate used for correction is the one closest in retention time to the congener being corrected).
- NEH will replace the lab uncorrected value with the corrected value and add a comment code to the database file indicating the lab value was replaced (same code as Battelle has used for historical data).
- If both surrogates are not recovered at all or if recovery is very poor in the judgment of NEH recovery correction will not occur. In these instances, NEH will add a comment code to the database result indicating that recovery correction was not possible.
- Non-detects will be reported at the sample-specific RL and will not be recovery corrected.

Data users are cautioned that even after NEH has performed surrogate recovery correction for LTMV PCB congener data, that there may be data comparability issues across the complete LTM data set. Trending of non-detects for LTM must recognize the difference in reporting of non-detects using MDLs versus reporting non-detects at RLs. Additionally, using final uncorrected data (as reported by Alpha) versus data output from the instrument (as reported by Battelle) as the starting point for recovery correction, may lead to differences in results, especially as levels of PCB Congeners increase.

APPENDIX C. STATION DATA FROM THE 2009 NBH LTM V SURVEY

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Event Number	Visit Number	Station ID	Sample Date/Time	Latitude	Longitude	Depth (m)
5001	1	105	9/24/2009 11:04	41 40.5809	70 54.9081	1.3
5002	1	108	9/24/2009 9:56	41 40.4973	70 54.9666	1.2
5003	1	109	9/24/2009 12:00	41 40.4981	70 54.8441	1.3
5004	1	111	9/24/2009 14:16	41 40.4153	70 54.9071	2.4
5005	1	114	9/24/2009 15:16	41 40.3335	70 54.9709	2.1
5006	1	115	9/24/2009 13:09	41 40.3350	70 54.8480	1.2
5007	1	117	9/27/2009 11:27	41 40.2771	70 55.0455	1.5
5008	1	120	9/27/2009 9:57	41 40.1437	70 55.1140	1.4
5009	1	121	9/27/2009 10:49	41 40.1419	70 54.9868	1.4
5010	1	123	9/27/2009 8:57	41 40.0869	70 55.0355	2.0
5011	1	125	9/23/2009 12:18	41 40.0044	70 55.1013	4.0
5012	1	126	9/23/2009 10:50	41 40.0046	70 54.9786	1.0
5013	1	128	9/23/2009 9:39	41 39.9217	70 55.0374	2.8
5014	1	130	9/22/2009 8:46	41 39.8462	70 55.0984	0.9
5015	1	131	9/23/2009 8:05	41 39.8409	70 54.9752	1.8
5016	1	134	9/23/2009 15:32	41 39.7572	70 55.0412	1.9
5017	1	135	9/23/2009 13:35	41 39.7751	70 54.9220	1.2
5018	1	138	9/22/2009 10:15	41 39.6779	70 55.2325	1.5
5019	1	139	9/24/2009 18:46	41 39.6767	70 55.1083	1.2
5020	1	140	9/24/2009 16:32	41 39.6748	70 54.9790	2.6
5021	1	146	9/24/2009 7:41	41 39.5936	70 55.0413	3.2
5080	1	146 (dup)	9/24/2009 7:41	41 39.5936	70 55.0413	3.2
5022	1	147	9/22/2009 14:42	41 39.5920	70 54.9165	0.9
5023	1	150	9/23/2009 16:43	41 39.5120	70 55.1053	2.6
5024	1	151	9/22/2009 16:13	41 39.5113	70 54.9801	1.2
5025	1	152	9/22/2009 13:16	41 39.5111	70 54.8548	1.7
5026	1	154	9/27/2009 7:55	41 39.4296	70 55.0458	6.1
5027	1	155	9/22/2009 11:27	41 39.4271	70 54.9187	1.2
5028	1	202	9/26/2009 16:55	41 39.3218	70 55.0260	5.9
5029	1	204	9/27/2009 14:58	41 39.1569	70 55.1560	7.8
5030	1	207	9/27/2009 13:24	41 38.9941	70 55.2776	1.7
5031	1	208	9/26/2009 15:01	41 38.9950	70 55.0322	1.9
5032	1	211	9/27/2009 13:22	41 38.8300	70 55.1581	3.4
5033	1	212	9/27/2009 13:34	41 38.8277	70 54.9026	3.2
5081	1	212 (dup)	9/27/2009 13:34	41 38.8277	70 54.9026	N/A
5034	1	216	9/27/2009 12:08	41 38.6653	70 55.0312	3.0
5035	1	217	9/26/2009 12:36	41 38.6652	70 54.7812	3.4
5036	1	218	9/26/2009 11:19	41 38.6566	70 54.5320	0.9
5037	1	220	9/27/2009 11:06	41 38.5026	70 55.1600	10.7
5038	1	221	9/26/2009 8:46	41 38.5061	70 54.8995	1.3
5039	1	222	9/26/2009 9:53	41 38.5010	70 54.6527	3.4
5040	1	224	9/25/2009 8:00	41 38.3455	70 55.2815	9.8
5041	1	225	9/25/2009 12:12	41 38.3379	70 55.0353	10.0
5042	1	226	9/25/2009 9:38	41 38.3367	70 54.7827	3.3
5043	1	227	9/25/2009 10:51	41 38.3397	70 54.5296	2.2
5044	1	230	9/25/2009 10:47	41 38.1756	70 55.1657	7.9
5045	1	231	9/25/2009 10:00	41 38.1730	70 54.9107	8.5

Event Number	Visit Number	Station ID	Sample Date/Time	Latitude	Longitude	Depth (m)
5046	1	235	9/25/2009 13:17	41 38. 0097	70 55.0372	8.9
5047	1	236	9/25/2009 14:36	41 38.0084	70 54.7846	10.1
5048	1	237	9/25/2009 12:16	41 38.0080	70 54.5326	6.4
5049	1	240	9/25/2009 15:38	41 37.8450	70 54.9128	8.9
5050	1	241	9/25/2009 7:59	41 37.8429	70 54.6615	10.3
5051	1	242	9/25/2009 13:48	41 37.8436	70 54.4068	6.5
5052	1	245	9/25/2009 14:59	41 37.6823	70 54.7865	4.3
5053	1	247	9/25/2009 16:25	41 37.6782	70 54.2829	3.4
5054	1	249	9/25/2009 17:19	41 37.5167	70 54.6638	2.2
5055	1	250	9/27/2009 9:39	41 37.5175	70 54.4131	12.2
5056	1	253	9/27/2009 8:09	41 37.3518	70 54.7924	2.9
5057	1	304	9/25/2009 16:44	41 37.1566	70 54.5388	3.4
5058	1	306	9/28/2009 8:55	41 37.1459	70 52.2575	2.7
5059	1	309	9/26/2009 14:30	41 36.4190	70 55.1179	5.4
5060	1	310	9/28/2009 9:58	41 36.4133	70 53.9765	5.8
5061	1	311	9/26/2009 16:45	41 36.4070	70 52.8356	5.3
5062	1	317	9/28/2009 8:02	41 35.6674	70 53.4134	9.1
5063	1	318	9/26/2009 15:50	41 35.6630	70 52.2728	6.5
5064	1	323	9/26/2009 12:50	41 34.9364	70 55.1318	8.3
5082	1	323 (dup)	9/26/2009 12:50	41 34.9364	70 55.1318	8.3
5065	1	324	9/26/2009 11:50	41 34.9296	70 53.9892	9.8
5066	1	325	9/26/2009 8:25	41 34.9243	70 52.8491	10.1
5067	1	331	9/24/2009 16:08	41 34.1976	70 55.7074	7.6
5068	1	332	9/24/2009 14:51	41 34.1910	70 54.5683	8.7
5069	1	333	9/24/2009 13:30	41 34.1832	70 53.4269	6.9
5070	1	334	9/24/2009 11:31	41 34.1786	70 52.2873	11.6
5071	1	335	9/24/2009 0:00	41 34.1752	70 51.1441	8.1
5072	1	338	9/23/2009 15:55	41 33.4537	70 55.1435	8.3
5073	1	339	9/23/2009 17:18	41 33.4475	70 54.0036	11.4
5074	1	340	9/23/2009 13:30	41 33.4417	70 52.8642	11.9
5075	1	341	9/23/2009 11:22	41 33.4350	70 51.7242	11.9
5076	1	345	9/23/2009 9:25	41 32.7092	70 54.5811	11.0
5077	1	346	9/22/2009 15:37	41 32.7029	70 53.4406	10.8
5078	1	349	9/22/2009 12:21	41 31.9743	70 56.2948	8.5
5079	1	352	9/22/2009 9:05	41 31.2382	70 56.8750	7.0

APPENDIX D. WATER QUALITY DATA FROM THE 2009 NB LTM V SURVEY

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Event Number	Visit Number	Station ID	Sample Date/Time	Depth of In Situ Measurements (m)	Dissolved Oxygen (mg/L)	Salinity (ppt)	Temperature (°C)
5001	1	105	9/24/2009 11:04	0.46	6.4	26.4	21.23
5002	1	108	9/24/2009 9:56	0.13	6.66	21.43	21.15
5003	1	109	9/24/2009 12:00	0.33	7.14	26.52	21.42
5004	1	111	9/24/2009 14:16	1.46	7.77	30.79	21.01
5005	1	114	9/24/2009 15:16	1.2	8.21	30.54	21.05
5006	1	115	9/24/2009 13:09	0.37	8.23	27.65	21.64
5007	1	117	9/27/2009 11:27	0.59	8.86	21.69	18.8
5008	1	120	9/27/2009 9:57	0.3	8.8	21 94	18.76
5009	1	121	9/27/2009 10:49	0.21	8.52	21.86	19.11
5010	1	123	9/27/2009 8:57	0.91	7.81	22.26	19.08
5011	1	125	9/23/2009 12:18	3	8.16	25.83	20.02
5012	1	126	9/23/2009 10:50	0.1	9.38	23.96	20.47
5013	1	128	9/23/2009 9:39	2	7.64	25.82	19.99
5014	1	130	9/22/2009 8:46	0.15	8.03	27.56	19.88
5015	1	131	9/23/2009 8:05	1	8.09	25.11	20.09
5016	1	134	9/23/2009 15:32	1	10.09	25.08	20.71
5017	1	135	9/23/2009 13:35	0.33	9.26	25.34	20.7
5018	1	138	9/22/2009 10:15	0.5	7.1	29.26	19.63
5019	1	139	9/24/2009 18:46	0.32	7.31	30.05	20.83
5020	1	140	9/24/2009 16:32	1.71	7.6	31.33	20.57
5021	1	146	9/24/2009 7:41	2.22	6.77	31.25	20.58
5080	1	146 (dup)	9/24/2009 7:41	2.22	6.77	31.25	20.58
5022	1	147	9/22/2009 14:42	0.25	10.6	28.41	20.81
5023	1	150	9/23/2009 16:43	1.75	9.96	25.78	20.69
5024	1	151	9/22/2009 16:13	0.33	9.9	27.99	20.94
5025	1	152	9/22/2009 13:16	0.75	9.42	28.8	20.25
5026	1	154	9/27/2009 7:55	5.1	7.39	23.29	18.91
5027	1	155	9/22/2009 11:27	0.33	9.5	28.62	20.24
5028	1	202	9/26/2009 16:55	4.98	8.33	27.74	19.83
5029	1	204	9/27/2009 14:58	6.49	7.53	23.57	18.58
5030	1	207	9/27/2009 13:24	0.76	7.76	23.4	18.14
5031	1	208	9/26/2009 15:01	0.89	10.41	27.33	19.84
5032	1	211	9/27/2009 13:22	2.72	7.04	25.7	18.8
5033	1	212	9/27/2009 13:34	2.33	8.13	27.94	19.41
5081	1	212 (dup)	9/27/2009 13:34	2.33	8.13	27.94	19.41
5034	1	216	9/27/2009 12:08	2.69	6.33	25.96	19.16
5035	1	217	9/26/2009 12:36	2.56	8.41	27.87	18.93
5036	1	218	9/26/2009 11:19	0.09	8.37	27.8	18.96
5037	1	220	9/27/2009 11:06	10.32	5.51	26.42	19.44
5038	1	221	9/26/2009 8:46	0.36	7.6	27.79	18.72
5039	1	222	9/26/2009 9:53	2.57	7.16	27.97	18.72
5040	1	224	9/25/2009 8:00	8.05	5.89	27.18	19.83
5041	1	225	9/25/2009 12:12	9.83	6.44	26.85	19.9
5042	1	226	9/25/2009 9:38	2.37	6.66	27.09	20.05
5043	1	227	9/25/2009 10:51	1.27	6.88	26.59	19.88
5044	1	230	9/25/2009 10:47	7.46	6.58	26.75	19.89
5045	1	231	9/25/2009 10:00	7.86	6.31	26.83	19.91
5046	1	235	9/25/2009 13:17	8.42	6.45	26.88	19.79
5047	1	236	9/25/2009 14:36	9.56	7.65	26.9	19.74
5048	1	237	9/25/2009 12:16	5.52	6.78	27.08	19.85
5049	1	240	9/25/2009 15:38	8.42	7.07	26.83	19.77
5050	1	241	9/25/2009 7:59	9.53	6.24	26.84	19.91
5051	1	242	9/25/2009 13:48	5.43	7.12	27.22	19.78

Event Number	Visit Number	Station ID	Sample Date/Time	Depth of In Situ Measurements (m)	Dissolved Oxygen (mg/L)	Salinity (ppt)	Temperature (°C)
5052	1	245	9/25/2009 14:59	3.56	7.93	26.72	19.98
5053	1	247	9/25/2009 16:25	2.63	8.62	26.98	20.05
5054	1	249	9/25/2009 17:19	1.28	8.42	26.75	19.89
5055	1	250	9/27/2009 9:39	9.92	6.54	26.4	18.73
5056	1	253	9/27/2009 8:09	2.61	6.56	26.32	18.83
5057	1	304	9/25/2009 16:44	2.88	8.06	26.89	19.79
5058	1	306	9/28/2009 8:55	1.48	7.2	27.75	18.12
5059	1	309	9/26/2009 14:30	N/A	N/A	N/A	N/A
5060	1	310	9/28/2009 9:58	4.63	6.69	28.33	18.63
5061	1	311	9/26/2009 16:45	N/A	N/A	N/A	N/A
5062	1	317	9/28/2009 8:02	8.58	6.87	28.38	18.45
5063	1	318	9/26/2009 15:50	N/A	N/A	N/A	N/A
5064	1	323	9/26/2009 12:50	N/A	N/A	N/A	N/A
5082	1	323 (dup)	9/26/2009 12:50	N/A	N/A	N/A	N/A
5065	1	324	9/26/2009 11:50	N/A	N/A	N/A	N/A
5066	1	325	9/26/2009 8:25	9.62	6.84	33.37	18.86
5067	1	331	9/24/2009 16:08	6.78	7.13	27.96	19.18
5068	1	332	9/24/2009 14:51	8.12	7.17	27.96	19.14
5069	1	333	9/24/2009 13:30	6.05	7.22	27.97	19.12
5070	1	334	9/24/2009 11:31	10.95	7.13	27.95	18.88
5071	1	335	9/24/2009 0:00	7.29	7.31	27.75	19.45
5072	1	338	9/23/2009 15:55	7.55	7.23	31.72	19.06
5073	1	339	9/23/2009 17:18	10.67	7.14	31.86	18.97
5074	1	340	9/23/2009 13:30	11.09	7.1	31.87	18.8
5075	1	341	9/23/2009 11:22	11.5	7.41	31.85	18.79
5076	1	345	9/23/2009 9:25	12.02	7.27	31.74	18.96
5077	1	346	9/22/2009 15:37	10.37	7.67	31.38	18.79
5078	1	349	9/22/2009 12:21	7.4	7.47	31.3	18.89
5079	1	352	9/22/2009 9:05	6.55	7.45	31.31	18.91

APPENDIX E. PCB DATA FROM THE 2009 NBH LTM V SURVEY

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			DecaCB - Homologue		2,3',4,4',5-Pentachlorobiphenyl		2,3',4,4'-Tetrachlorobiphenyl		2,3,3',4,4'-Pentachlorobiphenyl		2,4'-Dichlorobiphenyl		2,2',4,4',5,5'-Hexachlorobiphenyl		2,2',3,4,4',5'-Hexachlorobiphenyl		2,2',3,4,4',5,5'-Heptachlorobiphenyl		2,2',3,3',4,4',5-Heptachlorobiphenyl		2,2',5,5'-Tetrachlorobiphenyl		2,2',5-Trichlorobiphenyl		2,2',4,5,5'-Pentachlorobiphenyl		2,2',3,3',4,4'-Hexachlorobiphenyl		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl		2,2',3,3',4,4',5,5'-Tetrachlorobiphenyl		2,2',3,4',5,5',6-Heptachlorobiphenyl		2,2',3,3',4,4',5,6-Octachlorobiphenyl		2,4,4'-Trichlorobiphenyl		Total PCB	
Sample ID	Station ID	QC Code	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	
500125	105-09LTM	SADL1	341	DUJ	4070	D	2580	D	259	DJ	17200	D	4140	D	5880	D	681	D	865	D	72800	D	39800	D	3970	D	981	D	306	DJ	17500	D	1390	D	341	DU	30500	D	203604			
500225	108-09LTM	SADL1	170	DUJ	2580	D	1010	D	177	D	4660	D	2210	D	3330	D	623	D	481	D	41200	D	22200	D	4220	D	170	DU	170	DU	10100	D	908	D	170	DU	19300	D	113679			
500325	109-09LTM	SADL1	171	DUJ	2560	D	768	D	184	D	1770	D	2380	D	2940	D	398	D	319	D	32400	D	14700	D	3410	D	562	D	171	DU	7360	D	736	D	171	DU	19600	D	90600			
500425	111-09LTM	SADL1	170	DUJ	2900	D	818	D	153	DJ	3550	D	2920	D	3180	D	395	D	518	D	37400	D	20000	D	5180	D	562	D	170	DU	8840	D	642	D	170	DU	19000	D	106568			
500525	114-09LTM	SADL1	172	DUJ	4190	D	1320	D	247	D	3140	D	4140	D	4220	D	764	D	518	D	38400	D	19600	D	6930	D	875	D	172	DU	9030	D	807	D	172	DU	23700	D	118397			
500625	115-09LTM	SADL1	170	DUJ	4390	D	1100	D	310	D	2080	D	4210	D	5030	D	674	D	832	D	40700	D	15100	D	6040	D	1020	D	170	DU	9050	D	917	D	170	DU	24600	D	116563			
500725	117-09LTM	SADL1	343	DUJ	4300	D	1040	D	343	DU	14600	D	5470	D	4500	D	397	D	397	D	98500	D	65800	D	10000	D	343	DU	343	DU	11100	D	1110	D	343	DU	51000	D	269929			
500825	120-09LTM	SADL1	71.1	DUJ	4740	D	1480	D	357	D	2140	D	3410	D	3990	D	535	D	506	D	24800	D	11300	D	7210	D	746	D	71.1	DU	8080	D	586	D	71.1	DU	19900	D	89993			
500925	121-09LTM	SADL1	68.8	DUJ	3640	D	850	D	178	D	1830	D	2800	D	3050	D	467	D	487	D	25400	D	12100	D	4950	D	556	D	68.8	DU	5870	D	626	D	68.8	DU	17100	D	80110			
501025	123-09LTM	SADL1	68.6	DUJ	4150	D	1240	D	228	D	2430	D	3240	D	3470	D	635	D	532	D	25800	D	14400	D	6750	D	542	D	68.6	DU	7620	D	716	D	68.6	DU	20400	D	92359			
501125	125-09LTM	SADL1	345	DUJ	7950	D	2800	D	506	D	17100	D	6920	D	9800	D	1700	D	1670	D	98900	D	66400	D	12100	D	1520	D	345	DU	27700	D	1770	D	345	DU	73100	D	330971			
501225	126-09LTM	SADL1	3.34	DUJ	371	DK	143	DK	42	DK	126	DK	236	DK	292	DK	47	DK	39	DK	1647	DK	743	DK	606	DK	53	DK	6.6	DK	435	DK	39	DK	3.34	DU	1232	DK	6064	K		
501325	128-09LTM	SADL1	36	DU	2630	D	807	D	256	D	811	D	1720	D	2120	D	343	D	313	D	12500	DJ	5600	D	3690	D	414	D	36	DU	4130	D	286	D	36	DU	9890	DJ	45618			
501425	130-09LTM	SADL1	6.7	DUJ	875	DK	348	DK	95	DK	209	DK	488	DK	720	DK	120	DK	99	DK	3365	DK	1271	DK	1224	DK	152	DK	10	DK	1049	DK	85	DK	6	DJK	2612	DK	12735	K		
501525	131-09LTM	SADL1	33.9	DUJ	2300	D	607	D	215	D	653	D	1440	D	1940	D	275	D	287	D	8910	D	3750	D	2920	D	383	D	30.8	DJ	2740	D	266	D	33.9	DU	5700	D	32485			
501625	134-09LTM	SADL1	67.9	DUJ	3270	D	1140	D	307	D	697	D	1840	D	2610	D	324	D	277	D	11300	D	4560	D	3890	D	518	D	67.9	DU	3950	D	304	D	67.9	DU	12700	D	47891			
501725	135-09LTM	SADL1	1.67	DU	113	DK	68	DK	12	DK	30	DK	71	DK	89	DK	15	DK	14	DK	617	DKJ	181	DK	212	DK	3.4	DK	1.67	DU	168	DK	13	DK	1.67	DU	404	DKJ	2015	K		
501825	138-09LTM	SADL1	19.7	DU	3180	D	736	D	532	D	325	D	1470	D	2430	D	366	D	324	D	6300	DJ	2080	D	3540	D	532	D	19.7	DU	2610	D	276	D	19.7	DU	5080	DJ	29840			
501925	139-09LTM	SADL1	36.2	DU	2370	D	672	D	246	D	397	D	1440	D	2040	D	268	D	301	D	7870	DJ	2500	D	2670	D	472	D	36.2	DU	2690	D	230	D	36.2	DU	5260	DJ	29535			
502025	140-09LTM	SADL1	19.1	DU	2050	D	642	D	234	D	329	D	1180	D	1640	D	267	D	228	D	6220	DJ	2180	D	2360	D	366	D	19.1	DU	2150	D	251	D	19.1	DU	4450	DJ	24604			
502125	146-09LTM	SADL1	3.49	DU	609	DK	154	DK	116	DK	90	DK	358	DK	513	DK	89	DK	78	DK	1738	DKJ	621	DK	886	DK	102	DK	3.49	DU	654	DK	77	DK	3.49	DU	1750	DKJ	7845	K		
508035	146-09LTM	SADL1 (REP)	6.99	DU	699	D	223	D	80.9	D	111	D	389	D	546	D	89.8	D	90.6	D	2120	DJ	795	D	1020	D	121	D	6.99	DU	696	D	85.8	D	6.99	DU	1470	DJ	8558			
502225	147-09LTM	SADL1	3.32	DU	440	DK	198	DK	48.9	DK	114	DK	385	DK	373	DK	62.3	DK	50.8	DK	2200	DKJ	698	DK	975	DK	78.6	DK	3.32	DU	691	DK	61.5	DK	3.32	DU	2145	DKJ	8531	K		
502325	150-09LTM	SADL1	19.2	DU	1620	D	574	D	242	D	232	D	882	D	1280	D	194	D	192	D	4460	DJ	1580	D	2340	D	258	D	19.2	DU	1600	D	193	D	19.2	DU	3780	DJ	19485			
502425	151-09LTM	SADL1	3.6	DUJ	390	DKJ	114	DKJ	62.2	DKJ	57.6	DKJ	234	DKJ	312	DKJ	46.6	DKJ	44.1	DKJ	1197	DKJ	399	DKJ	560	DKJ	67.4	DKJ	3.6	DUJ	400	DKJ	45.9	DKJ	3.6	DUJ	1149	DKJ	5090	K		
502525	152-09LTM	SADL1	18.2	DU	1200	D	310	D	102	D	251	D	833	D	1130	D	186	D	164	D	4940	DJ	1490	D	1330	D	233	D	18.2	DU	2510	D	195	D	18.2	DU	3170	DJ	18099			
502625	154-09LTM	SA	0.264	KJ	50	KJ	18	KJ	6.6	KJ	6.2	KJ	32	KJ	43	KJ	4.9	KJ	4	KJ	151	KJ	57	KJ	55	KJ	8.3	KJ	0.837	KJ	53	KJ	4.9	KJ	0.328	UJ	93	KJ	588	K		
502725	155-09LTM	SADL1	3.41	DU	220	DK	148	DK	25.7	DK	103	DK	212	DK	182	DK	29.6	DK	27.2	DK	1706	DKJ	642	DK	781	DK	38.6	DK	3.41	DU	498	DK	29.7	DK	3.41	DU	1775	DKJ	6428	K		
502825	202-09LTM	SA	0.333	UJ	43	K	16	K	8.3	K	11	K	27	K	36	K	6	K	4.5	K	140	K	56	K	61	K	7.7	K	0.8	K	44	K	5.8	K	0.333	U	102	K	570	K		
502925	204-09LTM	SADL1	6.98	DU	802	D	173	D	163	D	62.7	D	404	D	659	D	100	D	87.6	D	1400	DJ	409	D	972	D	143	D	6.98	DU	527	D	90.6	D	6.98	DU	1620	DJ	7634			
503025	207-09LTM	SADL1	6.82	DU	810	D	229	D	140	D	60.2	D	414	D	619	D	75.6	D	54	D	1520	DJ	468	D	778	D	66.1	D	6.82	DU	478	D	63.4	D	6.82	DU	1580	DJ	7376			
503125	208-09LTM	SA	0.332	UJ	100	KJ	23	KJ	19.3	KJ	10	KJ	63	KJ	85	KJ	13	KJ	12.2	KJ	196	KJ	53	KJ	127	KJ	18.2	KJ	0.332	UJ	60	KJ	11.8	KJ	0.332	UJ	204	KJ	996	K		
503225	211-09LTM	SADL1	3.49	DUJ	1339	DKJ	333	DKJ	291	DKJ	97	DKJ	661	DKJ	1053	DKJ	152	DKJ	142	DKJ	2140	DKJ	709	DKJ	1684	DKJ	239	DKJ	3.49	DUJ	874	DKJ	129	DKJ	3.49	DUJ	2421	DKJ	12274	K		
503325	212-09LTM	SADL1	3.9	DK	1266	DK	547	DK	305	DJK	179	DK	639	DK	1055	DK	142	DK	129	DK	3414	DK	1026	DK	2724	DK	234	DK	4.07	DU	1438	DK	111	DK	4.07	DU	3172	DK	16393	K		
508135	212-09LTM	SADL1 (REP)	2.49	DJK	965	DK	351	DK	233	DJK	117	DK	610	DK	796	DK	106	DK	105	DK	2192	DK	674	DK	1712	DK	177	DK	8.61	DK	921	DK	82	DK	4.11	DU	2493	DK	11549	K		
503425	216-09LTM	SADL1	0.681	DU	66.3	DK	23.8	DK	16.4	DJK	15.3	DK	39.7	DK	58.2	DK	10	DK	9.1	DK	194	DK	64	DK	122	DK	12.5	DK	0.681	DU	73.8	DK	9	DK	0.681	DU	211	DK	927	K		
503525	217-09LTM	SADL1	11.7	DJK	2371	DJK	621	DJK	630	DJK	157	DJK	1007	DJK	2014	DJK	254	DJK	229	DJK	2900	DJK	934	DJK	2714	DJK	441	DJK	18	DJK	1320	DJK	174	DJK	4.13	DU	2929	DJK	18729	K		
503625	218-09LTM	SA	0.334	U	32.7	K	20.6	K	8.3	JK	5.2	K	18.5	K	27.9	K	3.2	K	4.4	K	126	K	38.8	K	83.1	K	6.3	K	0.334	U	36.5	K	2.7	K	0.334	U	147	K	562	K		
503725	220-09LTM	SADL1	1.79	DU	186	DK	135	DK	51	DJK	37.1	DK	109	DK	161	DK	23	DK	22.6	DK	727	DK	221	DK	531	DK	37.9	DK	1.79	DU	285	DK	20.8	DK	1.79	DU	800	DK	3353	K		
503825	221-09LTM	SADL1	3.6	DU	249	DK	134	DK	58	DJK	57.8	DK	161	DK	177	DK	24.8	DK	18	DK	652	DK	217	DK	530	DK	38.7	DK	3.6	DU	232	DK	20.3	DK	3.6	DU	1350	DK	3930	K		
503925	222-09LTM	SADL1	6.4	DJK	1731	DJK	390	DJK	456	DJK	120	DJK	813	DJK	1517	DJK	200	DJK	190	DJK	2635	DJK	683	DJK	1942	DJK	337	DJK	30.2	DJK	950	DJK	157	DJK	3.68	DU	2654	DJK	14815	K		
504025	224-09LTM	SADL1	4.8	DK	832	DK	404	DK	216	DJK	119	DK	415	DK	712	DK	107	DK	101	DK	2286	DK	727	DK	1734	DK	162	DK	10.4	DK	861	DK	83.8	DK	3.87	DU	2518	DK	11297	K		
504125	225-09LTM	SADL1	1.82	DU	329	DK	86.1	DK	93.3	DJK	26.1	DK	224	DK	271	DK	37.8	DK	30.8	DK	472	DK	154	DK	376	DK	64.1	DK	1.82	DU	201	DK	20.4	DK	1.82	DU	551	DK	2942	K		
504225	226-09LTM	SADL1	4.96	DU	464	DK	303	DK	139	DJK	147	DK	217	DK	378	DK	49	DK	46.2	DK	1050	DK	327	DK	877	DK	86.9	DK	4.96	DU	433	DK	40.6	DK	4.96	DU	2017	DK	6590	K		
504325	227-09LTM	SADL1	3.44	DU	388	DK	206	DK	116	DJK	86.2	DK	174	DK	325	DK	46.3	DK	43.3	DK	719	DK	268	DK	722	DK	75.2	DK	3.44	DU	332	DK	33.2	DK	3.44	DU	1388	DK	4933	K		
504425	230-09LTM	SADL1	3.51	DU	583	DJK	141	DJK	173	DJK	31.8	DJK	511	DJK	532	DJK	88.8	DJK	76.8	DJK	633	DJK	221	DJK	679	DJK	127	DJK	15.3	DJK	271	DJK	110	DJK	3.51	DU	950	DJK	5151	K		
504525	231-09LTM	SADL1	1.16	DJK	413	DK	142	DK	112	DK	76.2	DK	218	DK	363	DK	54.3	DK	38.8	DK	1062	DK	356	DK	764	DK	80.8	DK	3.93	DK	349	DK	37.2	DK	2.82	DK	1075	DK	5149	K		
504625	235-09LTM	SADL1	4.71	DU	406	DJK	108	DJK	128	DJK	44.6	DJK	273	DJK	350	DJK	36.6	DJK	46.1	DJK	524	DJK	213	DJK	434	DJK	80.6	DJK	4.71	DU	248	DJK	37.6	DJK	4.71	DU	1000	DJK	3944	K		
504725	236-09LTM	SADL1	3.46	DU	330	DK	132	DK	108	DJK	131	DK	173	DK	315	DK	43.7	DK	39	DK	718	DK	231	DK	648	DK	77.8	DK	3.46	DU	303	DK	31.8	DK	3.46	DU	1131	DK	4423	K		
504825	237-09LTM	SADL1	0.68	DU	85.9	DJK	21.1	DJK	25.8	DJK	7.1	DJK	65.8	DJK	78.5	DJK	15.6	DJK	12.3	DJK	106	DJK	45.6	DJK	91	DJK	18.8	DJK	0.68	DU	45.4	DJK	10	DJK	0.68	DU	179	DJK	810	K		
504925	240-09LTM	SADL1	2.02	DU	351	DK	101	DK	126	DK	55.4	DK	184	DK	397	DK	54.5	DK	45.8	DK	1067	DK	228	DK	610	DK	94.1	DK	2.02	DU	597	DK	34.7	DK	2.02	DU	789	DK	4741	K		
505025	241-09LTM	SA	0.341	U	123	KJ	26.7	KJ	35.7	KJ	13.7	KJ	59.4	KJ	108	KJ	14.1	KJ	15.5	KJ	142	KJ	45.3	KJ	123	KJ	25.3	KJ	0.341	U	54.9	KJ	11.2	KJ	0.341	U	166	KJ	965	K		

			DecaCB - Homologue		2,3',4,4',5-Pentachlorobiphenyl		2,3',4,4'-Tetrachlorobiphenyl		2,3,3',4,4'-Pentachlorobiphenyl		2,4'-Dichlorobiphenyl		2,2',4,4',5,5'-Hexachlorobiphenyl		2,2',3,4,4',5'-Hexachlorobiphenyl		2,2',3,4,4',5,5'-Heptachlorobiphenyl		2,2',3,3',4,4',5-Heptachlorobiphenyl		2,2',5,5'-Tetrachlorobiphenyl		2,2',5-Trichlorobiphenyl		2,2',4,5,5'-Pentachlorobiphenyl		2,2',3,3',4,4'-Hexachlorobiphenyl		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl		2,2',3,3',5,5'-Tetrachlorobiphenyl		2,2',3,4',5,5',6-Heptachlorobiphenyl		2,2',3,3',4,4',5,6-Octachlorobiphenyl		2,4,4'-Trichlorobiphenyl		Total PCB	
Sample ID	Station ID	QC Code	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual	ug/kg	Qual
505125	242-09LTM	SADL1	0.2	DK	148	DK	57.8	DK	46.7	DK	33.2	DK	63.3	DK	125	DK	13.4	DK	16.7	DK	281	DK	107	DK	240	DK	27.8	DK	3.17	DK	118	DK	13.8	DK	0.68	DU	387	DK	1683	K
505225	245-09LTM	SADL1	1.77	DU	251	DK	99.9	DK	73.3	DK	61.5	DK	123	DK	230	DK	33.8	DK	32.6	DK	422	DK	117	DK	411	DK	53.8	DK	1.77	DU	149	DK	22.6	DK	1.77	DU	577	DK	2663	K
505325	247-09LTM	SADL1	1.76	DU	362	DKJ	105	DKJ	94.7	DKJ	86.3	DKJ	179	DKJ	286	DKJ	46.7	DKJ	40.1	DKJ	433	DKJ	126	DKJ	323	DKJ	69.7	DKJ	1.76	DU	140	DKJ	37.8	DKJ	1.76	DU	667	DKJ	3002	K
505425	249-09LTM	SADL1	0.678	DU	137	DK	50.3	DK	37.4	DK	12.1	DK	98	DK	104	DK	11.1	DK	13.1	DK	203	DK	60.6	DK	179	DK	26.7	DK	0.678	DU	70	DK	12	DK	0.678	DU	329	DK	1345	K
505525	250-09LTM	SA	0.338	U	45.1	K	13.4	K	13	K	8.04	K	21.3	K	39.7	K	5.18	K	5.37	K	88.4	K	27	K	71.8	K	9.69	K	0.338	U	33	K	4.29	K	0.338	U	139	K	525	K
505625	253-09LTM	SADL1	1.82	DU	728	DKJ	197	DKJ	255	DKJ	173	DKJ	282	DKJ	608	DKJ	73.4	DKJ	65.9	DKJ	757	DKJ	308	DKJ	774	DKJ	139	DKJ	1.82	DUJ	336	DKJ	52.4	DKJ	1.82	DU	1111	DKJ	5865	K
505725	304-09LTM	SA	0.348	U	95.9	K	40.9	K	27.5	K	50.2	K	62.4	K	73.8	K	9.02	K	9.02	K	212	K	98.6	K	138	K	17.9	K	0.348	U	86.3	K	7.4	K	0.348	U	201	K	1131	K
505825	306-09LTM	SA	0.326	U	0.599	K	0.229	JK	0.326	U	0.322	JK	0.52	K	0.452	K	0.326	U	0.326	U	1.14	UK	0.369	UK	0.719	K	0.326	U	0.326	U	0.504	UK	0.326	U	0.326	U	1.18	UK	9	K
505925	309-09LTM	SA	0.36	U	39	K	17.8	K	11.8	K	8.59	K	28	K	32.4	K	4.25	K	2.63	K	39.9	K	12.7	K	52.2	K	8.55	K	0.36	U	24.1	K	3.02	K	0.36	U	50	K	336	K
506025	310-09LTM	SA	0.334	U	49.7	K	20.6	K	18.5	K	35.1	K	29.8	K	45.1	K	5.19	K	4.63	K	81.4	K	37.9	K	80.1	K	11	K	0.334	U	48.2	K	3.4	K	0.334	U	105	K	577	K
506125	311-09LTM	SA	0.33	U	4.31	K	1.96	K	1.24	K	1.41	K	3.89	K	4.26	K	0.439	K	0.405	K	5.91	K	1.89	UK	6.34	K	1.04	K	0.33	U	2.73	K	0.425	K	0.33	U	6.59	K	44	K
506225	317-09LTM	SA	0.4	U	91.3	K	28.8	K	30.8	K	27.2	K	38.8	K	82.8	K	9.71	K	6.37	K	95.9	K	29.3	K	115	K	19.6	K	0.4	U	45.3	K	6.39	K	0.4	U	113	K	741	K
506325	318-09LTM	SA	0.333	U	1.6	K	0.854	K	0.29	JK	0.958	K	1.71	K	1.52	K	0.333	U	0.333	U	3.28	UK	1.73	UK	2.31	K	0.333	U	0.333	U	0.493	UK	0.249	JK	0.333	U	3.28	UK	20	K
506425	323-09LTM	SA	0.347	U	20.9	KJ	9.28	K	6.91	KJ	6.26	KJ	12.3	K	18.6	KJ	2.09	KJ	1.7	K	19.7	KJ	7.82	KJ	18.9	KJ	5.06	K	0.347	U	12.2	KJ	1.73	KJ	0.347	U	26.3	KJ	171	K
508235	323-09LTM	SA (REP)	0.346	U	37.2	KJ	15.2	K	11.6	KJ	13.5	KJ	17.1	K	34.3	KJ	4.41	KJ	2.09	K	51.6	KJ	24.8	KJ	47.1	KJ	8.05	K	0.346	U	24.9	KJ	3.09	KJ	0.346	U	74.9	KJ	371	K
506525	324-09LTM	SA	0.454	K	108	K	43.2	K	29.7	K	28.6	K	57.8	K	93	K	11.2	K	7.32	K	177	K	69.5	K	102	K	22.9	K	0.767	K	87.6	K	6.43	K	0.376	U	172	K	1018	K
506625	325-09LTM	SA	0.254	JK	40	K	16.5	K	13	K	18.6	K	26.6	K	34.7	K	4.45	K	2.08	K	46.9	K	19.4	K	53.2	K	8.62	K	0.361	K	21.6	K	2.54	K	0.379	U	70.5	K	380	K
506725	331-09LTM	SA	0.183	JK	22.3	K	7.86	K	6.05	K	9.21	K	16.4	K	18.5	K	2.56	K	1.2	K	23.6	K	9.59	K	26.6	K	5.43	K	0.19	JK	11.8	K	1.68	K	0.338	U	38.4	K	202	K
506825	332-09LTM	SA	0.395	U	6.99	K	2.43	K	2.52	K	2.53	K	5.6	K	6.71	K	0.632	K	0.378	JK	7.28	K	2.6	K	7.38	K	2.58	K	0.395	U	3.44	K	0.479	K	0.395	U	9.78	K	63	K
506925	333-09LTM	SA	0.355	U	13.7	K	4.61	K	3.69	K	3.66	K	8.25	K	13.1	K	2.06	K	0.796	K	13.5	K	4.19	K	16.1	K	3.73	K	0.355	U	5.05	K	1.44	K	0.355	U	15.8	K	111	K
507025	334-09LTM	SA	0.395	U	19.3	K	6.49	K	5.68	K	7.61	K	9.55	K	15.1	K	2.21	K	1.06	K	16.9	K	6.03	K	18.6	K	3.68	K	0.395	U	7.61	K	1.14	K	0.395	U	29.3	K	151	K
507125	335-09LTM	SA	0.393	JK	15.3	K	5.11	K	3.74	K	4.91	K	12.6	K	12.9	K	1.71	K	0.841	K	13.9	K	4.91	K	15.7	K	4.46	K	0.393	U	5.92	K	1.38	K	0.393	U	20.8	K	125	K
507225	338-09LTM	SA	0.349	U	16	K	5.3	K	4.63	K	5.48	K	13	K	15.7	K	2.15	K	0.918	K	17.1	K	5.56	K	18.7	K	4.57	K	0.349	U	6.52	K	1.59	K	0.349	U	21	K	139	K
507325	339-09LTM	SA	0.367	U	10.4	K	4.36	K	3.03	K	4.1	K	7.35	K	8.66	K	0.8	K	0.528	K	9.64	K	3.7	K	10.5	K	2.82	K	0.367	U	3.11	K	0.755	K	0.367	U	14.3	K	85	K
507425	340-09LTM	SA	0.379	U	13.6	K	4.23	K	3.82	K	4.87	K	10	K	11.3	K	1.22	K	0.82	K	11.9	K	4.77	K	13.6	K	3.22	K	0.379	U	4.13	K	0.971	K	0.379	U	17.8	K	107	K
507525	341-09LTM	SA	0.328	U	2.52	K	0.796	K	0.605	K	0.912	K	2.07	K	2.67	K	0.261	JK	0.328	U	2.66	K	0.953	K	2.47	K	0.328	U	0.328	U	0.589	K	0.216	JK	0.328	U	3.32	K	22	K
507625	345-09LTM	SA	0.352	U	11.3	K	2.84	K	3.87	K	4	K	9.14	K	10.9	K	1.63	K	0.596	K	10.4	K	4.15	K	11.2	K	4.07	K	0.352	U	1.43	K	0.622	K	0.352	U	14.3	K	92	K
507725	346-09LTM	SA	0.326	U	1.28	K	0.454	K	0.265	JK	0.657	K	1.08	K	1.17	K	0.326	U	0.326	U	1.65	K	0.661	K	1.38	K	0.326	U	0.326	U	0.326	U	0.326	U	0.326	U	1.88	K	13	K
507825	349-09LTM	SA	0.341	U	1.83	K	0.81	K	0.35	JK	0.341	U	1.66	K	1.69	K	0.341	U	0.341	U	2.51	UK	0.341	U	1.81	UK	0.341	U	0.341	U	1.02	UK	0.266	JK	0.341	U	0.341	U	15	K
507925	352-09LTM	SA	0.336	U	1.91	K	0.704	K	0.816	K	0.717	K	2.01	K	2.44	K	0.322	JK	0.336	U	2.51	K	0.966	K	2.18	K	0.451	K	0.336	U	1.24	K	0.312	JK	0.336	U	3.11	K	21	K

APPENDIX F. TOC DATA FROM THE 2009 NBH LTM V SURVEY

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			Total Organic Carbon	
Sample ID	Station ID	QC Code	%	Qual
500125	105-09LTM	SADL1	3.08	
500225	108-09LTM	SADL1	4.49	
500325	109-09LTM	SADL1	2.34	
500425	111-09LTM	SADL1	2.78	
500525	114-09LTM	SADL1	1.94	
500625	115-09LTM	SADL1	2.17	
500725	117-09LTM	SADL1	1.76	
500825	120-09LTM	SADL1	3.62	
500925	121-09LTM	SADL1	3.42	
501025	123-09LTM	SADL1	3.00	
501125	125-09LTM	SADL1	5.15	
501225	126-09LTM	SADL1	0.490	
501325	128-09LTM	SADL1	4.33	
501425	130-09LTM	SADL1	1.01	
501525	131-09LTM	SADL1	1.90	
501625	134-09LTM	SADL1	2.36	
501725	135-09LTM	SADL1	0.443	
501825	138-09LTM	SADL1	3.65	
501925	139-09LTM	SADL1	4.21	
502025	140-09LTM	SADL1	4.14	
502125	146-09LTM	SADL1	2.99	
508035	146-09LTM	SADL1 (REP)	2.52	
502225	147-09LTM	SADL1	1.14	
502325	150-09LTM	SADL1	3.08	
502425	151-09LTM	SADL1	1.15	
502525	152-09LTM	SADL1	2.87	
502625	154-09LTM	SA	0.378	
502725	155-09LTM	SADL1	1.33	
502825	202-09LTM	SA	0.103	
502925	204-09LTM	SADL1	2.12	
503025	207-09LTM	SADL1	2.64	
503125	208-09LTM	SA	0.615	J
503225	211-09LTM	SADL1	1.90	
503325	212-09LTM	SADL1	3.19	
508135	212-09LTM	SADL1 (REP)	3.55	
503425	216-09LTM	SADL1	0.331	
503525	217-09LTM	SADL1	3.52	

			Total Organic Carbon	
Sample ID	Station ID	QC Code	%	Qual
503625	218-09LTM	SA	0.426	
503725	220-09LTM	SADL1	1.39	
503825	221-09LTM	SADL1	1.68	
503925	222-09LTM	SADL1	1.94	
504025	224-09LTM	SADL1	3.82	
504125	225-09LTM	SADL1	1.61	
504225	226-09LTM	SADL1	3.15	
504325	227-09LTM	SADL1	2.45	
504425	230-09LTM	SADL1	4.06	
504525	231-09LTM	SADL1	1.81	
504625	235-09LTM	SADL1	2.85	
504725	236-09LTM	SADL1	2.60	
504825	237-09LTM	SADL1	1.25	
504925	240-09LTM	SADL1	2.89	
505025	241-09LTM	SA	0.805	
505125	242-09LTM	SADL1	0.631	J
505225	245-09LTM	SADL1	1.45	
505325	247-09LTM	SADL1	1.41	
505425	249-09LTM	SADL1	0.834	
505525	250-09LTM	SA	0.437	
505625	253-09LTM	SADL1	1.74	
505725	304-09LTM	SA	0.940	
505825	306-09LTM	SA	0.050	J
505925	309-09LTM	SA	1.14	
506025	310-09LTM	SA	0.306	
506125	311-09LTM	SA	3.28	
506225	317-09LTM	SA	1.30	
506325	318-09LTM	SA	0.101	J
506425	323-09LTM	SA	0.662	
508235	323-09LTM	SA (REP)	0.844	
506525	324-09LTM	SA	1.31	
506625	325-09LTM	SA	1.19	
506725	331-09LTM	SA	1.49	
506825	332-09LTM	SA	0.301	
506925	333-09LTM	SA	1.34	
507025	334-09LTM	SA	1.19	
507125	335-09LTM	SA	1.10	
507225	338-09LTM	SA	1.17	
507325	339-09LTM	SA	0.987	
507425	340-09LTM	SA	0.961	
507525	341-09LTM	SA	0.239	
507625	345-09LTM	SA	1.33	
507725	346-09LTM	SA	0.176	
507825	349-09LTM	SA	0.390	
507925	352-09LTM	SA	0.509	

APPENDIX G. SEDIMENT GRAIN SIZE DATA FROM THE 2009 NBH LTM V SURVEY – CHEMISTRY SAMPLES

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			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay		Total Fines	d50
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	
500126	105-09LTM	SADL1	0.1		0.5		1.8		2.5		4.1		14		55		23		77	0.0370
500226	108-09LTM	SADL1	0.4		4		6.6		7.5		9.1		15		38		19		57	0.0527
500326	109-09LTM	SADL1	0.9		3.5		5.9		6.6		12		18		36		12		49	0.0648
500426	111-09LTM	SADL1	0.1		1.1		4.3		5.2		4.9		11		46		27		73	0.0350
500526	114-09LTM	SADL1	0.1	U	1.4		5.4		5.6		4		13		46		25		71	0.0415
500626	115-09LTM	SADL1	0.4		0.4		0.1		2		2.5		14		52		29		81	0.0389
500726	117-09LTM	SADL1	2.8		3.2		3.9		6.5		5		14		45		19		64	0.0484
500826	120-09LTM	SADL1	0.3		0.4		0.9		2		6.1		15		48		28		76	0.0394
500926	121-09LTM	SADL1	1.1		0.9		2.2		5.9		9.2		18		46		17		63	0.0501
501026	123-09LTM	SADL1	0.1		0.1		0.3		0.9		1.2		11		53		33		86	0.0236
501126	125-09LTM	SADL1	0.9		0.9		7		7.1		7.2		16		45		13		58	0.0551
501226	126-09LTM	SADL1	6.9		4		6.3		19		28		15		9.1		1.9		11	0.2301
501326	128-09LTM	SADL1	2.1		2.2		1.4		1.4		2		15		55		20		75	0.0451
501426	130-09LTM	SADL1	11		7.6		7.9		14		15		10		11		3		14	0.3932
501526	131-09LTM	SADL1	5.3		4.6		5.3		9.3		11		15		32		12		44	0.0711
501626	134-09LTM	SADL1	2.4		8.1		8.6		7.5		7.1		14		37		15		51	0.0607
501726	135-09LTM	SADL1	9		5.1		9.3		18		27		14		3.8		1.1		5	0.2883
501826	138-09LTM	SADL1	0.1	U	3.3		8.1		7.9		6.5		12		40		22		62	0.0473
501926	139-09LTM	SADL1	5.3		11		10		8.6		11		15		26		11		36	0.1146
502026	140-09LTM	SADL1	5.2		15		11		9.4		13		14		22		9.6		31	0.1619
502126	146-09LTM	SADL1	3.9		6.1		3.9		2.8		2.7		13		49		17		66	0.0495
508036	146-09LTM	SADL1 (REP)	5.1		5.3		9		17		25		13		14		5		19	0.2055
502226	147-09LTM	SADL1	1.8		3.1		7.7		22		41		18		0.8		0.2		1	0.2111
502326	150-09LTM	SADL1	5.3		5.9		8.9		17		13		11		23		14		37	0.1380
502426	151-09LTM	SADL1	5.6		7.8		6.3		7.1		1.8		17		33		13		46	0.0668
502526	152-09LTM	SADL1	0.3		0.3		1.2		1.4		1.6		18		58		20		78	0.0459
502626	154-09LTM	SA	6.7		9		21		31		8.7		3.4		2.8		0.6		3	0.5458
502726	155-09LTM	SADL1	1.5		2.9		8.2		26		25		11		6.5		1.7		8	0.2869
502826	202-09LTM	SA	7.7		23		35		28		1.5		0.8		0.9		0.2		1	0.6992
502926	204-09LTM	SADL1	2.2		4.2		4.5		12		22		15		23		7.6		31	0.1449
503026	207-09LTM	SADL1	4.2		5		6.3		8.7		17		18		28		5.6		33	0.1194
503126	208-09LTM	SA	0.4		1.3		4.6		14		52		22		5.4		0.9		6	0.1681
503226	211-09LTM	SADL1	6.9		3.5		4.9		11		15		17		26		6.3		32	0.1285
503326	212-09LTM	SADL1	2.6		3.1		0.7		2.5		3.2		13		55		18		73	0.0416
508136	212-09LTM	SADL1 (REP)	3.6		3.7		3.2		5		4.9		14		49		15		64	0.0476
503426	216-09LTM	SADL1	0.3		0.6		5		23		25		17		25		3.7		29	0.1409
503526	217-09LTM	SADL1	1.3		1.5		0.9		0.6		0.7		11		60		24		84	0.0330
503626	218-09LTM	SA	6.4		3.2		7.3		39		8		3.4		1.9		0.2		2	0.4246
503726	220-09LTM	SADL1	3.2		4.4		11		22		13		13		24		6		30	0.1848
503826	221-09LTM	SADL1	4.5		4.2		5.5		11		22		19		20		3.2		24	0.1578
503926	222-09LTM	SADL1	4.4		4.6		5.1		9.2		12		13		32		12		43	0.0732
504026	224-09LTM	SADL1	0.7		1.3		1.8		3.1		6.2		14		50		22		72	0.0405
504126	225-09LTM	SADL1	3.6		4.4		9.5		20		20		17		18		4.3		22	0.1859
504226	226-09LTM	SADL1	2.9		2.1		2.3		3.3		4.6		14		51		17		68	0.0462
504326	227-09LTM	SADL1	2.6		1.7		2.7		9.4		22		22		25		6.3		32	0.1127
504426	230-09LTM	SADL1	2.8		4.8		10		19		17		13		23		5.6		28	0.1816
504526	231-09LTM	SADL1	0.2		0.1		1.8		1.8		0.9		11		52		32		84	0.0325
504626	235-09LTM	SADL1	0.3		0.4		2		5.5		9.4		15		49		18		67	0.0459
504726	236-09LTM	SADL1	12		11		12		13		7.1		5		8.7		3.2		12	1.0943
504826	237-09LTM	SADL1	9.9		8.3		11		13		8.8		7.9		16		2.6		18	0.5688

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay		Total Fines	d50
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	
504926	240-09LTM	SADL1	0.4		0.5		1.8		3.7		5.3		11		53		24		77	0.0337
505026	241-09LTM	SA	4.5		5		13		24		19		12		13		2.6		15	0.2779
505126	242-09LTM	SADL1	2.4		1.5		3.2		8.9		30		24		17		4		21	0.1412
505226	245-09LTM	SADL1	1.6		1.5		5.6		14		23		17		29		7.4		36	0.1138
505326	247-09LTM	SADL1	0.2		0.3		2.1		6.3		24		23		31		10		41	0.0783
505426	249-09LTM	SADL1	4.5		6.5		13		18		25		15		11		2.4		14	0.2228
505526	250-09LTM	SA	6.2		13		23		28		5.7		5.9		11		2.7		14	0.4657
505626	253-09LTM	SADL1	4.8		13		13		13		9.9		12		26		7.2		33	0.1836
505726	304-09LTM	SA	2.3		4		9.1		22		23		15		16		4		20	0.1945
505826	306-09LTM	SA	0.6		4.4		17		49		16		5.8		5.2		0.8		6	0.3256
505926	309-09LTM	SA	1.1		2.3		3.4		6.6		10		19		22		8.8		31	0.1262
506026	310-09LTM	SA	2.3		4.5		9.5		16		16		19		21		5.5		26	0.1572
506126	311-09LTM	SA	3.2		4.5		9.7		35		32		8.9		1.7		0.6		2	0.2812
506226	317-09LTM	SA	2.4		5.4		4.9		4.3		11		21		40		10		50	0.0627
506326	318-09LTM	SA	2.3		3.6		19		45		20		5.6		0.6		0.2		1	0.3443
506426	323-09LTM	SA	0.7		0.9		0.5		3.5		5.7		16		51		21		72	0.0414
508236	323-09LTM	SA (REP)	1.3		0.8		1.2		3		13		15		45		17		62	0.0476
506526	324-09LTM	SA	2.2		2.4		3.1		5.6		8.3		17		44		17		61	0.0509
506626	325-09LTM	SA	0.2		0.9		2.4		6.4		6.8		13		46		24		70	0.0400
506726	331-09LTM	SA	0.3		1.5		2.5		3.6		3		12		54		23		77	0.0366
506826	332-09LTM	SA	1.2		3.5		10		36		24		11		11		3		14	0.2592
506926	333-09LTM	SA	11		5.8		4.6		3.6		2.4		9.1		28		6.9		34	0.5412
507026	334-09LTM	SA	0.8		1.1		1.1		2.4		4.4		19		56		16		71	0.0484
507126	335-09LTM	SA	8.4		7		6.5		10		2.9		9.8		31		8.8		40	0.1351
507226	338-09LTM	SA	0.1	U	0.3		0.3		1.8		5.5		12		52		28		80	0.0270
507326	339-09LTM	SA	0.4		0.4		0.5		1.3		6.7		21		52		15		67	0.0470
507426	340-09LTM	SA	0.2		0.3		0.5		1.1		1.8		13		54		30		83	0.0322
507526	341-09LTM	SA	0.4		2.1		16		29		28		13		9.5		2.3		12	0.2342
507626	345-09LTM	SA	0.1	U	0.2		0.3		0.5		1.2		16		60		22		82	0.0373
507726	346-09LTM	SA	1.2		0.4		1.7		24		51		16		4.1		1.2		5	0.1848
507826	349-09LTM	SA	0.2		1.8		6.1		16		7.7		30		31		7		38	0.0797
507926	352-09LTM	SA	11		15		20		16		4.9		5.6		9.8		2.5		12	0.7155

APPENDIX H. SEDIMENT GRAIN SIZE DATA FROM THE 2009 NBH LTM V SURVEY – BENTHIC SAMPLES

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			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
500111	105-09LTM	SA	0.1	U	0.4		1.5		2.3		3.3		11.2		50.6		30.7	
500112	105-09LTM	SA	0.1	U	0.1		0.5		0.8		1.8		12.5		56.1		28.2	
500113	105-09LTM	SA	0.1	U	0.4		1.2		1.9		2.8		13.4		57.6		22.7	
500211	108-09LTM	SA	0.8		2.9		5.3		7.3		9.7		15.9		36.6		18.5	
500212	108-09LTM	SA	0.2		2.1		4.9		6		8		15.1		39.5		24.1	
500213	108-09LTM	SA	0.3		2.9		5		6.6		10.1		17.1		40.3		17.6	
500311	109-09LTM	SA	0.2		2.2		3.5		4.2		9.5		18.2		47.8		14.4	
500312	109-09LTM	SA	0.2		2		3.9		6.2		12.2		19.8		41.7		14	
500313	109-09LTM	SA	2.2		6.7		7.2		8.3		15.6		19.3		30.1		9.7	
500411	111-09LTM	SA	0.1	U	0.3		1.5		2.7		3.5		12.1		49.9		30	
500412	111-09LTM	SA	0.1	U	0.5		2.3		3.7		4.4		12.3		48.6		28.2	
500413	111-09LTM	SA	0.1	U	0.2		0.3		1.1		2.6		12.1		54		29.7	
500511	114-09LTM	SA	0.8		5.5		6.9		5.6		4.5		10		39.2		26.9	
500512	114-09LTM	SA	0.1	U	1.2		5		5.8		4.6		11.7		44		27.7	
500513	114-09LTM	SA	0.1	U	0.8		3.3		3.8		2.9		10.9		53.8		24.5	
500611	115-09LTM	SA	0.3		0.4		0.6		1.3		1.9		11.6		59.3		24.1	
500612	115-09LTM	SA	0.3		0.5		1		2.1		1.9		12.1		55.5		25.9	
500613	115-09LTM	SA	0.4		0.4		0.4		1.1		1.8		11.8		62		22	
500711	117-09LTM	SA	1.6		2.8		4.2		6.1		5.2		13.4		41.9		15.5	
500712	117-09LTM	SA	0.7		2.2		2.6		3.7		2.4		12.4		50.1		25.6	
500713	117-09LTM	SA	2.2		3.3		4.6		5.4		4.8		13.7		45.7		19.5	
500811	120-09LTM	SA	0.4		1.1		0.8		3.5		8.8		16.6		44.7		23.7	
500812	120-09LTM	SA	0.6		1		2		3.7		9.6		15.9		44.9		22.2	
500813	120-09LTM	SA	1.3		0.9		0.6		2.1		6		14.6		48.9		24.7	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
500911	121-09LTM	SA	0.4		0.6		0.6		4		5		12.9		46.3		30	
500912	121-09LTM	SA	0.7		0.8		1.9		4.8		6		14.8		50.5		20.3	
500913	121-09LTM	SA	1.6		0.4		0.6		4.2		8.3		18.2		47.5		17.9	
501011	123-09LTM	SA	2.9		1.6		1		4.6		5.4		13.1		49.4		19.5	
501012	123-09LTM	SA	1.3		1.4		2.8		5.5		5.3		13.5		48.5		21.4	
501013	123-09LTM	SA	0.3		0.1		0.5		1.2		1.6		11.2		49.6		35.3	
501111	125-09LTM	SA	0.2		0.8		1.6		2.2		3.5		6.7		40.3		44.6	
501112	125-09LTM	SA	0.3		0.4		10.6		3.7		1.4		11.2		44.5		27.8	
501113	125-09LTM	SA	0.3		0.3		0.1		0.2		0.6		11.4		55.8		31.2	
501211	126-09LTM	SA	10.3		5.5		8.7		20.5		24.4		11.4		4.6		1	
501212	126-09LTM	SA	8.8		6		9		22.2		25.4		11.1		6.3		1.1	
501213	126-09LTM	SA	5.4		4.1		12.8		24.3		28.8		12		1.5		0.3	
501311	128-09LTM	SA	3.8		8		3.6		4.2		4.6		11.8		42.2		19.8	
501312	128-09LTM	SA	0.8		2.3		2.3		3		3.5		12.5		50.3		25.1	
501313	128-09LTM	SA	2.4		7.1		2.5		4.6		6.5		13.7		41.2		21.3	
501411	130-09LTM	SA	6.6		9		10.5		16.3		15.5		10.9		13.9		2.6	
501412	130-09LTM	SA	7.6		10		12.5		19		19.2		12.2		10.1		2.4	
501413	130-09LTM	SA	7.5		10.5		11.6		17.5		17.3		10.6		10.6		2.1	
501511	131-09LTM	SA	4		4.4		6.9		13.1		12.3		14.3		31.3		12.2	
501512	131-09LTM	SA	1.7		4.7		5.9		11.1		11.8		15.3		34.8		13.2	
501513	131-09LTM	SA	3.1		5		7		11.1		10.5		14.7		34.6		12.3	
501611	134-09LTM	SA	1.4		12.2		14.1		11.2		8.7		13		24.1		14.9	
501612	134-09LTM	SA	0.5		6.9		9.8		8.8		7.3		13.4		33.9		18.8	
501613	134-09LTM	SA	1.1		9.4		11.3		9.7		9.6		13.5		27.8		17.3	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
501613	134-09LTM	SA	1.1		9.4		11.3		9.7		9.6		13.5		27.8		17.3	
501711	135-09LTM	SA	7.7		4.7		8.9		16.9		24.5		13.5		4.7		1.3	
501712	135-09LTM	SA	11.4		6.3		10.9		19.9		23.6		11.5		2.2		0.7	
501713	135-09LTM	SA	10		6.9		11.6		19.1		22.4		12.1		4.3		1.3	
501811	138-09LTM	SA	0.1	U	6.8		11.5		10.2		8.4		11.6		31.9		19.6	
501812	138-09LTM	SA	3.3		12.3		10.5		8.8		10.6		15.9		26.4		11.4	
501813	138-09LTM	SA	0.1	U	3.4		7.1		7		6.1		13.1		46.2		17.1	
501911	139-09LTM	SA	1.5		7.1		8.8		10		14.2		18		24.2		12.6	
501912	139-09LTM	SA	5.9		12.9		10		8.4		9.9		13.8		25.6		10	
501913	139-09LTM	SA	1.9		12		9.3		9		12.1		17		26.1		12.1	
502011	140-09LTM	SA	2.6		10.6		11		10.2		10.7		14.9		27.1		12.2	
502012	140-09LTM	SA	0.1	U	4.1		7.4		7		5.8		10.8		44.9		20	
502013	140-09LTM	SA	3		11.6		11.3		10.1		11.5		14.5		23.9		11.3	
502111	146-09LTM	SA	6.7		5.7		8.1		25.3		20.7		10.1		7.8		2.4	
502112	146-09LTM	SA	43		13.2		9.7		10.5		1.7		3.7		1.2		0.4	
502113	146-09LTM	SA	7.6		7.6		10.2		17.6		25.1		12.6		11.3		4.1	
502211	147-09LTM	SA	0.9		2.2		7.1		19.2		40.3		20.5		6.7		2	
502212	147-09LTM	SA	1.5		7.4		10.7		8.6		11.9		19.4		25.5		7.8	
502213	147-09LTM	SA	1.1		2.5		7		18.4		37.8		19.8		6.3		2	
502311	150-09LTM	SA	5.7		6.8		9.2		15.1		13		11.8		22.2		8.2	
502312	150-09LTM	SA	7.8		8.8		6.6		12		13.3		11.5		23.7		10.3	
502313	150-09LTM	SA	3.8		5.8		10.2		22.4		21.3		13.3		14.2		4.8	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
502411	151-09LTM	SA	0.7		1.5		5.4		17.9		48		19.1		4.8		1.7	
502412	151-09LTM	SA	6.4		11.9		9.1		21.9		14.9		13.9		10.2		3.9	
502413	151-09LTM	SA	2		1.9		4.9		16.1		45.6		20.2		6.3		2.4	
502511	152-09LTM	SA	2		4		7.4		14.1		11.8		15.3		34.7		9.8	
502512	152-09LTM	SA	1.7		2.9		5.6		12.5		11		14.7		38.4		11.8	
502513	152-09LTM	SA	2.7		4		7		14.5		14.9		18.2		29.3		7.9	
502611	154-09LTM	SA	10		12.2		22.9		28.6		7.2		2.8		2		0.4	
502612	154-09LTM	SA	11.4		13.2		24.2		24.1		2.8		1.4		1.9		0.4	
502613	154-09LTM	SA	8.5		11.8		24.3		34.6		6.8		2.6		2		0.5	
502711	155-09LTM	SA	1.7		3.8		10.9		31.9		31.2		11.7		4.3		1	
502712	155-09LTM	SA	1.2		3.1		7.8		27.8		34.4		13.4		4.5		1.2	
502713	155-09LTM	SA	1.4		3.8		9.2		30.1		33.7		12.5		5.4		1.4	
502811	202-09LTM	SA	10.4		18.3		29.7		28.2		2.7		1.5		1.9		0.5	
502812	202-09LTM	SA	12.3		16.5		27.8		27.3		2.8		1.7		2.3		0.5	
502813	202-09LTM	SA	10.1		21.6		31.3		26.7		2		1		1.5		0.3	
502911	204-09LTM	SA	4.1		8		12.9		21.8		17.4		10.5		16.3		6	
502912	204-09LTM	SA	3.6		10.2		8.9		22.5		1.4		11.2		29.3		11.1	
502913	204-09LTM	SA	2.1		5.2		5.6		15.2		24.9		15.1		22.4		7.5	
503011	207-09LTM	SA	0.1		0.5		0.3		2.9		5.1		14.8		56.7		19.5	
503012	207-09LTM	SA	1.8		3		3.6		6.1		17.4		20.9		36.4		9.1	
503013	207-09LTM	SA	2.3		1.7		0.6		4.3		14.7		20.3		42.1		12.8	
503111	208-09LTM	SA	0.9		1.4		1.7		13.5		54.5		21.5		5.3		0.9	
503112	208-09LTM	SA	6.4		5.1		5.9		17.9		39.7		15.4		6.3		0.9	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
503113	208-09LTM	SA	0.5		1.4		3.4		13.8		53.6		20.4		5.8		1	
503211	211-09LTM	SA	0.8		2.1		0.6		3.6		5		12.6		42.2		32.9	
503212	211-09LTM	SA	4.7		4.3		6.9		11.9		12.6		16.9		31		6.8	
503213	211-09LTM	SA	3.2		2.7		2.5		11		16.9		19.5		33.4		7.8	
503311	212-09LTM	SA	0.9		1.4		1.1		1.9		2.5		11.4		49.8		30.6	
503312	212-09LTM	SA	0.9		0.8		0.5		2.5		2.2		11		51.6		30.2	
503313	212-09LTM	SA	1.9		4.3		4.2		6.5		5.5		12.8		44.6		18.1	
503411	216-09LTM	SA	0.3		1.2		6.7		20.9		24.6		17.6		24.3		4.3	
503412	216-09LTM	SA	1.8		3.4		10.8		24.6		23.9		14.4		16.8		2.9	
503413	216-09LTM	SA	0.1		0.8		9.8		33.5		29.7		15.2		9.4		1.5	
503511	217-09LTM	SA	0.1		1		0.4		2.5		1.2		8.4		52.1		34	
503512	217-09LTM	SA	0.1		2.4		2		1.7		1.2		9.2		49		34.3	
503513	217-09LTM	SA	0.2		0.5		0.2		2		0.8		7.9		50.2		38	
503611	218-09LTM	SA	11.8		4.2		4.9		28.5		7.4		2.9		2.3		0.3	
503612	218-09LTM	SA	8.4		3.2		4.8		30.6		10.6		4.6		3.1		0.4	
503613	218-09LTM	SA	9.5		4.6		7		35.1		7.1		2.7		1.7		0.3	
503711	220-09LTM	SA	4.4		5.6		9.3		25.5		17.5		11.4		16.8		4.2	
503712	220-09LTM	SA	4.9		3.9		5.9		17.3		13.3		11.7		19.9		4.9	
503713	220-09LTM	SA	3		3.9		12.4		33.8		18.7		9.6		11.6		2	
503811	221-09LTM	SA	5.8		5.8		7.3		14.3		23.4		18.1		16		3.8	
503812	221-09LTM	SA	7.4		6.4		9.1		17.6		22.8		14.3		9.7		1.7	
503813	221-09LTM	SA	5.1		5.3		6.4		11.6		21.1		17		14.1		2.7	
503911	222-09LTM	SA	1.7		7.3		9.1		12.6		11.3		11.5		28.5		16.8	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
503912	222-09LTM	SA	1.7		1.5		1.5		2.6		4		14.4		51.1		22	
503913	222-09LTM	SA	3		6.2		6.1		8.7		8.2		12.1		32.4		13.4	
504011	224-09LTM	SA	0.3		1.4		0.5		5.1		9.5		13.1		40.2		29.8	
504012	224-09LTM	SA	0.9		1.3		2.2		4.5		8.7		15		46.9		20.2	
504013	224-09LTM	SA	1.1		1.3		0.5		3.9		6.9		15.8		49		21.2	
504111	225-09LTM	SA	2.5		3.4		3.7		11.4		17.3		17.4		27.6		9.8	
504112	225-09LTM	SA	2.7		2.3		3.5		7.6		12.2		17.3		37.7		14.5	
504113	225-09LTM	SA	2.6		3.7		3.7		8.9		14.3		17.4		34.1		12.3	
504211	226-09LTM	SA	0.1		0.4		0.2		3.5		5.1		12.9		50.1		27.6	
504212	226-09LTM	SA	1.4		1.7		2.7		5.6		6.8		12.6		38.4		22	
504213	226-09LTM	SA	0.7		1.1		0.3		4.9		5.9		14.4		47.6		24.9	
504311	227-09LTM	SA	1.3		1		0.5		4.8		17		22		37.8		10.2	
504312	227-09LTM	SA	1.7		1.1		2.1		7.6		18.7		21.6		30.5		7.9	
504313	227-09LTM	SA	1.9		1.4		0.8		11.1		23.8		23.4		24.5		11.3	
504411	230-09LTM	SA	2.1		5		9.9		21.8		18.3		13.5		19.7		6.6	
504412	230-09LTM	SA	4		4		7.7		15.3		17.7		14		24.6		7.8	
504413	230-09LTM	SA	3.2		4.8		9.1		18.9		16.3		12.9		21.3		6.9	
504511	231-09LTM	SA	0.2		0.3		0.4		0.4		0.8		8.3		43.1		46.4	
504512	231-09LTM	SA	0.3		0.2		5.2		3.8		1.5		7		38.4		43.4	
504513	231-09LTM	SA	0.4		0.1		0.2		0.6		0.5		9.4		50		38.5	
504611	235-09LTM	SA	0.1	U	0.5		1.9		6.5		14.8		16		40.8		19.3	
504612	235-09LTM	SA	0.1		0.8		3.3		5.9		10.2		13.8		41.1		24.7	
504613	235-09LTM	SA	0.2		0.6		0.7		3.4		9.7		16.1		46.8		22.4	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
505711	304-09LTM	SA	2		2.3		7.3		20.6		25.7		17.8		16.1		4.3	
505712	304-09LTM	SA	0.2		3.1		8.5		19.2		25.9		19.7		18.1		4.8	
505713	304-09LTM	SA	1.7		2.3		6.1		20.7		25.9		19.6		17.2		4.6	
505811	306-09LTM	SA	3.2		5.9		23.4		32.3		0.6		25.7		4.1		0.6	
505812	306-09LTM	SA	1.2		4.3		21.7		50.1		17.1		4.3		0.1		0.1	U
505813	306-09LTM	SA	1		3.9		23.2		50.8		14.2		3.6		0.2		0.1	U
505911	309-09LTM	SA	1.1		1.9		4.3		9.2		15		22.1		34.3		11.8	
505912	309-09LTM	SA	0.7		1		2.5		7.5		10.3		20.5		39.2		10	
505913	309-09LTM	SA	1.2		1.3		3.1		7.9		9.9		18.9		37.6		11.9	
506011	310-09LTM	SA	4.5		6.9		11.2		14.2		12.2		13.6		18		3.9	
506012	310-09LTM	SA	2.9		3.2		8.4		16.3		15.8		17.8		20.3		7.4	
506013	310-09LTM	SA	1		1.7		4.9		11.2		17.4		22.4		32.6		6.4	
506111	311-09LTM	SA	2.1		4		11.5		36.8		32.9		8		0.3		0.1	
506112	311-09LTM	SA	1.6		4.4		11.7		38.4		32.7		8.5		0.7		0.2	
506113	311-09LTM	SA	2.2		4.8		13.5		38.6		13.9		7.5		11.1		4.3	
506211	317-09LTM	SA	0.9		5.6		7.4		5.6		3.2		10		45.9		21.1	
506212	317-09LTM	SA	0.7		4.8		5.2		4.6		3.3		10.3		48.7		22.2	
506213	317-09LTM	SA	0.3		6.1		9.6		8		5.1		11.6		38		21.1	
506311	318-09LTM	SA	3		3.9		20.6		43.5		20.2		5.7		1		0.2	
506312	318-09LTM	SA	2.3		3.8		18.1		44.6		22.6		6.5		0.8		0.2	
506313	318-09LTM	SA	1.2		2.2		17.3		45.4		22.3		6.4		1.1		0.3	
506411	323-09LTM	SA	2.8		3.5		5.3		7.8		8.7		17.3		40.5		11.7	
506412	323-09LTM	SA	0.9		1		2.4		3.8		5.9		17.1		47.1		12.5	
506413	323-09LTM	SA	3		3.3		5.6		7.6		7		16		42.5		11.2	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
506511	324-09LTM	SA	1.8		4.3		5.8		8.7		8.1		14.3		38.6		17.9	
506512	324-09LTM	SA	2.2		5.5		7.7		10		8.2		13.2		38.6		13.9	
506513	324-09LTM	SA	0.5		2.8		4		6.6		6.9		14.5		49.6		15	
506611	325-09LTM	SA	2.3		4.8		9.4		17.3		12.1		13.6		27.9		9.1	
506612	325-09LTM	SA	1.1		2.6		6.5		14.3		11.5		14.7		29.7		8.5	
506613	325-09LTM	SA	0.8		2.1		6		12.2		11.1		14.8		38.7		14.1	
506711	331-09LTM	SA	0.4		1.1		2.9		3.5		2.1		11.6		57.9		20.4	
506712	331-09LTM	SA	1		1.8		2.5		3.4		2.9		9.1		50.6		25.8	
506713	331-09LTM	SA	0.1		0.4		2		3.4		2.2		9.7		53.5		28.6	
506811	332-09LTM	SA	0.8		5.3		13.5		37		21.8		9.4		9.4		2.6	
506812	332-09LTM	SA	0.7		4.7		10.4		30.8		21.6		11.7		15.8		4.1	
506813	332-09LTM	SA	0.2		4.7		11		34.6		20		10.7		14.2		4.5	
506911	333-09LTM	SA	13.5		8.4		5.6		4.2		2.4		9.5		29.8		8.1	
506912	333-09LTM	SA	14.8		10.3		9		7.8		3.8		8.4		22.4		6	
506913	333-09LTM	SA	7.1		3.7		1.4		1.4		0.9		10.6		32.6		8.7	
507011	334-09LTM	SA	4.5		6.8		5.1		6.9		7.5		12.1		36		14.7	
507012	334-09LTM	SA	1.8		4		5		8.4		10.1		16.7		40.7		12.4	
507013	334-09LTM	SA	2.4		3.6		3.1		6.9		9.1		15.8		42.5		14.4	
507111	335-09LTM	SA	3.7		7.4		11.3		21.8		9.4		11.5		26.1		6.6	
507112	335-09LTM	SA	2.9		6.7		9.3		25.7		9.8		10.1		24.9		5.6	
507113	335-09LTM	SA	3.6		4.9		11.3		20.1		5.9		10.7		31.5		9	
507211	338-09LTM	SA	0.1	U	0.1		0.1		0.5		1.6		12.9		56.8		28	
507212	338-09LTM	SA	0.1		0.2		0.2		0.8		3.3		13.1		53.6		28.7	
507213	338-09LTM	SA	0.5		0.5		0.4		1.4		3.8		13.7		52.9		25.3	

			Gravel		Very Course Sand		Course Sand		Medium Sand		Fine Sand		Very Fine Sand		Silt		Clay	
Sample ID	Station ID	QC Code	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual	%	Qual
507311	339-09LTM	SA	0.1	U	0.1		0.2		0.6		2.8		13.7		48.1		34.5	
507312	339-09LTM	SA	0.1	U	0.1		0.2		0.6		0.4		14.5		55.4		28.8	
507313	339-09LTM	SA	0.1	U	0.1		0.2		0.5		2.7		16.9		52.7		26.9	
507411	340-09LTM	SA	0.1	U	0.2		0.5		1		2		9.9		41.5		44.9	
507412	340-09LTM	SA	0.1	U	0.4		0.4		1		2.2		13.3		51.7		31	
507413	340-09LTM	SA	0.1	U	0.8		1.4		2.2		3.3		13.7		50.7		27.9	
507511	341-09LTM	SA	1.4		4.9		18.2		24.8		22.1		11.2		11.6		3.3	
507512	341-09LTM	SA	0.5		3.4		17.9		25.7		20.2		12.5		15.1		4.6	
507513	341-09LTM	SA	0.9		5.2		18		22.5		21.6		11.9		14.7		2.9	
507611	345-09LTM	SA	0.1	U	0.3		0.2		0.7		0.6		14.9		54.4		28.9	
507612	345-09LTM	SA	0.1	U	0.1	U	0.4		0.3		0.7		14.3		57.2		27.1	
507613	345-09LTM	SA	0.1	U	0.1		0.2		0.4		0.6		14.7		52.8		31.2	
507711	346-09LTM	SA	0.3		1.3		1.6		24.8		48.6		14.4		7.1		1.5	
507712	346-09LTM	SA	0.2		1.2		4.8		17.2		1.1		62.1		9.4		2.4	
507713	346-09LTM	SA	0.2		0.6		0.8		27		45		14.2		9.5		2.6	
507811	349-09LTM	SA	1.3		6.6		6.6		10.3		12.1		27.8		27.9		6.9	
507812	349-09LTM	SA	0.4		3.4		5.9		6.1		9.8		31.2		34.2		8.3	
507813	349-09LTM	SA	3.1		5.8		6.5		8.9		10.7		30.1		26.6		7.2	
507911	352-09LTM	SA	5.2		9.7		14.4		25.4		4.5		5.6		11.3		2.3	
507912	352-09LTM	SA	2.4		23.6		23.1		23.4		7.7		6.3		6		1.3	

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APPENDIX I. GRAIN SIZE LABORATORY REPORTS

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ANALYTICAL REPORT

Lab Number:	L0912906
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/02/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912906
Report Date: 02/02/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912906-01	500111	NEW BEDFORD, MA	09/24/09 11:19
L0912906-02	500112	NEW BEDFORD, MA	09/24/09 11:19
L0912906-03	500113	NEW BEDFORD, MA	09/24/09 11:19
L0912906-04	500126	NEW BEDFORD, MA	09/24/09 11:23
L0912906-05	500211	NEW BEDFORD, MA	09/24/09 10:20
L0912906-06	500212	NEW BEDFORD, MA	09/24/09 10:20
L0912906-07	500213	NEW BEDFORD, MA	09/24/09 10:20
L0912906-08	500226	NEW BEDFORD, MA	09/24/09 10:25
L0912906-09	500311	NEW BEDFORD, MA	09/24/09 12:43
L0912906-10	500312	NEW BEDFORD, MA	09/24/09 12:13
L0912906-11	500313	NEW BEDFORD, MA	09/24/09 12:13
L0912906-12	500326	NEW BEDFORD, MA	09/24/09 12:25
L0912906-13	500411	NEW BEDFORD, MA	09/24/09 14:28
L0912906-14	500412	NEW BEDFORD, MA	09/24/09 14:28
L0912906-15	500413	NEW BEDFORD, MA	09/24/09 14:28
L0912906-16	500426	NEW BEDFORD, MA	09/24/09 14:34
L0912906-17	500511	NEW BEDFORD, MA	09/24/09 15:33
L0912906-18	500512	NEW BEDFORD, MA	09/24/09 15:33
L0912906-19	500513	NEW BEDFORD, MA	09/24/09 15:33
L0912906-20	500526	NEW BEDFORD, MA	09/24/09 15:38

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912906
Project Number:	TO-0018	**Report Date:**	02/02/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 14, 2009. The report was ammended to include revised Grain Size data.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Nancy A Rose

Title: Technical Director/Representative Date: 02/02/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-01
Client ID: 500111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 11:19
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	30.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-02
Client ID: 500112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 11:19
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.800		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	56.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-03
Client ID: 500113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 11:19
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	57.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-04
Client ID: 500126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 11:23
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	54.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-05
Client ID: 500211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 10:20
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	36.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	18.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-06
Client ID: 500212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 10:20
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	39.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-07
Client ID: 500213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 10:20
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-08
Client ID: 500226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 10:25
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	37.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	18.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-09
Client ID: 500311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 12:43
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	47.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-10
Client ID: 500312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 12:13
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	41.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-11
Client ID: 500313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 12:13
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	15.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	30.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-12
Client ID: 500326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 12:25
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.900		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	36.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-13
Client ID: 500411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:28
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	30.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-14
Client ID: 500412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:28
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-15
Client ID: 500413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:28
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.200		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	54.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	29.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-16
Client ID: 500426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:34
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-17
Client ID: 500511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:33
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	39.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	26.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-18
Client ID: 500512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:33
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-19
Client ID: 500513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:33
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	53.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912906
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912906-20
Client ID: 500526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:38
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	25.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912906
Report Date: 02/02/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG382093-1 QC Sample: L0912906-20 Client ID: 500526						
Gravel (>2.00mm)	ND	ND	%	NC		20
Very Coarse Sand (1.00-2.00 mm)	1.4	1.80	%	**25**	Q	20
Coarse Sand (0.50-1.00 mm)	5.4	5.70	%	5		20
Medium Sand (0.25-0.50 mm)	5.6	5.70	%	2		20
Fine Sand (0.125-0.25 mm)	4.0	3.60	%	11		20
Very Fine Sand (0.063-0.125 mm)	12.5	13.0	%	4		20
Silt - (1.95-62.5 um)	45.7	49.1	%	7		20
Clay - (<1.95 um)	25.4	21.1	%	18		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912906
Report Date: 02/02/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912906-01A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-02A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-03A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-04A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-05A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-06A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-07A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-08A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912906
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912906-09A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-10A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-11A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-12A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-13A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-14A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-15A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-16A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-17A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-18A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912906
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912906-19A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-20A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912906-20B	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-DUP()

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912906
Project Number:	TO-0018	**Report Date:**	02/02/10

GLOSSARY

Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
Q	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

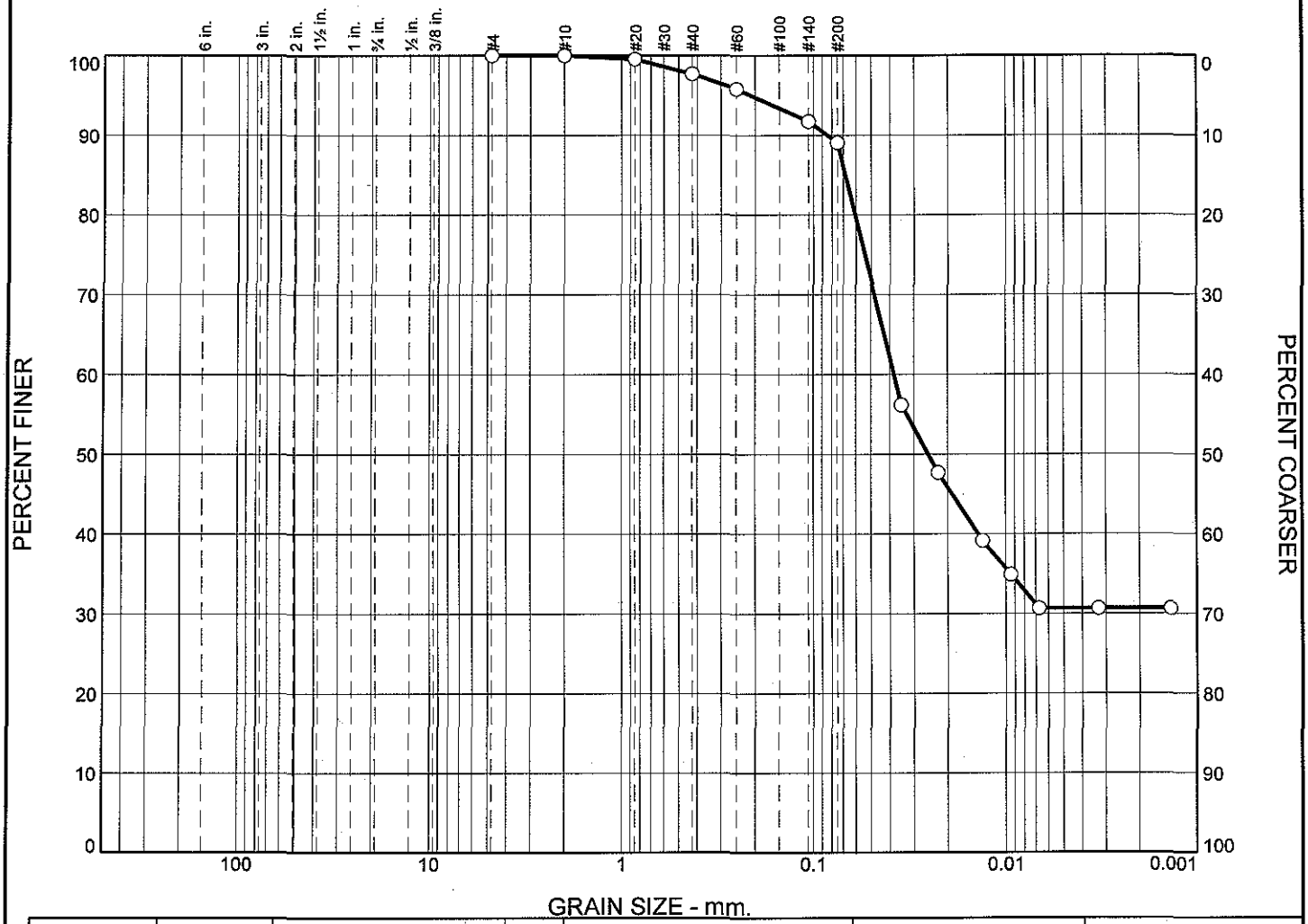
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.4	1.5	2.3	3.3	11.2	27.4	12.0	9.3	1.9	30.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0682	0.0380	0.0253					

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500111 **Sample Number:** L0912906-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500111
Sample Number: L0912906-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 9.40
Tare Wt. = 4.08
Minus #200 from wash = 84.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
33.65	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	405.68	405.52	99.5	0.5
		#40	359.90	359.28	97.7	2.3
		#60	366.89	366.26	95.8	4.2
		#140	344.30	342.93	91.7	8.3
		#200	346.22	345.32	89.1	10.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 89.1
Weight of hydrometer sample =33.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	56.2	43.8
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	47.7	52.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	39.2	60.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	34.9	65.1
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	30.7	69.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	30.7	69.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	30.7	69.3

Fractional Components

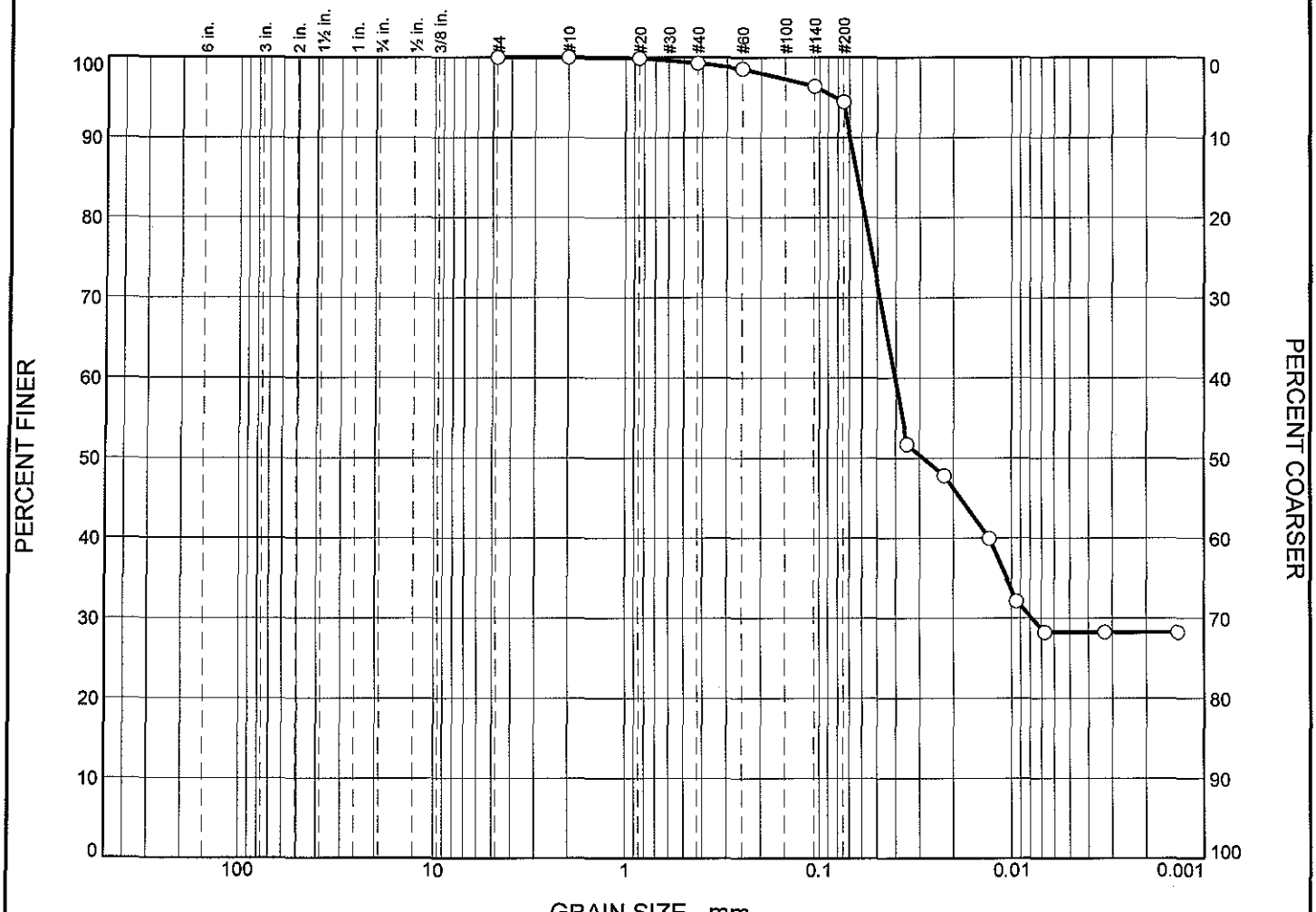
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.4	1.5	2.3	3.3	11.2	18.7	27.4	12.0	9.3	1.9	50.6	30.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0253	0.0380	0.0607	0.0682	0.0847	0.2108

Fineness Modulus
0.12

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.1	0.5	0.8	1.8	12.5	33.6	8.1	12.6	1.8	28.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0633	0.0404	0.0287	0.0078				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500112 **Sample Number:** L0912906-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500112
Sample Number: L0912906-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 7.27
Tare Wt. = 4.01
Minus #200 from wash = 91.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
38.78	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.16	482.16	100.0	0.0
		#20	411.25	411.21	99.9	0.1
		#40	378.16	377.92	99.3	0.7
		#60	370.28	370.01	98.6	1.4
		#140	348.17	347.33	96.4	3.6
		#200	347.34	346.58	94.5	5.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.5
Weight of hydrometer sample =38.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	51.7	48.3
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	47.8	52.2
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	39.9	60.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	32.1	67.9
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	28.2	71.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	28.2	71.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	28.2	71.8

Fractional Components

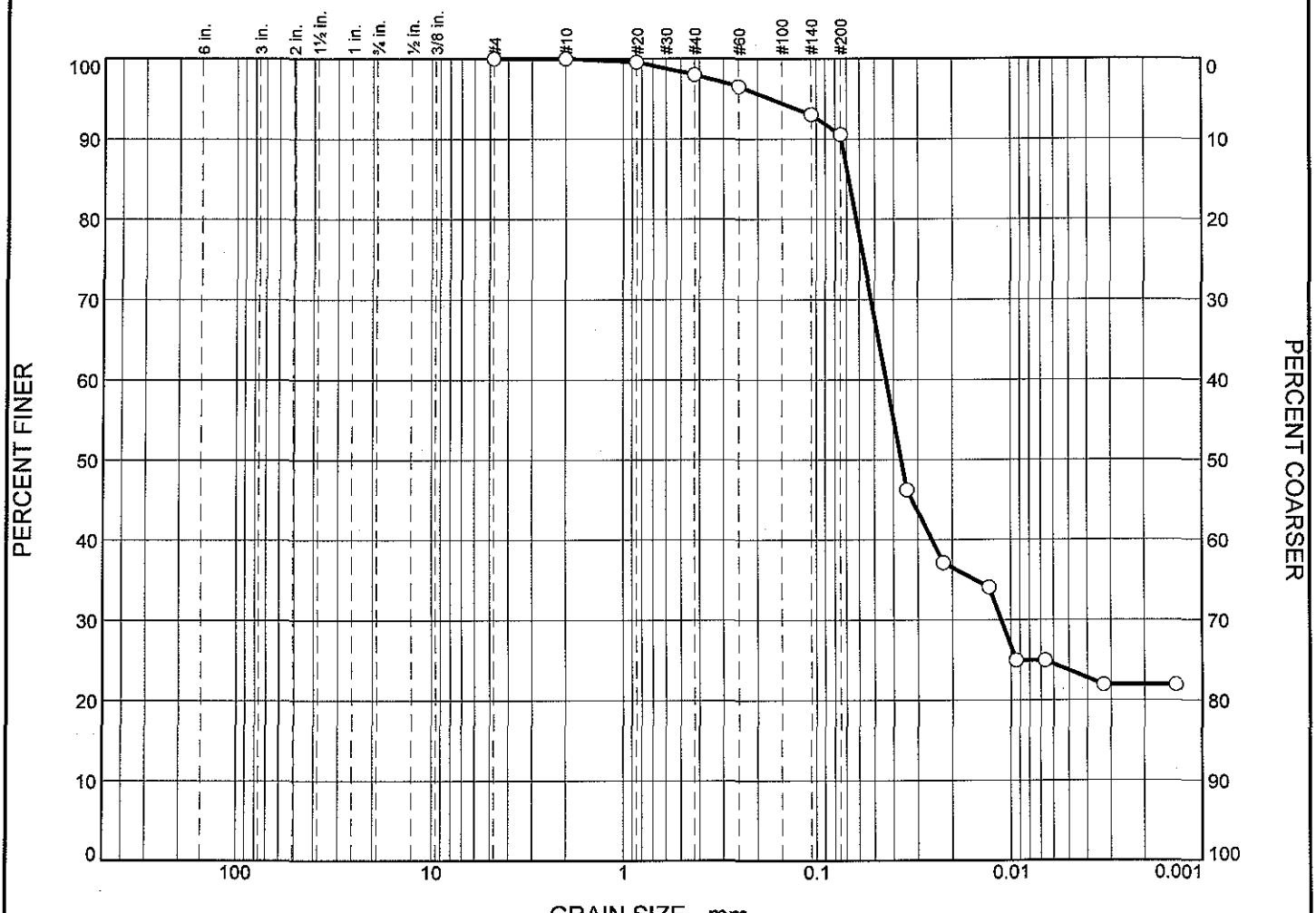
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.1	0.5	0.8	1.8	12.5	15.7	33.6	8.1	12.6	1.8	56.1	28.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0078	0.0287	0.0404	0.0578	0.0633	0.0692	0.0826

Fineness Modulus
0.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.4	1.2	1.9	2.8	13.4	36.1	9.1	10.1	2.3	22.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0680	0.0436	0.0365	0.0112				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500113 **Sample Number:** L0912906-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500113
Sample Number: L0912906-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 11.06
Tare Wt. = 4.01
Minus #200 from wash = 85.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
47.85	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	405.73	405.52	99.6	0.4
		#40	360.02	359.28	98.0	2.0
		#60	366.97	366.26	96.5	3.5
		#140	344.61	342.93	93.0	7.0
		#200	346.51	345.32	90.5	9.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 90.5
Weight of hydrometer sample =47.85
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	46.2	53.8
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	37.1	62.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	34.1	65.9
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	25.0	75.0
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	25.0	75.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	21.9	78.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	21.9	78.1

Fractional Components

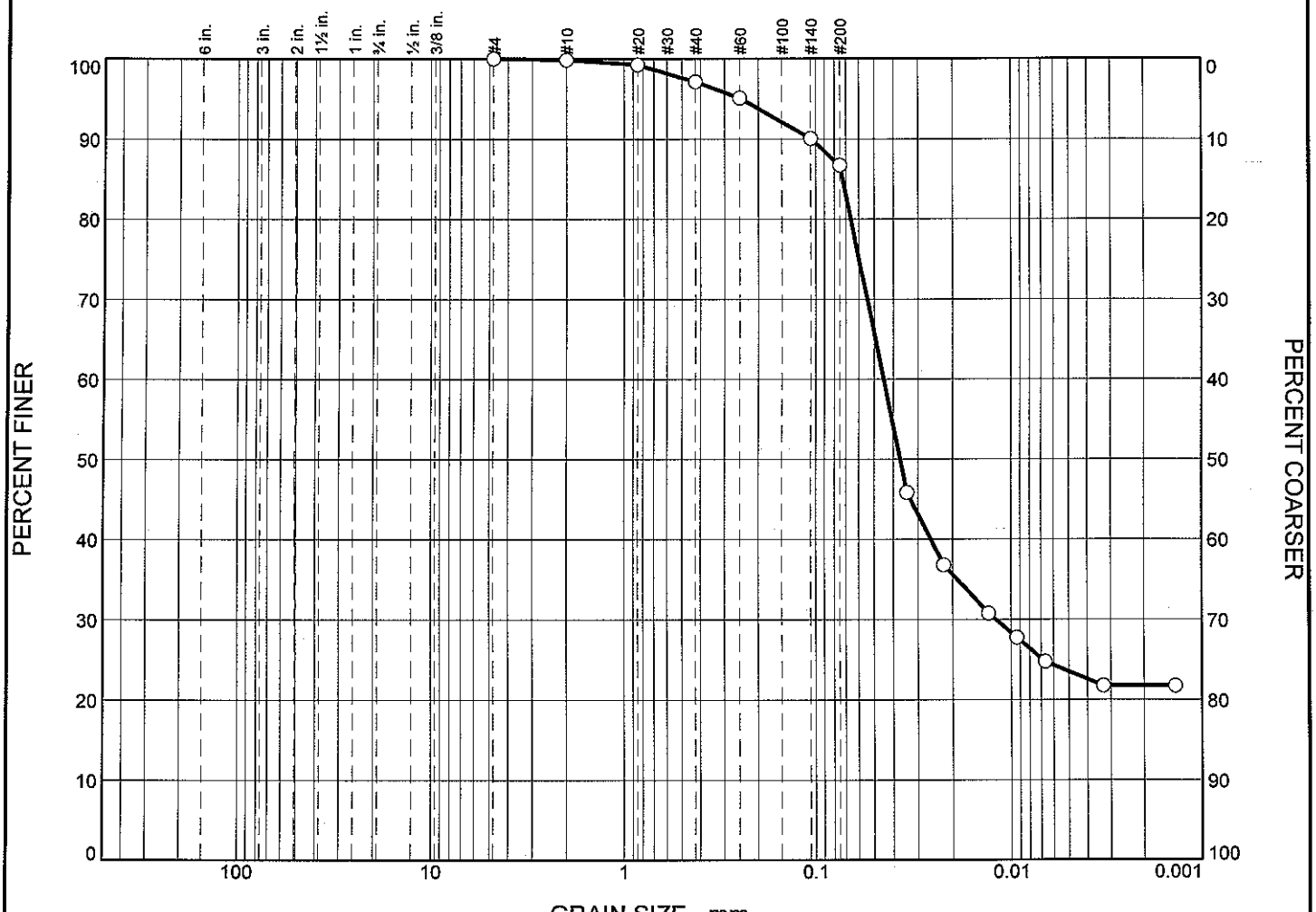
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.4	1.2	1.9	2.8	13.4	19.7	36.1	9.1	10.1	2.3	57.6	22.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0112	0.0365	0.0436	0.0622	0.0680	0.0743	0.1720

Fineness Modulus
0.10

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.1	0.5	1.8	2.5	4.1	13.7	33.5	11.0	6.6	3.7	22.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0726	0.0448	0.0370	0.0120				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500126 **Sample Number:** L0912906-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500126
Sample Number: L0912906-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 14.53
Tare Wt. = 4.03
Minus #200 from wash = 77.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
46.24	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.22	482.16	99.9	0.1
		#20	411.50	411.21	99.2	0.8
		#40	378.90	377.92	97.1	2.9
		#60	370.94	370.01	95.1	4.9
		#140	349.66	347.33	90.1	9.9
		#200	348.13	346.58	86.7	13.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.7
Weight of hydrometer sample =46.24
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	45.8	54.2
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	36.8	63.2
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	30.8	69.2
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	27.7	72.3
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	24.7	75.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	21.7	78.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	21.7	78.3

Fractional Components

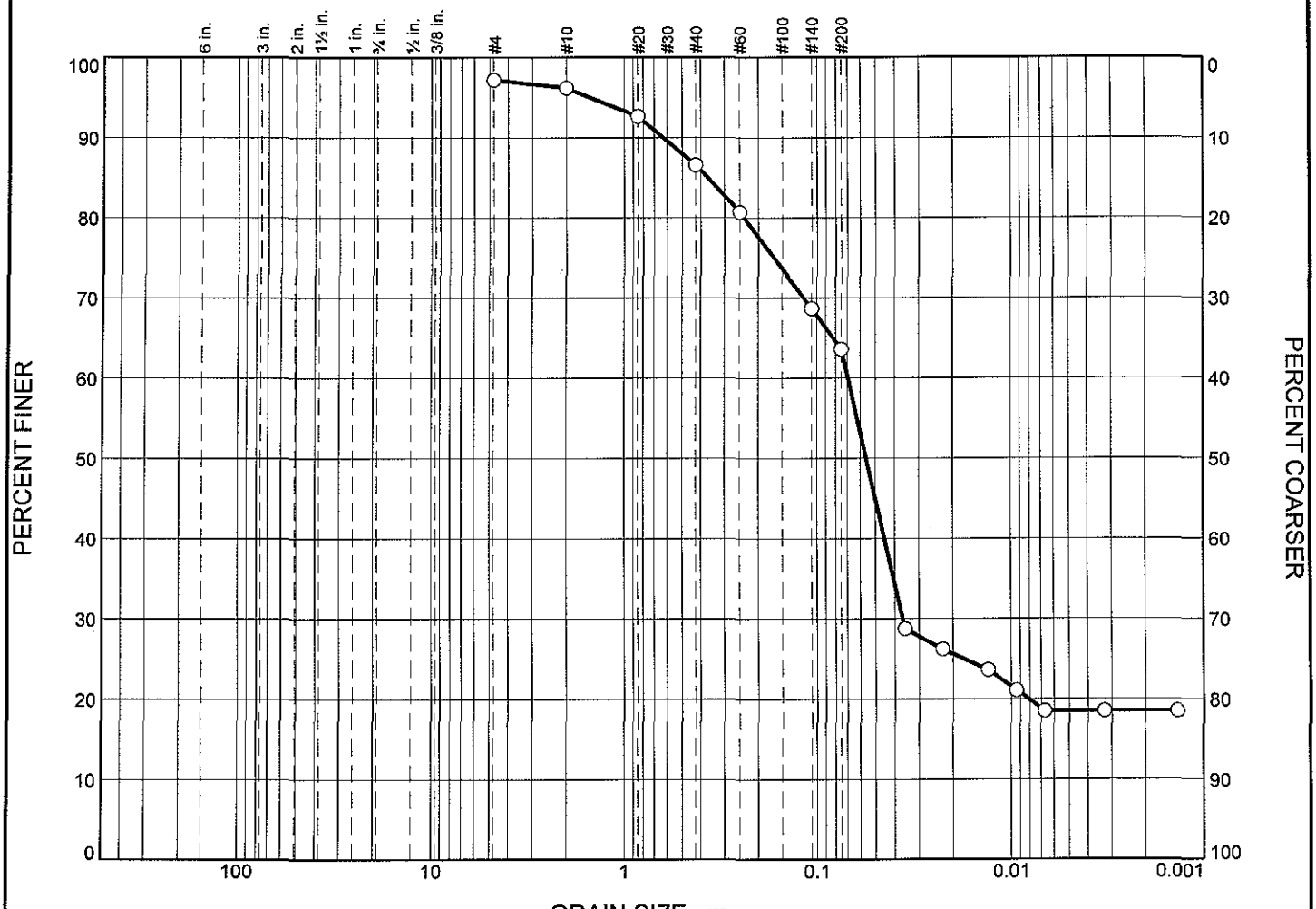
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.1	0.5	1.8	2.5	4.1	13.7	22.6	33.5	11.0	6.6	3.7	54.8	22.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0120	0.0370	0.0448	0.0659	0.0726	0.1052	0.2453

Fineness Modulus
0.15

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	2.9	5.3	7.3	9.7	15.9	27.1	3.6	4.8	1.1	18.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3679	0.0694	0.0560	0.0364				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500211 **Sample Number:** L0912906-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500211
Sample Number: L0912906-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 21.63
Tare Wt. = 4.08
Minus #200 from wash = 55.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
39.84	0.00	#4	523.01	521.88	97.2	2.8
		#10	485.23	484.84	96.2	3.8
		#20	406.94	405.52	92.6	7.4
		#40	361.68	359.28	86.6	13.4
		#60	368.60	366.26	80.7	19.3
		#140	347.73	342.93	68.7	31.3
		#200	347.34	345.32	63.6	36.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 63.6
Weight of hydrometer sample =39.84
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	28.7	71.3
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	26.2	73.8
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	23.6	76.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	21.1	78.9
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	18.5	81.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	18.5	81.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	18.5	81.5

Fractional Components

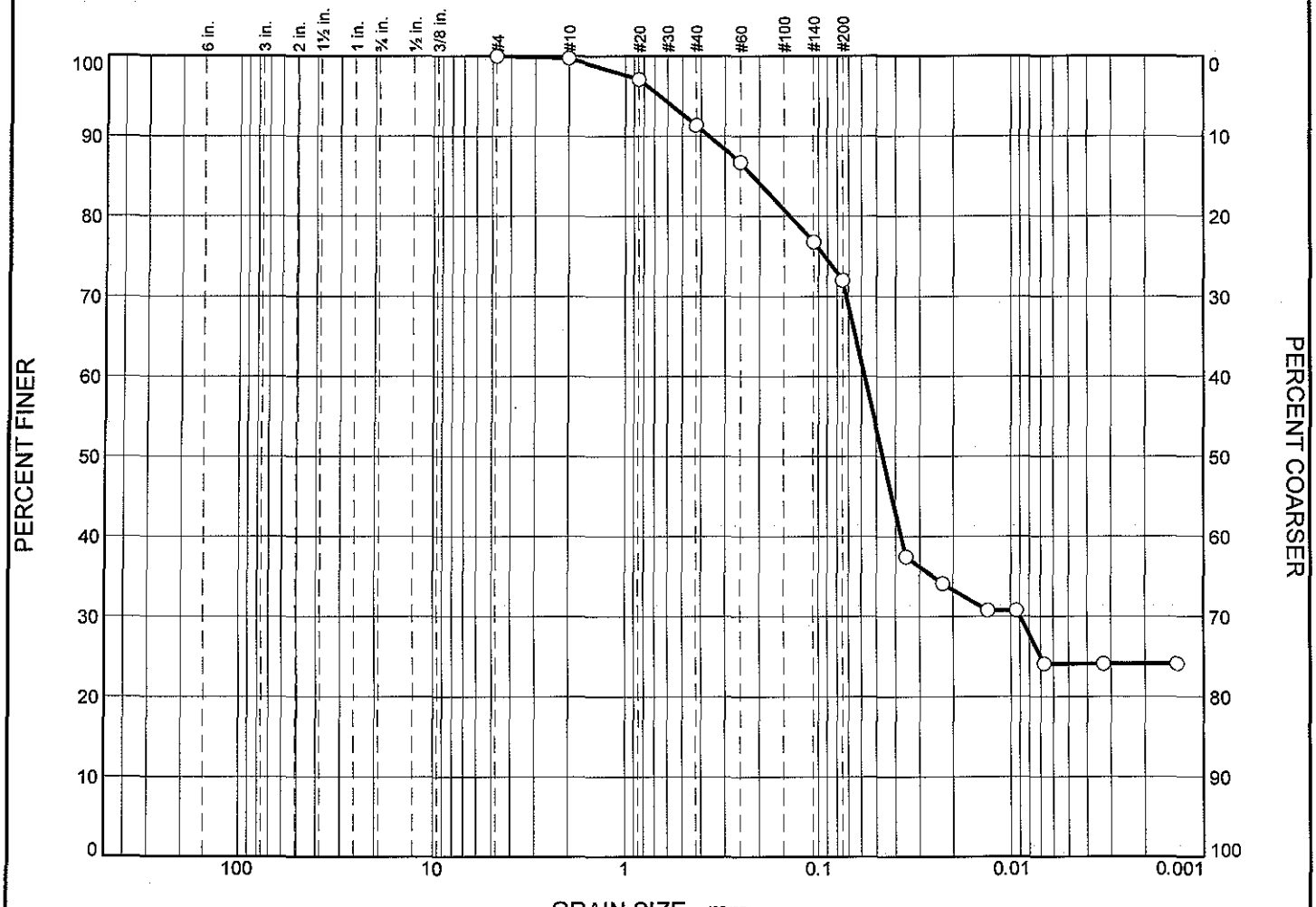
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	2.9	5.3	7.3	9.7	15.9	41.1	27.1	3.6	4.8	1.1	36.6	18.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0082	0.0364	0.0560	0.0694	0.2375	0.3679	0.6287	1.5049

Fineness Modulus
0.67

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.2	2.1	4.9	6.0	8.0	15.1	27.2	4.6	4.7	3.0	24.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2155	0.0578	0.0466	0.0090				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500212 **Sample Number:** L0912906-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500212
Sample Number: L0912906-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 16.00
Tare Wt. = 4.02
Minus #200 from wash = 65.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
34.64	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.25	482.16	99.7	0.3
		#20	412.12	411.21	97.1	2.9
		#40	379.92	377.92	91.3	8.7
		#60	371.61	370.01	86.7	13.3
		#140	350.77	347.33	76.8	23.2
		#200	348.24	346.58	72.0	28.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 72.0
Weight of hydrometer sample =34.64
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	37.4	62.6
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	34.1	65.9
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	30.8	69.2
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	30.8	69.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	24.1	75.9
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	24.1	75.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	24.1	75.9

Fractional Components

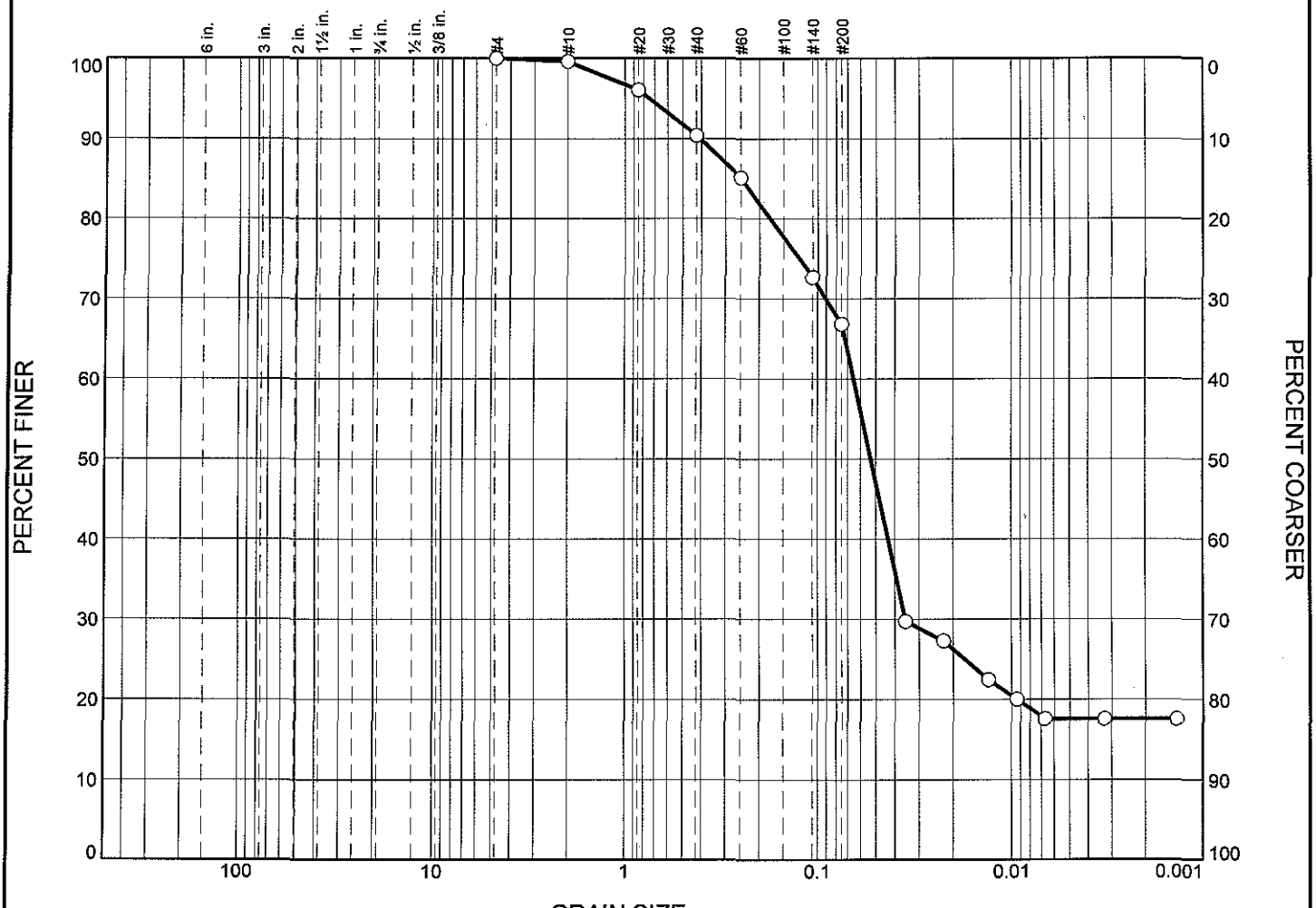
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.2	2.1	4.9	6.0	8.0	15.1	36.1	27.2	4.6	4.7	3.0	39.5	24.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0090	0.0466	0.0578	0.1399	0.2155	0.3644	0.6595

Fineness Modulus
0.39

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.3	2.9	5.0	6.6	10.1	17.1	28.9	5.0	5.4	1.0	17.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2479	0.0652	0.0532	0.0353				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500213 **Sample Number:** L0912906-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500213
Sample Number: L0912906-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 22.72
Tare Wt. = 4.02
Minus #200 from wash = 57.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
44.09	0.00	#4	521.88	521.88	100.0	0.0
		#10	485.02	484.84	99.6	0.4
		#20	407.09	405.52	96.0	4.0
		#40	361.76	359.28	90.4	9.6
		#60	368.59	366.26	85.1	14.9
		#140	348.43	342.93	72.6	27.4
		#200	347.89	345.32	66.8	33.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 66.8
Weight of hydrometer sample =44.09
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	29.7	70.3
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	27.3	72.7
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	22.4	77.6
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	20.0	80.0
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	17.6	82.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	17.6	82.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	17.6	82.4

Fractional Components

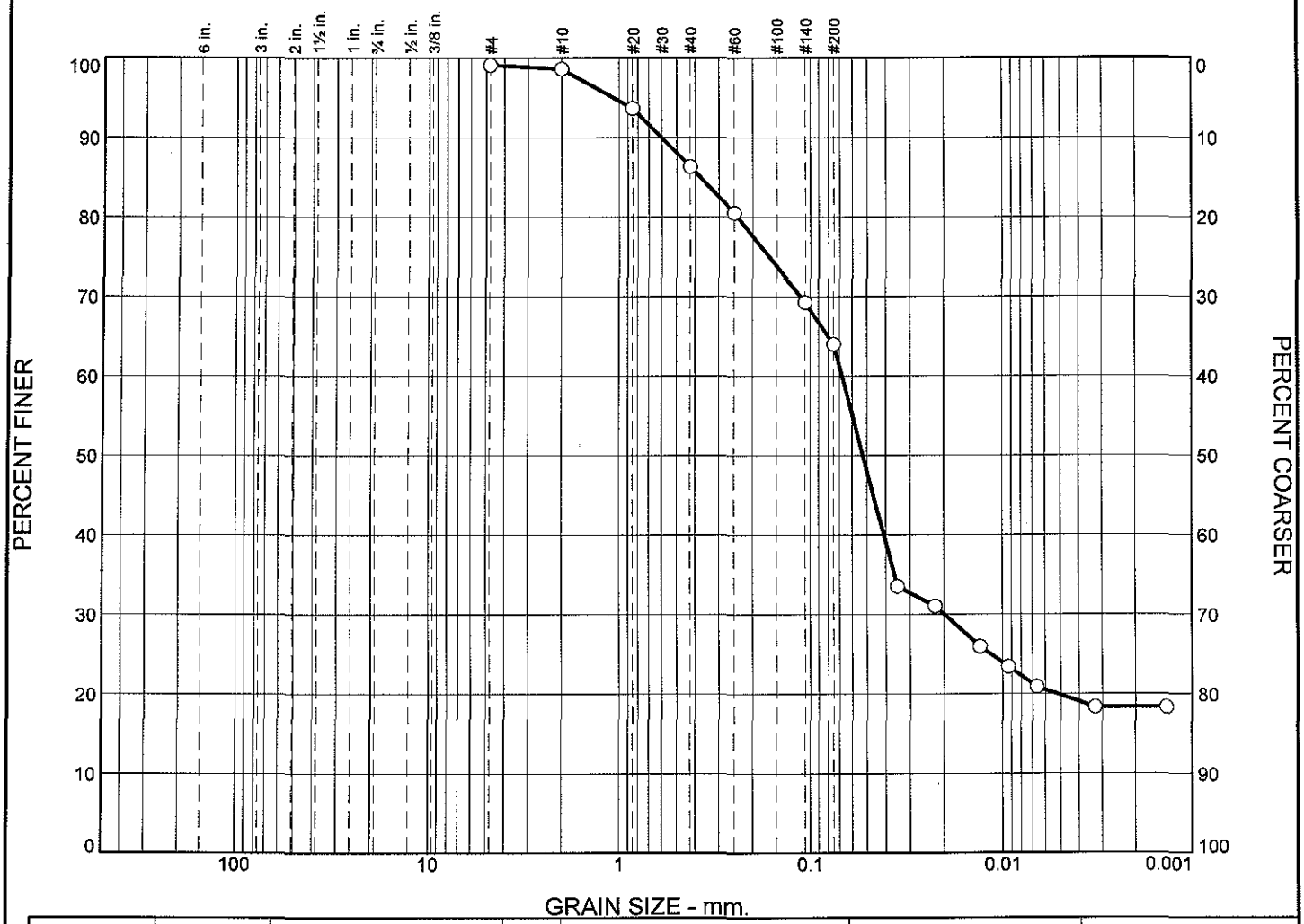
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.3	2.9	5.0	6.6	10.1	17.1	41.7	28.9	5.0	5.4	1.0	40.3	17.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0094	0.0353	0.0532	0.0652	0.1758	0.2479	0.4080	0.7486

Fineness Modulus
0.45

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	4.0	6.6	7.5	9.1	14.6	23.9	5.3	5.6	3.1	18.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3767	0.0678	0.0527	0.0200				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500226 **Sample Number:** L0912906-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500226
Sample Number: L0912906-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 22.86
Tare Wt. = 4.08
Minus #200 from wash = 53.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
40.48	0.00	#4	521.32	520.95	99.1	0.9
		#10	482.35	482.16	98.6	1.4
		#20	413.22	411.21	93.7	6.3
		#40	380.89	377.92	86.3	13.7
		#60	372.35	370.01	80.5	19.5
		#140	351.90	347.33	69.2	30.8
		#200	348.71	346.58	64.0	36.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 64.0
Weight of hydrometer sample =40.48
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	33.5	66.5
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	31.0	69.0
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	25.9	74.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	23.4	76.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	20.8	79.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	18.3	81.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	18.3	81.7

Fractional Components

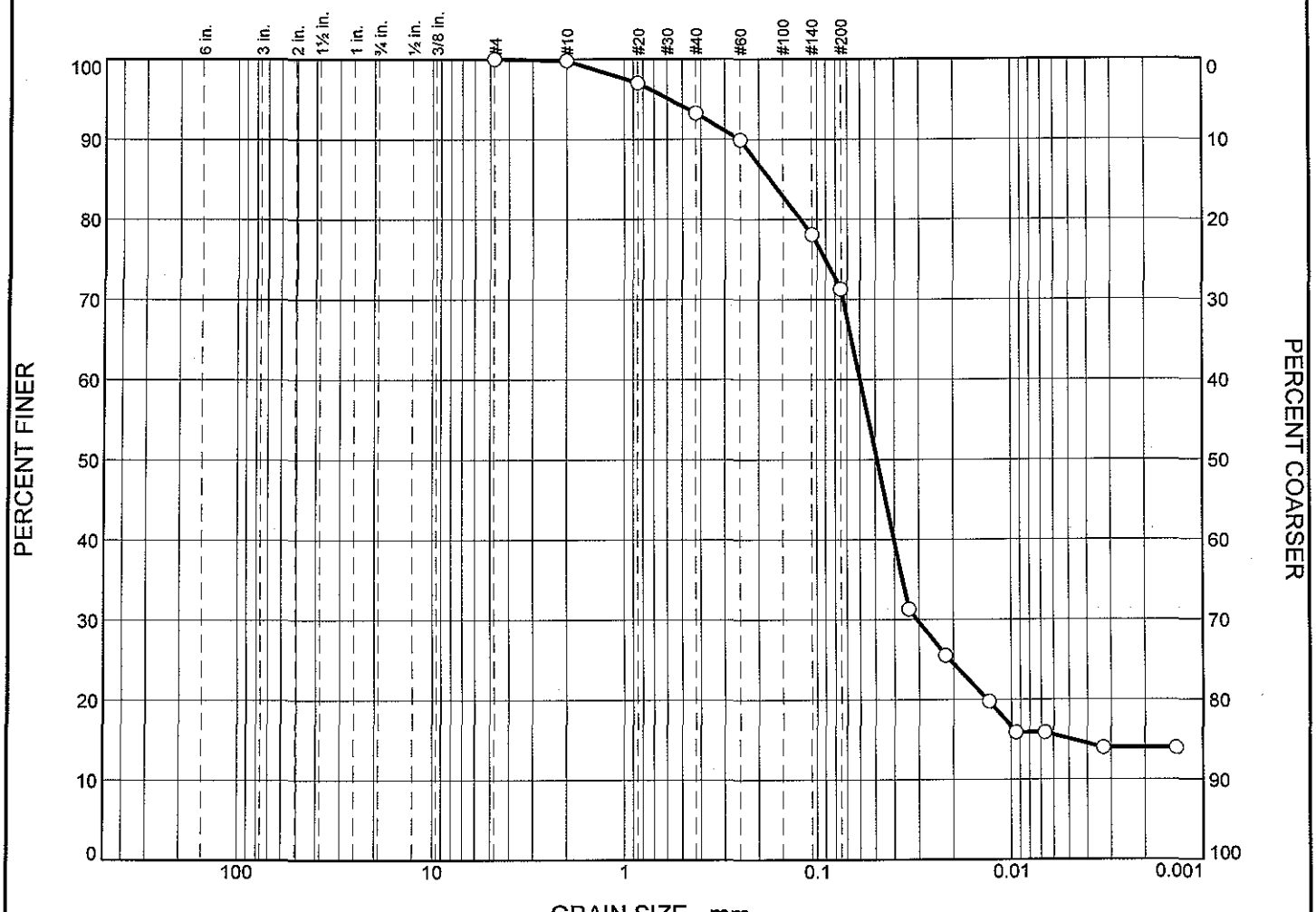
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	4.0	6.6	7.5	9.1	14.6	41.8	23.9	5.3	5.6	3.1	37.9	18.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0053	0.0200	0.0527	0.0678	0.2401	0.3767	0.6020	1.0724

Fineness Modulus
0.60

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.2	2.2	3.5	4.2	9.5	18.2	32.0	8.5	5.8	1.5	14.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1750	0.0599	0.0490	0.0306	0.0049			

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500311 **Sample Number:** L0912906-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500311
Sample Number: L0912906-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 26.26
Tare Wt. = 4.09
Minus #200 from wash = 62.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
59.28	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.95	484.84	99.8	0.2
		#20	407.17	405.52	97.0	3.0
		#40	361.52	359.28	93.3	6.7
		#60	368.24	366.26	89.9	10.1
		#140	349.93	342.93	78.1	21.9
		#200	349.36	345.32	71.3	28.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 71.3
Weight of hydrometer sample =59.28
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0338	31.3	68.7
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	25.5	74.5
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	19.7	80.3
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	15.9	84.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	15.9	84.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	13.9	86.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	13.9	86.1

Fractional Components

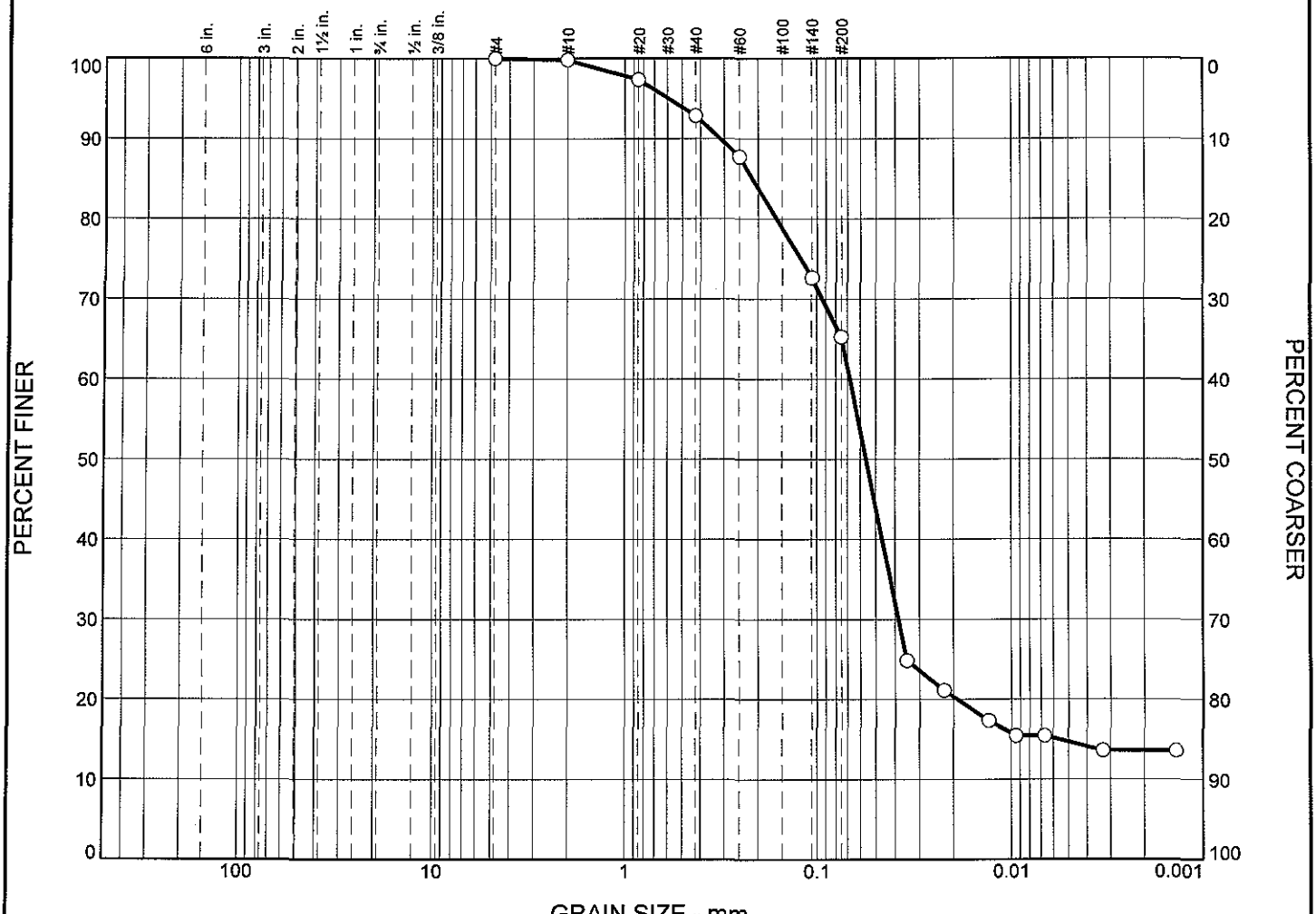
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.2	2.2	3.5	4.2	9.5	18.2	37.6	32.0	8.5	5.8	1.5	47.8	14.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0049	0.0134	0.0306	0.0490	0.0599	0.1217	0.1750	0.2535	0.5856

Fineness Modulus
0.33

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.2	2.0	3.9	6.2	12.2	19.8	31.8	5.4	3.1	1.4	14.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2139	0.0679	0.0561	0.0384	0.0056			

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500312 **Sample Number:** L0912906-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500312
Sample Number: L0912906-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 26.64
Tare Wt. = 4.01
Minus #200 from wash = 59.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.74	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.27	482.16	99.8	0.2
		#20	412.58	411.21	97.3	2.7
		#40	380.42	377.92	92.9	7.1
		#60	372.86	370.01	87.7	12.3
		#140	355.75	347.33	72.6	27.4
		#200	350.70	346.58	65.2	34.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 65.2
Weight of hydrometer sample =55.74
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	24.8	75.2
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	21.1	78.9
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	17.3	82.7
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	15.4	84.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	15.4	84.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	13.6	86.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	13.6	86.4

Fractional Components

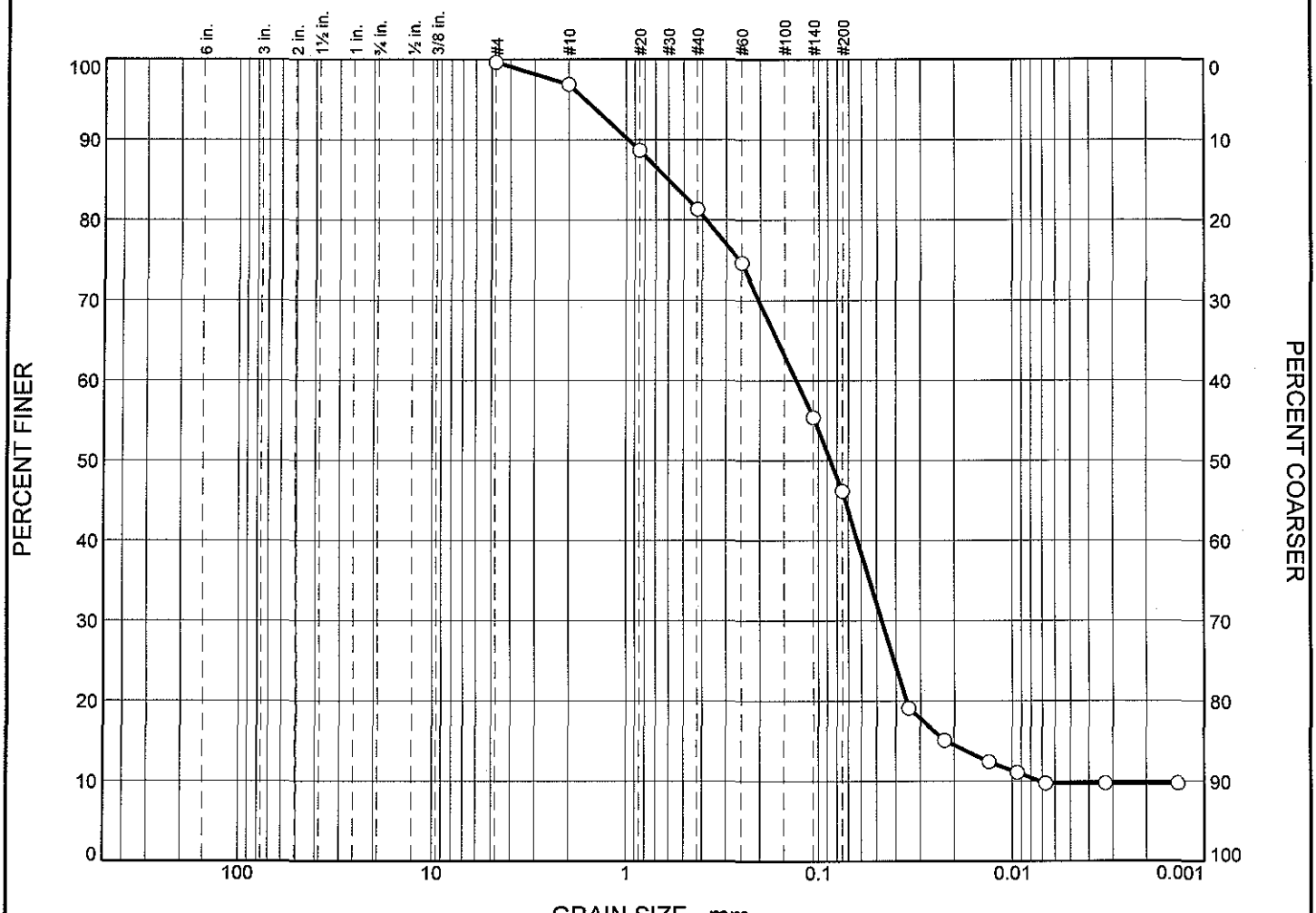
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.2	2.0	3.9	6.2	12.2	19.8	44.1	31.8	5.4	3.1	1.4	41.7	14.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0056	0.0193	0.0384	0.0561	0.0679	0.1610	0.2139	0.3159	0.5916

Fineness Modulus
0.39

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.2	6.7	7.2	8.3	15.6	19.3	21.7	4.9	2.9	0.6	9.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6022	0.1302	0.0867	0.0471	0.0222	0.0073	2.35	17.94

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500313 **Sample Number:** L0912906-11

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500313
Sample Number: L0912906-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 38.28
Tare Wt. = 4.06
Minus #200 from wash = 38.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.19	0.00	#4	522.08	521.88	99.6	0.4
		#10	486.36	484.84	96.9	3.1
		#20	410.07	405.52	88.6	11.4
		#40	363.32	359.28	81.3	18.7
		#60	369.94	366.26	74.7	25.3
		#140	353.57	342.93	55.4	44.6
		#200	350.41	345.32	46.1	53.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 46.1
Weight of hydrometer sample =55.19
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	19.1	80.9
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	15.1	84.9
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	12.4	87.6
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	11.0	89.0
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	9.7	90.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	9.7	90.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	9.7	90.3

Fractional Components

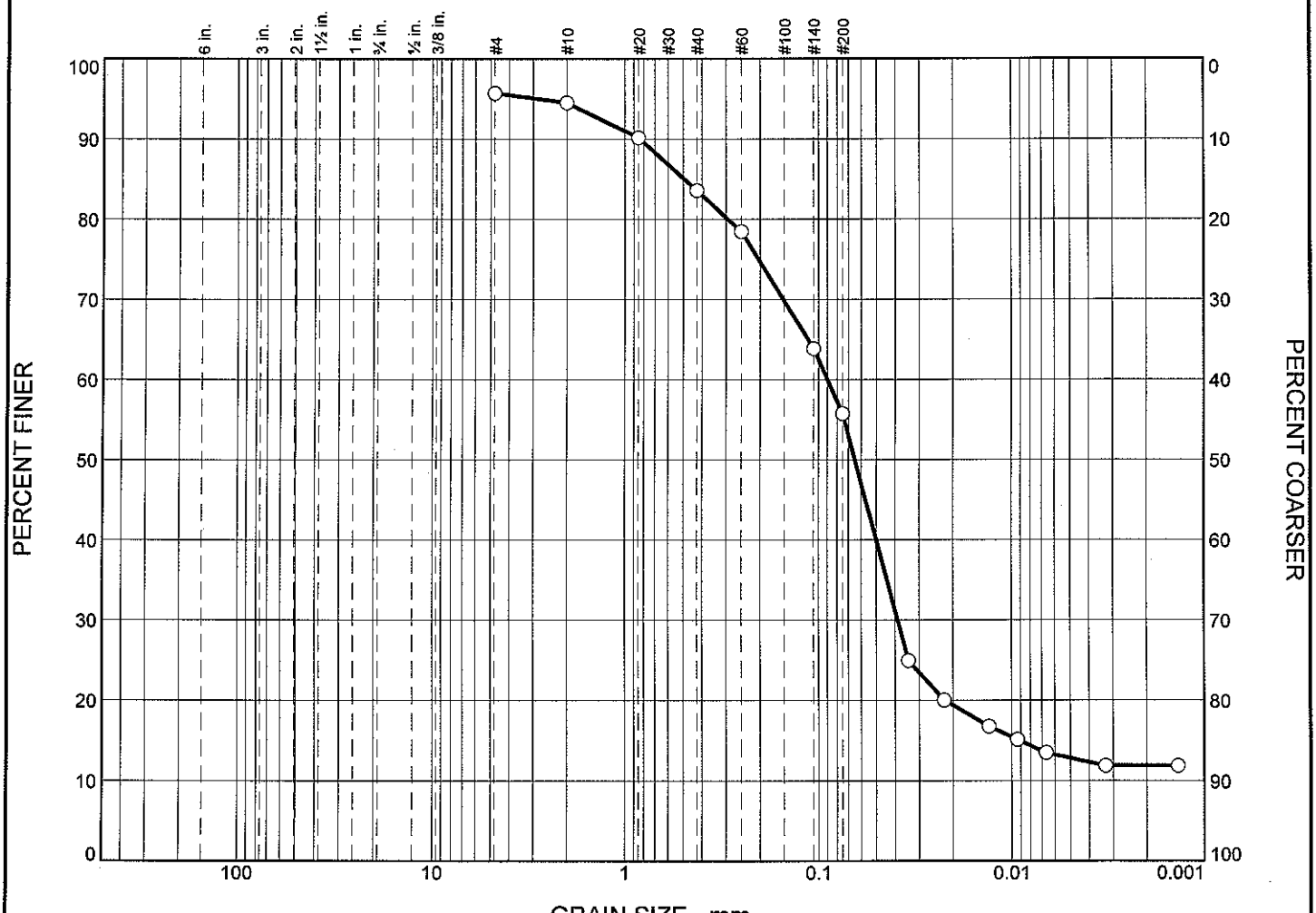
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.2	6.7	7.2	8.3	15.6	19.3	57.1	21.7	4.9	2.9	0.6	30.1	9.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0073	0.0222	0.0354	0.0471	0.0867	0.1302	0.3826	0.6022	0.9789	1.6449

Fineness Modulus	C_u	C_c
0.86	17.94	2.35

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	3.5	5.9	6.6	11.9	18.0	24.8	6.0	3.6	2.0	12.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4945	0.0900	0.0648	0.0388	0.0091			

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500326 **Sample Number:** L0912906-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500326
Sample Number: L0912906-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 32.55
Tare Wt. = 3.99
Minus #200 from wash = 47.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.62	0.00	#4	523.31	520.95	95.7	4.3
		#10	482.81	482.16	94.5	5.5
		#20	413.58	411.21	90.2	9.8
		#40	381.52	377.92	83.6	16.4
		#60	372.80	370.01	78.5	21.5
		#140	355.31	347.33	63.8	36.2
		#200	351.02	346.58	55.7	44.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 55.7
Weight of hydrometer sample =54.62
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	24.9	75.1
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	20.0	80.0
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	16.7	83.3
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	15.1	84.9
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	13.5	86.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	11.8	88.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	11.8	88.2

Fractional Components

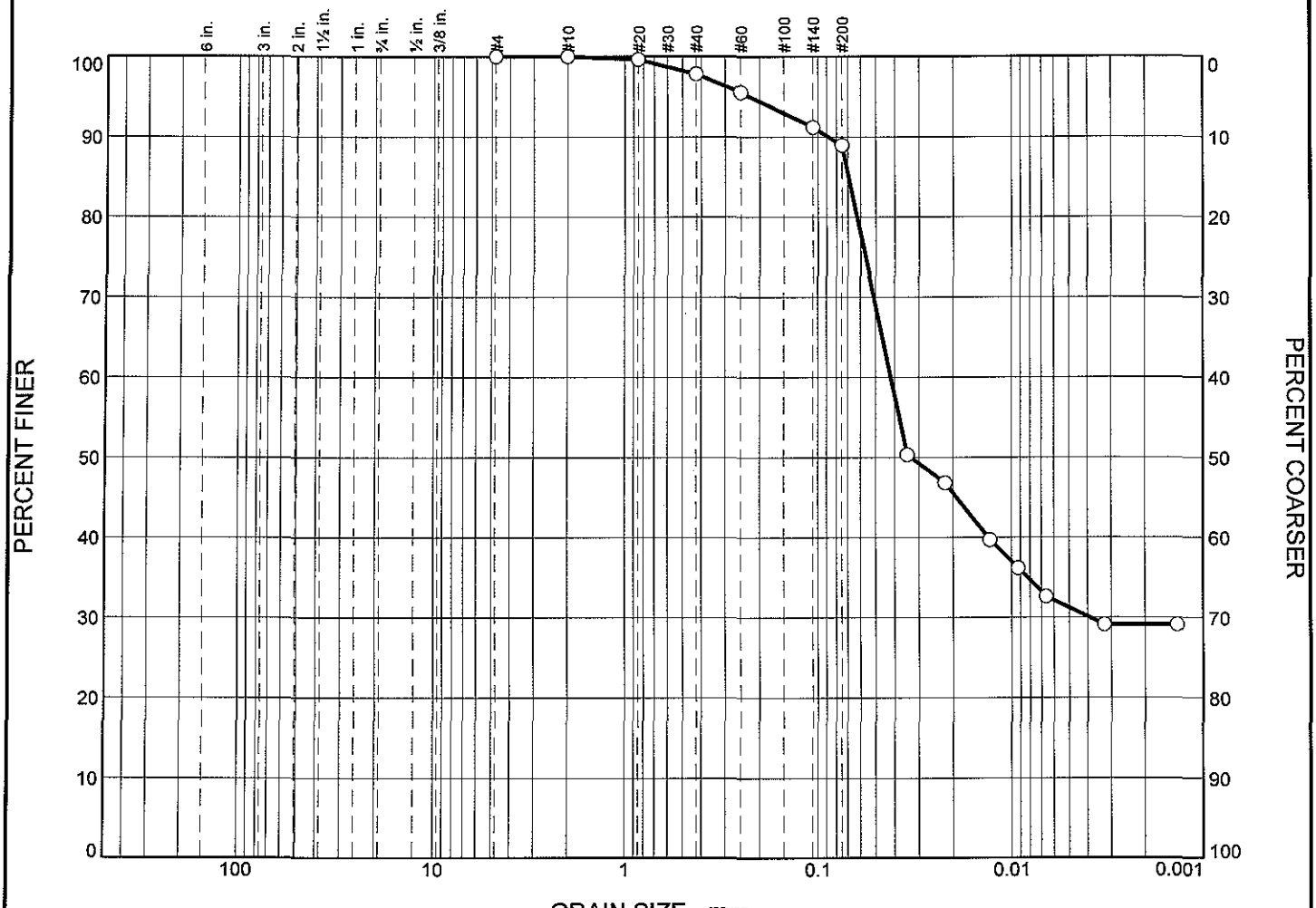
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	3.5	5.9	6.6	11.9	18.0	45.9	24.8	6.0	3.6	2.0	36.4	12.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0091	0.0222	0.0388	0.0648	0.0900	0.2936	0.4945	0.8367	2.8992

Fineness Modulus
0.81

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.3	1.5	2.7	3.5	12.1	30.4	7.3	7.8	4.4	30.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0693	0.0419	0.0330	0.0039				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500411 **Sample Number:** L0912906-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500411
Sample Number: L0912906-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 10.87
Tare Wt. = 4.07
Minus #200 from wash = 83.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
40.34	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	405.67	405.52	99.6	0.4
		#40	360.01	359.28	97.8	2.2
		#60	367.18	366.26	95.5	4.5
		#140	344.68	342.93	91.2	8.8
		#200	346.23	345.32	88.9	11.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 88.9
Weight of hydrometer sample =40.34
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	50.3	49.7
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	46.8	53.2
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	39.7	60.3
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	36.2	63.8
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	32.6	67.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	29.1	70.9
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	29.1	70.9

Fractional Components

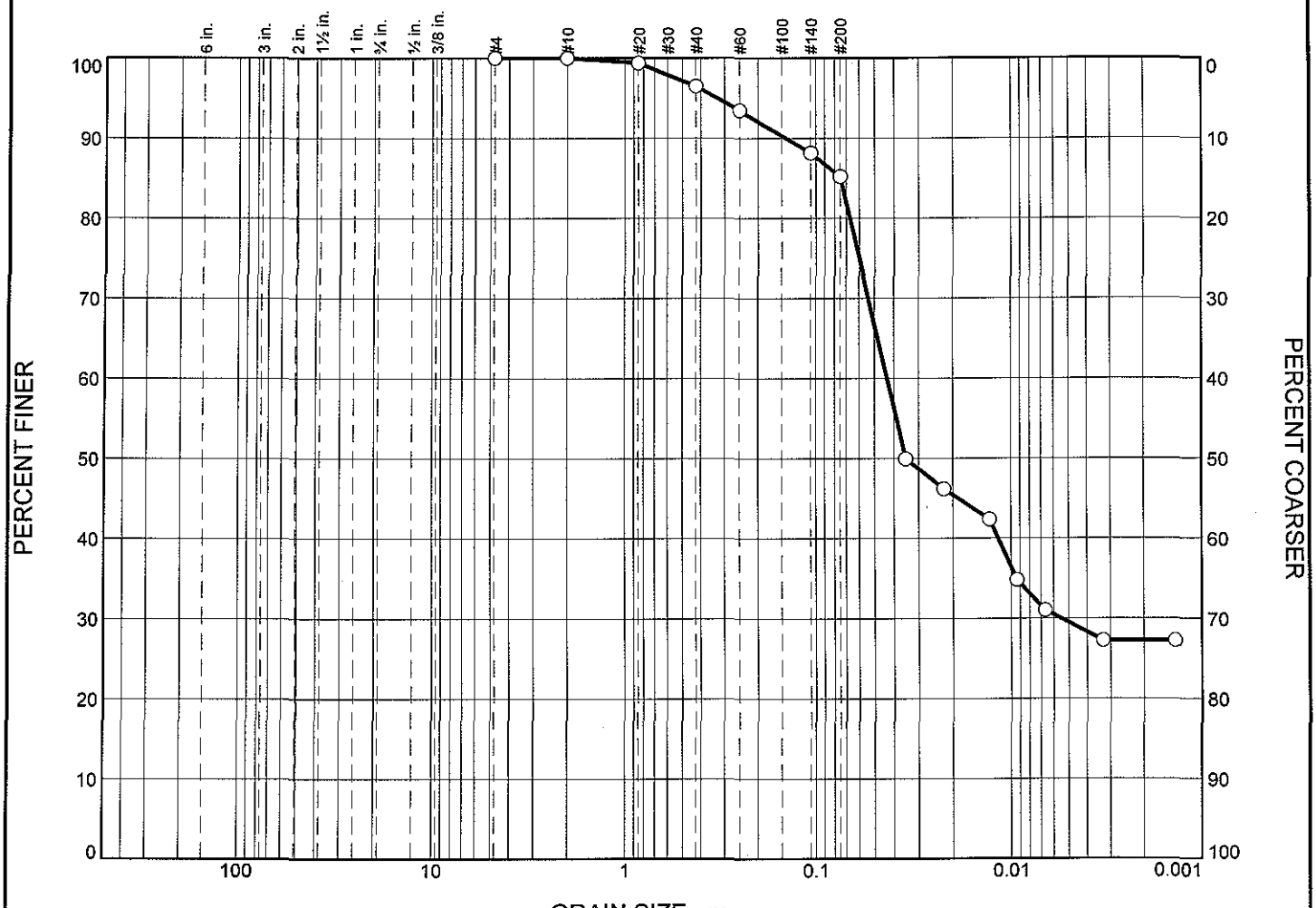
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.3	1.5	2.7	3.5	12.1	20.1	30.4	7.3	7.8	4.4	49.9	30.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0039	0.0330	0.0419	0.0626	0.0693	0.0882	0.2248

Fineness Modulus
0.12

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.5	2.3	3.7	4.4	12.3	27.8	5.3	10.9	4.6	28.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0747	0.0433	0.0348	0.0055				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500412 **Sample Number:** L0912906-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500412
Sample Number: L0912906-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 12.54
Tare Wt. = 4.05
Minus #200 from wash = 76.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
36.21	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.16	482.16	100.0	0.0
		#20	411.43	411.21	99.4	0.6
		#40	378.98	377.92	96.5	3.5
		#60	371.10	370.01	93.5	6.5
		#140	349.26	347.33	88.1	11.9
		#200	347.64	346.58	85.2	14.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 85.2
Weight of hydrometer sample =36.21
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	49.9	50.1
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	46.1	53.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	42.4	57.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	34.8	65.2
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	31.0	69.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	27.3	72.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	27.3	72.7

Fractional Components

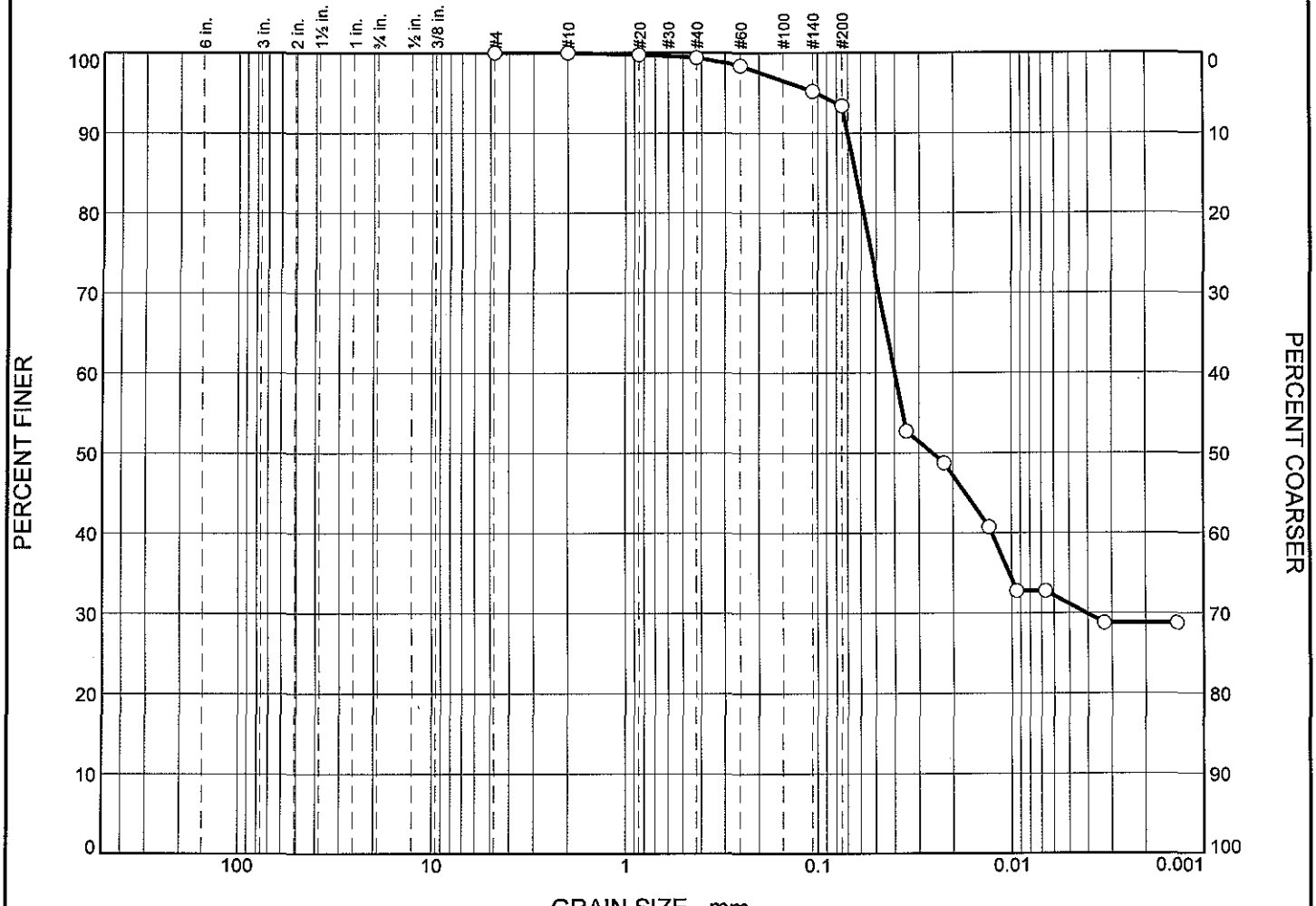
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.5	2.3	3.7	4.4	12.3	23.2	27.8	5.3	10.9	4.6	48.6	28.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0055	0.0348	0.0433	0.0670	0.0747	0.1434	0.3283

Fineness Modulus
0.18

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.2	0.3	1.1	2.6	12.1	32.0	8.3	10.6	3.1	29.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0640	0.0399	0.0256	0.0041				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500413 **Sample Number:** L0912906-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500413
Sample Number: L0912906-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 8.29
Tare Wt. = 4.04
Minus #200 from wash = 88.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
37.60	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	405.61	405.52	99.8	0.2
		#40	359.42	359.28	99.4	0.6
		#60	366.63	366.26	98.4	1.6
		#140	344.13	342.93	95.2	4.8
		#200	346.00	345.32	93.4	6.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.4
Weight of hydrometer sample =37.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	52.7	47.3
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	48.7	51.3
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	40.7	59.3
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	32.8	67.2
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	32.8	67.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	28.8	71.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	28.8	71.2

Fractional Components

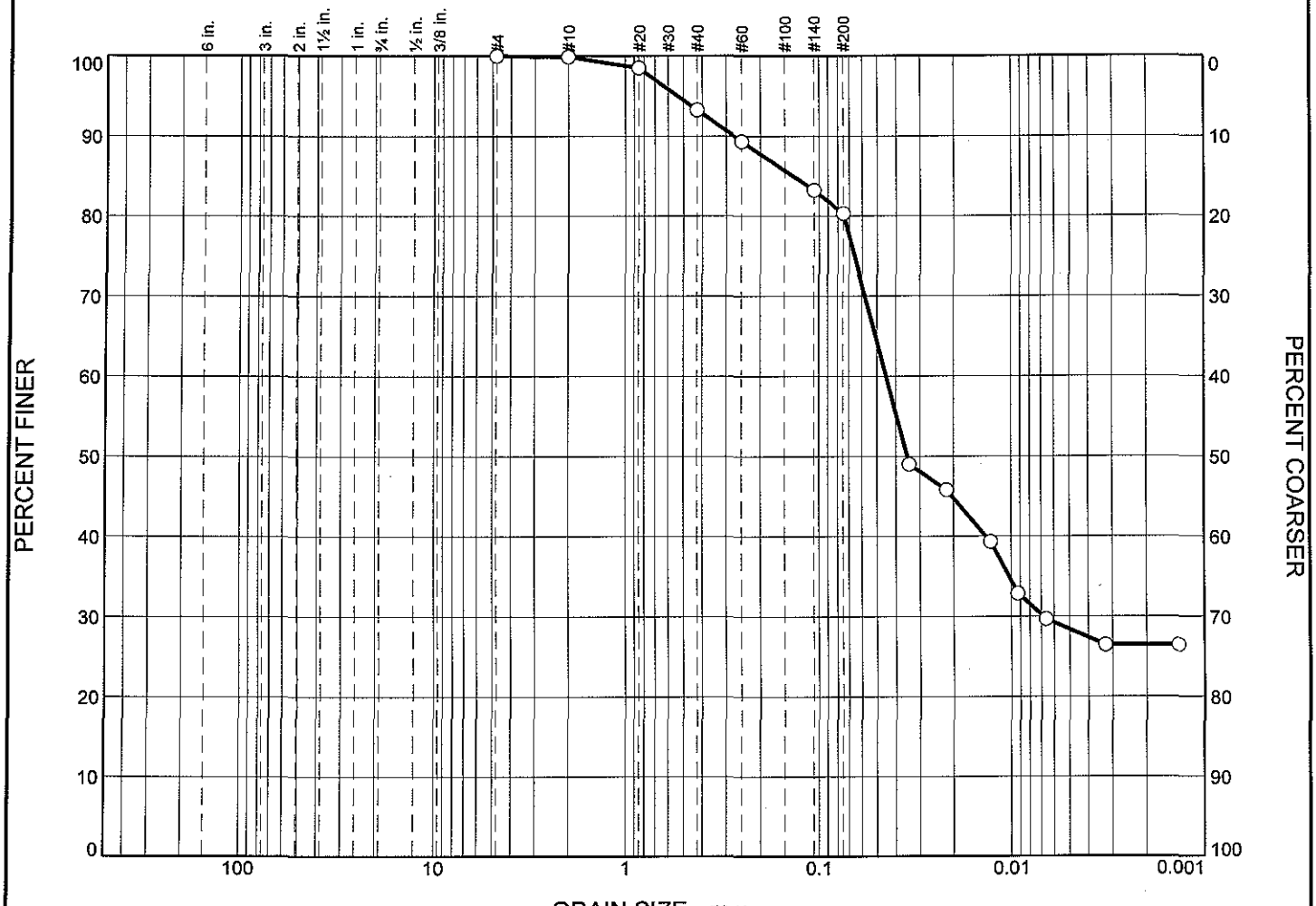
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.2	0.3	1.1	2.6	12.1	16.3	32.0	8.3	10.6	3.1	54.0	29.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0041	0.0256	0.0399	0.0582	0.0640	0.0703	0.1018

Fineness Modulus
0.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.1	1.1	4.3	5.2	4.9	11.3	24.8	6.6	10.4	4.0	27.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1360	0.0450	0.0350	0.0068				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500426 **Sample Number:** L0912906-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500426
Sample Number: L0912906-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 15.05
Tare Wt. = 4.03
Minus #200 from wash = 72.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
40.05	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.21	482.16	99.9	0.1
		#20	411.76	411.21	98.5	1.5
		#40	380.02	377.92	93.3	6.7
		#60	371.58	370.01	89.3	10.7
		#140	349.78	347.33	83.2	16.8
		#200	347.75	346.58	80.3	19.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.3
Weight of hydrometer sample =40.05
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	49.0	51.0
5.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0218	45.8	54.2
15.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0128	39.3	60.7
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	32.9	67.1
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	29.7	70.3
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	26.4	73.6
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	26.4	73.6

Fractional Components

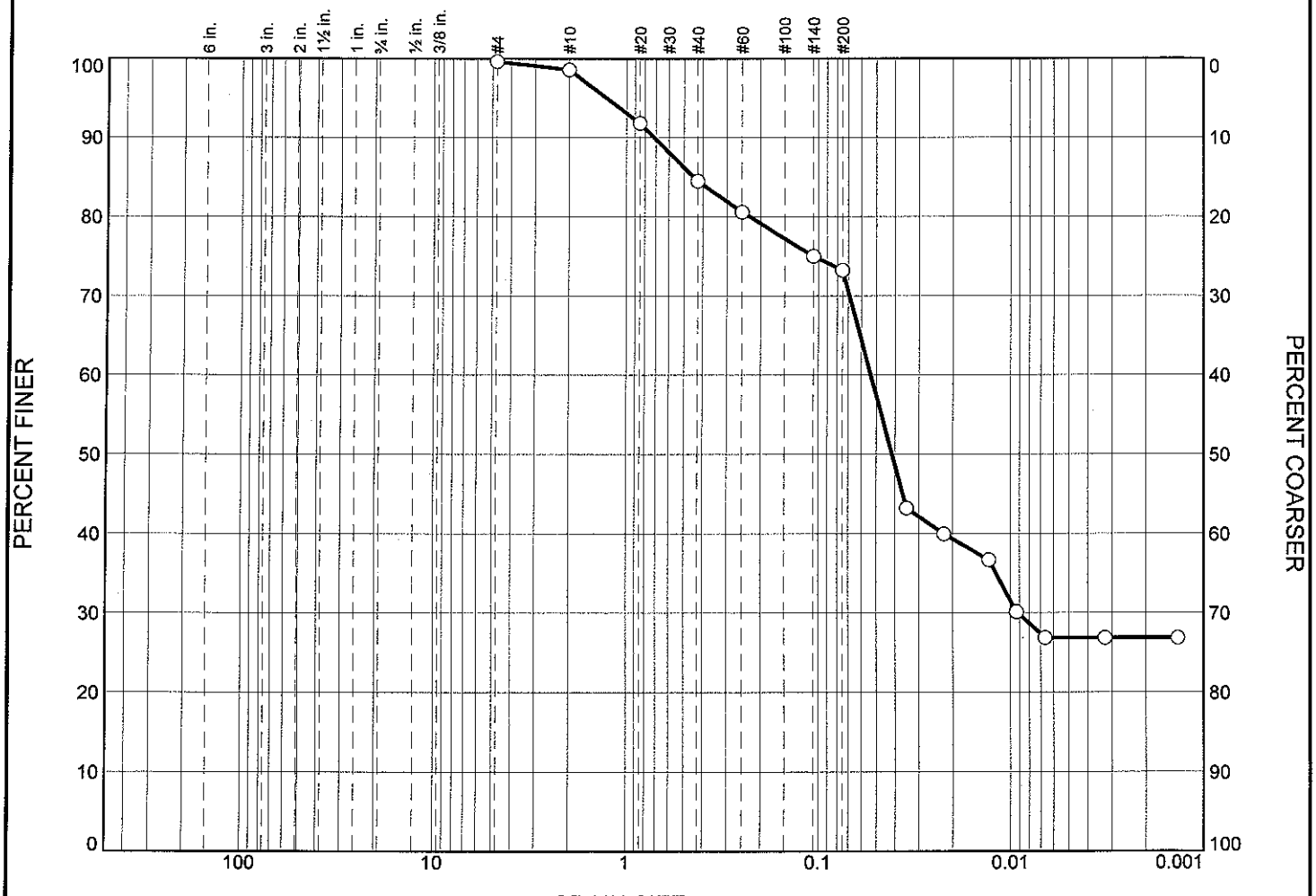
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.1	1.1	4.3	5.2	4.9	11.3	26.8	24.8	6.6	10.4	4.0	45.8	27.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0068	0.0350	0.0450	0.0744	0.1360	0.2734	0.5350

Fineness Modulus
0.29

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	5.5	6.9	5.6	4.5	10.0	23.7	4.6	9.4	1.5	26.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4455	0.0535	0.0414	0.0092				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500511 **Sample Number:** L0912906-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

2/2/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500511
Sample Number: L0912906-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 15.80
Tare Wt. = 4.04
Minus #200 from wash = 67.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
35.94	0.00	#4	522.02	521.88	99.6	0.4
		#10	485.21	484.84	98.6	1.4
		#20	407.95	405.52	91.8	8.2
		#40	361.91	359.28	84.5	15.5
		#60	367.67	366.26	80.6	19.4
		#140	344.94	342.93	75.0	25.0
		#200	345.96	345.32	73.2	26.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 73.2
Weight of hydrometer sample =35.94
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	43.2	56.8
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	39.9	60.1
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	36.7	63.3
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	30.1	69.9
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	26.9	73.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	26.9	73.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	26.9	73.1

Fractional Components

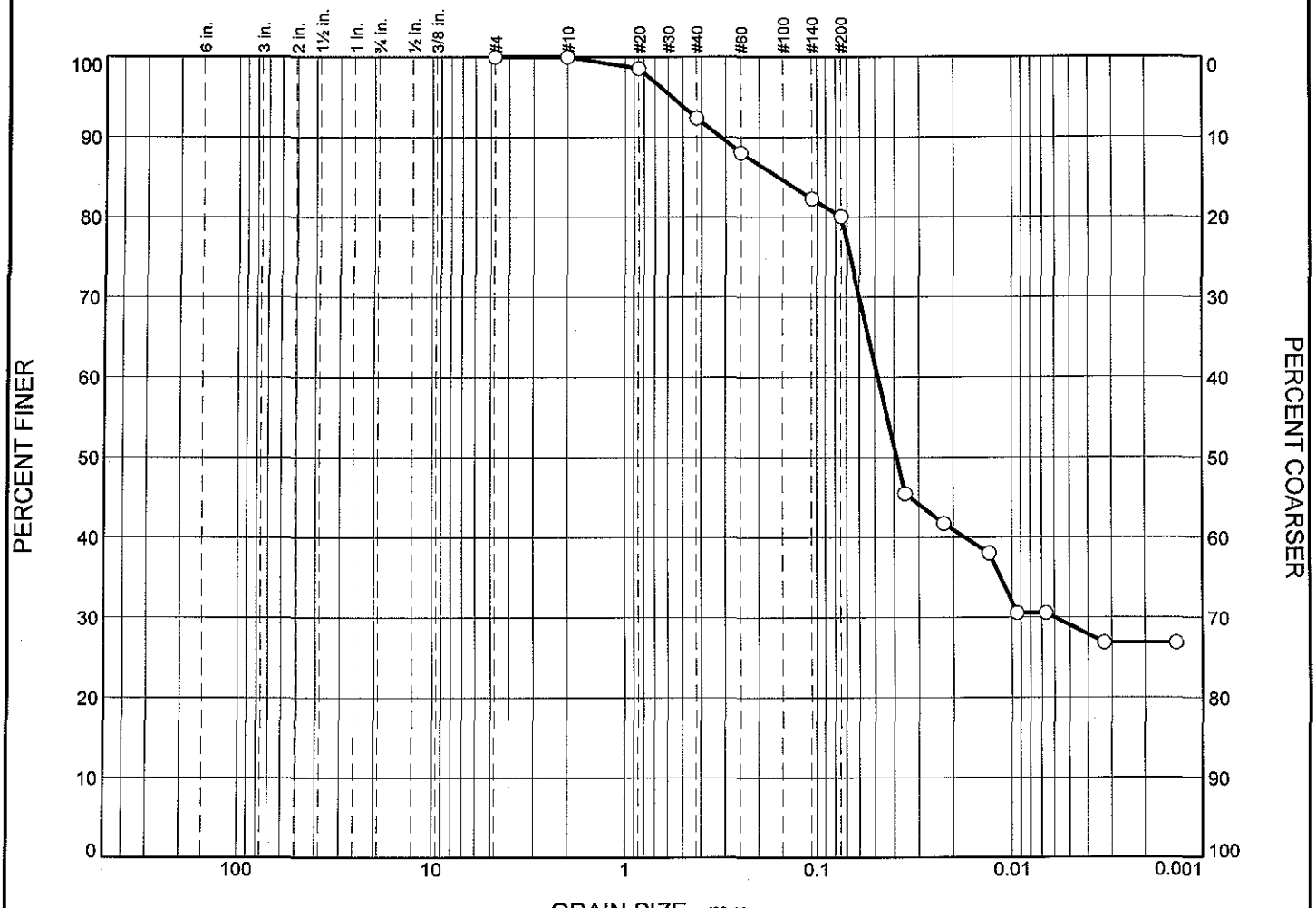
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	5.5	6.9	5.6	4.5	10.0	32.5	23.7	4.6	9.4	1.5	39.2	26.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0092	0.0414	0.0535	0.2288	0.4455	0.7154	1.2712

Fineness Modulus
0.60

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	1.2	5.0	5.8	4.6	11.7	27.3	5.2	8.6	2.9	27.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1588	0.0483	0.0388	0.0060				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500512 **Sample Number:** L0912906-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500512
Sample Number: L0912906-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 13.79
Tare Wt. = 4.07
Minus #200 from wash = 71.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
34.55	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.16	482.16	100.0	0.0
		#20	411.71	411.21	98.6	1.4
		#40	380.06	377.92	92.4	7.6
		#60	371.51	370.01	88.0	12.0
		#140	349.30	347.33	82.3	17.7
		#200	347.36	346.58	80.1	19.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.1
Weight of hydrometer sample =34.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	45.4	54.6
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	41.7	58.3
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	38.0	62.0
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	30.6	69.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	30.6	69.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	26.8	73.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	26.8	73.2

Fractional Components

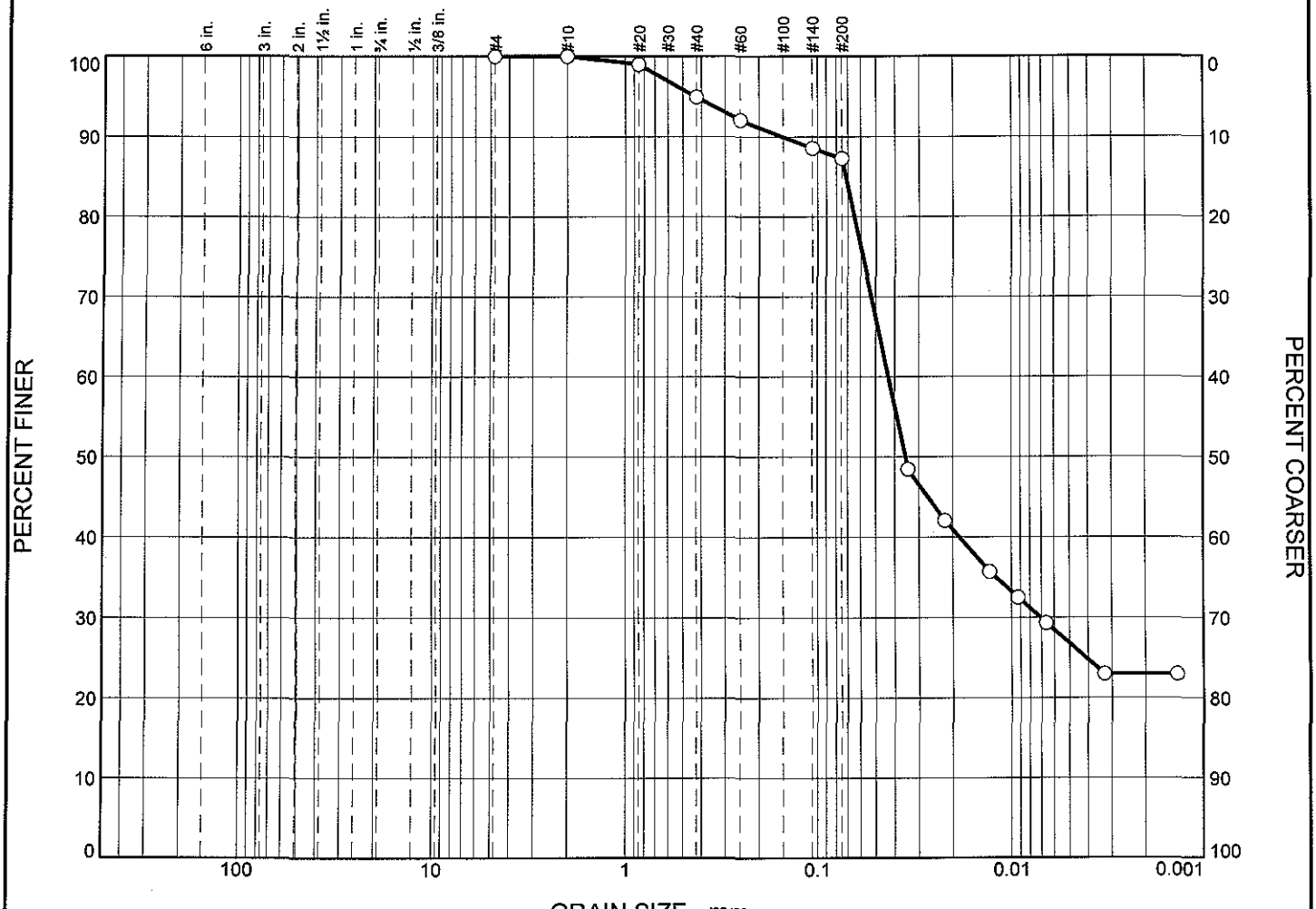
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	1.2	5.0	5.8	4.6	11.7	28.3	27.3	5.2	8.6	2.9	44.0	27.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0060	0.0388	0.0483	0.0749	0.1588	0.3186	0.5711

Fineness Modulus
0.31

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.8	3.3	3.8	2.9	10.9	31.3	9.1	7.0	6.4	24.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0716	0.0431	0.0352	0.0071				

Material Description	USCS	AASHTO
○		

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500513 **Sample Number:** L0912906-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500513
Sample Number: L0912906-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 12.12
Tare Wt. = 4.05
Minus #200 from wash = 81.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
44.04	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	405.96	405.52	99.0	1.0
		#40	361.08	359.28	94.9	5.1
		#60	367.52	366.26	92.1	7.9
		#140	344.48	342.93	88.5	11.5
		#200	345.87	345.32	87.3	12.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 87.3
Weight of hydrometer sample =44.04
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	48.4	51.6
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	42.1	57.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	35.7	64.3
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	32.5	67.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	29.3	70.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	23.0	77.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	23.0	77.0

Fractional Components

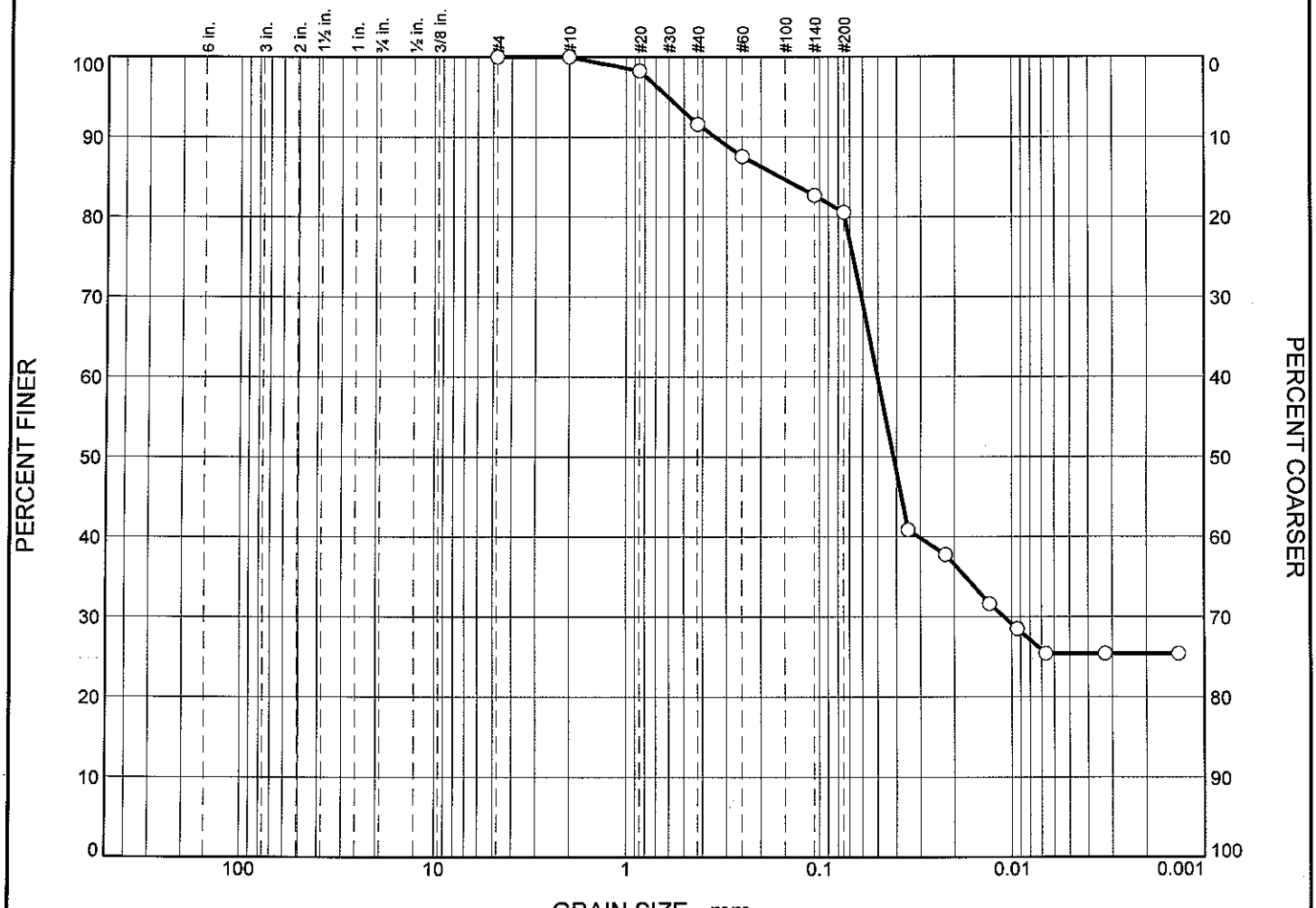
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.8	3.3	3.8	2.9	10.9	21.7	31.3	9.1	7.0	6.4	53.8	24.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0071	0.0352	0.0431	0.0647	0.0716	0.1516	0.4313

Fineness Modulus
0.21

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	1.4	5.4	5.6	4.0	12.5	31.0	6.4	6.8	1.5	25.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1590	0.0504	0.0415	0.0110				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500526 **Sample Number:** L0912906-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500526
Sample Number: L0912906-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 16.26
Tare Wt. = 3.99
Minus #200 from wash = 70.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
41.84	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.16	482.16	100.0	0.0
		#20	411.94	411.21	98.3	1.7
		#40	380.71	377.92	91.6	8.4
		#60	371.69	370.01	87.6	12.4
		#140	349.37	347.33	82.7	17.3
		#200	347.47	346.58	80.6	19.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.6
Weight of hydrometer sample =41.84
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	40.9	59.1
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	37.8	62.2
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	31.6	68.4
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	28.5	71.5
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	25.4	74.6
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	25.4	74.6
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	25.4	74.6

Fractional Components

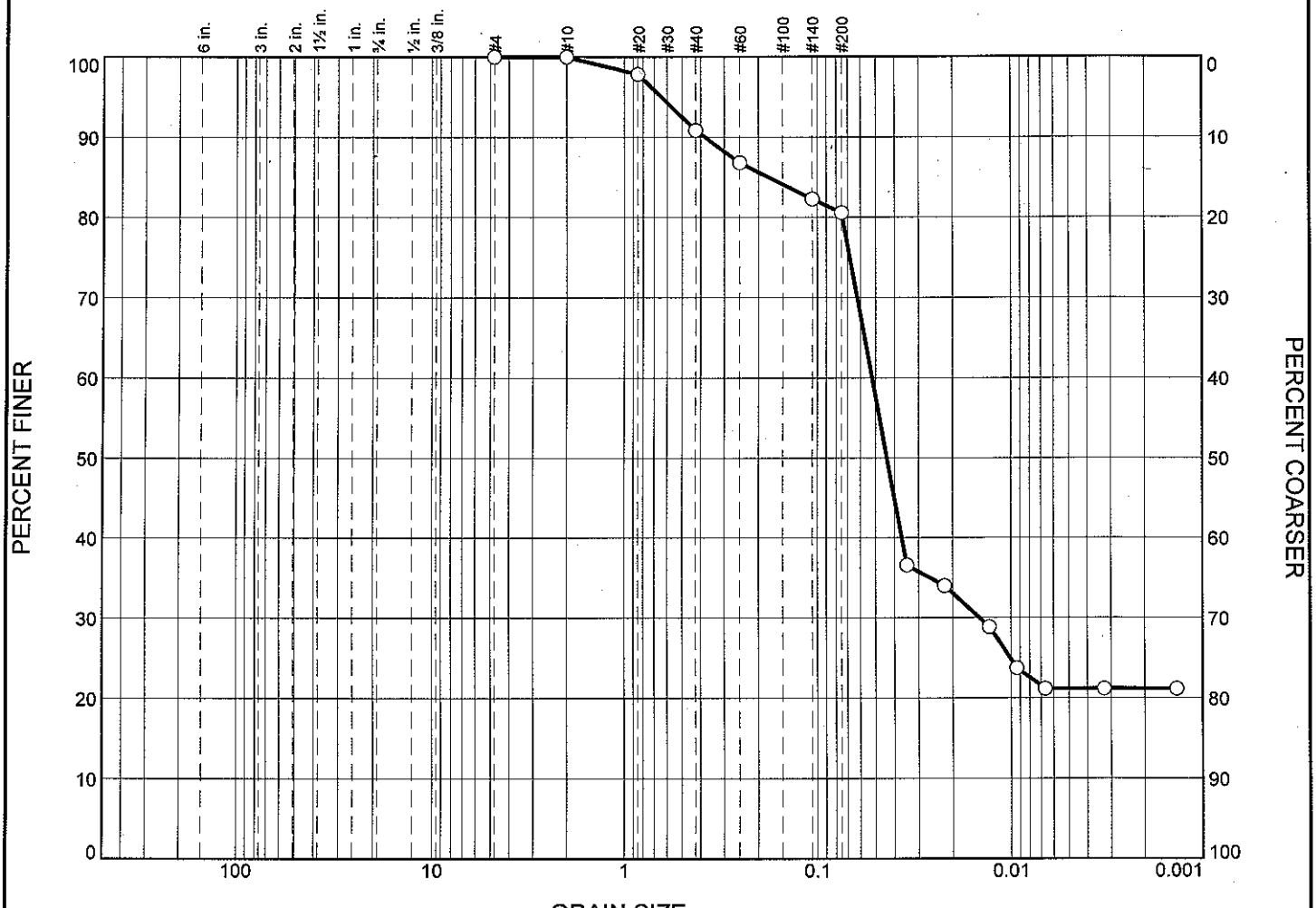
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	1.4	5.4	5.6	4.0	12.5	28.9	31.0	6.4	6.8	1.5	45.7	25.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0110	0.0415	0.0504	0.0742	0.1590	0.3446	0.6060

Fineness Modulus
0.33

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	1.8	5.7	5.7	3.6	13.0	34.2	5.3	8.4	1.2	21.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1777	0.0521	0.0437	0.0146				

	Material Description	USCS	AASHTO
○			

Project No. L0912906 **Client:** Woods Hole Group

Project: New Bedford Harbor Long Term Monitoring

○ **Source of Sample:** 500526 **Sample Number:** WG382093-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Harbor Long Term Monitoring
Project Number: L0912906
Location: 500526
Sample Number: WG382093-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 17.98
Tare Wt. = 4.10
Minus #200 from wash = 72.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.29	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	406.61	405.52	97.8	2.2
		#40	362.80	359.28	90.8	9.2
		#60	368.29	366.26	86.8	13.2
		#140	345.20	342.93	82.3	17.7
		#200	346.19	345.32	80.6	19.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.6
Weight of hydrometer sample =50.29
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	36.6	63.4
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	34.0	66.0
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	28.8	71.2
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	23.7	76.3
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	21.1	78.9
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	21.1	78.9
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	21.1	78.9

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	1.8	5.7	5.7	3.6	13.0	29.8	34.2	5.3	8.4	1.2	49.1	21.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0146	0.0437	0.0521	0.0743	0.1777	0.3809	0.6421

Fineness Modulus
0.35

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

02021014:46

CHAIN OF CUSTODY

PAGE 1 OF 14

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912906

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	500111	9/24/09	11:19	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	500112	9/24/09	11:19	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	500113	9/24/09	11:19	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	500125	9/24/09	11:21	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	500126	9/24/09	11:23	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	500127	9/24/09	11:21	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
					Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
Hadi [signature]	9-24-09 19:34	[signature]	9/24/09 1934
[signature]	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35	[signature]	9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

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(rev. 29-APR-09)

02021014:46

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912906

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do

Preservation
☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	500211	9/24/09	10:20	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
6	500212	9/24/09	10:20	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	500213	9/24/09	10:20	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	500225	9/24/09	10:25	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
8	500226	9/24/09	10:25	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	500227	9/24/09	10:25	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
Hendry [signature]	9-24-09 17:34	Ralph McCall [signature]	9/24/09 1934
Ralph McCall [signature]	9/25/09 9:15	Paul Gilbert [signature]	9/25/09 9:15
Paul Gilbert [signature]	9/25/09 10:35	[signature]	9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

CHAIN OF CUSTODY

PAGE 3 OF 14

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02021014:46

Date Rec'd in Lab:

ALPHA Job #: L0912906

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	500311	9/24/09	12:43	SE	HC	☐	☐	☒	☐								ben gs	1
10	500312	9/24/09	12:13	SE	HC	☐	☐	☒	☐								ben gs	1
11	500313	9/24/09	12:13	SE	HC	☐	☐	☒	☐								ben gs	1
	500325	9/24/09	12:25	SE	HC	☒	☒	☐	☐								sed chem	1
12	500326	9/24/09	12:25	SE	HC	☐	☐	☒	☐								sed gs	1
	500327	9/24/09	12:25	SE	HC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/24/09 19:35		9/24/09 1934
	9/25/09 9:15		9/25/09 9:15
	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02021014:46

Date Rec'd in Lab:

ALPHA Job #: L0912906

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	500411	9/24/09	14:28	SE	HC	☐	☐	☒	☐									ben gs	1
14	500412	9/24/09	14:28	SE	HC	☐	☐	☒	☐									ben gs	1
15	500413	9/24/09	14:28	SE	HC	☐	☐	☒	☐									ben gs	1
	500425	9/24/09	14:34	SE	HC	☒	☒	☐	☐									sed chem	1
16	500426	9/24/09	14:34	SE	HC	☐	☐	☒	☐									sed gs	1
	500427	9/24/09	14:34	SE	HC	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Heather McCann	9/24/09 18:48	Kaitlyn McCann	9/24/09 19:40
Kaitlyn McCann	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35		9/25/09 10:35

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02021014:46

Date Rec'd in Lab:

ALPHA Job #: L0912906

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
17	500511	9/24/09	15:33	SE	HC	☐	☐	☒	☐									ben gs	1
18	500512	9/24/09	15:33	SE	HC	☐	☐	☒	☐									ben gs	1
19	500513	9/24/09	15:33	SE	HC	☐	☐	☒	☐									ben gs	1
	500525	9/24/09	15:38	SE	HC	☒	☒	☐	☐									sed chem	1
20	500526	9/24/09	15:38	SE	HC	☐	☐	☒	☐									sed gs	1
	500527	9/24/09	15:38	SE	HC	☐	☐	☐	☒									sed arch	1
	500545	9/24/09	15:38	SE	HC	☒	☒	☐	☐									sed chem QC	1
20	500546	9/24/09	15:38	SE	HC	☐	☐	☒	☐									sed gs QC	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	9/24/09 18:		9/25/09 19:3
	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912907
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/02/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912907
Report Date: 02/02/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912907-01	500611	NEW BEDFORD, MA	09/24/09 13:26
L0912907-02	500612	NEW BEDFORD, MA	09/24/09 13:26
L0912907-03	500613	NEW BEDFORD, MA	09/24/09 13:26
L0912907-04	500626	NEW BEDFORD, MA	09/24/09 13:28
L0912907-05	500711	NEW BEDFORD, MA	09/27/09 11:40
L0912907-06	500712	NEW BEDFORD, MA	09/27/09 11:43
L0912907-07	500713	NEW BEDFORD, MA	09/27/09 11:48
L0912907-08	500726	NEW BEDFORD, MA	09/27/09 12:55
L0912907-09	500811	NEW BEDFORD, MA	09/27/09 10:03
L0912907-10	500812	NEW BEDFORD, MA	09/27/09 10:07
L0912907-11	500813	NEW BEDFORD, MA	09/27/09 10:10
L0912907-12	500826	NEW BEDFORD, MA	09/27/09 10:20
L0912907-13	500911	NEW BEDFORD, MA	09/27/09 10:51
L0912907-14	500912	NEW BEDFORD, MA	09/27/09 10:35
L0912907-15	500913	NEW BEDFORD, MA	09/27/09 11:00
L0912907-16	500926	NEW BEDFORD, MA	09/27/09 11:05
L0912907-17	501011	NEW BEDFORD, MA	09/27/09 09:05
L0912907-18	501012	NEW BEDFORD, MA	09/27/09 09:08
L0912907-19	501013	NEW BEDFORD, MA	09/27/09 09:13
L0912907-20	501026	NEW BEDFORD, MA	09/27/09 09:28

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912907
Project Number:	TO-0018	**Report Date:**	02/02/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 22, 2009. The report was ammended to include revised Grain Size data.

Grain Size

The WG382094-1 Laboratory Duplicate RPD is outside the acceptance criteria for gravel (60%), coarse sand (25%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912907
Project Number:	TO-0018	**Report Date:**	02/02/10

Case Narrative (continued)

laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newl

Title: Technical Director/Representative Date: 02/02/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-01
Client ID: 500611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 13:26
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.600		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	59.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-02
Client ID: 500612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 13:26
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	55.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	25.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-03
Client ID: 500613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 13:26
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	62.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-04
Client ID: 500626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 13:28
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	51.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	29.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-05
Client ID: 500711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 11:40
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	41.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	15.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-06
Client ID: 500712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 11:43
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.700		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	25.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-07
Client ID: 500713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 11:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-08
Client ID: 500726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 12:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	18.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-09
Client ID: 500811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:03
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.800		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	23.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-10
Client ID: 500812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:07
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.600		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.70		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-11
Client ID: 500813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:10
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.900		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.600		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-12
Client ID: 500826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.900		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-13
Client ID: 500911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:51
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.600		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.600		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	46.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	30.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-14
Client ID: 500912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.700		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.8		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	20.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-15
Client ID: 500913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 11:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.600		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	47.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.9		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-16
Client ID: 500926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 11:05
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.10		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.900		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.7		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-17
Client ID: 501011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 09:05
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.90		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.00		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.1		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-18
Client ID: 501012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 09:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.80		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.50		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.30		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.5		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.4		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-19
Client ID: 501013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 09:13
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.60		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.6		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	35.3		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912907
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912907-20
Client ID: 501026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 09:28
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.900		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.20		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	53.0		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	33.2		%	0.100	1	-	09/29/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912907
Report Date: 02/02/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG382094-1 QC Sample: L0912907-08 Client ID: 500726						
Gravel (>2.00mm)	2.8	1.50	%	**60**	Q	20
Very Coarse Sand (1.00-2.00 mm)	3.2	3.00	%	6		20
Coarse Sand (0.50-1.00 mm)	3.9	5.00	%	**25**	Q	20
Medium Sand (0.25-0.50 mm)	6.5	6.00	%	8		20
Fine Sand (0.125-0.25 mm)	5.0	4.80	%	4		20
Very Fine Sand (0.063-0.125 mm)	13.5	13.7	%	1		20
Silt - (1.95-62.5 um)	45.1	46.7	%	3		20
Clay - (<1.95 um)	18.8	18.3	%	3		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912907
Report Date: 02/02/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912907-01A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-02A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-03A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-04A	Glass 250ml unpreserved	A	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-05A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-06A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-07A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-08A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912907
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912907-09A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-10A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-11A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-12A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-13A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-14A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-15A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-16A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-17A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-18A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912907
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912907-19A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912907-20A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912907
Project Number:	TO-0018	**Report Date:**	02/02/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

ND · Not detected at the reported detection limit for the sample.

NI · Not Ignitable.

RDL · Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)

R · Analytical results are from sample re-analysis.

RE · Analytical results are from sample re-extraction.

J · Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

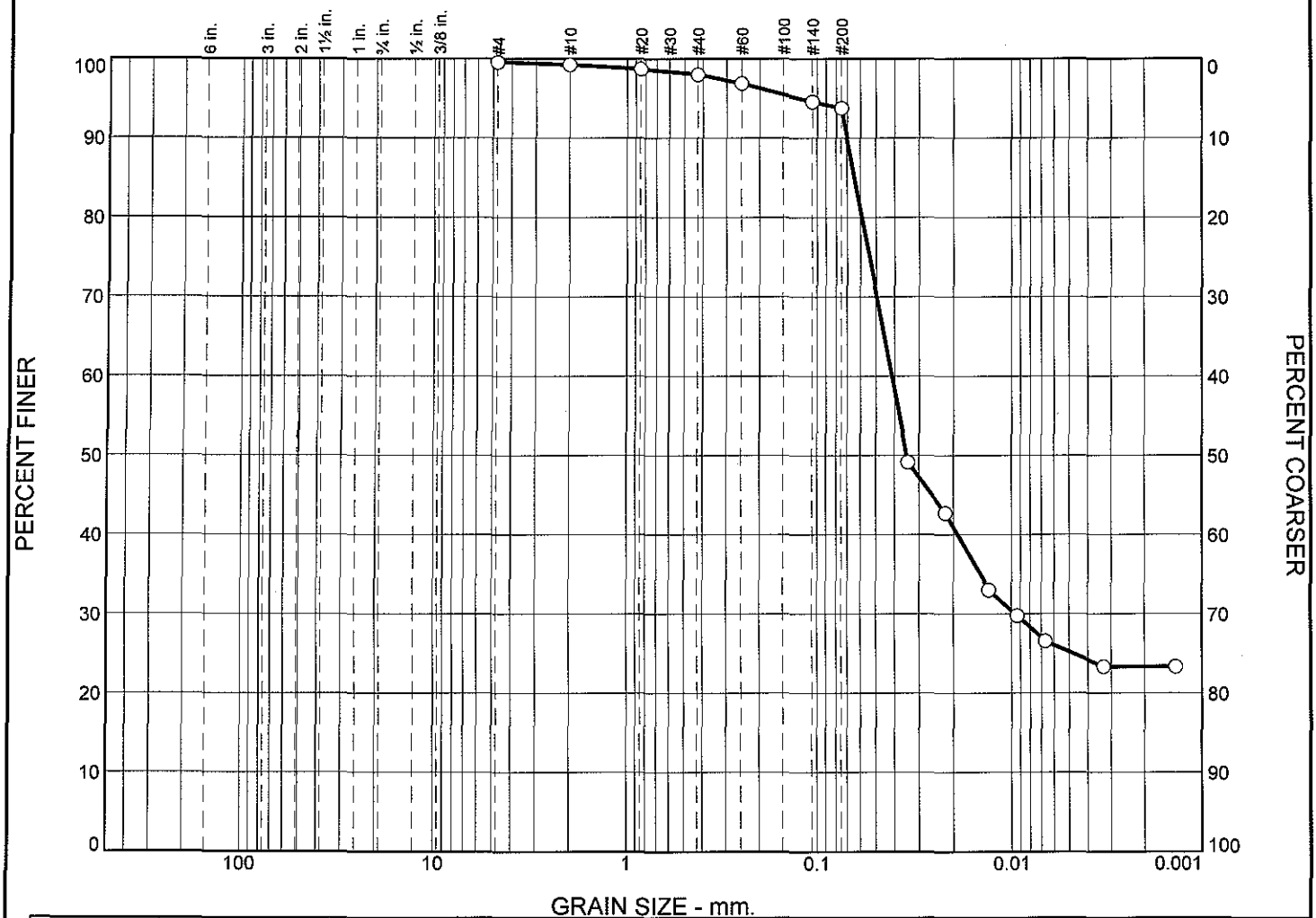
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.4	0.6	1.3	1.9	11.6	35.7	11.4	8.3	3.9	24.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0643	0.0413	0.0346	0.0096				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500611 **Sample Number:** L0912907-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500611
Sample Number: L0912907-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
46.62	0.00	#4	521.05	520.86	99.6	0.4
		#10	482.22	482.06	99.2	0.8
		#20	411.27	411.02	98.7	1.3
		#40	378.21	377.89	98.0	2.0
		#60	370.34	369.81	96.9	3.1
		#140	348.23	347.15	94.6	5.4
		#200	347.04	346.66	93.8	6.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.8
Weight of hydrometer sample =46.62
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	49.1	50.9
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	42.7	57.3
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	33.0	67.0
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	29.8	70.2
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	26.5	73.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	23.3	76.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	23.3	76.7

Fractional Components

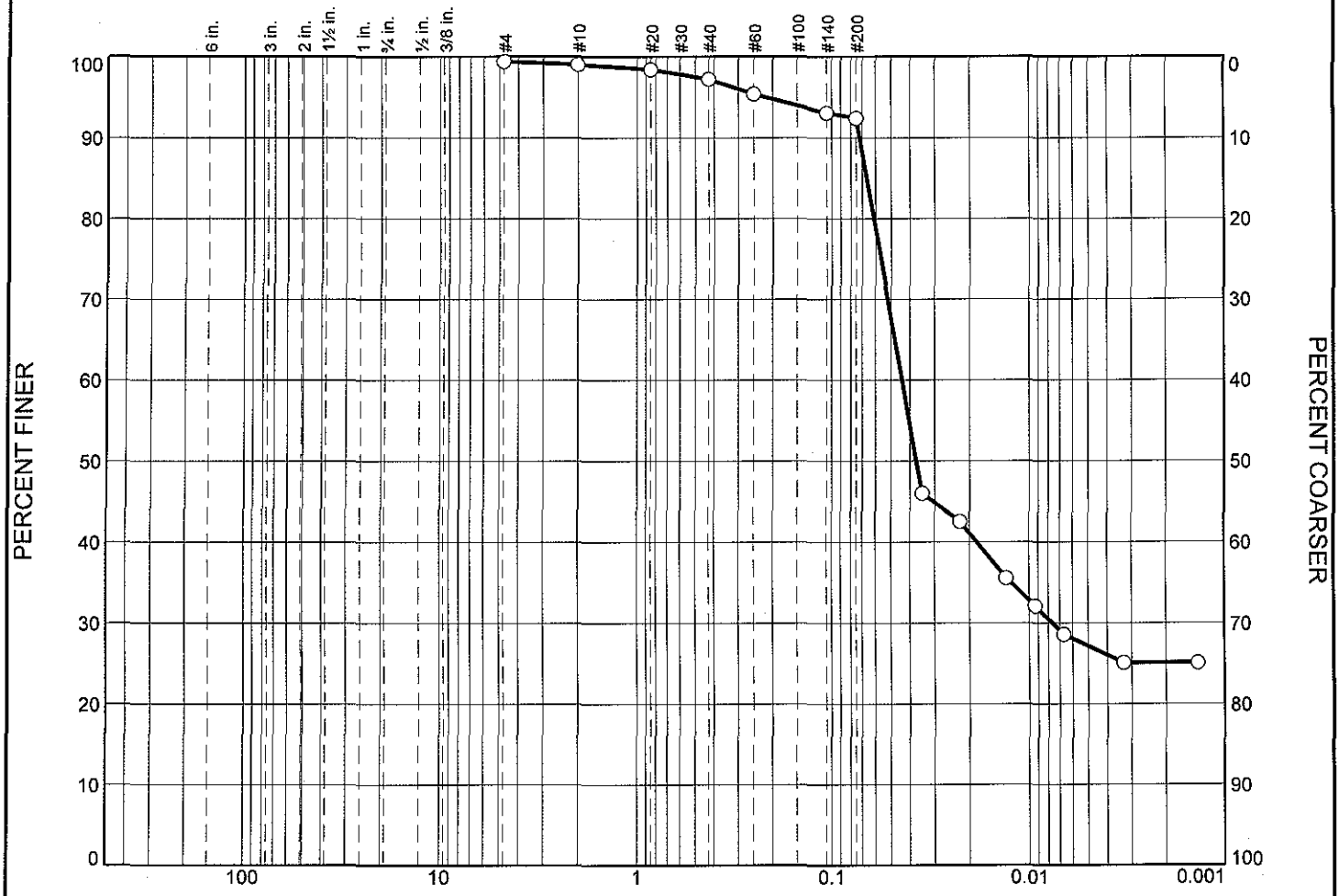
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.4	0.6	1.3	1.9	11.6	15.8	35.7	11.4	8.3	3.9	59.3	24.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0096	0.0346	0.0413	0.0588	0.0643	0.0702	0.1242

Fineness Modulus
0.11

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.5	1.0	2.1	1.9	12.1	36.3	7.2	7.7	4.3	25.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0663	0.0439	0.0372	0.0076				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500612 **Sample Number:** L0912907-02

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/27/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500612
Sample Number: L0912907-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
42.65	0.00	#4	521.99	521.73	99.4	0.6
		#10	484.89	484.74	99.0	1.0
		#20	405.63	405.37	98.4	1.6
		#40	362.18	361.66	97.2	2.8
		#60	366.91	366.14	95.4	4.6
		#140	343.79	342.79	93.1	6.9
		#200	345.45	345.18	92.4	7.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 92.4
Weight of hydrometer sample =42.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	46.0	54.0
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	42.5	57.5
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	35.5	64.5
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	32.1	67.9
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	28.6	71.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	25.1	74.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	25.1	74.9

Fractional Components

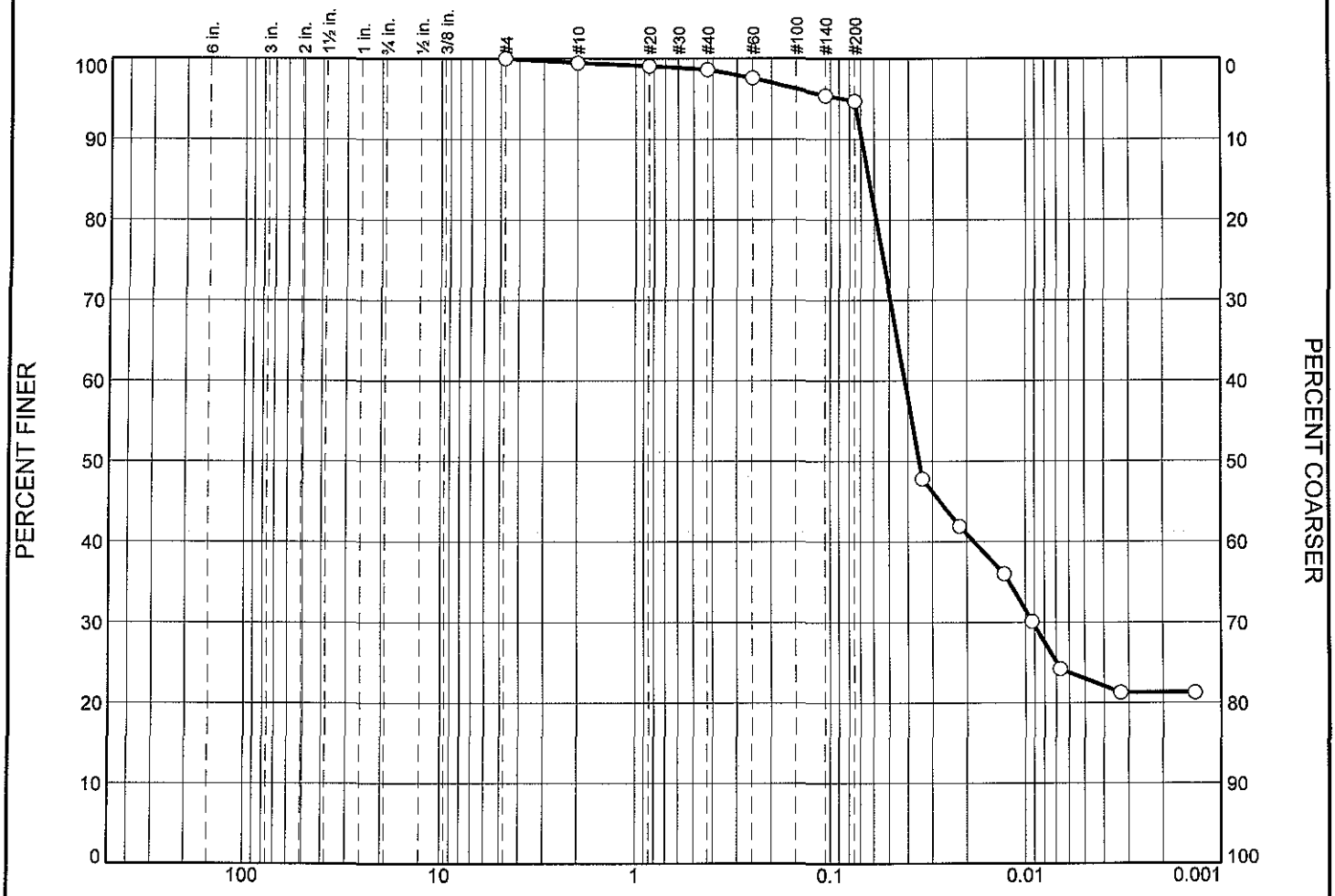
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.5	1.0	2.1	1.9	12.1	17.6	36.3	7.2	7.7	4.3	55.5	25.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0076	0.0372	0.0439	0.0611	0.0663	0.0720	0.2156

Fineness Modulus
0.15

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.4	0.4	0.4	1.1	1.8	11.8	37.4	8.4	11.1	5.1	22.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.0636	0.0416	0.0351	0.0092				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500613 **Sample Number:** L0912907-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500613
Sample Number: L0912907-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.63	0.00	#4	520.86	520.86	100.0	0.0
		#10	482.33	482.06	99.5	0.5
		#20	411.23	411.02	99.1	0.9
		#40	378.12	377.89	98.6	1.4
		#60	370.34	369.81	97.6	2.4
		#140	348.27	347.15	95.4	4.6
		#200	347.02	346.66	94.7	5.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.7
Weight of hydrometer sample =51.63
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0338	47.8	52.2
5.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0218	41.9	58.1
15.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0128	36.0	64.0
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	30.1	69.9
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	24.2	75.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	21.3	78.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	21.3	78.7

Fractional Components

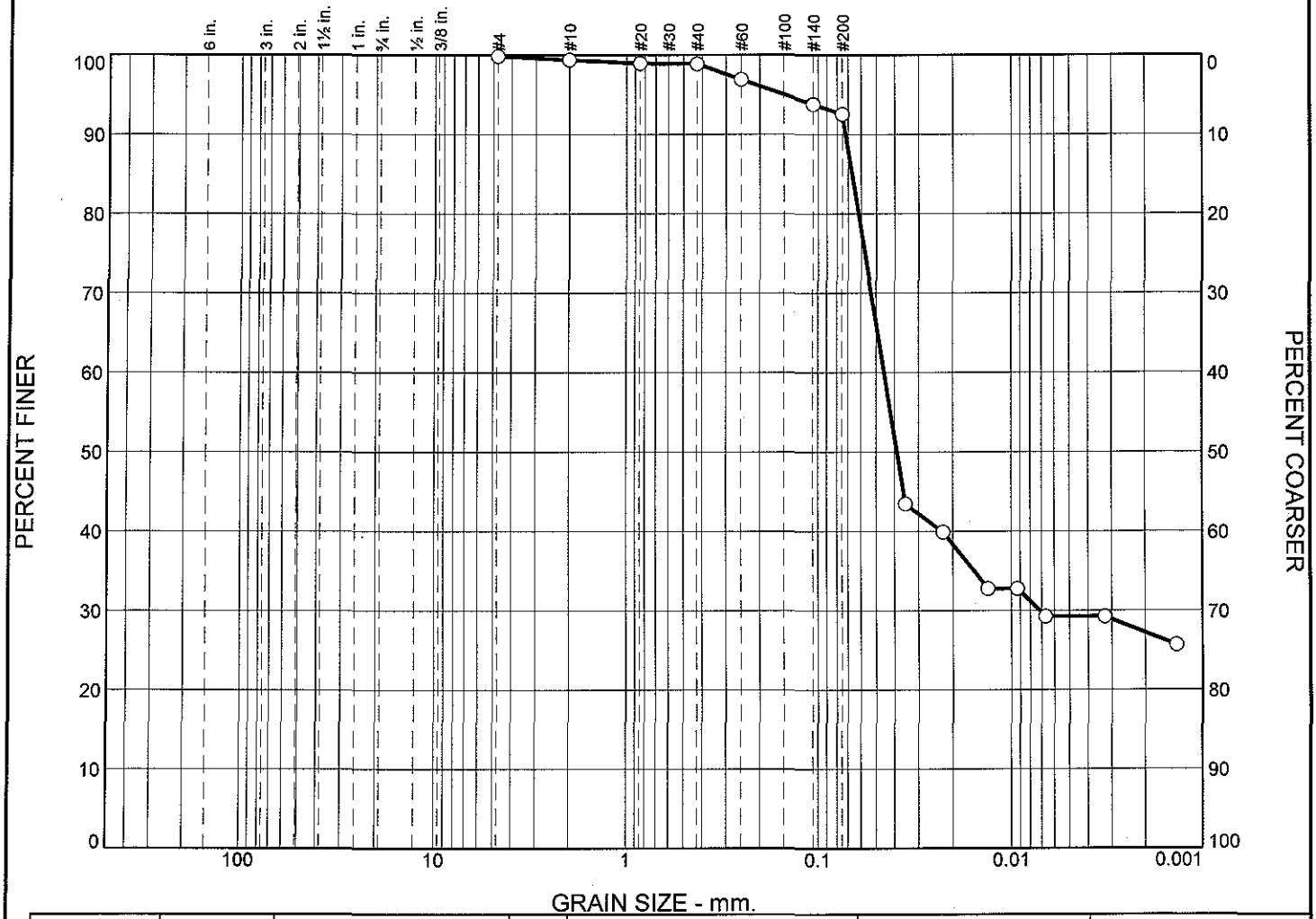
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.4	0.4	0.4	1.1	1.8	11.8	15.5	37.4	8.4	11.1	5.1	62.0	22.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0092	0.0351	0.0416	0.0584	0.0636	0.0692	0.0857

Fineness Modulus
0.08

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	0.4	0.1	2.0	2.5	13.6	38.3	7.5	4.1	1.7	29.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0667	0.0454	0.0389	0.0072				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500626 **Sample Number:** L0912907-04

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500626
Sample Number: L0912907-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
41.78	0.00	#4	521.79	521.73	99.9	0.1
		#10	484.94	484.74	99.4	0.6
		#20	405.55	405.37	98.9	1.1
		#40	361.68	361.66	98.9	1.1
		#60	366.97	366.14	96.9	3.1
		#140	344.09	342.79	93.8	6.2
		#200	345.70	345.18	92.6	7.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 92.6
Weight of hydrometer sample =41.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	43.4	56.6
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	39.9	60.1
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	32.8	67.2
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	32.8	67.2
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	29.2	70.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	29.2	70.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	25.7	74.3

Fractional Components

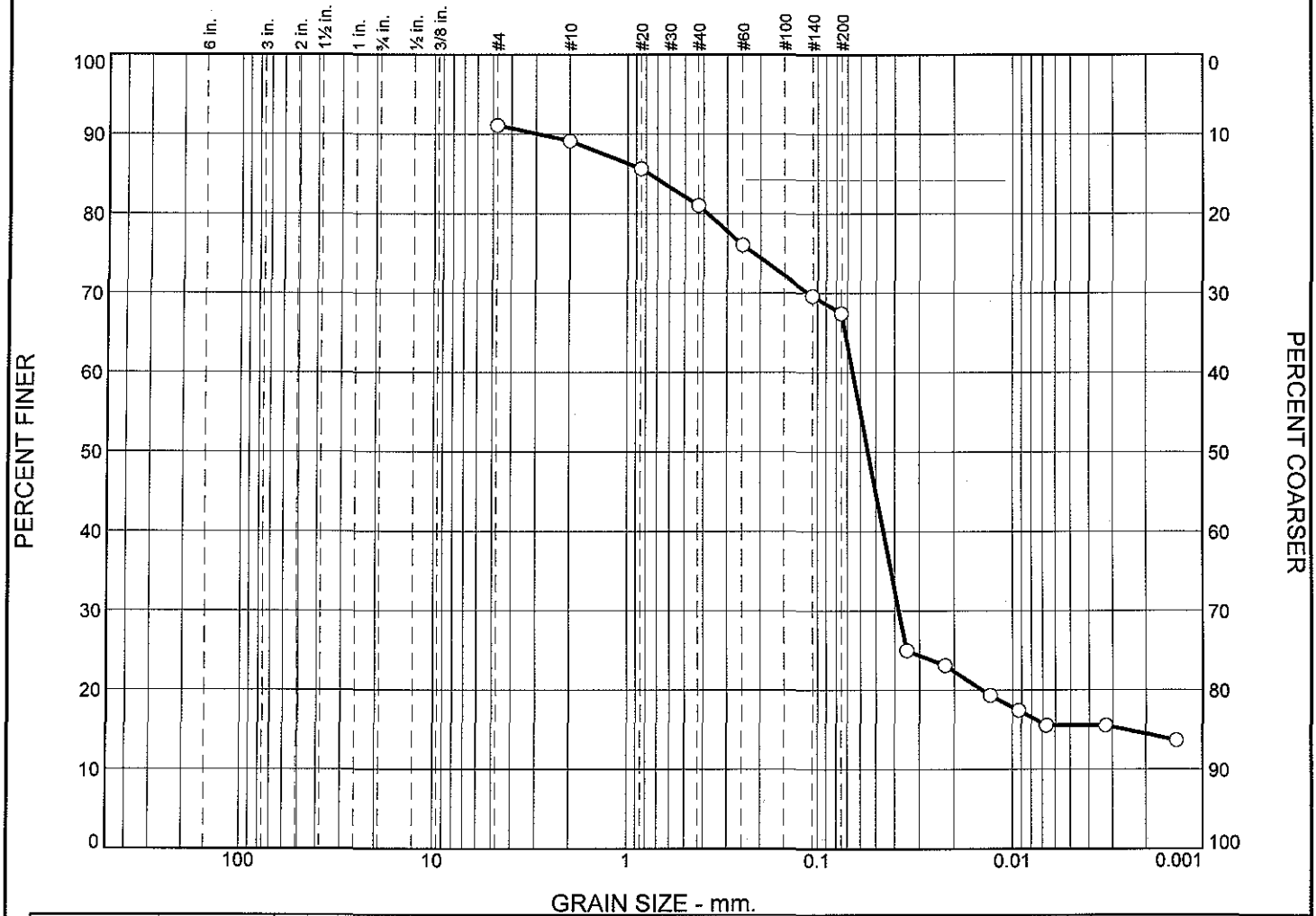
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	0.4	0.1	2.0	2.5	13.6	18.6	38.3	7.5	4.1	1.7	51.6	29.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0072	0.0389	0.0454	0.0618	0.0667	0.0721	0.1475

Fineness Modulus
0.10

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.6	2.8	4.2	6.1	5.2	13.4	32.9	3.9	4.2	0.9	15.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7703	0.0656	0.0547	0.0381	0.0026			

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500711 **Sample Number:** L0912907-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500711
Sample Number: L0912907-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.31	0.00	#4	525.95	520.86	91.1	8.9
		#10	483.19	482.06	89.1	10.9
		#20	413.02	411.02	85.7	14.3
		#40	380.54	377.89	81.0	19.0
		#60	372.68	369.81	76.0	24.0
		#140	350.83	347.15	69.6	30.4
		#200	347.90	346.66	67.4	32.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 67.4
Weight of hydrometer sample =57.331
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	25.0	75.0
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	23.1	76.9
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	19.3	80.7
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	17.4	82.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	15.5	84.5
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	15.5	84.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	13.6	86.4

Fractional Components

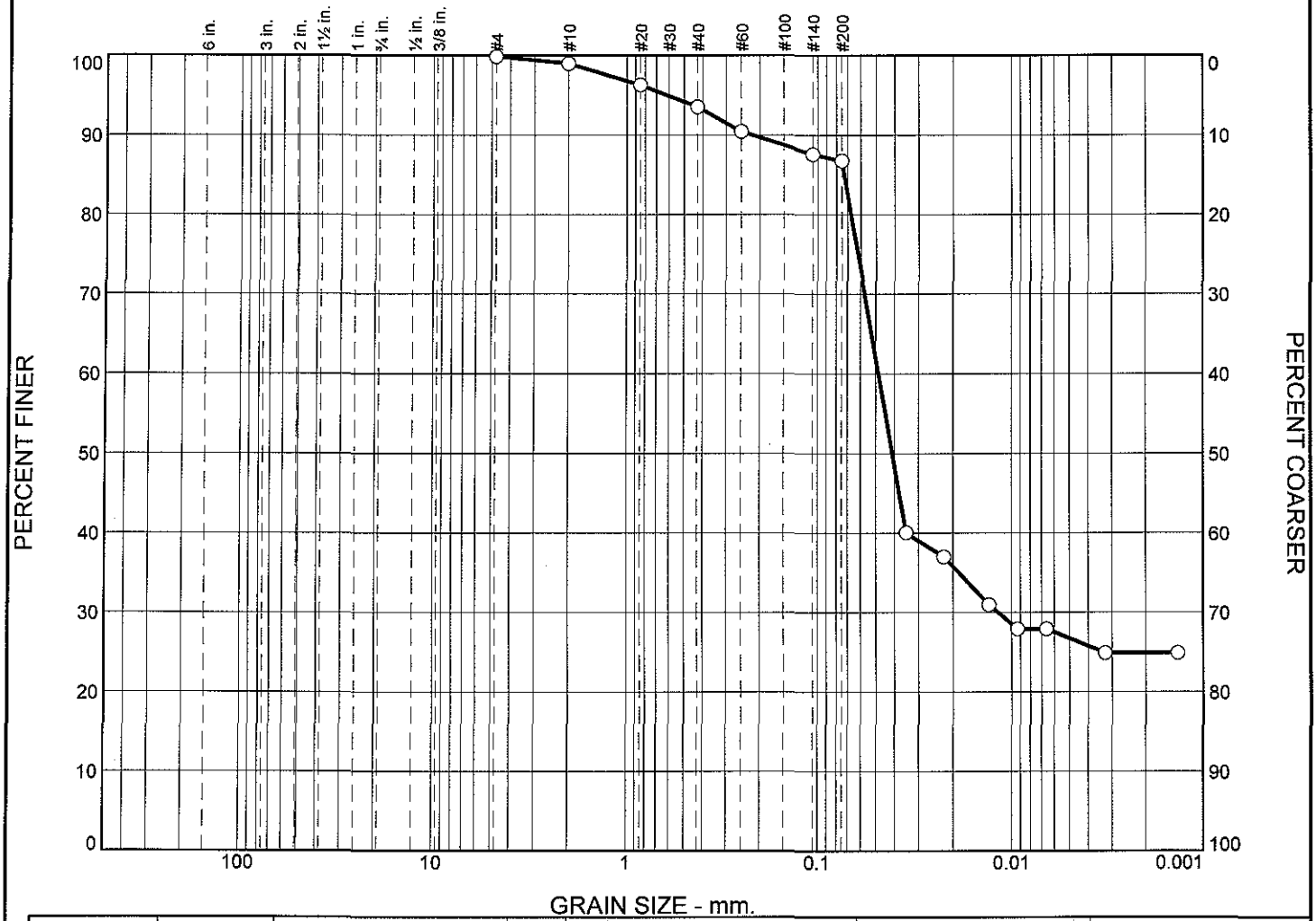
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.6	2.8	4.2	6.1	5.2	13.4	31.7	32.9	3.9	4.2	0.9	41.9	15.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0026	0.0144	0.0381	0.0547	0.0656	0.3809	0.7703	2.9080	

Fineness Modulus
0.99

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	2.2	2.6	3.7	2.4	12.4	36.5	6.2	5.1	2.3	25.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0729	0.0483	0.0410	0.0118				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500712 **Sample Number:** L0912907-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500712
Sample Number: L0912907-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
46.00	0.00	#4	521.79	521.73	99.9	0.1
		#10	485.14	484.74	99.0	1.0
		#20	406.61	405.37	96.3	3.7
		#40	362.93	361.66	93.5	6.5
		#60	367.56	366.14	90.5	9.5
		#140	344.11	342.79	87.6	12.4
		#200	345.56	345.18	86.8	13.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.8
Weight of hydrometer sample =46
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	40.0	60.0
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	37.0	63.0
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	30.9	69.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	27.9	72.1
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	27.9	72.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	24.9	75.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	24.9	75.1

Fractional Components

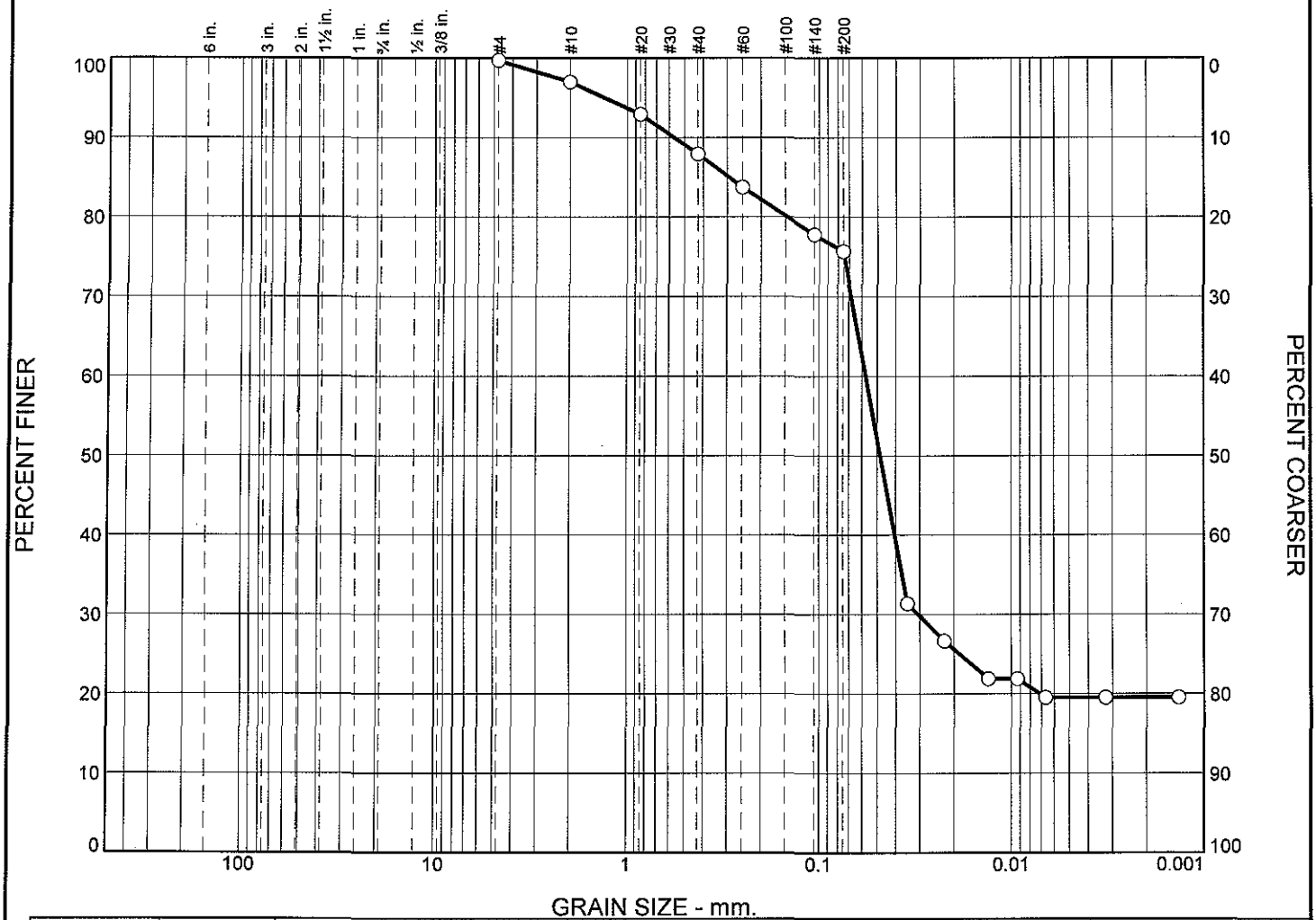
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	2.2	2.6	3.7	2.4	12.4	23.3	36.5	6.2	5.1	2.3	50.1	25.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0118	0.0410	0.0483	0.0671	0.0729	0.2181	0.6126

Fineness Modulus
0.28

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.2	3.3	4.6	5.4	4.8	13.7	35.1	6.7	2.8	1.1	19.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2939	0.0572	0.0481	0.0307				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500713 **Sample Number:** L0912907-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500713
Sample Number: L0912907-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.23	0.00	#4	521.01	520.86	99.7	0.3
		#10	483.45	482.06	97.0	3.0
		#20	413.10	411.02	92.9	7.1
		#40	380.46	377.89	87.9	12.1
		#60	371.96	369.81	83.7	16.3
		#140	350.19	347.15	77.8	22.2
		#200	347.74	346.66	75.7	24.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 75.7
Weight of hydrometer sample =51.23
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	31.3	68.7
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	26.6	73.4
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	21.9	78.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	21.9	78.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	19.5	80.5
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	19.5	80.5
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	19.5	80.5

Fractional Components

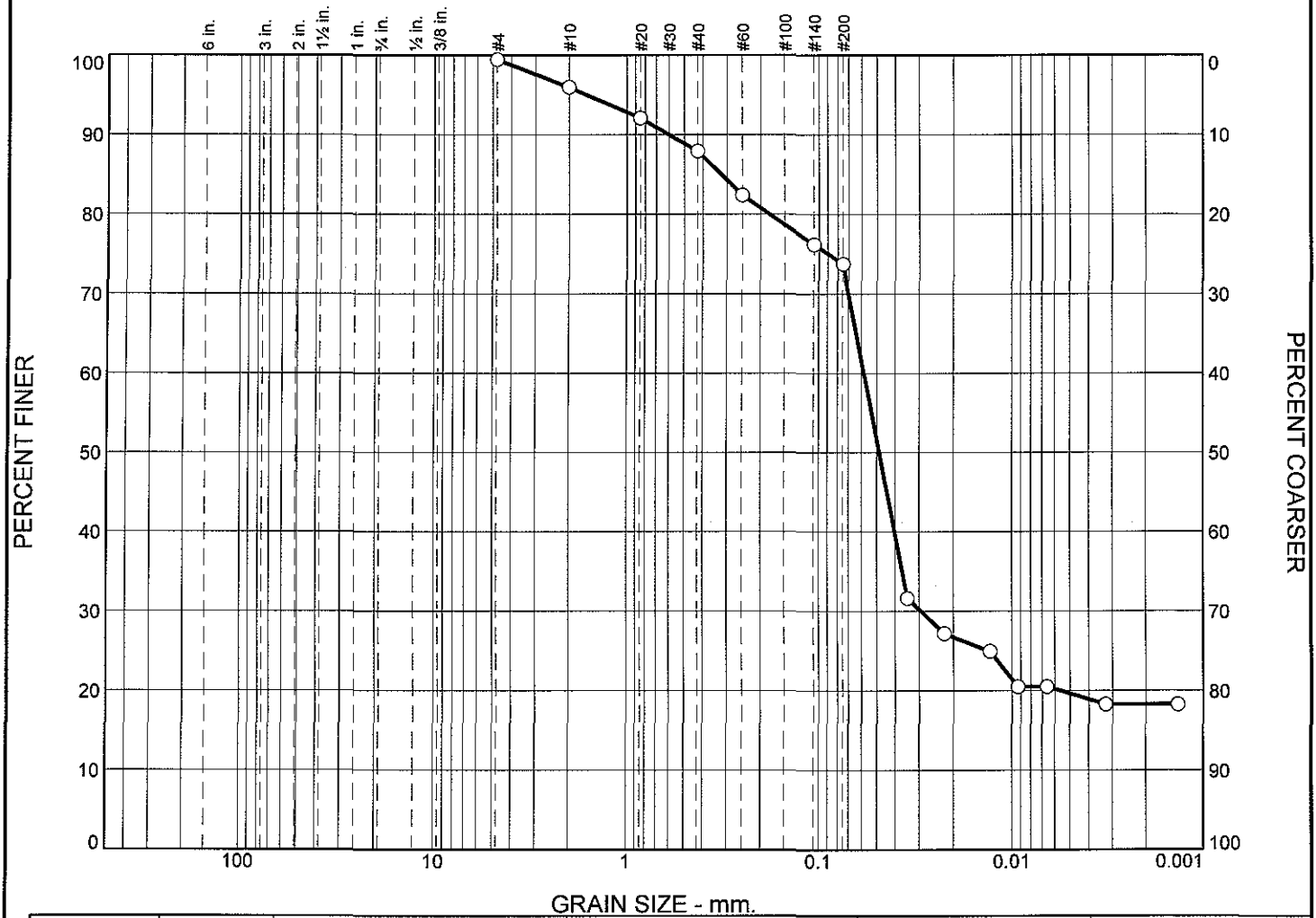
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.2	3.3	4.6	5.4	4.8	13.7	31.8	35.1	6.7	2.8	1.1	45.7	19.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0072	0.0307	0.0481	0.0572	0.1460	0.2939	0.5667	1.3138

Fineness Modulus
0.53

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.8	3.2	3.9	6.5	5.0	13.5	33.4	4.8	5.2	1.7	18.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3220	0.0582	0.0484	0.0294				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500726 **Sample Number:** L0912907-08

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500726
Sample Number: L0912907-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
53.29	0.00	#4	522.02	521.73	99.5	0.5
		#10	486.60	484.74	96.0	4.0
		#20	407.44	405.37	92.1	7.9
		#40	363.89	361.66	87.9	12.1
		#60	369.09	366.14	82.4	17.6
		#140	346.08	342.79	76.2	23.8
		#200	346.47	345.18	73.8	26.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 73.8
Weight of hydrometer sample =53.29
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	31.6	68.4
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	27.1	72.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	24.9	75.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	20.5	79.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	20.5	79.5
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	18.3	81.7
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	18.3	81.7

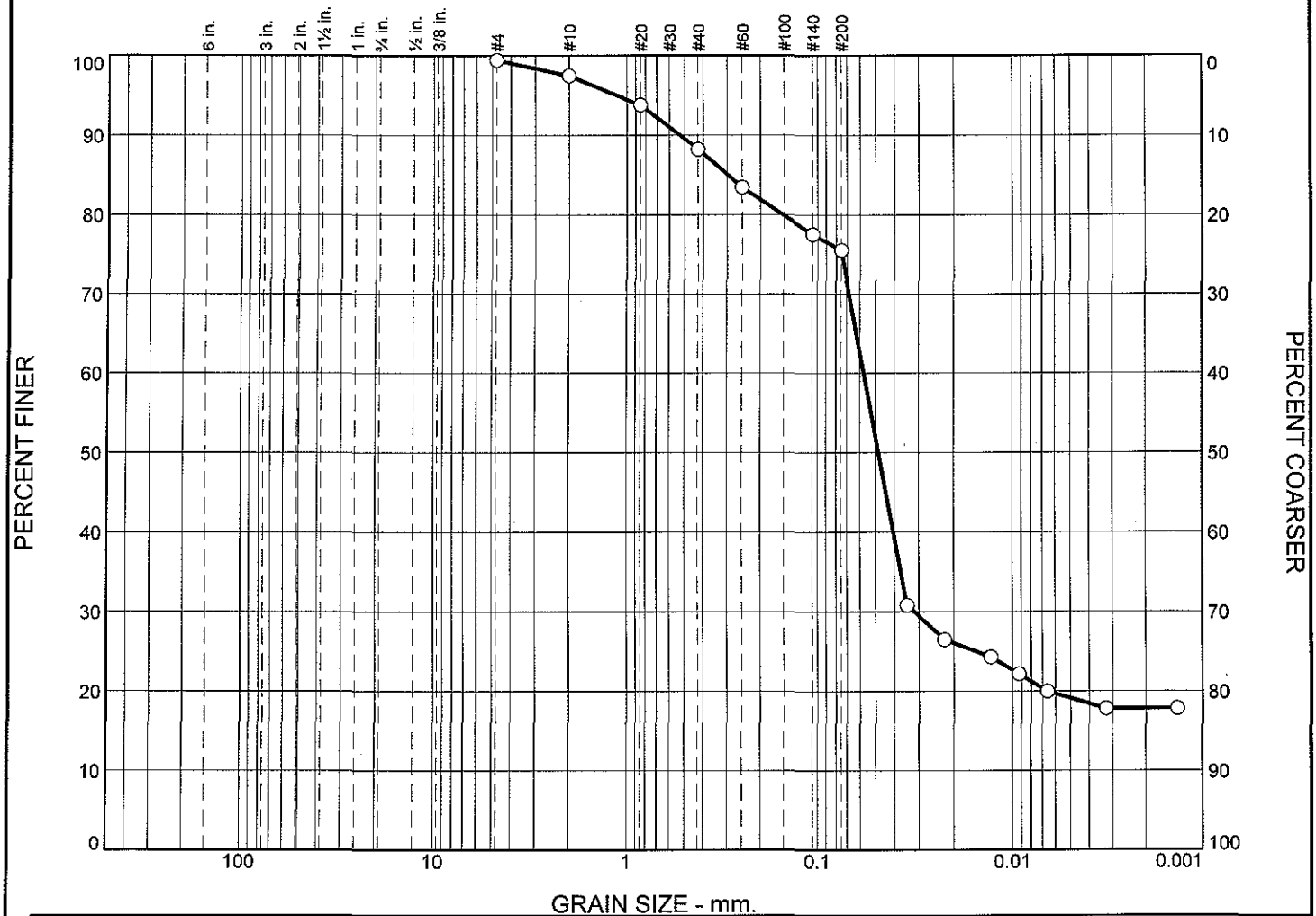
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.8	3.2	3.9	6.5	5.0	13.5	32.1	33.4	4.8	5.2	1.7	45.1	18.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0057	0.0294	0.0484	0.0582	0.1801	0.3220	0.6022	1.6168

Fineness Modulus
0.57

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.5	3.0	5.0	6.0	4.8	13.7	35.2	4.8	4.0	2.7	18.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2967	0.0572	0.0481	0.0318				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500726 **Sample Number:** WG382094-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500726
Sample Number: WG382094-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.97	0.00	#4	521.18	520.86	99.4	0.6
		#10	483.16	482.06	97.5	2.5
		#20	413.08	411.02	93.8	6.2
		#40	380.99	377.89	88.2	11.8
		#60	372.49	369.81	83.5	16.5
		#140	350.47	347.15	77.5	22.5
		#200	347.78	346.66	75.5	24.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 75.5
Weight of hydrometer sample =55.97
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	30.8	69.2
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	26.5	73.5
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	24.3	75.7
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	22.1	77.9
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	20.0	80.0
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	17.8	82.2
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	17.8	82.2

Fractional Components

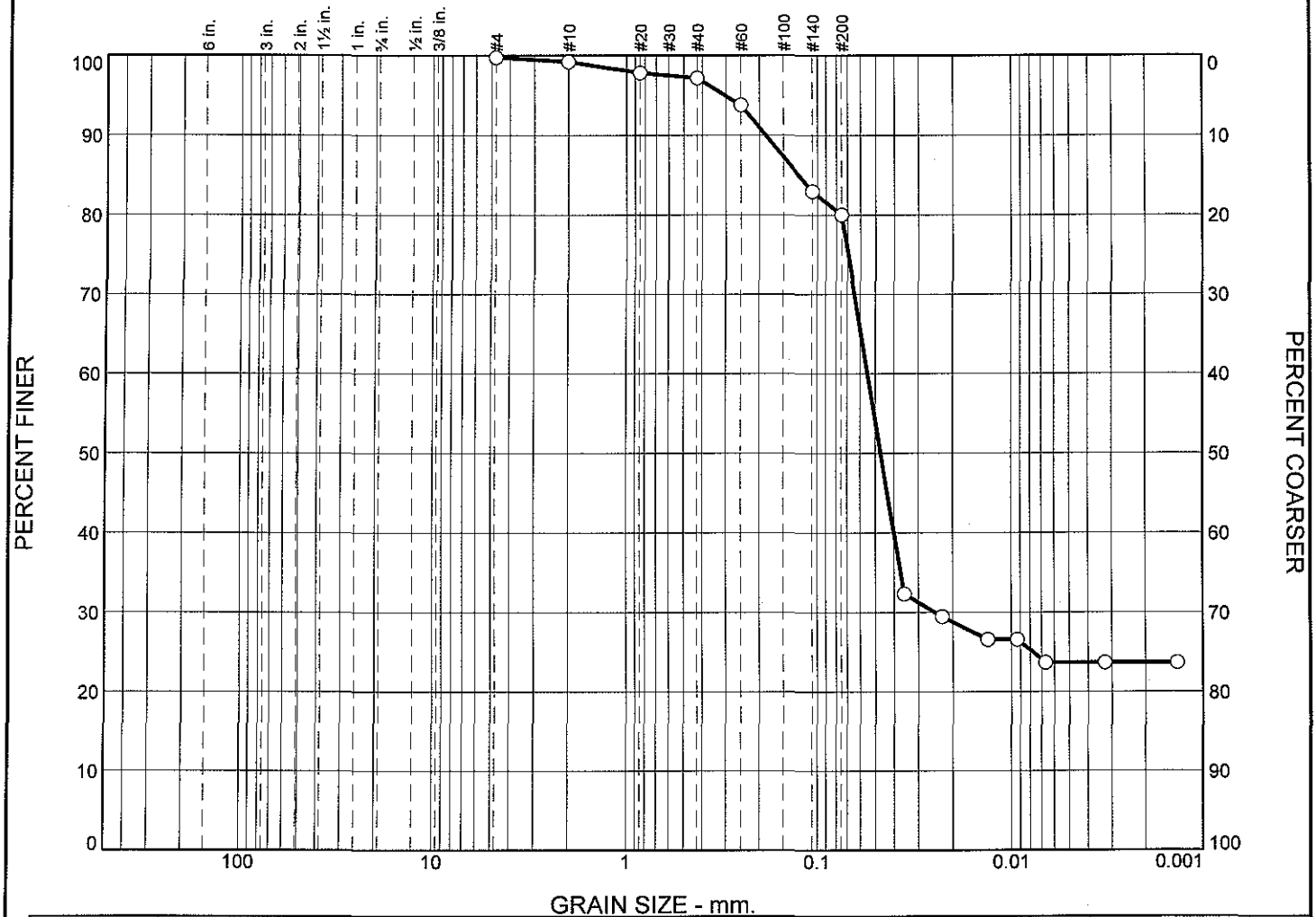
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.5	3.0	5.0	6.0	4.8	13.7	32.5	35.2	4.8	4.0	2.7	46.7	18.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0066	0.0318	0.0481	0.0572	0.1517	0.2967	0.5295	1.1281

Fineness Modulus
0.52

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	1.1	0.8	3.5	8.8	16.6	36.9	4.0	2.5	1.3	23.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○			0.1248	0.0548	0.0468	0.0246				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500811 **Sample Number:** L0912907-09

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500811
Sample Number: L0912907-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
44.55	0.00	#4	521.84	521.73	99.8	0.2
		#10	484.98	484.74	99.2	0.8
		#20	405.99	405.37	97.8	2.2
		#40	361.95	361.66	97.2	2.8
		#60	367.65	366.14	93.8	6.2
		#140	347.62	342.79	82.9	17.1
		#200	346.49	345.18	80.0	20.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.0
Weight of hydrometer sample =44.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	32.3	67.7
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	29.5	70.5
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	26.6	73.4
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	26.6	73.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	23.7	76.3
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	23.7	76.3
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	23.7	76.3

Fractional Components

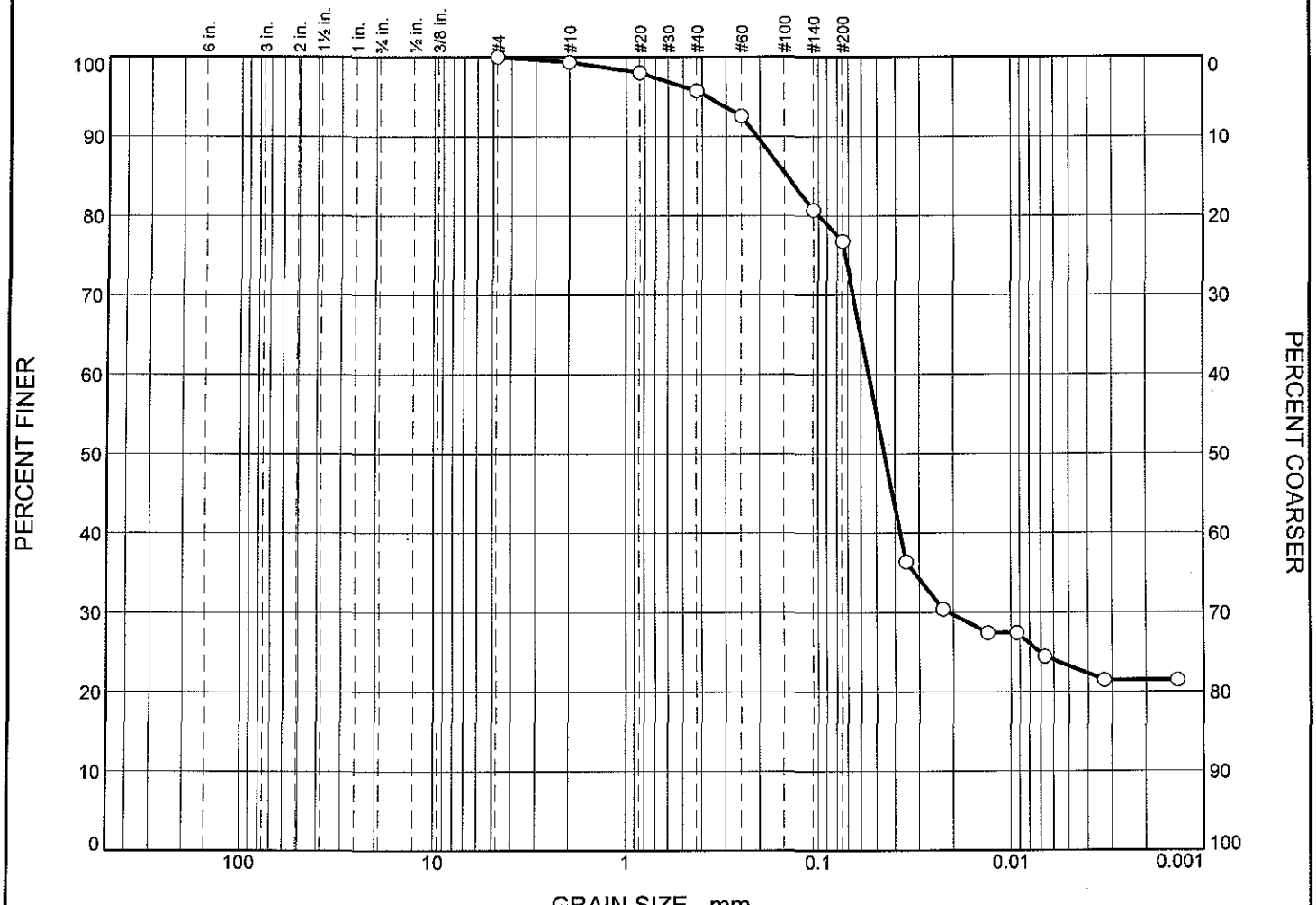
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	1.1	0.8	3.5	8.8	16.6	30.8	36.9	4.0	2.5	1.3	44.7	23.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0246	0.0468	0.0548	0.0750	0.1248	0.1853	0.3025

Fineness Modulus
0.23

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.6	1.0	2.0	3.7	9.6	15.9	32.4	6.4	2.5	3.6	22.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1447	0.0547	0.0454	0.0211				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500812 **Sample Number:** L0912907-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500812
Sample Number: L0912907-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
41.43	0.00	#4	520.86	520.86	100.0	0.0
		#10	482.33	482.06	99.3	0.7
		#20	411.57	411.02	98.0	2.0
		#40	378.84	377.89	95.7	4.3
		#60	371.12	369.81	92.6	7.4
		#140	352.07	347.15	80.7	19.3
		#200	348.28	346.66	76.8	23.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 76.8
Weight of hydrometer sample =41.43
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	36.3	63.7
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	30.4	69.6
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	27.4	72.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	27.4	72.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	24.4	75.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	21.5	78.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	21.5	78.5

Fractional Components

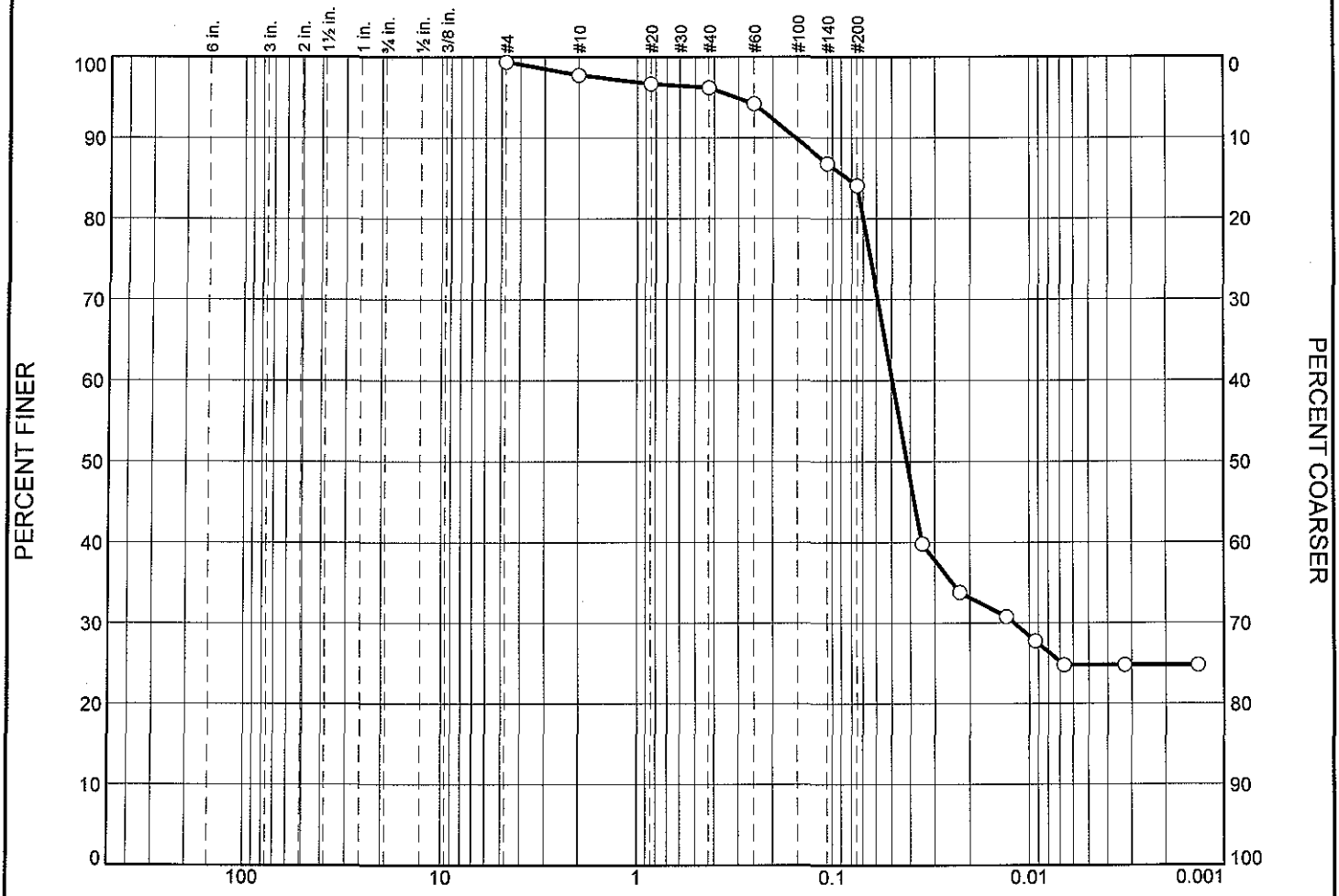
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.6	1.0	2.0	3.7	9.6	15.9	32.2	32.4	6.4	2.5	3.6	44.9	22.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0211	0.0454	0.0547	0.0997	0.1447	0.2077	0.3761

Fineness Modulus
0.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.3	0.9	0.6	2.1	6.0	14.6	35.4	6.4	5.6	1.5	24.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0843	0.0494	0.0415	0.0120				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500813 **Sample Number:** L0912907-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500813
Sample Number: L0912907-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
44.82	0.00	#4	522.00	521.73	99.4	0.6
		#10	485.47	484.74	97.8	2.2
		#20	405.87	405.37	96.7	3.3
		#40	361.87	361.66	96.2	3.8
		#60	367.03	366.14	94.2	5.8
		#140	346.11	342.79	86.8	13.2
		#200	346.39	345.18	84.1	15.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 84.1
Weight of hydrometer sample =44.82
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	39.8	60.2
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	33.8	66.2
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	30.8	69.2
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	27.8	72.2
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	24.7	75.3
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	24.7	75.3
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	24.7	75.3

Fractional Components

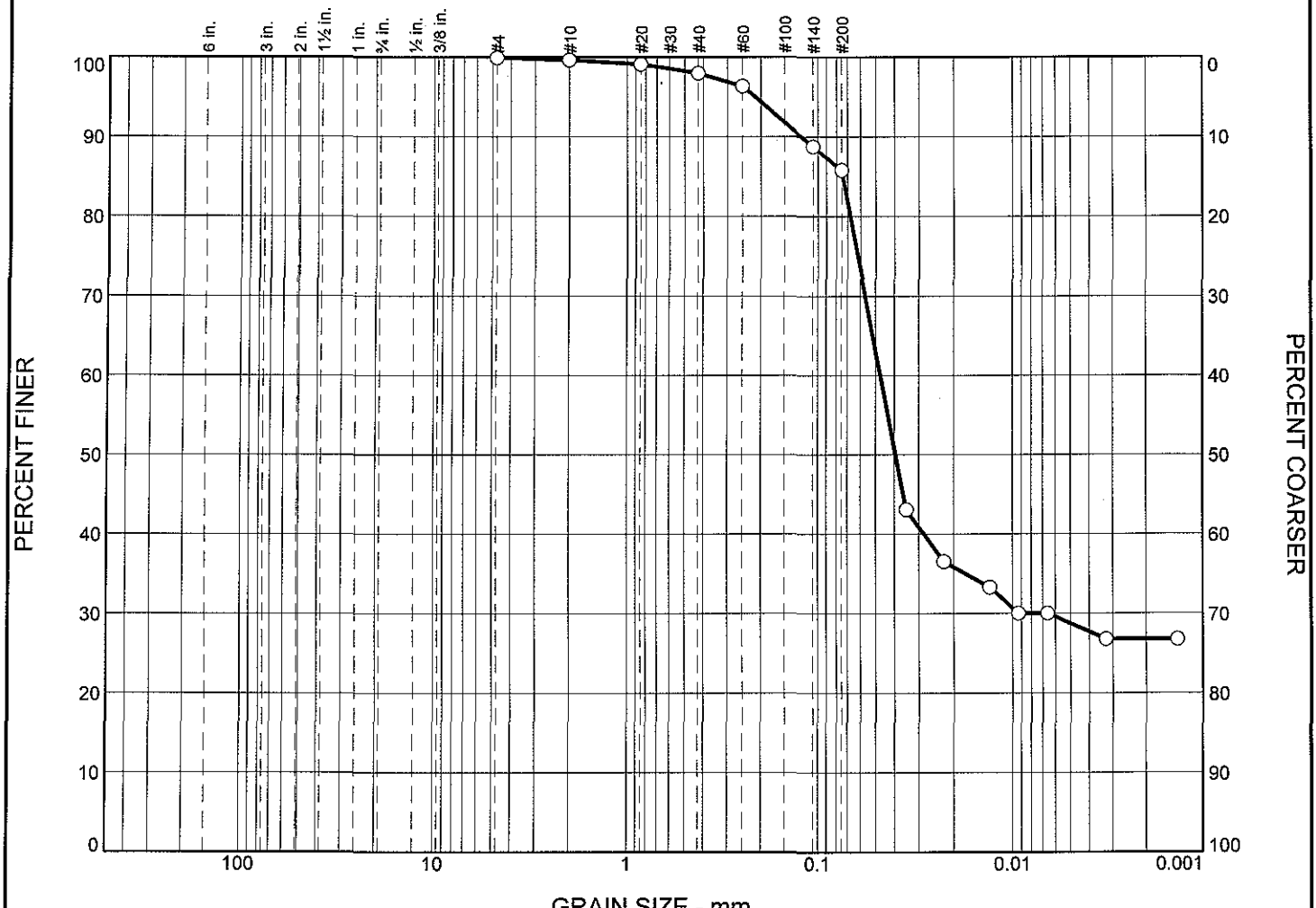
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.3	0.9	0.6	2.1	6.0	14.6	24.2	35.4	6.4	5.6	1.5	48.9	24.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0120	0.0415	0.0494	0.0699	0.0843	0.1537	0.3097

Fineness Modulus
0.24

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.4	0.9	2.0	6.1	14.6	34.3	7.0	4.3	2.4	27.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0739	0.0472	0.0394	0.0066				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500826 **Sample Number:** L0912907-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500826
Sample Number: L0912907-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
42.30	0.00	#4	520.88	520.86	100.0	0.0
		#10	482.19	482.06	99.6	0.4
		#20	411.25	411.02	99.1	0.9
		#40	378.36	377.89	98.0	2.0
		#60	370.51	369.81	96.3	3.7
		#140	350.37	347.15	88.7	11.3
		#200	347.90	346.66	85.8	14.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 85.8
Weight of hydrometer sample =42.30
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	43.0	57.0
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	36.5	63.5
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	33.3	66.7
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	30.0	70.0
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	30.0	70.0
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	26.7	73.3
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	26.7	73.3

Fractional Components

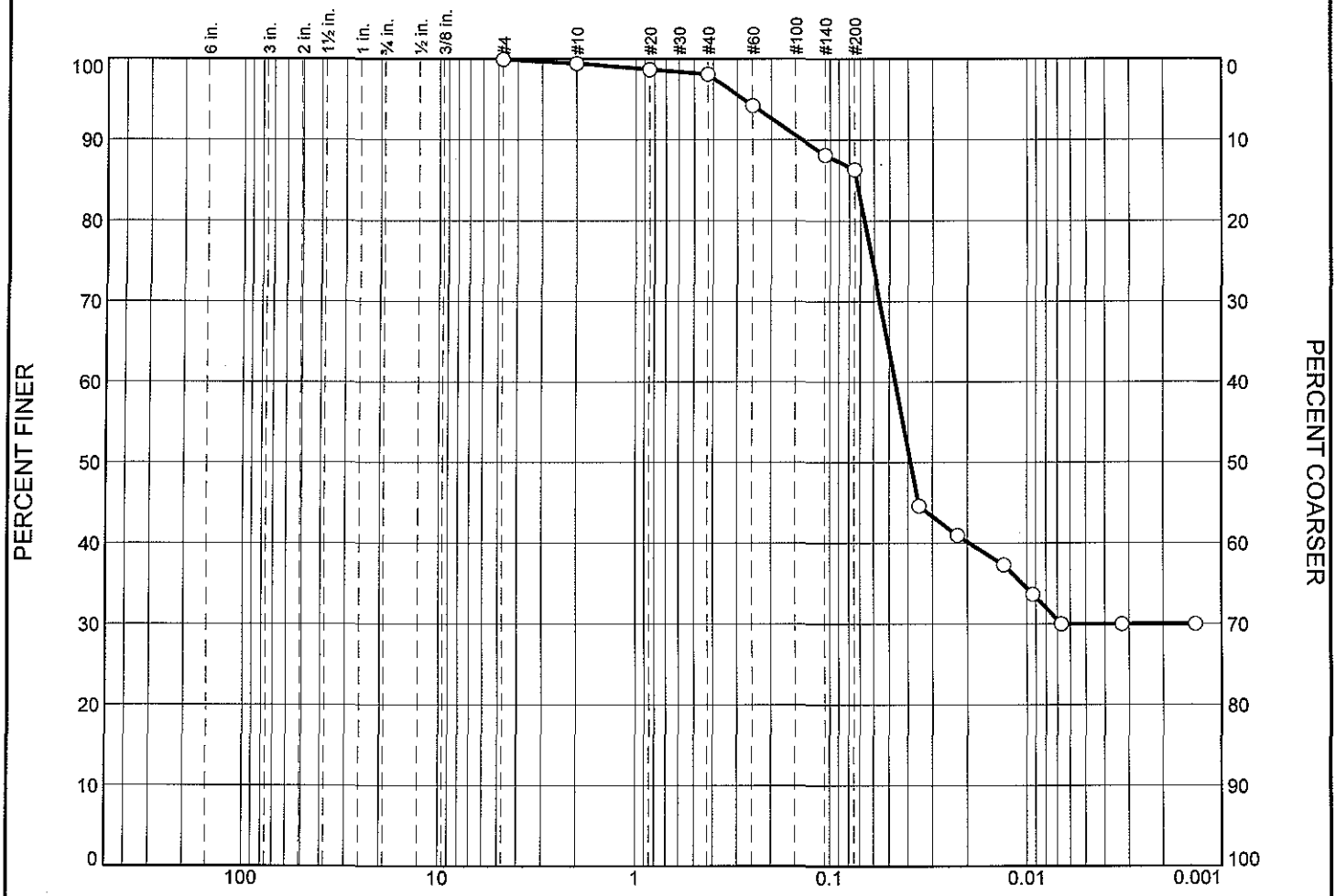
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.4	0.9	2.0	6.1	14.6	24.0	34.3	7.0	4.3	2.4	48.0	27.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0066	0.0394	0.0472	0.0676	0.0739	0.1224	0.2151

Fineness Modulus
0.14

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	0.6	0.6	4.0	5.0	12.9	32.7	5.1	6.8	1.7	30.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0732	0.0465	0.0388	0.0067				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500911 **Sample Number:** L0912907-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500911
Sample Number: L0912907-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
37.97	0.00	#4	521.76	521.73	99.9	0.1
		#10	484.92	484.74	99.4	0.6
		#20	405.66	405.37	98.7	1.3
		#40	361.89	361.66	98.1	1.9
		#60	367.61	366.14	94.2	5.8
		#140	345.12	342.79	88.1	11.9
		#200	345.85	345.18	86.3	13.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.3
Weight of hydrometer sample =37.97
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	44.6	55.4
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	40.9	59.1
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	37.3	62.7
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	33.6	66.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	30.0	70.0
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	30.0	70.0
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	30.0	70.0

Fractional Components

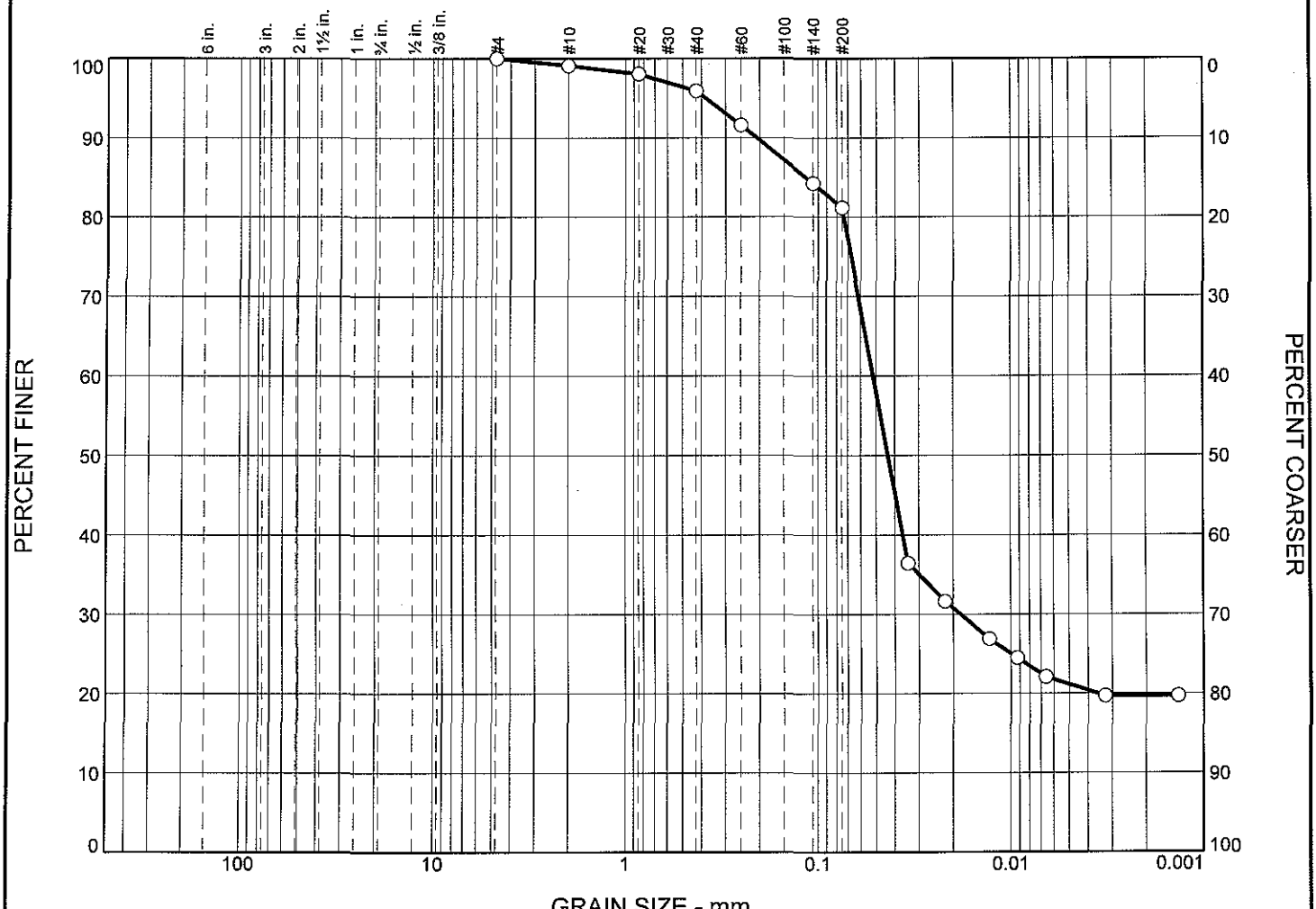
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	0.6	0.6	4.0	5.0	12.9	23.1	32.7	5.1	6.8	1.7	46.3	30.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0067	0.0388	0.0465	0.0669	0.0732	0.1388	0.2787

Fineness Modulus
0.17

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.2	0.7	0.8	1.9	4.8	6.0	14.8	35.4	6.9	5.2	3.0	20.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1162	0.0517	0.0433	0.0183				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500912 **Sample Number:** L0912907-14

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500912
Sample Number: L0912907-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.40	0.00	#4	520.84	520.84	100.0	0.0
		#10	482.54	482.06	99.1	0.9
		#20	411.59	411.02	98.1	1.9
		#40	379.05	377.89	95.9	4.1
		#60	372.17	369.81	91.6	8.4
		#140	351.17	347.15	84.2	15.8
		#200	348.33	346.66	81.1	18.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 81.1
Weight of hydrometer sample =54.40
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	36.4	63.6
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	31.6	68.4
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	26.9	73.1
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	24.5	75.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	22.1	77.9
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	19.7	80.3
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	19.7	80.3

Fractional Components

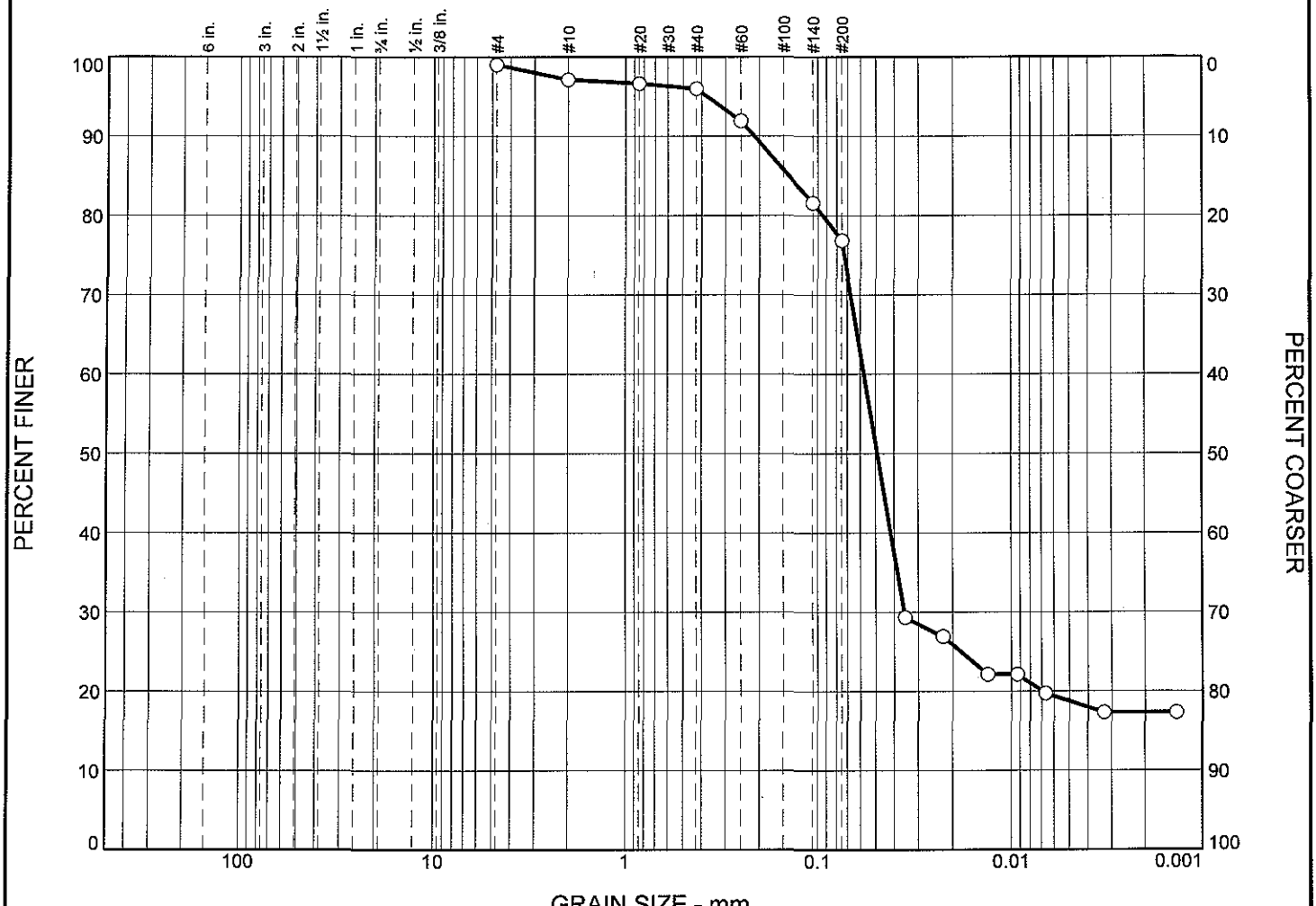
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.2	0.7	0.8	1.9	4.8	6.0	14.8	28.3	35.4	6.9	5.2	3.0	50.5	20.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0036	0.0183	0.0433	0.0517	0.0735	0.1162	0.2076	0.3790

Fineness Modulus
0.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.6	0.4	0.6	4.2	8.3	18.2	36.8	5.0	2.8	2.9	17.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1409	0.0573	0.0489	0.0355				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500913 **Sample Number:** L0912907-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500913
Sample Number: L0912907-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.45	0.00	#4	522.22	521.73	99.0	1.0
		#10	485.72	484.74	97.1	2.9
		#20	405.63	405.37	96.6	3.4
		#40	361.41	361.06	96.0	4.0
		#60	368.23	366.14	91.9	8.1
		#140	348.10	342.79	81.6	18.4
		#200	347.62	345.18	76.8	23.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 76.8
Weight of hydrometer sample =51.45
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	29.3	70.7
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	26.9	73.1
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	22.1	77.9
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	22.1	77.9
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	19.7	80.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	17.3	82.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	17.3	82.7

Fractional Components

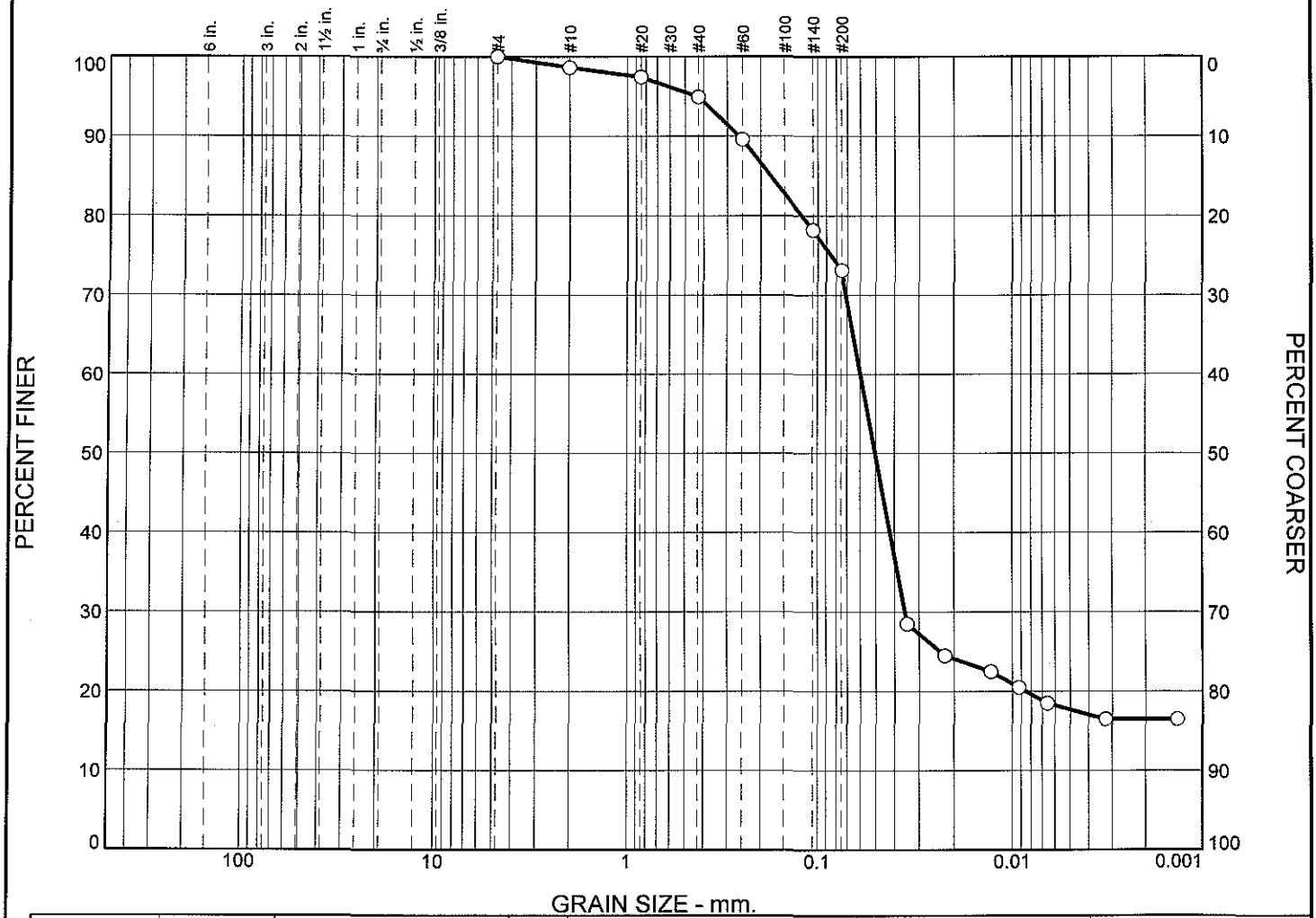
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.6	0.4	0.6	4.2	8.3	18.2	31.7	36.8	5.0	2.8	2.9	47.5	17.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0069	0.0355	0.0489	0.0573	0.0945	0.1409	0.2136	0.3750

Fineness Modulus
0.31

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.3	1.1	0.9	2.2	5.9	9.2	17.7	35.2	4.3	3.7	2.5	17.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1771	0.0596	0.0501	0.0354				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 500926 **Sample Number:** L0912907-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 500926
Sample Number: L0912907-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
58.62	0.00	#4	520.86	520.86	100.0	0.0
		#10	482.86	482.06	98.6	1.4
		#20	411.73	411.02	97.4	2.6
		#40	379.35	377.89	94.9	5.1
		#60	372.95	369.81	89.6	10.4
		#140	353.83	347.15	78.2	21.8
		#200	349.61	346.66	73.1	26.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 73.1
Weight of hydrometer sample =58.62
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	28.5	71.5
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	24.5	75.5
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	22.5	77.5
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	20.5	79.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	18.5	81.5
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	16.5	83.5
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	16.5	83.5

Fractional Components

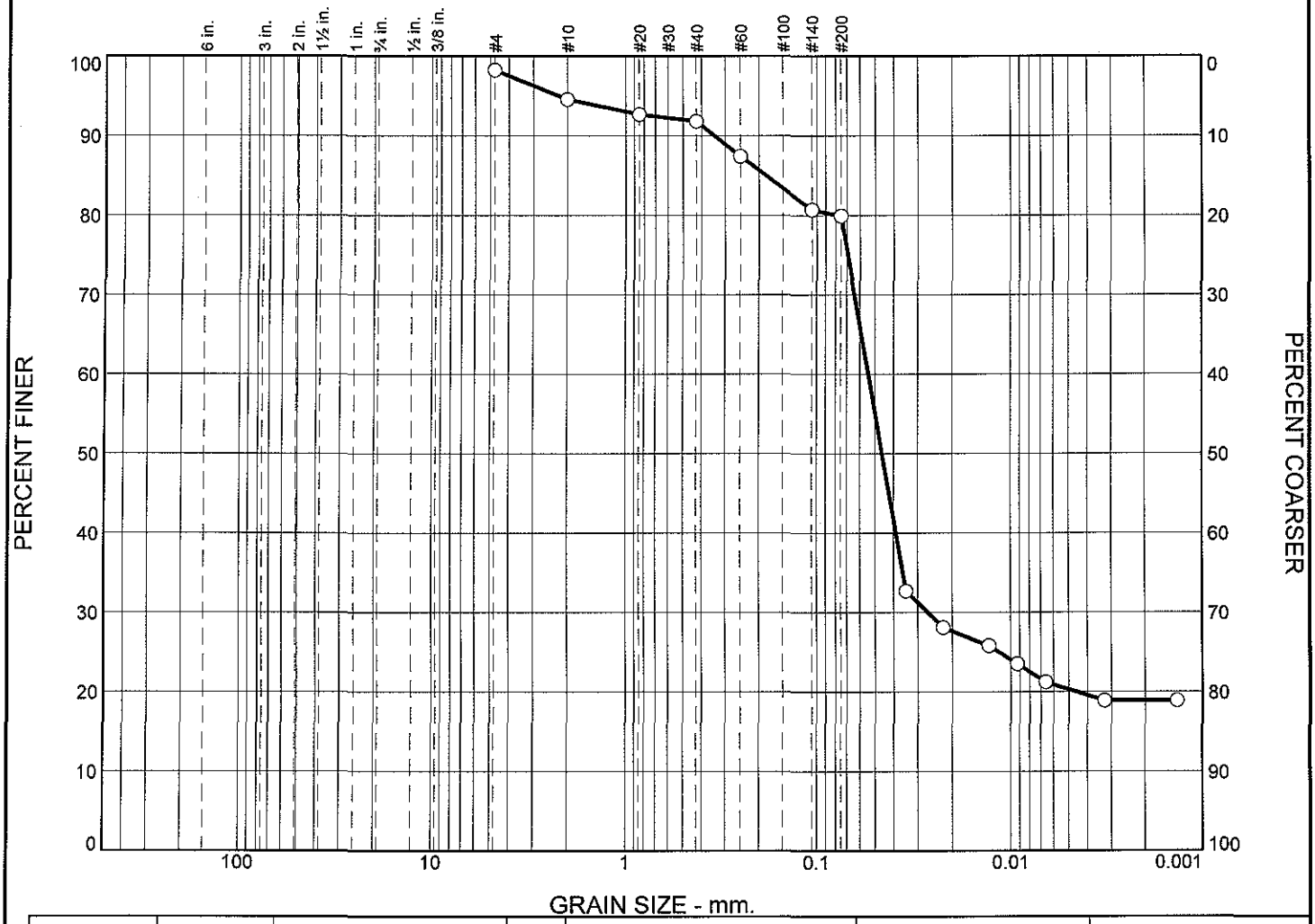
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.3	1.1	0.9	2.2	5.9	9.2	17.7	35.9	35.2	4.3	3.7	2.5	45.7	17.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0085	0.0354	0.0501	0.0596	0.1216	0.1771	0.2607	0.4329

Fineness Modulus
0.33

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.9	1.6	1.0	4.6	5.4	13.1	37.3	5.0	4.3	2.8	19.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1841	0.0540	0.0458	0.0267				

Material Description	USCS	AASHTO
○		

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501011 **Sample Number:** L0912907-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 501011
Sample Number: L0912907-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.83	0.00	#4	522.70	521.73	98.3	1.7
		#10	486.80	484.74	94.6	5.4
		#20	406.43	405.37	92.7	7.3
		#40	362.15	361.66	91.8	8.2
		#60	368.60	366.14	87.4	12.6
		#140	346.53	342.79	80.7	19.3
		#200	345.61	345.18	79.9	20.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 79.9
Weight of hydrometer sample =55.83
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	32.7	67.3
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	28.1	71.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	25.8	74.2
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	23.5	76.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	21.2	78.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	18.9	81.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	18.9	81.1

Fractional Components

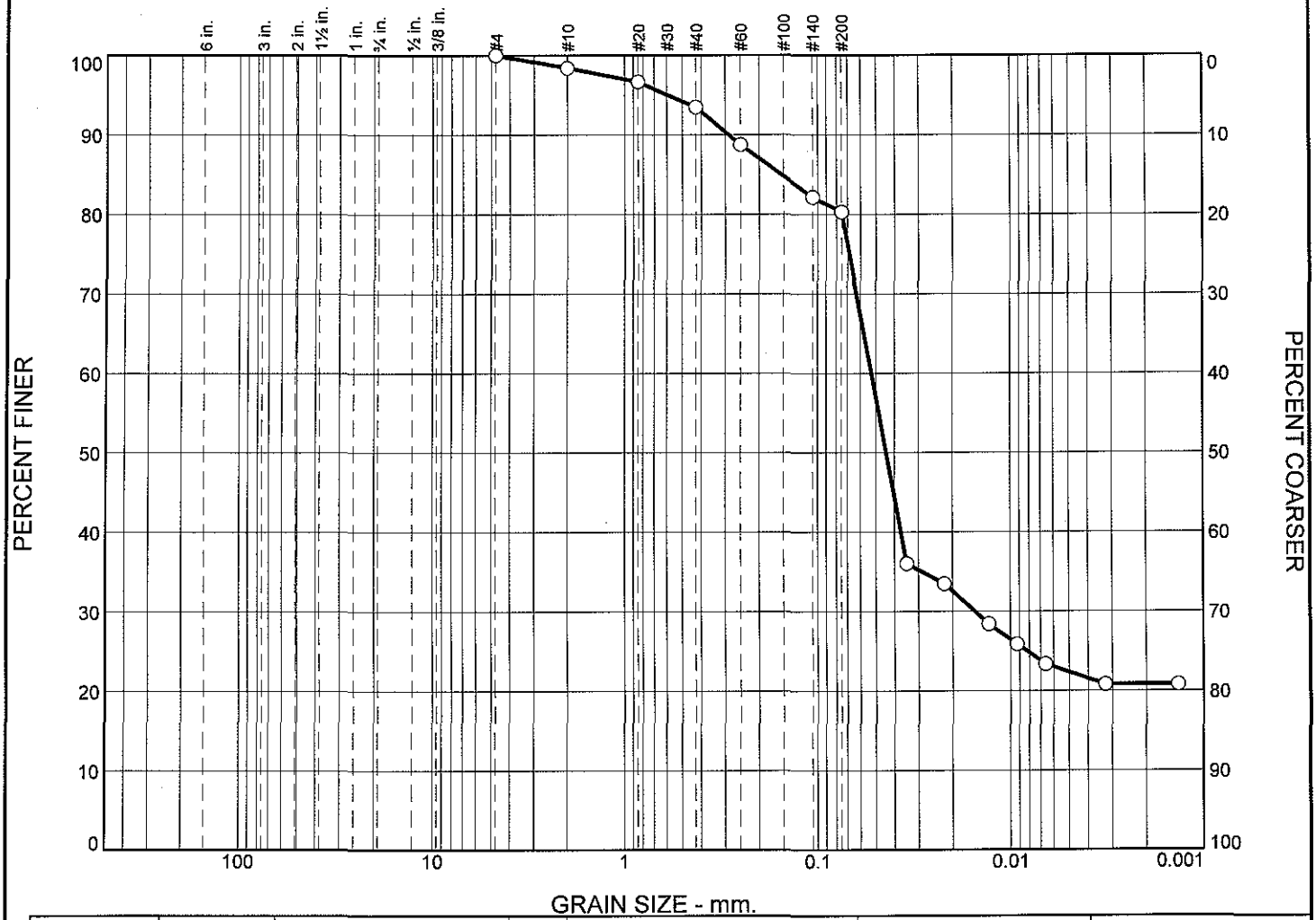
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.9	1.6	1.0	4.6	5.4	13.1	25.7	37.3	5.0	4.3	2.8	49.4	19.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0046	0.0267	0.0458	0.0540	0.0777	0.1841	0.3423	2.2107

Fineness Modulus
0.49

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.3	1.3	1.4	2.8	5.5	5.3	13.5	34.5	5.2	5.6	3.2	21.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1538	0.0525	0.0441	0.0153				

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501012 **Sample Number:** L0912907-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 501012
Sample Number: L0912907-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.92	0.00	#4	520.86	520.86	100.0	0.0
		#10	482.86	482.06	98.4	1.6
		#20	411.92	411.02	96.7	3.3
		#40	379.52	377.89	93.5	6.5
		#60	372.22	369.81	88.7	11.3
		#140	350.50	347.15	82.1	17.9
		#200	347.61	346.66	80.3	19.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.3
Weight of hydrometer sample =50.92
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	36.0	64.0
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	33.5	66.5
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	28.4	71.6
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	25.9	74.1
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	23.3	76.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	20.8	79.2
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	20.8	79.2

Fractional Components

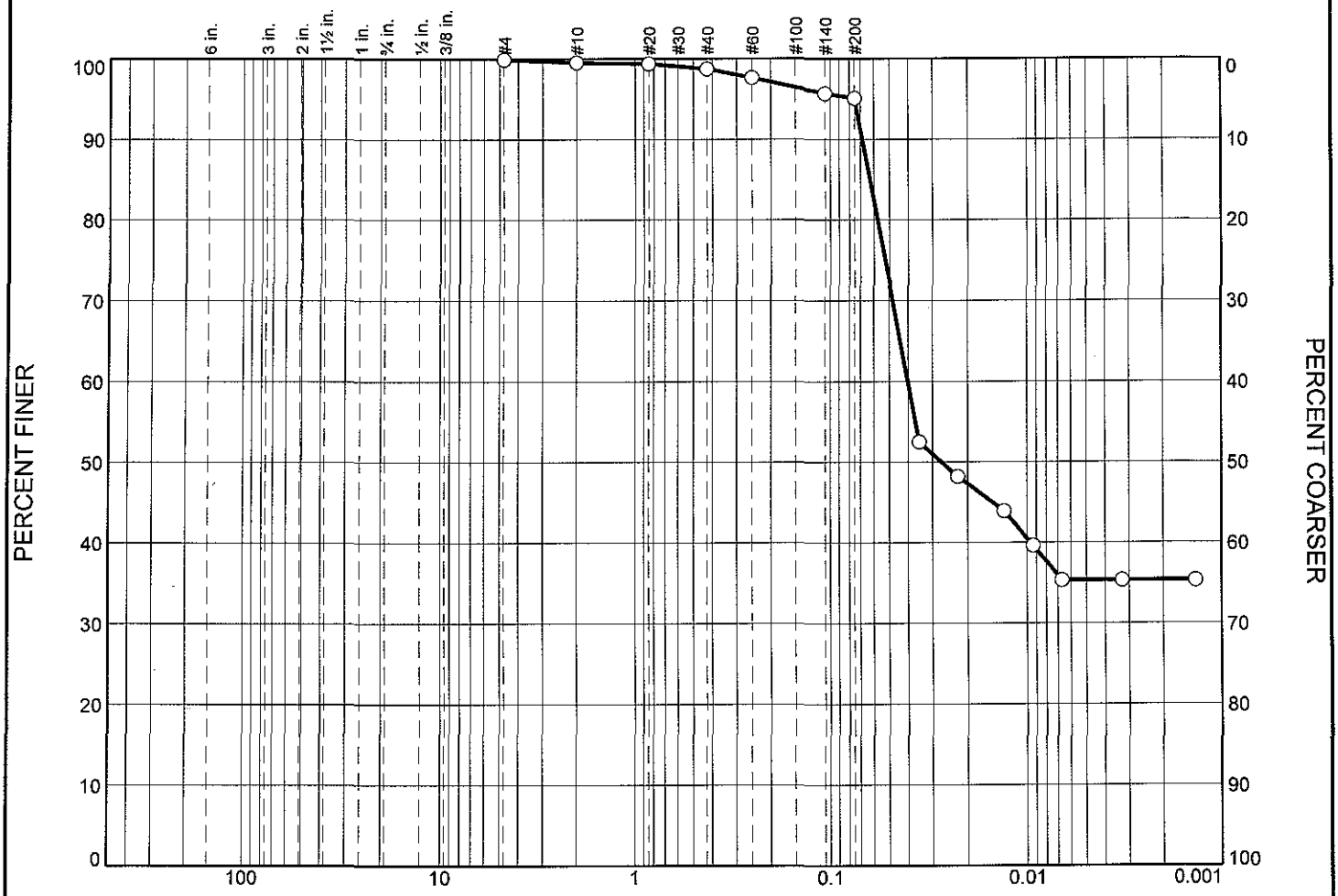
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.3	1.3	1.4	2.8	5.5	5.3	13.5	28.5	34.5	5.2	5.6	3.2	48.5	21.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0153	0.0441	0.0525	0.0746	0.1538	0.2883	0.5932

Fineness Modulus
0.34

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.1	0.5	1.2	1.6	11.2	33.6	6.0	8.0	2.0	35.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0627	0.0401	0.0271					

	Material Description	USCS	AASHTO
○			

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501013 **Sample Number:** L0912907-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 501013
Sample Number: L0912907-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
35.54	0.00	#4	521.76	521.73	99.9	0.1
		#10	484.88	484.74	99.5	0.5
		#20	405.42	405.37	99.4	0.6
		#40	360.59	360.36	98.7	1.3
		#60	366.52	366.14	97.7	2.3
		#140	343.49	342.79	95.7	4.3
		#200	345.39	345.18	95.1	4.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 95.1
Weight of hydrometer sample =35.54
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	52.5	47.5
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	48.2	51.8
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	43.9	56.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	39.6	60.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	35.3	64.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	35.3	64.7
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	35.3	64.7

Fractional Components

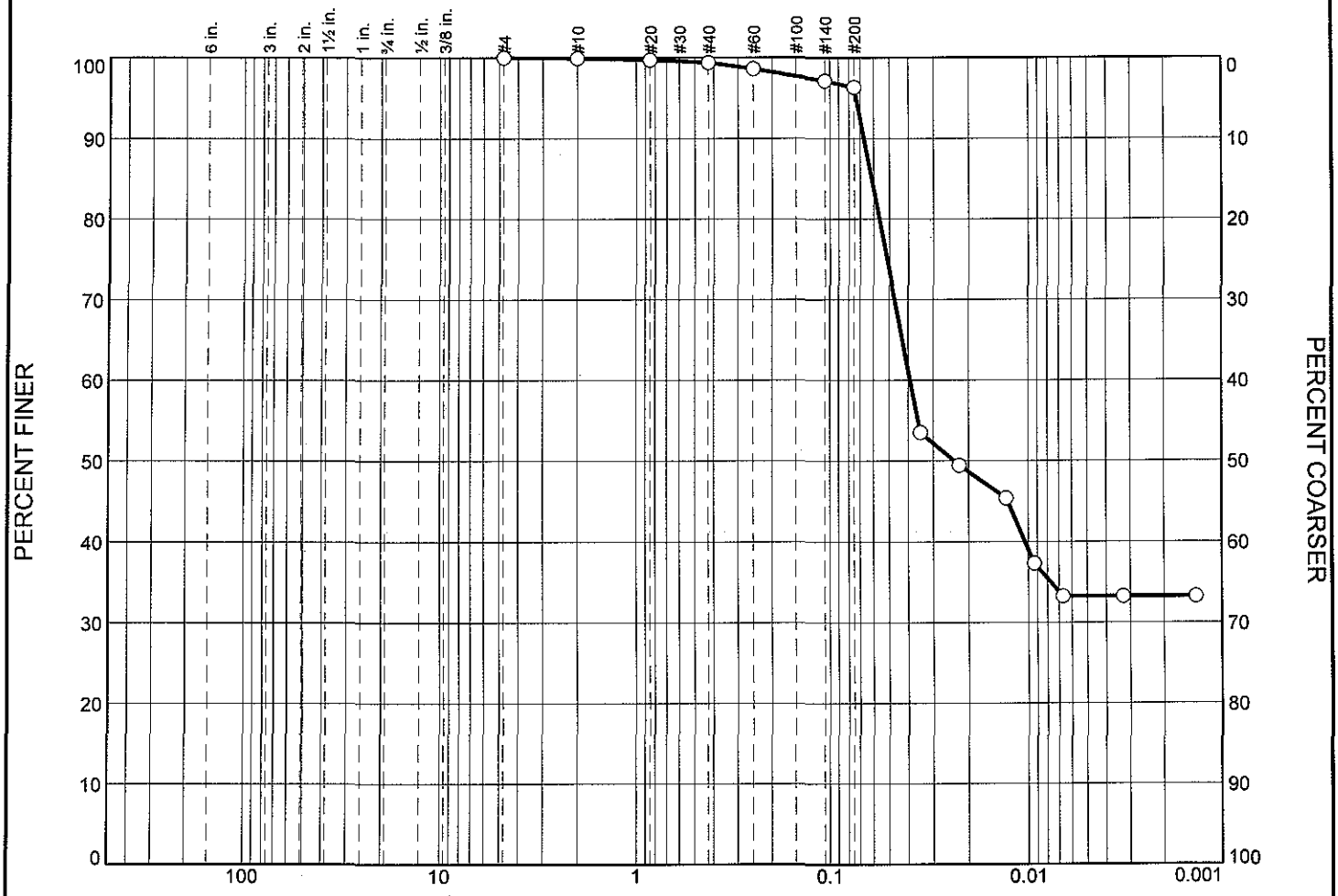
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.1	0.5	1.2	1.6	11.2	14.6	33.6	6.0	8.0	2.0	49.6	35.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0271	0.0401	0.0573	0.0627	0.0685	0.0749

Fineness Modulus
0.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.1	0.1	0.3	0.9	1.2	11.2	33.8	5.6	11.6	2.0	33.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0612	0.0391	0.0236					

Material Description	USCS	AASHTO
○		

Project No. L0912907 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501026 **Sample Number:** L0912907-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912907
Location: 501026
Sample Number: L0912907-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
38.22	0.00	#4	520.86	520.86	100.0	0.0
		#10	482.08	482.06	99.9	0.1
		#20	411.10	411.02	99.7	0.3
		#40	378.02	377.89	99.4	0.6
		#60	370.11	369.81	98.6	1.4
		#140	347.72	347.15	97.1	2.9
		#200	346.96	346.66	96.3	3.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 96.3
Weight of hydrometer sample =38.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	53.5	46.5
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	49.4	50.6
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	45.4	54.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	37.3	62.7
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	33.2	66.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	33.2	66.8
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	33.2	66.8

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.1	0.1	0.3	0.9	1.2	11.2	13.7	33.8	5.6	11.6	2.0	53.0	33.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0236	0.0391	0.0560	0.0612	0.0669	0.0732

Fineness Modulus
0.04

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

02021016:33

CHAIN OF CUSTODY

PAGE 6 OF 14

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912907

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
1	500611	9/24/09	13:26	SE	HC	☐	☐	☒	☐	ben gs	1
2	500612	9/24/09	13:26	SE	HC	☐	☐	☒	☐	ben gs	1
3	500613	9/24/09	13:22	SE	HC	☐	☐	☒	☐	ben gs	1
	500625	9/24/09	13:28	SE	HC	☒	☒	☐	☐	sed chem	1
4	500626	9/24/09	13:28	SE	HC	☐	☐	☒	☐	sed gs	1
	500627	9/24/09	13:28	SE	HC	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9-24-09 18:40	[signature]	9/24/09 18:34
[signature]	9/25/09 9:15	Paul Gilbert	9/24/09 9:15
Paul Gilbert	9/25/09	[signature]	9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 117

CHAIN OF CUSTODY

Date Rec'd in Lab:

ALPHA Job #: L0912907

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02016:33

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	500711	9-27-09	11:40	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
6	500712	9-27-09	11:43	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	500713	9-27-09	11:48	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	500725	9-27-09	12:55	SE	DB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
8	500726	9-27-09	12:55	SE	DB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	500727	9-27-09	12:55	SE	DB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/27/09 16:10	[signature]	9-27-09
[signature]	9-28-09 09:3	P. Gilbert	9/28/09 925
P. Gilbert	9/28/09 1020	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station ICU

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

0 1016:33

Date Rec'd in Lab:

ALPHA Job #: L0912907

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do

Preservation
☐ Lab to do

(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
9	500811	9-27-09	10:03	SE	HC			X		ben gs	1
10	500812	9-27-09	10:07	SE	HC			X		ben gs	1
11	500813	9-27-09	10:10	SE	HC			X		ben gs	1
	500825	9-27-09	10:20	SE	DB	X	X			sed chem	1
12	500826	9-27-09	10:20	SE	DB			X		sed gs	1
	500827	9-27-09	10:20	SE	DB				X	sed arch	1
					Container Type	G	G	G	-		
					Preservative	A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/27/09 6:10	[signature]	9-27-09
[signature]	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[signature]	9/28/09 1020

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FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

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CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912907

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
13	500911	9-27-09	10:51	SE	HC	☐	☐	☒	☐	ben gs	1
14	500912	9-27-09	10:35	SE	HC	☐	☐	☒	☐	ben gs	1
15	500913	9-27-09	11:00	SE	HC	☐	☐	☒	☐	ben gs	1
	500925	9-27-09	11:09	SE	DB	☒	☒	☐	☐	sed chem	1
16	500926	9-27-09	11:05	SE	DB	☐	☐	☒	☐	sed gs	1
	500927	9-27-09	11:05	SE	DB	☐	☐	☐	☒	sed arch	1
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
Container Type						G	G	G	-		
Preservative						A	A	A	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/27/09 1640		9/27/09
P. Gillett	9-28-09 09:13	P. Gillett	9/28/09 9:25
P. Gillett	9/28/09 10:20		9/28/09 1020

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CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912907

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	501011	9-27-09	09:05	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
18	501012	9-27-09	09:08	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
19	501013	9-27-09	09:13	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	501025	9-27-09	09:28	SE	DB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
20	501026	9-27-09	09:28	SE	DB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	501027	9-27-09	09:28	SE	DB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Had J Cu	9/27/09 16:10	Beth Hayes	9-27-09
Beth Hayes	9-28-09 09:13	P. Gillett	9/28/09 9:25
P. Gillett	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912908
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/02/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912908
Report Date: 02/02/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912908-01	501111	NEW BEDFORD, MA	09/23/09 12:43
L0912908-02	501112	NEW BEDFORD, MA	09/23/09 12:43
L0912908-03	501113	NEW BEDFORD, MA	09/23/09 12:43
L0912908-04	501126	NEW BEDFORD, MA	09/23/09 12:50
L0912908-05	501211	NEW BEDFORD, MA	09/23/09 11:15
L0912908-06	501212	NEW BEDFORD, MA	09/23/09 11:15
L0912908-07	501213	NEW BEDFORD, MA	09/23/09 11:15
L0912908-08	501226	NEW BEDFORD, MA	09/23/09 11:18
L0912908-09	501311	NEW BEDFORD, MA	09/23/09 10:05
L0912908-10	501312	NEW BEDFORD, MA	09/23/09 10:05
L0912908-11	501313	NEW BEDFORD, MA	09/23/09 10:05
L0912908-12	501326	NEW BEDFORD, MA	09/23/09 10:11
L0912908-13	501411	NEW BEDFORD, MA	09/22/09 09:00
L0912908-14	501412	NEW BEDFORD, MA	09/22/09 09:00
L0912908-15	501413	NEW BEDFORD, MA	09/22/09 09:00
L0912908-16	501426	NEW BEDFORD, MA	09/22/09 09:25
L0912908-17	501511	NEW BEDFORD, MA	09/23/09 08:46
L0912908-18	501512	NEW BEDFORD, MA	09/23/09 08:46
L0912908-19	501513	NEW BEDFORD, MA	09/23/09 08:46
L0912908-20	501526	NEW BEDFORD, MA	09/23/09 08:50

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912908
Project Number:	TO-0018	**Report Date:**	02/02/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 22, 2009. The report was ammended to include revised Grain Size data.

Grain Size

The WG382945-1 Laboratory Duplicate RPD is outside the acceptance criteria for gravel (32%), % coarse sand (24%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912908
Project Number:	TO-0018	**Report Date:**	02/02/10

Case Narrative (continued)

the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newell

Title: Technical Director/Representative Date: 02/02/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-01
Client ID: 501111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 12:43
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.20		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	6.70		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	44.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-02
Client ID: 501112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 12:43
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.70		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-03
Client ID: 501113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 12:43
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.100		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.200		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.600		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.4		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	55.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	31.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-04
Client ID: 501126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 12:50
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.900		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.900		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.20		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.0		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	13.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-05
Client ID: 501211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 11:15
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	10.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.70		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	20.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	24.4		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.4		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-06
Client ID: 501212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 11:15
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	8.80		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	22.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.4		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-07
Client ID: 501213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 11:15
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	5.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	28.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.0		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.300		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-08
Client ID: 501226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 11:18
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	6.90		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	27.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.90		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-09
Client ID: 501311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 10:05
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.80		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.20		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	42.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-10
Client ID: 501312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 10:05
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	25.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-11
Client ID: 501313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 10:05
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	41.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-12
Client ID: 501326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 10:11
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.20		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	54.9		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.7		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-13
Client ID: 501411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 09:00
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	6.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	9.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	15.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.9		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	13.9		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-14
Client ID: 501412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 09:00
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	7.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	10.0		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.0		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	19.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	10.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-15
Client ID: 501413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 09:00
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	7.50		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	10.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	10.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-16
Client ID: 501426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 09:25
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	10.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.90		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	15.4		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.4		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-17
Client ID: 501511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 08:46
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.40		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.90		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-18
Client ID: 501512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 08:46
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.70		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.70		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.90		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	34.8		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	13.2		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-19
Client ID: 501513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 08:46
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.10		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.00		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.1		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.5		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.7		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	34.6		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.3		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912908
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912908-20
Client ID: 501526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 08:50
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	5.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.60		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.30		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.7		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.7		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.7		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.0		%	0.100	1	-	10/05/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912908
Report Date: 02/02/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG382945-1 QC Sample: L0912908-08 Client ID: 501226						
Gravel (>2.00mm)	6.9	5.00	%	**32**	Q	20
Very Coarse Sand (1.00-2.00 mm)	4.0	4.30	%	7		20
Coarse Sand (0.50-1.00 mm)	6.3	8.00	%	**24**	Q	20
Medium Sand (0.25-0.50 mm)	19.1	21.4	%	11		20
Fine Sand (0.125-0.25 mm)	27.8	30.0	%	8		20
Very Fine Sand (0.063-0.125 mm)	14.5	16.3	%	12		20
Silt - (1.95-62.5 um)	9.1	8.10	%	12		20
Clay - (<1.95 um)	1.9	1.80	%	5		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912908
Report Date: 02/02/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
C	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912908-01A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-02A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-03A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-04A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-05A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-06A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-07A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-08A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912908
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912908-09A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-10A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-11A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-12A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-13A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-14A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-15A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-16A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-17A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-18A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912908
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912908-19A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912908-20A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912908
Project Number:	TO-0018	**Report Date:**	02/02/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

ND · Not detected at the reported detection limit for the sample.

NI · Not Ignitable.

RDL · Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)

R · Analytical results are from sample re-analysis.

RE · Analytical results are from sample re-extraction.

J · Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

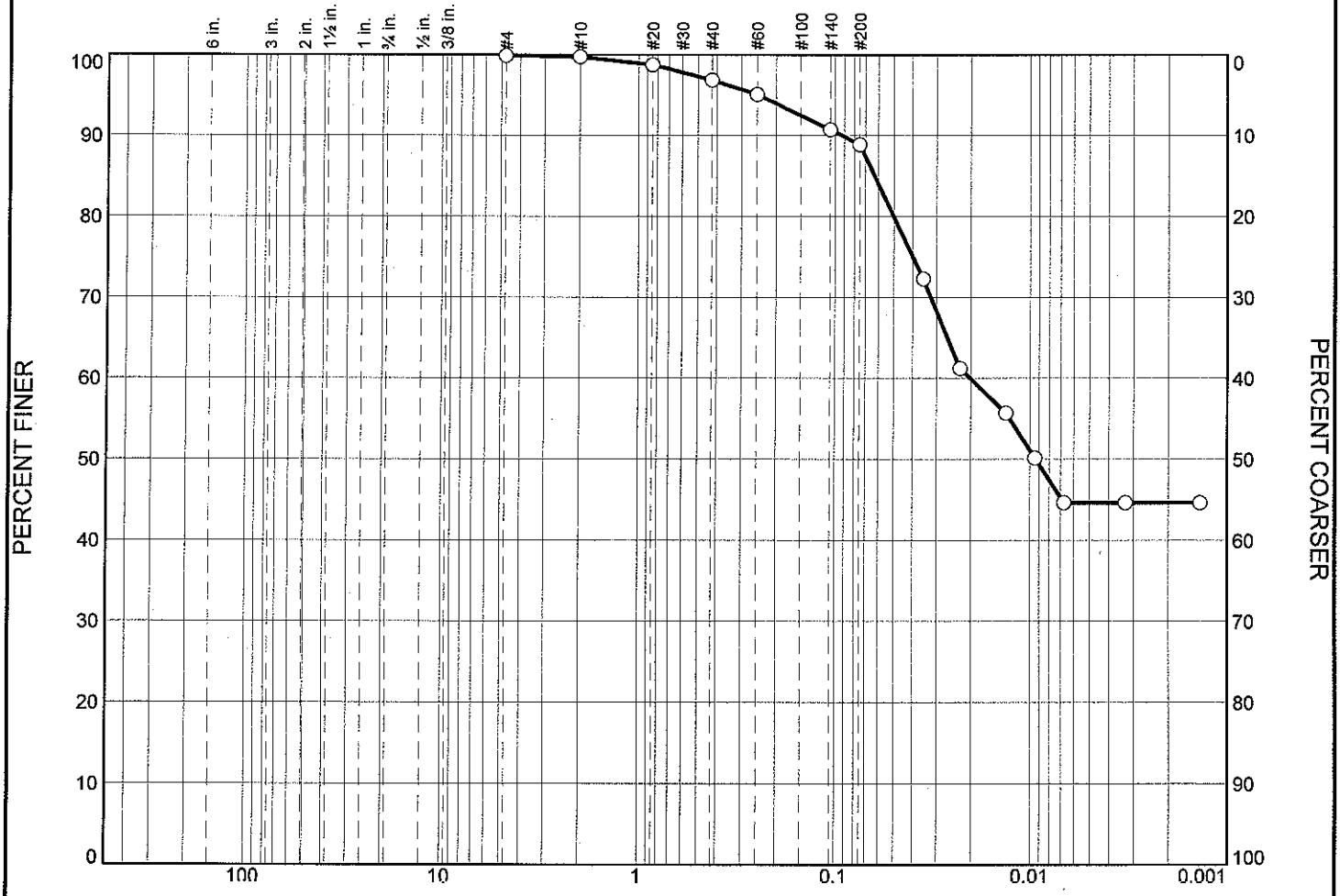
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.8	1.6	2.2	3.5	6.7	15.8	11.7	10.4	2.4	44.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0629	0.0202	0.0093					

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501111 **Sample Number:** L0912908-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501111
Sample Number: L0912908-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
25.81	0.00	#4	520.89	520.86	99.9	0.1
		#10	482.10	482.06	99.7	0.3
		#20	411.27	411.02	98.8	1.2
		#40	378.38	377.89	96.9	3.1
		#60	370.27	369.81	95.1	4.9
		#140	348.27	347.15	90.7	9.3
		#200	347.14	346.66	88.9	11.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 88.9
Weight of hydrometer sample =25.81
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0352	72.3	27.7
5.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0227	61.2	38.8
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	55.7	44.3
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	50.2	49.8
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	44.6	55.4
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	44.6	55.4
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	44.6	55.4

Fractional Components

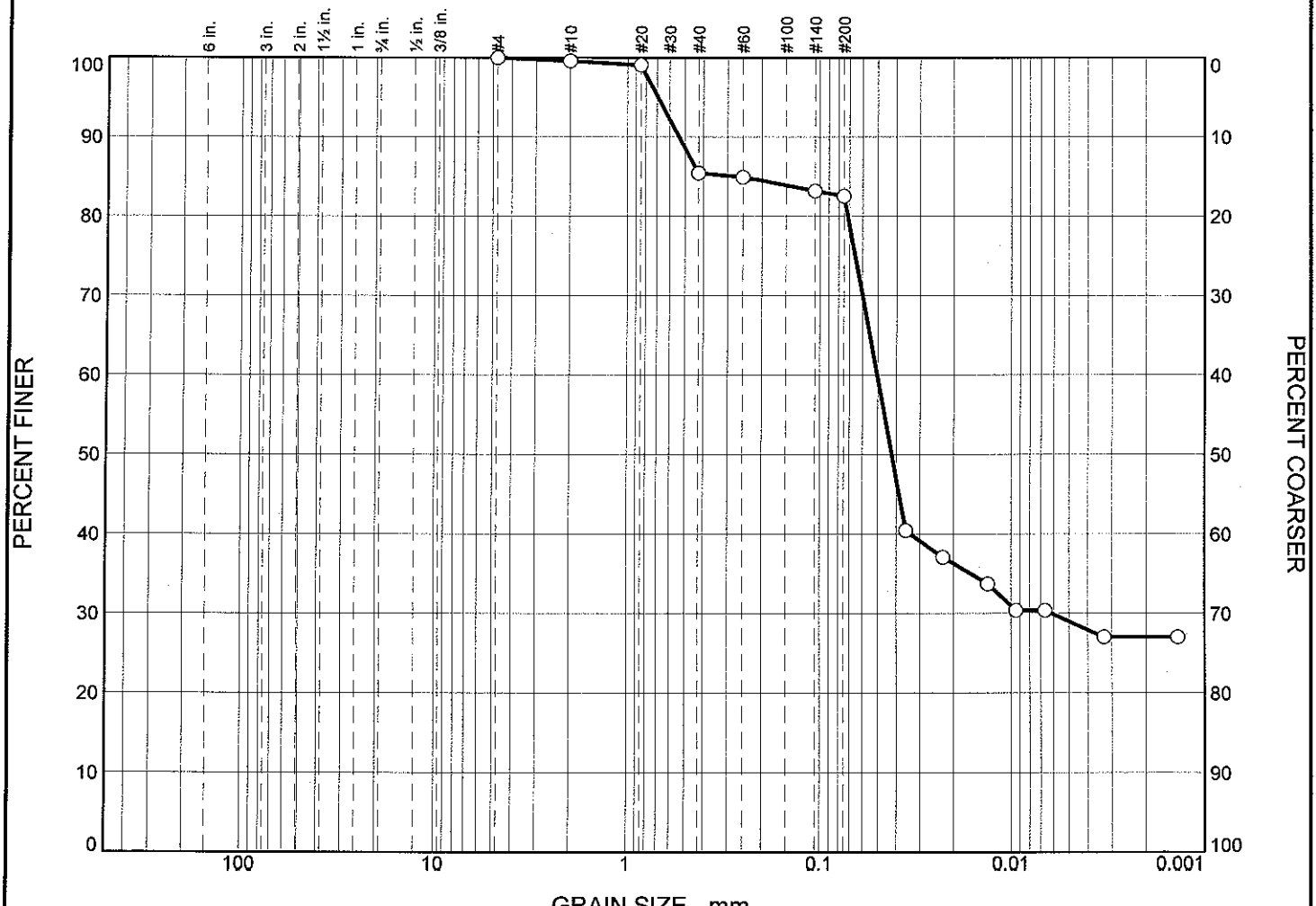
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.8	1.6	2.2	3.5	6.7	14.8	15.8	11.7	10.4	2.4	40.3	44.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0093	0.0202	0.0501	0.0629	0.0924	0.2461

Fineness Modulus
0.15

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.3	0.4	10.6	3.7	1.4	11.2	32.9	4.7	4.3	2.6	27.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2647	0.0503	0.0421	0.0062				

Material Description	USCS	AASHTO
○		

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501112 **Sample Number:** L0912908-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501112
Sample Number: L0912908-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 6.42
Tare Wt. = 4.65
Minus #200 from wash = 95.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
39.59	0.00	#4	521.73	521.73	100.0	0.0
		#10	484.91	484.74	99.6	0.4
		#20	405.57	405.37	99.1	0.9
		#40	366.39	361.00	85.5	14.5
		#60	366.34	366.14	84.9	15.1
		#140	343.48	342.79	83.2	16.8
		#200	345.44	345.18	82.5	17.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 82.5
Weight of hydrometer sample =39.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0355	40.4	59.6
5.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0227	37.1	62.9
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	33.7	66.3
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	30.4	69.6
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	30.4	69.6
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	27.0	73.0
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	27.0	73.0

Fractional Components

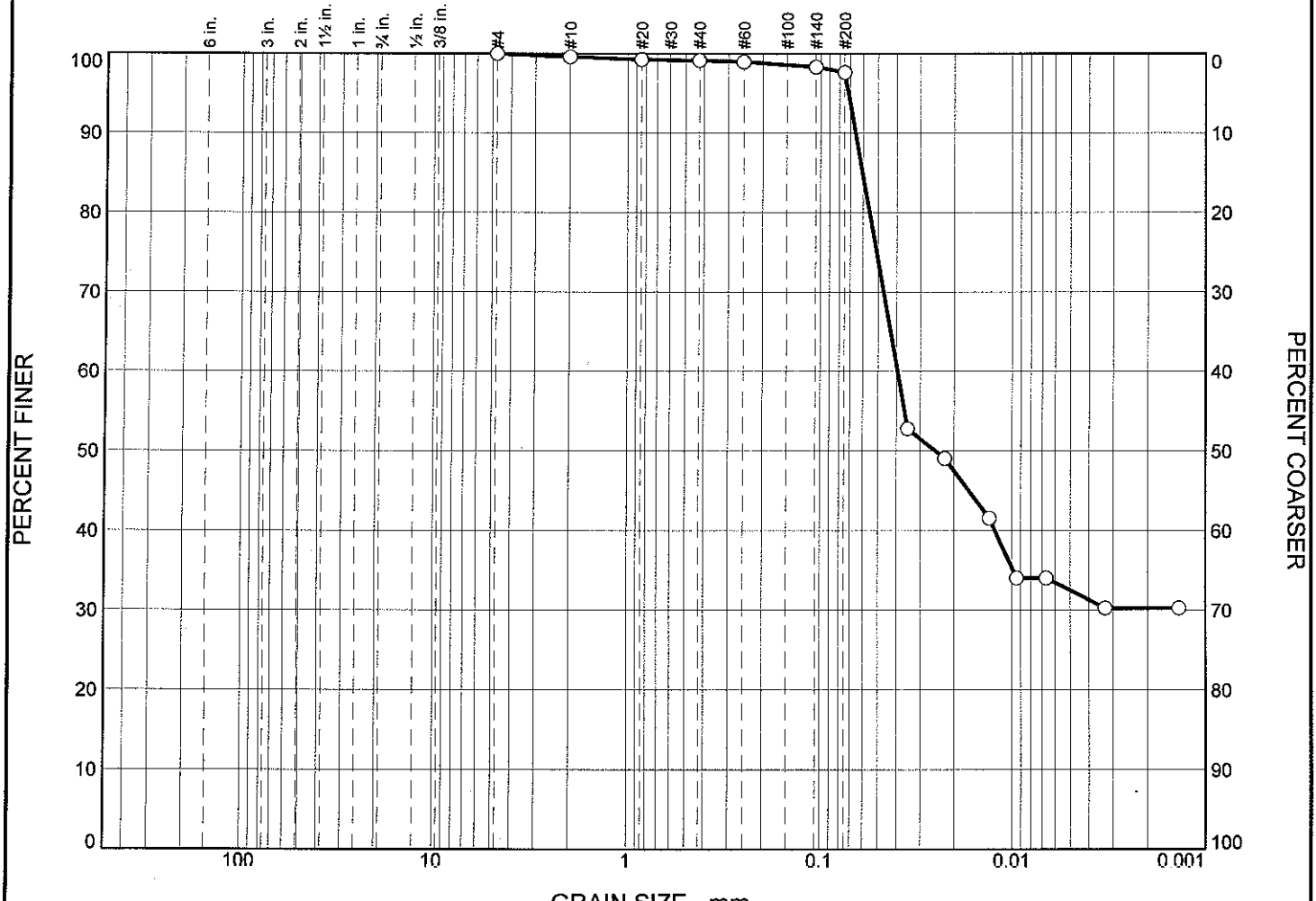
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.3	0.4	10.6	3.7	1.4	11.2	27.3	32.9	4.7	4.3	2.6	44.5	27.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0062	0.0421	0.0503	0.0717	0.2647	0.5358	0.6911

Fineness Modulus
0.40

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.3	0.1	0.2	0.6	11.4	35.2	7.8	10.0	2.8	31.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0604	0.0394	0.0250					

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501113 **Sample Number:** L0912908-03

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501113
Sample Number: L0912908-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 5.59
Tare Wt. = 4.55
Minus #200 from wash = 97.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
41.78	0.00	#4	520.87	520.86	100.0	0.0
		#10	482.22	482.06	99.6	0.4
		#20	411.16	411.02	99.3	0.7
		#40	377.94	377.89	99.1	0.9
		#60	369.88	369.81	99.0	1.0
		#140	347.42	347.15	98.3	1.7
		#200	346.95	346.66	97.6	2.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 97.6
Weight of hydrometer sample =41.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	52.8	47.2
5.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0223	49.0	51.0
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	41.5	58.5
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	34.0	66.0
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	34.0	66.0
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	30.3	69.7
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	30.3	69.7

Fractional Components

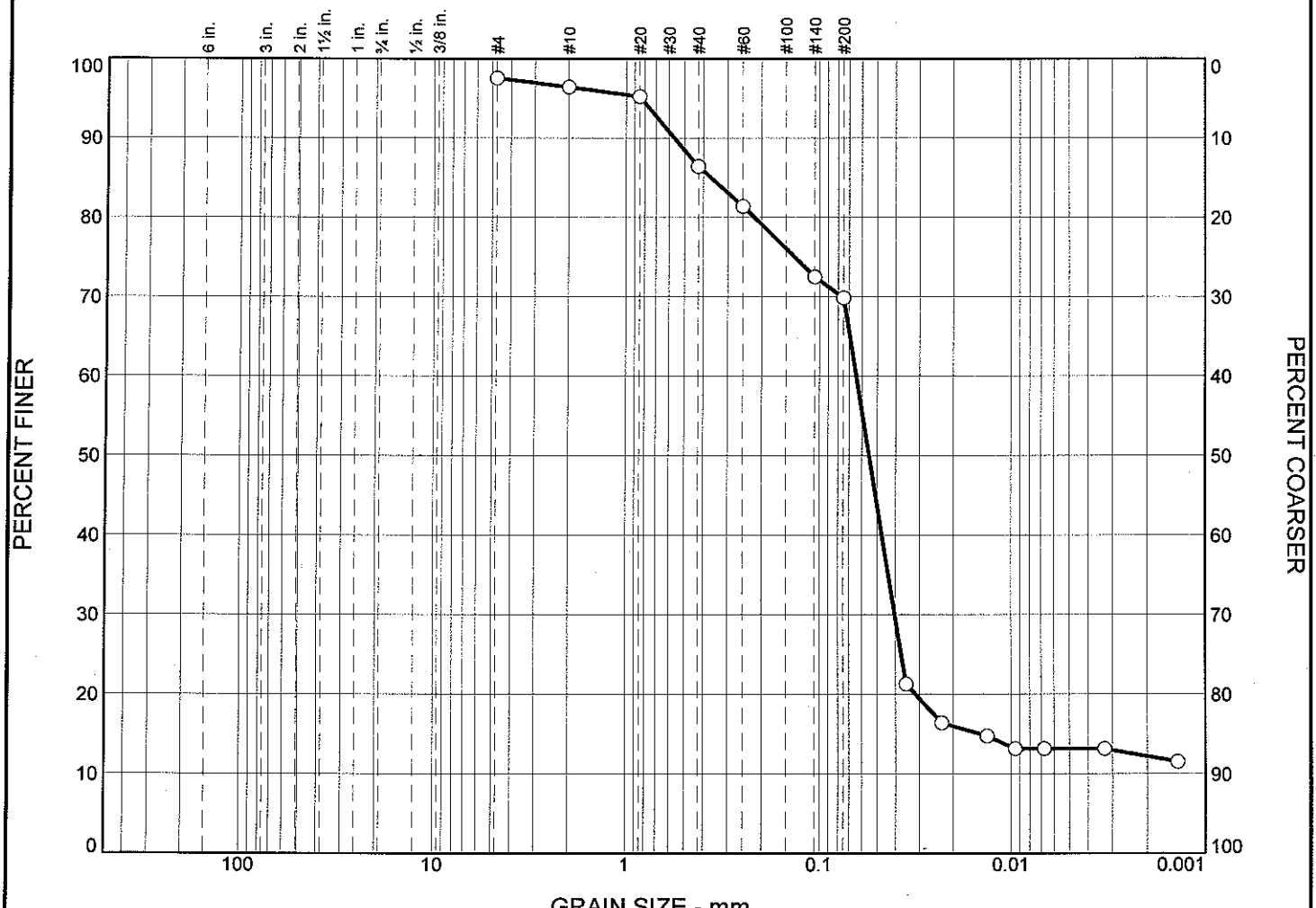
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.3	0.1	0.2	0.6	11.4	12.6	35.2	7.8	10.0	2.8	55.8	31.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0250	0.0394	0.0555	0.0604	0.0658	0.0717

Fineness Modulus
0.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	0.9	7.0	7.1	7.2	16.1	38.3	4.6	2.1	0.0	13.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3660	0.0644	0.0551	0.0403	0.0145			

Material Description	USCS	AASHTO
○		

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501126 **Sample Number:** L0912908-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501126
Sample Number: L0912908-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.94	0.00	#4	523.42	521.73	97.5	2.5
		#10	485.51	484.74	96.4	3.6
		#20	406.20	405.37	95.2	4.8
		#40	367.73	361.66	86.4	13.6
		#60	369.62	366.14	81.4	18.6
		#140	348.91	342.79	72.5	27.5
		#200	347.02	345.18	69.8	30.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 69.8
Weight of hydrometer sample =68.94
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0352	21.3	78.7
5.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0229	16.4	83.6
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	14.8	85.2
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	13.1	86.9
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	13.1	86.9
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	13.1	86.9
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	11.5	88.5

Fractional Components

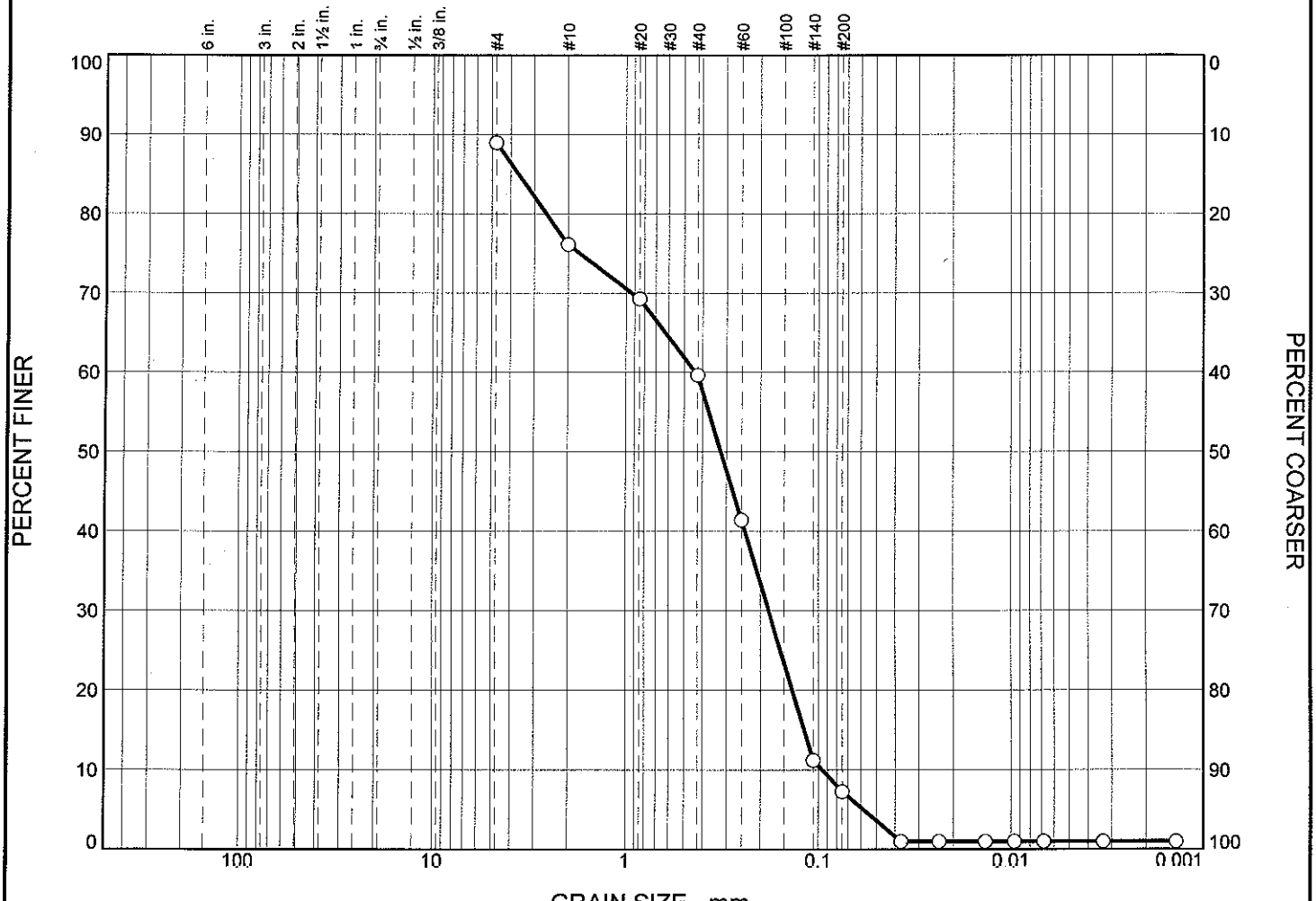
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	0.9	7.0	7.1	7.2	16.1	38.3	38.3	4.6	2.1	0.0	45.0	13.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0145	0.0315	0.0403	0.0551	0.0644	0.2189	0.3660	0.5632	0.8349

Fineness Modulus
0.60

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.3	5.5	8.7	20.5	24.4	11.4	4.6	0.0	0.0		1.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.6406	0.4360	0.3211	0.1809	0.1181	0.0955	0.79	4.56

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501211 **Sample Number:** L0912908-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501211
Sample Number: L0912908-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
82.10	0.00	#4	529.93	520.86	89.0	11.0
		#10	492.61	482.06	76.1	23.9
		#20	416.64	411.02	69.3	30.7
		#40	385.78	377.89	59.6	40.4
		#60	384.79	369.81	41.4	58.6
		#140	371.96	347.15	11.2	88.8
		#200	349.88	346.66	7.3	92.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 7.3
Weight of hydrometer sample =82.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0372	1.0	99.0
5.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0235	1.0	99.0
15.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0136	1.0	99.0
30.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0096	1.0	99.0
60.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0068	1.0	99.0
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	1.0	99.0
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	1.0	99.0

Fractional Components

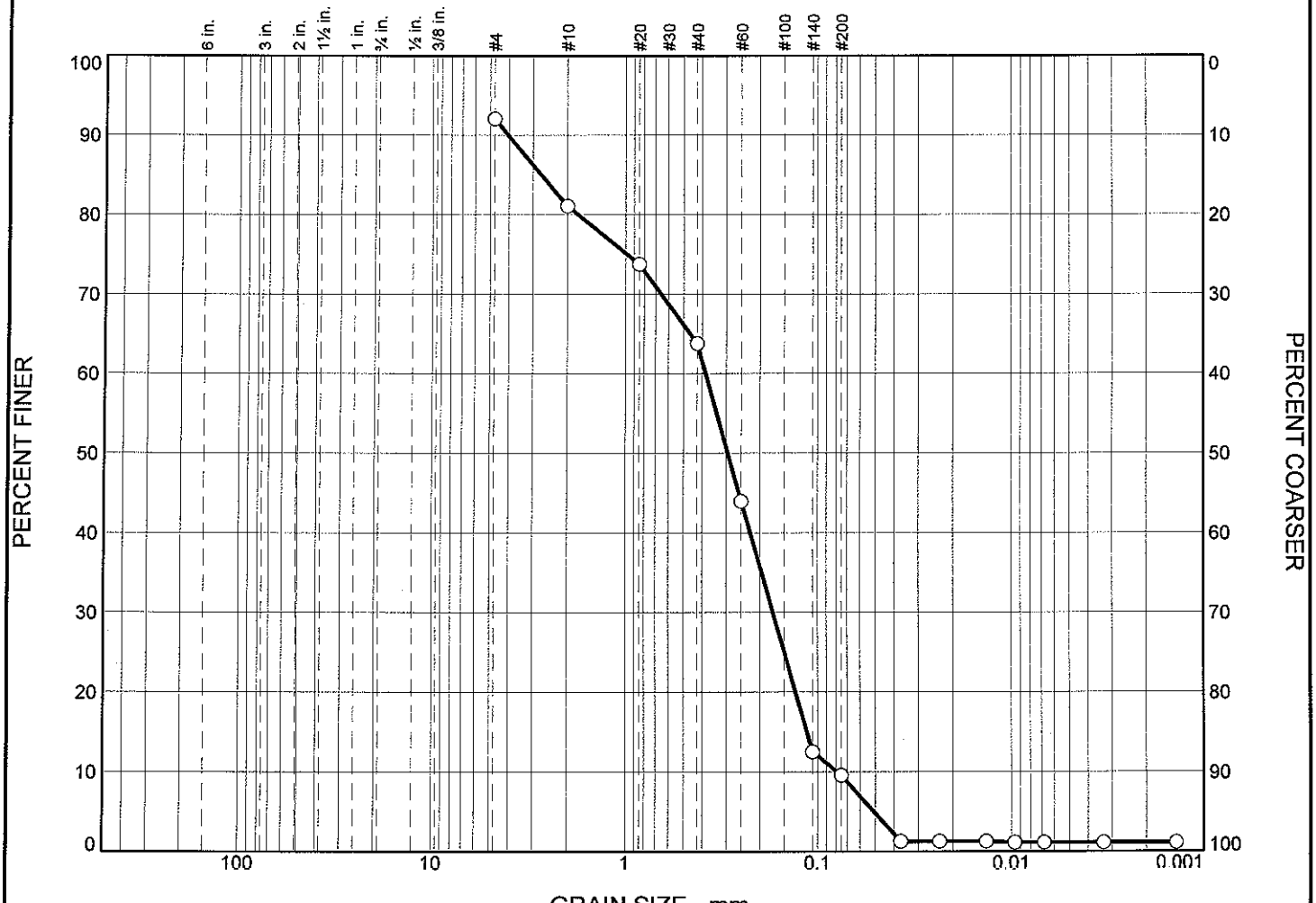
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.3	5.5	8.7	20.5	24.4	11.4	70.5	4.6	0.0	0.0		4.6	1.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0955	0.1181	0.1362	0.1809	0.3211	0.4360	2.6003	3.6406		

Fineness Modulus	C_u	C_c
2.25	4.56	0.79

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				8.8	6.0	9.0	22.2	25.4	11.1	6.1	0.0	0.2		1.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.7208	0.3841	0.2940	0.1709	0.1135	0.0792	0.96	4.85

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501212 **Sample Number:** L0912908-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501212
Sample Number: L0912908-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
96.06	0.00	#4	529.33	521.73	92.1	7.9
		#10	495.31	484.74	81.1	18.9
		#20	412.41	405.37	73.8	26.2
		#40	371.24	361.66	63.8	36.2
		#60	385.21	366.14	43.9	56.1
		#140	372.98	342.79	12.5	87.5
		#200	348.03	345.18	9.5	90.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 9.5
Weight of hydrometer sample =96.06
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0369	1.3	98.7
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	1.3	98.7
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	1.3	98.7
30.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0096	1.1	98.9
60.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0068	1.1	98.9
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	1.1	98.9
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	1.1	98.9

Fractional Components

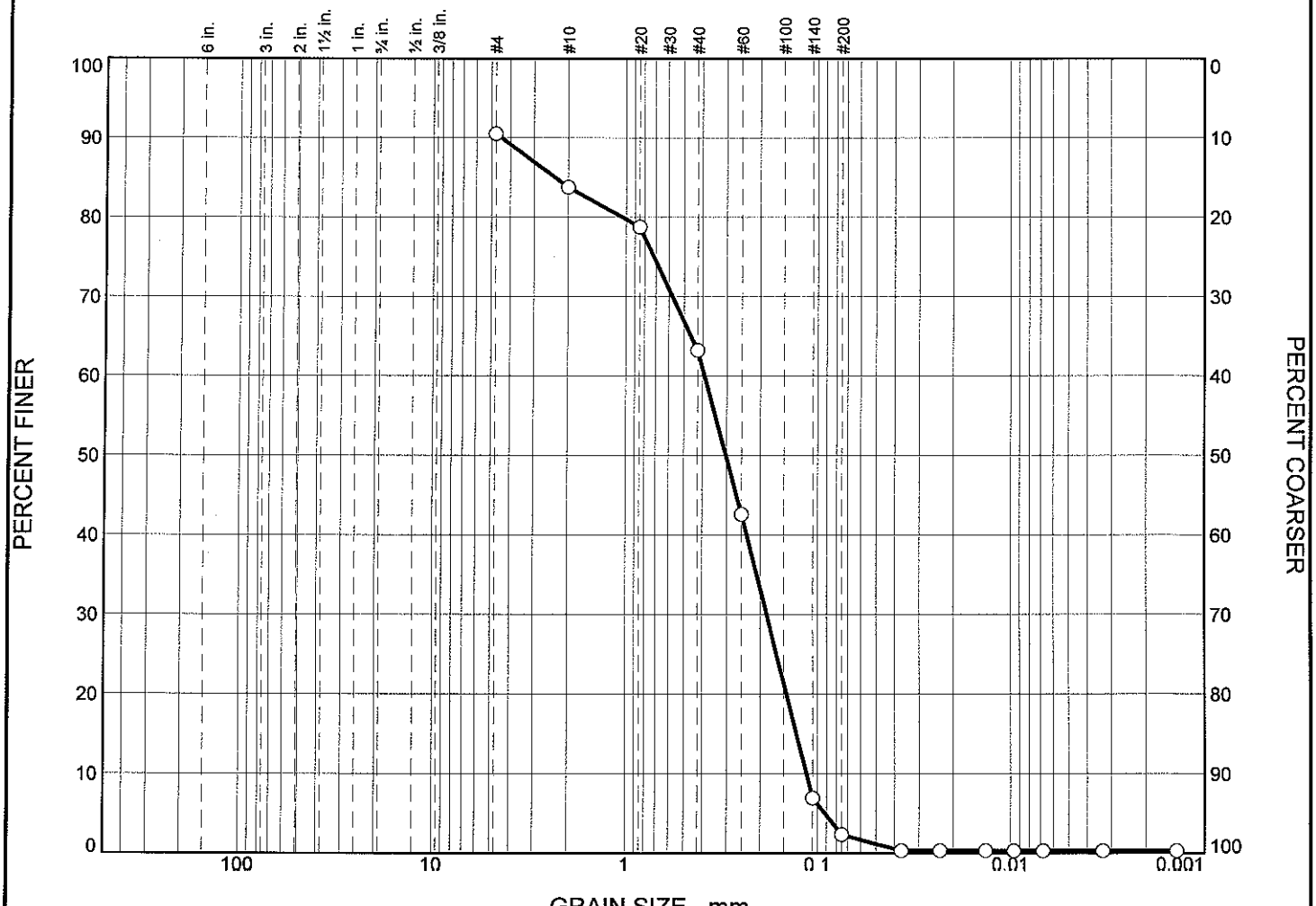
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			8.8	6.0	9.0	22.2	25.4	11.1	73.7	6.1	0.0	0.2		6.3	1.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0792	0.1135	0.1301	0.1709	0.2940	0.3841	1.7621	2.7208	4.0309	

Fineness Modulus	C_u	C_c
2.03	4.85	0.96

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.4	4.1	12.8	24.3	28.8	12.0	1.5	0.0	0.0	0.0	0.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.3389	0.3909	0.3024	0.1846	0.1287	0.1141	0.76	3.43

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501213 **Sample Number:** L0912908-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501213
Sample Number: L0912908-07
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
92.63	0.00	#4	529.66	520.86	90.5	9.5
		#10	488.28	482.06	83.8	16.2
		#20	415.66	411.02	78.8	21.2
		#40	387.27	372.89	63.3	36.7
		#60	388.94	369.81	42.6	57.4
		#140	380.18	347.15	6.9	93.1
		#200	350.91	346.66	2.4	97.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 2.4
Weight of hydrometer sample =92.63
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0369	0.3	99.7
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	0.3	99.7
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	0.3	99.7
30.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0096	0.3	99.7
60.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0068	0.3	99.7
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	0.3	99.7
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	0.3	99.7

Fractional Components

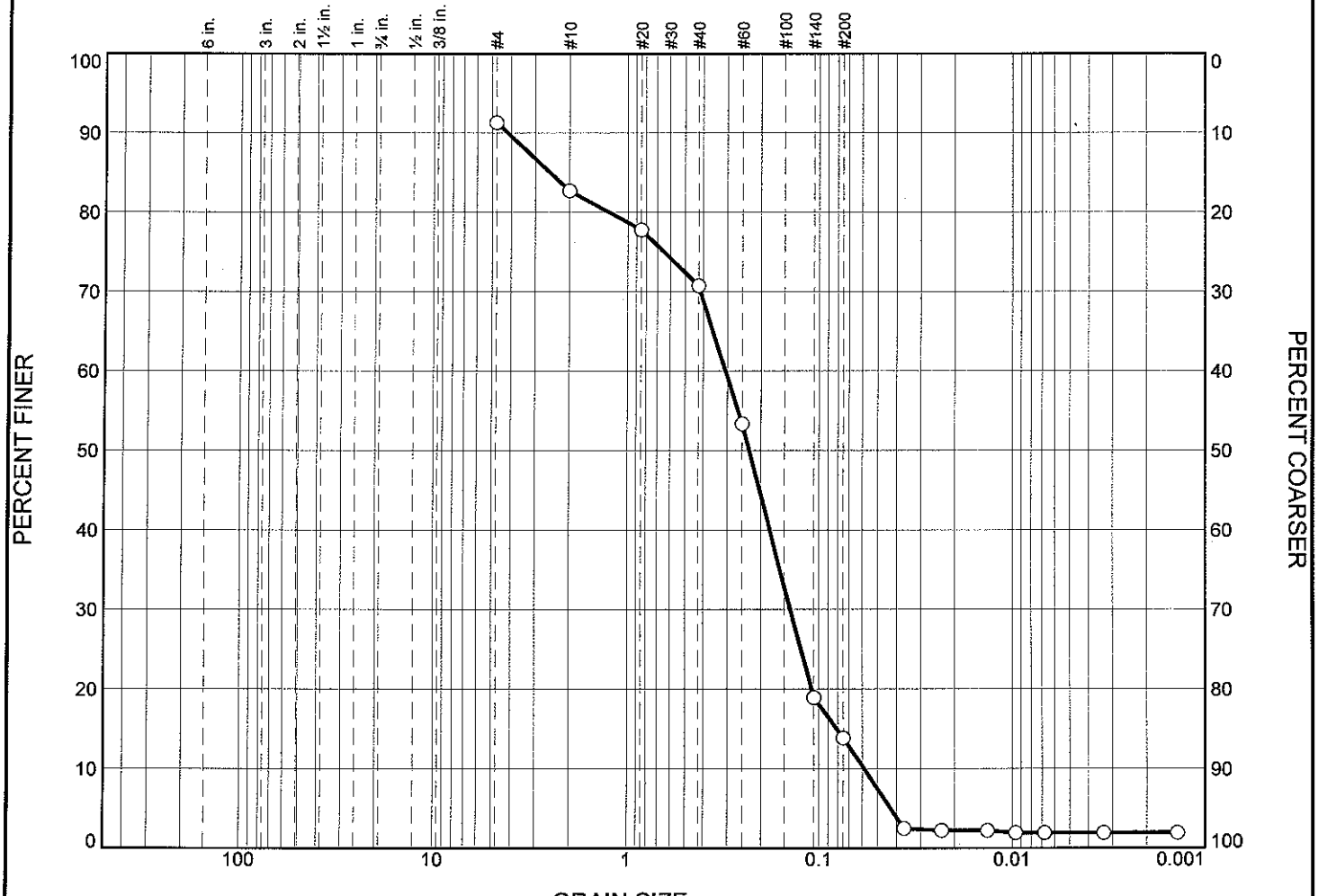
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.4	4.1	12.8	24.3	28.8	12.0	82.0	1.5	0.0	0.0	0.0	1.5	0.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1141	0.1287	0.1451	0.1846	0.3024	0.3909	1.0477	2.3389	4.4538	

Fineness Modulus	C_u	C_c
2.02	3.43	0.76

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.9	4.0	6.3	19.1	27.8	14.5	8.6	0.2	0.3	0.0	1.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.5185	0.3064	0.2301	0.1398	0.0812	0.0588	1.08	5.21

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501226 **Sample Number:** L0912908-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501226
Sample Number: L0912908-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
81.20	0.00	#4	528.79	521.73	91.3	8.7
		#10	491.72	484.74	82.7	17.3
		#20	409.37	405.37	77.8	22.2
		#40	367.38	361.66	70.7	29.3
		#60	380.28	366.14	53.3	46.7
		#140	370.74	342.79	18.9	81.1
		#200	349.30	345.18	13.8	86.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 13.8
Weight of hydrometer sample =81.20
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0365	2.5	97.5
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	2.2	97.8
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	2.2	97.8
30.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0096	1.9	98.1
60.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0068	1.9	98.1
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	1.9	98.1
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	1.9	98.1

Fractional Components

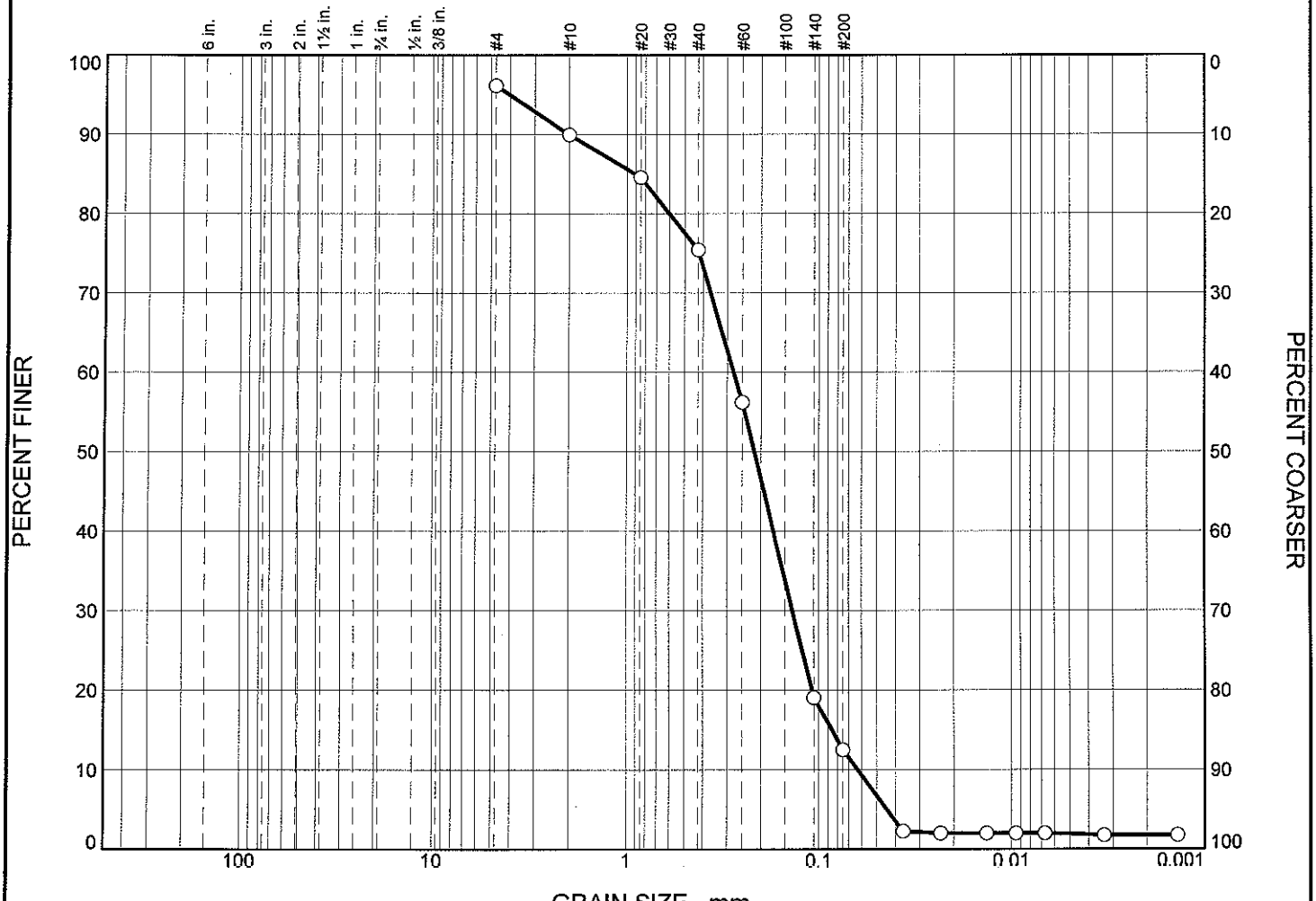
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.9	4.0	6.3	19.1	27.8	14.5	71.7	8.6	0.2	0.3	0.0	9.1	1.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0588	0.0812	0.1089	0.1398	0.2301	0.3064	1.2492	2.5185	4.1653	

Fineness Modulus	C_u	C_c
1.78	5.21	1.08

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.0	4.3	8.0	21.4	30.0	16.3	7.7	0.2	0.0	0.2	1.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9087	0.2776	0.2166	0.1365	0.0856	0.0629	1.07	4.41

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501226 **Sample Number:** WG382945-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501226
Sample Number: WG382945-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
80.69	0.00	#4	523.96	520.86	96.2	3.8
		#10	487.09	482.06	89.9	10.1
		#20	415.33	411.02	84.6	15.4
		#40	385.29	377.89	75.4	24.6
		#60	385.30	369.81	56.2	43.8
		#140	377.14	347.15	19.0	81.0
		#200	351.94	346.66	12.5	87.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 12.5
Weight of hydrometer sample =80.69
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0365	2.3	97.7
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	2.0	98.0
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	2.0	98.0
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	2.0	98.0
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	2.0	98.0
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	1.8	98.2
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	1.8	98.2

Fractional Components

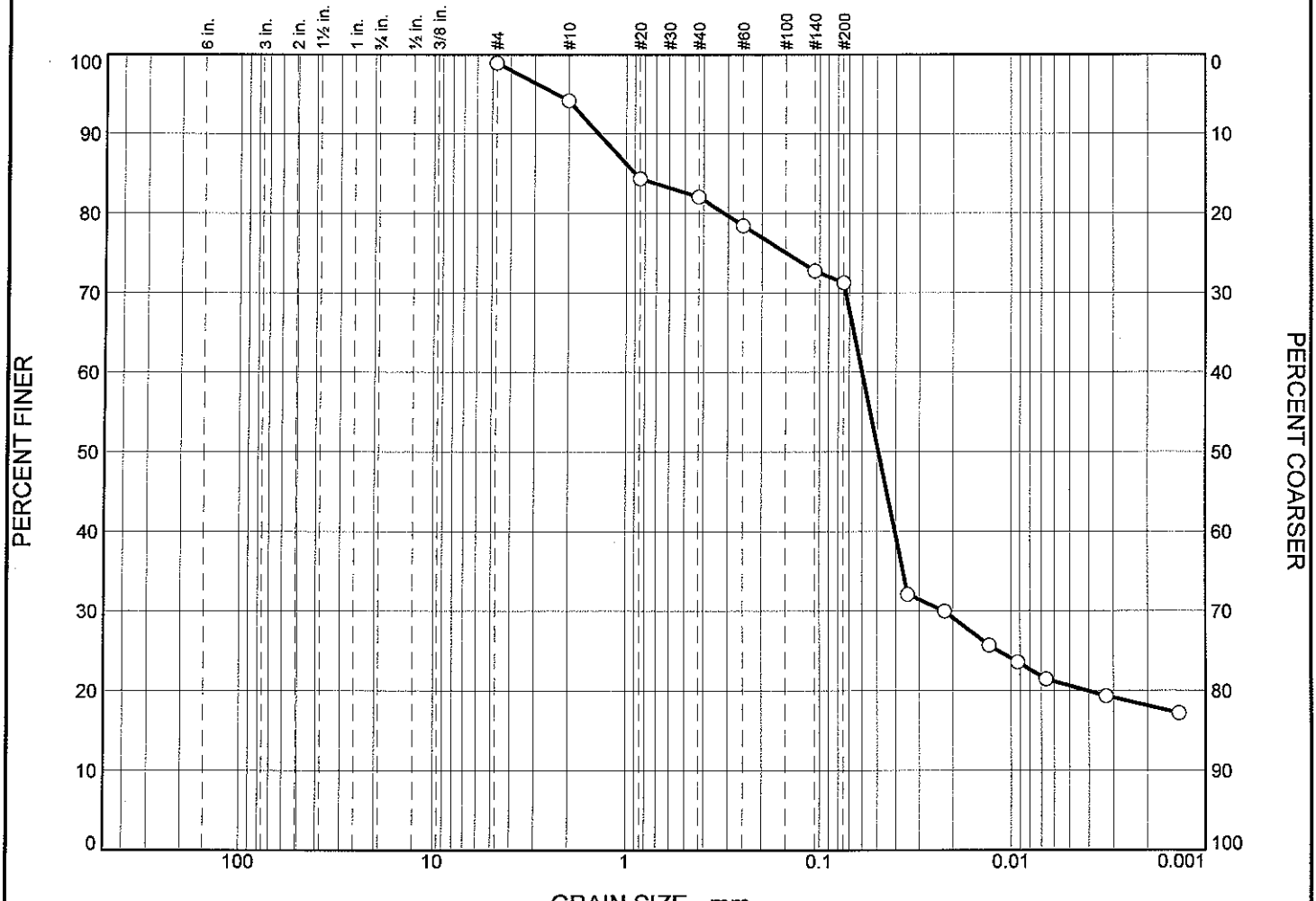
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.0	4.3	8.0	21.4	30.0	16.3	80.0	7.7	0.2	0.0	0.2	8.1	1.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0629	0.0856	0.1084	0.1365	0.2166	0.2776	0.6012	0.9087	2.0211	4.0448

Fineness Modulus	C_u	C_c
1.49	4.41	1.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.8	8.0	3.6	4.2	4.6	11.8	30.4	4.4	4.7	2.7	19.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8998	0.0600	0.0492	0.0222				

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501311 **Sample Number:** L0912908-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501311
Sample Number: L0912908-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
53.72	0.00	#4	522.30	521.73	98.9	1.1
		#10	487.29	484.74	94.2	5.8
		#20	410.66	405.37	84.3	15.7
		#40	362.88	361.66	82.1	17.9
		#60	368.09	366.14	78.4	21.6
		#140	345.86	342.79	72.7	27.3
		#200	345.98	345.18	71.2	28.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 71.2
Weight of hydrometer sample =53.72
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0345	32.1	67.9
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	30.0	70.0
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	25.7	74.3
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	23.6	76.4
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	21.4	78.6
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	19.3	80.7
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	17.2	82.8

Fractional Components

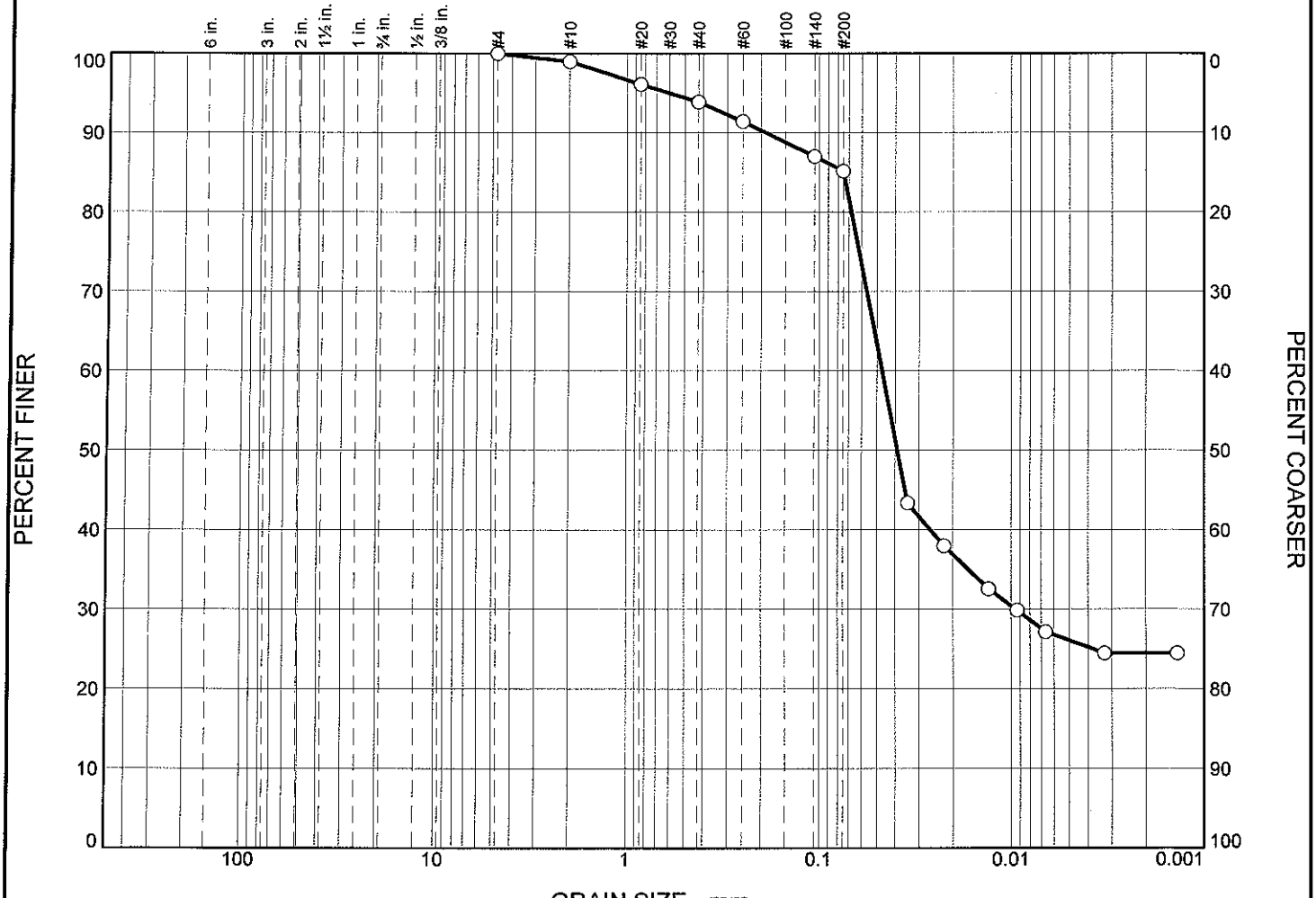
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.8	8.0	3.6	4.2	4.6	11.8	32.2	30.4	4.4	4.7	2.7	42.2	19.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0041	0.0222	0.0492	0.0600	0.3139	0.8998	1.3894	2.3172

Fineness Modulus
0.80

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	2.3	2.3	3.0	3.5	12.5	33.3	7.7	6.0	3.3	25.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0748	0.0469	0.0389	0.0095				

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501312 **Sample Number:** L0912908-10

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501312
Sample Number: L0912908-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.93	0.00	#4	520.87	520.86	100.0	0.0
		#10	482.57	482.06	99.0	1.0
		#20	412.48	411.02	96.1	3.9
		#40	379.02	377.89	93.9	6.1
		#60	371.07	369.81	91.4	8.6
		#140	349.40	347.15	87.0	13.0
		#200	347.60	346.66	85.2	14.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 85.2
Weight of hydrometer sample =50.93
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.63
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0160	1.0161	0.0136	13.0	12.9	0.0344	43.3	56.7
5.00	21.0	1.0140	1.0141	0.0136	11.0	13.4	0.0222	38.0	62.0
15.00	21.0	1.0120	1.0121	0.0136	9.0	13.9	0.0131	32.6	67.4
30.00	21.0	1.0110	1.0111	0.0136	8.0	14.2	0.0093	29.9	70.1
60.00	21.0	1.0100	1.0101	0.0136	7.0	14.4	0.0067	27.2	72.8
250.00	21.0	1.0090	1.0091	0.0136	6.0	14.7	0.0033	24.5	75.5
1440.00	21.0	1.0090	1.0091	0.0136	6.0	14.7	0.0014	24.5	75.5

Fractional Components

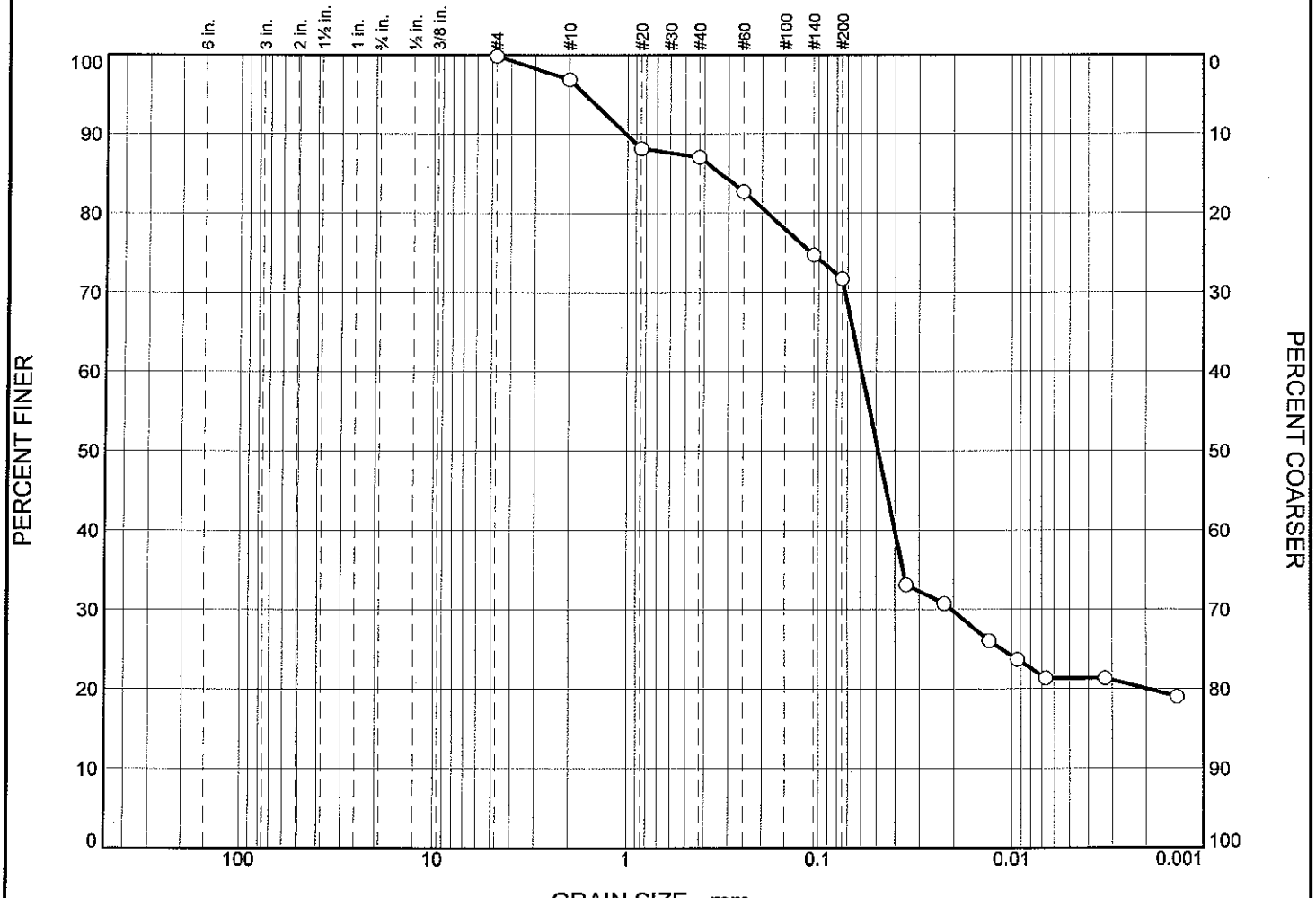
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	2.3	2.3	3.0	3.5	12.5	23.6	33.3	7.7	6.0	3.3	50.3	25.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0095	0.0389	0.0469	0.0681	0.0748	0.1898	0.6005

Fineness Modulus
0.28

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	7.1	2.5	4.6	6.5	13.7	30.0	4.9	5.2	1.1	21.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3303	0.0595	0.0488	0.0205				

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501313 **Sample Number:** L0912908-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501313
Sample Number: L0912908-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
18.93	0.00	#4	521.76	521.73	99.8	0.2
		#10	485.30	484.74	96.9	3.1
		#20	407.02	405.37	88.2	11.8
		#40	361.87	361.66	87.1	12.9
		#60	366.96	366.14	82.7	17.3
		#140	344.31	342.79	74.7	25.3
		#200	345.75	345.18	71.7	28.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 71.7
Weight of hydrometer sample =48.93
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	33.1	66.9
5.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0223	30.7	69.3
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	26.0	74.0
30.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0094	23.7	76.3
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	21.3	78.7
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	21.3	78.7
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	19.0	81.0

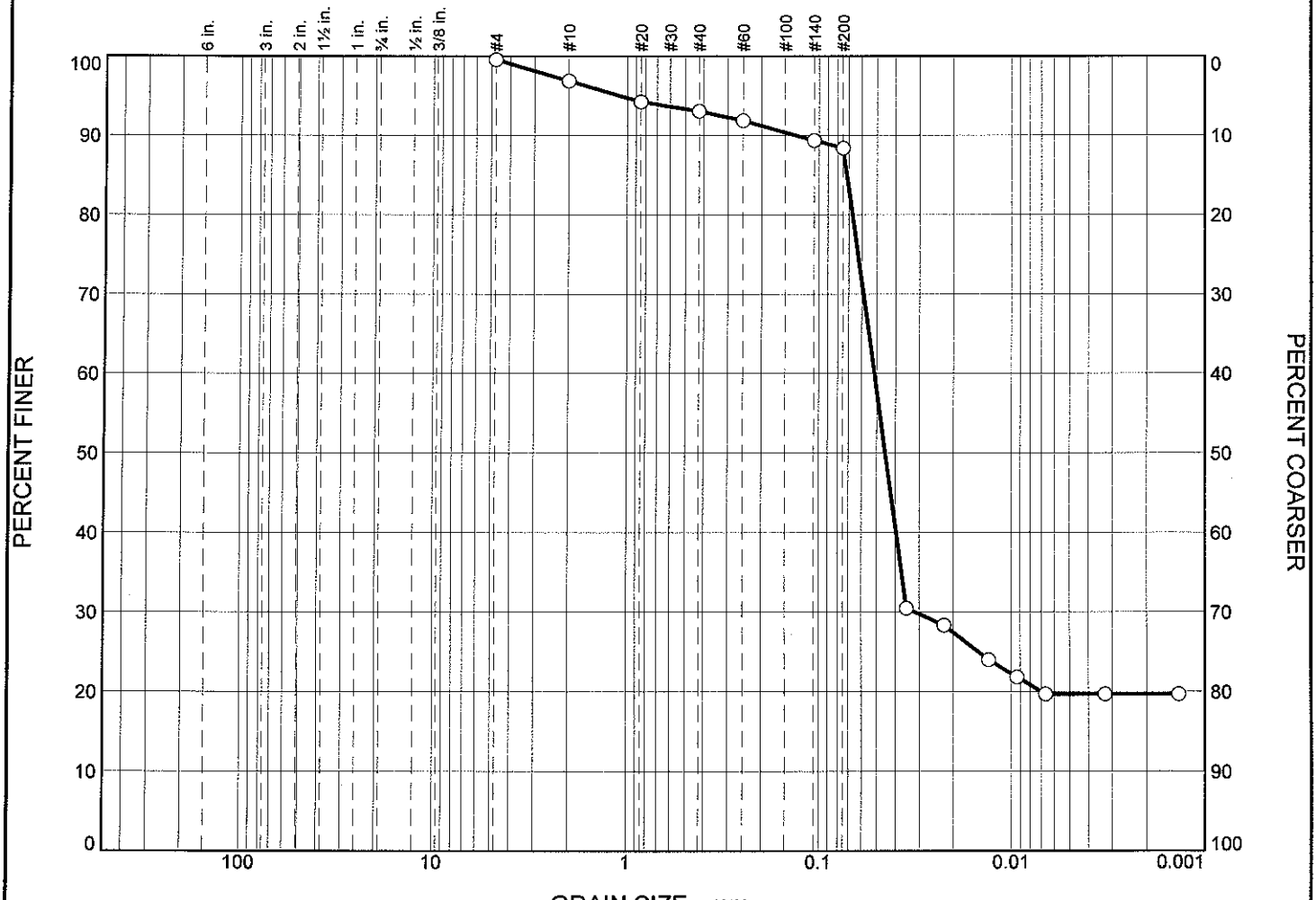
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	7.1	2.5	4.6	6.5	13.7	34.4	30.0	4.9	5.2	1.1	41.2	21.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0020	0.0205	0.0488	0.0595	0.1868	0.3303	1.0176	1.6624

Fineness Modulus
0.61

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.1	2.2	1.4	1.4	2.0	15.3	44.7	4.5	4.7	1.0	19.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0717	0.0515	0.0451	0.0315				

Material Description	USCS	AASHTO
○		

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501326 **Sample Number:** L0912908-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501326
Sample Number: L0912908-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.49	0.00	#4	522.02	521.73	99.6	0.4
		#10	483.83	482.06	96.9	3.1
		#20	412.74	411.02	94.2	5.8
		#40	378.65	377.89	93.1	6.9
		#60	370.60	369.81	91.9	8.1
		#140	348.78	347.15	89.4	10.6
		#200	347.30	346.66	88.4	11.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 88.4
Weight of hydrometer sample =65.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	30.5	69.5
5.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0223	28.3	71.7
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	24.0	76.0
30.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0094	21.8	78.2
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	19.7	80.3
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	19.7	80.3
1440.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0014	19.7	80.3

Fractional Components

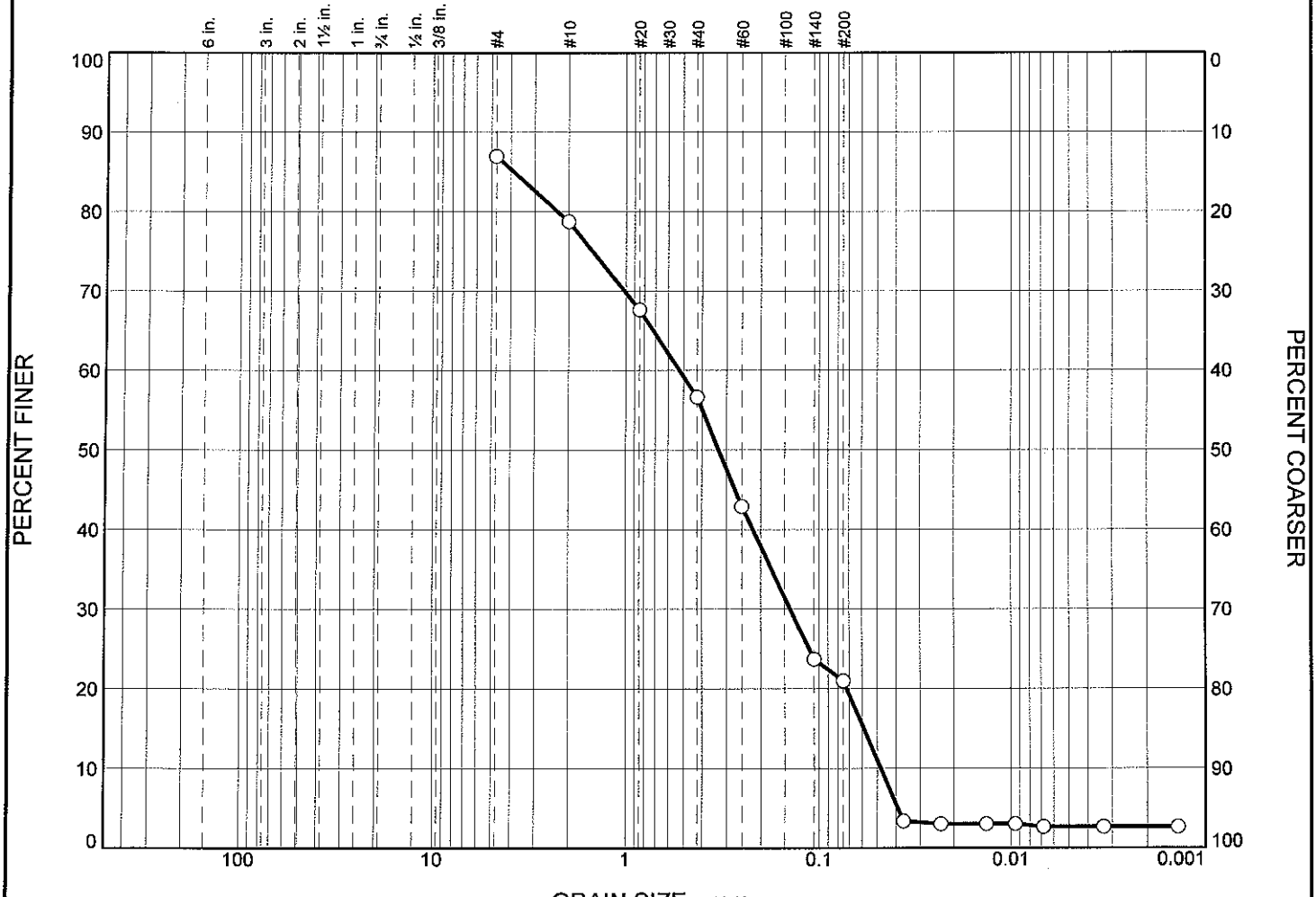
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.1	2.2	1.4	1.4	2.0	15.3	22.3	44.7	4.5	4.7	1.0	54.9	19.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0070	0.0315	0.0451	0.0515	0.0671	0.0717	0.1316	1.0930

Fineness Modulus
0.32

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.6	9.0	10.5	16.3	15.5	10.9	13.2	0.3	0.2	0.2	2.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.8643	0.5251	0.3288	0.1405	0.0588	0.0479	0.79	10.96

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501411 **Sample Number:** L0912908-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501411
Sample Number: L0912908-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
89.97	0.00	#4	533.46	521.73	87.0	13.0
		#10	492.14	484.74	78.7	21.3
		#20	415.37	405.37	67.6	32.4
		#40	371.53	361.66	56.7	43.3
		#60	378.52	366.14	42.9	57.1
		#140	360.07	342.79	23.7	76.3
		#200	347.63	345.18	21.0	79.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 21.0
Weight of hydrometer sample =89.97
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0365	3.4	96.6
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	3.0	97.0
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	3.0	97.0
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	3.0	97.0
60.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0068	2.6	97.4
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	2.6	97.4
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	2.6	97.4

Fractional Components

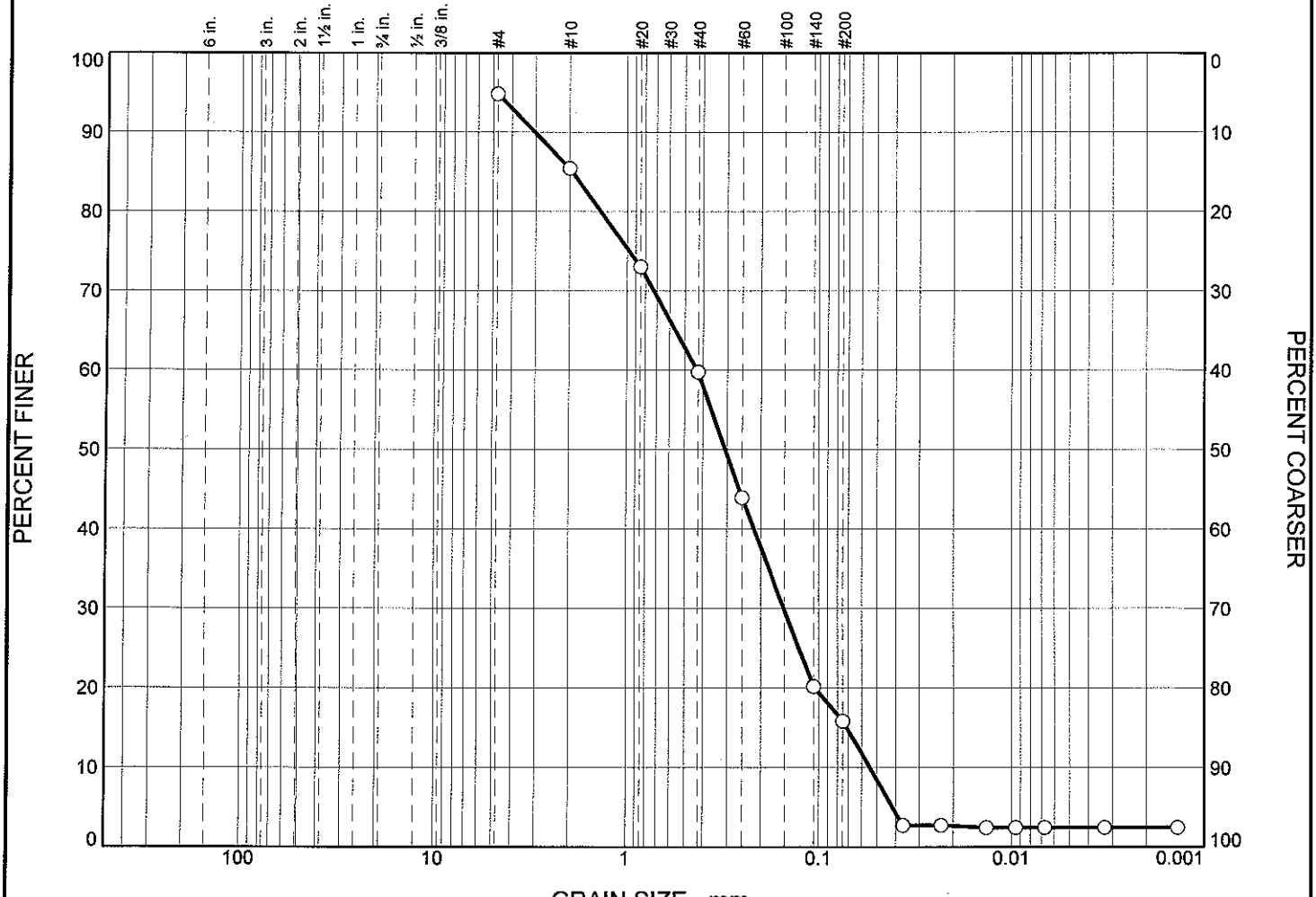
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.6	9.0	10.5	16.3	15.5	10.9	62.2	13.2	0.3	0.2	0.2	13.9	2.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0479	0.0588	0.0721	0.1405	0.3288	0.5251	2.2840	3.8643		

Fineness Modulus	C_u	C_c
2.20	10.96	0.79

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.6	10.0	12.5	19.0	19.2	12.2	9.8	0.2	0.1		2.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.9417	0.4306	0.3065	0.1512	0.0716	0.0544	0.98	7.91

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501412 **Sample Number:** L0912908-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501412
Sample Number: L0912908-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
84.07	0.00	#4	525.19	520.86	94.8	5.2
		#10	489.98	482.06	85.4	14.6
		#20	421.45	411.02	73.0	27.0
		#40	389.05	377.89	59.7	40.3
		#60	383.11	369.81	43.9	56.1
		#140	367.12	347.15	20.2	79.8
		#200	350.30	346.66	15.8	84.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 15.8
Weight of hydrometer sample =84.07
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0365	2.7	97.3
5.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0231	2.7	97.3
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	2.4	97.6
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	2.4	97.6
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	2.4	97.6
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	2.4	97.6
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	2.4	97.6

Fractional Components

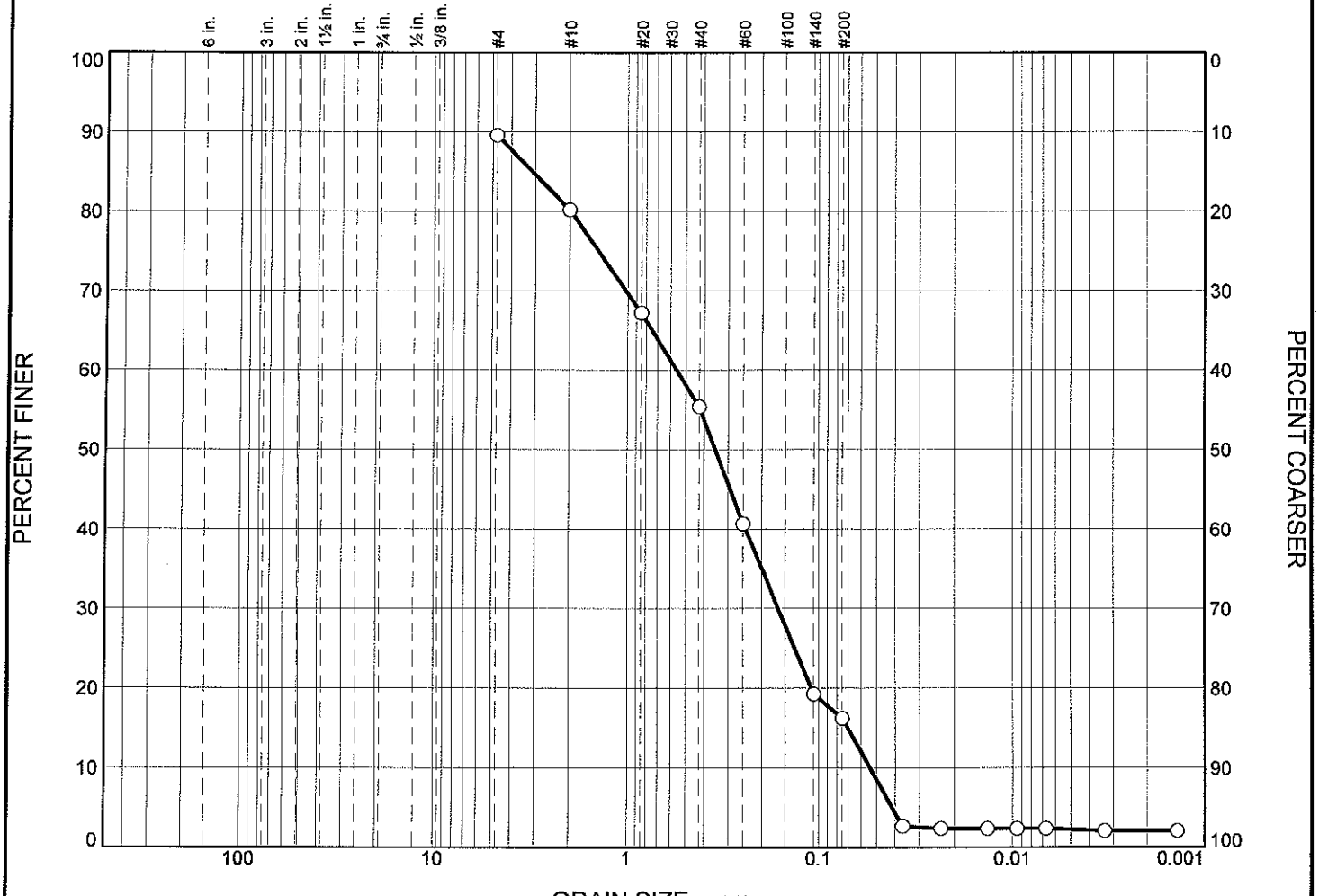
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.6	10.0	12.5	19.0	19.2	12.2	72.9	9.8	0.2	0.1		10.1	2.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0544	0.0716	0.1046	0.1512	0.3065	0.4306	1.3754	1.9417	3.0431	

Fineness Modulus	C_u	C_c
1.95	7.91	0.98

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.5	10.5	11.6	17.5	17.3	10.6	10.2	0.1	0.0	0.3	2.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.1164	0.5581	0.3504	0.1632	0.0705	0.0540	0.88	10.33

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501413 **Sample Number:** L0912908-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501413
Sample Number: L0912908-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
89.09	0.00	#4	531.02	521.73	89.6	10.4
		#10	493.10	484.74	80.2	19.8
		#20	416.96	405.37	67.2	32.8
		#40	372.20	361.66	55.3	44.7
		#60	379.24	366.14	40.6	59.4
		#140	361.87	342.79	19.2	80.8
		#200	347.90	345.18	16.2	83.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 16.2
Weight of hydrometer sample =89.09
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0365	2.6	97.4
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	2.4	97.6
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	2.4	97.6
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	2.4	97.6
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	2.4	97.6
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	2.1	97.9
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	2.1	97.9

Fractional Components

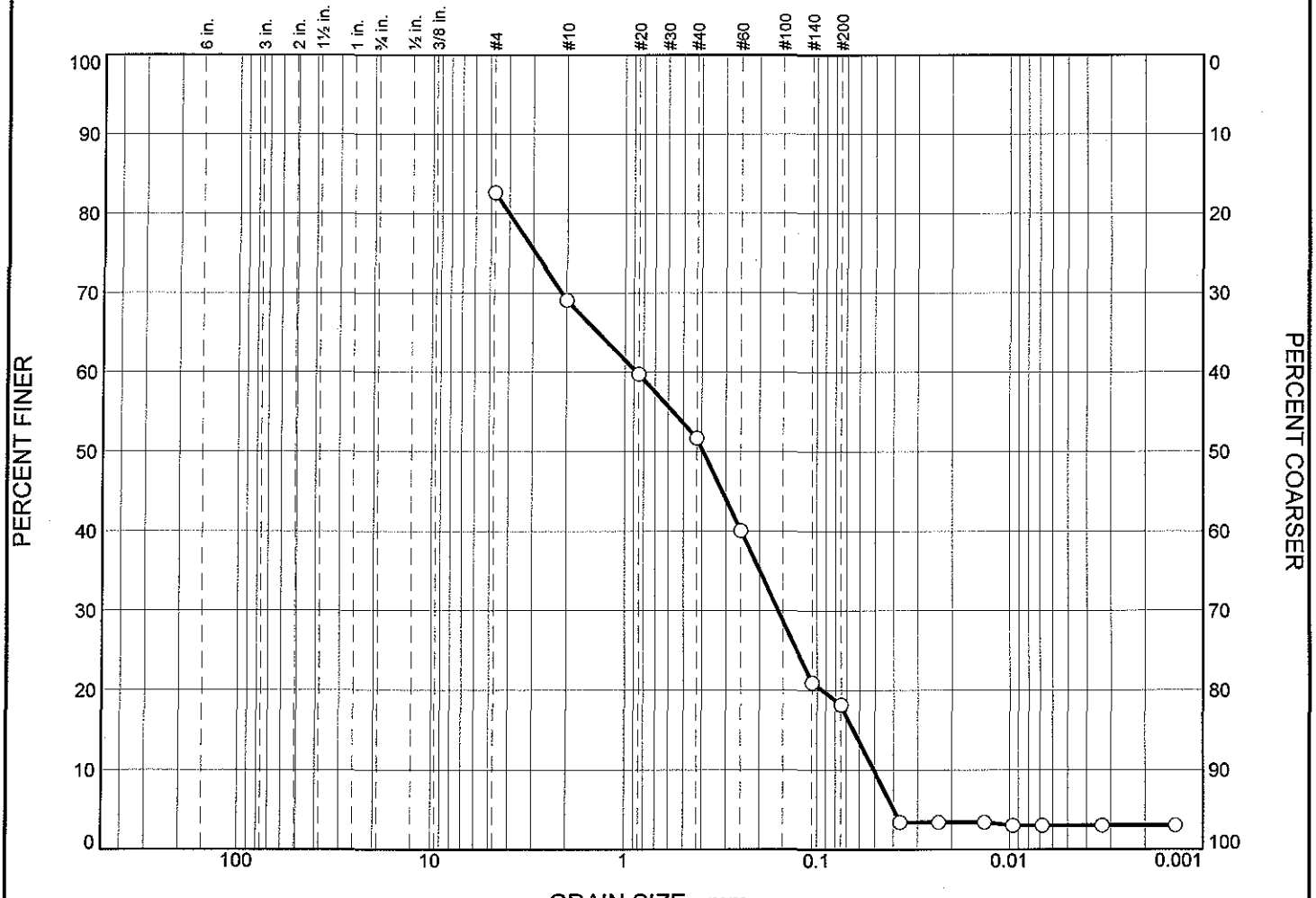
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.5	10.5	11.6	17.5	17.3	10.6	67.5	10.2	0.1	0.0	0.3	10.6	2.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0540	0.0705	0.1093	0.1632	0.3504	0.5581	1.9753	3.1164		

Fineness Modulus	C_u	C_c
2.21	10.33	0.88

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.8	7.6	7.9	13.6	15.4	10.2	11.0	0.0	0.4		3.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.8686	0.3932	0.1592	0.0643	0.0506	0.58	17.17

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501426 **Sample Number:** L0912908-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501426
Sample Number: L0912908-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.67	0.00	#4	532.78	520.86	82.6	17.4
		#10	491.38	482.06	69.1	30.9
		#20	417.41	411.02	59.8	40.2
		#40	383.42	377.89	51.7	48.3
		#60	377.32	369.31	40.0	60.0
		#140	360.26	347.15	21.0	79.0
		#200	348.56	346.66	18.2	81.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 18.2
Weight of hydrometer sample =68.67
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0369	3.4	96.6
5.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0233	3.4	96.6
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	3.4	96.6
30.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0096	3.0	97.0
60.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0068	3.0	97.0
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	3.0	97.0
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	3.0	97.0

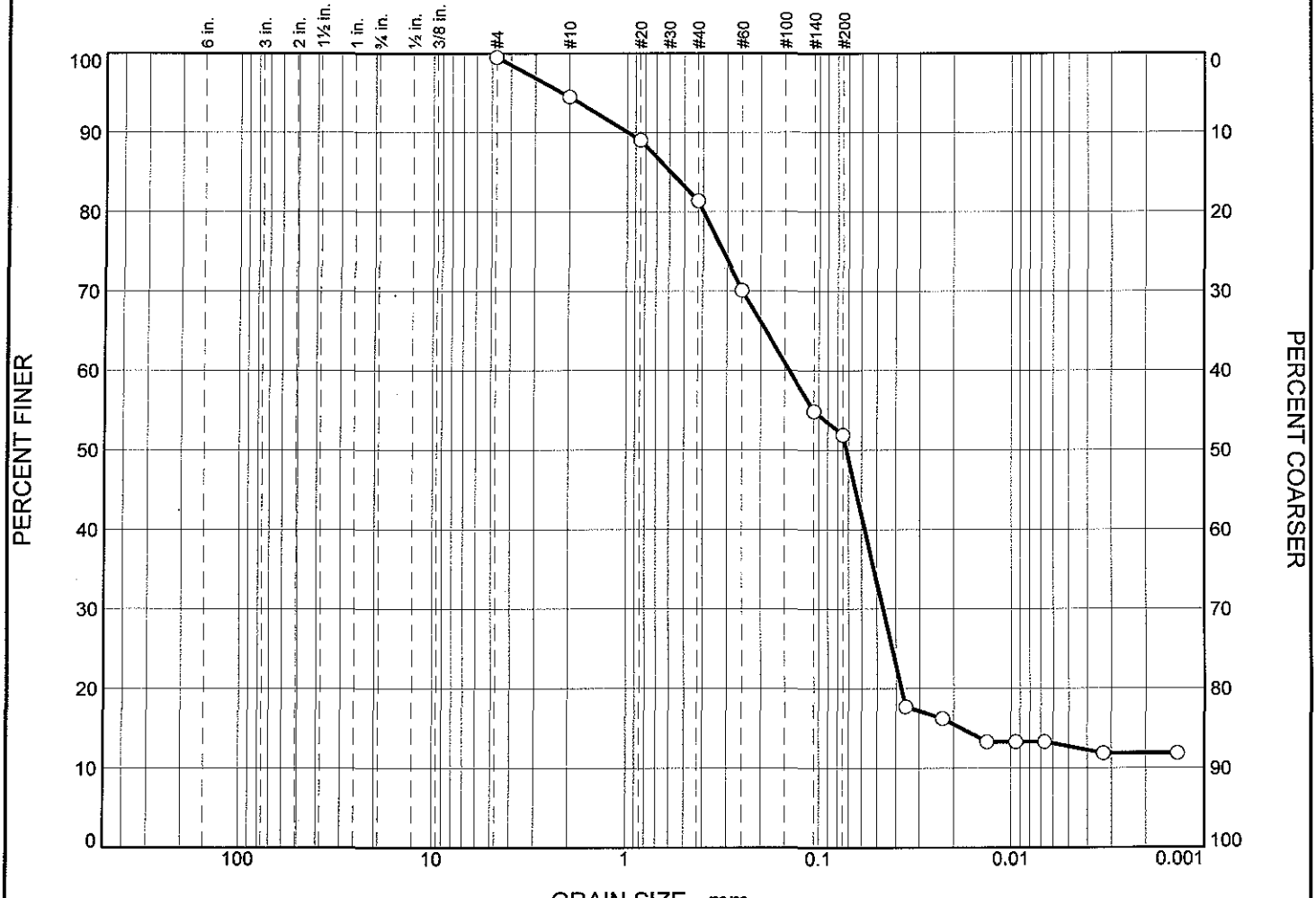
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.8	7.6	7.9	13.6	15.4	10.2	54.7	11.0	0.0	0.4		11.4	3.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0506	0.0643	0.0941	0.1592	0.3932	0.8686	4.0140			

Fineness Modulus	C_u	C_c
2.54	17.17	0.58

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.0	4.4	6.9	13.1	12.3	14.3	26.3	3.0	0.9	1.1	12.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5906	0.1417	0.0720	0.0465	0.0182			

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501511 **Sample Number:** L0912908-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501511
Sample Number: L0912908-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
56.83	0.00	#4	522.00	521.73	99.5	0.5
		#10	487.59	484.74	94.5	5.5
		#20	408.49	405.37	89.0	11.0
		#40	366.01	361.66	81.4	18.6
		#60	372.55	366.14	70.1	29.9
		#140	351.45	342.79	54.8	45.2
		#200	346.86	345.18	51.9	48.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 51.9
Weight of hydrometer sample =56.83
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0355	17.7	82.3
5.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0227	16.2	83.8
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	13.3	86.7
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	13.3	86.7
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	13.3	86.7
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	11.8	88.2
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	11.8	88.2

Fractional Components

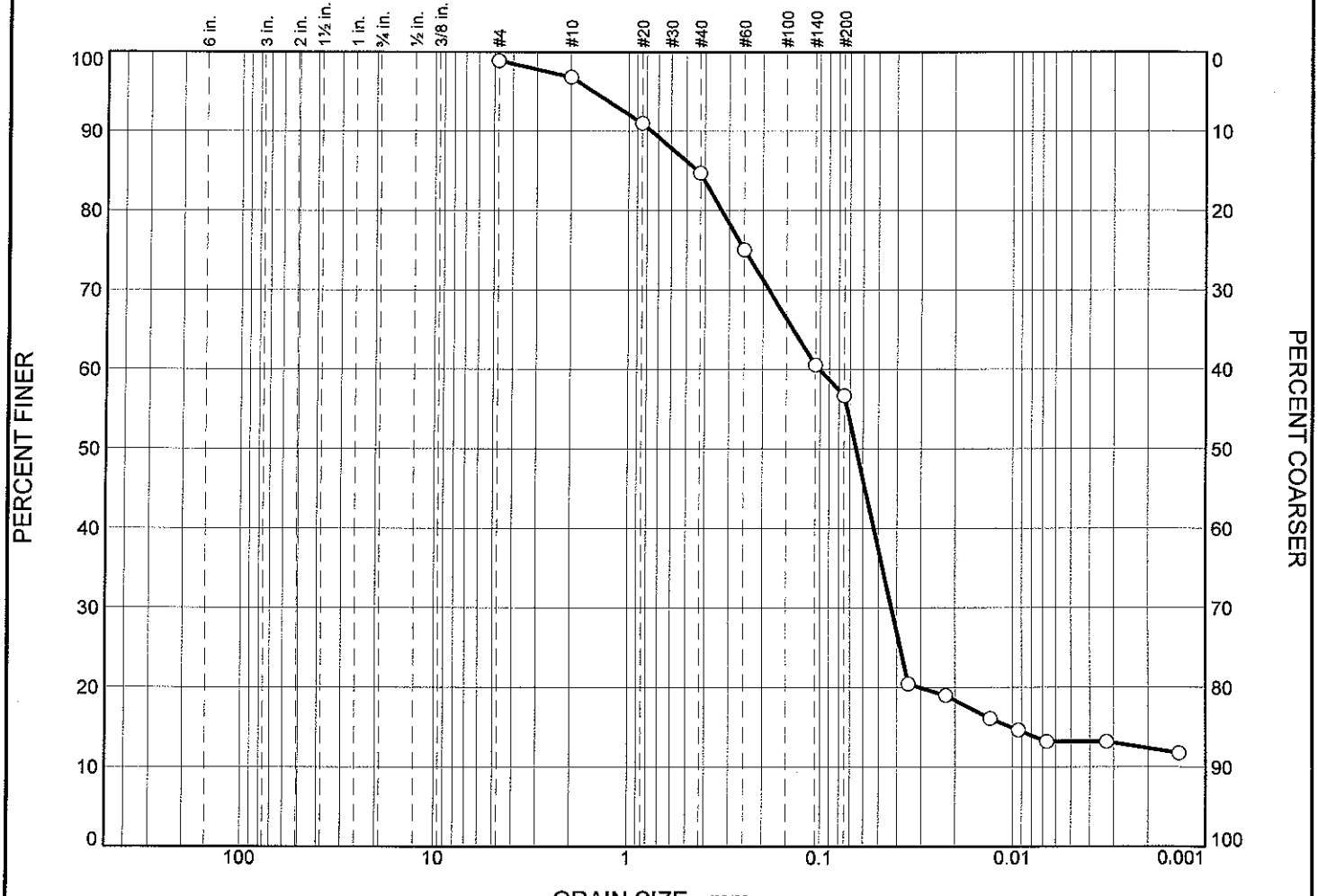
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.0	4.4	6.9	13.1	12.3	14.3	51.0	26.3	3.0	0.9	1.1	31.3	12.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0182	0.0374	0.0465	0.0720	0.1417	0.3986	0.5906	0.9903	2.1764

Fineness Modulus
0.94

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	4.7	5.9	11.1	11.8	15.3	28.0	3.0	3.2	0.6	13.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4369	0.1010	0.0652	0.0427	0.0102			

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501512 **Sample Number:** L0912908-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501512
Sample Number: L0912908-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.69	0.00	#4	521.55	520.86	98.9	1.1
		#10	483.36	482.06	96.8	3.2
		#20	414.66	411.02	91.0	9.0
		#40	381.82	377.89	84.8	15.2
		#60	375.89	369.81	75.1	24.9
		#140	356.25	347.15	60.5	39.5
		#200	349.09	346.66	56.7	43.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 56.7
Weight of hydrometer sample =62.69
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	20.4	79.6
5.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0223	19.0	81.0
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	16.1	83.9
30.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0094	14.6	85.4
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	13.2	86.8
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	13.2	86.8
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	11.7	88.3

Fractional Components

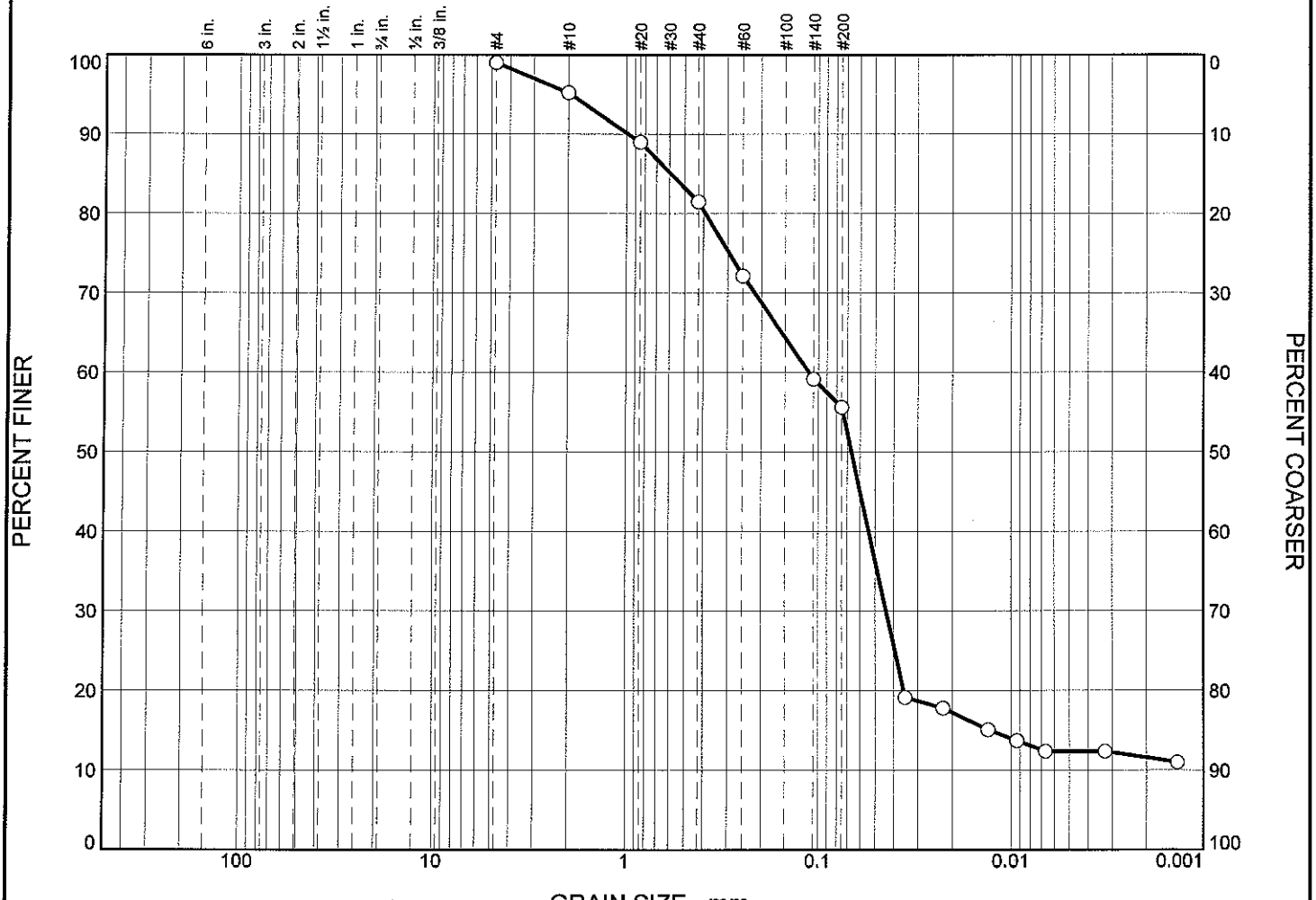
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	4.7	5.9	11.1	11.8	15.3	48.8	28.0	3.0	3.2	0.6	34.8	13.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0102	0.0306	0.0427	0.0652	0.1010	0.3277	0.4369	0.7594	1.5282

Fineness Modulus
0.78

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.1	5.0	7.0	11.1	10.5	14.7	28.1	2.8	3.0	0.7	12.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5885	0.1121	0.0667	0.0438	0.0129			

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501513 **Sample Number:** L0912908-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501513
Sample Number: L0912908-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.60	0.00	#4	522.38	521.73	99.0	1.0
		#10	487.22	484.74	95.2	4.8
		#20	409.47	405.37	89.0	11.0
		#40	366.58	361.66	81.5	18.5
		#60	372.27	366.14	72.1	27.9
		#140	351.31	342.79	59.1	40.9
		#200	347.52	345.18	55.6	44.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 55.6
Weight of hydrometer sample =65.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	19.1	80.9
5.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0223	17.8	82.2
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	15.1	84.9
30.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0094	13.7	86.3
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	12.3	87.7
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	12.3	87.7
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	11.0	89.0

Fractional Components

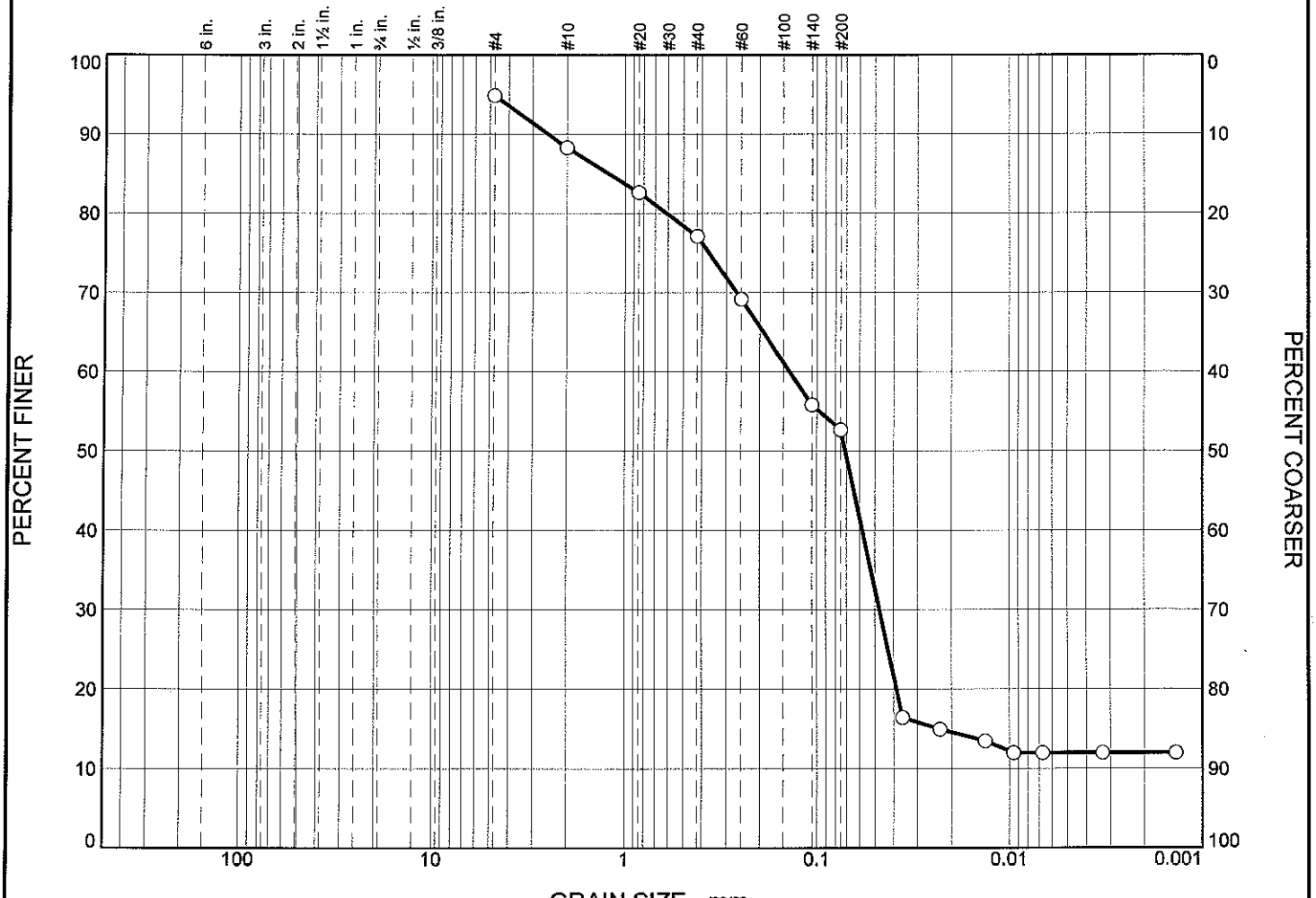
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.1	5.0	7.0	11.1	10.5	14.7	48.3	28.1	2.8	3.0	0.7	34.6	12.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0129	0.0355	0.0438	0.0667	0.1121	0.3908	0.5885	0.9776	1.9384

Fineness Modulus
0.89

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.3	4.6	5.3	9.3	10.7	14.7	27.8	2.0	1.9	0.0	12.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2191	0.1390	0.0711	0.0473	0.0234			

	Material Description	USCS	AASHTO
○			

Project No. L0912908 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501526 **Sample Number:** L0912908-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912908
Location: 501526
Sample Number: L0912908-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.02	0.00	#4	523.79	520.86	94.9	5.1
		#10	485.82	482.06	88.3	11.7
		#20	414.24	411.02	82.6	17.4
		#40	381.04	377.89	77.1	22.9
		#60	374.35	369.81	69.1	30.9
		#140	354.76	347.15	55.8	44.2
		#200	348.46	346.66	52.6	47.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 52.6
Weight of hydrometer sample =57.02
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0359	16.4	83.6
5.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0229	14.9	85.1
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	13.4	86.6
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	12.0	88.0
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	12.0	88.0
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	12.0	88.0
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	12.0	88.0

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.3	4.6	5.3	9.3	10.7	14.7	44.6	27.8	2.0	1.9	0.0	31.7	12.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0234	0.0386	0.0473	0.0711	0.1390	0.6118	1.2191	2.5104	

Fineness Modulus
1.18

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 125

02021016:35

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912908

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
1	501111	9/23/09	12:43	SE	HC	☐	☐	☒	☐	ben gs	1
2	501112	9/23/09	12:43	SE	HC	☐	☐	☒	☐	ben gs	1
3	501113	9/23/09	12:43	SE	HC	☐	☐	☒	☐	ben gs	1
	501125	9/23/09	12:50	SE	HC	☒	☒	☐	☐	sed chem	1
4	501126	9/23/09	12:50	SE	HC	☐	☐	☒	☐	sed gs	1
	501127	9/23/09	12:50	SE	HC	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
Heidi Nder	9-23-09 18:40	Lauren McCann	9/23/09 18:53
Lauren McCann	9/24/09 9:20	Paul Gilbert	9/24/09 9:20
Paul Gilbert	9/24/09 11:00	[illegible signature]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

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CHAIN OF CUSTODY

PAGE 3 OF 12

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02021016:35

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912908

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	501211	9/23/09	11:15	SE	HC	☐	☐	☒	☐									ben gs	1
6	501212	9/23/09	11:15	SE	HC	☐	☐	☒	☐									ben gs	1
7	501213	9/23/09	11:15	SE	HC	☐	☐	☒	☐									ben gs	1
	501225	9/23/09	11:18	SE	HC	☒	☒	☐	☐									sed chem	1
8	501226	9/23/09	11:18	SE	HC	☐	☐	☒	☐									sed gs	1
	501227	9/23/09	11:18	SE	HC	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Mark N. Clayton	9-23-09 18:40	Karl McCarthy	9/23/09
Ralph McCarthy	9/24/09 9:00	Paul Gilbert	9/24/09 18:53
Paul Gilbert	9/24/09 11:00		9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 128

CHAIN OF CUSTODY

PAGE 2 OF 12

02021016:35

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912908

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
9	501311	9/23/09	10:05	SE	HC	☐	☐	☒	☐									ben gs	1
10	501312	9/23/09	10:05	SE	HC	☐	☐	☒	☐									ben gs	1
11	501313	9/23/09	10:05	SE	HC	☐	☐	☒	☐									ben gs	1
	501325	9/23/09	10:11	SE	HC	☒	☒	☐	☐									sed chem	1
12	501326	9/23/09	10:11	SE	HC	☐	☐	☒	☐									sed gs	1
	501327	9/23/09	10:11	SE	HC	☐	☐	☐	☒									sed arch	1
	501345	9/23/09	10:30	SE	HC	☒	☒	☐	☐									sed chem lab QC	i
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type		G	G	G	-	-	-	-	-	-	-	-	-						
Preservative		A	A	A	-	-	-	-	-	-	-	-	-						

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/23/09 18:41		9/23/09 18:53
	9/24/09 9:00		9/24/09 9:20
Paul Gilbert	9/24/09 11:00		9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

02021016:35

CHAIN OF CUSTODY

PAGE OF

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912908

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
13	501411	9/22/09	09:00	SE	DB	☐	☐	☒	☐	ben gs	1
14	501412	9/22/09	09:00	SE	DB	☐	☐	☒	☐	ben gs	1
15	501413	9/22/09	09:00	SE	DB	☐	☐	☒	☐	ben gs	1
	501425	9/22/09	09:25	SE	HC	☒	☒	☐	☐	sed chem	1
16	501426	9/22/09	09:25	SE	HC	☐	☐	☒	☐	sed gs	1
	501427	9/22/09	09:25	SE	HC	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/22/09 18:56	[signature]	9/22 18:55
[signature]	9/23/09 09:15	[signature]	9/23/09 9:15
[signature]	9/23/09 10:25	[signature]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

(Station 131 (

CHAIN OF CUSTODY

PAGE 1 OF 12

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02021016:35

Date Rec'd in Lab:

ALPHA Job #: L0912908

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	501511	9/23/09	08:46	SE	HC	☐	☐	☒	☐								ben gs	1
18	501512	9/23/09	08:46	SE	HC	☐	☐	☒	☐								ben gs	1
19	501513	9/23/09	08:46	SE	HC	☐	☐	☒	☐								ben gs	1
	501525	9/23/09	08:50	SE	HC	☒	☒	☐	☐								sed chem	1
20	501526	9/23/09	08:50	SE	HC	☐	☐	☒	☐								sed gs	1
	501527	9/23/09	08:52	SE	HC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-	-	
Preservative						A	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9-23-09 18:40		9/23/09 18:53
	9/24/09 9:00		9/24/09 9:20
	9/24/09 11:00		9/24/09 11:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-08)

ANALYTICAL REPORT

Lab Number:	L0912909
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912909
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912909-01	501611	NEW BEDFORD, MA	09/23/09 16:00
L0912909-02	501612	NEW BEDFORD, MA	09/23/09 16:00
L0912909-03	501613	NEW BEDFORD, MA	09/23/09 16:00
L0912909-04	501626	NEW BEDFORD, MA	09/23/09 16:09
L0912909-05	501711	NEW BEDFORD, MA	09/23/09 14:00
L0912909-06	501712	NEW BEDFORD, MA	09/23/09 14:00
L0912909-07	501713	NEW BEDFORD, MA	09/23/09 14:00
L0912909-08	501726	NEW BEDFORD, MA	09/23/09 14:12
L0912909-09	501811	NEW BEDFORD, MA	09/22/09 10:30
L0912909-10	501812	NEW BEDFORD, MA	09/22/09 10:30
L0912909-11	501813	NEW BEDFORD, MA	09/22/09 10:30
L0912909-12	501826	NEW BEDFORD, MA	09/22/09 10:30
L0912909-13	501911	NEW BEDFORD, MA	09/24/09 09:10
L0912909-14	501912	NEW BEDFORD, MA	09/24/09 09:10
L0912909-15	501913	NEW BEDFORD, MA	09/24/09 09:10
L0912909-16	501926	NEW BEDFORD, MA	09/24/09 09:14
L0912909-17	502011	NEW BEDFORD, MA	09/24/09 16:52
L0912909-18	502012	NEW BEDFORD, MA	09/24/09 16:52
L0912909-19	502013	NEW BEDFORD, MA	09/24/09 16:52
L0912909-20	502026	NEW BEDFORD, MA	09/24/09 16:56

Project Name: NBH LONG TERM MONITORING **Lab Number:** L0912909
Project Number: TO-0018 **Report Date:** 08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 2, 2010. The report was ammended to include revised Grain Size data.

The WG381751-1 Laboratory Duplicate RPD is outside the acceptance criteria for gravel (200%),% very coarse sand (68%), clay (26%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912909
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative (continued)

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-01
Client ID: 501611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 16:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	14.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-02
Client ID: 501612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 16:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.500		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	33.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	18.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-03
Client ID: 501613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 16:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	9.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-04
Client ID: 501626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 16:09
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.50		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	36.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-05
Client ID: 501711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	7.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	24.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-06
Client ID: 501712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	11.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.20		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.700		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-07
Client ID: 501713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	10.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	22.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-08
Client ID: 501726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:12
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	9.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	27.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	3.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-09
Client ID: 501811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 10:30
Date Received: 09/22/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	ND		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-10
Client ID: 501812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 10:30
Date Received: 09/22/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	26.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-11
Client ID: 501813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 10:30
Date Received: 09/22/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	ND		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	46.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-12
Client ID: 501826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 10:30
Date Received: 09/22/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	ND		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.50		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-13
Client ID: 501911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 09:10
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.50		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-14
Client ID: 501912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 09:10
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-15
Client ID: 501913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 09:10
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	26.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-16
Client ID: 501926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 09:14
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-17
Client ID: 502011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 16:52
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	10.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-18
Client ID: 502012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 16:52
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	ND		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	20.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-19
Client ID: 502013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 16:52
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	23.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912909
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912909-20
Client ID: 502026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 16:56
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.20		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	14.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	21.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912909
Report Date: 08/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG381751-1 QC Sample: L0912909-12 Client ID: 501826						
Gravel (>2.00mm)	ND	0.400	%	NC	Q	20
Very Coarse Sand (1.00-2.00 mm)	3.3	6.70	%	**68**	Q	20
Coarse Sand (0.50-1.00 mm)	8.1	9.50	%	16		20
Medium Sand (0.25-0.50 mm)	7.9	7.30	%	8		20
Fine Sand (0.125-0.25 mm)	6.5	5.50	%	17		20
Very Fine Sand (0.063-0.125 mm)	12.2	12.6	%	3		20
Silt - (1.95-62.5 um)	40.3	41.2	%	2		20
Clay - (<1.95 um)	21.7	16.7	%	**26**	Q	20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912909
Report Date: 08/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information	Custody Seal
Cooler	
D	Absent
C	Absent
E	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-01A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912909
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-02A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-03A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-04A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-05A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-06A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-07A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-08A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-09A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-10A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-11A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-12A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-13A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-14A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-15A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-16A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-17A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-18A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912909-19A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912909-20A	Glass 250ml unpreserved	D	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912909
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Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

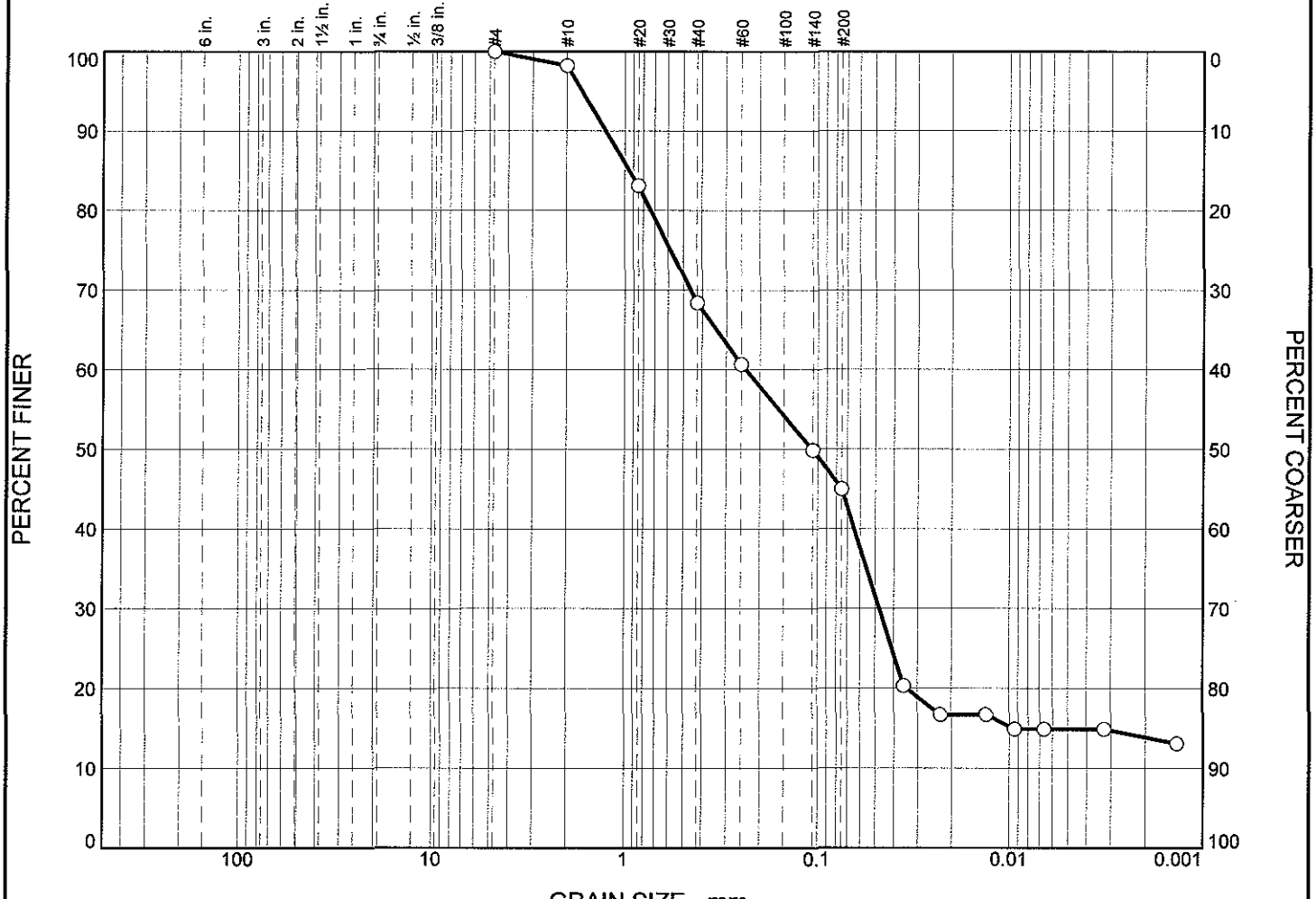
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.4	1.4	12.2	14.1	11.2	8.7	13.0	19.8	2.5	1.8	0.0	14.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9449	0.2369	0.1068	0.0476	0.0096			

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501611 **Sample Number:** L0912909-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501611
Sample Number: L0912909-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 31.74
Tare Wt. = 4.14
Minus #200 from wash = 30.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
39.90	0.00	#4	521.88	521.88	100.0	0.0
		#10	485.55	484.84	98.2	1.8
		#20	411.54	405.52	83.1	16.9
		#40	365.16	359.28	68.4	31.6
		#60	369.34	366.26	60.7	39.3
		#140	347.23	342.93	49.9	50.1
		#200	347.27	345.32	45.0	55.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.0
Weight of hydrometer sample =39.90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	20.3	79.7
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	16.7	83.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	16.7	83.3
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	14.9	85.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	14.9	85.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	14.9	85.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	13.1	86.9

Fractional Components

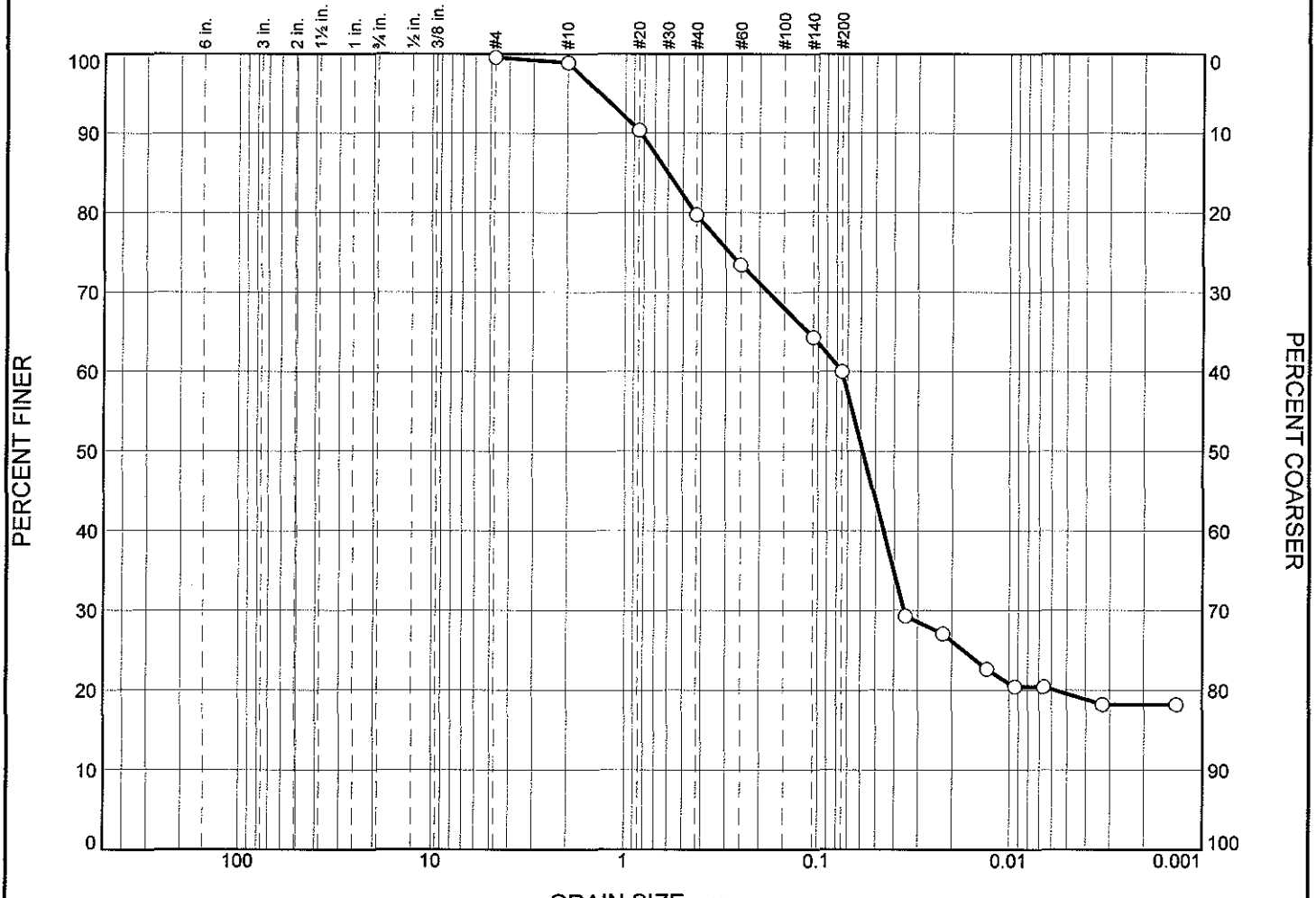
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.4	1.4	12.2	14.1	11.2	8.7	13.0	59.2	19.8	2.5	1.8	0.0	24.1	14.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0096	0.0341	0.0476	0.1068	0.2369	0.7335	0.9449	1.2548	1.6661

Fineness Modulus
1.19

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.5	6.9	9.8	8.8	7.3	13.4	24.0	4.6	3.7	1.6	18.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5985	0.0750	0.0584	0.0354				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501612 **Sample Number:** L0912909-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501612
Sample Number: L0912909-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 26.25
Tare Wt. = 4.11
Minus #200 from wash = 49.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.49	0.00	#4	521.14	520.95	99.6	0.4
		#10	482.45	482.16	98.9	1.1
		#20	414.91	411.21	90.4	9.6
		#40	382.55	377.92	79.7	20.3
		#60	372.76	370.01	73.4	26.6
		#140	351.28	347.33	64.3	35.7
		#200	348.46	346.58	60.0	40.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 60.0
Weight of hydrometer sample =43.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	29.3	70.7
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	27.1	72.9
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	22.6	77.4
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	20.4	79.6
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	20.4	79.6
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	18.2	81.8
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	18.2	81.8

Fractional Components

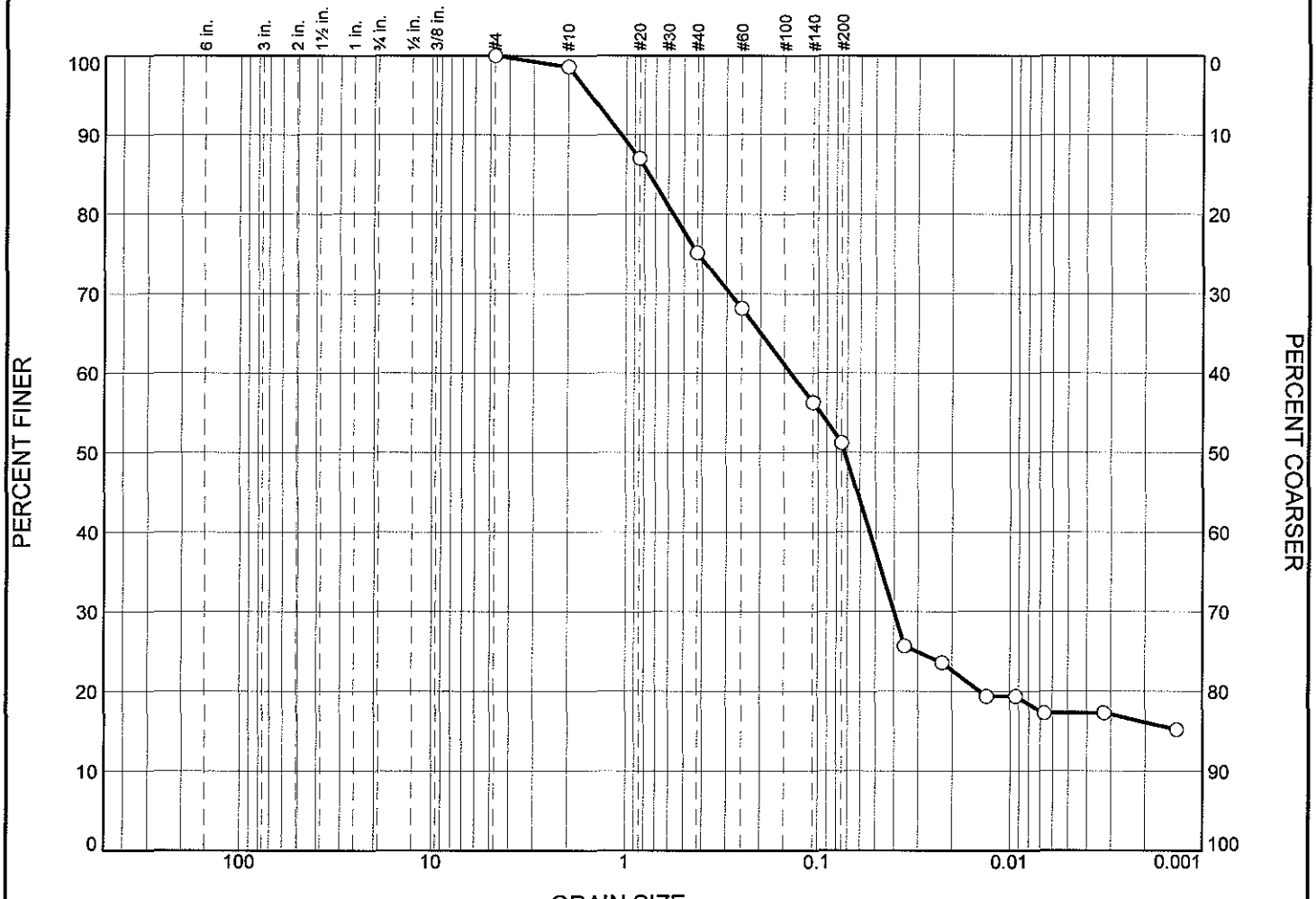
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.5	6.9	9.8	8.8	7.3	13.4	46.2	24.0	4.6	3.7	1.6	33.9	18.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0058	0.0354	0.0584	0.0750	0.4322	0.5985	0.8288	1.3516

Fineness Modulus
0.79

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.3	1.1	9.4	11.3	9.7	9.6	13.5	20.0	4.4	2.4	1.0	17.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7556	0.1384	0.0723	0.0399				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501613 **Sample Number:** L0912909-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501613
Sample Number: L0912909-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 26.64
Tare Wt. = 4.08
Minus #200 from wash = 42.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
39.13	0.00	#4	521.88	521.88	100.0	0.0
		#10	485.39	484.84	98.6	1.4
		#20	410.05	405.52	87.0	13.0
		#40	363.93	359.28	75.1	24.9
		#60	368.99	366.26	68.2	31.8
		#140	347.56	342.93	56.3	43.7
		#200	347.31	345.32	51.2	48.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 51.2
Weight of hydrometer sample =39.13
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	25.7	74.3
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	23.6	76.4
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	19.4	80.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	19.4	80.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	17.3	82.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	17.3	82.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	15.2	84.8

Fractional Components

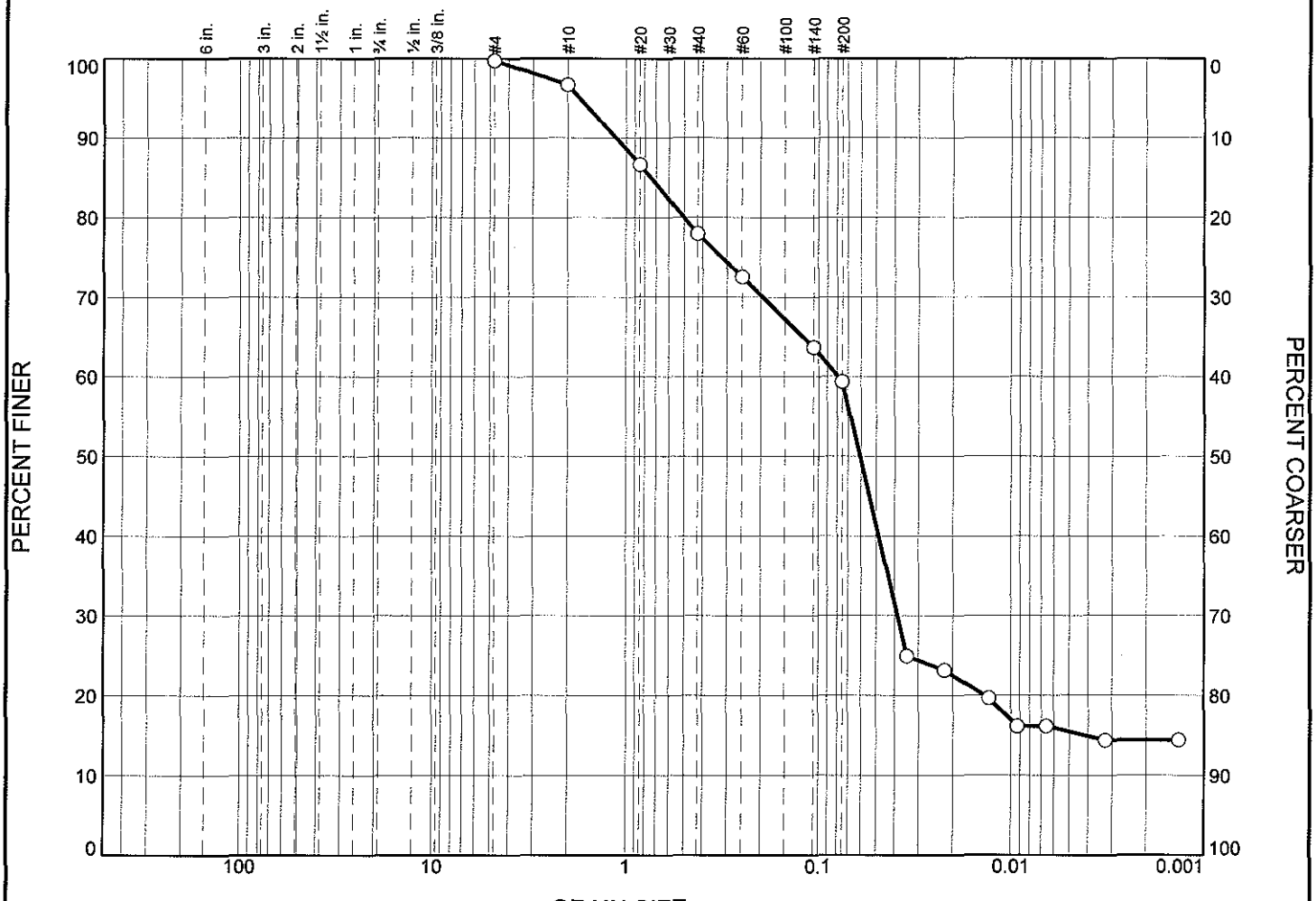
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.3	1.1	9.4	11.3	9.7	9.6	13.5	53.5	20.0	4.4	2.4	1.0	27.8	17.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0143	0.0399	0.0723	0.1384	0.5645	0.7556	1.0596	1.5334

Fineness Modulus
0.97

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	8.1	8.6	7.5	7.1	14.1	26.8	3.6	4.7	1.4	14.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7435	0.0790	0.0607	0.0386	0.0042			

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501626 **Sample Number:** L0912909-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501626
Sample Number: L0912909-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 30.58
Tare Wt. = 4.05
Minus #200 from wash = 51.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.37	0.00	#4	521.09	520.95	99.7	0.3
		#10	483.82	482.16	96.7	3.3
		#20	416.65	411.21	86.7	13.3
		#40	382.66	377.92	78.0	22.0
		#60	372.96	370.01	72.5	27.5
		#140	352.16	347.33	63.7	36.3
		#200	348.92	346.58	59.4	40.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 59.4
Weight of hydrometer sample =54.37
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	24.9	75.1
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	23.2	76.8
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	19.7	80.3
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	16.2	83.8
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	16.2	83.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	14.4	85.6
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	14.4	85.6

Fractional Components

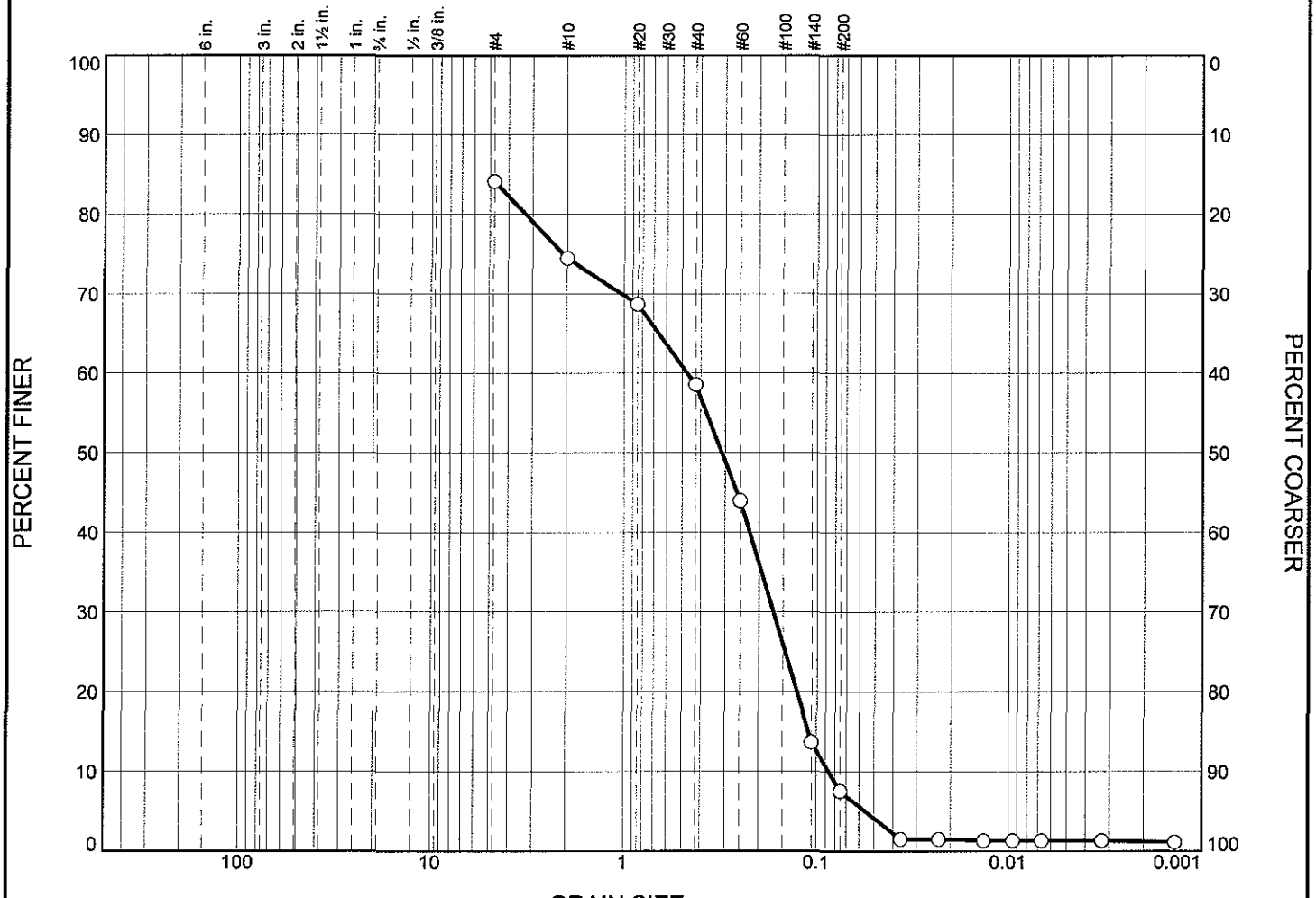
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	8.1	8.6	7.5	7.1	14.1	45.4	26.8	3.6	4.7	1.4	36.5	14.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0042	0.0136	0.0386	0.0607	0.0790	0.4996	0.7435	1.1287	1.7310

Fineness Modulus
0.89

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.7	4.7	8.9	16.9	24.5	13.5	4.5	0.1	0.1	0.0	1.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.4694	0.3113	0.1683	0.1101	0.0863	0.70	5.44

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501711 **Sample Number:** L0912909-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501711
Sample Number: L0912909-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 65.13
Tare Wt. = 4.05
Minus #200 from wash = 6.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.59	0.00	#4	532.28	521.88	84.1	15.9
		#10	491.19	484.84	74.5	25.5
		#20	409.31	405.52	68.7	31.3
		#40	365.93	359.28	58.5	41.5
		#60	375.81	366.26	44.0	56.0
		#140	362.82	342.93	13.7	86.3
		#200	349.36	345.32	7.5	92.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 7.5
Weight of hydrometer sample =65.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.5	98.5
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.5	98.5
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	1.3	98.7
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.3	98.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.3	98.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.3	98.7
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	1.1	98.9

Fractional Components

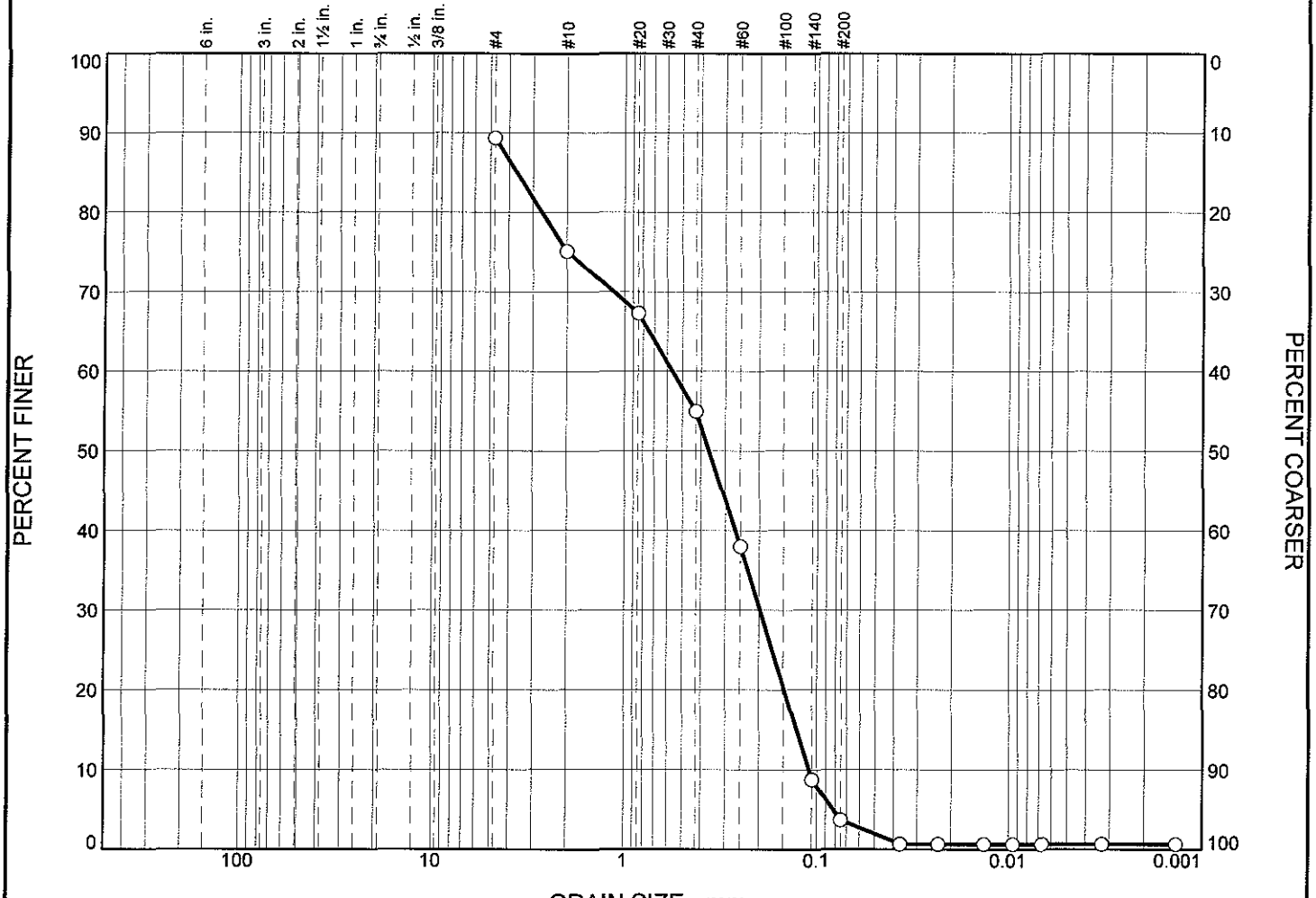
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.7	4.7	8.9	16.9	24.5	13.5	68.5	4.5	0.1	0.1	0.0	4.7	1.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0863	0.1101	0.1268	0.1683	0.3113	0.4694	3.2802			

Fineness Modulus	C_u	C_c
2.30	5.44	0.70

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				11.4	6.3	10.9	19.9	23.6	11.5	2.2	0.0	0.0	0.0	0.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.6463	0.5639	0.3638	0.1977	0.1274	0.1100	0.63	5.13

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501712 **Sample Number:** L0912909-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501712
Sample Number: L0912909-06
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 64.63
Tare Wt. = 4.08
Minus #200 from wash = 3.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.60	0.00	#4	527.61	520.95	89.4	10.6
		#10	491.09	482.16	75.1	24.9
		#20	416.09	411.21	67.3	32.7
		#40	385.64	377.92	55.0	45.0
		#60	380.63	370.01	38.0	62.0
		#140	365.65	347.33	8.7	91.3
		#200	349.75	346.58	3.7	96.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.7
Weight of hydrometer sample =62.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.7	99.3
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.7	99.3
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.7	99.3
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.7	99.3
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.7	99.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.7	99.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.7	99.3

Fractional Components

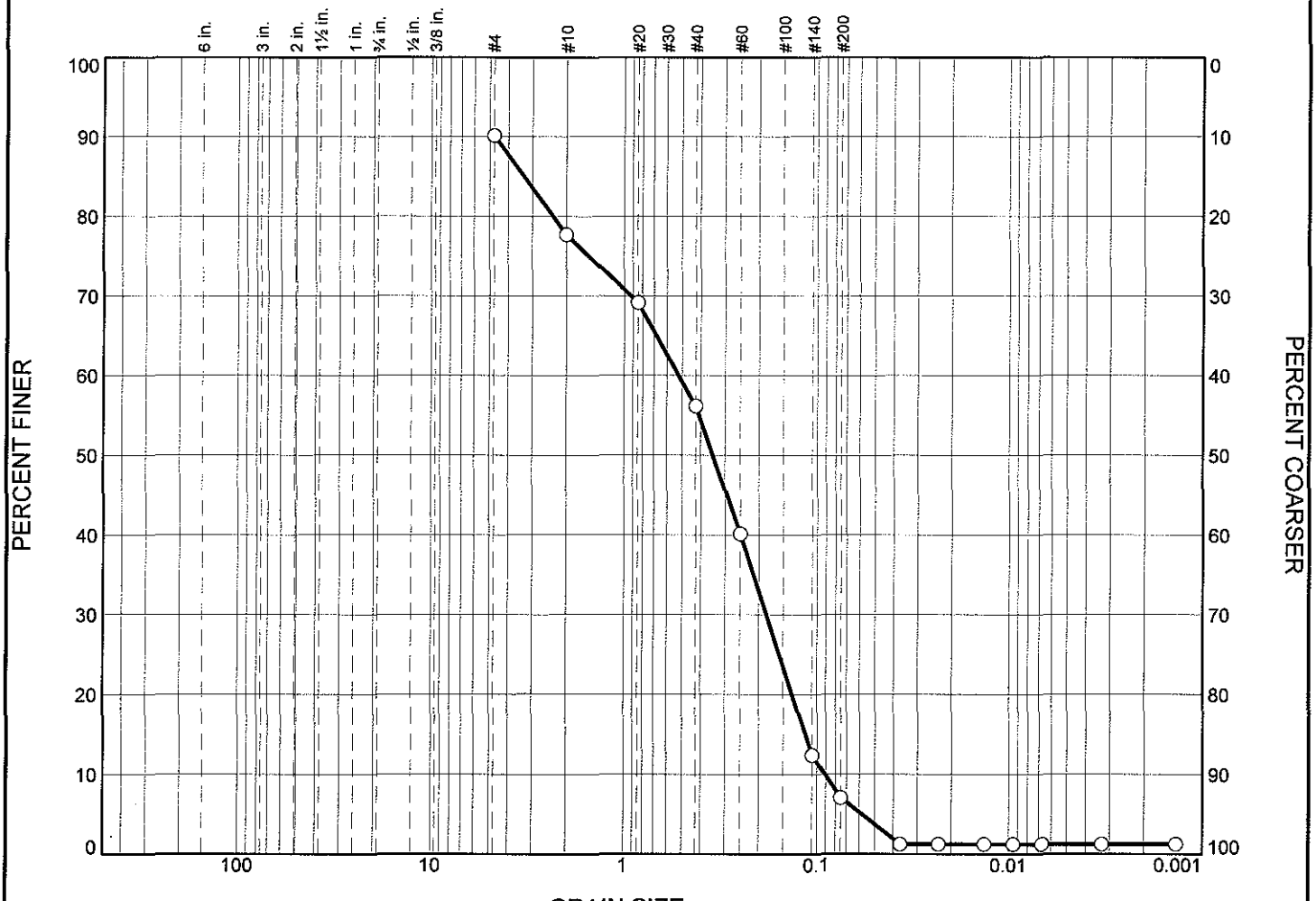
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			11.4	6.3	10.9	19.9	23.6	11.5	72.2	2.2	0.0	0.0	0.0	2.2	0.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1100	0.1274	0.1475	0.1977	0.3638	0.5639	2.6926	3.6463		

Fineness Modulus	C_u	C_c
2.37	5.13	0.63

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.0	6.9	11.6	19.1	22.4	12.1	4.3	0.0	0.0		1.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.3181	0.5215	0.3466	0.1828	0.1149	0.0908	0.71	5.75

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501713 **Sample Number:** L0912909-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501713
Sample Number: L0912909-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 64.90
Tare Wt. = 4.05
Minus #200 from wash = 6.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.13	0.00	#4	528.29	521.88	90.2	9.8
		#10	492.94	484.84	77.7	22.3
		#20	411.10	405.52	69.2	30.8
		#40	367.74	359.28	56.2	43.8
		#60	376.71	366.26	40.1	59.9
		#140	360.99	342.93	12.4	87.6
		#200	348.79	345.32	7.1	92.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 7.1
Weight of hydrometer sample =65.13
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	1.3	98.7
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	1.3	98.7
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	1.3	98.7
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.3	98.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.3	98.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.3	98.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.3	98.7

Fractional Components

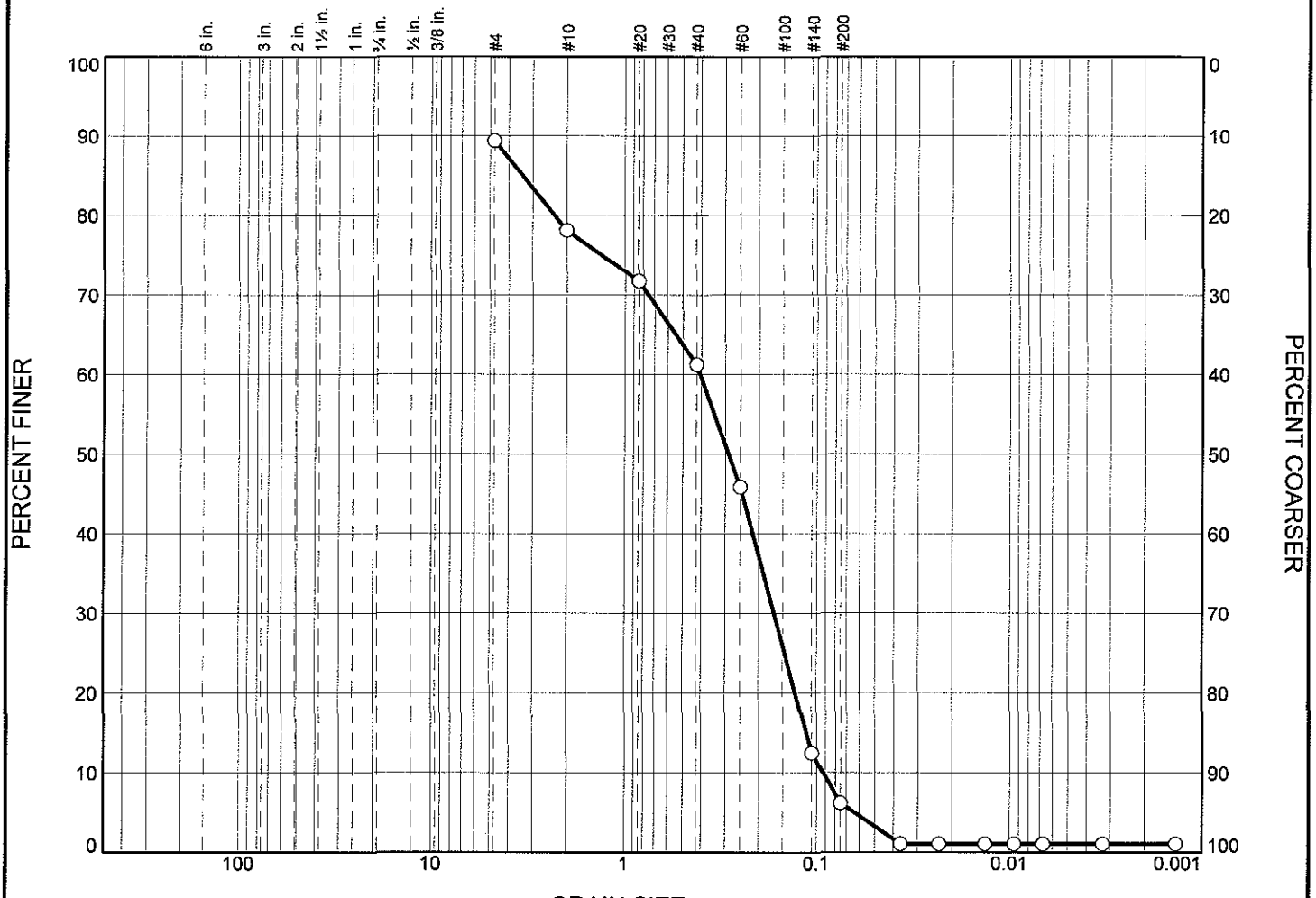
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.0	6.9	11.6	19.1	22.4	12.1	72.1	4.3	0.0	0.0		4.3	1.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0908	0.1149	0.1341	0.1828	0.3466	0.5215	2.3434	3.3181	4.6980	

Fineness Modulus	C_u	C_c
2.25	5.75	0.71

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				9.0	5.1	9.3	17.8	27.0	14.0	3.8	0.0	0.0	0.0	1.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.3942	0.4070	0.2883	0.1663	0.1130	0.0924	0.73	4.40

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501726 **Sample Number:** L0912909-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501726
Sample Number: L0912909-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 68.48
Tare Wt. = 4.08
Minus #200 from wash = 5.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.16	0.00	#4	528.19	520.95	89.4	10.6
		#10	489.84	482.16	78.1	21.9
		#20	415.54	411.21	71.8	28.2
		#40	385.08	377.92	61.3	38.7
		#60	380.50	370.01	45.9	54.1
		#140	370.07	347.33	12.5	87.5
		#200	350.88	346.58	6.2	93.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 6.2
Weight of hydrometer sample =68.16
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	1.1	98.9
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	1.1	98.9
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	1.1	98.9
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.1	98.9
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.1	98.9
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.1	98.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.1	98.9

Fractional Components

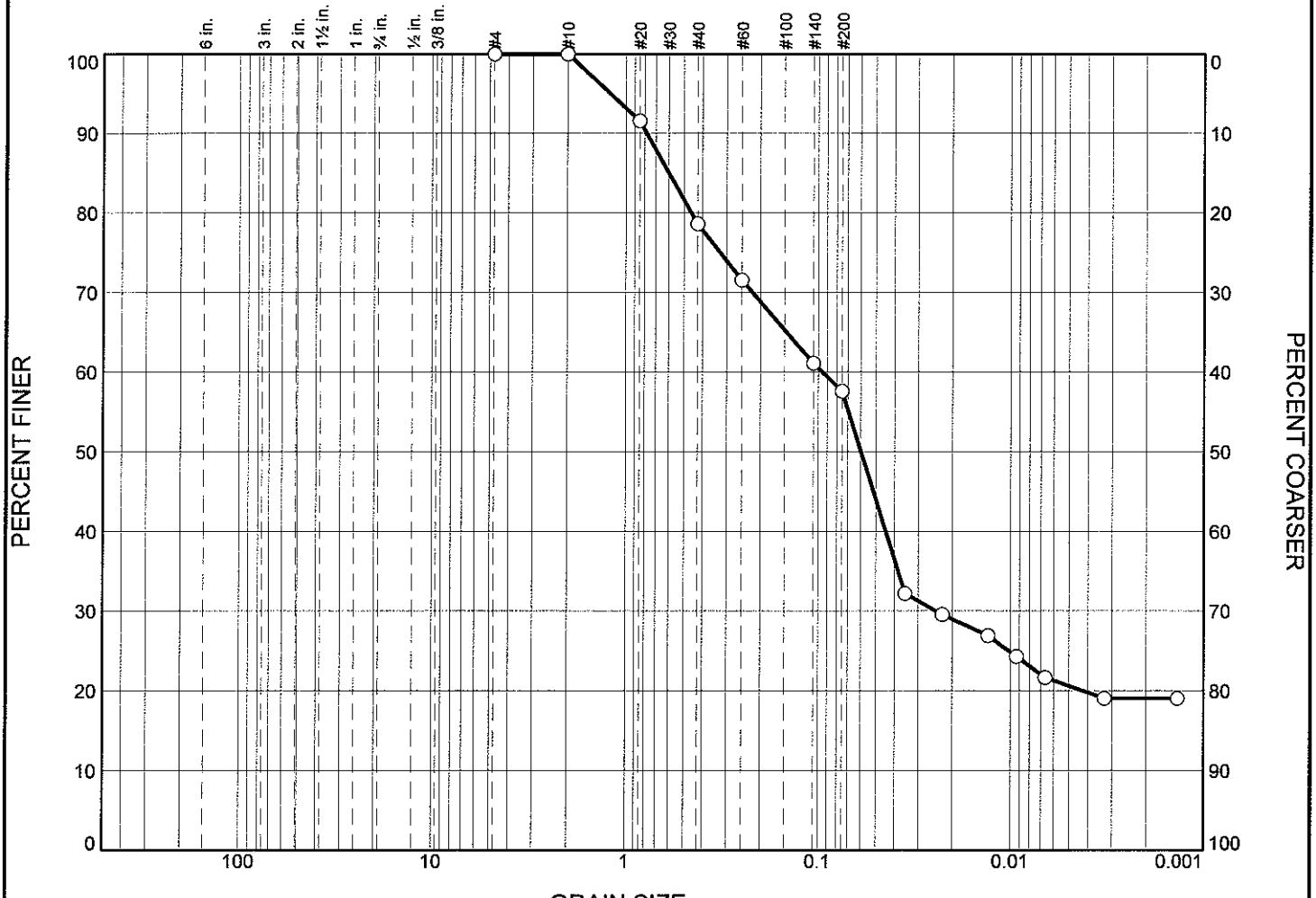
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			9.0	5.1	9.3	17.8	27.0	14.0	73.2	3.8	0.0	0.0	0.0	3.8	1.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0924	0.1130	0.1286	0.1663	0.2883	0.4070	2.3122	3.3942		

Fineness Modulus	C_u	C_c
2.13	4.40	0.73

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	6.8	11.5	10.2	8.4	11.6	20.1	3.6	4.9	3.3	19.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5978	0.0953	0.0598	0.0243				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501811 **Sample Number:** L0912909-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501811
Sample Number: L0912909-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 23.51
Tare Wt. = 4.11
Minus #200 from wash = 44.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
35.10	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	408.48	405.52	91.6	8.4
		#40	363.82	359.28	78.6	21.4
		#60	368.75	366.26	71.5	28.5
		#140	346.60	342.93	61.1	38.9
		#200	346.55	345.32	57.6	42.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 57.6
Weight of hydrometer sample =35.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	32.2	67.8
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	29.5	70.5
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	26.9	73.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	24.3	75.7
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	21.6	78.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	19.0	81.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	19.0	81.0

Fractional Components

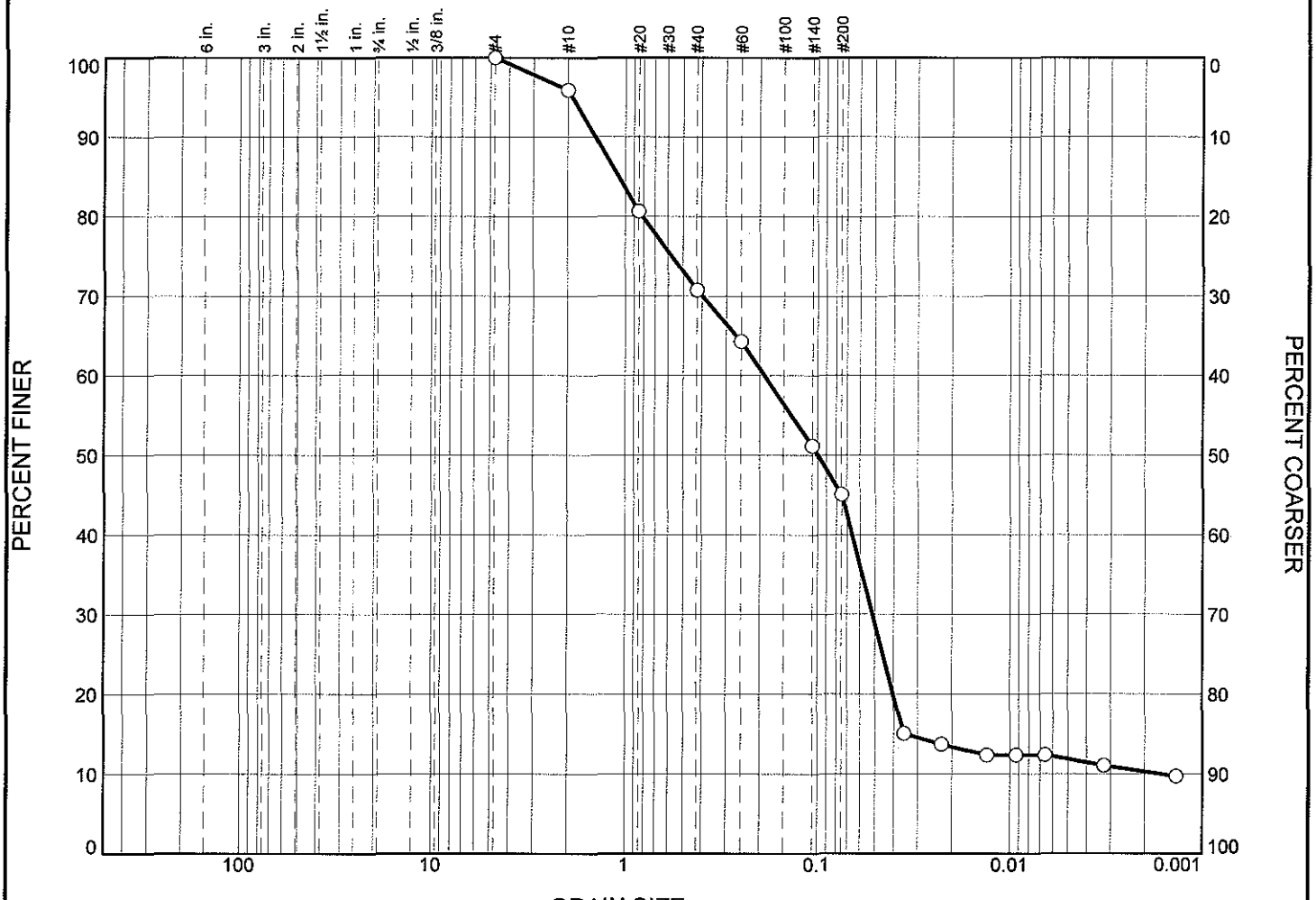
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	6.8	11.5	10.2	8.4	11.6	48.5	20.1	3.6	4.9	3.3	31.9	19.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0043	0.0243	0.0598	0.0953	0.4573	0.5978	0.7815	1.2042

Fineness Modulus
0.81

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.8	3.3	12.3	10.5	8.8	10.6	15.9	23.2	1.8	0.4	1.0	11.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.0837	0.1890	0.0993	0.0515	0.0349	0.0017	8.32	112.11

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501812 **Sample Number:** L0912909-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501812
Sample Number: L0912909-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 38.52
Tare Wt. = 4.12
Minus #200 from wash = 36.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
53.94	0.00	#4	520.95	520.95	100.0	0.0
		#10	484.35	482.16	95.9	4.1
		#20	419.45	411.21	80.7	19.3
		#40	383.26	377.92	70.8	29.2
		#60	373.51	370.01	64.3	35.7
		#140	354.41	347.33	51.1	48.9
		#200	349.86	346.58	45.1	54.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.1
Weight of hydrometer sample =53.94
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	15.0	85.0
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	13.7	86.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	12.4	87.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	12.4	87.6
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	12.4	87.6
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	11.0	89.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	9.7	90.3

Fractional Components

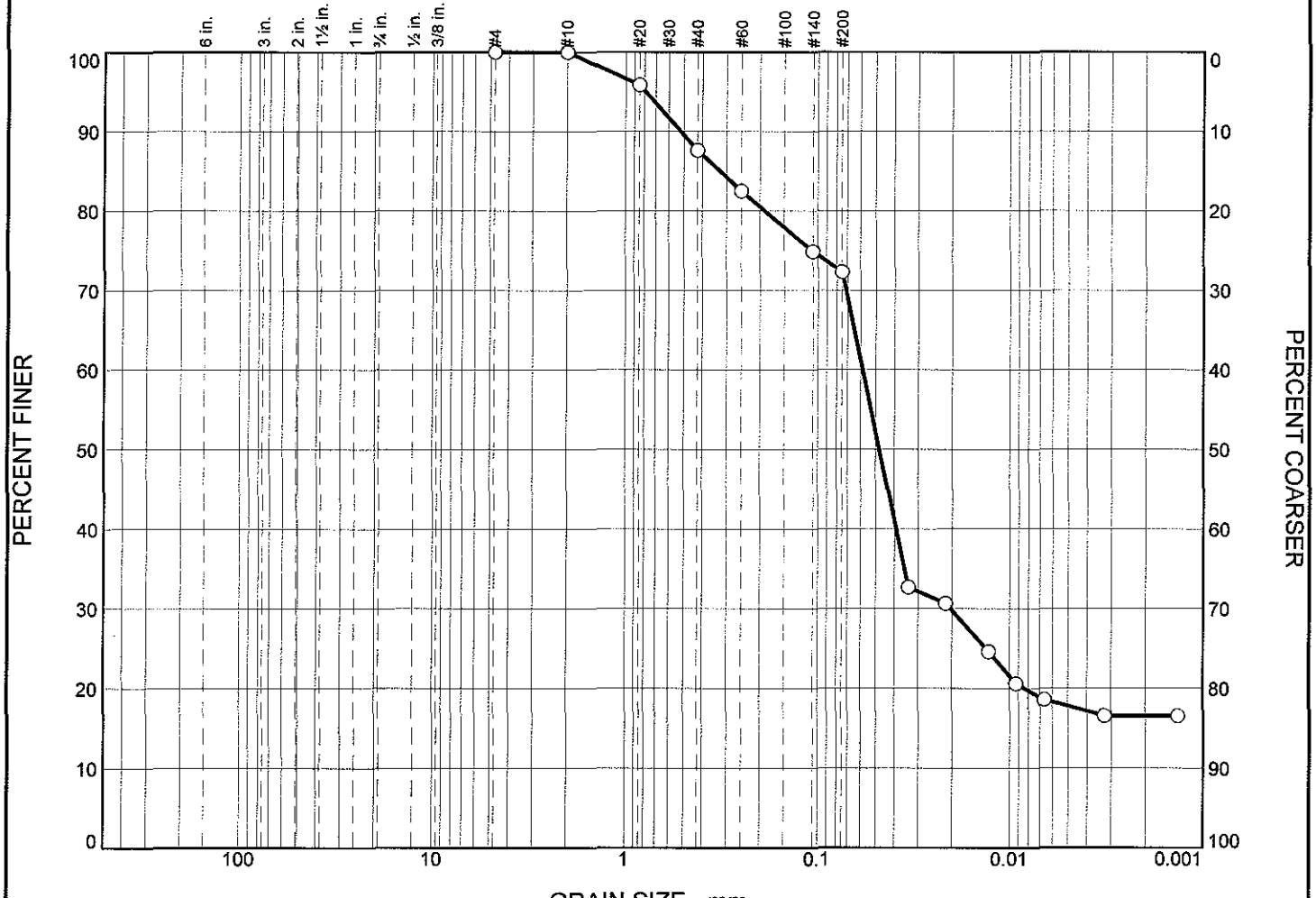
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.8	3.3	12.3	10.5	8.8	10.6	15.9	58.1	23.2	1.8	0.4	1.0	26.4	11.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0017	0.0349	0.0401	0.0515	0.0993	0.1890	0.8114	1.0837	1.4340	1.8974

Fineness Modulus	C_u	C_c
1.18	112.11	8.32

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	3.4	7.1	7.0	6.1	13.1	31.0	5.4	7.3	2.5	17.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.3242	0.0585	0.0478	0.0204				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501813 **Sample Number:** L0912909-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501813
Sample Number: L0912909-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 27.99
Tare Wt. = 4.17
Minus #200 from wash = 58.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.60	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	407.92	405.52	95.8	4.2
		#40	364.01	359.28	87.6	12.4
		#60	369.22	366.26	82.5	17.5
		#140	347.30	342.93	74.9	25.1
		#200	346.81	345.32	72.3	27.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 72.3
Weight of hydrometer sample =57.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0338	32.7	67.3
5.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0216	30.7	69.3
15.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0128	24.6	75.4
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	20.6	79.4
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	18.6	81.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	16.6	83.4
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	16.6	83.4

Fractional Components

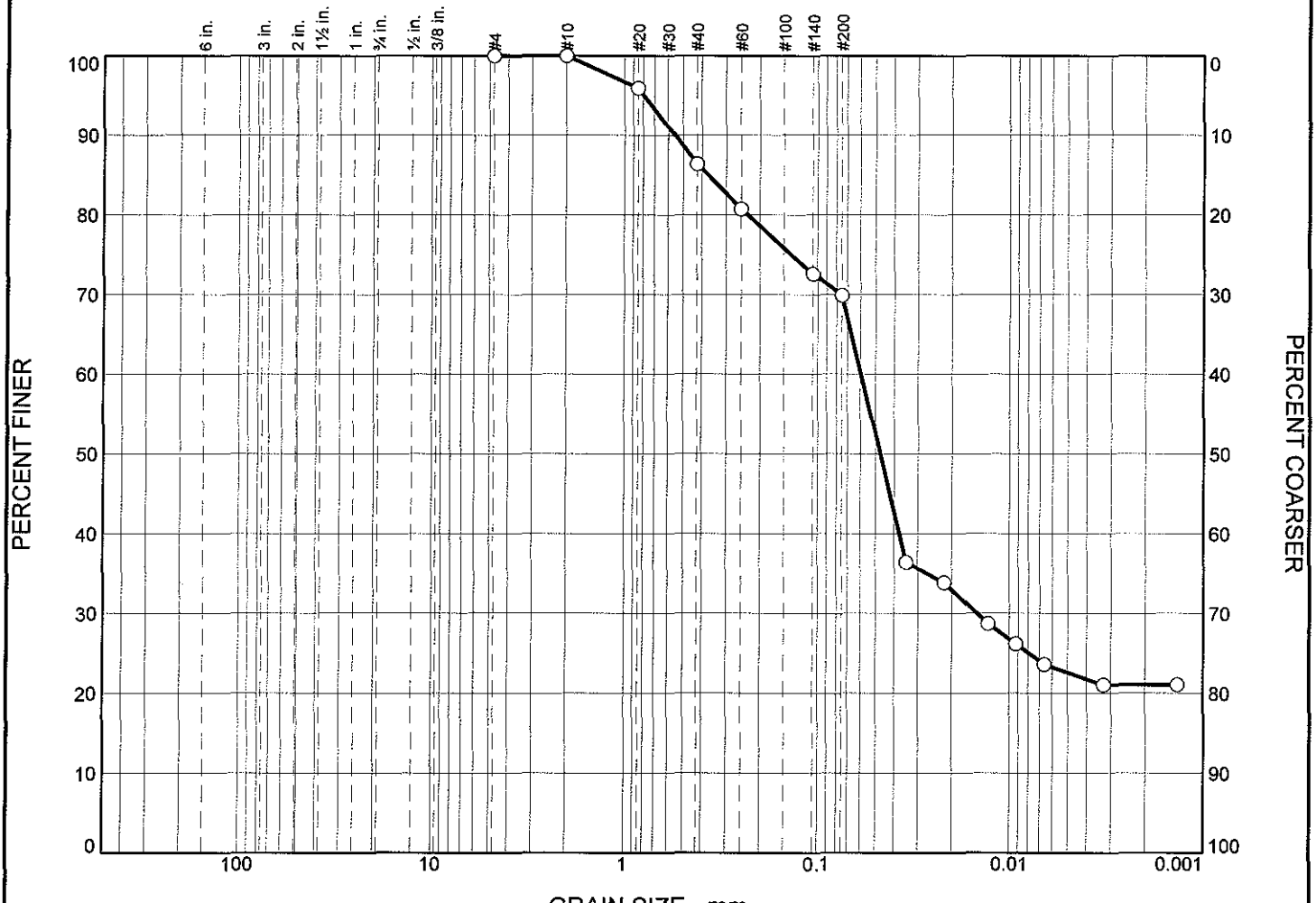
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	3.4	7.1	7.0	6.1	13.1	36.7	31.0	5.4	7.3	2.5	46.2	17.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0084	0.0204	0.0478	0.0585	0.1888	0.3242	0.5195	0.7923

Fineness Modulus
0.49

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	3.3	8.1	7.9	6.5	12.2	26.2	5.3	5.6	3.2	21.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3729	0.0596	0.0473	0.0148				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501826 **Sample Number:** L0912909-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501826
Sample Number: L0912909-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 21.83
Tare Wt. = 4.17
Minus #200 from wash = 59.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.81	0.00	#4	520.95	520.95	100.0	0.0
		#10	482.16	482.16	100.0	0.0
		#20	412.99	411.21	95.9	4.1
		#40	382.10	377.92	86.4	13.6
		#60	372.49	370.01	80.7	19.3
		#140	350.90	347.33	72.6	27.4
		#200	347.77	346.58	69.9	30.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 69.9
Weight of hydrometer sample =43.81
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	36.4	63.6
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	33.8	66.2
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	28.7	71.3
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	26.2	73.8
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	23.6	76.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	21.0	79.0
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	21.0	79.0

Fractional Components

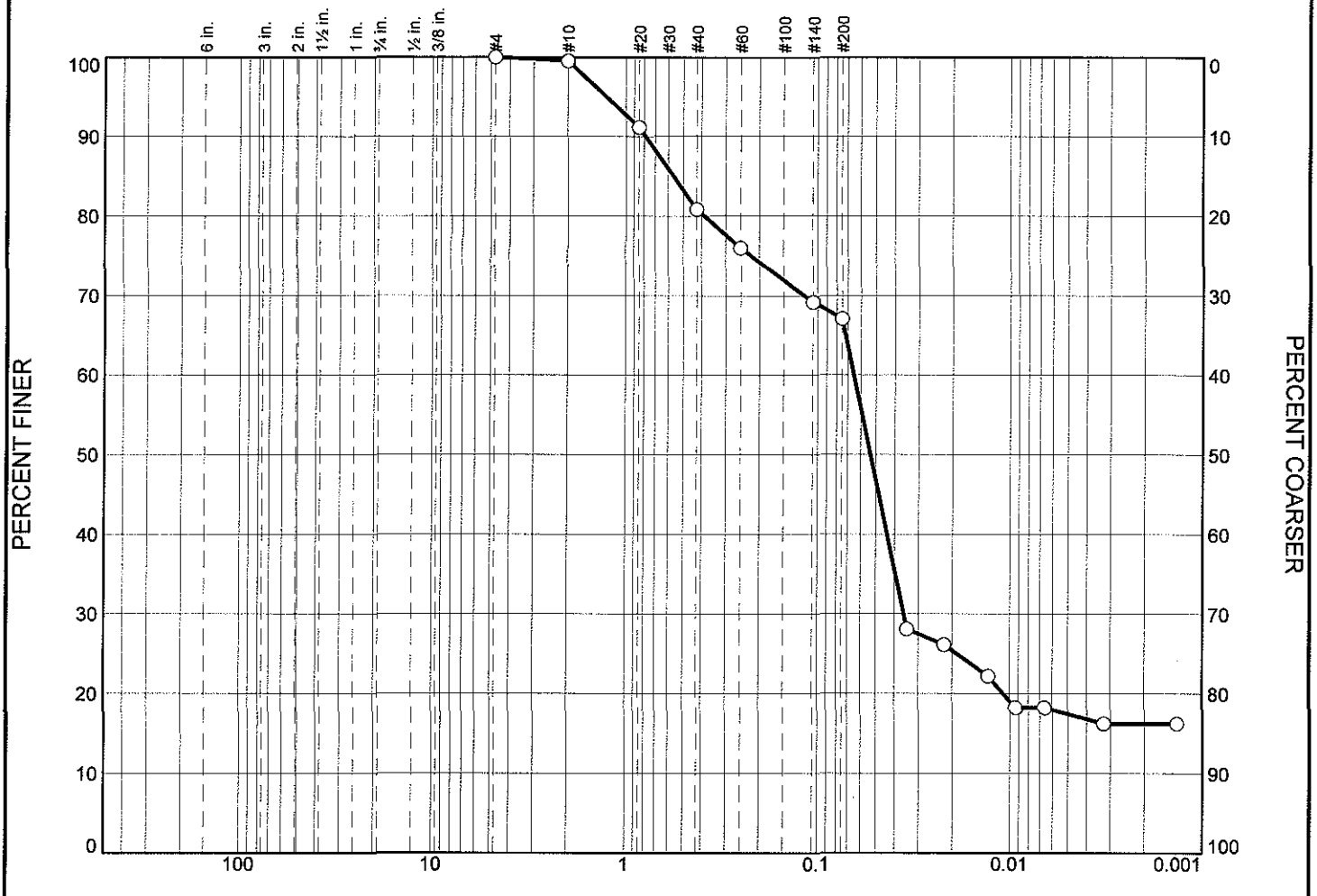
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	3.3	8.1	7.9	6.5	12.2	38.0	26.2	5.3	5.6	3.2	40.3	21.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0148	0.0473	0.0596	0.2314	0.3729	0.5522	0.7941

Fineness Modulus
0.53

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.4	6.7	9.5	7.3	5.5	12.6	30.3	4.0	5.4	1.5	16.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5611	0.0651	0.0533	0.0358				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501826 **Sample Number:** WG381751-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501826
Sample Number: WG381751-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 27.08
Tare Wt. = 4.13
Minus #200 from wash = 57.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.48	0.00	#4	521.88	521.88	100.0	0.0
		#10	485.10	484.84	99.5	0.5
		#20	410.07	405.52	91.2	8.8
		#40	364.89	359.28	80.9	19.1
		#60	368.91	366.26	76.0	24.0
		#140	346.65	342.93	69.2	30.8
		#200	346.47	345.32	67.1	32.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 67.1
Weight of hydrometer sample =54.48
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	28.1	71.9
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	26.1	73.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	22.2	77.8
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	18.2	81.8
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	18.2	81.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	16.2	83.8
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	16.2	83.8

Fractional Components

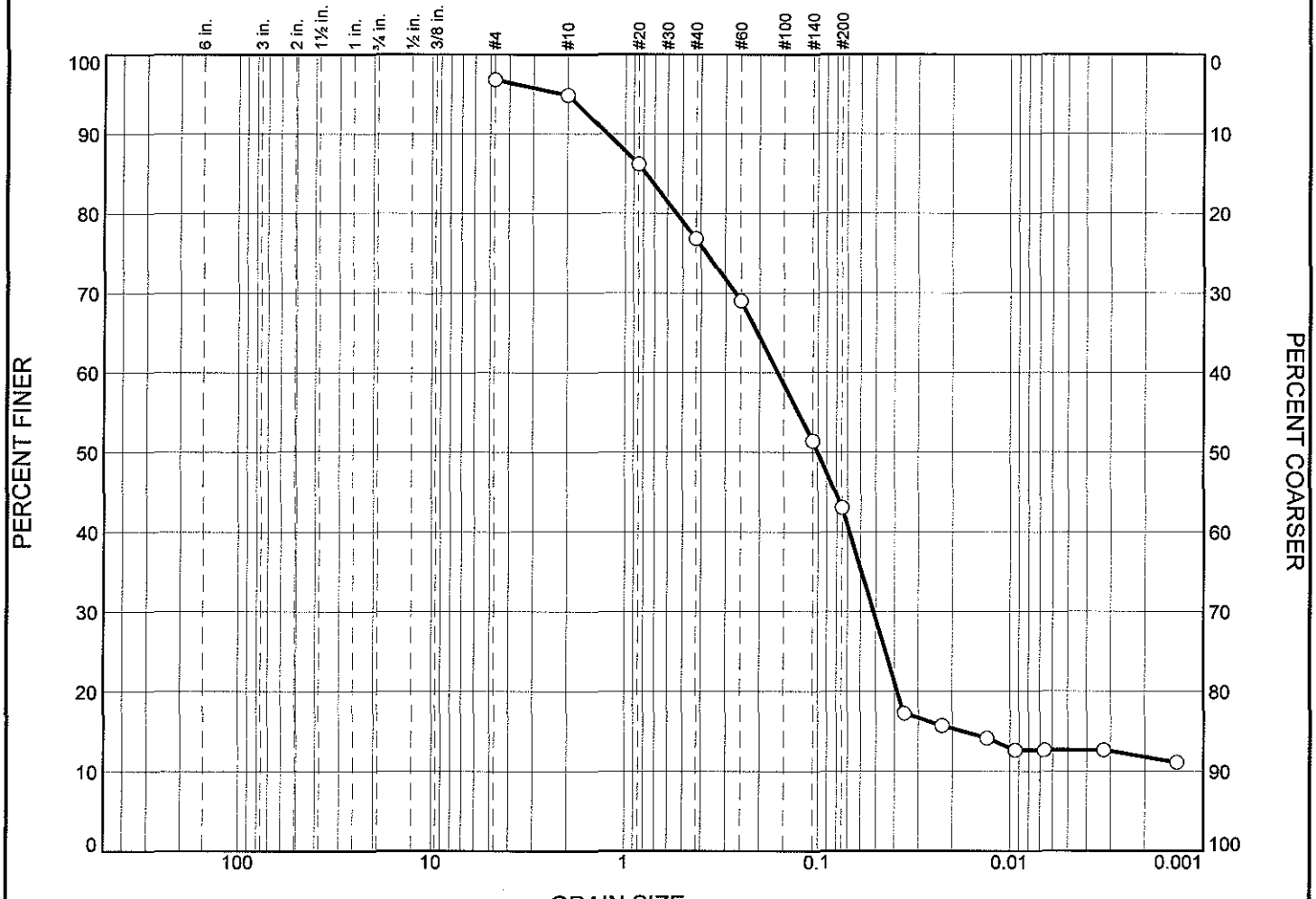
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.4	6.7	9.5	7.3	5.5	12.6	41.6	30.3	4.0	5.4	1.5	41.2	16.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0108	0.0358	0.0533	0.0651	0.3864	0.5611	0.7856	1.2583

Fineness Modulus
0.70

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.5	7.1	8.8	10.0	14.2	18.0	20.0	2.1	2.1		12.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7779	0.1611	0.1000	0.0514	0.0176			

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501911 **Sample Number:** L0912909-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501911
Sample Number: L0912909-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 34.48
Tare Wt. = 4.12
Minus #200 from wash = 32.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
44.92	0.00	#4	522.38	520.95	96.8	3.2
		#10	483.03	482.16	94.9	5.1
		#20	415.11	411.21	86.2	13.8
		#40	382.13	377.92	76.8	23.2
		#60	373.52	370.01	69.0	31.0
		#140	355.23	347.33	51.4	48.6
		#200	350.35	346.58	43.0	57.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 43.0
Weight of hydrometer sample =44.92
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	17.3	82.7
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	15.7	84.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	14.2	85.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	12.6	87.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	12.6	87.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	12.6	87.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	11.1	88.9

Fractional Components

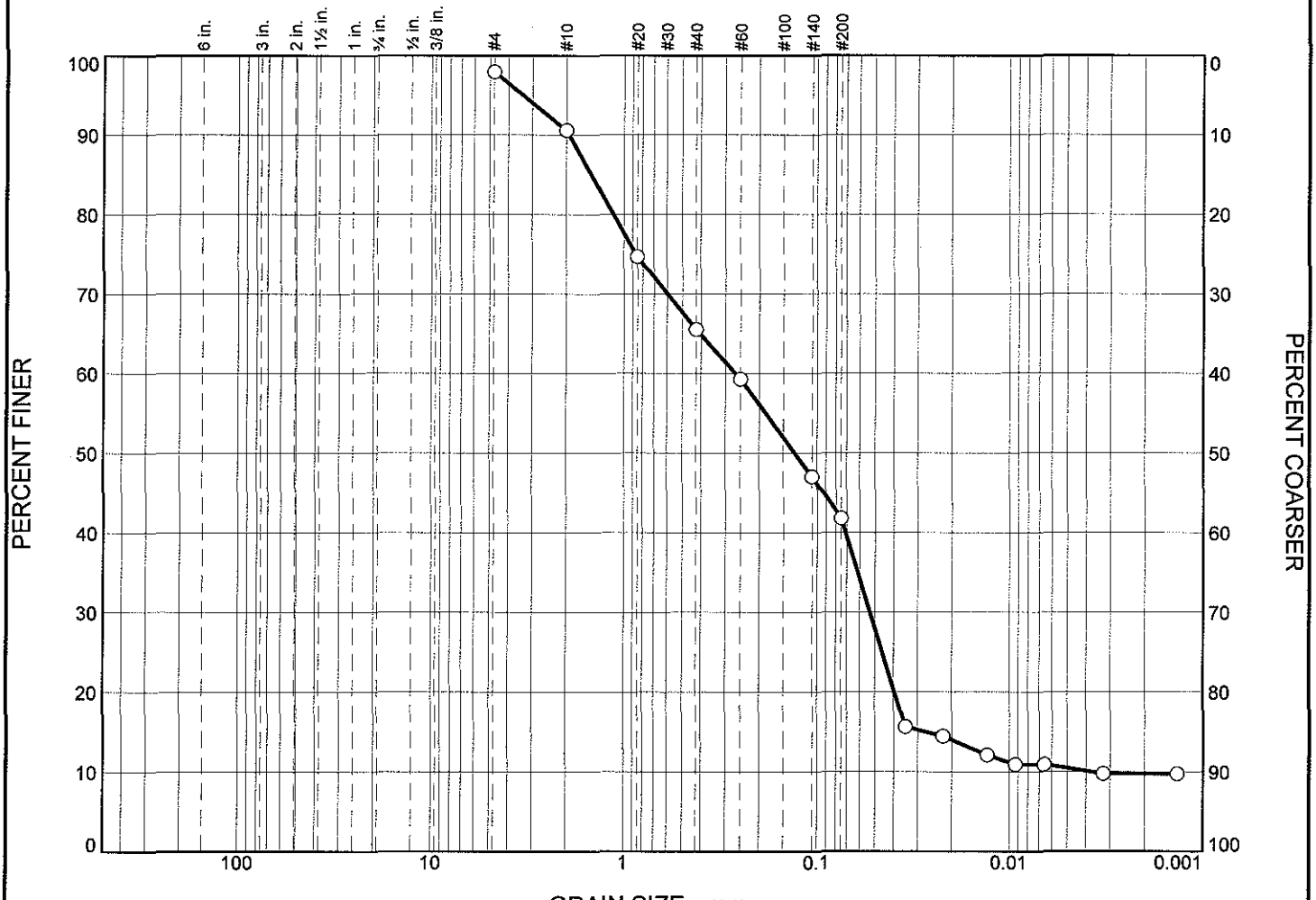
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.5	7.1	8.8	10.0	14.2	18.0	58.1	20.0	2.1	2.1		24.2	12.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0176	0.0384	0.0514	0.1000	0.1611	0.5375	0.7779	1.2364	2.1103

Fineness Modulus
1.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.9	12.9	10.0	8.4	9.9	13.8	20.3	2.4	2.0	0.9	10.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.4818	0.2658	0.1306	0.0530	0.0273	0.0039	2.75	69.01

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501912 **Sample Number:** L0912909-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501912
Sample Number: L0912909-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 39.70
Tare Wt. = 4.19
Minus #200 from wash = 37.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
56.70	0.00	#4	523.05	521.88	97.9	2.1
		#10	489.01	484.84	90.6	9.4
		#20	414.55	405.52	74.7	25.3
		#40	364.46	359.28	65.5	34.5
		#60	369.80	366.26	59.3	40.7
		#140	349.88	342.93	47.0	53.0
		#200	348.29	345.32	41.8	58.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 41.8
Weight of hydrometer sample =56.70
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	15.6	84.4
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	14.5	85.5
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	12.1	87.9
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	10.9	89.1
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	10.9	89.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	9.7	90.3
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	9.7	90.3

Fractional Components

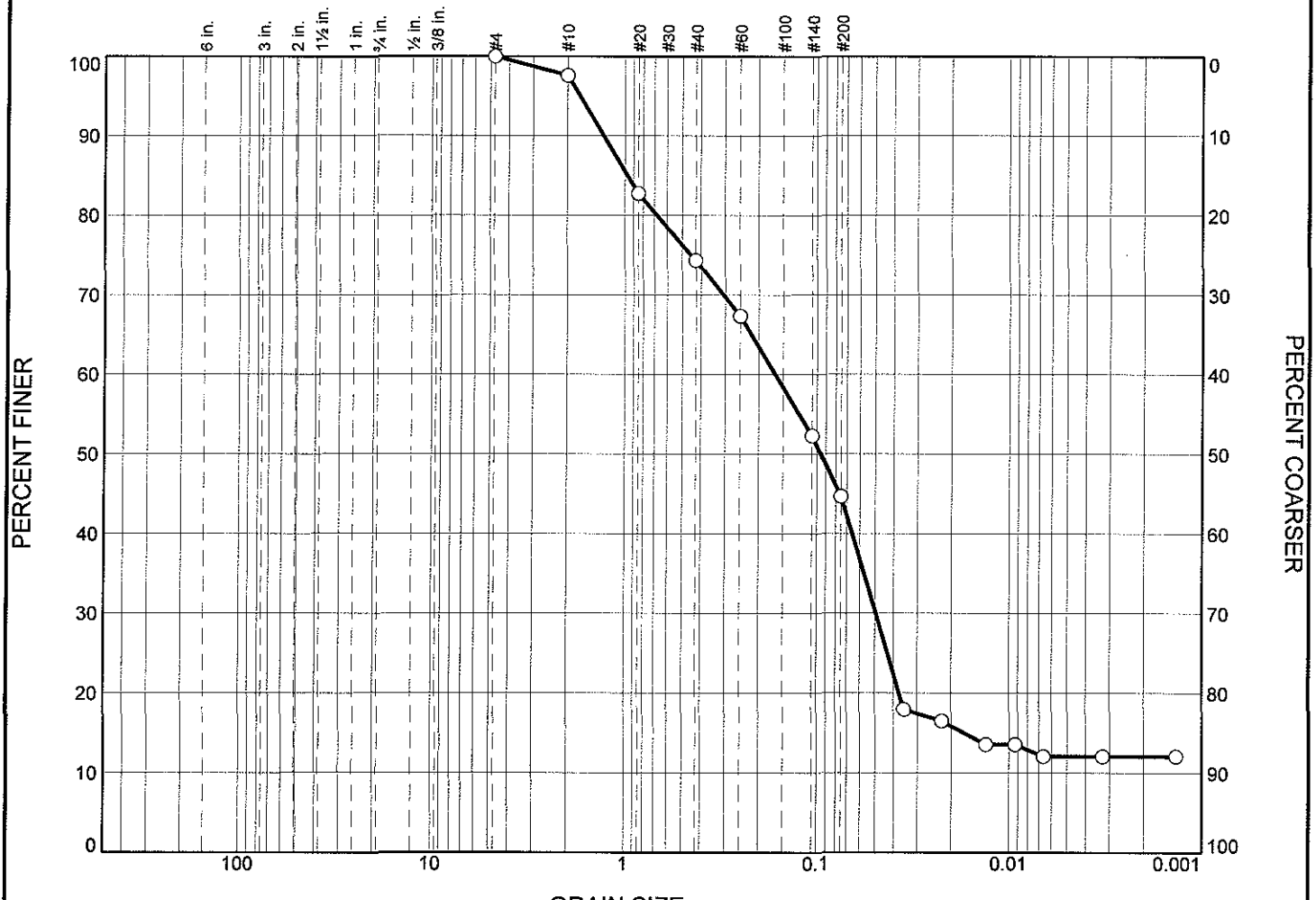
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.9	12.9	10.0	8.4	9.9	13.8	55.0	20.3	2.4	2.0	0.9	25.6	10.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0039	0.0273	0.0395	0.0530	0.1306	0.2658	1.1327	1.4818	1.9384	3.3628

Fineness Modulus	C_u	C_c
1.46	69.01	2.75

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.5	1.9	12.0	9.3	9.0	12.1	17.0	20.7	3.0	1.7	0.7	12.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9679	0.1645	0.0955	0.0495	0.0172			

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501913 **Sample Number:** L0912909-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501913
Sample Number: L0912909-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 37.17
Tare Wt. = 4.10
Minus #200 from wash = 32.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
48.85	0.00	#4	520.95	520.95	100.0	0.0
		#10	483.33	482.16	97.6	2.4
		#20	418.47	411.21	82.7	17.3
		#40	382.03	377.92	74.3	25.7
		#60	373.43	370.01	67.3	32.7
		#140	354.67	347.33	52.3	47.7
		#200	350.31	346.58	44.7	55.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 44.7
Weight of hydrometer sample =48.85
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	17.9	82.1
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	16.5	83.5
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	13.5	86.5
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	13.5	86.5
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	12.1	87.9
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	12.1	87.9
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	12.1	87.9

Fractional Components

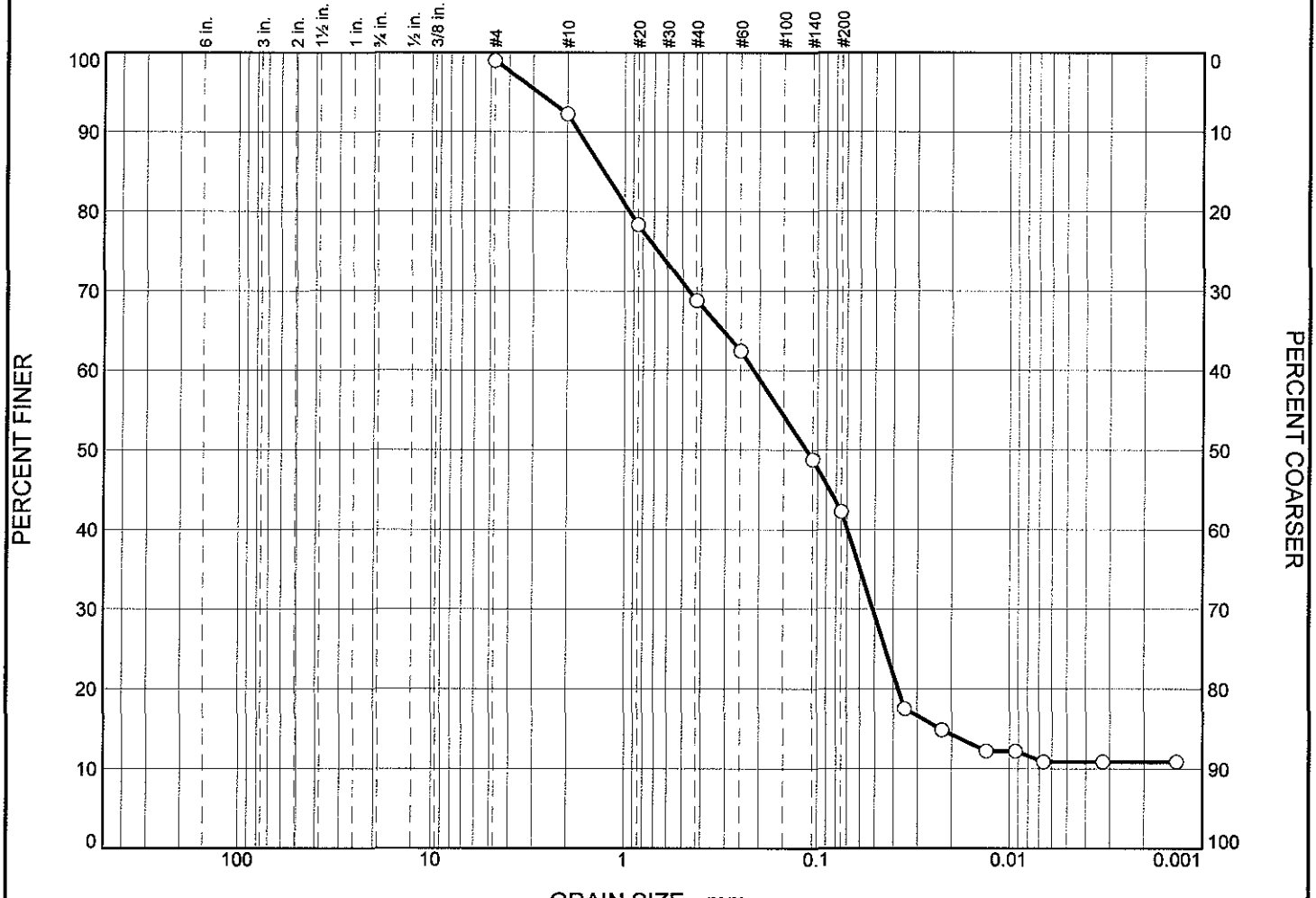
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.5	1.9	12.0	9.3	9.0	12.1	17.0	59.4	20.7	3.0	1.7	0.7	26.1	12.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0172	0.0372	0.0495	0.0955	0.1645	0.6781	0.9679	1.2908	1.7215

Fineness Modulus
1.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.3	11.3	10.0	8.6	11.0	15.0	19.6	3.8	1.5	0.6	10.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2810	0.2145	0.1146	0.0513	0.0230			

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 501926 **Sample Number:** L0912909-16

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 501926
Sample Number: L0912909-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 38.13
Tare Wt. = 4.16
Minus #200 from wash = 33.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.25	0.00	#4	522.40	521.88	99.0	1.0
		#10	488.29	484.84	92.3	7.7
		#20	412.66	405.52	78.3	21.7
		#40	364.16	359.28	68.8	31.2
		#60	369.52	366.26	62.4	37.6
		#140	349.94	342.93	48.8	51.2
		#200	348.66	345.32	42.2	57.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 42.2
Weight of hydrometer sample =51.25
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	17.5	82.5
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	14.8	85.2
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	12.2	87.8
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	12.2	87.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	10.9	89.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	10.9	89.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	10.9	89.1

Fractional Components

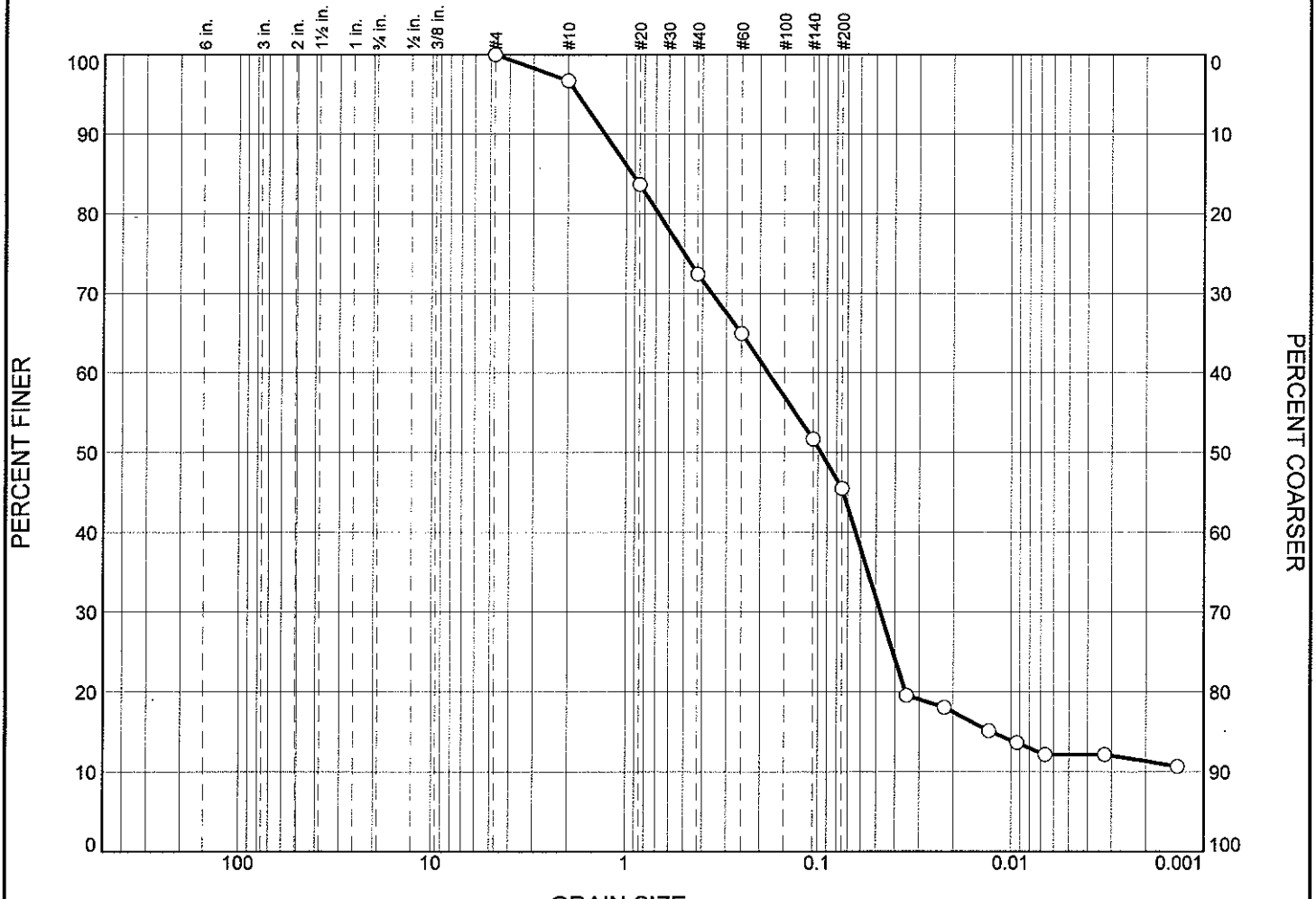
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.3	11.3	10.0	8.6	11.0	15.0	55.9	19.6	3.8	1.5	0.6	25.5	10.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0230	0.0376	0.0513	0.1146	0.2145	0.9423	1.2810	1.7415	2.8464

Fineness Modulus
1.31

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.7	2.6	10.6	11.0	10.2	10.7	14.9	20.1	3.1	3.2	0.7	12.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9287	0.1815	0.0965	0.0474	0.0127			

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502011 **Sample Number:** L0912909-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 502011
Sample Number: L0912909-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 34.89
Tare Wt. = 4.19
Minus #200 from wash = 37.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
49.35	0.00	#4	520.95	520.95	100.0	0.0
		#10	483.78	482.16	96.7	3.3
		#20	417.66	411.21	83.6	16.4
		#40	383.46	377.92	72.4	27.6
		#60	373.70	370.01	64.9	35.1
		#140	353.87	347.33	51.7	48.3
		#200	349.64	346.58	45.5	54.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.5
Weight of hydrometer sample =49.35
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	19.6	80.4
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	18.1	81.9
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	15.1	84.9
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	13.6	86.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	12.2	87.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	12.2	87.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	10.7	89.3

Fractional Components

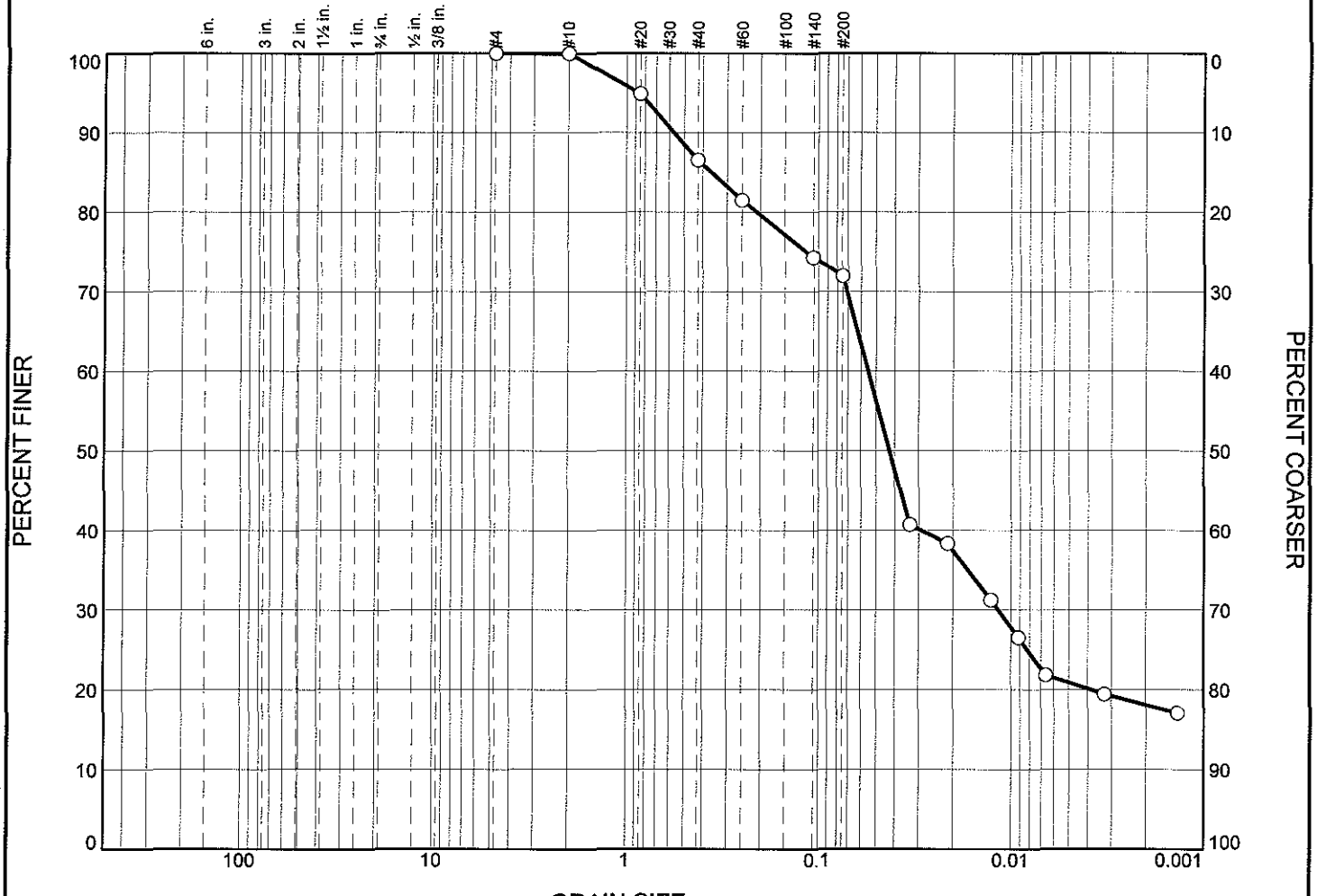
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.7	2.6	10.6	11.0	10.2	10.7	14.9	57.4	20.1	3.1	3.2	0.7	27.1	12.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0127	0.0352	0.0474	0.0965	0.1815	0.6786	0.9287	1.2884	1.7873

Fineness Modulus
1.11

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	4.1	7.4	7.0	5.8	10.8	24.6	6.2	9.9	4.2	20.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3620	0.0550	0.0425	0.0116				

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502012 **Sample Number:** L0912909-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 502012
Sample Number: L0912909-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 23.65
Tare Wt. = 4.13
Minus #200 from wash = 60.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
48.87	0.00	#4	521.88	521.88	100.0	0.0
		#10	484.84	484.84	100.0	0.0
		#20	408.01	405.52	94.9	5.1
		#40	363.38	359.28	86.5	13.5
		#60	368.71	366.26	81.5	18.5
		#140	346.47	342.93	74.3	25.7
		#200	346.43	345.32	72.0	28.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 72.0
Weight of hydrometer sample =48.87
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0170	1.0172	0.0133	14.0	12.6	0.0334	40.7	59.3
5.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0213	38.4	61.6
15.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0127	31.3	68.7
30.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0092	26.5	73.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	21.8	78.2
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	19.4	80.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	17.1	82.9

Fractional Components

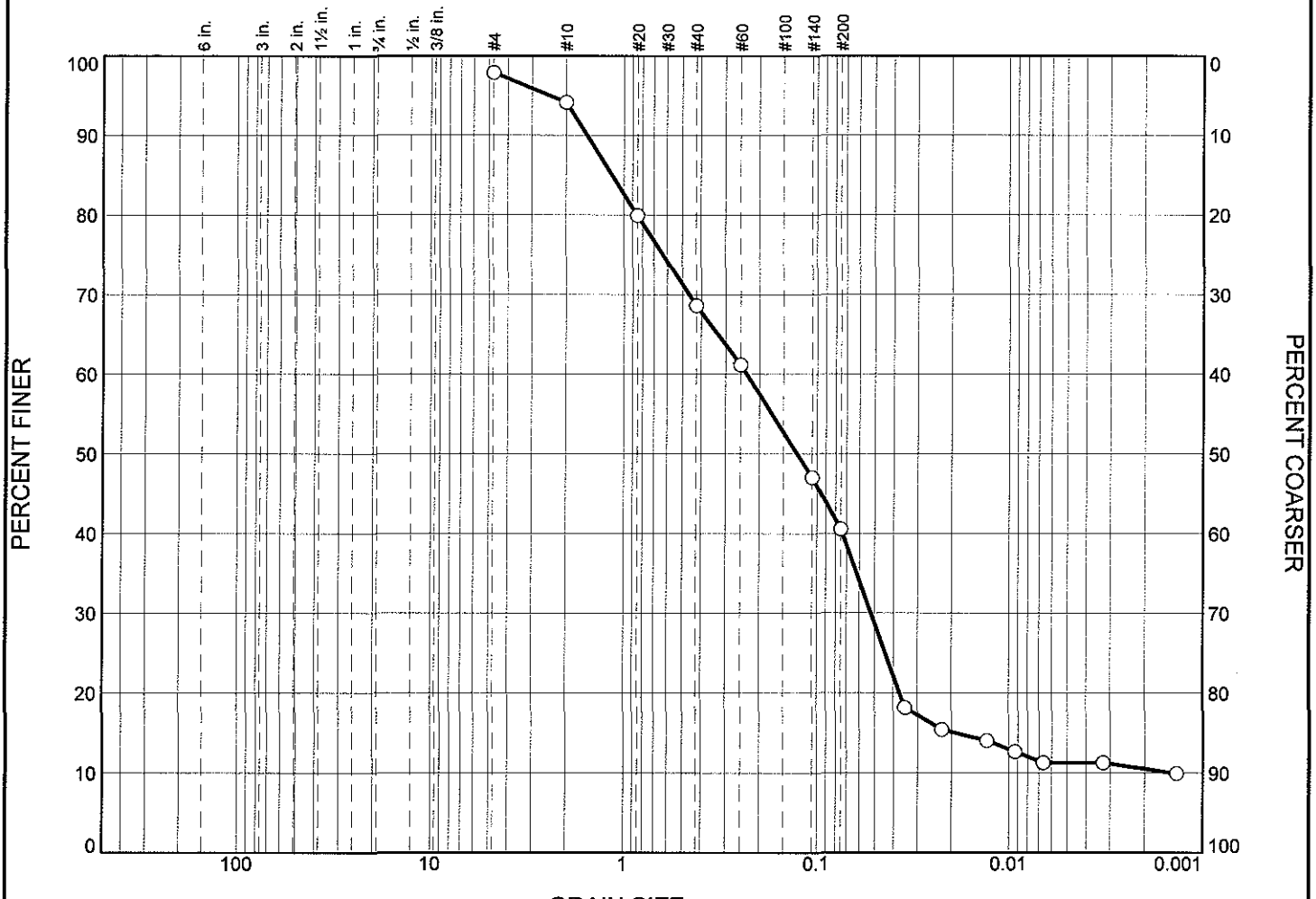
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	4.1	7.4	7.0	5.8	10.8	35.1	24.6	6.2	9.9	4.2	44.9	20.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0039	0.0116	0.0425	0.0550	0.2093	0.3620	0.5668	0.8637

Fineness Modulus
0.52

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.0	11.6	11.3	10.1	11.5	14.5	17.8	2.9	2.6	0.6	11.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.1528	0.2328	0.1269	0.0523	0.0193	0.0015	8.02	159.32

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502013 **Sample Number:** L0912909-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 502013
Sample Number: L0912909-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 37.77
Tare Wt. = 4.20
Minus #200 from wash = 29.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
47.44	0.00	#4	521.95	520.95	97.9	2.1
		#10	483.93	482.16	94.2	5.8
		#20	417.96	411.21	79.9	20.1
		#40	383.29	377.92	68.6	31.4
		#60	373.54	370.01	61.2	38.8
		#140	354.04	347.33	47.0	53.0
		#200	349.66	346.58	40.5	59.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 40.5
Weight of hydrometer sample =47.44
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	18.1	81.9
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	15.4	84.6
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	14.0	86.0
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	12.6	87.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	11.3	88.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	11.3	88.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	9.9	90.1

Fractional Components

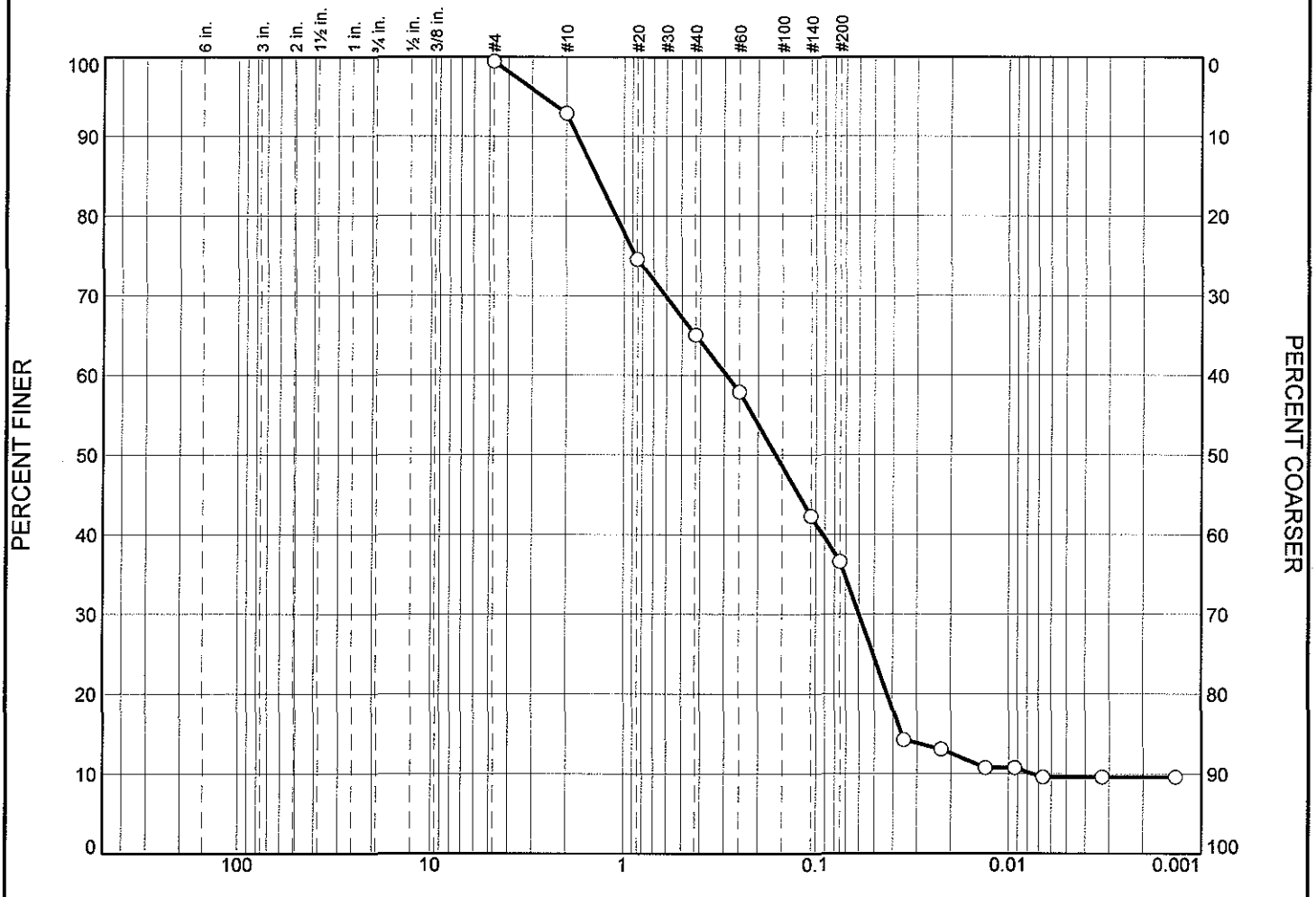
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.0	11.6	11.3	10.1	11.5	14.5	59.0	17.8	2.9	2.6	0.6	23.9	11.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0015	0.0193	0.0371	0.0523	0.1269	0.2328	0.8535	1.1528	1.5572	2.4294

Fineness Modulus	C_u	C_c
1.31	159.32	8.02

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.2	14.9	10.7	9.4	12.6	14.1	17.3	2.4	1.4	0.5	9.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.3835	0.2922	0.1619	0.0600	0.0360	0.0075	1.64	38.77

	Material Description	USCS	AASHTO
○			

Project No. L0912909 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502026 **Sample Number:** L0912909-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912909
Location: 502026
Sample Number: L0912909-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 40.74
Tare Wt. = 4.07
Minus #200 from wash = 27.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.40	0.00	#4	522.17	521.88	99.4	0.6
		#10	488.13	484.84	92.9	7.1
		#20	414.76	405.52	74.6	25.4
		#40	364.07	359.28	65.1	34.9
		#60	369.87	366.26	57.9	42.1
		#140	350.79	342.93	42.3	57.7
		#200	348.21	345.32	36.6	63.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 36.6
Weight of hydrometer sample =50.40
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	14.2	85.8
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	13.1	86.9
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	10.7	89.3
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	10.7	89.3
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	9.6	90.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	9.6	90.4
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	9.6	90.4

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.2	14.9	10.7	9.4	12.6	14.1	61.7	17.3	2.4	1.4	0.5	21.6	9.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0075	0.0360	0.0427	0.0600	0.1619	0.2922	1.0955	1.3835	1.7471	2.6428

Fineness Modulus	C_u	C_c
1.46	38.77	1.64

Alpha Analytical

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 134

CHAIN OF CUSTODY

PAGE 6 OF 12

Date Rec'd in Lab:

ALPHA Job #: L0912909

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08031016:16

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	501611	9/23/09	16:00	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	501612	9/23/09	16:00	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	501613	9/23/09	16:00	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	501625	9/23/09	16:09	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	501626	9/23/09	16:09	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	501627	9/23/09	16:09	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	-	
Preservative	A	A	A	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9-23-09 18:40		9/23/09
	9/24/09 9:00		9/24/09 9:30
	9/24/09 11:30		9/24/09 11:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 135

CHAIN OF CUSTODY

PAGE 7 OF 12

Serial_No:08031016:16

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L09129O9

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	501711	9/23/09	14:00	SE	HC	☐	☐	☒	☐									ben gs	1
6	501712	9/23/09	14:08	SE	HC	☐	☐	☒	☐									ben gs	1
7	501713	9/23/09	14:00	SE	HC	☐	☐	☒	☐									ben gs	1
	501725	9/23/09	14:12	SE	HC	☒	☒	☐	☐									sed chem	1
8	501726	9/23/09	14:12	SE	HC	☐	☐	☒	☐									sed gs	1
	501727	9/23/09	14:12	SE	HC	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	-	
Preservative	A	A	A	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9-23-09 18:40		9/23/09 18:153
	9/24/09 9:00		9/24/09 9:20
	9/24/09 11:00		9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Serial_No:08031016:16

CHAIN OF CUSTODY

PAGE OF

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912909

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
9	501811	9/22/09	10:30	SE	HC	☐	☐	☒	☐	ben gs	1
10	501812	9/22/09	10:30	SE	HC	☐	☐	☒	☐	ben gs	1
11	501813	9/22/09	10:30	SE	HC	☐	☐	☒	☐	ben gs	1
	501825	9/22/09	10:30	SE	HC	☒	☒	☐	☐	sed chem	1
12	501826	9/22/09	10:30	SE	HC	☐	☐	☒	☐	sed gs	1
	501827	9/22/09	10:30	SE	HC	☐	☐	☐	☒	sed arch	1

	total PCB congeners NOAA 18	TOC	grain size	archive								
Container Type	G	G	G	-	-	-	-	-	-	-	-	-
Preservative	A	A	A	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/22 18:56	[signature]	9/22 18:55
[signature]	9/23/09 09:15	Paul Gilbert	9/23/09 9:15
Paul Gilbert	9/23/09 10:25	[signature]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Serial_No:08031016:16

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 7 OF 14

Date Rec'd in Lab:

ALPHA Job #: L0912909

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	501911	9/24/09	09:10	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
14	501912	9/24/09	09:10	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
15	501913	9/24/09	09:10	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	501925	9/24/09	09:14	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
16	501926	9/24/09	09:14	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	501927	9/24/09	09:14	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/24/09 18:40	Kathleen McCann	9/24/09 19:3[illegible]
Kathleen McCann	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35	[signature]	9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

PAGE 9 OF 14

Date Rec'd in Lab:

ALPHA Job #: L09129O9

Serial No:08031016:16

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
17	502011	9/24/09	16:52	SE	HC	☐	☐	☒	☐									ben gs	1
18	502012	9/24/09	16:52	SE	HC	☐	☐	☒	☐									ben gs	1
19	502013	9/24/09	16:52	SE	HC	☐	☐	☒	☐									ben gs	1
	502025	9/24/09	16:56	SE	HC	☒	☒	☐	☐									sed chem	1
20	502026	9/24/09	16:56	SE	HC	☐	☐	☒	☐									sed gs	1
	502027	9/24/09	16:56	SE	HC	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type		G	G	G	-	-	-	-	-	-	-	-	-						
Preservative		A	A	A	-	-	-	-	-	-	-	-	-						

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9-24-09 18:40		9/24/09 19:39
	9/25/09 9:15		9/25/09 9:15
	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912910
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912910-01	502111	NEW BEDFORD, MA	09/24/09 07:57
L0912910-02	502112	NEW BEDFORD, MA	09/24/09 07:57
L0912910-03	502113	NEW BEDFORD, MA	09/24/09 07:57
L0912910-04	502126	NEW BEDFORD, MA	09/24/09 08:04
L0912910-05	508036	NEW BEDFORD, MA	09/24/09 08:20
L0912910-06	502211	NEW BEDFORD, MA	09/22/09 15:02
L0912910-07	502212	NEW BEDFORD, MA	09/22/09 15:02
L0912910-08	502213	NEW BEDFORD, MA	09/22/09 15:02
L0912910-09	502226	NEW BEDFORD, MA	09/22/09 15:30
L0912910-10	502311	NEW BEDFORD, MA	09/23/09 17:06
L0912910-11	502312	NEW BEDFORD, MA	09/23/09 17:06
L0912910-12	502313	NEW BEDFORD, MA	09/23/09 17:05
L0912910-13	502326	NEW BEDFORD, MA	09/23/09 17:13
L0912910-14	502411	NEW BEDFORD, MA	09/22/09 17:18
L0912910-15	502412	NEW BEDFORD, MA	09/22/09 17:18
L0912910-16	502413	NEW BEDFORD, MA	09/22/09 17:18
L0912910-17	502426	NEW BEDFORD, MA	09/22/09 17:38

Project Name: NBH LONG TERM MONITORING **Lab Number:** L0912910
Project Number: TO-0018 **Report Date:** 08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 2, 2010. The report was ammended to include revised Grain Size data.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-01
Client ID: 502111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 07:57
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	6.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	25.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	20.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	7.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-02
Client ID: 502112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 07:57
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	43.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	13.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	3.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.20		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.400		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-03
Client ID: 502113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 07:57
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	7.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-04
Client ID: 502126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 08:04
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-05
Client ID: 508036
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/24/09 08:20
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	24.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	14.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-06
Client ID: 502211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 15:02
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.900		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.20		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	40.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-07
Client ID: 502212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 15:02
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.50		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-08
Client ID: 502213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 15:02
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.50		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	18.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	37.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-09
Client ID: 502226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 15:30
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	22.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	41.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.800		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-10
Client ID: 502311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:06
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.20		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	15.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.8		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	22.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.20		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-11
Client ID: 502312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:06
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	7.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.5		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	23.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-12
Client ID: 502313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:05
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	22.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	14.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-13
Client ID: 502326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:13
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.3		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	23.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-14
Client ID: 502411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 17:18
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.700		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	48.0		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.70		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-15
Client ID: 502412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 17:18
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	6.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	10.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-16
Client ID: 502413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 17:18
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.00		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.90		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.1		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	45.6		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.2		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.40		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912910
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912910-17
Client ID: 502426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 17:38
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.60		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.30		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.10		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.80		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.9		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	33.4		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.7		%	0.100	--	1	-	09/28/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG381846-1 QC Sample: L0912910-05 Client ID: 508036						
Gravel (>2.00mm)	5.1	4.70	%	8		20
Very Coarse Sand (1.00-2.00 mm)	5.3	6.50	%	20		20
Coarse Sand (0.50-1.00 mm)	9.0	9.00	%	0		20
Medium Sand (0.25-0.50 mm)	16.8	17.0	%	1		20
Fine Sand (0.125-0.25 mm)	24.8	24.4	%	2		20
Very Fine Sand (0.063-0.125 mm)	13.2	14.5	%	9		20
Silt - (1.95-62.5 um)	14.0	13.2	%	6		20
Clay - (<1.95 um)	5.0	4.80	%	4		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
D	Absent
C	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-01A	Glass 250ml unpreserved	D	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-02A	Glass 250ml unpreserved	D	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-03A	Glass 250ml unpreserved	D	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-04A	Glass 250ml unpreserved	D	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-05A	Glass 250ml unpreserved	D	N/A	2.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-06A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-07A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-08A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-09A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-10A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-11A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-12A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-13A	Glass 250ml unpreserved	C	N/A	3.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-14A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-15A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912910
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912910-16A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912910-17A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912910
Project Number:	TO-0018	**Report Date:**	08/03/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912910
Project Number:	TO-0018	**Report Date:**	08/03/10

Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

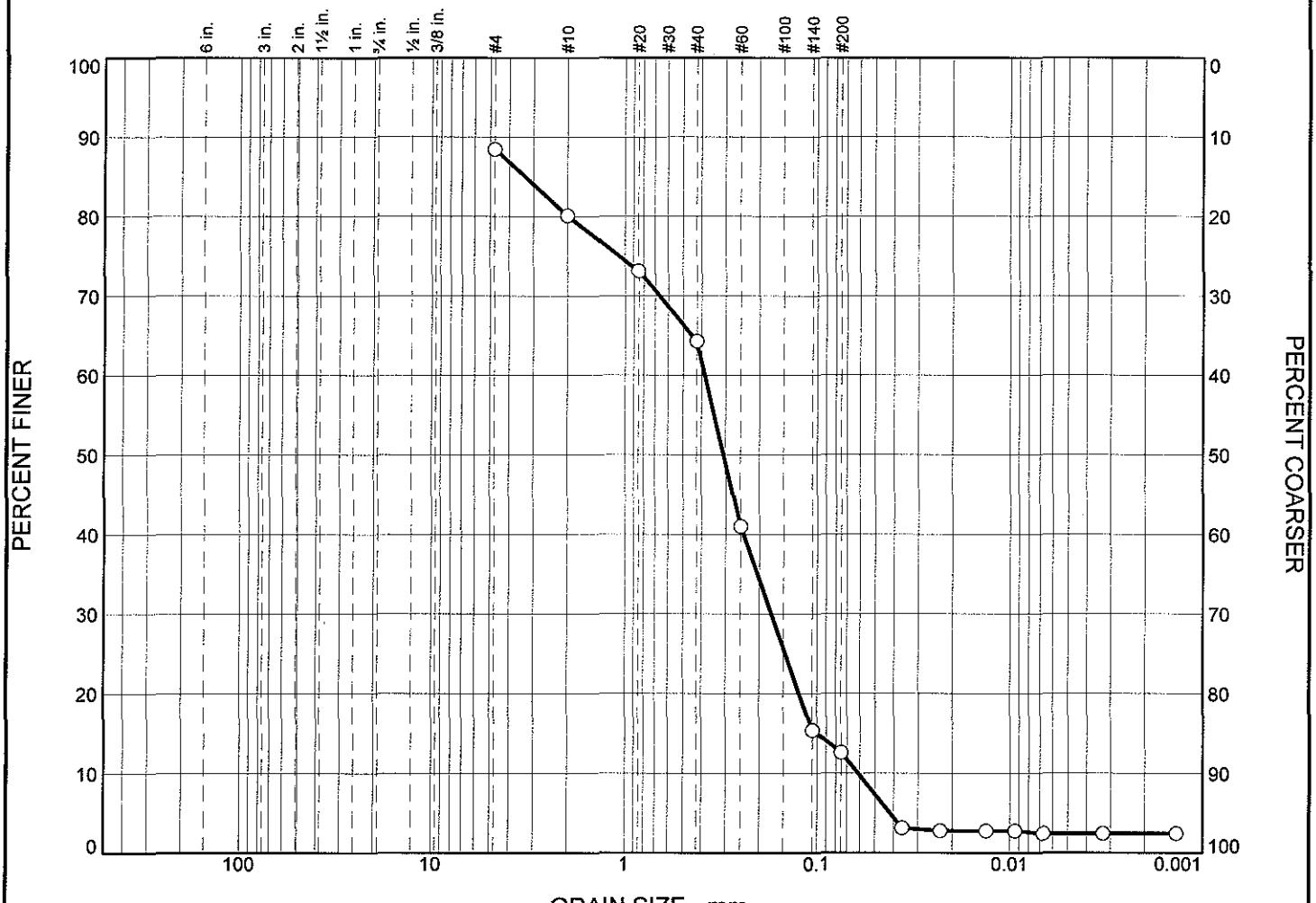
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.7	5.7	8.1	25.3	20.7	10.1	7.2	0.2	0.2	0.2	2.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.3223	0.3855	0.3069	0.1729	0.1009	0.0613	1.26	6.29

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502111 **Sample Number:** L0912910-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502111
Sample Number: L0912910-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 56.63
Tare Wt. = 3.96
Minus #200 from wash = 12.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
59.87	0.00	#4	528.78	521.87	88.5	11.5
		#10	489.87	484.86	80.1	19.9
		#20	409.70	405.51	73.1	26.9
		#40	364.53	359.25	64.3	35.7
		#60	380.15	366.22	41.0	59.0
		#140	358.21	342.88	15.4	84.6
		#200	346.58	344.91	12.6	87.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 12.6
Weight of hydrometer sample =59.87
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	3.1	96.9
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	2.8	97.2
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	2.8	97.2
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	2.8	97.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	2.4	97.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.4	97.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.4	97.6

Fractional Components

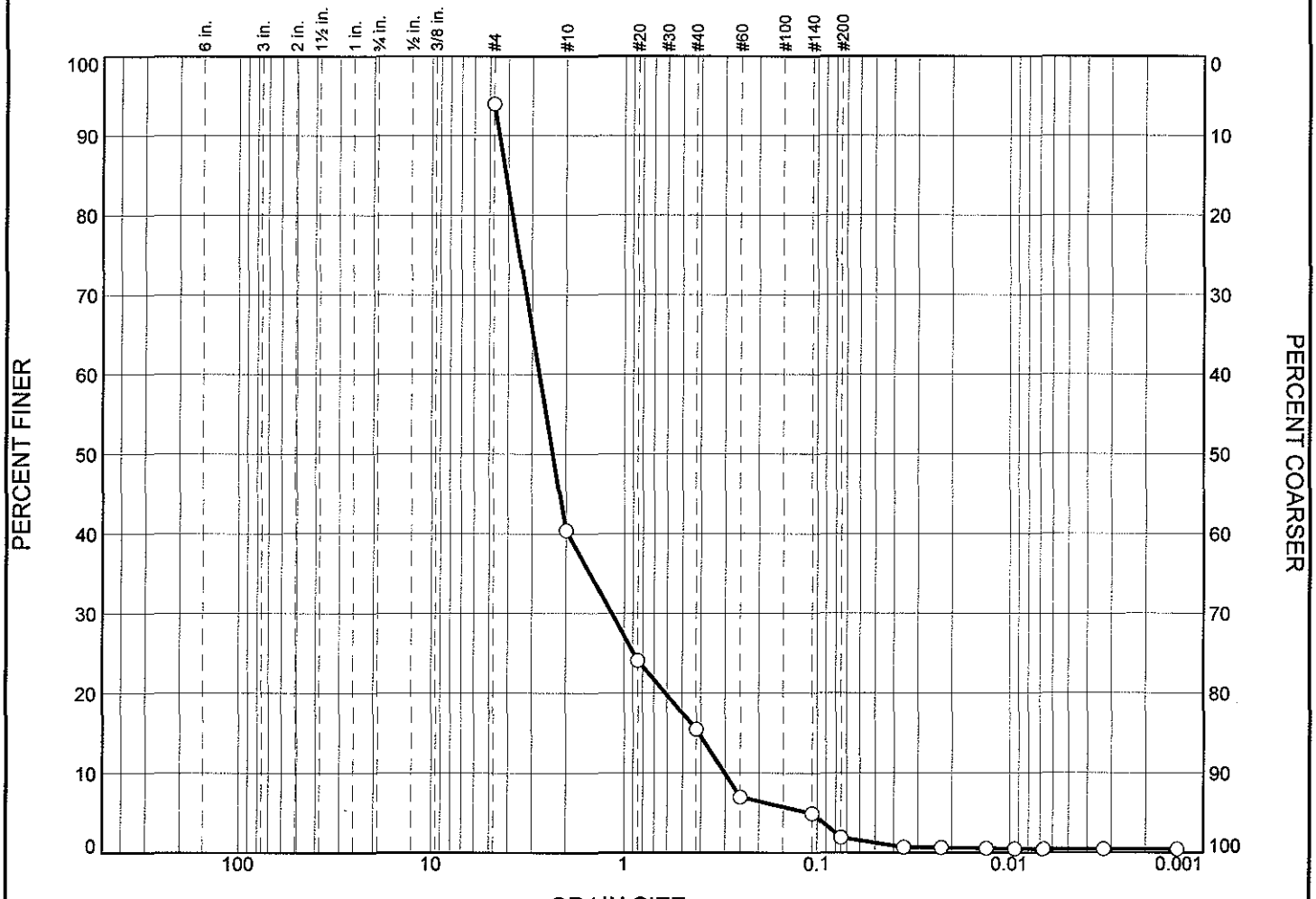
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.7	5.7	8.1	25.3	20.7	10.1	69.9	7.2	0.2	0.2	0.2	7.8	2.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0613	0.1009	0.1237	0.1729	0.3069	0.3855	1.9781	3.3223		

Fineness Modulus	C_u	C_c
2.11	6.29	1.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				43.0	13.2	9.7	10.5	1.7	3.7	0.9	0.1	0.1	0.1	0.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.1078	2.7449	2.3361	1.1606	0.4129	0.3019	1.63	9.09

	Material Description	USCS	AASHTO
○		SW	

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502112 **Sample Number:** L0912910-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502112
Sample Number: L0912910-02
USCS Classification: SW
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.61
Tare Wt. = 4.10
Minus #200 from wash = 26.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.23	0.00	#4	522.23	519.16	94.0	6.0
		#10	487.39	459.91	40.4	59.6
		#20	383.53	375.18	24.1	75.9
		#40	370.89	366.48	15.5	84.5
		#60	371.32	366.98	7.0	93.0
		#140	345.24	344.18	4.9	95.1
		#200	348.10	346.56	1.9	98.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.9
Weight of hydrometer sample =51.23
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	0.7	99.3
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	0.6	99.4
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	0.6	99.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	0.5	99.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.4	99.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.4	99.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.4	99.6

Fractional Components

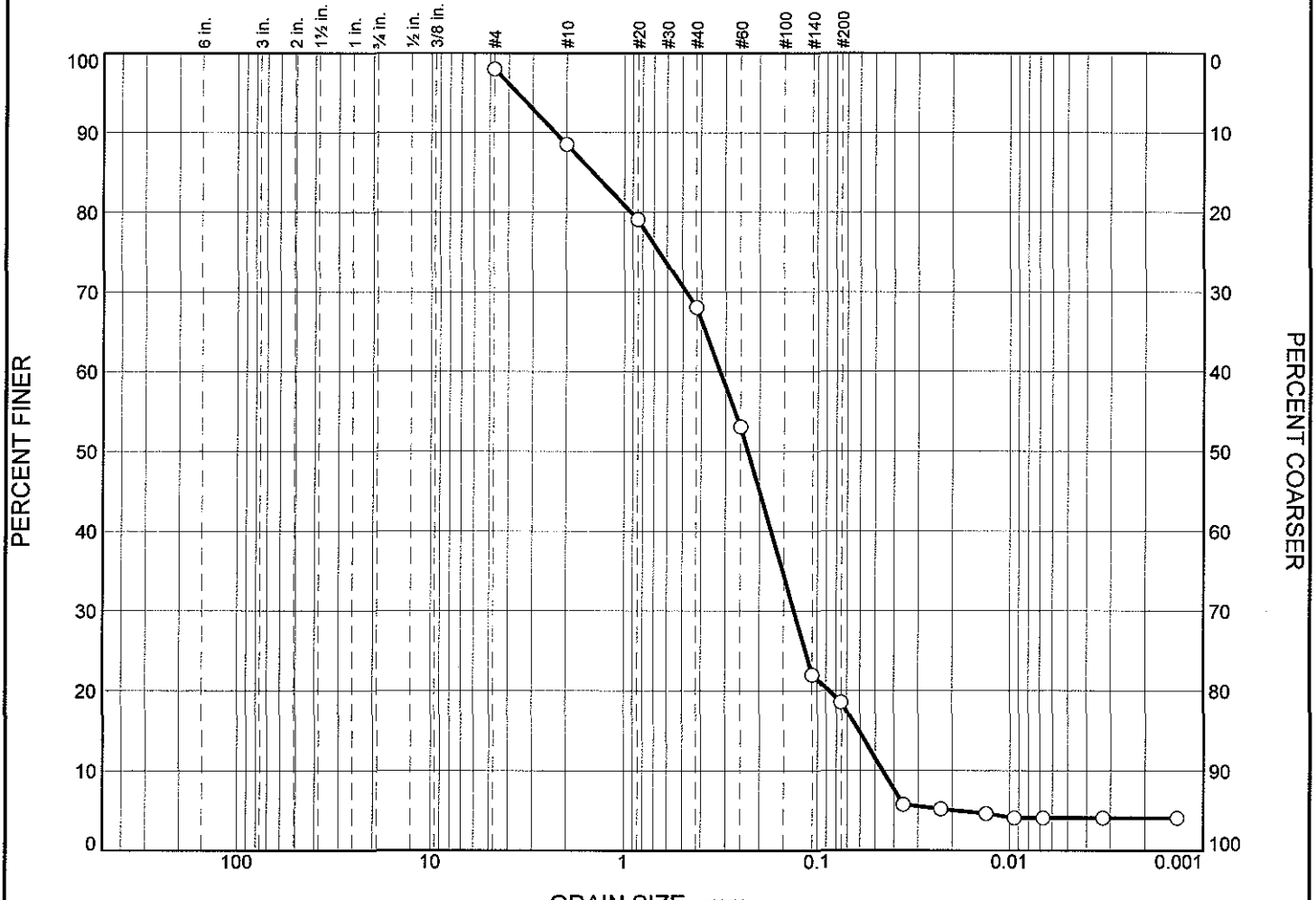
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			43.0	13.2	9.7	10.5	1.7	3.7	38.8	0.9	0.1	0.1	0.1	1.2	0.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.3019	0.4129	0.6126	1.1606	2.3361	2.7449	3.7896	4.1078	4.4527	

Fineness Modulus	C_u	C_c
3.90	9.09	1.63

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.6	7.6	10.2	17.6	25.1	12.6	9.8	0.8	0.7		4.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.4542	0.3195	0.2297	0.1322	0.0611	0.0458	1.20	6.98

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502113 **Sample Number:** L0912910-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502113
Sample Number: L0912910-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 47.33
Tare Wt. = 4.16
Minus #200 from wash = 18.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.99	0.00	#4	522.93	521.87	98.0	2.0
		#10	489.89	484.86	88.5	11.5
		#20	410.50	405.51	79.1	20.9
		#40	365.09	359.25	68.1	31.9
		#60	374.17	366.22	53.1	46.9
		#140	359.34	342.88	22.0	78.0
		#200	346.74	344.91	18.6	81.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 18.6
Weight of hydrometer sample =52.99
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	5.7	94.3
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	5.2	94.8
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	4.6	95.4
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	4.1	95.9
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	4.1	95.9
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	4.1	95.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	4.1	95.9

Fractional Components

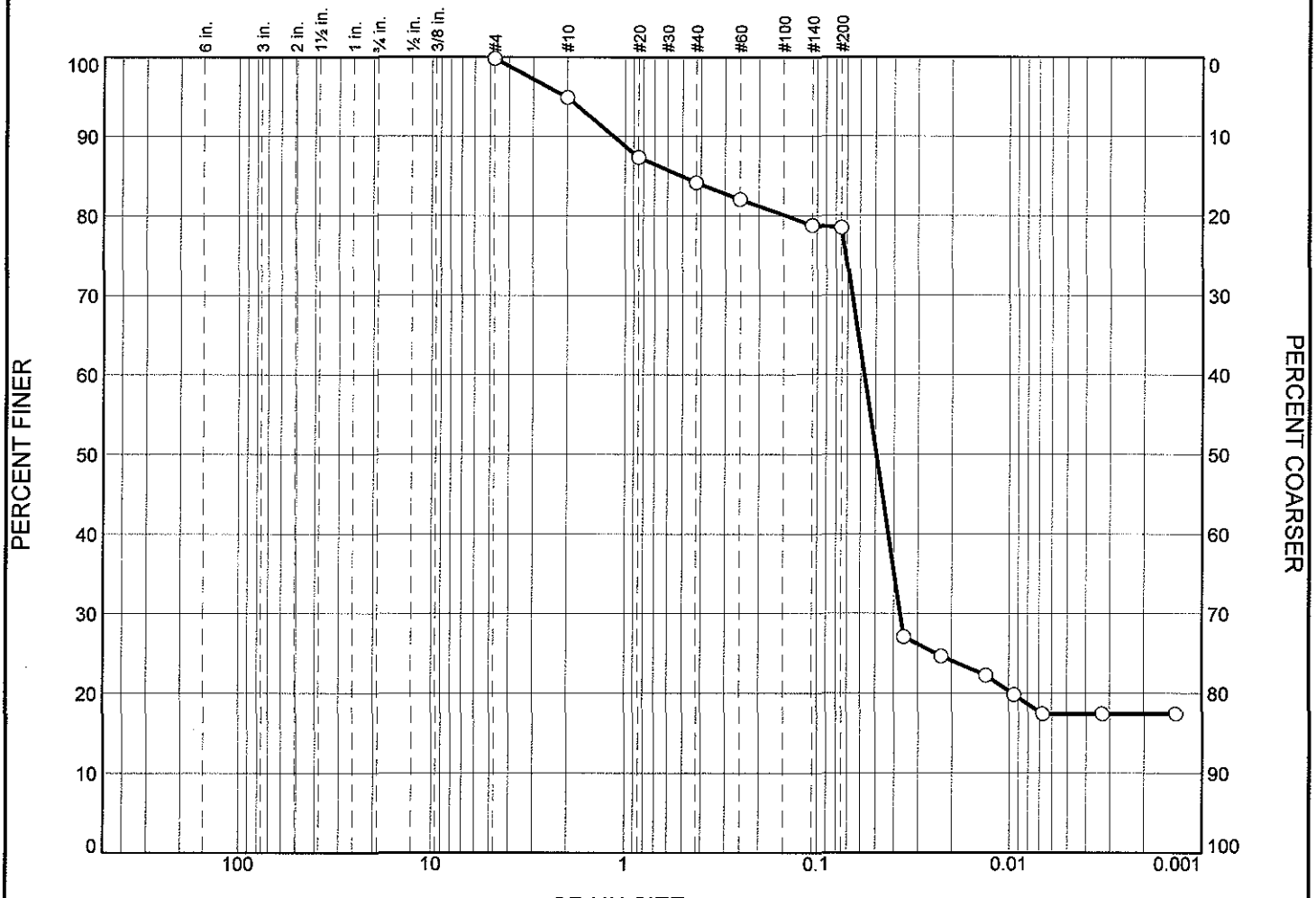
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.6	7.6	10.2	17.6	25.1	12.6	73.1	9.8	0.8	0.7		11.3	4.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0458	0.0611	0.0867	0.1322	0.2297	0.3195	0.9232	1.4542	2.2914	3.6140

Fineness Modulus	C_u	C_c
1.63	6.98	1.20

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.9	6.1	3.9	2.8	2.7	13.4	39.7	3.3	4.5	1.1	17.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5073	0.0573	0.0495	0.0370				

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502126 **Sample Number:** L0912910-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502126
Sample Number: L0912910-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 42.55
Tare Wt. = 4.06
Minus #200 from wash = 92.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
522.24	0.00	#4	520.22	519.16	99.8	0.2
		#10	485.40	459.91	94.9	5.1
		#20	414.60	375.18	87.4	12.6
		#40	383.09	366.48	84.2	15.8
		#60	378.13	366.98	82.1	17.9
		#140	361.12	344.18	78.8	21.2
		#200	348.04	346.56	78.5	21.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 78.5
Weight of hydrometer sample =52.24
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x **Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	27.1	72.9
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	24.7	75.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	22.2	77.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	19.8	80.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	17.4	82.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	17.4	82.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	17.4	82.6

Fractional Components

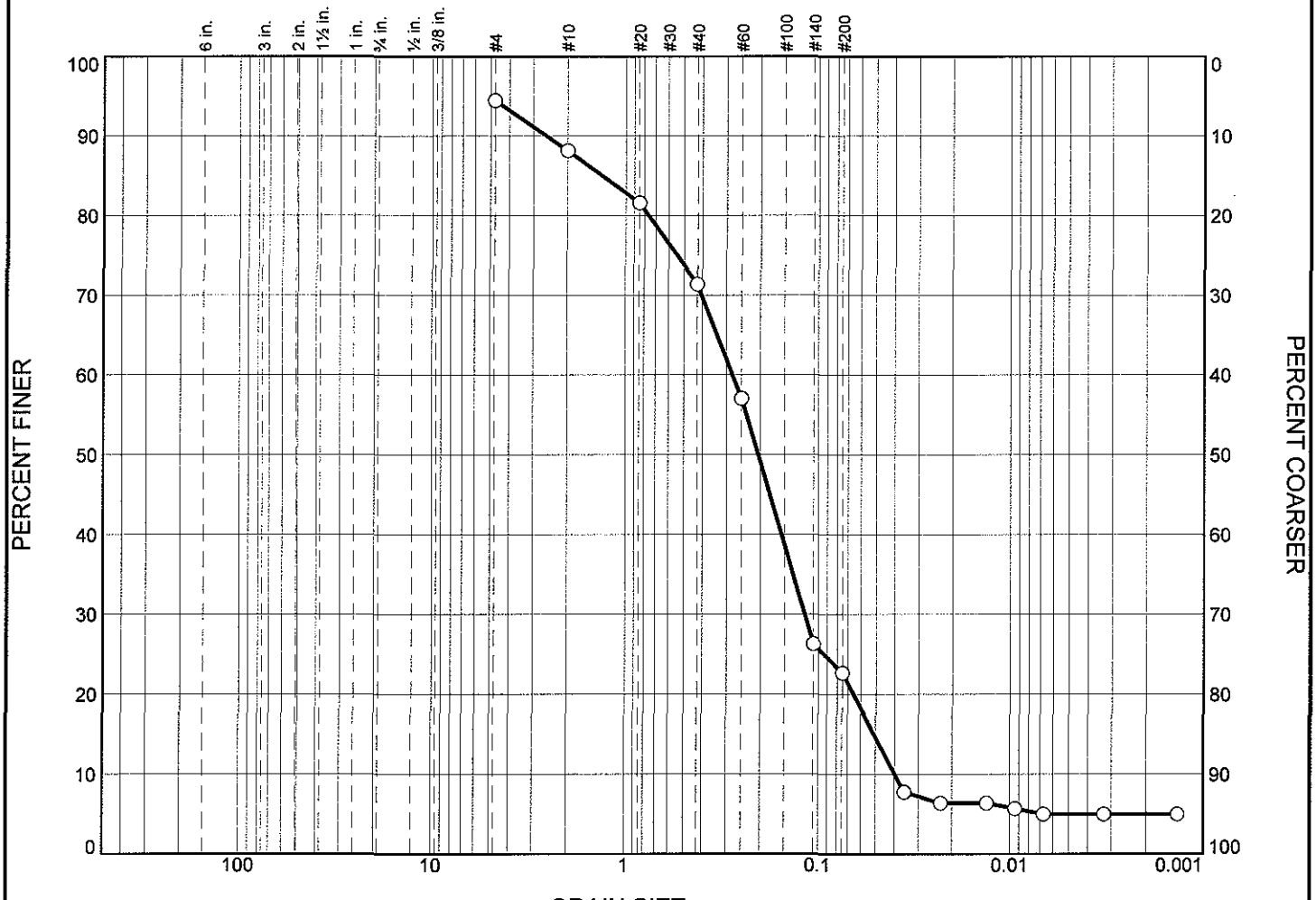
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.9	6.1	3.9	2.8	2.7	13.4	28.9	39.7	3.3	4.5	1.1	48.6	17.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0096	0.0370	0.0495	0.0573	0.1453	0.5073	1.1455	2.0299

Fineness Modulus
0.65

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.1	5.3	9.0	16.8	24.8	13.2	11.7	0.9	1.1	0.3	5.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.3263	0.2790	0.2055	0.1176	0.0511	0.0397	1.25	7.02

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 508036 **Sample Number:** L0912910-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 508036
Sample Number: L0912910-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 45.68
Tare Wt. = 4.05
Minus #200 from wash = 21.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.74	0.00	#4	524.79	521.87	94.5	5.5
		#10	488.19	484.86	88.1	11.9
		#20	408.97	405.51	81.6	18.4
		#40	364.64	359.25	71.4	28.6
		#60	373.78	366.22	57.0	43.0
		#140	359.10	342.88	26.3	73.7
		#200	346.83	344.91	22.6	77.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 22.6
Weight of hydrometer sample =52.74
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	7.7	92.3
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	6.4	93.6
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	6.4	93.6
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	5.7	94.3
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	5.0	95.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	5.0	95.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	5.0	95.0

Fractional Components

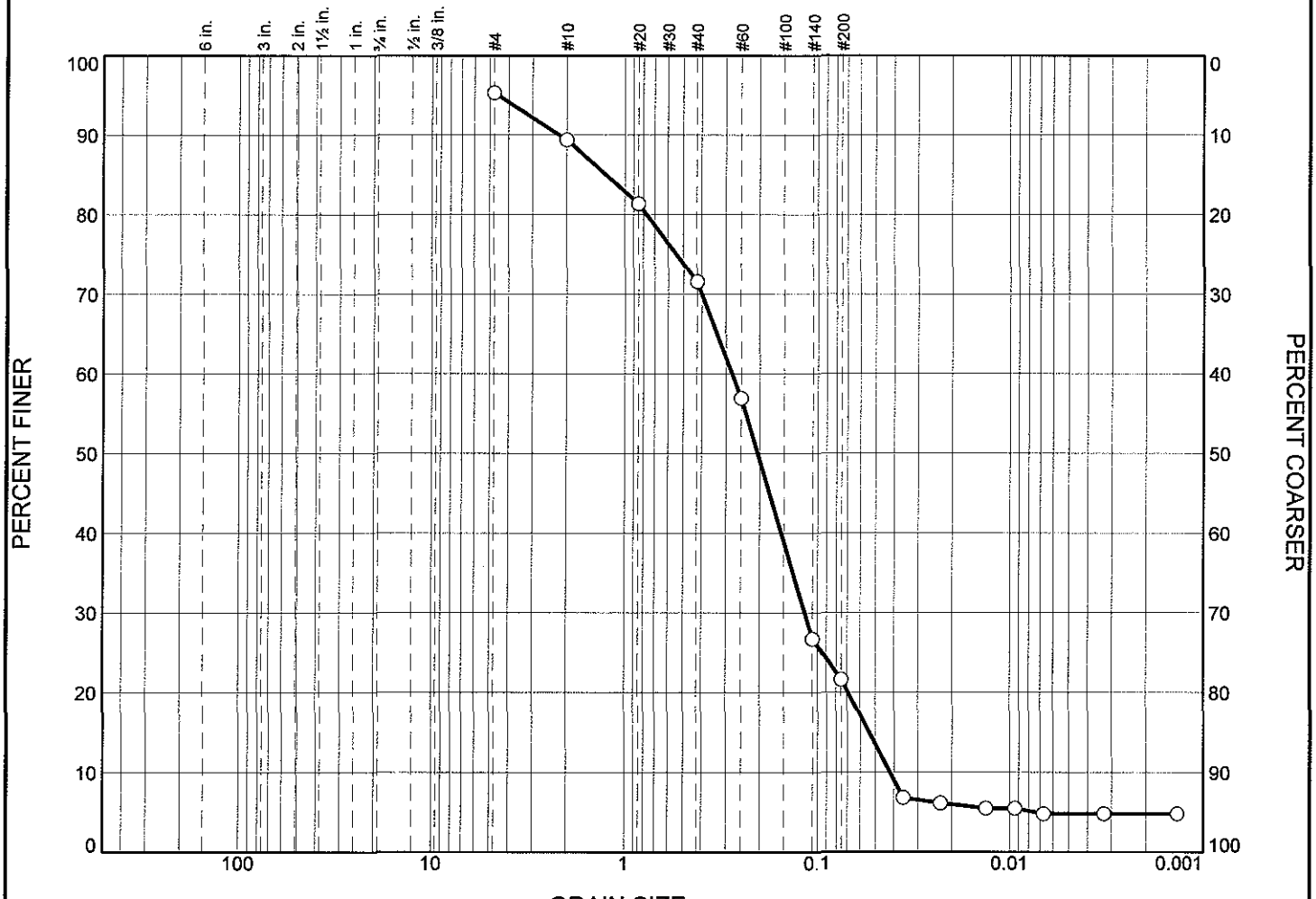
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.1	5.3	9.0	16.8	24.8	13.2	69.1	11.7	0.9	1.1	0.3	14.0	5.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0397	0.0511	0.0657	0.1176	0.2055	0.2790	0.7632	1.3263	2.5771	

Fineness Modulus	C_u	C_c
1.55	7.02	1.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.7	6.5	9.0	17.0	24.4	14.5	11.4	0.9	0.6	0.3	4.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2514	0.2794	0.2054	0.1164	0.0539	0.0420	1.16	6.66

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 508036 **Sample Number:** WG381846-1

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 508036
Sample Number: WG381846-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 48.20
Tare Wt. = 3.95
Minus #200 from wash = 15.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.07	0.00	#4	521.61	519.16	95.3	4.7
		#10	462.98	459.91	89.4	10.6
		#20	379.36	375.18	81.4	18.6
		#40	371.57	366.48	71.6	28.4
		#60	374.62	366.98	56.9	43.1
		#140	359.91	344.18	26.7	73.3
		#200	349.21	346.56	21.6	78.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 21.6
Weight of hydrometer sample =52.07
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	6.8	93.2
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	6.1	93.9
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	5.5	94.5
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	5.5	94.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	4.8	95.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	4.8	95.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	4.8	95.2

Fractional Components

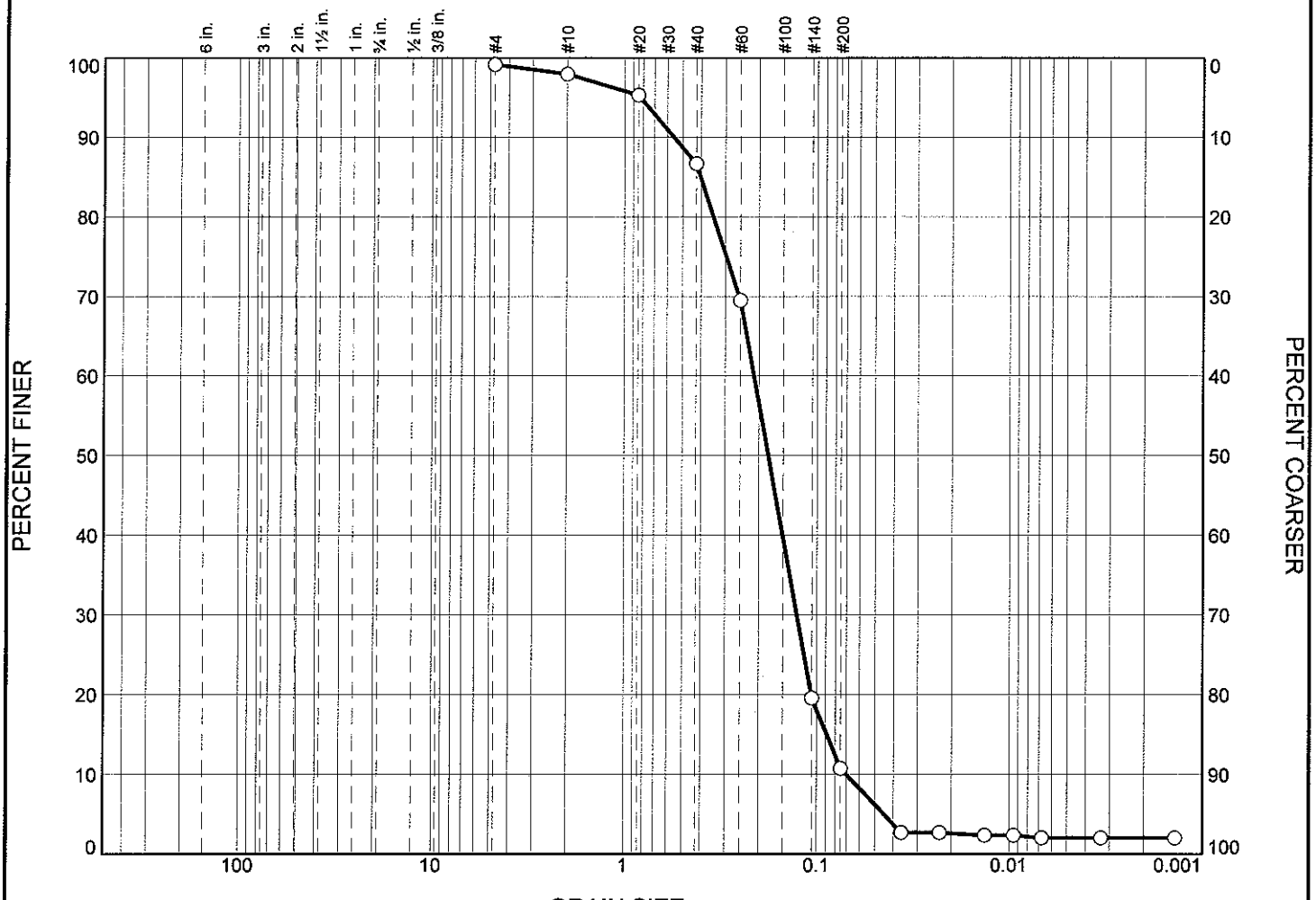
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.7	6.5	9.0	17.0	24.4	14.5	71.4	11.4	0.9	0.6	0.3	13.2	4.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0420	0.0539	0.0692	0.1164	0.2054	0.2794	0.7712	1.2514	2.1844	4.5489

Fineness Modulus	C_u	C_c
1.52	6.66	1.16

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	2.2	7.1	19.2	40.3	20.5	6.0	0.3	0.2	0.2	2.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4038	0.2124	0.1789	0.1268	0.0886	0.0701	1.08	3.03

Material Description	USCS	AASHTO
○		

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502211 **Sample Number:** L0912910-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502211
Sample Number: L0912910-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 52.32
Tare Wt. = 4.02
Minus #200 from wash = 8.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.91	0.00	#4	522.31	521.87	99.2	0.8
		#10	485.50	484.86	98.0	2.0
		#20	406.92	405.51	95.3	4.7
		#40	363.82	359.25	86.7	13.3
		#60	375.34	366.25	69.5	30.5
		#140	369.29	342.88	19.6	80.4
		#200	349.57	344.91	10.8	89.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 10.8
Weight of hydrometer sample =52.91
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	2.7	97.3
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	2.7	97.3
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	2.4	97.6
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	2.4	97.6
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	2.0	98.0
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	2.0	98.0
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	2.0	98.0

Fractional Components

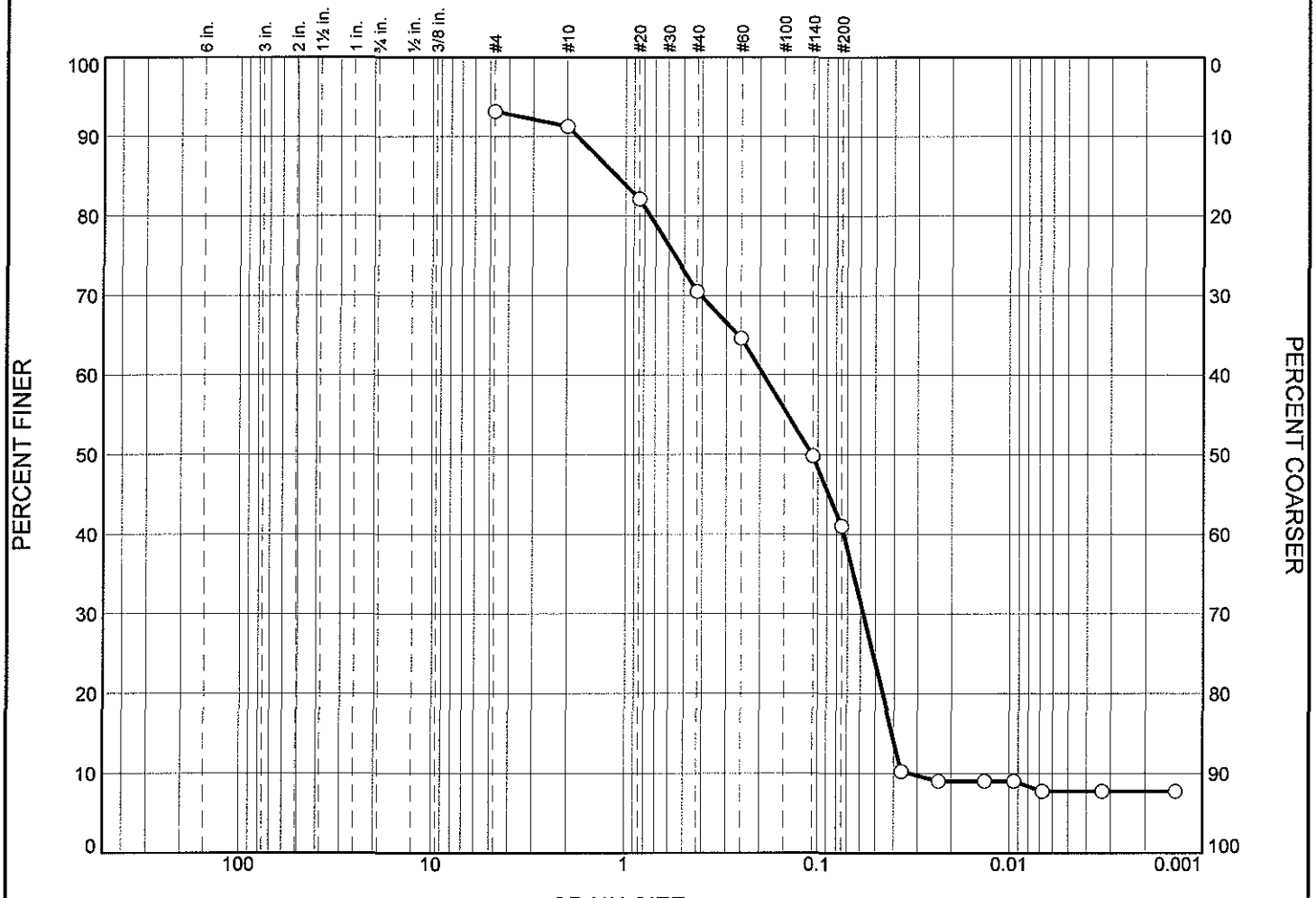
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	2.2	7.1	19.2	40.3	20.5	89.3	6.0	0.3	0.2	0.2	6.7	2.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0701	0.0886	0.1068	0.1268	0.1789	0.2124	0.3460	0.4038	0.5558	0.8302

Fineness Modulus	C_u	C_c
1.00	3.03	1.08

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.5	7.4	10.7	8.6	11.9	19.4	23.5	0.8	0.7	0.5	7.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.1113	0.1914	0.1072	0.0579	0.0407	0.0333	0.53	5.75

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502212 **Sample Number:** L0912910-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502212
Sample Number: L0912910-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 52.56
Tare Wt. = 3.90
Minus #200 from wash = 7.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.78	0.00	#4	522.76	519.16	93.2	6.8
		#10	460.91	459.91	91.3	8.7
		#20	380.01	375.18	82.1	17.9
		#40	372.62	366.48	70.5	29.5
		#60	370.09	366.98	64.6	35.4
		#140	351.98	344.17	49.8	50.2
		#200	351.20	346.56	41.0	59.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 41.0
Weight of hydrometer sample =52.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	10.3	89.7
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	9.0	91.0
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	9.0	91.0
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	9.0	91.0
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	7.8	92.2
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	7.8	92.2
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	7.8	92.2

Fractional Components

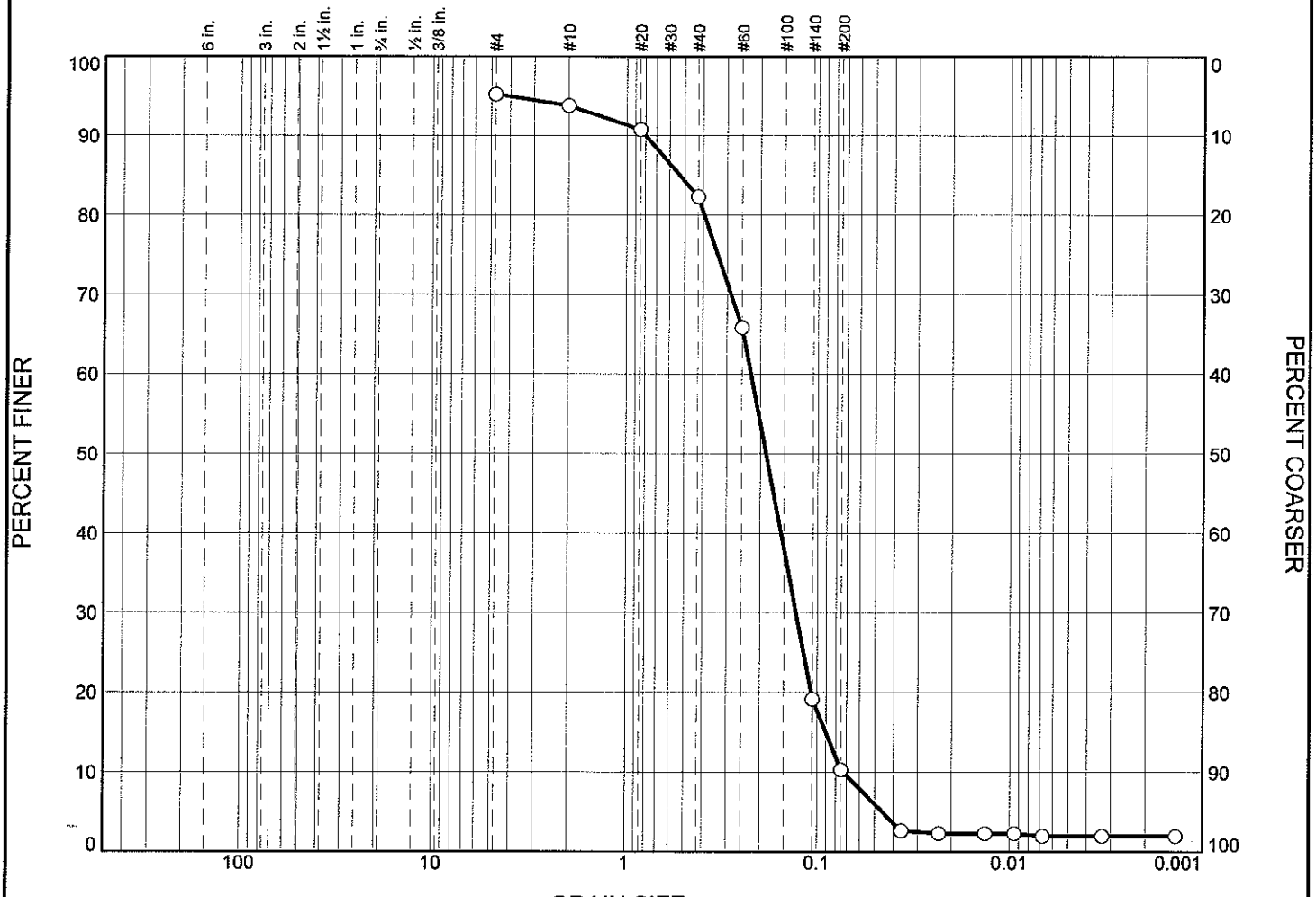
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.5	7.4	10.7	8.6	11.9	19.4	58.0	23.5	0.8	0.7	0.5	25.5	7.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0333	0.0407	0.0458	0.0579	0.1072	0.1914	0.7485	1.1113	1.7736	

Fineness Modulus	C_u	C_c
1.31	5.75	0.53

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.1	2.5	7.0	18.4	37.8	19.8	5.8	0.2	0.2	0.1	2.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5302	0.2245	0.1868	0.1294	0.0902	0.0730	1.02	3.07

Material Description	USCS	AASHTO
○		

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502213 **Sample Number:** L0912910-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502213
Sample Number: L0912910-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 51.62
Tare Wt. = 4.06
Minus #200 from wash = 8.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.82	0.00	#4	524.35	521.87	95.2	4.8
		#10	485.61	484.86	93.8	6.2
		#20	407.07	405.51	90.8	9.2
		#40	363.63	359.25	82.3	17.7
		#60	374.74	366.22	65.9	34.1
		#140	367.09	342.88	19.1	80.9
		#200	349.50	344.91	10.3	89.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 10.3
Weight of hydrometer sample =51.82
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	2.6	97.4
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	2.3	97.7
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	2.3	97.7
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	2.3	97.7
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	2.0	98.0
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	2.0	98.0
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	2.0	98.0

Fractional Components

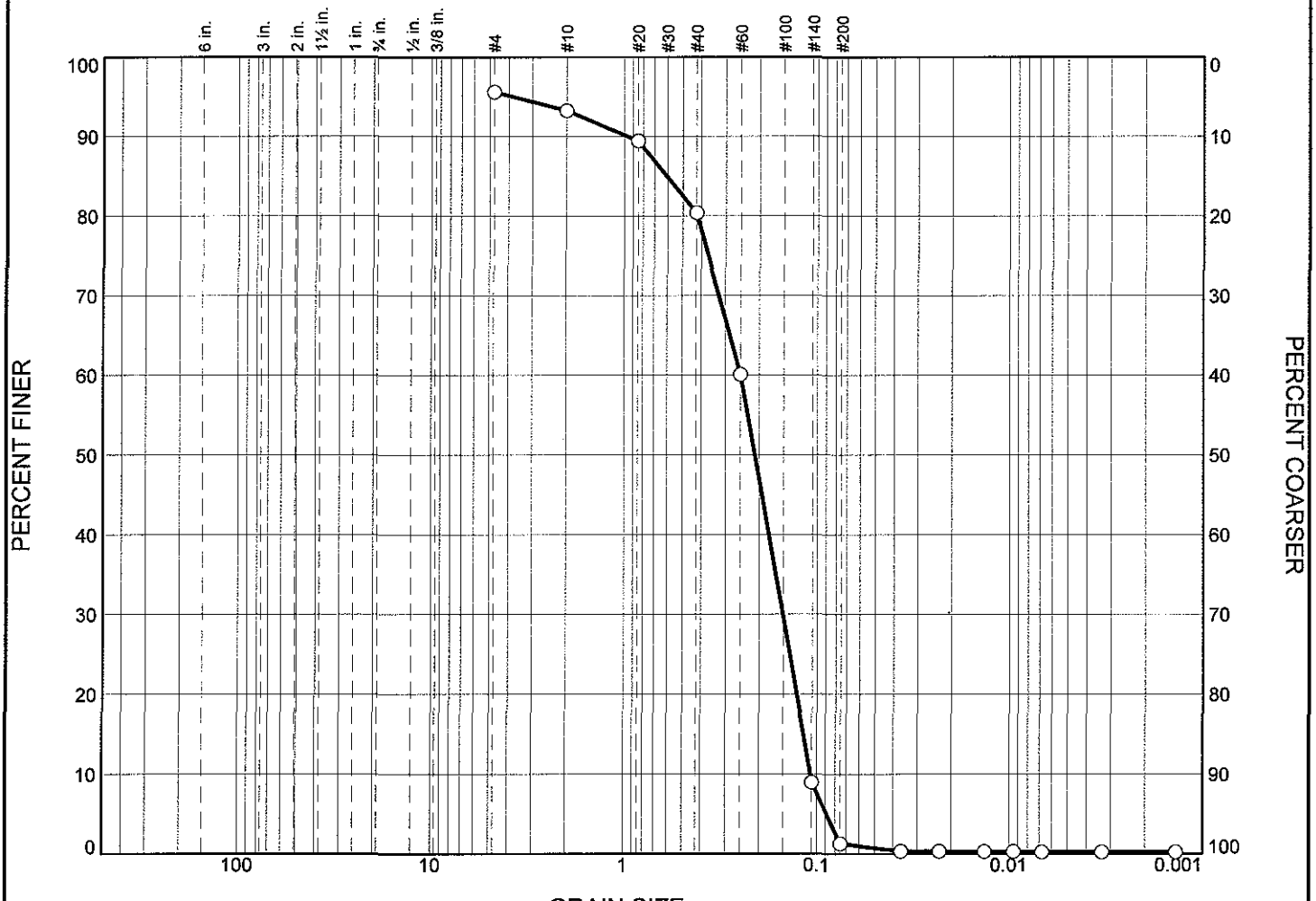
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.1	2.5	7.0	18.4	37.8	19.8	85.5	5.8	0.2	0.2	0.1	6.3	2.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0730	0.0902	0.1077	0.1294	0.1868	0.2245	0.3945	0.5302	0.7989	4.1792

Fineness Modulus	C_u	C_c
1.23	3.07	1.02

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.8	3.1	7.7	22.4	41.3	17.8	0.7	0.0	0.0	0.1	0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6048	0.2497	0.2111	0.1509	0.1173	0.1079	0.85	2.31

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502226 **Sample Number:** L0912910-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502226
Sample Number: L0912910-09
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 50.91
Tare Wt. = 4.06
Minus #200 from wash = 9.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.02	0.00	#4	521.45	519.16	95.6	4.4
		#10	461.13	459.91	93.3	6.7
		#20	377.16	375.18	89.4	10.6
		#40	371.19	366.48	80.4	19.6
		#60	377.55	366.98	60.1	39.9
		#140	370.78	344.18	8.9	91.1
		#200	350.55	346.56	1.3	98.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.3
Weight of hydrometer sample =52.02
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.3	99.7
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	0.3	99.7
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.3	99.7
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.3	99.7
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	0.2	99.8
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	0.2	99.8
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	0.2	99.8

Fractional Components

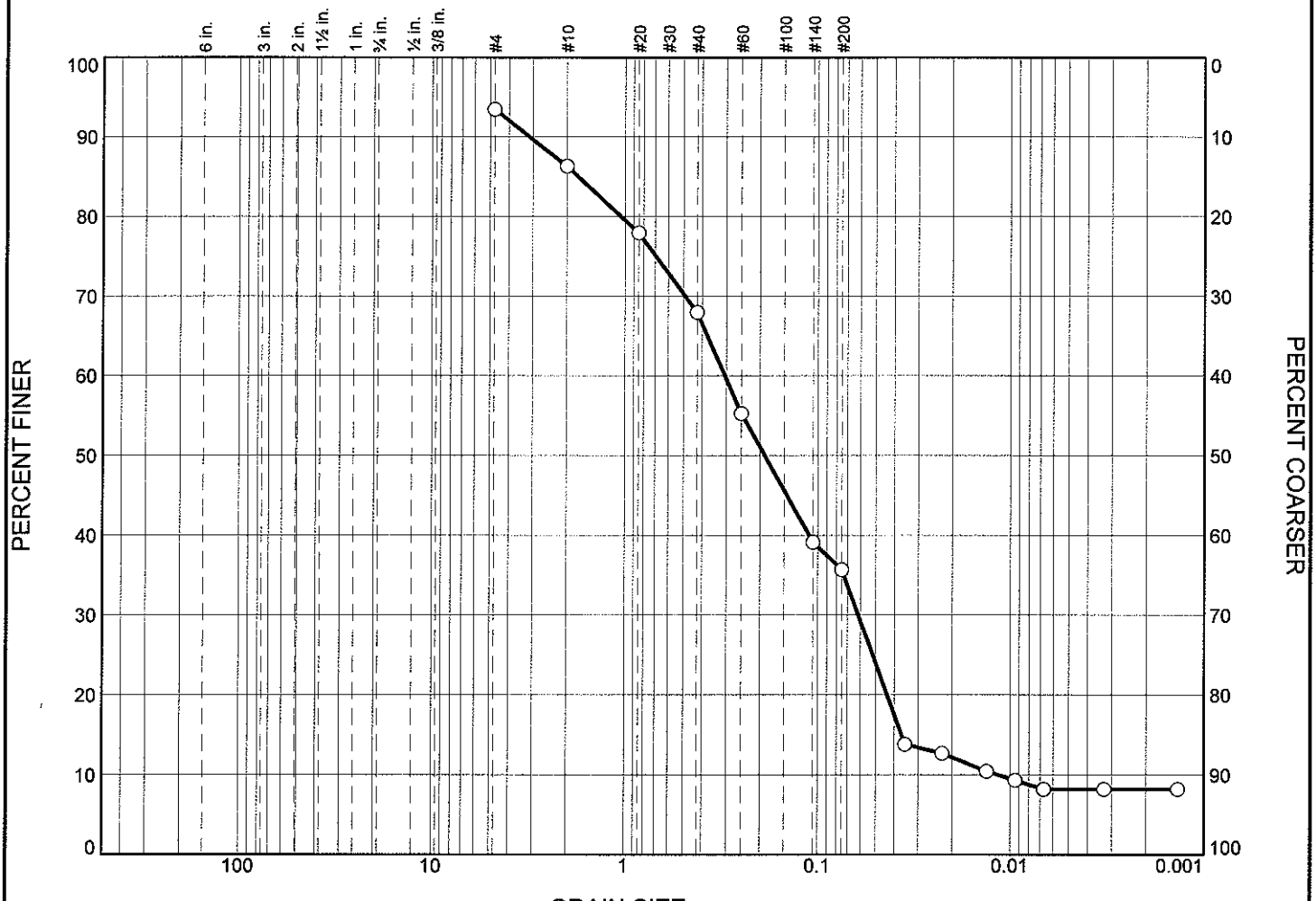
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.8	3.1	7.7	22.4	41.3	17.8	92.3	0.7	0.0	0.0	0.1	0.8	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1079	0.1173	0.1276	0.1509	0.2111	0.2497	0.4207	0.6048	0.9627	3.8100

Fineness Modulus	C_u	C_c
1.38	2.31	0.85

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.7	6.8	9.2	15.1	13.0	11.8	16.9	2.4	2.4	0.5	8.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.7515	0.3050	0.1891	0.0616	0.0366	0.0116	1.07	26.19

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502311 **Sample Number:** L0912910-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502311
Sample Number: L0912910-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 36.98
Tare Wt. = 4.11
Minus #200 from wash = 35.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.65	0.00	#4	525.19	521.87	93.4	6.6
		#10	488.48	484.86	86.3	13.7
		#20	409.75	405.51	77.9	22.1
		#40	364.31	359.25	67.9	32.1
		#60	372.65	366.22	55.2	44.8
		#140	351.04	342.88	39.1	60.9
		#200	346.67	344.91	35.7	64.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 35.7
Weight of hydrometer sample =50.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	13.8	86.2
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	12.7	87.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	10.4	89.6
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	9.3	90.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	8.2	91.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	8.2	91.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	8.2	91.8

Fractional Components

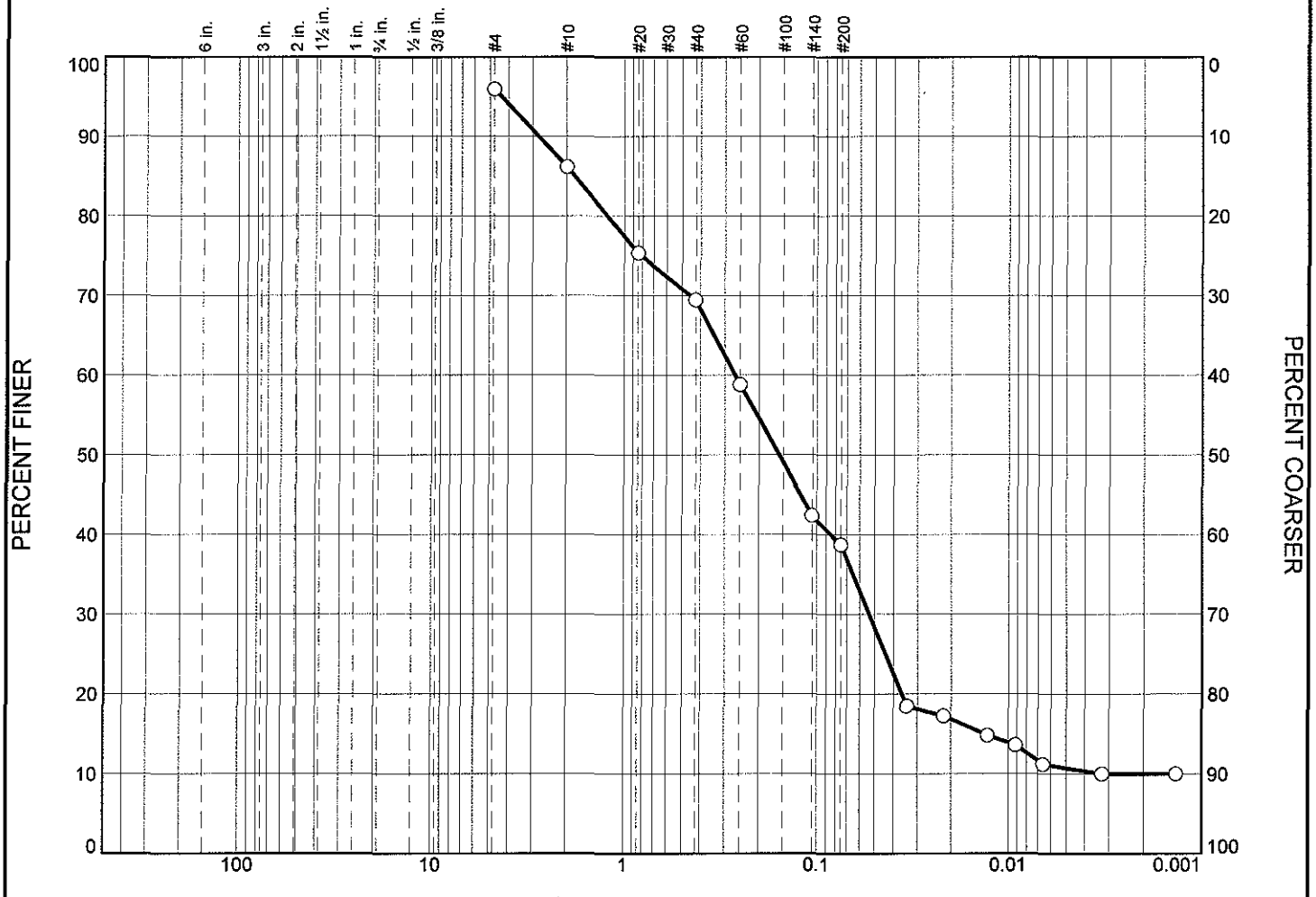
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.7	6.8	9.2	15.1	13.0	11.8	55.9	16.9	2.4	2.4	0.5	22.2	8.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0116	0.0366	0.0435	0.0616	0.1891	0.3050	1.0506	1.7515	3.1305	

Fineness Modulus	C_u	C_c
1.60	26.19	1.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.8	8.8	6.6	12.0	13.3	11.5	15.8	2.5	3.3	2.1	10.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.8224	0.2651	0.1578	0.0534	0.0133	0.0033	3.25	79.92

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502312 **Sample Number:** L0912910-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502312
Sample Number: L0912910-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 23.17
Tare Wt. = 4.07
Minus #200 from wash = 62.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.22	0.00	#4	521.23	519.16	96.0	4.0
		#10	464.92	459.91	86.2	13.8
		#20	380.55	375.00	75.3	24.7
		#40	370.00	366.98	69.4	30.6
		#60	372.42	366.98	58.8	41.2
		#140	352.61	344.18	42.4	57.6
		#200	348.43	346.56	38.7	61.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 38.7
Weight of hydrometer sample =51.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	18.5	81.5
5.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0218	17.3	82.7
15.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0128	14.8	85.2
30.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0092	13.6	86.4
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	11.2	88.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	10.0	90.0
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	10.0	90.0

Fractional Components

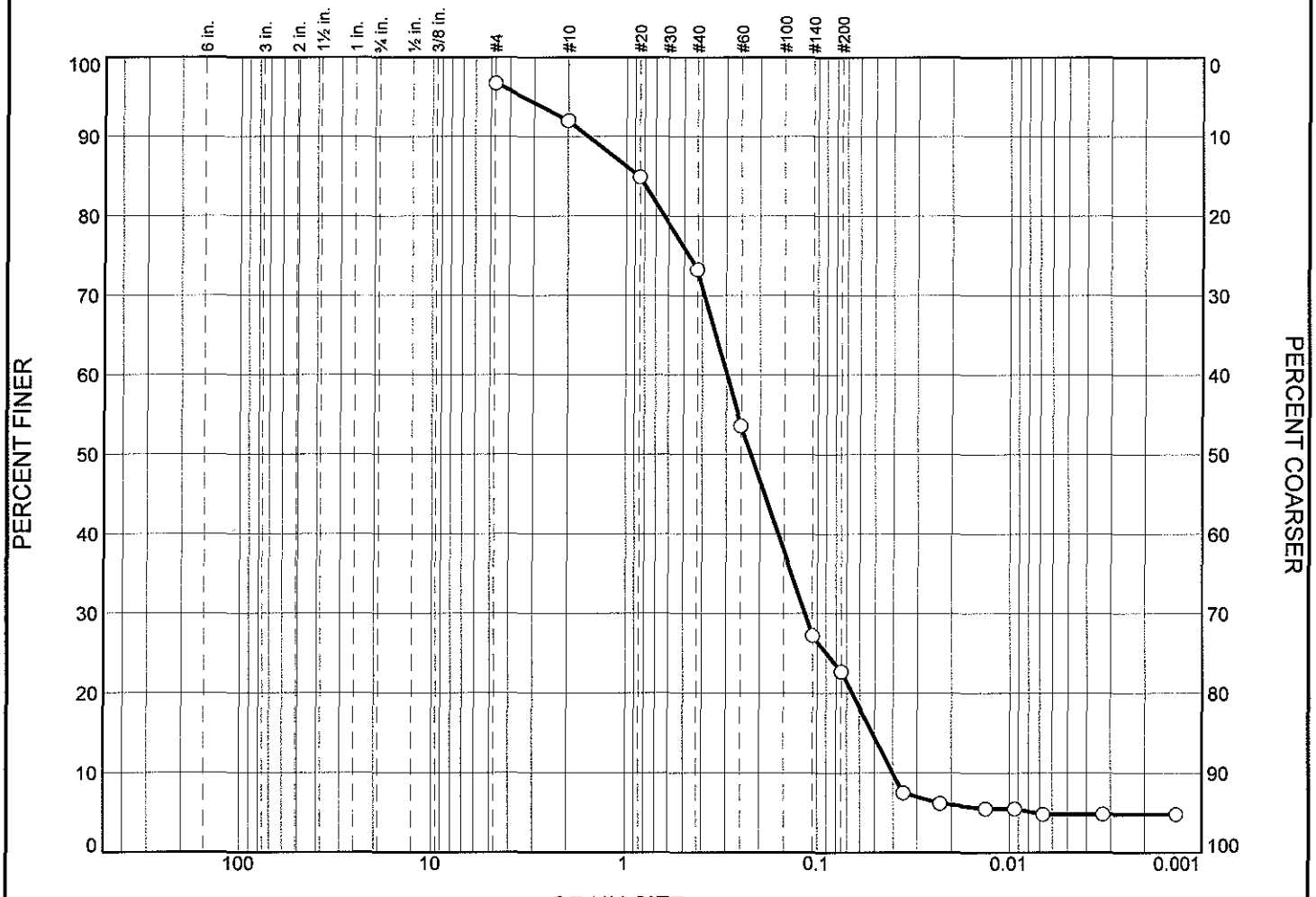
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.8	8.8	6.6	12.0	13.3	11.5	52.2	15.8	2.5	3.3	2.1	23.7	10.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0033	0.0133	0.0362	0.0534	0.1578	0.2651	1.2279	1.8224	2.8044	4.3639

Fineness Modulus	C_u	C_c
1.53	79.92	3.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.8	5.8	10.2	22.4	21.3	13.3	11.9	1.4	0.6	0.3	4.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8606	0.2973	0.2226	0.1161	0.0514	0.0401	1.13	7.41

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502313 **Sample Number:** L0912910-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502313
Sample Number: L0912910-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 46.93
Tare Wt. = 4.04
Minus #200 from wash = 21.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.56	0.00	#4	523.65	521.87	96.7	3.3
		#10	487.44	484.86	92.0	8.0
		#20	409.39	405.51	84.9	15.1
		#40	365.60	359.25	73.3	26.7
		#60	376.96	366.22	53.6	46.4
		#140	357.27	342.88	27.2	72.8
		#200	347.38	344.91	22.7	77.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 22.7
Weight of hydrometer sample =54.56
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	7.5	92.5
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	6.1	93.9
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	5.5	94.5
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	5.5	94.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	4.8	95.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	4.8	95.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	4.8	95.2

Fractional Components

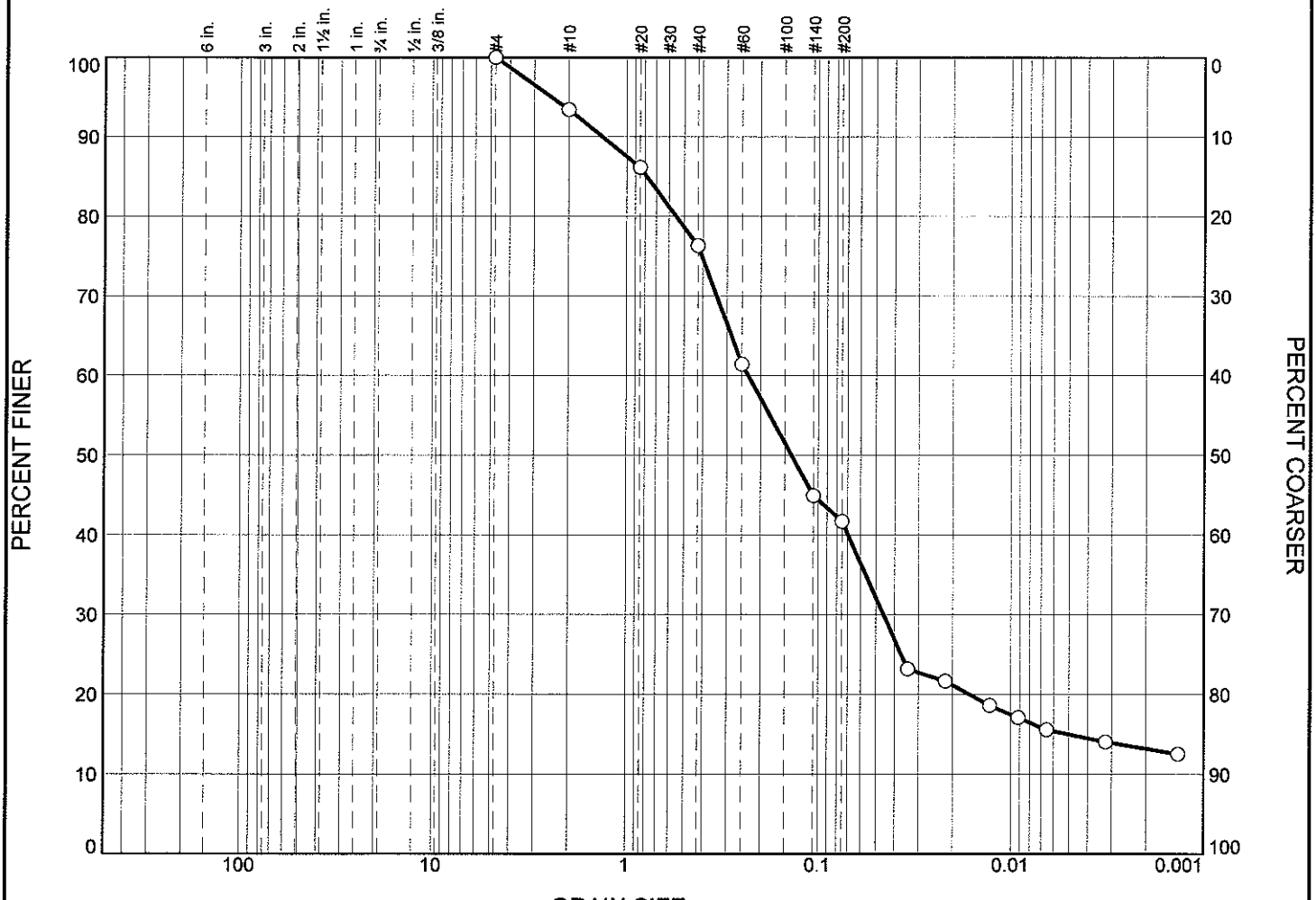
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.8	5.8	10.2	22.4	21.3	13.3	73.0	11.9	1.4	0.6	0.3	14.2	4.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0401	0.0514	0.0657	0.1161	0.2226	0.2973	0.6350	0.8606	1.5706	3.4567

Fineness Modulus	C_u	C_c
1.45	7.41	1.13

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	1.3	5.3	5.9	8.9	17.2	13.3	10.7	14.6	3.1	3.3	2.0	14.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7840	0.2320	0.1380	0.0456	0.0050			

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502326 **Sample Number:** L0912910-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502326
Sample Number: L0912910-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 27.48
Tare Wt. = 4.02
Minus #200 from wash = 46.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.96	0.00	#4	519.16	519.16	100.0	0.0
		#10	462.80	459.91	93.4	6.6
		#20	378.38	375.18	86.1	13.9
		#40	370.80	366.48	76.3	23.7
		#60	373.52	366.98	61.4	38.6
		#140	351.44	344.18	44.9	55.1
		#200	347.98	346.56	41.7	58.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 41.7
Weight of hydrometer sample =43.96
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	23.2	76.8
5.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0218	21.7	78.3
15.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0128	18.6	81.4
30.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0092	17.1	82.9
60.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0065	15.6	84.4
250.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0032	14.0	86.0
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	12.5	87.5

Fractional Components

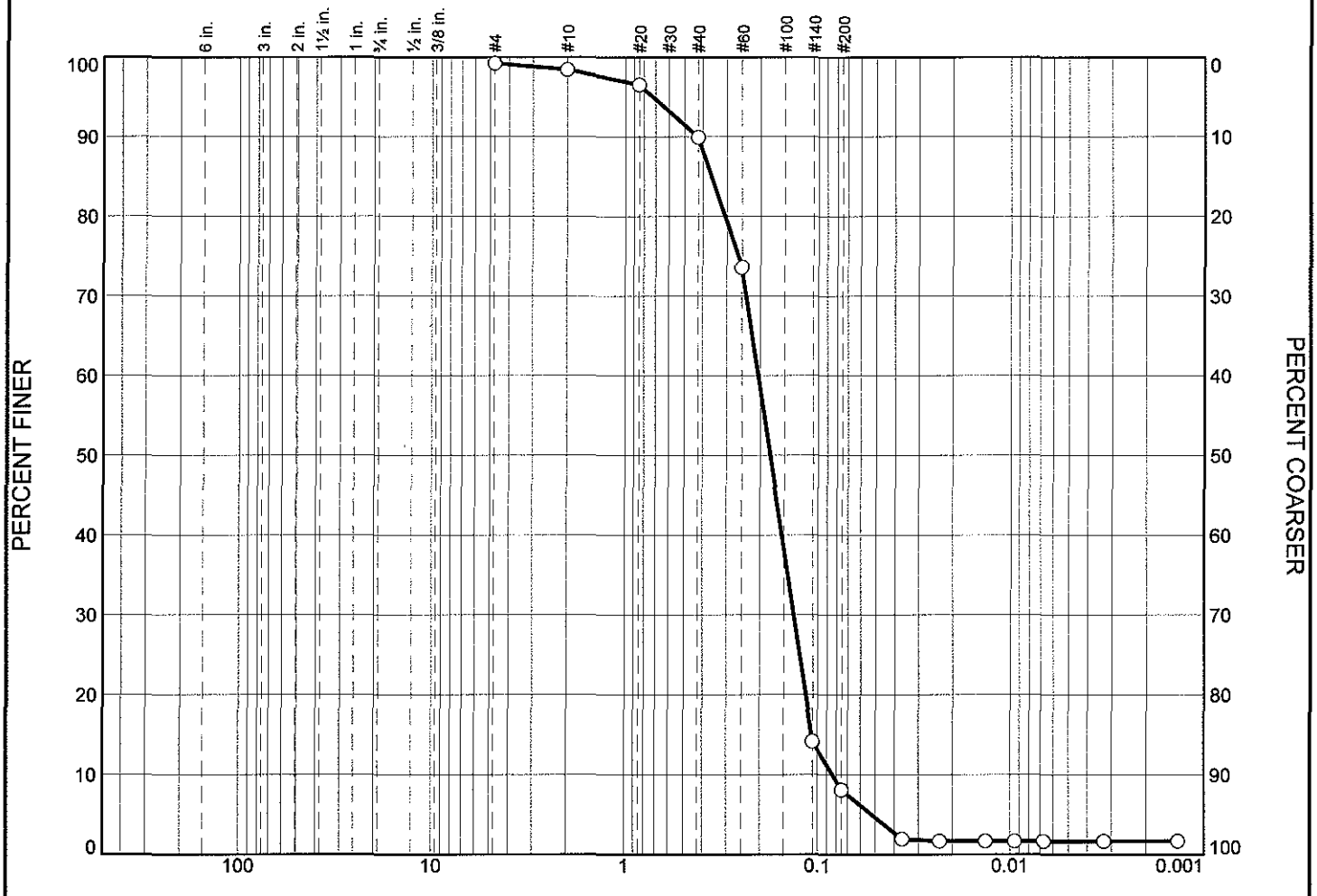
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	1.3	5.3	5.9	8.9	17.2	13.3	10.7	56.0	14.6	3.1	3.3	2.0	23.0	14.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0050	0.0163	0.0456	0.1380	0.2320	0.5510	0.7840	1.3370	2.4603

Fineness Modulus
1.17

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	1.5	5.4	17.9	48.0	19.1	4.7	0.1	0.0	0.0	1.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3621	0.2055	0.1779	0.1332	0.1073	0.0836	1.03	2.46

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502411 **Sample Number:** L0912910-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502411
Sample Number: L0912910-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 55.37
Tare Wt. = 4.04
Minus #200 from wash = 7.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.55	0.00	#4	522.30	521.87	99.2	0.8
		#10	485.30	484.86	98.4	1.6
		#20	406.56	405.51	96.5	3.5
		#40	362.92	359.25	89.9	10.1
		#60	375.31	366.22	73.6	26.4
		#140	375.88	342.88	14.2	85.8
		#200	348.29	344.91	8.1	91.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 8.1
Weight of hydrometer sample =55.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.9	98.1
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	1.7	98.3
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	1.7	98.3
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.7	98.3
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.7	98.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.7	98.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.7	98.3

Fractional Components

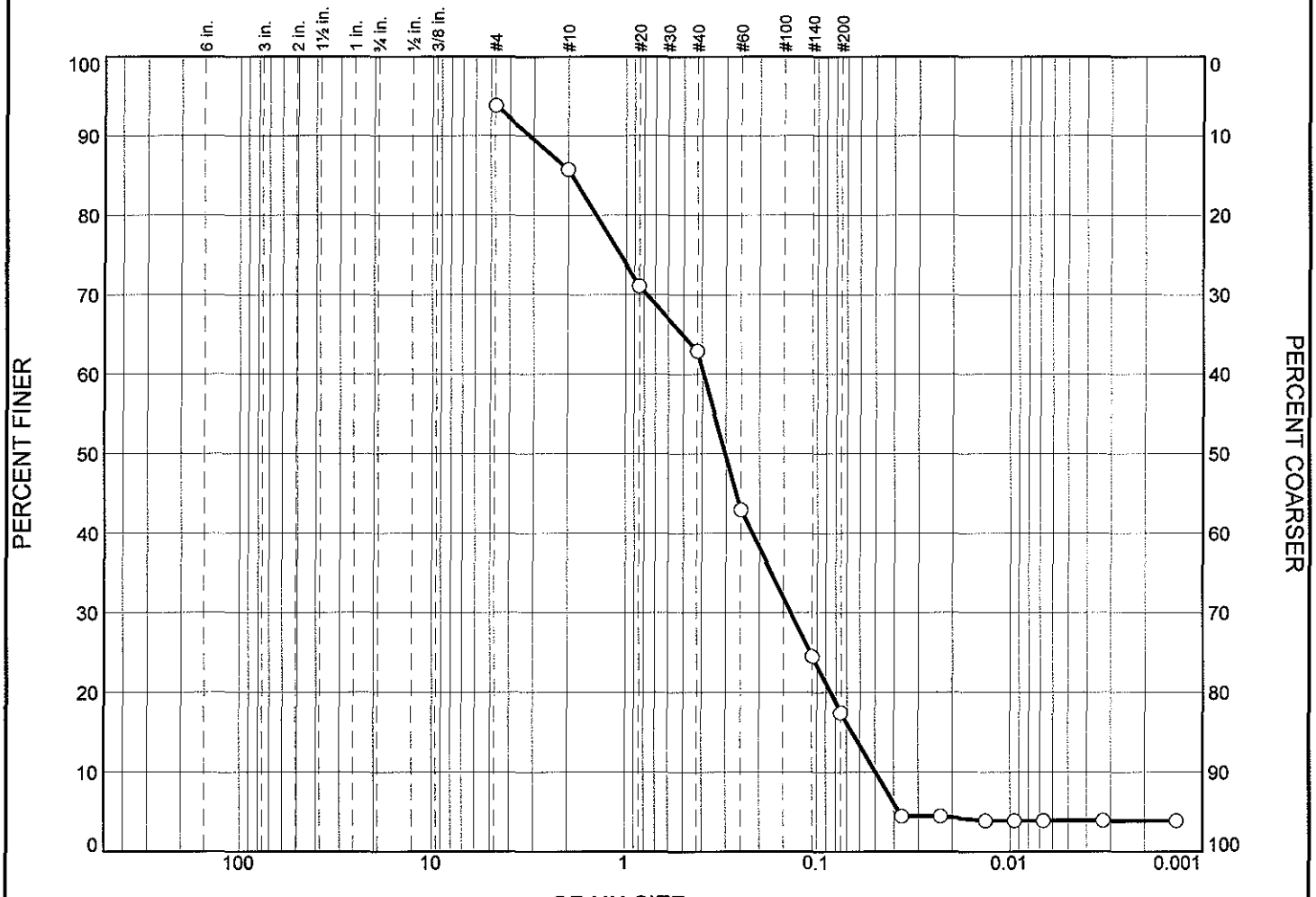
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	1.5	5.4	17.9	48.0	19.1	91.9	4.7	0.1	0.0	0.0	4.8	1.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0836	0.1073	0.1153	0.1332	0.1779	0.2055	0.3079	0.3621	0.4278	0.7229

Fineness Modulus	C_u	C_c
0.94	2.46	1.03

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.4	11.9	9.1	21.9	14.9	13.9	9.7	0.4	0.1	0.0	3.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.9139	0.3935	0.3018	0.1370	0.0656	0.0497	0.96	7.92

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502412 **Sample Number:** L0912910-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502412
Sample Number: L0912910-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 50.33
Tare Wt. = 4.06
Minus #200 from wash = 10.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.81	0.00	#4	522.36	519.16	93.8	6.2
		#10	464.09	459.91	85.8	14.2
		#20	382.79	375.18	71.1	28.9
		#40	370.71	366.48	62.9	37.1
		#60	377.34	366.98	42.9	57.1
		#140	353.72	344.18	24.5	75.5
		#200	350.23	346.56	17.4	82.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 17.4
Weight of hydrometer sample =51.81
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	4.4	95.6
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	4.4	95.6
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	3.9	96.1
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	3.9	96.1
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	3.9	96.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	3.9	96.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	3.9	96.1

Fractional Components

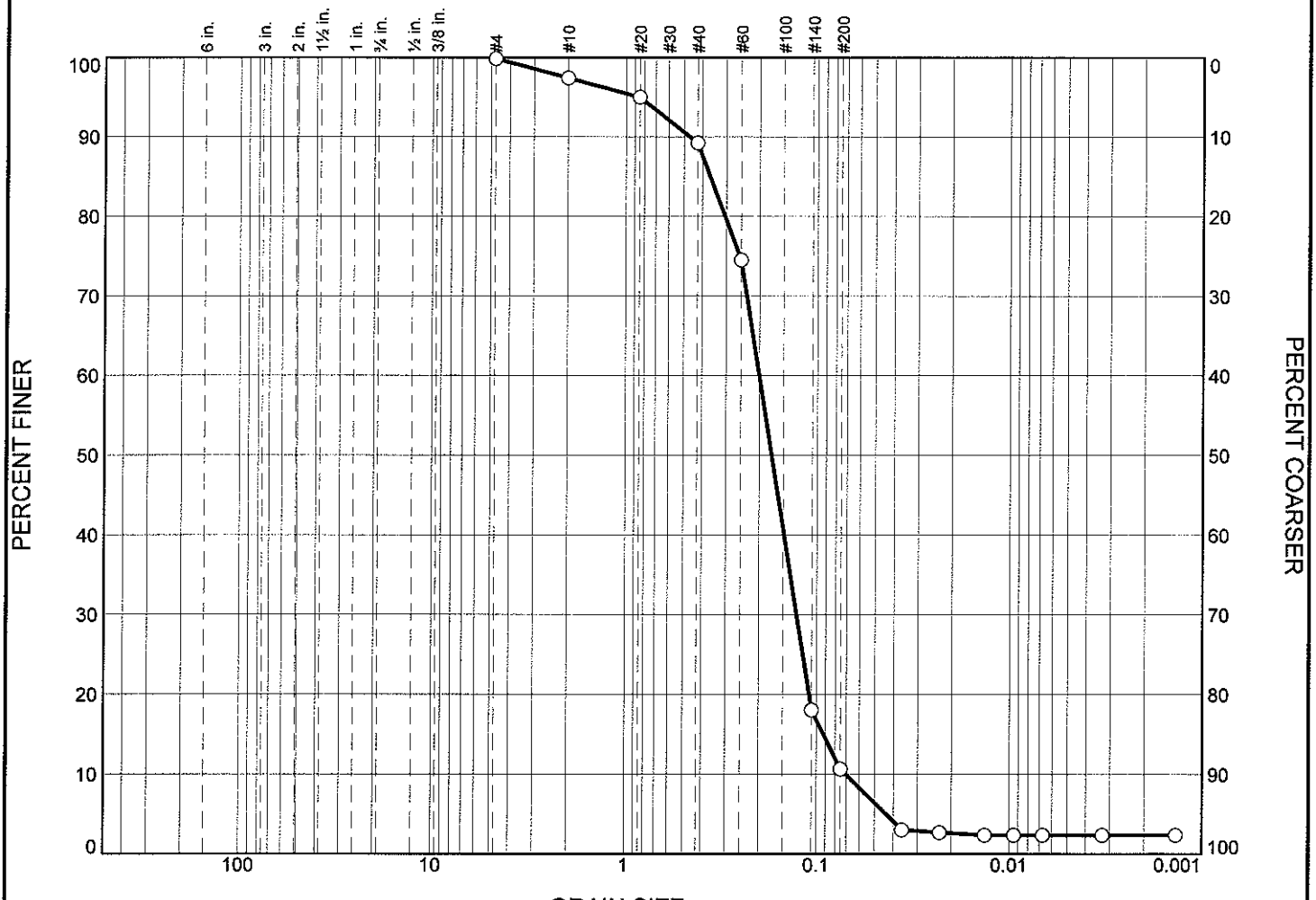
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.4	11.9	9.1	21.9	14.9	13.9	71.7	9.7	0.4	0.1	0.0	10.2	3.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0497	0.0656	0.0851	0.1370	0.3018	0.3935	1.4303	1.9139	3.1525	

Fineness Modulus	C_u	C_c
1.93	7.92	0.96

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.0	1.9	4.9	16.1	45.6	20.2	5.8	0.4	0.1		2.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3646	0.2005	0.1723	0.1271	0.0920	0.0706	1.14	2.84

Material Description	USCS	AASHTO
○		

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502413 **Sample Number:** L0912910-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502413
Sample Number: L0912910-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 50.67
Tare Wt. = 4.02
Minus #200 from wash = 9.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.39	0.00	#4	521.95	521.87	99.8	0.2
		#10	486.11	484.86	97.4	2.6
		#20	406.75	405.51	95.0	5.0
		#40	362.20	359.25	89.3	10.7
		#60	373.80	366.22	74.5	25.5
		#140	371.90	342.88	18.0	82.0
		#200	348.72	344.91	10.6	89.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 10.6
Weight of hydrometer sample =51.75
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	3.0	97.0
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	2.7	97.3
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	2.4	97.6
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	2.4	97.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	2.4	97.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.4	97.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.4	97.6

Fractional Components

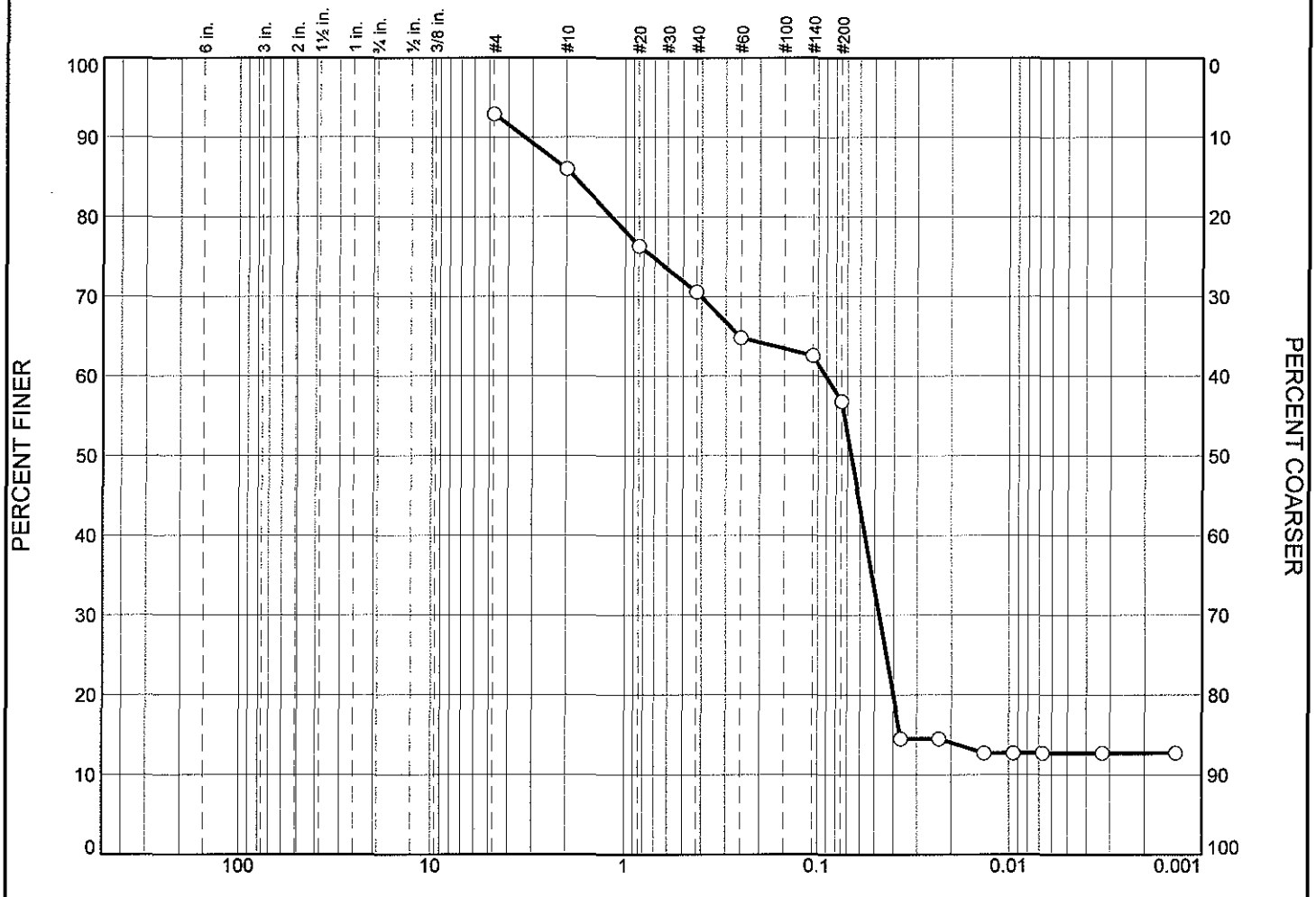
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.0	1.9	4.9	16.1	45.6	20.2	88.7	5.8	0.4	0.1		6.3	2.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0706	0.0920	0.1092	0.1271	0.1723	0.2005	0.3046	0.3646	0.4648	0.8503

Fineness Modulus	C_u	C_c
0.94	2.84	1.14

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.6	7.8	6.3	7.1	1.8	16.9	31.6	1.3	0.5		12.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.8289	0.0910	0.0668	0.0475	0.0368			

	Material Description	USCS	AASHTO
○			

Project No. L0912910 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502426 **Sample Number:** L0912910-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912910
Location: 502426
Sample Number: L0912910-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 51.36
Tare Wt. = 4.04
Minus #200 from wash = 8.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.75	0.00	#4	522.82	519.16	92.9	7.1
		#10	463.49	459.91	86.0	14.0
		#20	380.18	375.18	76.3	23.7
		#40	369.48	366.48	70.6	29.4
		#60	369.95	366.98	64.8	35.2
		#140	345.36	344.18	62.5	37.5
		#200	349.49	346.53	56.8	43.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 56.8
Weight of hydrometer sample =51.75
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	14.5	85.5
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	14.5	85.5
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	12.7	87.3
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	12.7	87.3
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	12.7	87.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	12.7	87.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	12.7	87.3

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.6	7.8	6.3	7.1	1.8	16.9	39.9	31.6	1.3	0.5		33.4	12.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0368	0.0400	0.0475	0.0668	0.0910	1.1746	1.8289	3.2940	

Fineness Modulus
1.36

Alpha Analytical

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912910

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	502111	9/24/09	07:57	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	502112	9/24/09	07:57	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	502113	9/24/09	07:57	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	502125	9/24/09	08:04	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	502126	9/24/09	08:05	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	502127	9/24/09	08:04	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
	508035	9/24/09	08:20	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem F Dup	1
5	508036	9/24/09	08:20	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs F Dup	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
				Container Type		G	G	G	G	-	-	-	-	-	-	-	-		
				Preservative		A	A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	9-24-09 18:40		9/24/09 19:34
	9/25/09 9:15		9/25/09 9:15
	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 28-APR-09)

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CHAIN OF CUSTODY

PAGE OF

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd In Lab:

ALPHA Job #: L091Z910

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
6	502211	9/22/09	15:02	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	502212	9/22/09	15:02	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
8	502213	9/22/09	15:02	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	502225	9/22/09	15:30	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
9	502226	9/22/09	15:30	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	502227	9/22/09	15:30	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Heidi Nowicki	9/22 18:56	[illegible]	9/22 18:55
[illegible]	9/23/09 08:15	[illegible]	9/23/09 9:15
Paul Gilbert	9/23/09 10:25	[illegible]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 150

CHAIN OF CUSTODY

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Serial No:08031016:16

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L091890

Report Information — ☐ FAX ☒ ADEx
Data Deliverables — ☒ EMAIL ☐ Add'l Deliverables
Billing Information — ☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
10	502311	9/23/09	17:06	SE	HC	☐	☐	☒	☐									ben gs	1
11	502312	9/23/09	17:06	SE	HC	☐	☐	☒	☐									ben gs	1
12	502313	9/23/09	17:05	SE	HC	☐	☐	☒	☐									ben gs	1
	502325	9/23/09	17:02	SE	HC	☒	☒	☐	☐									sed chem	1
13	502326	9/23/09	17:13	SE	HC	☐	☐	☒	☐									sed gs	1
	502327	9/23/09	17:13	SE	HC	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	9-23-09 16:40	[illegible]	9/23/09
[illegible]	9/24/09 9:00	[illegible]	9/24/09 9:20
[illegible]	9/24/09 11:00	[illegible]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Serial_No:08031016:16

CHAIN OF CUSTODY

PAGE OF

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:
ALPHA Job #:

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Welshar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
14	502411	9/22/09	17:18	SE	HC	☐	☐	☒	☐	ben gs	1
15	502412	9/22/09	17:18	SE	HC	☐	☐	☒	☐	ben gs	1
16	502413	9/22/09	17:18	SE	HC	☐	☐	☒	☐	ben gs	1
	502425	9/22/09	17:38	SE	HC	☒	☒	☐	☐	sed chem	1
17	502426	9/22/09	17:38	SE	HC	☐	☐	☒	☐	sed gs	1
	502427	9/22/09	17:38	SE	HC	☐	☐	☐	☒	sed arch	1
		~~9/22/09~~				☐	☐	☐	☐		
		~~9/22/09~~				☐	☐	☐	☐		
		~~9/22/09~~				☐	☐	☐	☐		
		~~9/22/09~~				☐	☐	☐	☐		
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/22 18:56	[signature]	9/22 18:55
		Paul Gilbert	9/22/09 9:15
Paul Gilbert	9/23/09 10:25	[signature]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912911
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912911
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912911-01	502511	NEW BEDFORD, MA	09/22/09 13:00
L0912911-02	502512	NEW BEDFORD, MA	09/22/09 13:30
L0912911-03	502513	NEW BEDFORD, MA	09/22/09 13:32
L0912911-04	502526	NEW BEDFORD, MA	09/22/09 13:48
L0912911-05	502611	NEW BEDFORD, MA	09/27/09 08:02
L0912911-06	502612	NEW BEDFORD, MA	09/27/09 08:10
L0912911-07	502613	NEW BEDFORD, MA	09/27/09 08:17
L0912911-08	502626	NEW BEDFORD, MA	09/27/09 08:23
L0912911-09	502711	NEW BEDFORD, MA	09/22/09 11:56
L0912911-10	502712	NEW BEDFORD, MA	09/22/09 11:56
L0912911-11	502713	NEW BEDFORD, MA	09/22/09 11:56
L0912911-12	502726	NEW BEDFORD, MA	09/22/09 11:56
L0912911-13	502811	NEW BEDFORD, MA	09/23/09 17:21
L0912911-14	502812	NEW BEDFORD, MA	09/23/09 17:21
L0912911-15	502813	NEW BEDFORD, MA	09/23/09 17:21
L0912911-16	502826	NEW BEDFORD, MA	09/23/09 17:30
L0912911-17	502911	NEW BEDFORD, MA	09/27/09 14:12
L0912911-18	502912	NEW BEDFORD, MA	09/27/09 14:20
L0912911-19	502913	NEW BEDFORD, MA	09/27/09 14:25
L0912911-20	502926	NEW BEDFORD, MA	09/27/09 14:38

Project Name: NBH LONG TERM MONITORING **Lab Number:** L0912911
Project Number: TO-0018 **Report Date:** 08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 2, 2010. The report was ammended to include revised Grain Size data.

Grain Size

The WG382946-1 Laboratory Duplicate RPD is outside the acceptance criteria for gravel (133%), % very coarse sand (152%), % coarse sand (123%), % fine sand (169%),% very fine sand (168%),silt (182%),clay (178%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912911
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative (continued)

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-01
Client ID: 502511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 13:00
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	34.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-02
Client ID: 502512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 13:30
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-03
Client ID: 502513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 13:32
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	29.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-04
Client ID: 502526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 13:48
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.300		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	57.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-05
Client ID: 502611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 08:02
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	10.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	22.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	28.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	2.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.400		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-06
Client ID: 502612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 08:10
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	11.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	13.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	24.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.400		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-07
Client ID: 502613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 08:17
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	8.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	24.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	34.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	2.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.500		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-08
Client ID: 502626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 08:23
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	6.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	9.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	21.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	31.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	3.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.600		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-09
Client ID: 502711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 11:56
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	31.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	31.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-10
Client ID: 502712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 11:56
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	27.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	34.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-11
Client ID: 502713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 11:56
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	30.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	33.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	5.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-12
Client ID: 502726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 11:56
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	25.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-13
Client ID: 502811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:21
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	10.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	18.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	29.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	28.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	1.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.500		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-14
Client ID: 502812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 17:21
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	12.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	16.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	27.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	27.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	1.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.500		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-15
Client ID: 502813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 17:21
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	10.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	21.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	31.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	26.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	1.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.300		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-16
Client ID: 502826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 17:30
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	7.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	23.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	34.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	28.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	0.800		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-17
Client ID: 502911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 14:12
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-18
Client ID: 502912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 14:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	10.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	22.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	29.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-19
Client ID: 502913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 14:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	15.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	24.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	22.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912911
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912911-20
Client ID: 502926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 14:38
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	23.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912911
Report Date: 08/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG382946-1 QC Sample: L0912911-12 Client ID: 502726						
Gravel (>2.00mm)	1.5	7.40	%	**133**	Q	20
Very Coarse Sand (1.00-2.00 mm)	2.9	21.1	%	**152**	Q	20
Coarse Sand (0.50-1.00 mm)	8.2	34.2	%	**123**	Q	20
Medium Sand (0.25-0.50 mm)	25.8	29.5	%	13		20
Fine Sand (0.125-0.25 mm)	25.2	2.10	%	**169**	Q	20
Very Fine Sand (0.063-0.125 mm)	10.5	0.900	%	**168**	Q	20
Silt - (1.95-62.5 um)	6.5	0.300	%	**182**	Q	20
Clay - (<1.95 um)	1.7	0.100	%	**178**	Q	20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912911
Report Date: 08/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
A	Absent
C	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-01A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912911
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-02A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-03A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-04A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-05A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-06A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-07A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-08A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-09A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-10A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-11A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-12A	Glass 250ml unpreserved	B	N/A	4.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-13A	Glass 250ml unpreserved	A	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-14A	Glass 250ml unpreserved	A	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-15A	Glass 250ml unpreserved	A	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-16A	Glass 250ml unpreserved	A	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-17A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-18A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912911-19A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912911-20A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

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Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

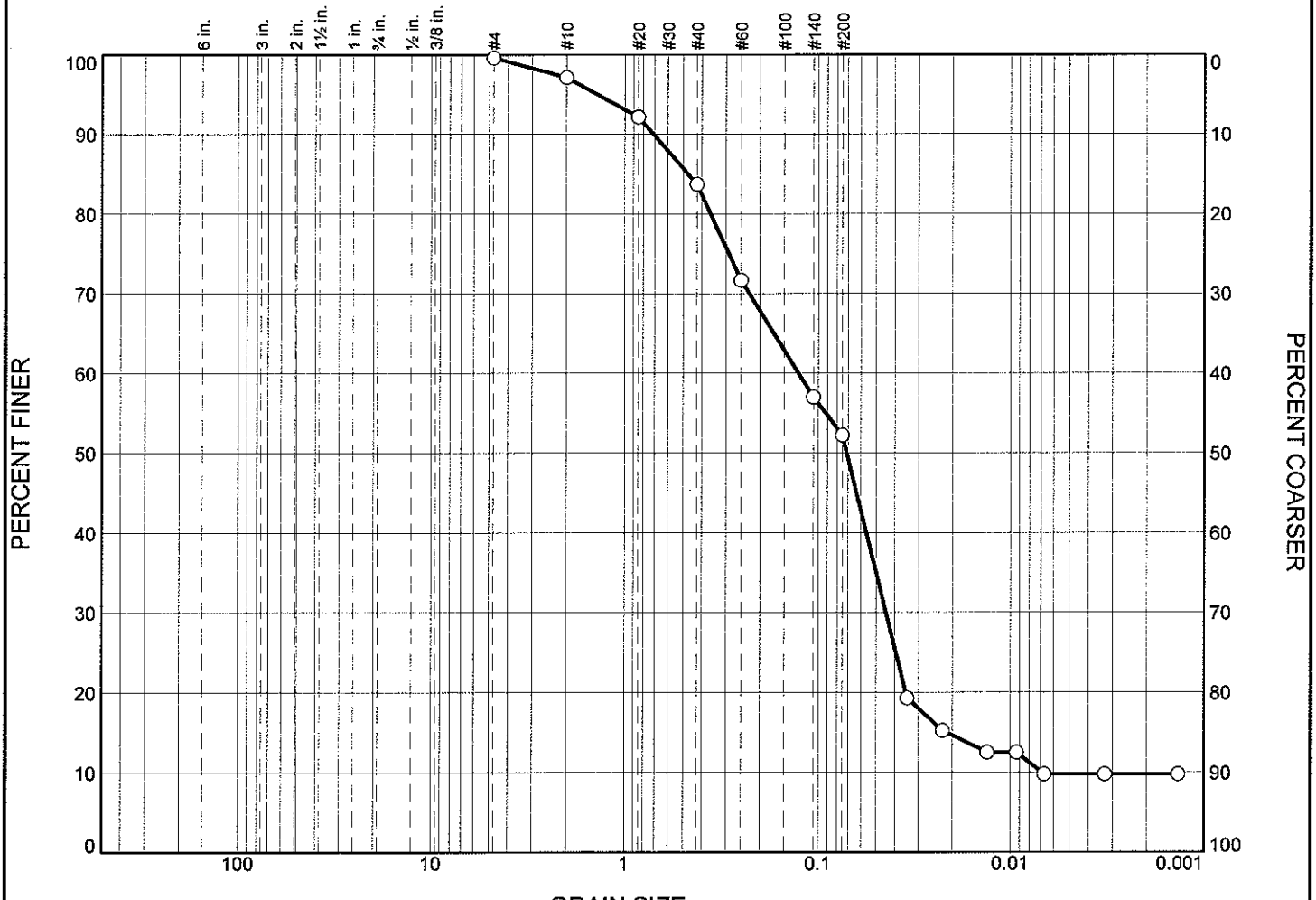
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.0	4.0	7.4	14.1	11.8	15.3	26.2	4.9	2.4	1.2	9.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4731	0.1265	0.0712	0.0444	0.0215	0.0069	2.26	18.37

Material Description	USCS	AASHTO
○		

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502511 **Sample Number:** L0912911-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502511
Sample Number: L0912911-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
61.81	0.00	#4	521.13	520.87	99.6	0.4
		#10	483.60	482.08	97.1	2.9
		#20	414.14	411.07	92.2	7.8
		#40	383.06	377.83	83.7	16.3
		#60	377.31	369.86	71.6	28.4
		#140	356.26	347.20	57.0	43.0
		#200	349.46	346.51	52.2	47.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 52.2
Weight of hydrometer sample =61.81
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	19.3	80.7
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	15.2	84.8
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	12.5	87.5
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	12.5	87.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	9.8	90.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	9.8	90.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	9.8	90.2

Fractional Components

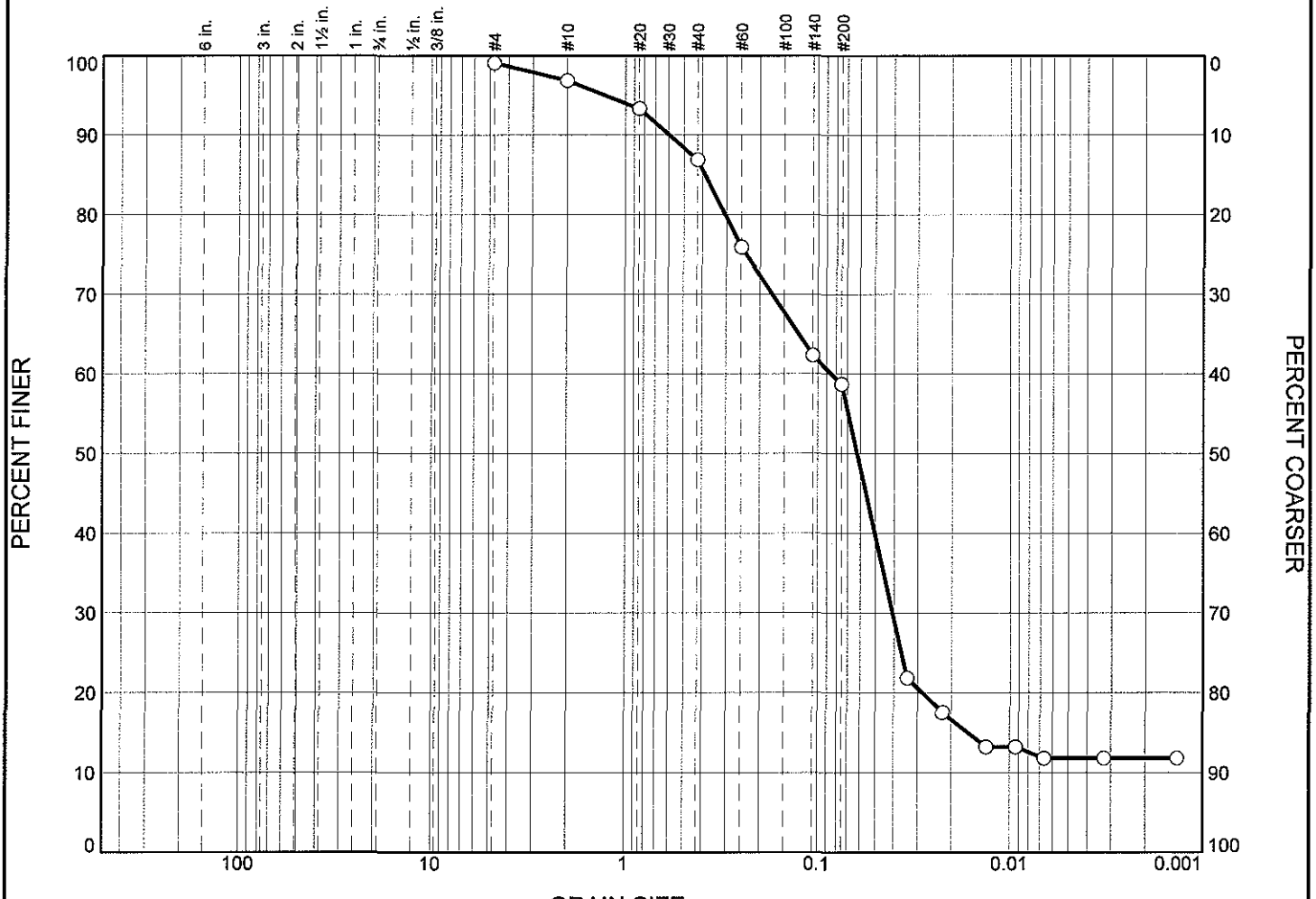
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.0	4.0	7.4	14.1	11.8	15.3	52.6	26.2	4.9	2.4	1.2	34.7	9.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0069	0.0215	0.0350	0.0444	0.0712	0.1265	0.3612	0.4731	0.7125	1.3880

Fineness Modulus	C_u	C_c
0.82	18.37	2.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	2.9	5.6	12.5	11.0	14.7	29.3	6.3	2.1	0.7	11.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3880	0.0849	0.0623	0.0406	0.0163			

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502512 **Sample Number:** L0912911-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502512
Sample Number: L0912911-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.66	0.00	#4	522.35	521.74	99.1	0.9
		#10	486.21	484.76	96.9	3.1
		#20	407.70	405.38	93.3	6.7
		#40	366.32	362.09	86.9	13.1
		#60	373.37	366.15	75.9	24.1
		#140	351.79	342.88	62.3	37.7
		#200	347.62	345.24	58.7	41.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 58.7
Weight of hydrometer sample =65.66
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	21.8	78.2
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	17.5	82.5
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	13.2	86.8
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	13.2	86.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	11.8	88.2
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	11.8	88.2
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	11.8	88.2

Fractional Components

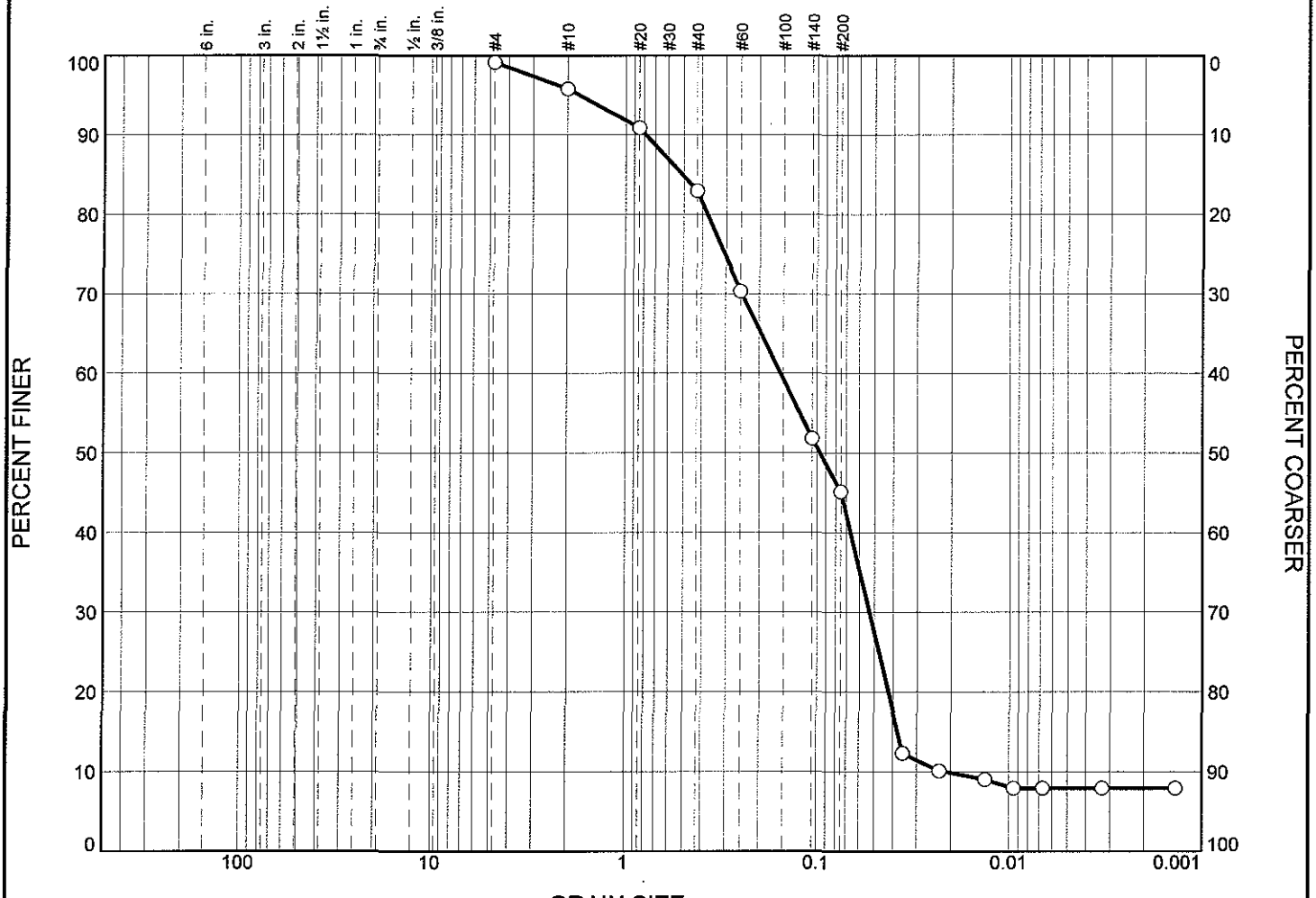
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	2.9	5.6	12.5	11.0	14.7	46.7	29.3	6.3	2.1	0.7	38.4	11.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0163	0.0284	0.0406	0.0623	0.0849	0.3048	0.3880	0.5941	1.2739

Fineness Modulus
0.71

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.7	4.0	7.0	14.5	14.9	18.2	25.6	2.3	1.4	0.0	7.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5083	0.1549	0.0965	0.0531	0.0377	0.0217	0.84	7.15

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502513 **Sample Number:** L0912911-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502513
Sample Number: L0912911-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
66.11	0.00	#4	521.44	520.87	99.1	0.9
		#10	484.29	482.08	95.8	4.2
		#20	414.32	411.07	90.9	9.1
		#40	383.07	377.83	83.0	17.0
		#60	378.21	369.86	70.3	29.7
		#140	359.44	347.20	51.8	48.2
		#200	350.91	346.51	45.2	54.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.2
Weight of hydrometer sample =66.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	12.3	87.7
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	10.1	89.9
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	9.0	91.0
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	7.9	92.1
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	7.9	92.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	7.9	92.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	7.9	92.1

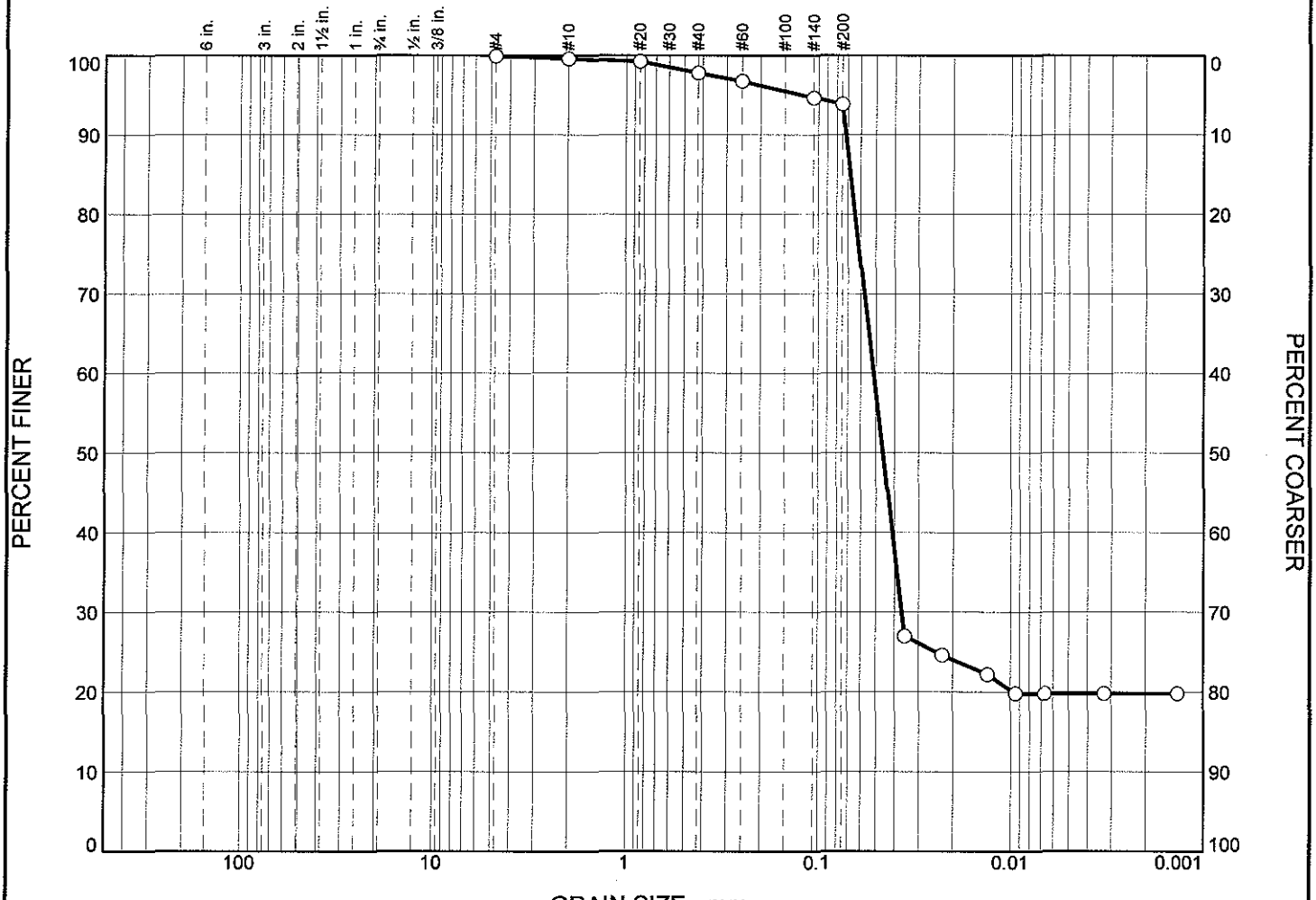
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.7	4.0	7.0	14.5	14.9	18.2	58.6	25.6	2.3	1.4	0.0	29.3	7.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0217	0.0377	0.0423	0.0531	0.0965	0.1549	0.3754	0.5083	0.7871	1.7416

Fineness Modulus	C_u	C_c
0.91	7.15	0.84

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.3	1.2	1.4	1.6	17.5	51.3	3.4	3.1		19.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0679	0.0513	0.0459	0.0367				

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502526 **Sample Number:** L0912911-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502526
Sample Number: L0912911-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.58	0.00	#4	521.79	521.74	99.9	0.1
		#10	484.97	484.76	99.6	0.4
		#20	405.61	405.38	99.2	0.8
		#40	362.99	362.09	97.8	2.2
		#60	366.80	366.15	96.7	3.3
		#140	344.18	342.88	94.7	5.3
		#200	345.75	345.24	93.8	6.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.8
Weight of hydrometer sample =62.58
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	27.0	73.0
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	24.6	75.4
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	22.2	77.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	19.8	80.2
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	19.8	80.2
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	19.8	80.2
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	19.8	80.2

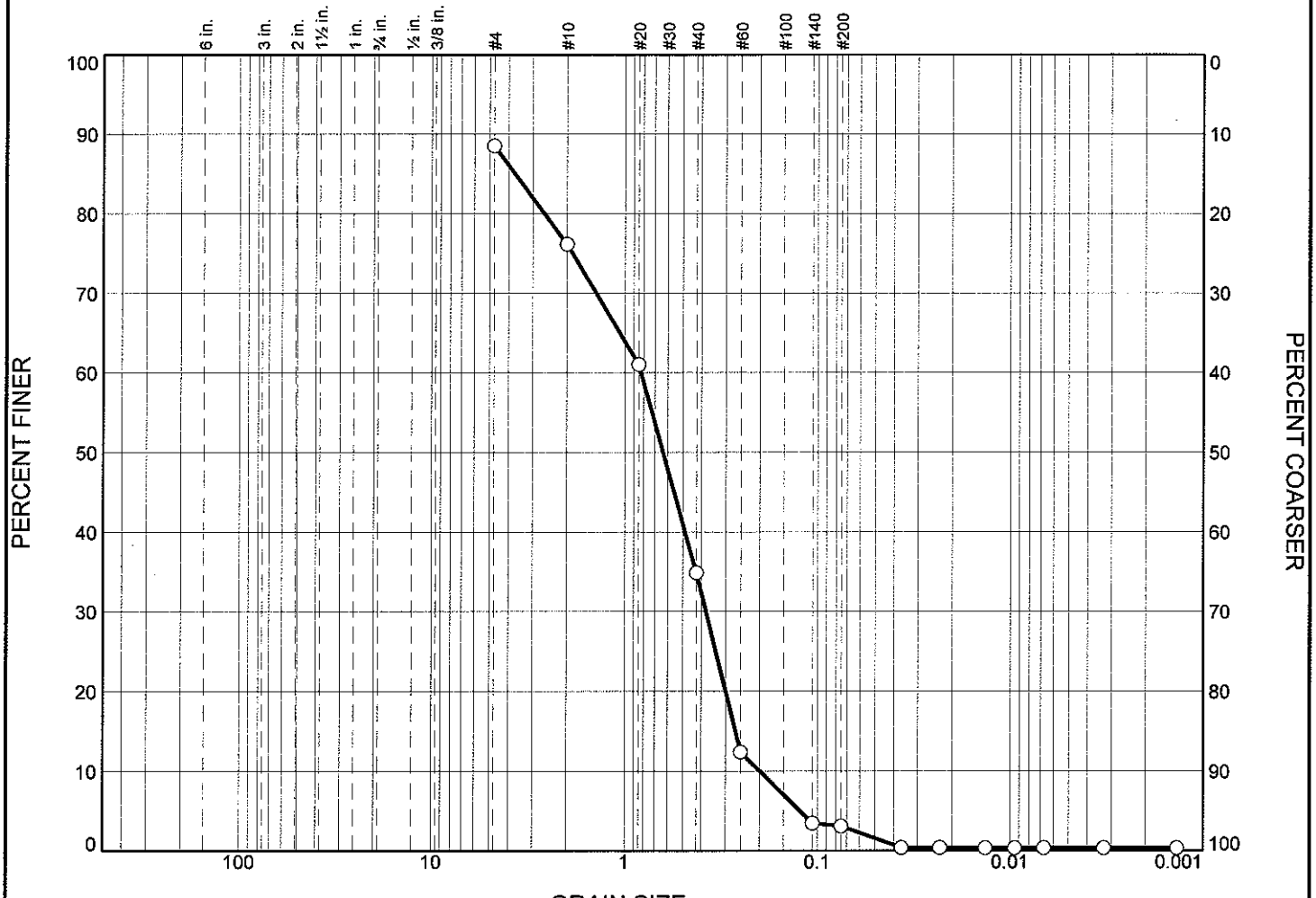
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.3	1.2	1.4	1.6	17.5	22.0	51.3	3.4	3.1		57.8	19.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0097	0.0367	0.0459	0.0513	0.0642	0.0679	0.0718	0.1218

Fineness Modulus
0.10

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.0	12.2	22.9	28.6	7.2	2.8	2.0	0.0	0.0	0.0	0.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.7146	0.8272	0.6345	0.3788	0.2660	0.1990	0.87	4.16

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502611 **Sample Number:** L0912911-05

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502611
Sample Number: L0912911-05
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
98.50	0.00	#4	532.18	520.87	88.5	11.5
		#10	494.27	482.08	76.1	23.9
		#20	425.96	411.07	61.0	39.0
		#40	403.58	377.83	34.9	65.1
		#60	392.04	369.86	12.4	87.6
		#140	355.97	347.20	3.5	96.5
		#200	346.87	346.51	3.1	96.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.1
Weight of hydrometer sample =98.50
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.4	99.6
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	0.4	99.6
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.4	99.6
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.4	99.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.4	99.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.4	99.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.4	99.6

Fractional Components

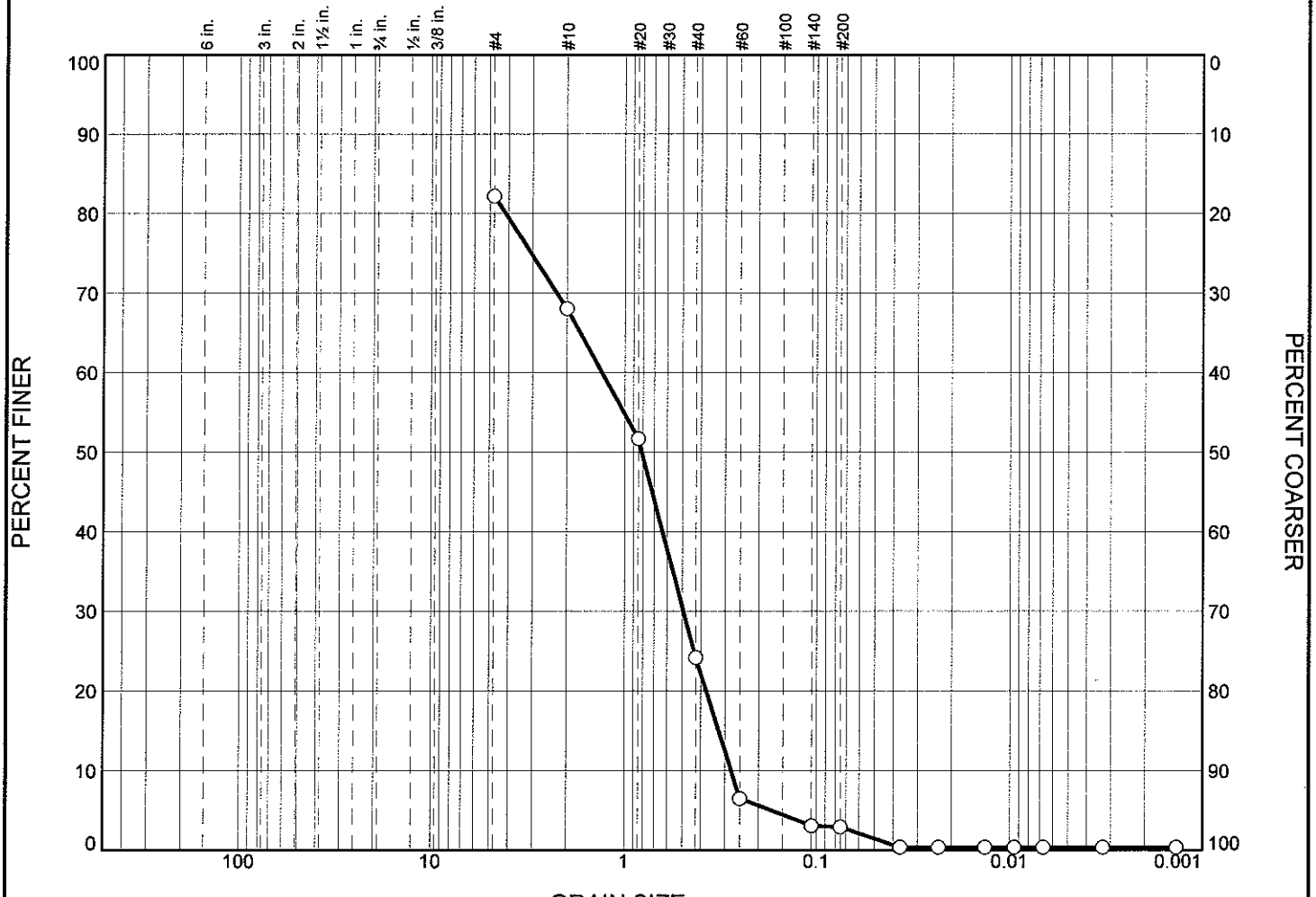
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.0	12.2	22.9	28.6	7.2	2.8	73.7	2.0	0.0	0.0	0.0	2.0	0.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1990	0.2660	0.2993	0.3788	0.6345	0.8272	2.6190	3.7146		

Fineness Modulus	C_u	C_c
2.91	4.16	0.87

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				11.4	13.2	24.2	24.1	2.8	1.4	1.9	0.0	0.0	0.0	0.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.3148	0.8153	0.4925	0.3229	0.2778	0.66	4.73

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502612 **Sample Number:** L0912911-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502612
Sample Number: L0912911-06
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
95.02	0.00	#4	538.63	521.74	82.2	17.8
		#10	498.25	484.76	68.0	32.0
		#20	420.94	405.38	51.7	48.3
		#40	388.22	362.09	24.2	75.8
		#60	382.94	366.15	6.5	93.5
		#140	346.12	342.88	3.1	96.9
		#200	345.39	345.24	2.9	97.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 2.9
Weight of hydrometer sample =95.02
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.4	99.6
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.4	99.6
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.4	99.6
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.4	99.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.4	99.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.4	99.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.4	99.6

Fractional Components

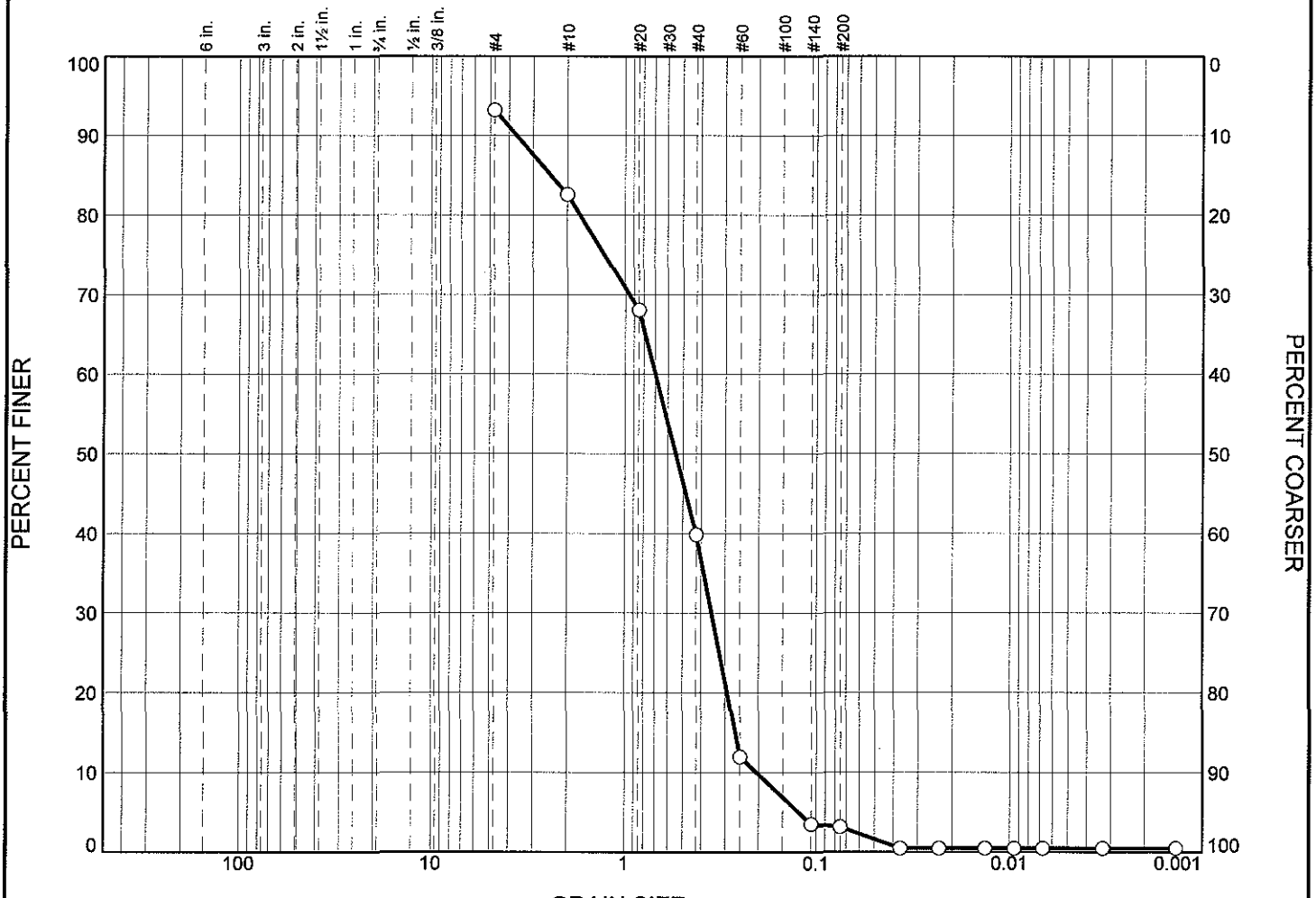
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			11.4	13.2	24.2	24.1	2.8	1.4	65.7	1.9	0.0	0.0	0.0	1.9	0.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2778	0.3229	0.3752	0.4925	0.8153	1.3148	4.1479			

Fineness Modulus	C_u	C_c
3.34	4.73	0.66

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				8.5	11.8	24.3	34.6	6.8	2.6	2.0	0.0	0.0	0.0	0.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.4370	0.6972	0.5453	0.3524	0.2650	0.2053	0.87	3.40

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502613 **Sample Number:** L0912911-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502613
Sample Number: L0912911-07
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
76.18	0.00	#4	526.04	520.87	93.2	6.8
		#10	490.19	482.08	82.6	17.4
		#20	422.12	411.07	68.1	31.9
		#40	399.32	377.83	39.9	60.1
		#60	391.13	369.86	11.9	88.1
		#140	353.61	347.20	3.5	96.5
		#200	346.79	346.51	3.2	96.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.2
Weight of hydrometer sample =76.18
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.5	99.5
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.5	99.5
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.5	99.5
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.5	99.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.5	99.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.5	99.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.5	99.5

Fractional Components

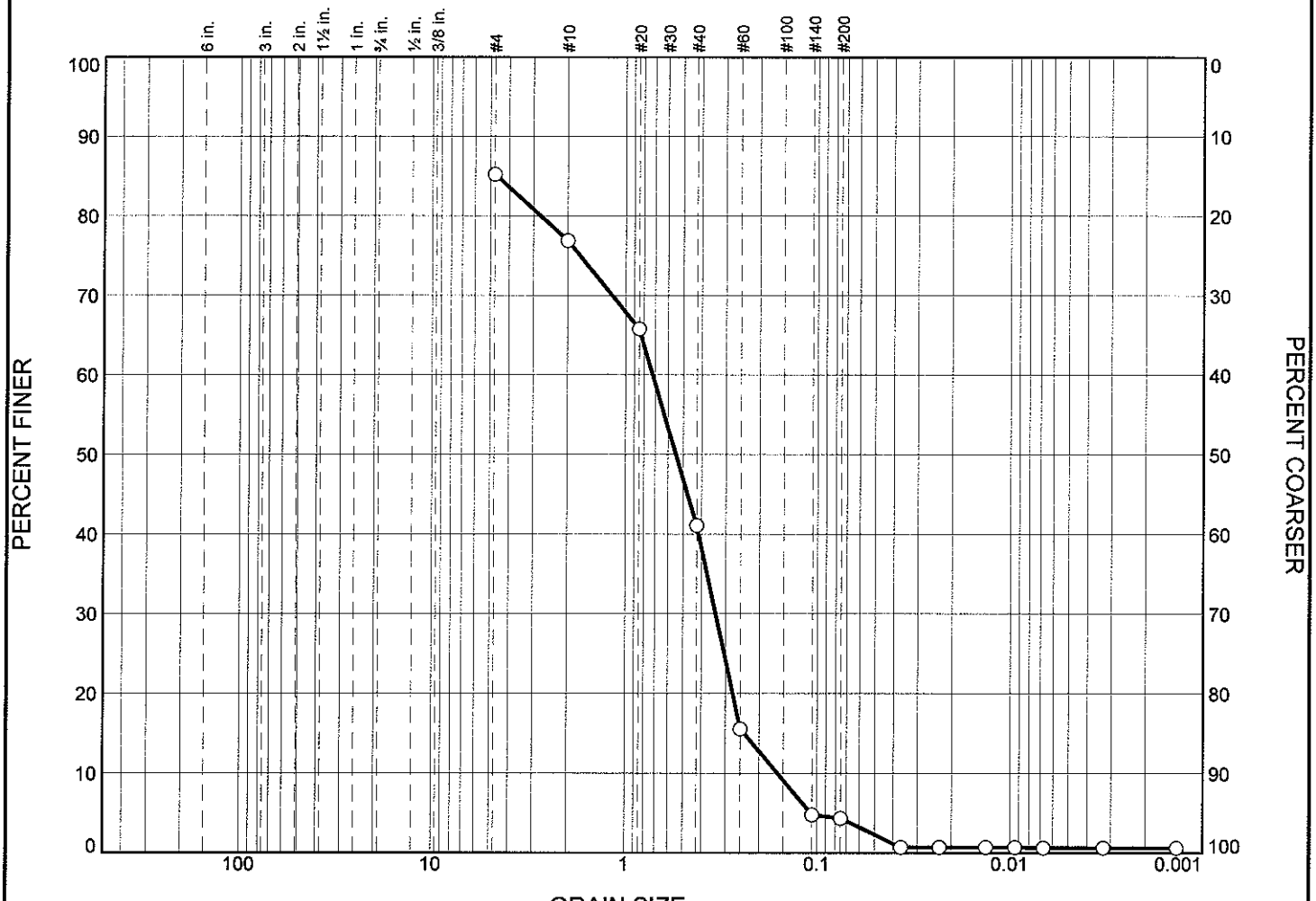
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			8.5	11.8	24.3	34.6	6.8	2.6	80.1	2.0	0.0	0.0	0.0	2.0	0.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2053	0.2650	0.2914	0.3524	0.5453	0.6972	1.7189	2.4370	3.6585	

Fineness Modulus	C_u	C_c
2.66	3.40	0.87

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.7	9.0	21.0	31.4	8.7	3.4	2.7	0.0	0.0	0.1	0.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.6383	0.7228	0.5458	0.3376	0.2395	0.1608	0.98	4.50

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502626 **Sample Number:** L0912911-08

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502626
Sample Number: L0912911-08
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
81.04	0.00	#4	533.71	521.74	85.2	14.8
		#10	491.52	484.76	76.9	23.1
		#20	414.39	405.38	65.8	34.2
		#40	382.09	362.09	41.1	58.9
		#60	386.86	366.15	15.5	84.5
		#140	351.60	342.88	4.8	95.2
		#200	345.60	345.24	4.3	95.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 4.3
Weight of hydrometer sample =81.04
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.7	99.3
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	0.7	99.3
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	0.7	99.3
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	0.7	99.3
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.6	99.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.6	99.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.6	99.4

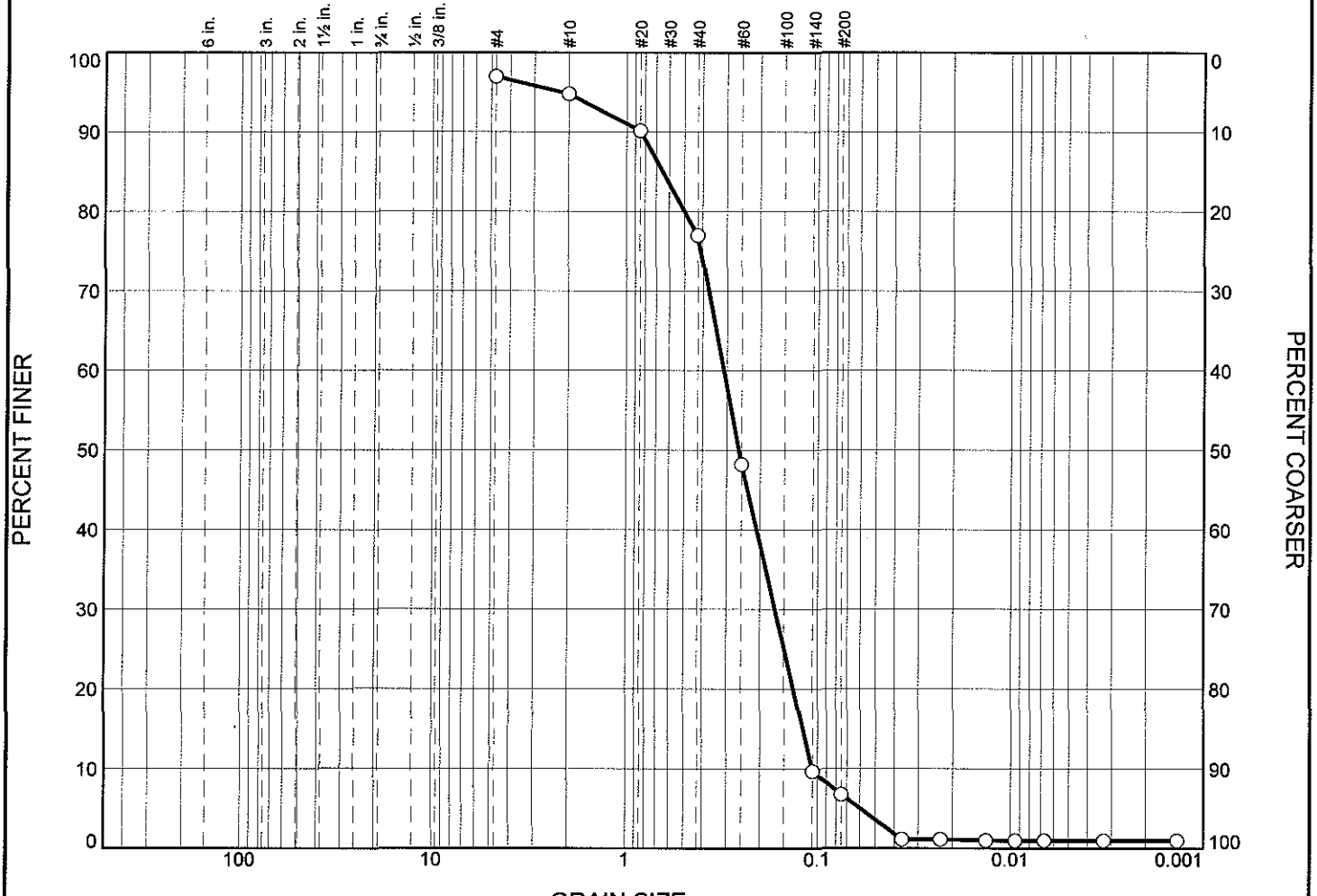
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.7	9.0	21.0	31.4	8.7	3.4	73.5	2.7	0.0	0.0	0.1	2.8	0.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1608	0.2395	0.2743	0.3376	0.5458	0.7228	2.7617	4.6383		

Fineness Modulus	C_u	C_c
2.79	4.50	0.98

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	3.8	10.9	31.9	31.2	11.7	4.2	0.1	0.0	0.0	1.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6481	0.3109	0.2586	0.1668	0.1194	0.1068	0.84	2.91

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502711 **Sample Number:** L0912911-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502711
Sample Number: L0912911-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
78.25	0.00	#4	524.11	521.74	97.0	3.0
		#10	486.47	484.76	94.8	5.2
		#20	409.00	405.38	90.2	9.8
		#40	372.41	362.09	77.0	23.0
		#60	388.69	366.15	48.2	51.8
		#140	373.02	342.88	9.6	90.4
		#200	347.51	345.24	6.7	93.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 6.7
Weight of hydrometer sample =78.25
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.1	98.9
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.1	98.9
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	1.0	99.0
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.0	99.0
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.0	99.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.0	99.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.0	99.0

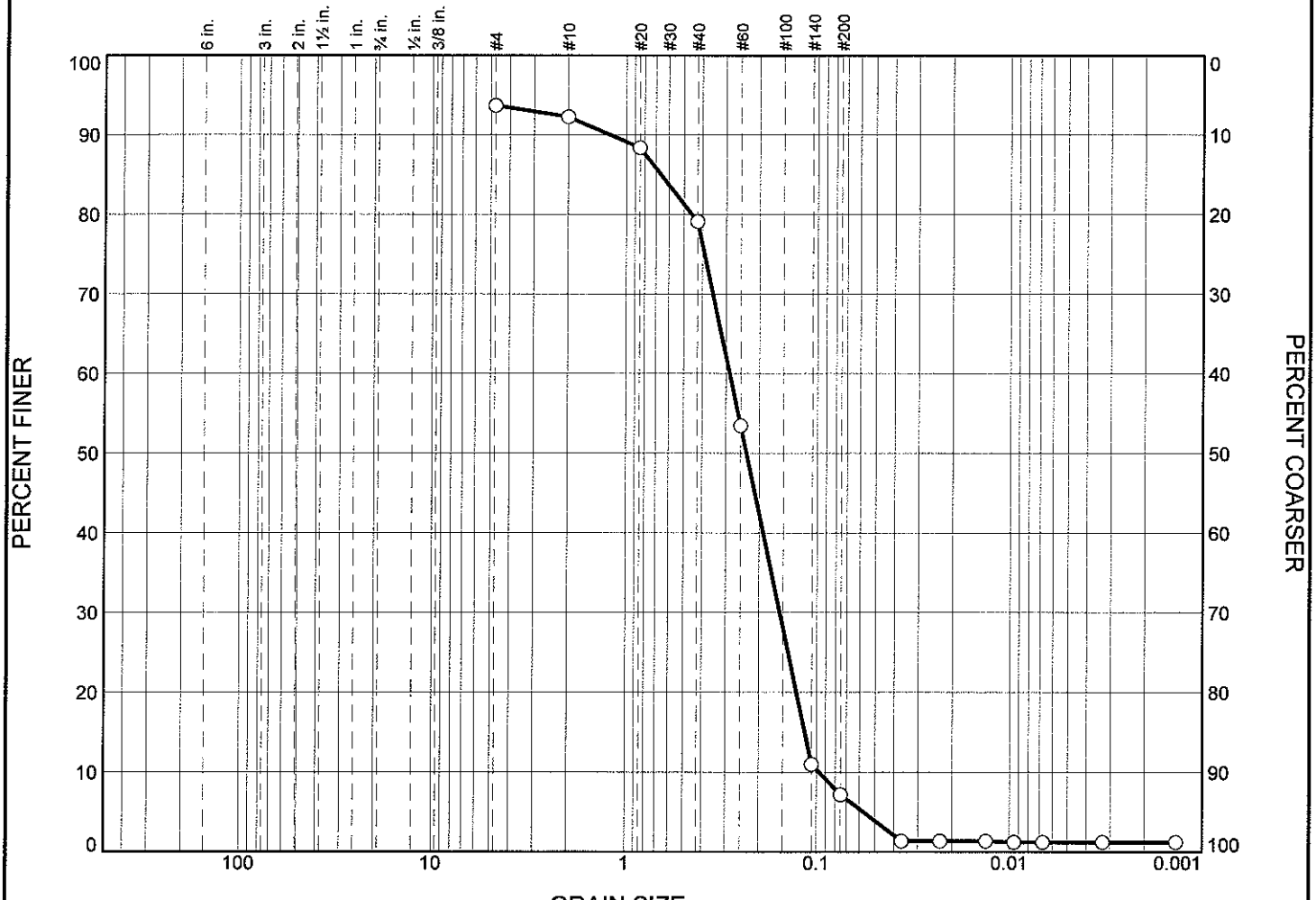
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	3.8	10.9	31.9	31.2	11.7	89.5	4.2	0.1	0.0	0.0	4.3	1.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1068	0.1194	0.1335	0.1668	0.2586	0.3109	0.4983	0.6481	0.8429	2.1768

Fineness Modulus	C_u	C_c
1.49	2.91	0.84

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	3.1	7.8	27.8	34.4	13.4	4.3	0.0	0.2		1.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6602	0.2863	0.2331	0.1557	0.1150	0.0971	0.87	2.95

Material Description	USCS	AASHTO
○		

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502712 **Sample Number:** L0912911-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502712
Sample Number: L0912911-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.25	0.00	#4	525.25	520.87	93.7	6.3
		#10	483.07	482.08	92.2	7.8
		#20	413.74	411.07	88.4	11.6
		#40	384.27	377.83	79.1	20.9
		#60	387.61	369.86	53.5	46.5
		#140	376.63	347.20	11.0	89.0
		#200	349.14	346.51	7.2	92.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 7.2
Weight of hydrometer sample =69.25
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.4	98.6
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.4	98.6
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.4	98.6
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.2	98.8
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.2	98.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.2	98.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.2	98.8

Fractional Components

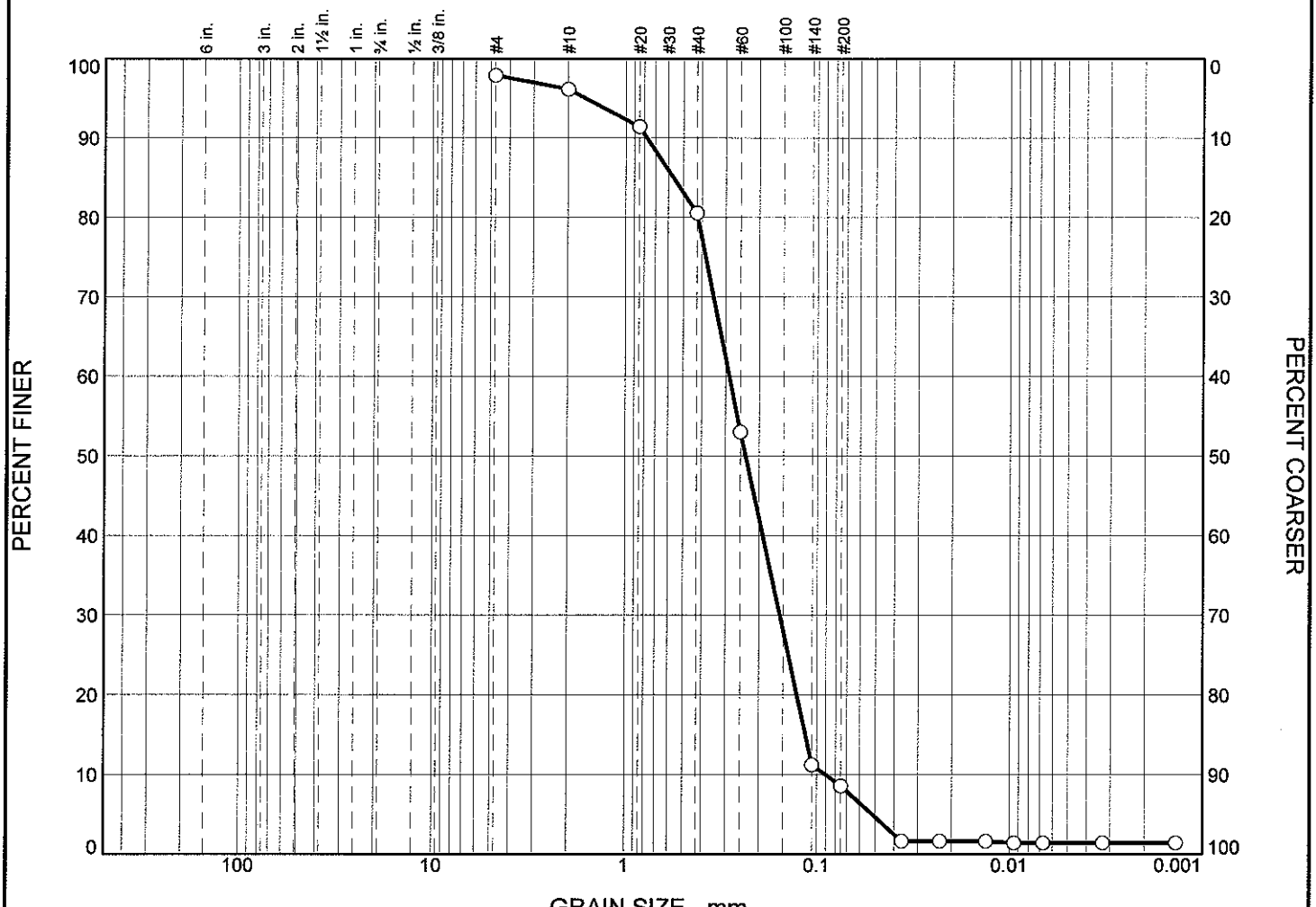
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	3.1	7.8	27.8	34.4	13.4	86.5	4.3	0.0	0.2		4.5	1.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0971	0.1150	0.1272	0.1557	0.2331	0.2863	0.4548	0.6602	1.2151	

Fineness Modulus	C_u	C_c
1.50	2.95	0.87

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.4	3.8	9.2	30.1	33.7	12.5	5.2	0.0	0.2	0.0	1.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5644	0.2861	0.2351	0.1559	0.1145	0.0903	0.94	3.17

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502713 **Sample Number:** L0912911-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502713
Sample Number: L0912911-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.47	0.00	#4	523.20	521.74	97.9	2.1
		#10	485.98	484.76	96.1	3.9
		#20	408.66	405.38	91.4	8.6
		#40	369.64	362.09	80.6	19.4
		#60	385.29	366.15	53.0	47.0
		#140	371.90	342.88	11.2	88.8
		#200	347.08	345.24	8.6	91.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 8.6
Weight of hydrometer sample =69.47
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.6	98.4
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.6	98.4
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.6	98.4
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	1.4	98.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.4	98.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.4	98.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.4	98.6

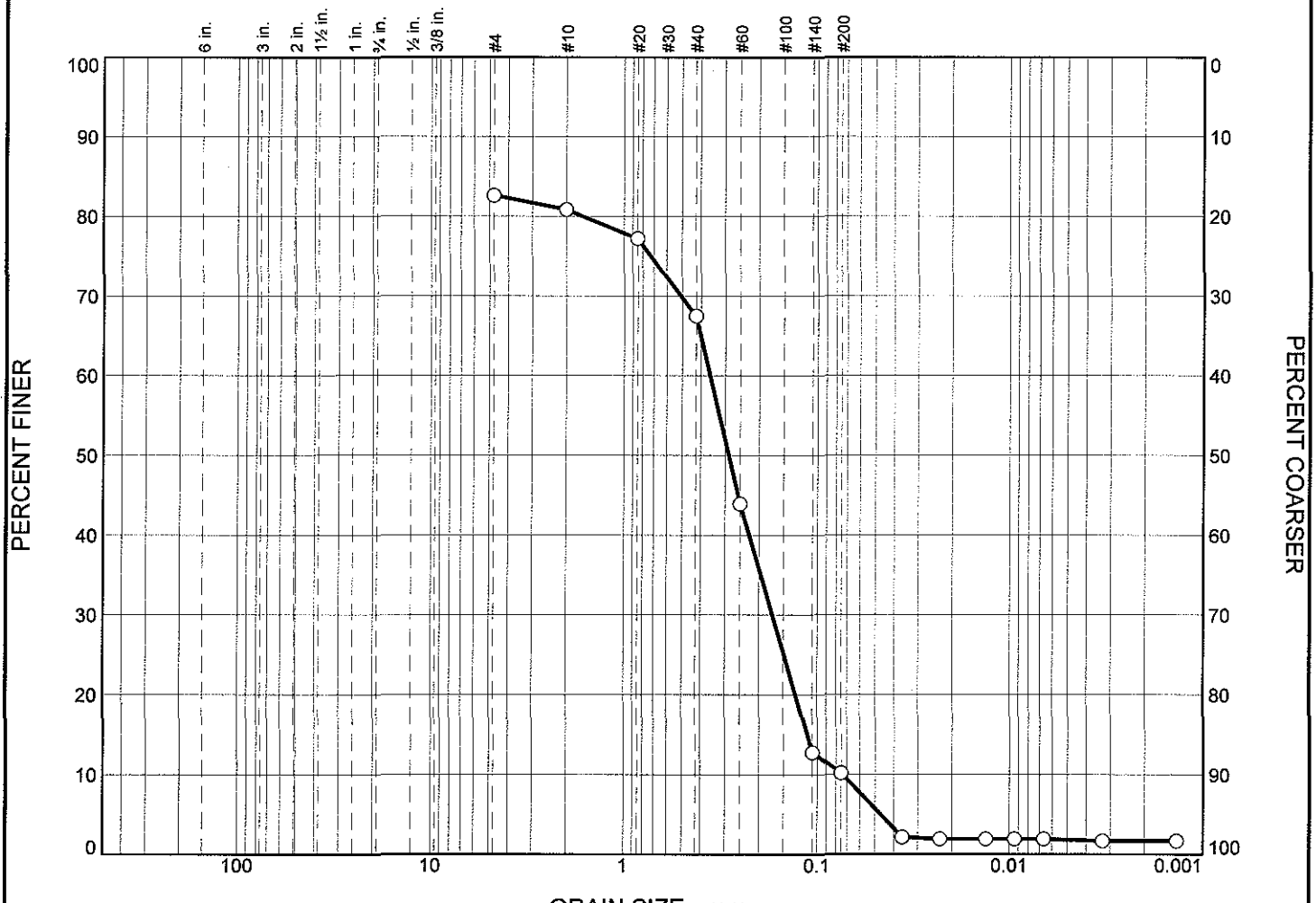
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.4	3.8	9.2	30.1	33.7	12.5	89.3	5.2	0.0	0.2	0.0	5.4	1.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0903	0.1145	0.1269	0.1559	0.2351	0.2861	0.4205	0.5644	0.7764	1.6260

Fineness Modulus	C_u	C_c
1.36	3.17	0.94

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.5	2.9	8.2	25.8	25.2	10.5	6.1	0.2	0.0	0.2	1.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.3593	0.2869	0.1705	0.1128	0.0738	1.10	4.87

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502726 **Sample Number:** L0912911-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502726
Sample Number: L0912911-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.68	0.00	#4	532.99	520.87	82.6	17.4
		#10	483.32	482.08	80.8	19.2
		#20	413.60	411.07	77.2	22.8
		#40	384.61	377.83	67.5	32.5
		#60	386.29	369.86	43.9	56.1
		#140	368.89	347.20	12.8	87.2
		#200	348.31	346.51	10.2	89.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 10.2
Weight of hydrometer sample =69.68
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	2.2	97.8
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.9	98.1
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.9	98.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.9	98.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	1.9	98.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.7	98.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.7	98.3

Fractional Components

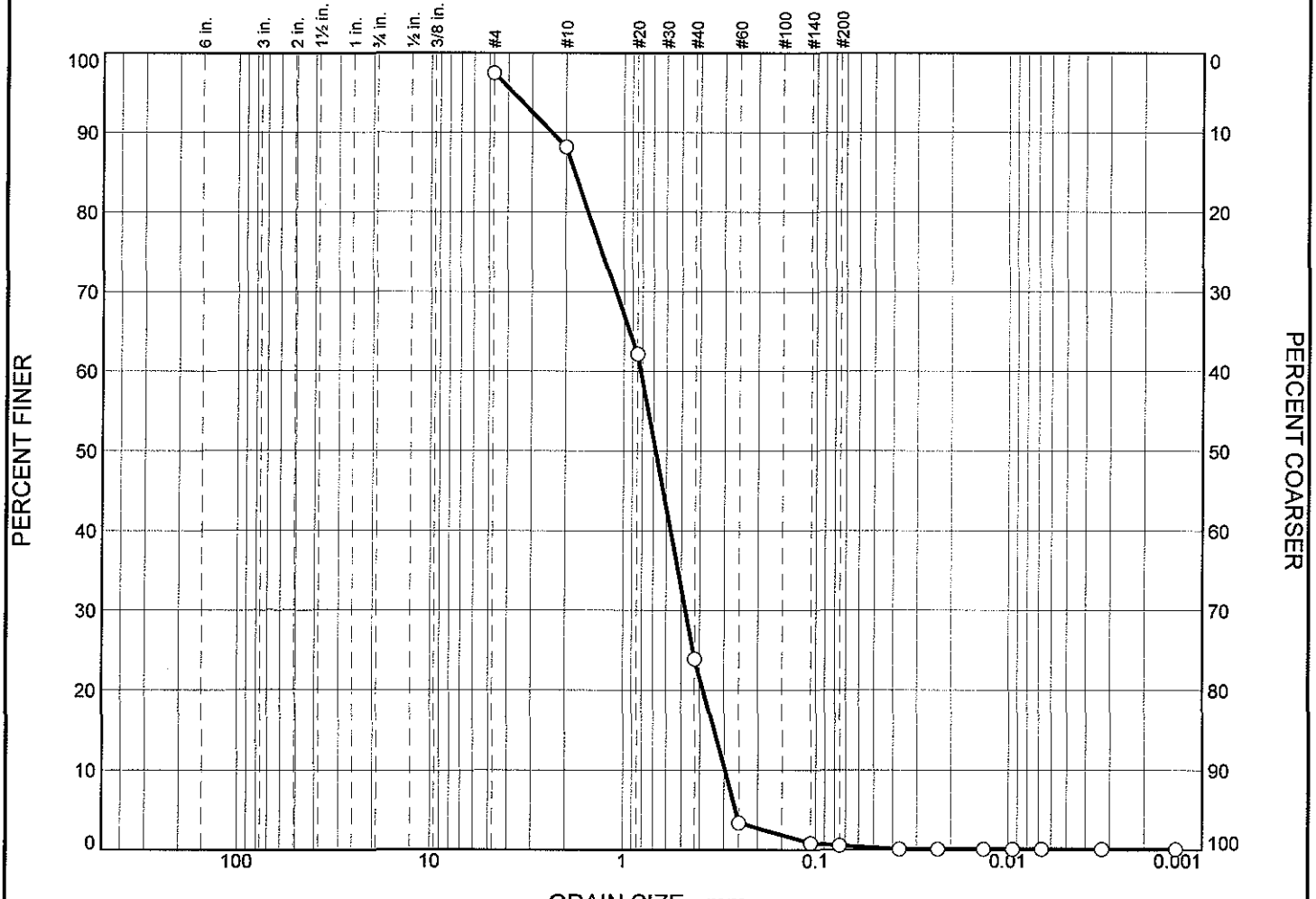
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.5	2.9	8.2	25.8	25.2	10.5	72.6	6.1	0.2	0.0	0.2	6.5	1.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0738	0.1128	0.1294	0.1705	0.2869	0.3593	1.6460			

Fineness Modulus	C_u	C_c
2.08	4.87	1.10

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.4	21.1	34.2	29.5	2.1	0.9	0.3	0.0	0.0	0.0	0.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.8029	0.8176	0.6821	0.4747	0.3376	0.2966	0.93	2.76

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502826 **Sample Number:** WG382946-1

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502826
Sample Number: WG382946-1
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
78.25	0.00	#4	522.84	520.87	97.5	2.5
		#10	489.38	482.08	88.2	11.8
		#20	431.42	411.07	62.1	37.9
		#40	407.76	377.83	23.9	76.1
		#60	385.90	369.86	3.4	96.6
		#140	349.19	347.20	0.9	99.1
		#200	346.75	346.51	0.5	99.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 0.5
Weight of hydrometer sample =78.25
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.1	99.9
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.1	99.9
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.1	99.9
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.1	99.9
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.1	99.9
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.1	99.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.1	99.9

Fractional Components

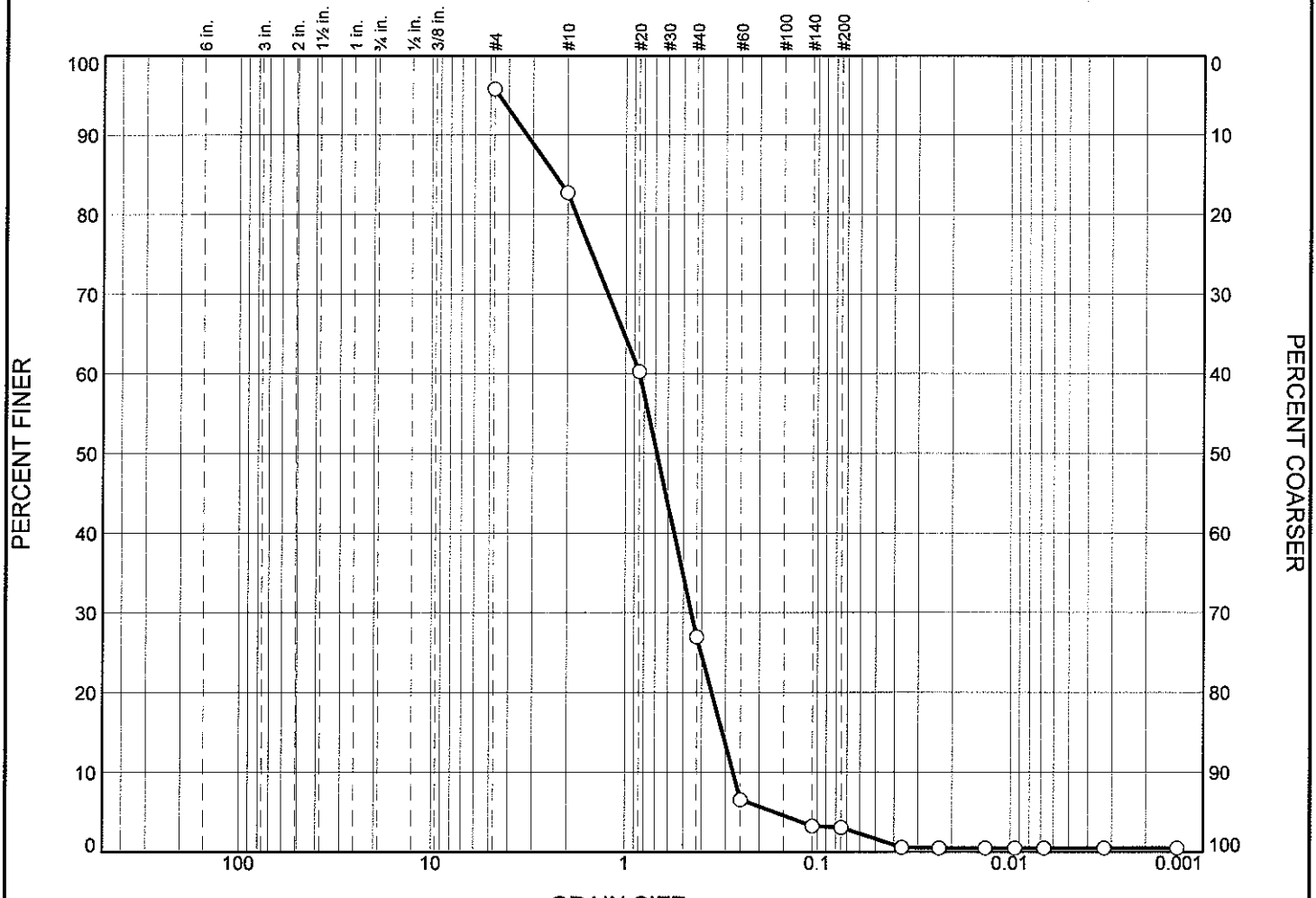
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.4	21.1	34.2	29.5	2.1	0.9	87.8	0.3	0.0	0.0	0.0	0.3	0.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2966	0.3376	0.3842	0.4747	0.6821	0.8176	1.5294	1.8029	2.3735	3.7734

Fineness Modulus	C_u	C_c
2.85	2.76	0.93

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.4	18.3	29.7	28.2	2.7	1.5	1.9	0.0	0.0	0.0	0.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.3207	0.8452	0.6864	0.4527	0.3114	0.2734	0.89	3.09

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502811 **Sample Number:** L0912911-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502811
Sample Number: L0912911-13
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
72.79	0.00	#4	524.80	521.74	95.8	4.2
		#10	494.25	484.76	82.8	17.2
		#20	421.75	405.38	60.3	39.7
		#40	386.33	362.09	27.0	73.0
		#60	381.01	366.15	6.6	93.4
		#140	345.29	342.88	3.2	96.8
		#200	345.37	345.24	3.1	96.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.1
Weight of hydrometer sample =72.79
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.6	99.4
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.5	99.5
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.5	99.5
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.5	99.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.5	99.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.5	99.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.5	99.5

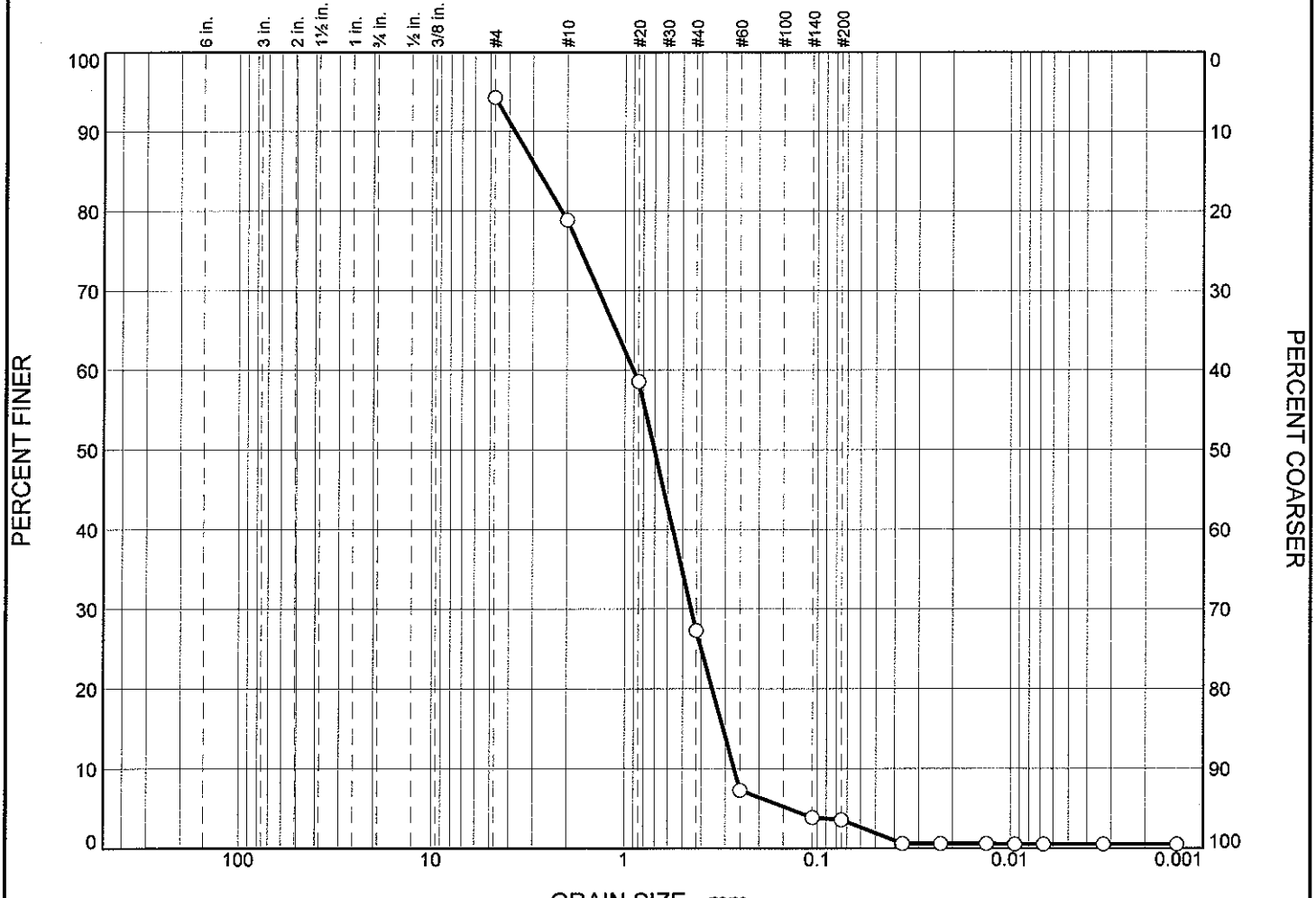
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.4	18.3	29.7	28.2	2.7	1.5	80.4	1.9	0.0	0.0	0.0	1.9	0.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2734	0.3114	0.3546	0.4527	0.6864	0.8452	1.8007	2.3207	3.2336	4.5056

Fineness Modulus	C_u	C_c
2.88	3.09	0.89

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				12.3	16.5	27.8	27.3	2.8	1.7	2.2	0.0	0.1		0.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.8211	0.9030	0.7030	0.4513	0.3068	0.2687	0.84	3.36

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502812 **Sample Number:** L0912911-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502812
Sample Number: L0912911-14
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.11	0.00	#4	525.40	520.87	94.3	5.7
		#10	494.26	482.08	78.9	21.1
		#20	427.14	411.07	58.6	41.4
		#40	402.57	377.83	27.3	72.7
		#60	385.69	369.86	7.3	92.7
		#140	349.91	347.20	3.9	96.1
		#200	346.74	346.51	3.6	96.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.6
Weight of hydrometer sample =79.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.6	99.4
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	0.6	99.4
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	0.6	99.4
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.5	99.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.5	99.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.5	99.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.5	99.5

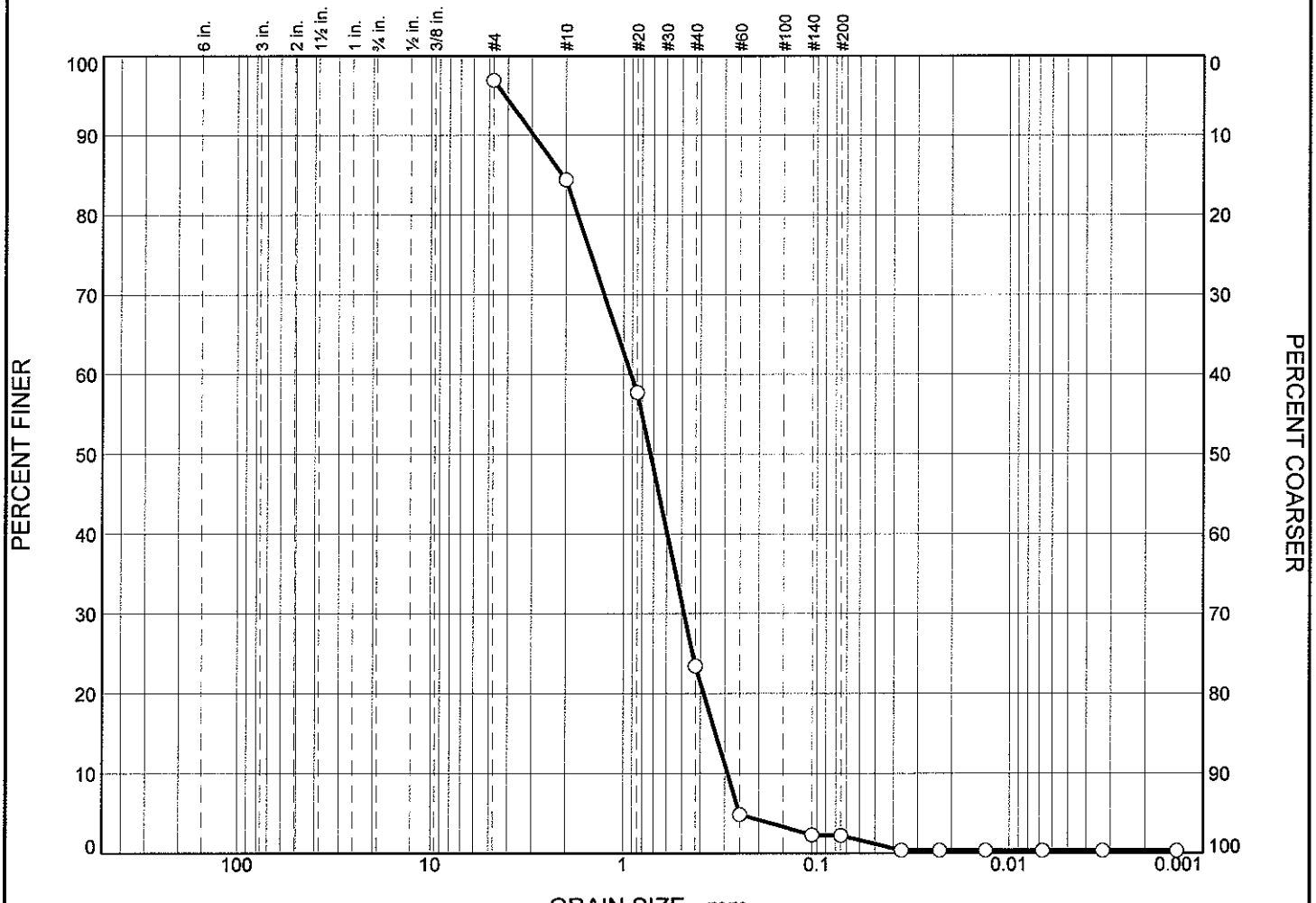
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			12.3	16.5	27.8	27.3	2.8	1.7	76.1	2.2	0.0	0.1		2.3	0.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2687	0.3068	0.3503	0.4513	0.7030	0.9030	2.1302	2.8211	3.7361	

Fineness Modulus	C_u	C_c
2.95	3.36	0.84

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.1	21.6	31.3	26.7	2.0	1.0	1.4	0.0	0.1		0.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.0820	0.9139	0.7269	0.4852	0.3340	0.2896	0.89	3.16

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502813 **Sample Number:** L0912911-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502813
Sample Number: L0912911-15
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
80.22	0.00	#4	524.19	521.74	96.9	3.1
		#10	494.81	484.76	84.4	15.6
		#20	426.78	405.38	57.7	42.3
		#40	389.60	362.09	23.4	76.6
		#60	381.07	366.15	4.8	95.2
		#140	344.94	342.88	2.3	97.7
		#200	345.28	345.24	2.2	97.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 2.2
Weight of hydrometer sample =80.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.4	99.6
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	0.4	99.6
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	0.4	99.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.3	99.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.3	99.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.3	99.7

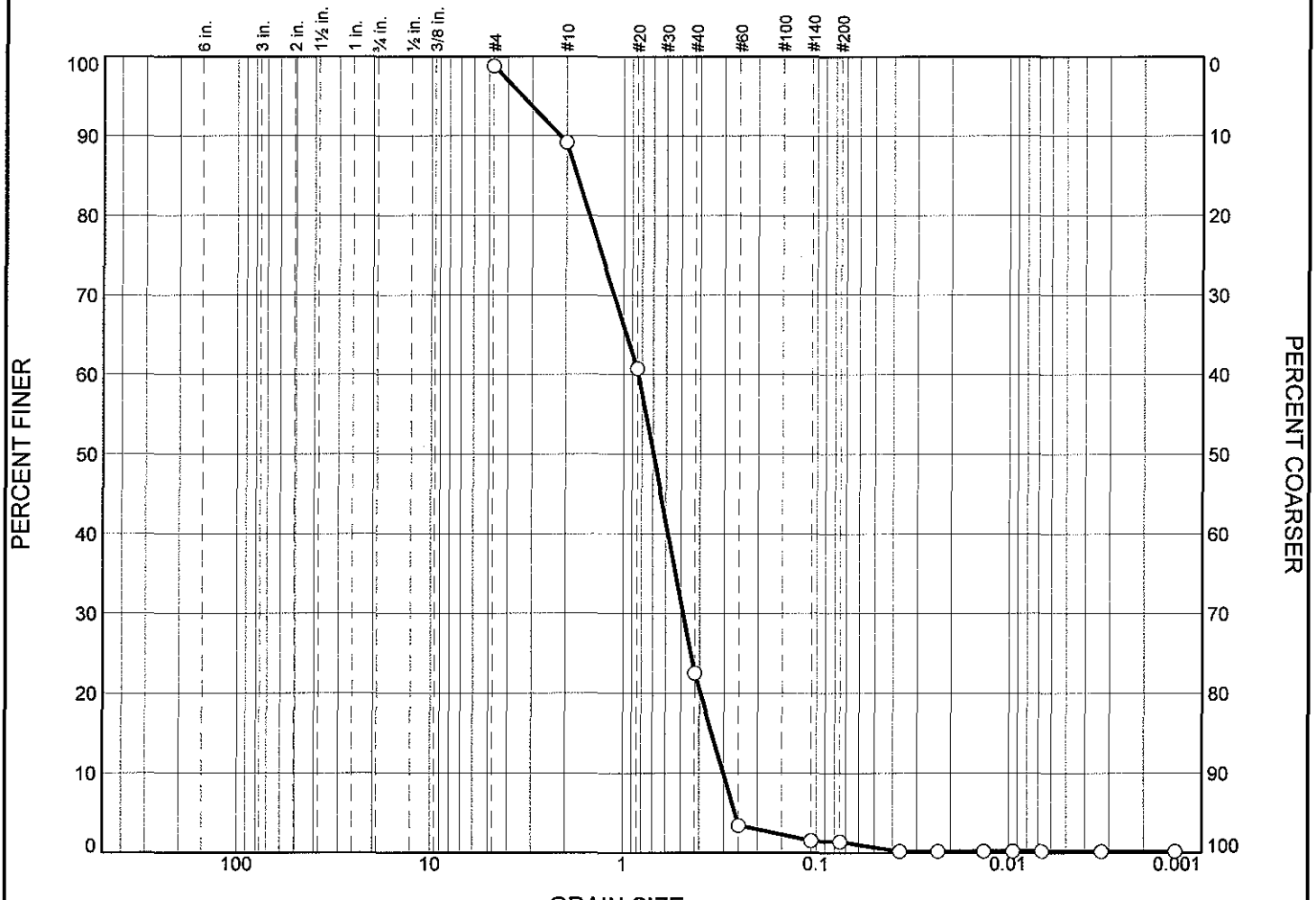
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.1	21.6	31.3	26.7	2.0	1.0	82.6	1.4	0.0	0.1		1.5	0.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2896	0.3340	0.3852	0.4852	0.7269	0.9139	1.7358	2.0820	2.9405	4.1528

Fineness Modulus	C_u	C_c
2.93	3.16	0.89

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.7	23.0	34.7	28.1	1.5	0.8	0.9	0.0	0.0		0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.7642	0.8381	0.6992	0.4866	0.3447	0.3000	0.94	2.79

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502826 **Sample Number:** L0912911-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502826
Sample Number: L0912911-16
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
80.36	0.00	#4	521.83	520.87	98.8	1.2
		#10	489.83	482.08	89.2	10.8
		#20	433.88	411.07	60.8	39.2
		#40	408.56	377.83	22.5	77.5
		#60	385.21	369.86	3.4	96.6
		#140	348.77	347.20	1.5	98.5
		#200	346.58	346.51	1.4	98.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.4
Weight of hydrometer sample =80.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.2	99.8
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.2	99.8
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.2	99.8
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.2	99.8
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.2	99.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.2	99.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.2	99.8

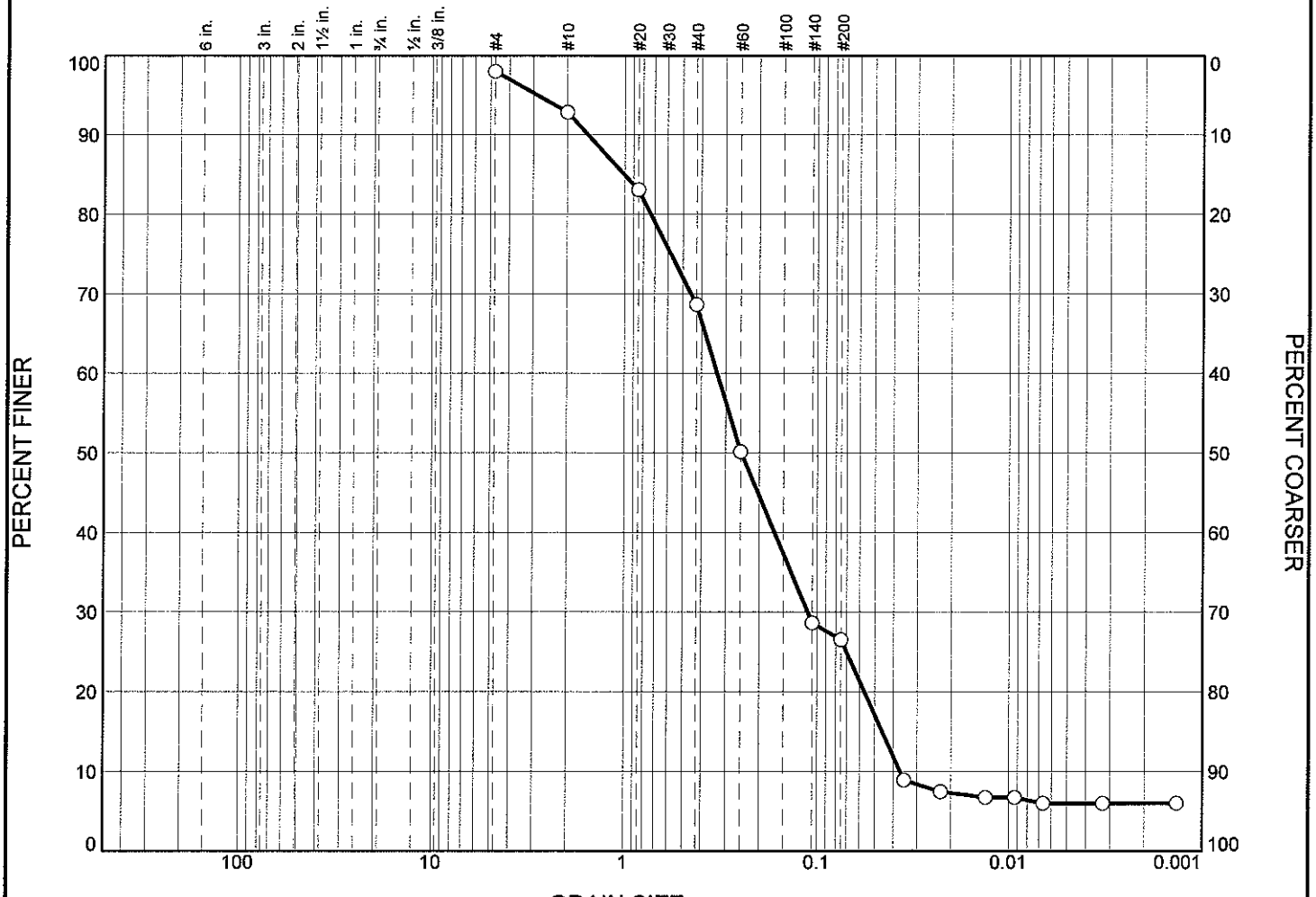
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.7	23.0	34.7	28.1	1.5	0.8	88.1	0.9	0.0	0.0		0.9	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.3000	0.3447	0.3961	0.4866	0.6992	0.8381	1.5174	1.7642	2.1563	3.3765

Fineness Modulus	C_u	C_c
2.85	2.79	0.94

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.1	8.0	12.9	21.8	17.4	10.5	13.8	1.5	0.7	0.3	6.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.0062	0.3317	0.2485	0.1119	0.0456	0.0368	1.03	9.01

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502911 **Sample Number:** L0912911-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502911
Sample Number: L0912911-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
58.36	0.00	#4	522.91	521.74	98.0	2.0
		#10	487.76	484.76	92.9	7.1
		#20	411.09	405.38	83.1	16.9
		#40	370.52	362.09	68.6	31.4
		#60	376.93	366.15	50.2	49.8
		#140	355.44	342.88	28.6	71.4
		#200	346.47	345.24	26.5	73.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 26.5
Weight of hydrometer sample =58.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	8.9	91.1
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	7.5	92.5
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	6.7	93.3
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	6.7	93.3
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	6.0	94.0
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	6.0	94.0
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	6.0	94.0

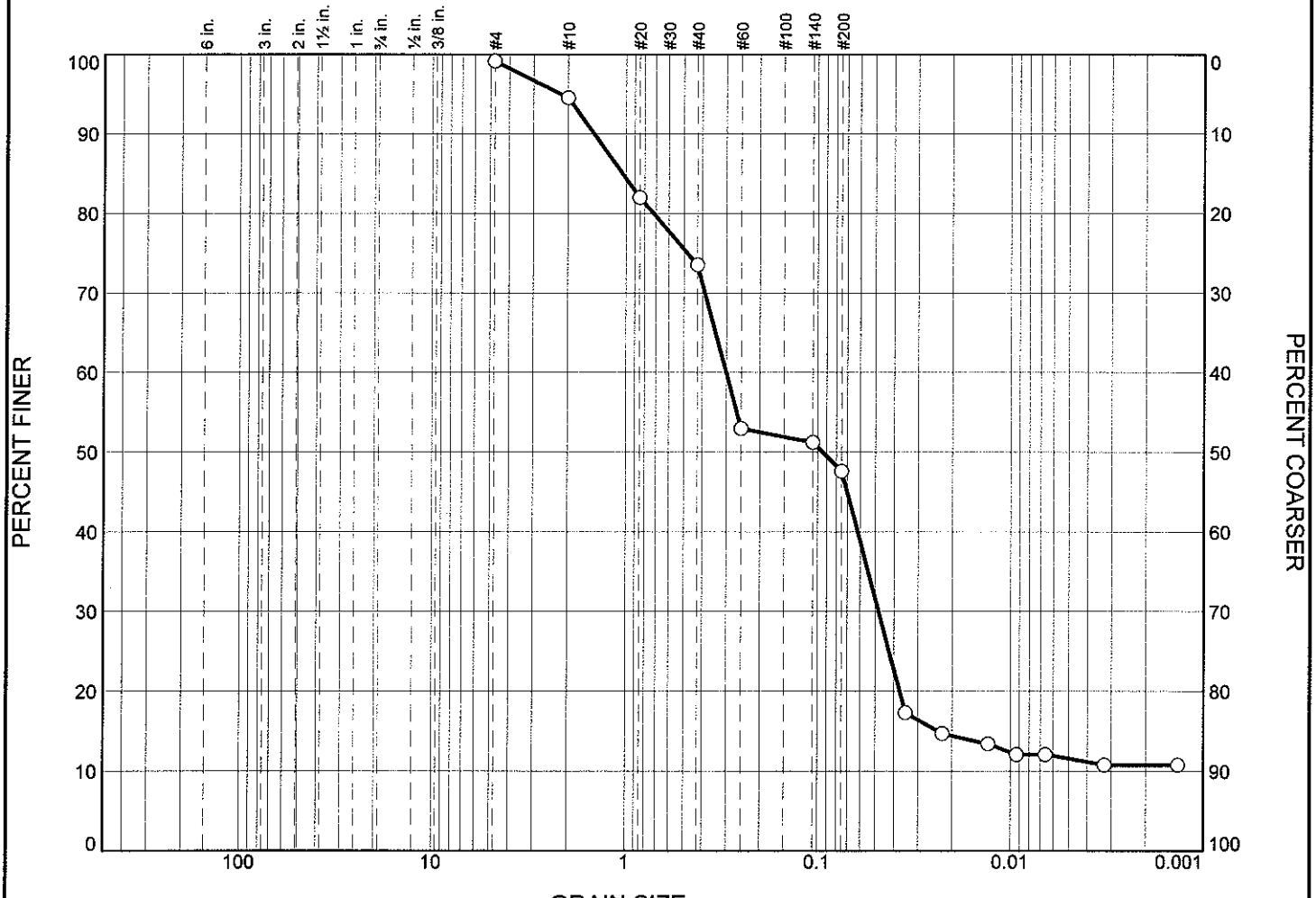
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.1	8.0	12.9	21.8	17.4	10.5	70.6	13.8	1.5	0.7	0.3	16.3	6.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0368	0.0456	0.0566	0.1119	0.2485	0.3317	0.7335	1.0062	1.5581	2.8695

Fineness Modulus	C_u	C_c
1.52	9.01	1.03

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.6	10.2	8.9	22.5	1.4	11.2	23.8	2.8	1.7	1.0	11.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.0425	0.2998	0.0944	0.0480	0.0236			

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502912 **Sample Number:** L0912911-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502912
Sample Number: L0912911-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
58.36	0.00	#4	521.37	520.87	99.1	0.9
		#10	484.76	482.08	94.6	5.4
		#20	418.39	411.07	82.0	18.0
		#40	382.78	377.83	73.5	26.5
		#60	361.89	349.89	53.0	47.0
		#140	348.22	347.20	51.2	48.8
		#200	348.62	346.51	47.6	52.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 47.6
Weight of hydrometer sample =58.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	17.3	82.7
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	14.7	85.3
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	13.4	86.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	12.1	87.9
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	12.1	87.9
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	10.8	89.2
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	10.8	89.2

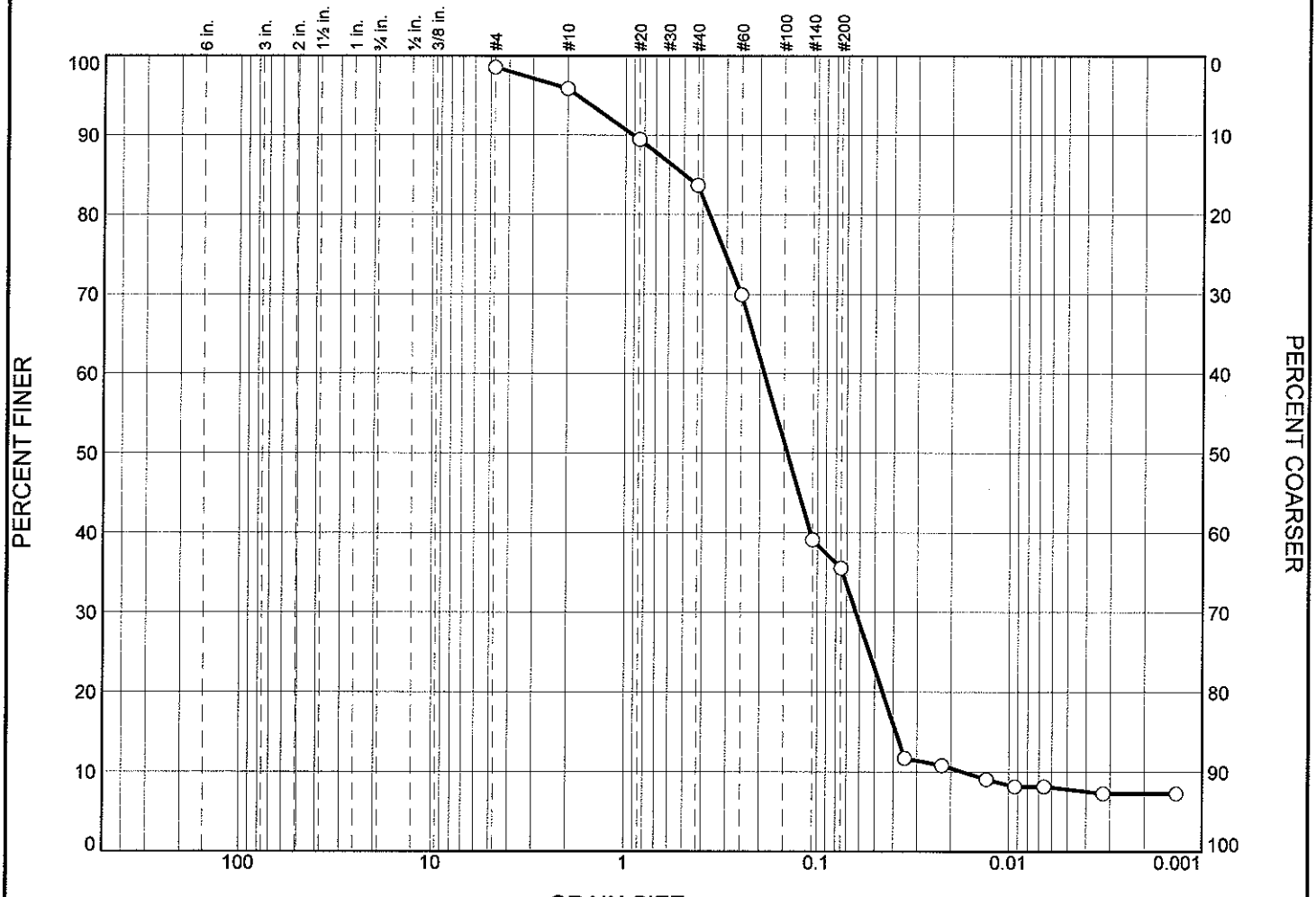
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.6	10.2	8.9	22.5	1.4	11.2	54.2	23.8	2.8	1.7	1.0	29.3	11.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0236	0.0372	0.0480	0.0944	0.2998	0.7213	1.0425	1.4662	2.1765

Fineness Modulus
1.29

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.1	5.2	5.6	15.2	24.9	15.1	18.4	1.9	1.5	0.6	7.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4966	0.1897	0.1436	0.0627	0.0387	0.0175	1.19	10.85

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502913 **Sample Number:** L0912911-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502913
Sample Number: L0912911-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
64.58	0.00	#4	522.68	521.74	98.5	1.5
		#10	486.50	484.76	95.9	4.1
		#20	409.51	405.38	89.5	10.5
		#40	365.80	362.09	83.7	16.3
		#60	375.06	366.15	69.9	30.1
		#140	362.78	342.88	39.1	60.9
		#200	347.53	345.24	35.6	64.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 35.6
Weight of hydrometer sample =64.58
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	11.7	88.3
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	10.8	89.2
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	9.0	91.0
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	8.1	91.9
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	8.1	91.9
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	7.3	92.7
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	7.3	92.7

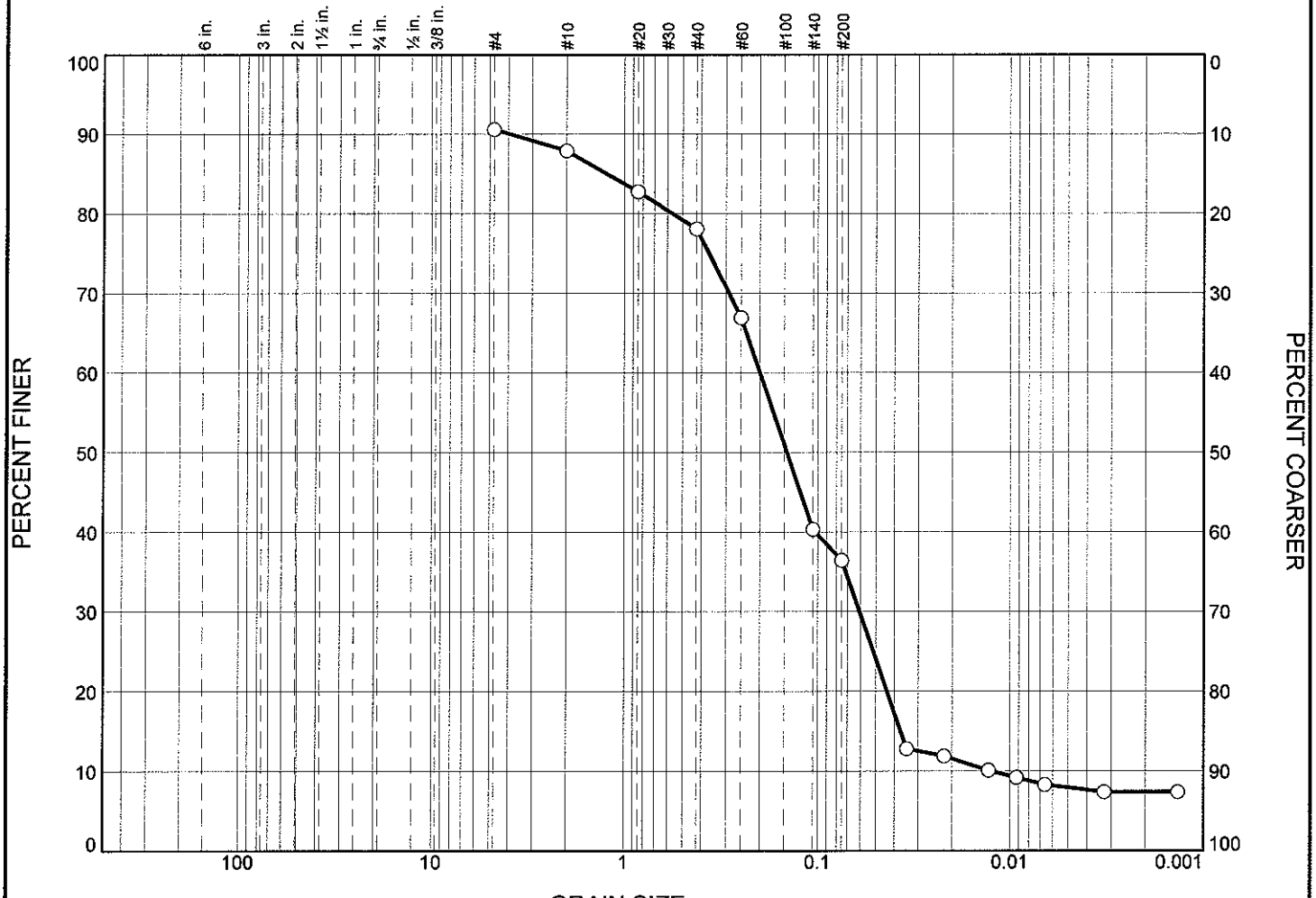
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.1	5.2	5.6	15.2	24.9	15.1	66.0	18.4	1.9	1.5	0.6	22.4	7.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0175	0.0387	0.0455	0.0627	0.1436	0.1897	0.3685	0.4966	0.9143	1.7850

Fineness Modulus	C_u	C_c
1.00	10.85	1.19

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.2	4.2	4.5	12.3	21.5	14.5	18.3	1.9	2.0	1.1	7.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2331	0.2001	0.1449	0.0607	0.0371	0.0126	1.47	15.94

	Material Description	USCS	AASHTO
○			

Project No. L0912911 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 502926 **Sample Number:** L0912911-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912911
Location: 502926
Sample Number: L0912911-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.09	0.00	#4	526.99	520.87	90.6	9.4
		#10	483.83	482.08	87.9	12.1
		#20	414.42	411.07	82.8	17.2
		#40	380.87	377.83	78.1	21.9
		#60	377.14	369.86	66.9	33.1
		#140	364.52	347.20	40.3	59.7
		#200	349.02	346.51	36.4	63.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 36.4
Weight of hydrometer sample =65.09
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	12.8	87.2
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	11.9	88.1
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	10.1	89.9
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	9.2	90.8
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	8.3	91.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	7.4	92.6
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	7.4	92.6

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.2	4.2	4.5	12.3	21.5	14.5	57.0	18.3	1.9	2.0	1.1	23.3	7.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0126	0.0371	0.0437	0.0607	0.1449	0.2001	0.5641	1.2331	3.9191	

Fineness Modulus	C_u	C_c
1.34	15.94	1.47

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab:

ALPHA Job #: L0912911

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08031016:18

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	502511	9/22/09	13:00	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	502512	9/22/09	13:30	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	502513	9/22/09	13:32	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	502525	9/22/09	13:58	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	502526	9/22/09	13:48	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	502527	9/22/09	13:48	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type		G	G	G	-	-	-	-	-	-	-	-	-						
Preservative		A	A	A	-	-	-	-	-	-	-	-	-						

SAMPLE HANDLING

Filtration

☐ Done ☒ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	9/22 18:50	[illegible]	9/22 18:55
[illegible]	9/23/09 09:15	Paul Gillett	9/23/09 9:15
Paul Gillett	9/22/09 10:25	[illegible]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

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CHAIN OF CUSTODY

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Date Rec'd in Lab:

ALPHA Job #: L409129/1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08116:18

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	502611	9-27-09	08:02	SE	HC	☐	☐	☒	☐									ben gs	1
6	502612	9-27-09	08:10	SE	HC	☐	☐	☒	☐									ben gs	1
7	502613	9-27-09	08:17	SE	HC	☐	☐	☒	☐									ben gs	1
	502625	9-27-09	08:23	SE	DB	☒	☒	☐	☐									sed chem	1
8	502626	9-27-09	08:23	SE	DB	☐	☐	☒	☐									sed gs	1
	502627	9-27-09	08:23	SE	DB	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/27/09 16:10		9-27-09
P. Gillett	9/28/09 09:15	P. Gillett	9/28/09 9:25
	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

PAGE OF

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912911

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
9	502711	9/22/09	11:56	SE	HC	☐	☐	☒	☐	ben gs	1
10	502712	9/22/09	11:56	SE	HC	☐	☐	☒	☐	ben gs	1
11	502713	9/22/09	11:56	SE	HC	☐	☐	☒	☐	ben gs	1
	502725	9/22/09	11:56	SE	HC	☒	☒	☐	☐	sed chem	1
12	502726	9/22/09	11:56	SE	HC	☐	☐	☒	☐	sed gs	1
	502727	9/22/09	11:56	SE	HC	☐	☐	☐	☒	sed arch	1

	total PCB	TOC	grain size	archive
Container Type	G	G	G	-
Preservative	A	A	A	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/22 1856	[signature]	9/22 18:55
[signature]	[illegible]	Paul Gilbert	9/22/09 [illegible]
Paul Gilbert	9/23/09 10:35	[signature]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

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CHAIN OF CUSTODY

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Date Rec'd in Lab:

ALPHA Job #: L091291

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08116:18

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	502811	9/26/09	17:21	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
14	502812	9/26/09	17:21	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
15	502813	9/26/09	17:24	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	502825	9/26/09	17:30	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
16	502826	9/26/09	17:30	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	502827	9/26/09	17:36	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	9/26/09 19:12		9/26/09 19:17
	9/28/09 09:13		9/28/09 9:25
	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 204

CHAIN OF COUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912911

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
17	502911	9-27-09	14:12	SE	HC	☐	☐	☒	☐	ben gs	1
18	502912	9-27-09	14:20	SE	HC	☐	☐	☒	☐	ben gs	1
19	502913	9-27-09	14:25	SE	HC	☐	☐	☒	☐	ben gs	1
	502925	9-27-09	14:38	SE	DB	☒	☒	☐	☐	sed chem	1
20	502926	9-27-09	14:38	SE	DB	☐	☐	☒	☐	sed gs	1
	502927	9-27-09	14:38	SE	DB	☐	☐	☐	☒	sed arch	1

	total PCB	TOC	grain size	archive								
Container Type	G	G	G	-	-	-	-	-	-	-	-	-
Preservative	A	A	A	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/27/09 16:10	[signature]	9-27-09
[signature]	9-28-09 09:13	P. Gilbert	9/28/09 9:15
P. Gilbert	9/28/09 10:20	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Serial No:08...016:18

ANALYTICAL REPORT

Lab Number:	L0912912
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912912
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912912-01	503011	NEW BEDFORD, MA	09/27/09 13:25
L0912912-02	503012	NEW BEDFORD, MA	09/27/09 13:30
L0912912-03	503013	NEW BEDFORD, MA	09/27/09 13:33
L0912912-04	503026	NEW BEDFORD, MA	09/27/09 13:42
L0912912-05	503111	NEW BEDFORD, MA	09/26/09 15:20
L0912912-06	503112	NEW BEDFORD, MA	09/26/09 15:20
L0912912-07	503113	NEW BEDFORD, MA	09/26/09 15:20
L0912912-08	503126	NEW BEDFORD, MA	09/26/09 15:40
L0912912-09	503211	NEW BEDFORD, MA	09/27/09 13:42
L0912912-10	503212	NEW BEDFORD, MA	09/27/09 14:05
L0912912-11	503213	NEW BEDFORD, MA	09/27/09 14:12
L0912912-12	503226	NEW BEDFORD, MA	09/27/09 13:50
L0912912-13	503311	NEW BEDFORD, MA	09/26/09 13:55
L0912912-14	503312	NEW BEDFORD, MA	09/26/09 13:55
L0912912-15	503313	NEW BEDFORD, MA	09/26/09 13:55
L0912912-16	503326	NEW BEDFORD, MA	09/26/09 14:02
L0912912-17	508136	NEW BEDFORD, MA	09/26/09 14:15

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912912
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 3, 2010. The report was ammended to include revised Grain Size data.

QC SAMPLES

The WG382947-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve, coarse sand (36%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912912
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative (continued)

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-01
Client ID: 503011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 13:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	56.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-02
Client ID: 503012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 13:30
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	36.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-03
Client ID: 503013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 13:33
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.600		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	42.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-04
Client ID: 503026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 13:42
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-05
Client ID: 503111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 15:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	54.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	21.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	5.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-06
Client ID: 503112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 15:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	6.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	39.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-07
Client ID: 503113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 15:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.500		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	53.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	5.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-08
Client ID: 503126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 15:40
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.400		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	51.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	21.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	5.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-09
Client ID: 503211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 13:42
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.800		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.600		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	42.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	32.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-10
Client ID: 503212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 14:05
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-11
Client ID: 503213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 14:12
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	33.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.80		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-12
Client ID: 503226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 13:50
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	6.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	15.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.9		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-13
Client ID: 503311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 13:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.4		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	30.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-14
Client ID: 503312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 13:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.900		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.0		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	51.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	30.2		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-15
Client ID: 503313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 13:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.30		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.8		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	18.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-16
Client ID: 503326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 14:02
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.10		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.700		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.50		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.6		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	55.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.5		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912912
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912912-17
Client ID: 508136
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 14:15
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.60		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.70		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.20		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.00		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.90		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.1		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	15.3		%	0.100	--	1	-	10/05/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912912
Report Date: 08/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG382947-1 QC Sample: L0912912-12 Client ID: 503226						
Gravel (>2.00mm)	6.9	6.60	%	4		20
Very Coarse Sand (1.00-2.00 mm)	3.5	3.70	%	6		20
Coarse Sand (0.50-1.00 mm)	4.9	3.40	%	**36**	Q	20
Medium Sand (0.25-0.50 mm)	10.8	10.5	%	3		20
Fine Sand (0.125-0.25 mm)	15.0	14.6	%	3		20
Very Fine Sand (0.063-0.125 mm)	17.2	16.9	%	2		20
Silt - (1.95-62.5 um)	25.9	29.3	%	12		20
Clay - (<1.95 um)	6.3	7.10	%	12		20

Project Name: NBH LONG TERM MONITORING
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
B	Absent
C	Absent
F	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-01A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-02A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-03A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-04A	Glass 250ml unpreserved	C	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-05A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-06A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-07A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-08A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-09A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-10A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-11A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-12A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-13A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-14A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-15A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912912-16A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912912-17A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912912
Project Number:	TO-0018	**Report Date:**	08/03/10

GLOSSARY

Acronyms

- EPA · Environmental Protection Agency.
- LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
- LCSD · Laboratory Control Sample Duplicate: Refer to LCS.
- MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
- MSD · Matrix Spike Sample Duplicate: Refer to MS.
- NA · Not Applicable.
- NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
- NI · Not Ignitable.
- RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- **A** · Spectra identified as "Aldol Condensation Product".
- **B** · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- **D** · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- **E** · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- **H** · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- **I** · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
- **P** · The RPD between the results for the two columns exceeds the method-specified criteria.
- **Q** · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912912
Project Number:	TO-0018	**Report Date:**	08/03/10

Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

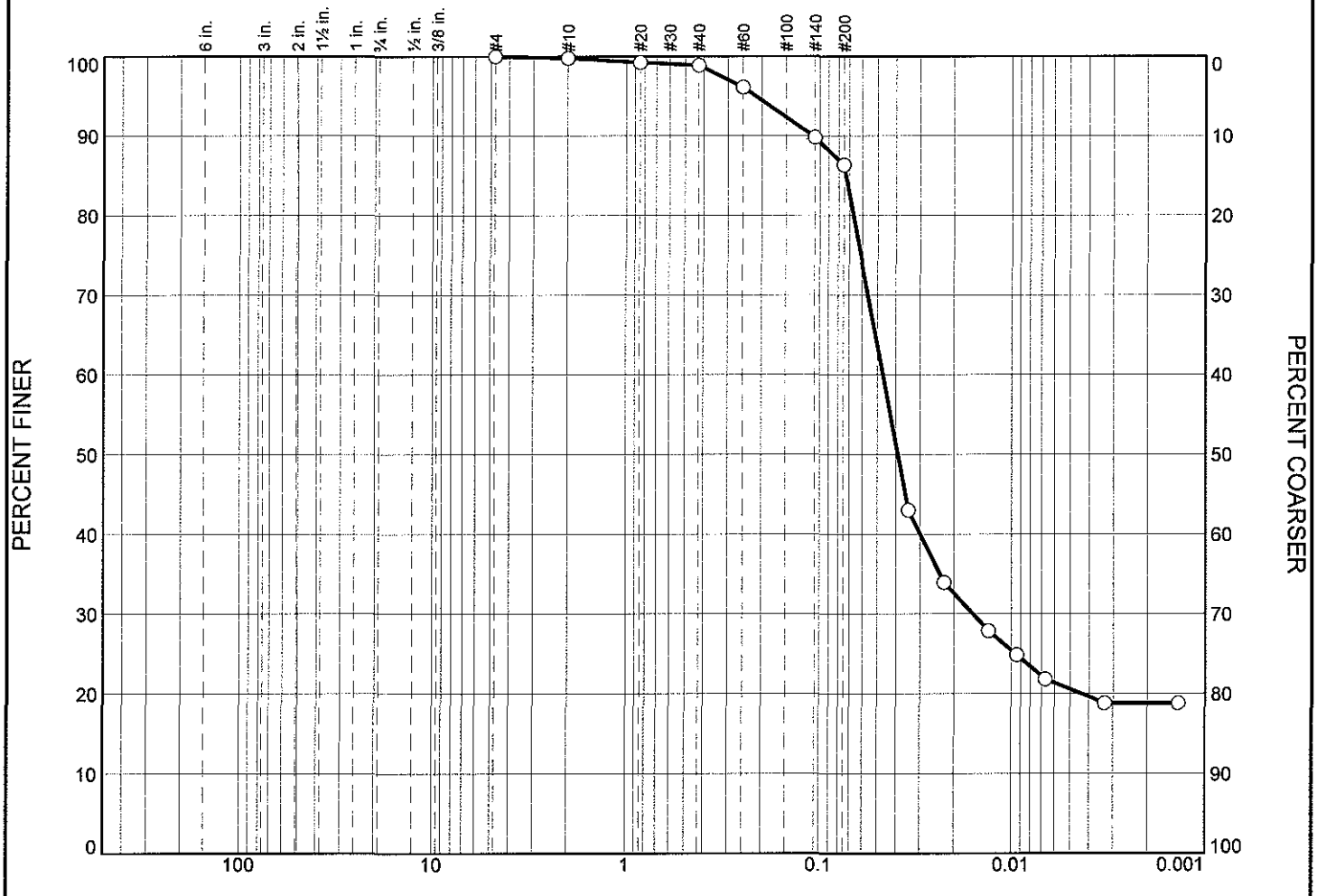
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.5	0.3	2.9	5.1	14.8	35.4	11.0	6.6	3.7	19.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0732	0.0467	0.0390	0.0159				

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503011 **Sample Number:** L0912912-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503011
Sample Number: L0912912-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 10.35
Tare Wt. = 4.57
Minus #200 from wash = 87.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.82	0.00	#4	521.78	521.77	100.0	0.0
		#10	484.90	484.81	99.8	0.2
		#20	405.67	405.42	99.2	0.8
		#40	362.91	362.74	98.9	1.1
		#60	367.43	366.16	96.1	3.9
		#140	345.71	342.82	89.8	10.2
		#200	346.83	345.25	86.3	13.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.3
Weight of hydrometer sample =45.82
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	43.0	57.0
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	33.9	66.1
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	27.9	72.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	24.9	75.1
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	21.8	78.2
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	18.8	81.2
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	18.8	81.2

Fractional Components

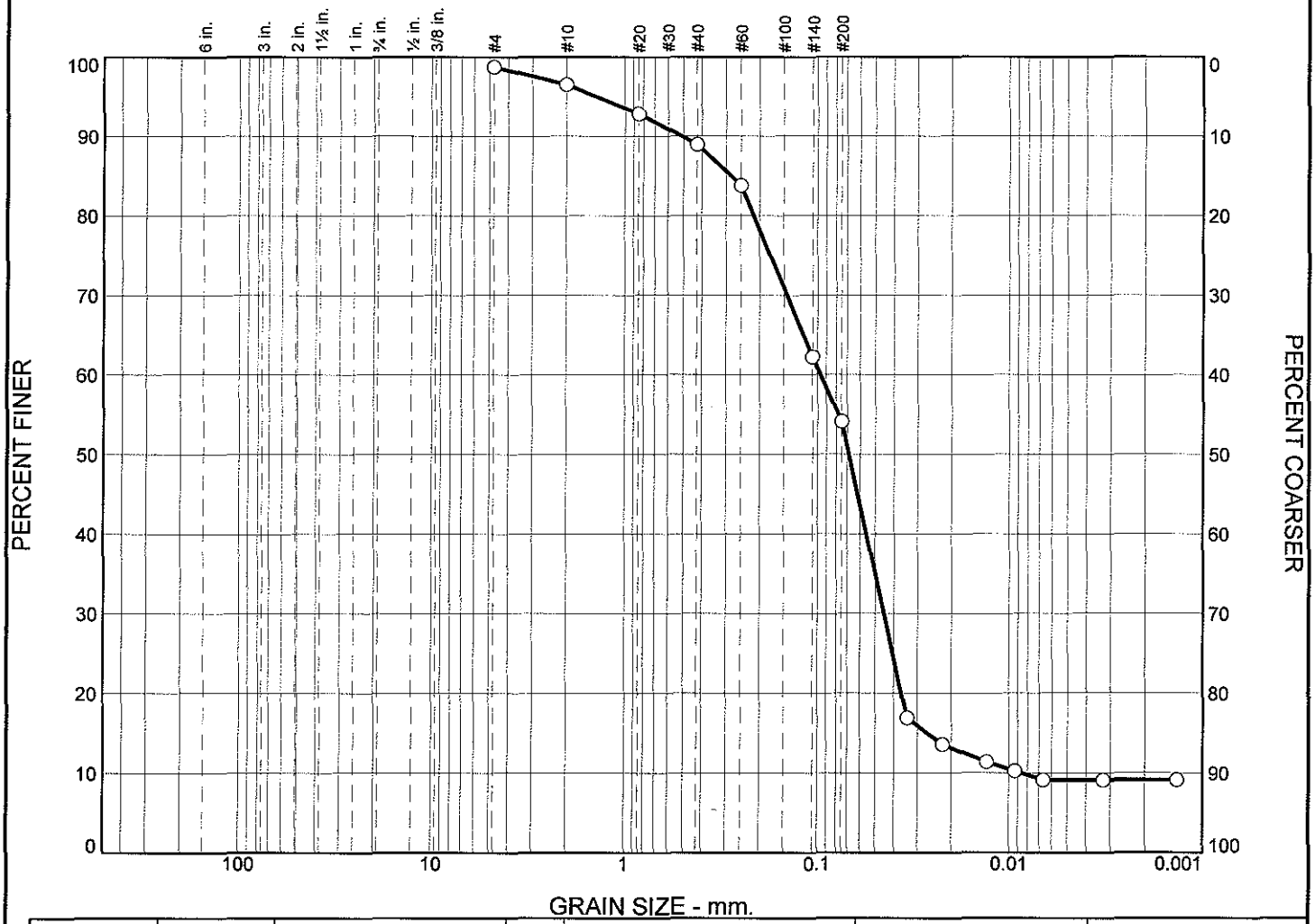
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.5	0.3	2.9	5.1	14.8	23.6	35.4	11.0	6.6	3.7	56.7	19.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0044	0.0159	0.0390	0.0467	0.0669	0.0732	0.1091	0.2154

Fineness Modulus
0.12

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.8	3.0	3.6	6.1	17.4	20.9	29.3	4.1	2.5	0.5	9.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2824	0.0963	0.0687	0.0450	0.0267	0.0087	2.42	11.09

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503012 **Sample Number:** L0912912-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503012
Sample Number: L0912912-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 40.90
Tare Wt. = 4.55
Minus #200 from wash = 53.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
78.23	0.00	#4	521.80	520.81	98.7	1.3
		#10	483.86	482.11	96.5	3.5
		#20	413.94	411.09	92.9	7.1
		#40	380.90	377.86	89.0	11.0
		#60	373.87	369.84	83.8	16.2
		#140	364.03	347.17	62.3	37.7
		#200	352.88	346.51	54.1	45.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 54.1
Weight of hydrometer sample =78.23
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	16.9	83.1
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	13.6	86.4
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	11.3	88.7
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	10.2	89.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	9.1	90.9
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	9.1	90.9
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	9.1	90.9

Fractional Components

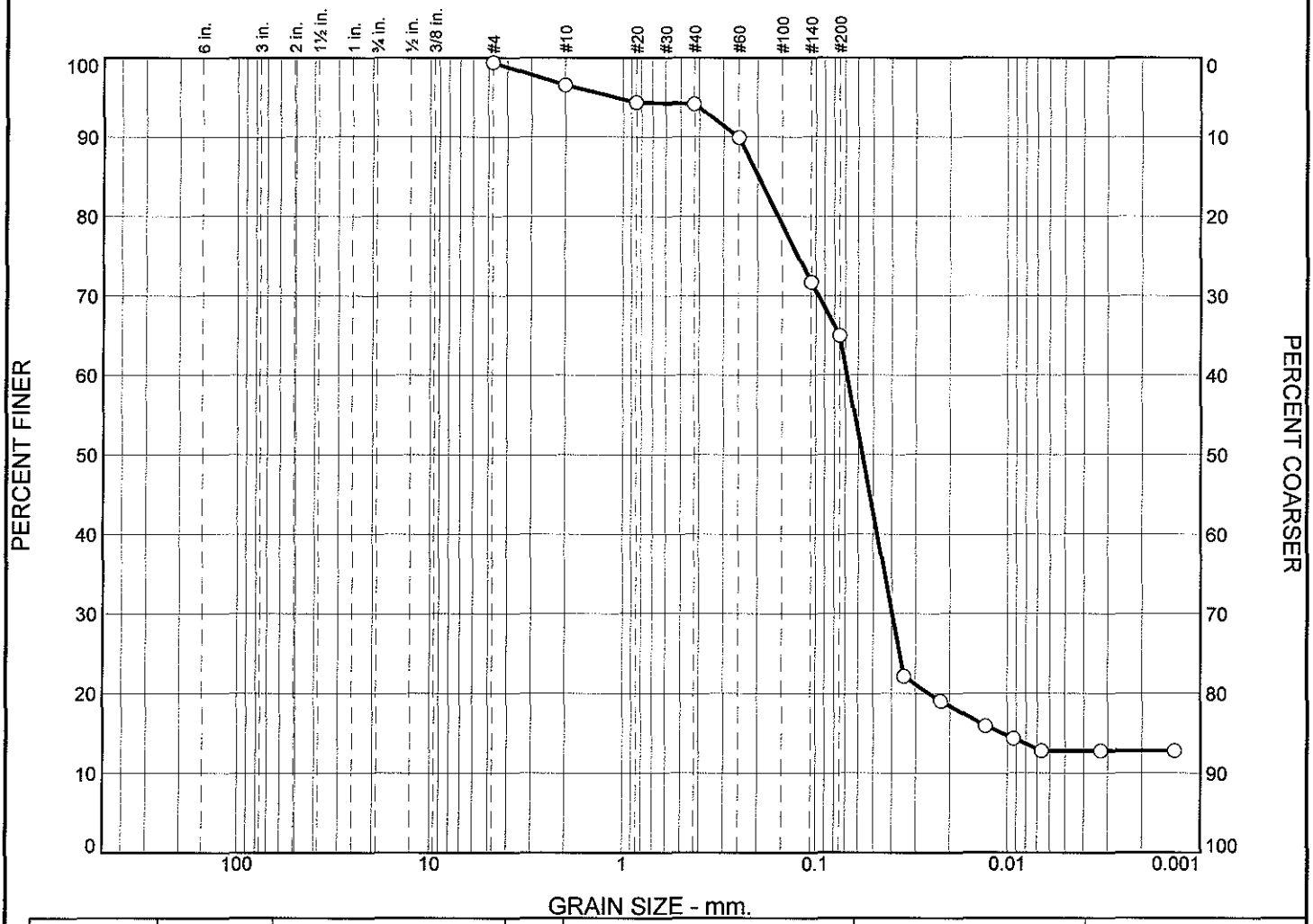
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.8	3.0	3.6	6.1	17.4	20.9	51.0	29.3	4.1	2.5	0.5	36.4	9.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0087	0.0267	0.0364	0.0450	0.0687	0.0963	0.2148	0.2824	0.5109	1.4069

Fineness Modulus	C_u	C_c
0.63	11.09	2.42

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.3	1.7	0.6	4.3	14.7	20.3	33.5	4.5	3.4	0.7	12.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1981	0.0685	0.0571	0.0397	0.0107			

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503013 **Sample Number:** L0912912-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503013
Sample Number: L0912912-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 30.68
Tare Wt. = 4.62
Minus #200 from wash = 61.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
66.99	0.00	#4	522.18	521.77	99.4	0.6
		#10	486.73	484.81	96.5	3.5
		#20	406.86	405.42	94.4	5.6
		#40	362.88	362.74	94.2	5.8
		#60	368.99	366.16	89.9	10.1
		#140	355.01	342.82	71.7	28.3
		#200	349.79	345.25	65.0	35.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 65.0
Weight of hydrometer sample =66.99
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	22.1	77.9
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	19.0	81.0
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	15.9	84.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	14.3	85.7
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	12.8	87.2
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	12.8	87.2
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	12.8	87.2

Fractional Components

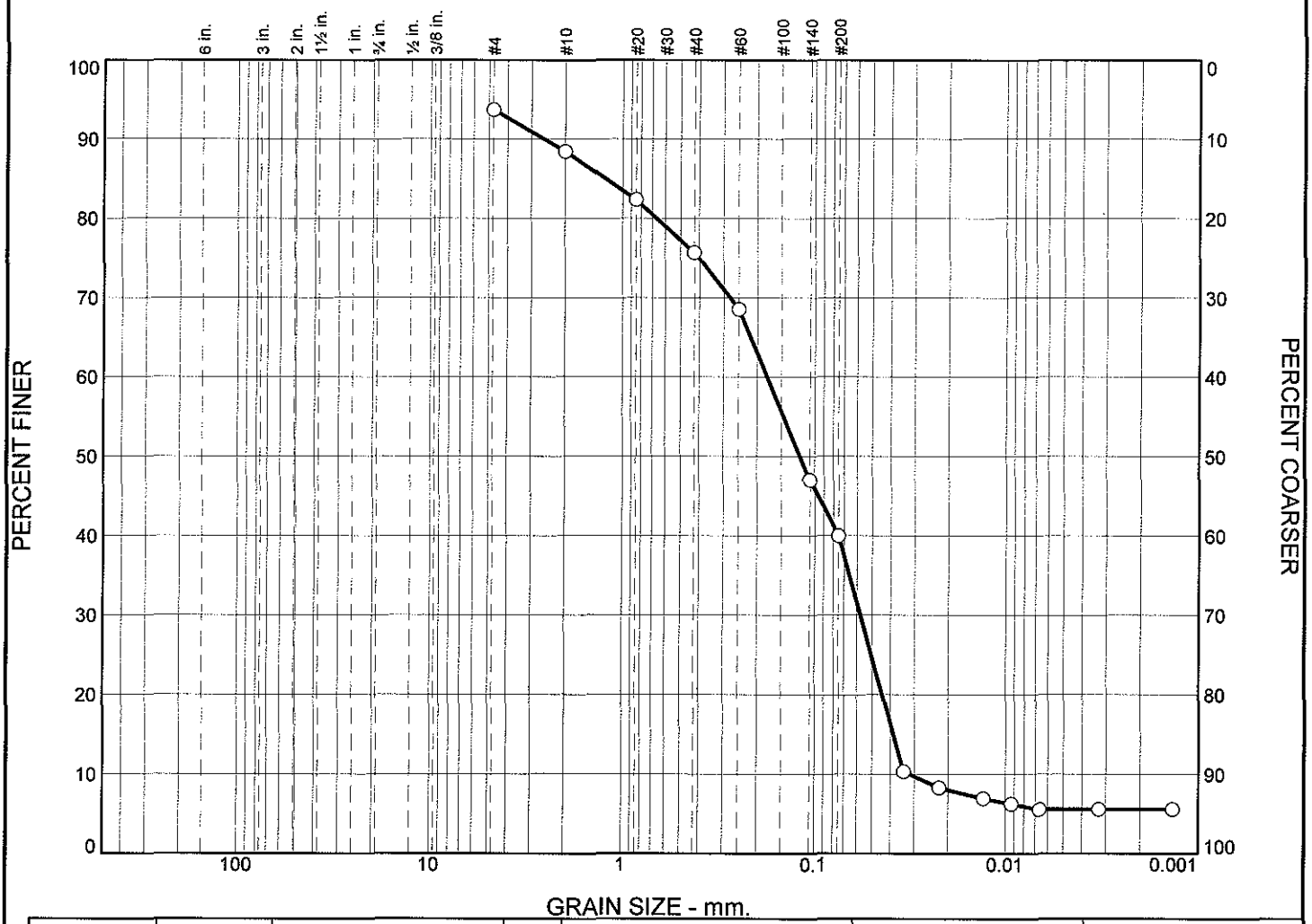
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.3	1.7	0.6	4.3	14.7	20.3	41.6	33.5	4.5	3.4	0.7	42.1	12.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0107	0.0255	0.0397	0.0571	0.0685	0.1565	0.1981	0.2519	1.0913

Fineness Modulus
0.44

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.2	5.0	6.3	8.7	17.3	18.1	23.2	2.5	1.5	0.3	5.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2328	0.1779	0.1194	0.0575	0.0386	0.0319	0.58	5.57

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503026 **Sample Number:** L0912912-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503026
Sample Number: L0912912-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 62.38
Tare Wt. = 4.59
Minus #200 from wash = 39.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
94.73	0.00	#4	526.77	520.81	93.7	6.3
		#10	487.08	482.11	88.5	11.5
		#20	416.89	411.09	82.3	17.7
		#40	384.16	377.86	75.7	24.3
		#60	376.61	369.84	68.5	31.5
		#140	367.56	347.17	47.0	53.0
		#200	353.18	346.51	40.0	60.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 40.0
Weight of hydrometer sample =94.73
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	10.3	89.7
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	8.3	91.7
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	6.9	93.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	6.2	93.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	5.6	94.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	5.6	94.4
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	5.6	94.4

Fractional Components

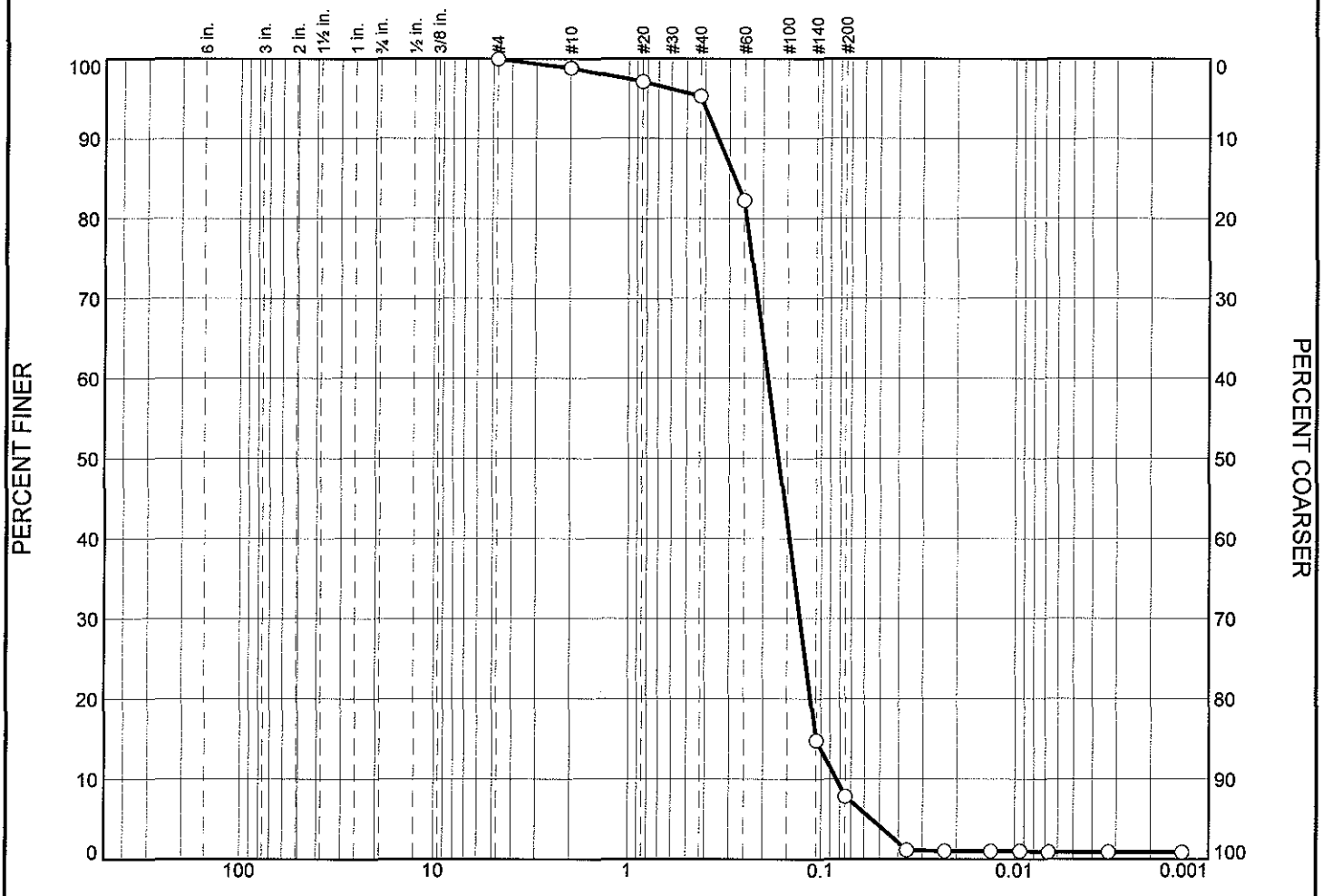
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.2	5.0	6.3	8.7	17.3	18.1	55.4	23.2	2.5	1.5	0.3	27.5	5.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0319	0.0386	0.0441	0.0575	0.1194	0.1779	0.6661	1.2328	2.5773	

Fineness Modulus	C_u	C_c
1.26	5.57	0.58

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	1.4	1.7	13.5	54.5	21.5	5.1	0.1	0.1		0.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2797	0.1884	0.1659	0.1286	0.1063	0.0836	1.05	2.25

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503111 **Sample Number:** L0912912-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503111
Sample Number: L0912912-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 100.34
Tare Wt. = 4.65
Minus #200 from wash = 5.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
101.46	0.00	#4	521.81	521.77	100.0	0.0
		#10	485.98	484.81	98.8	1.2
		#20	407.17	405.42	97.1	2.9
		#40	364.56	362.74	95.3	4.7
		#60	379.40	366.16	82.2	17.8
		#140	411.27	342.82	14.8	85.2
		#200	352.31	345.25	7.8	92.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 7.8
Weight of hydrometer sample =101.46
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	1.1	98.9
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.0	99.0
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.0	99.0
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.0	99.0
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.9	99.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.9	99.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.9	99.1

Fractional Components

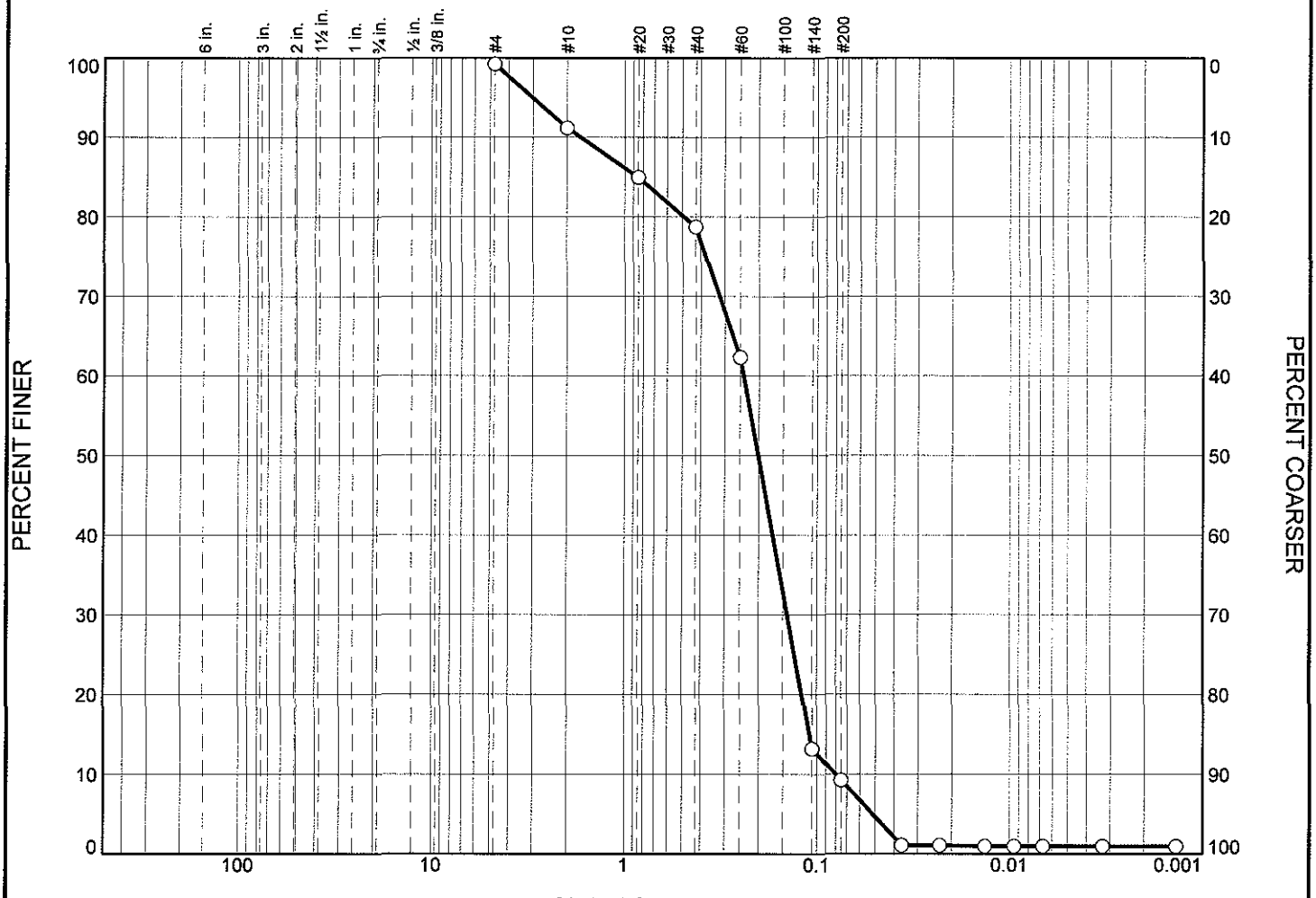
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	1.4	1.7	13.5	54.5	21.5	92.6	5.1	0.1	0.1		5.3	0.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0836	0.1063	0.1133	0.1286	0.1659	0.1884	0.2430	0.2797	0.3428	0.4200

Fineness Modulus	C_u	C_c
0.78	2.25	1.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.4	5.1	5.9	17.9	39.7	15.4	6.1	0.1	0.1	0.0	0.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8547	0.2400	0.2016	0.1422	0.1094	0.0802	1.05	2.99

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503112 **Sample Number:** L0912912-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503112
Sample Number: L0912912-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 114.11
Tare Wt. = 4.68
Minus #200 from wash = 3.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
113.43	0.00	#4	521.71	520.81	99.2	0.8
		#10	491.21	482.11	91.2	8.8
		#20	418.15	411.09	85.0	15.0
		#40	384.93	377.86	78.7	21.3
		#60	388.44	369.84	62.3	37.7
		#140	402.92	347.17	13.2	86.8
		#200	350.99	346.51	9.2	90.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 9.2
Weight of hydrometer sample =113.43
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.1	98.9
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.1	98.9
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.9	99.1
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.9	99.1
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.9	99.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.9	99.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.9	99.1

Fractional Components

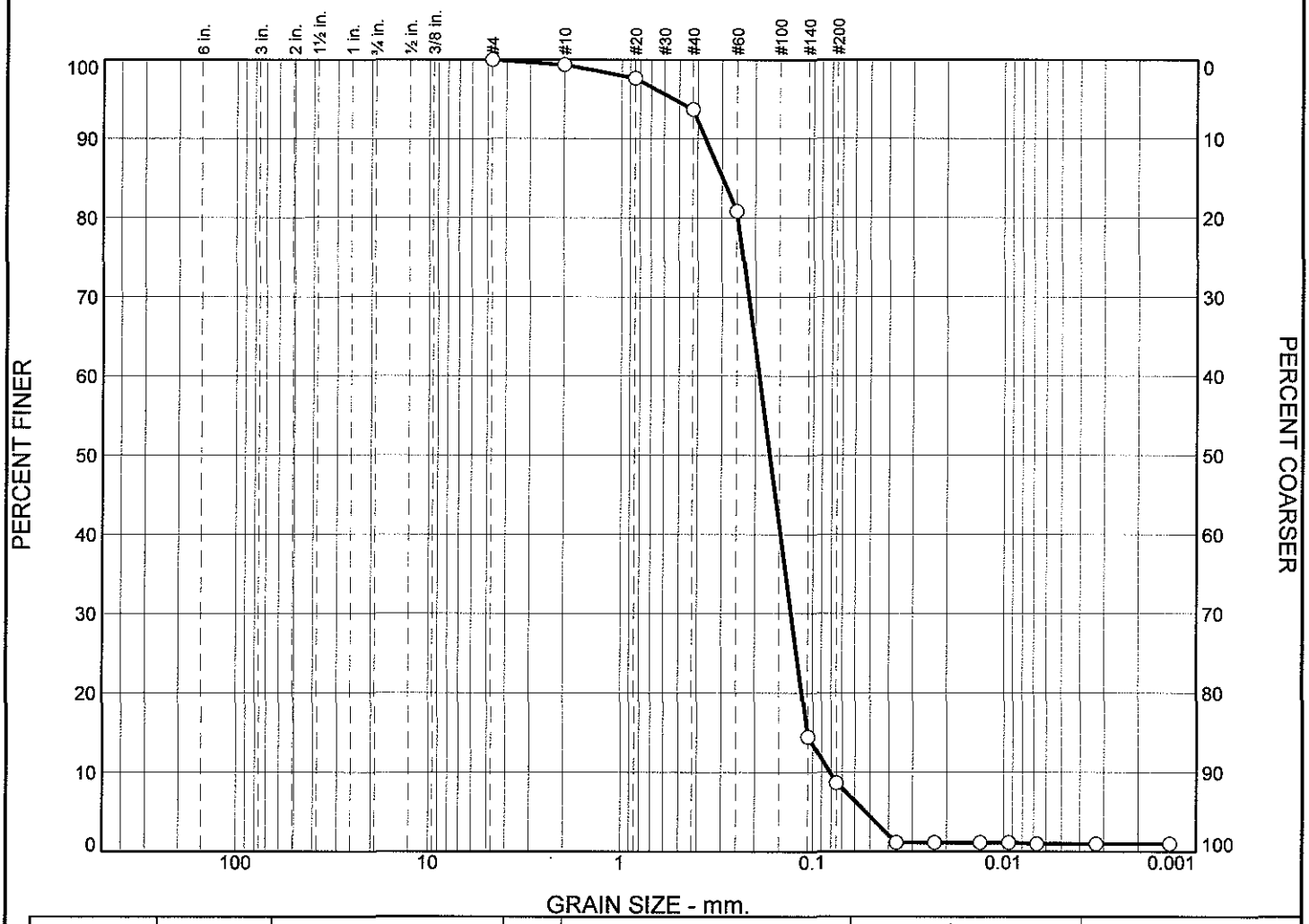
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.4	5.1	5.9	17.9	39.7	15.4	84.0	6.1	0.1	0.1	0.0	6.3	0.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0802	0.1094	0.1194	0.1422	0.2016	0.2400	0.4896	0.8547	1.6996	3.0180

Fineness Modulus	C_u	C_c
1.38	2.99	1.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.5	1.4	3.4	13.8	53.6	20.4	5.7	0.0	0.0	0.1	1.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2969	0.1910	0.1678	0.1296	0.1067	0.0813	1.08	2.35

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503113 **Sample Number:** L0912912-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503113
Sample Number: L0912912-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 98.33
Tare Wt. = 4.16
Minus #200 from wash = 5.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
99.61	0.00	#4	521.79	521.77	100.0	0.0
		#10	485.43	484.81	99.4	0.6
		#20	407.12	405.42	97.7	2.3
		#40	366.68	362.74	93.7	6.3
		#60	378.97	366.16	80.8	19.2
		#140	408.94	342.82	14.5	85.5
		#200	351.04	345.25	8.6	91.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 8.6
Weight of hydrometer sample =99.61
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	1.1	98.9
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	1.1	98.9
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.1	98.9
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.1	98.9
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.0	99.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.0	99.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.0	99.0

Fractional Components

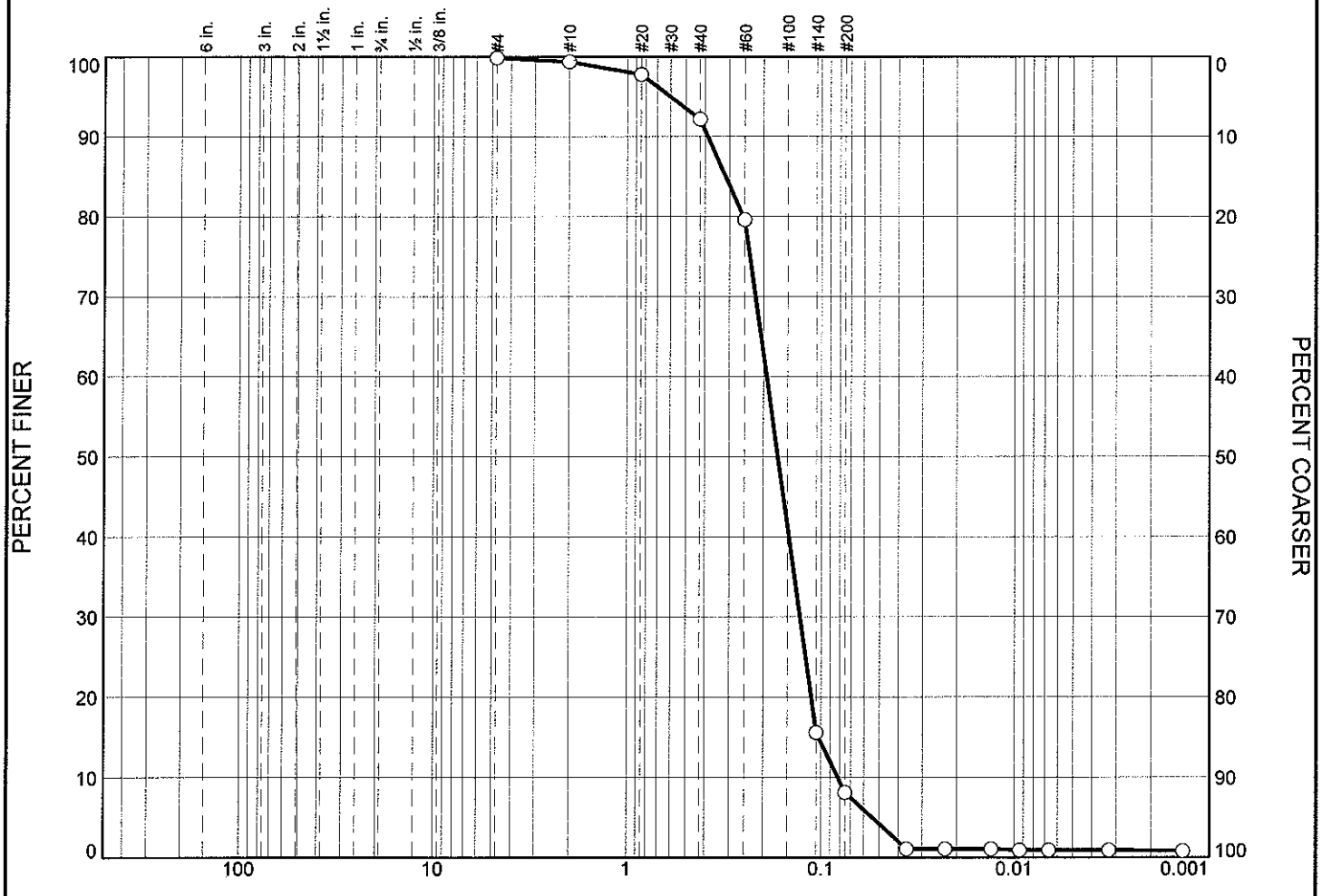
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.5	1.4	3.4	13.8	53.6	20.4	92.6	5.7	0.0	0.0	0.1	5.8	1.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0813	0.1067	0.1139	0.1296	0.1678	0.1910	0.2473	0.2969	0.3649	0.5342

Fineness Modulus	C_u	C_c
0.80	2.35	1.08

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	1.3	4.6	13.9	51.7	21.6	5.3	0.0	0.1	0.0	0.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3138	0.1922	0.1681	0.1286	0.1032	0.0819	1.05	2.35

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503126 **Sample Number:** L0912912-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503126
Sample Number: L0912912-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 110.61
Tare Wt. = 4.81
Minus #200 from wash = 7.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
114.58	0.00	#4	520.95	520.81	99.9	0.1
		#10	482.71	482.11	99.4	0.6
		#20	412.89	411.09	97.8	2.2
		#40	384.26	377.86	92.2	7.8
		#60	384.27	369.84	79.6	20.4
		#140	420.53	347.17	15.6	84.4
		#200	355.07	346.51	8.1	91.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 8.1
Weight of hydrometer sample =114.58
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	1.0	99.0
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	1.0	99.0
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	1.0	99.0
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	0.9	99.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	0.9	99.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	0.9	99.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.8	99.2

Fractional Components

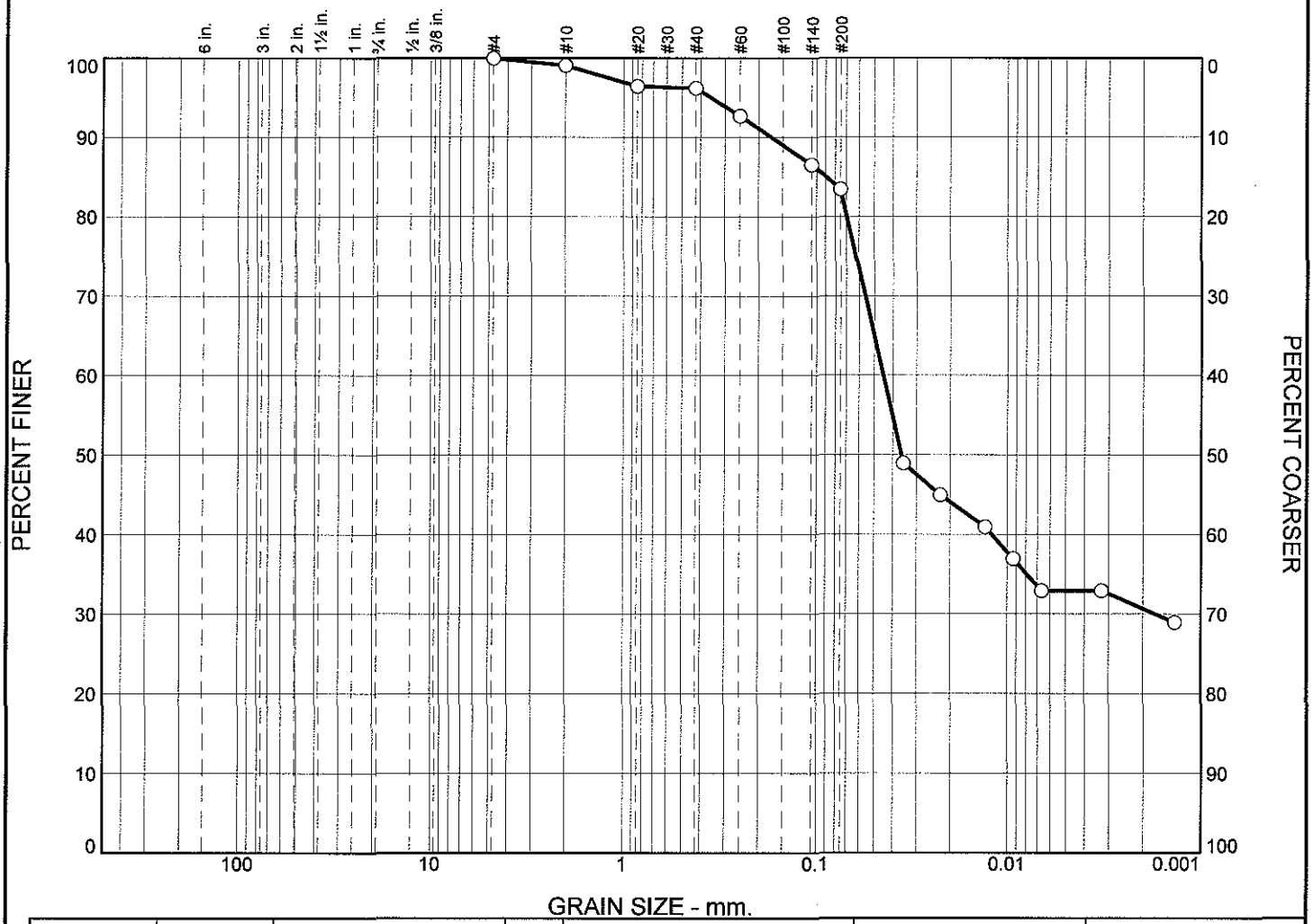
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	1.3	4.6	13.9	51.7	21.6	93.1	5.3	0.0	0.1	0.0	5.4	0.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0819	0.1032	0.1125	0.1286	0.1681	0.1922	0.2542	0.3138	0.3874	0.6018

Fineness Modulus	C_u	C_c
0.82	2.35	1.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	2.1	0.6	3.6	5.0	12.6	27.3	5.6	7.4	1.9	32.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0893	0.0448	0.0359	0.0017				

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503211 **Sample Number:** L0912912-09

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503211
Sample Number: L0912912-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 10.47
Tare Wt. = 4.50
Minus #200 from wash = 82.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
33.44	0.00	#4	521.79	521.77	99.9	0.1
		#10	485.11	484.81	99.0	1.0
		#20	406.29	405.42	96.4	3.6
		#40	362.82	362.74	96.2	3.8
		#60	367.33	366.16	92.7	7.3
		#140	344.88	342.82	86.5	13.5
		#200	346.29	345.25	83.4	16.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 83.4
Weight of hydrometer sample =33.43
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	48.9	51.1
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	44.9	55.1
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	40.9	59.1
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	36.9	63.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	32.9	67.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	32.9	67.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	28.9	71.1

Fractional Components

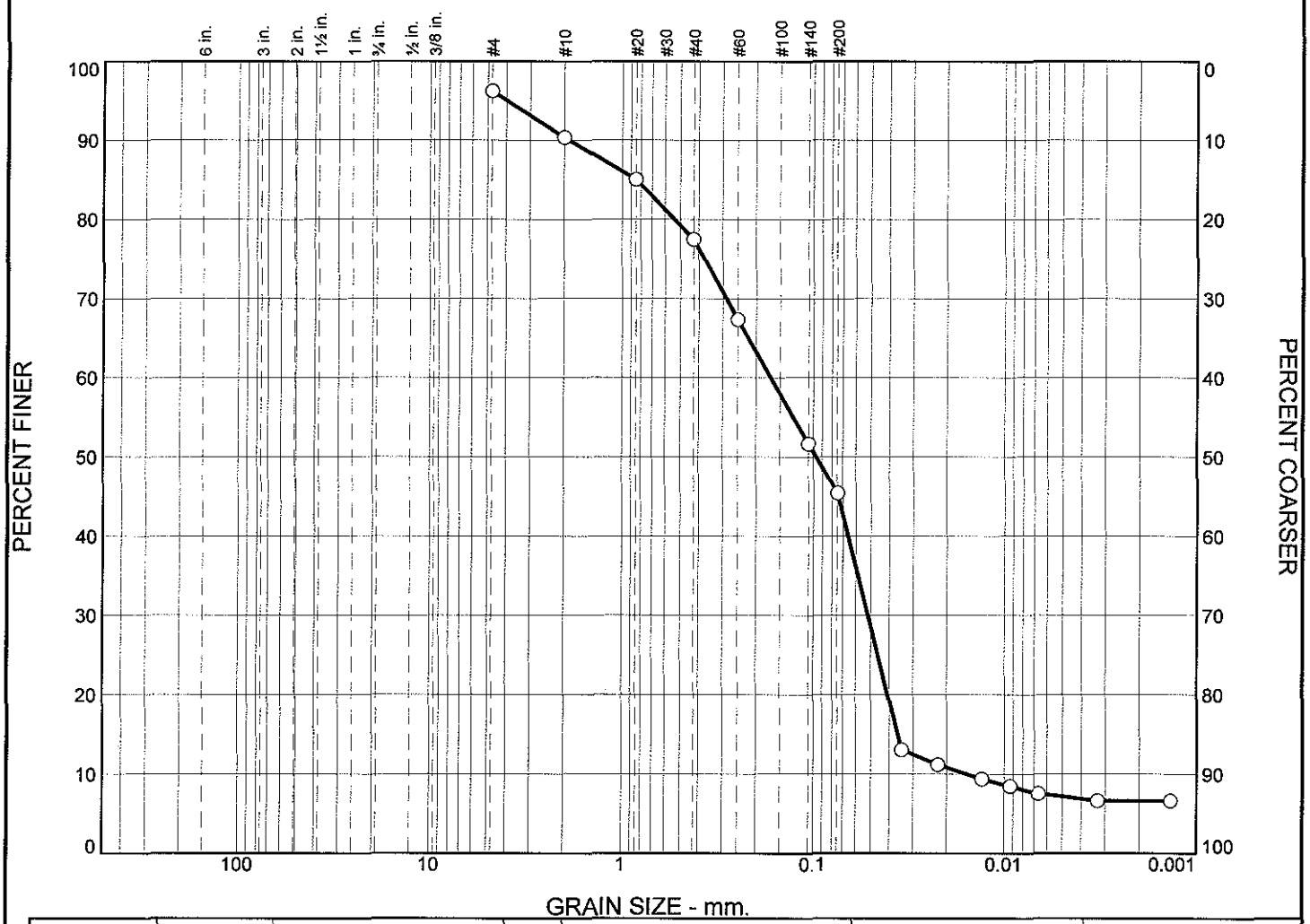
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	2.1	0.6	3.6	5.0	12.6	23.9	27.3	5.6	7.4	1.9	42.2	32.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0017	0.0359	0.0448	0.0695	0.0893	0.1716	0.3542

Fineness Modulus
0.24

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.7	4.3	6.9	11.9	12.6	16.9	25.2	2.6	2.0	1.2	6.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8461	0.1673	0.0966	0.0518	0.0361	0.0157	1.02	10.65

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503212 **Sample Number:** L0912912-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503212
Sample Number: L0912912-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 48.67
Tare Wt. = 4.77
Minus #200 from wash = 44.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.60	0.00	#4	523.81	520.81	96.2	3.8
		#10	486.77	482.11	90.4	9.6
		#20	415.33	411.09	85.1	14.9
		#40	383.90	377.86	77.5	22.5
		#60	377.91	369.84	67.3	32.7
		#140	359.63	347.17	51.7	48.3
		#200	351.47	346.51	45.4	54.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.4
Weight of hydrometer sample =79.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	13.0	87.0
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	11.2	88.8
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	9.4	90.6
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	8.4	91.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	7.5	92.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.6	93.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.6	93.4

Fractional Components

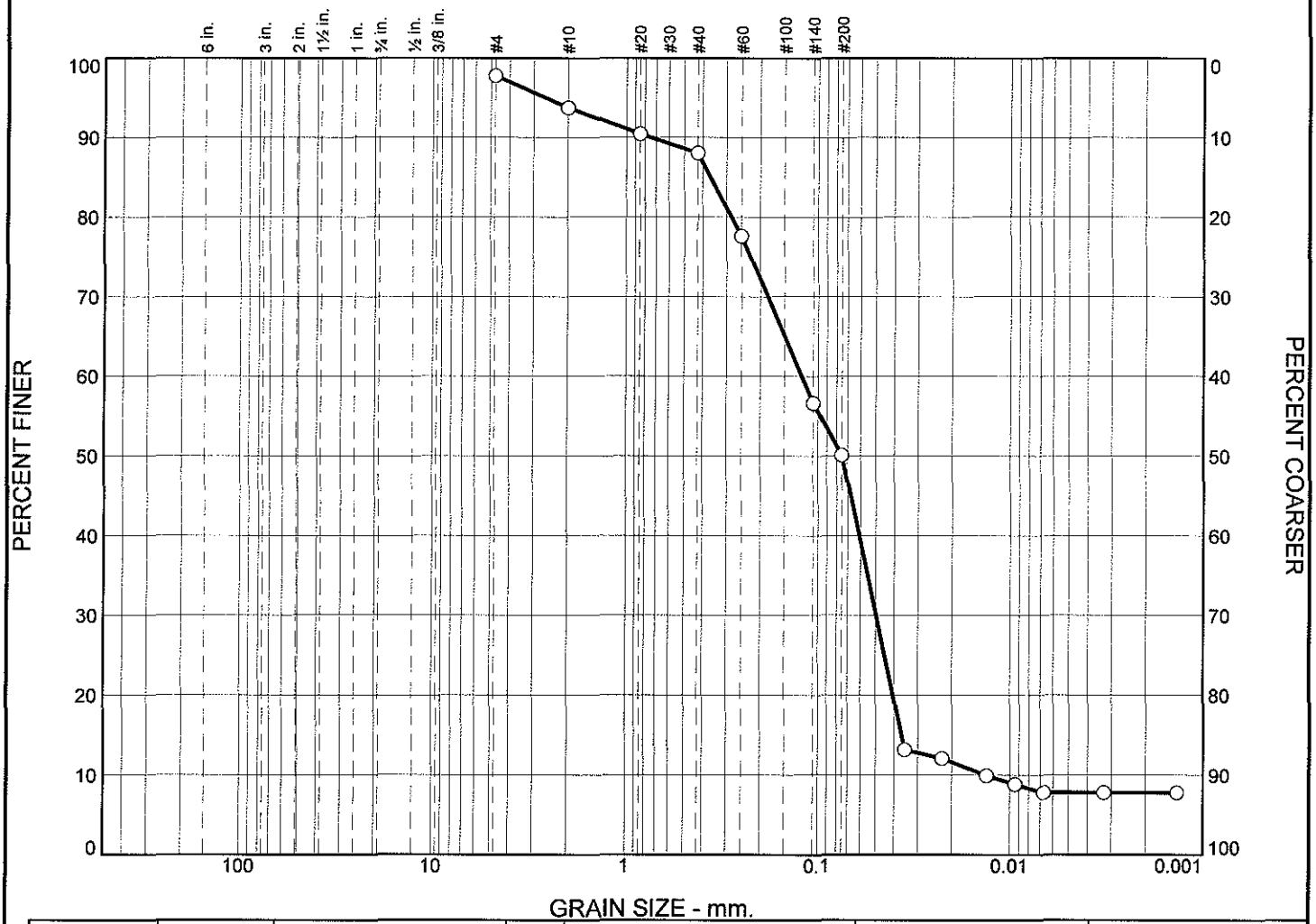
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.7	4.3	6.9	11.9	12.6	16.9	52.6	25.2	2.6	2.0	1.2	31.0	6.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0157	0.0361	0.0407	0.0518	0.0966	0.1673	0.5359	0.8461	1.8825	3.9600

Fineness Modulus	C_u	C_c
1.15	10.65	1.02

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.2	2.7	2.5	11.0	16.9	19.5	28.4	2.2	2.4	0.4	7.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3641	0.1216	0.0749	0.0497	0.0365	0.0135	1.50	9.02

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503213 **Sample Number:** L0912912-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503213
Sample Number: L0912912-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 44.17
Tare Wt. = 4.64
Minus #200 from wash = 47.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.76	0.00	#4	523.43	521.77	97.8	2.2
		#10	487.82	484.81	93.8	6.2
		#20	407.89	405.42	90.4	9.6
		#40	364.54	362.74	88.0	12.0
		#60	373.96	366.16	77.6	22.4
		#140	358.49	342.82	56.6	43.4
		#200	350.16	345.25	50.1	49.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 50.1
Weight of hydrometer sample =74.76
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	13.1	86.9
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	12.1	87.9
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	9.9	90.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	8.8	91.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	7.8	92.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	7.8	92.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	7.8	92.2

Fractional Components

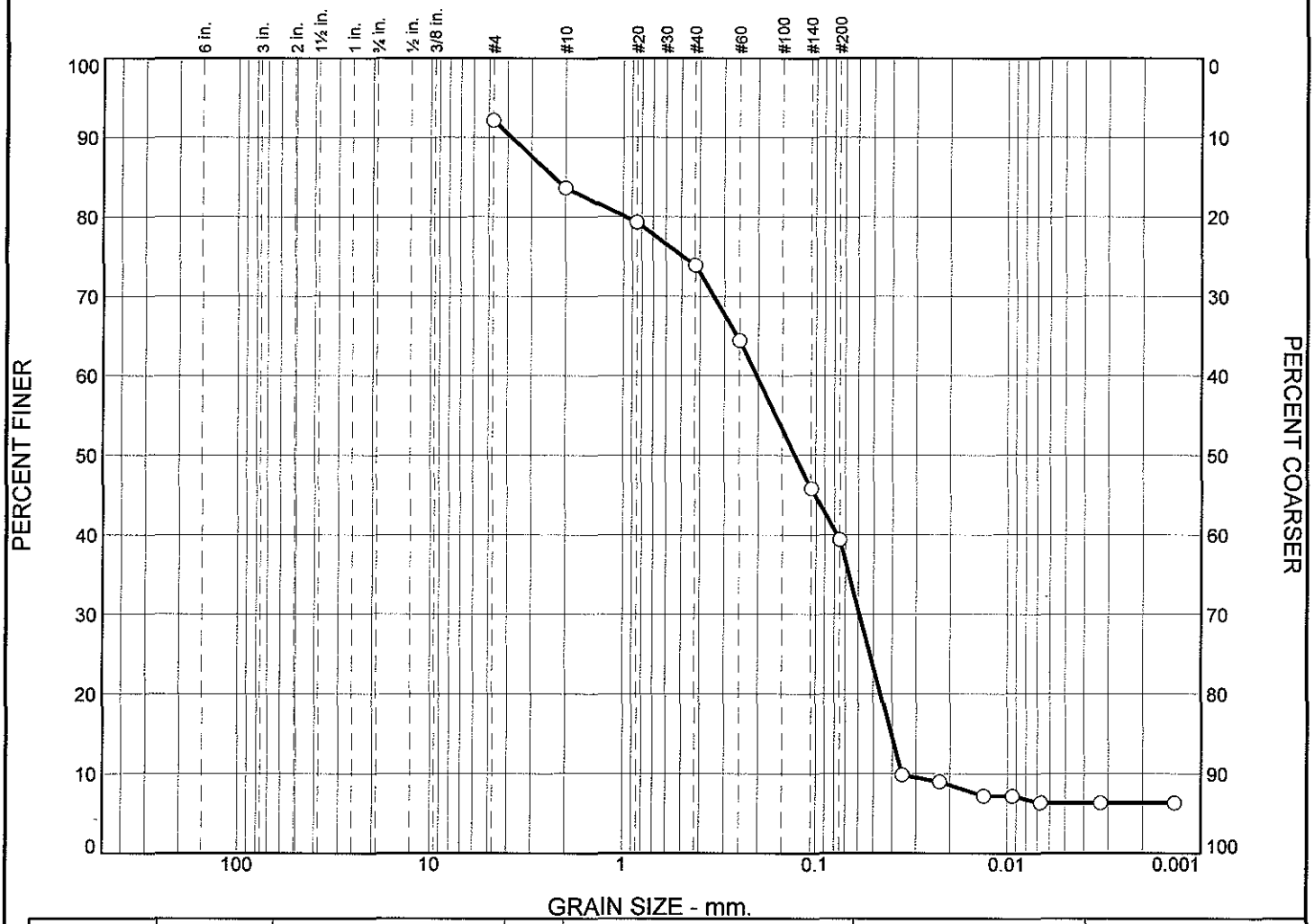
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.2	2.7	2.5	11.0	16.9	19.5	52.6	28.4	2.2	2.4	0.4	33.4	7.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0135	0.0365	0.0404	0.0497	0.0749	0.1216	0.2823	0.3641	0.7468	2.6143

Fineness Modulus	C_u	C_c
0.80	9.02	1.50

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.9	3.5	4.9	10.8	15.0	17.2	22.6	1.9	1.0	0.4	6.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.2950	0.2037	0.1285	0.0591	0.0404	0.0356	0.48	5.72

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503226 **Sample Number:** L0912912-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503226
Sample Number: L0912912-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 48.79
Tare Wt. = 4.79
Minus #200 from wash = 39.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
72.11	0.00	#4	526.48	520.81	92.1	7.9
		#10	488.23	482.11	83.6	16.4
		#20	414.22	411.09	79.3	20.7
		#40	381.75	377.86	73.9	26.1
		#60	376.67	369.84	64.4	35.6
		#140	360.59	347.17	45.8	54.2
		#200	351.17	346.51	39.4	60.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 39.4
Weight of hydrometer sample =72.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	9.8	90.2
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	9.0	91.0
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	7.2	92.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	7.2	92.8
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	6.3	93.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.3	93.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.3	93.7

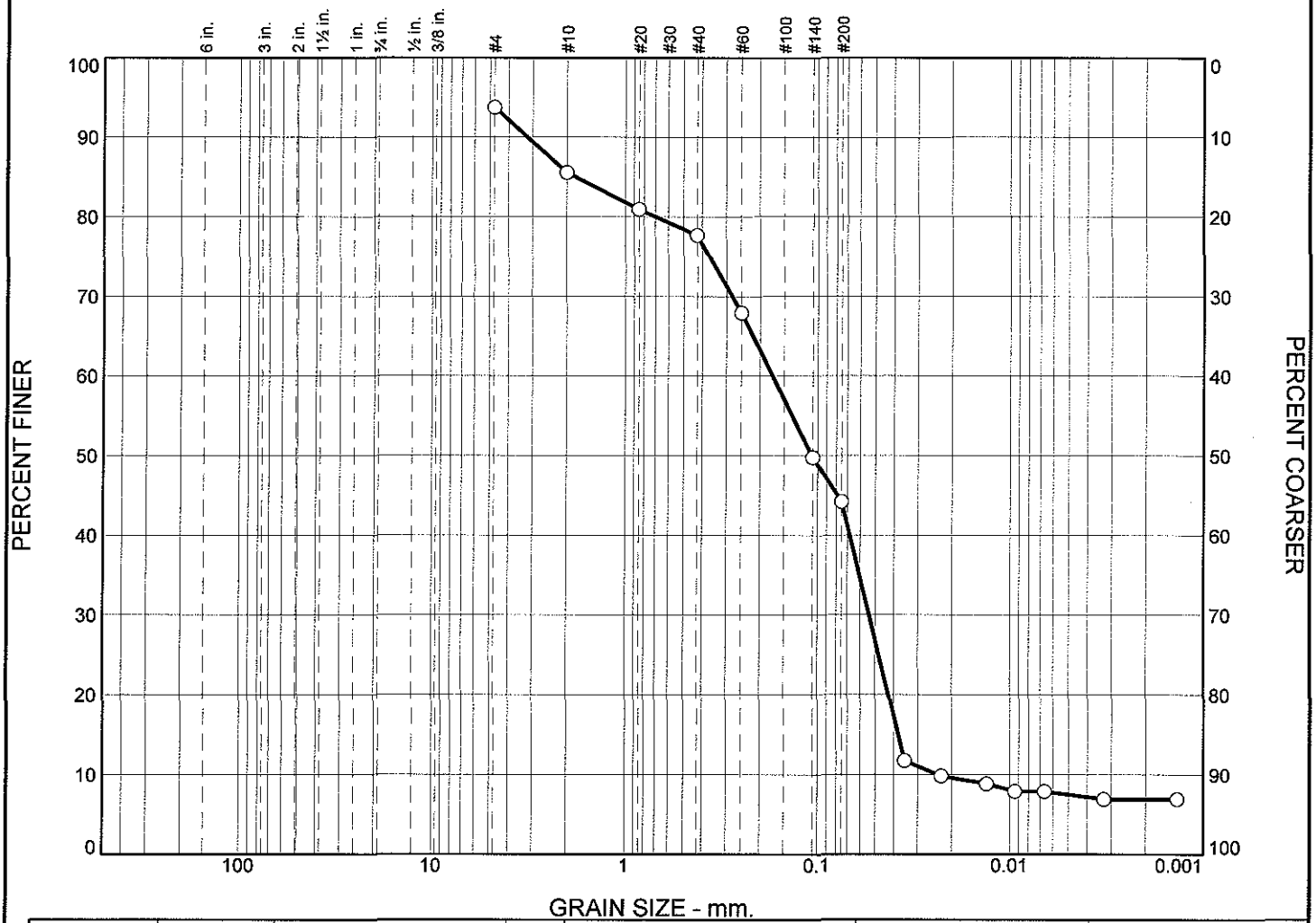
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.9	3.5	4.9	10.8	15.0	17.2	51.4	22.6	1.9	1.0	0.4	25.9	6.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0356	0.0404	0.0459	0.0591	0.1285	0.2037	0.9740	2.2950	3.8203	

Fineness Modulus	C_u	C_c
1.44	5.72	0.48

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.6	3.7	3.4	10.5	14.6	16.9	25.2	2.1	1.2	0.8	7.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.8076	0.1719	0.1070	0.0538	0.0379	0.0237	0.71	7.25

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503226 **Sample Number:** WG382947-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503226
Sample Number: WG382947-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 47.84
Tare Wt. = 4.59
Minus #200 from wash = 41.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.02	0.00	#4	526.39	521.77	93.8	6.2
		#10	490.89	484.81	85.5	14.5
		#20	408.83	405.42	80.9	19.1
		#40	365.16	362.74	77.7	22.3
		#60	373.38	366.16	67.9	32.1
		#140	356.23	342.82	49.8	50.2
		#200	349.39	345.25	44.2	55.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 44.2
Weight of hydrometer sample =74.02
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	11.7	88.3
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	9.8	90.2
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	8.8	91.2
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	7.9	92.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	7.9	92.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.9	93.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.9	93.1

Fractional Components

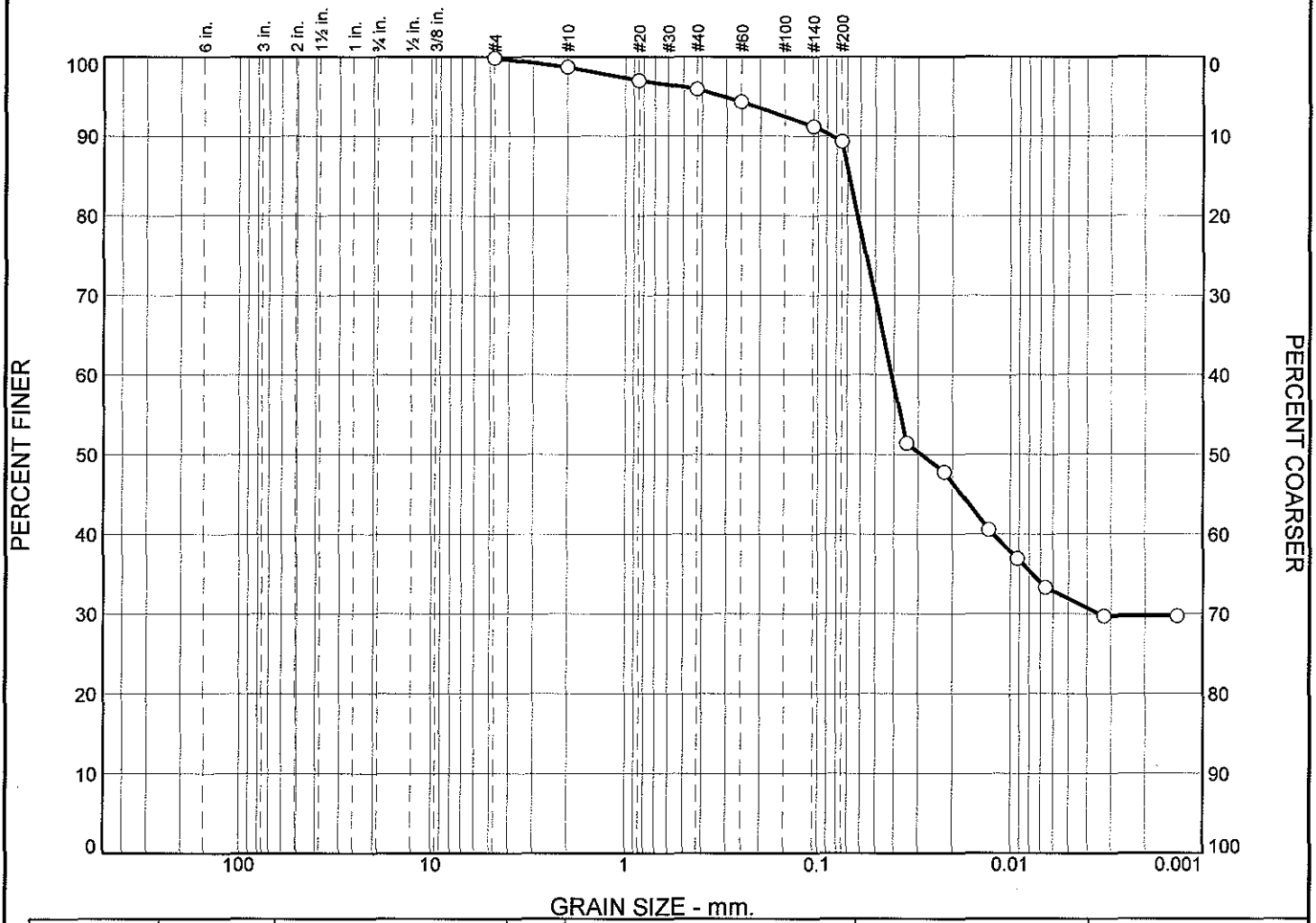
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.6	3.7	3.4	10.5	14.6	16.9	49.1	25.2	2.1	1.2	0.8	29.3	7.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0237	0.0379	0.0426	0.0538	0.1070	0.1719	0.6968	1.8076	3.1974	

Fineness Modulus	C_u	C_c
1.29	7.25	0.71

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	1.4	1.1	1.9	2.5	11.4	29.8	7.5	8.0	4.5	30.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0687	0.0411	0.0289	0.0034				

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503311 **Sample Number:** L0912912-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503311
Sample Number: L0912912-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 8.70
Tare Wt. = 4.57
Minus #200 from wash = 89.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
39.65	0.00	#4	520.87	520.81	99.8	0.2
		#10	482.58	482.11	98.7	1.3
		#20	411.74	411.09	97.0	3.0
		#40	378.29	377.86	95.9	4.1
		#60	370.48	369.84	94.3	5.7
		#140	348.40	347.17	91.2	8.8
		#200	347.27	346.51	89.3	10.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 89.3
Weight of hydrometer sample =39.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	51.4	48.6
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	47.8	52.2
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	40.6	59.4
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	36.9	63.1
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	33.3	66.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	29.7	70.3
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	29.7	70.3

Fractional Components

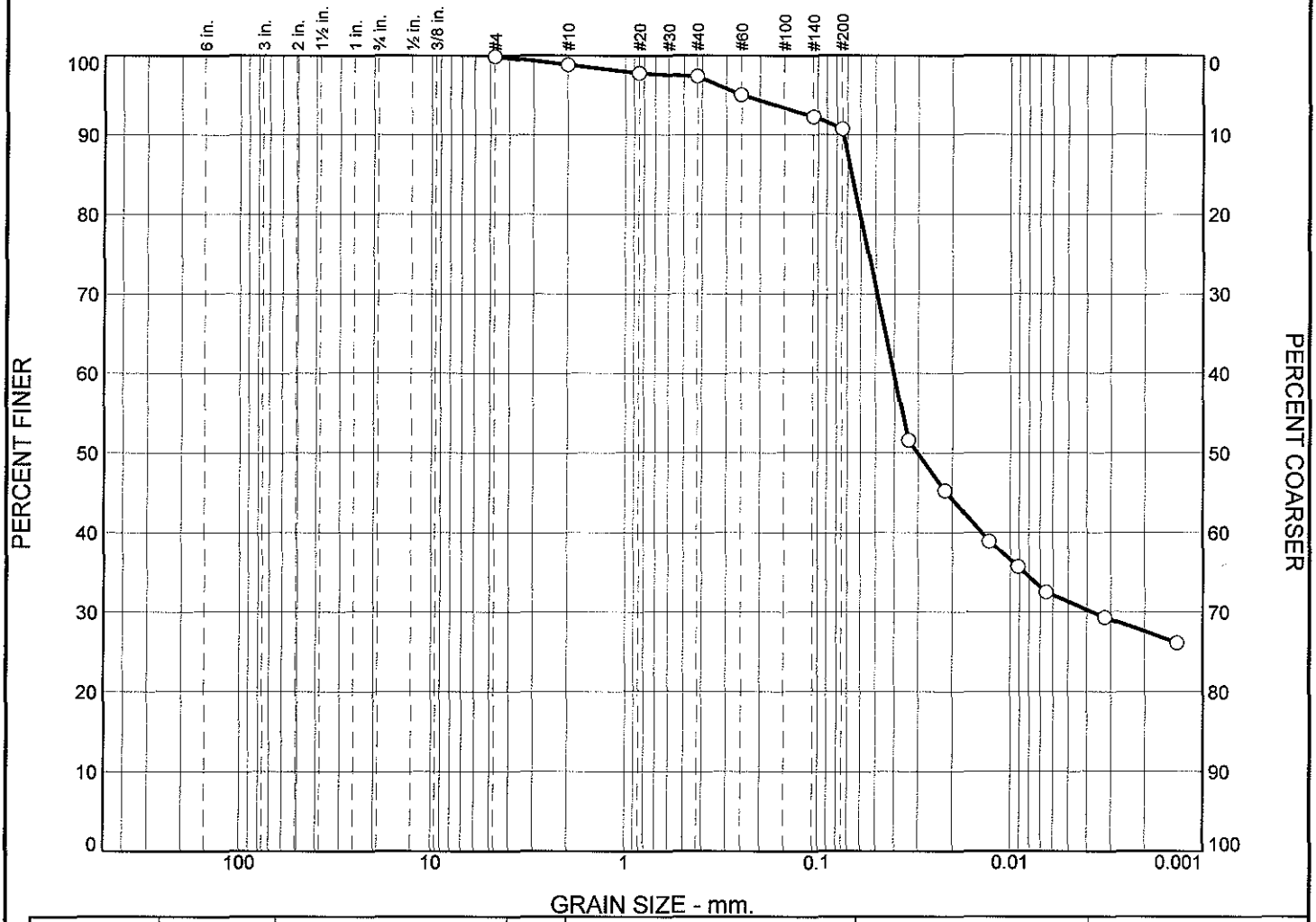
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	1.4	1.1	1.9	2.5	11.4	18.3	29.8	7.5	8.0	4.5	49.8	30.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0034	0.0289	0.0411	0.0620	0.0687	0.0850	0.3121

Fineness Modulus
0.20

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	0.8	0.5	2.5	2.2	11.0	31.4	9.2	7.0	4.0	30.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0667	0.0401	0.0302	0.0038				

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503312 **Sample Number:** L0912912-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503312
Sample Number: L0912912-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 8.52
Tare Wt. = 4.55
Minus #200 from wash = 91.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.78	0.00	#4	521.83	521.77	99.9	0.1
		#10	485.28	484.81	98.8	1.2
		#20	405.91	405.42	97.8	2.2
		#40	362.93	362.74	97.4	2.6
		#60	367.22	366.16	95.0	5.0
		#140	344.08	342.82	92.3	7.7
		#200	345.96	345.25	90.7	9.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 90.7
Weight of hydrometer sample =45.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0338	51.6	48.4
5.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0218	45.2	54.8
15.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0128	38.9	61.1
30.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0092	35.7	64.3
60.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0065	32.5	67.5
250.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0032	29.3	70.7
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	26.1	73.9

Fractional Components

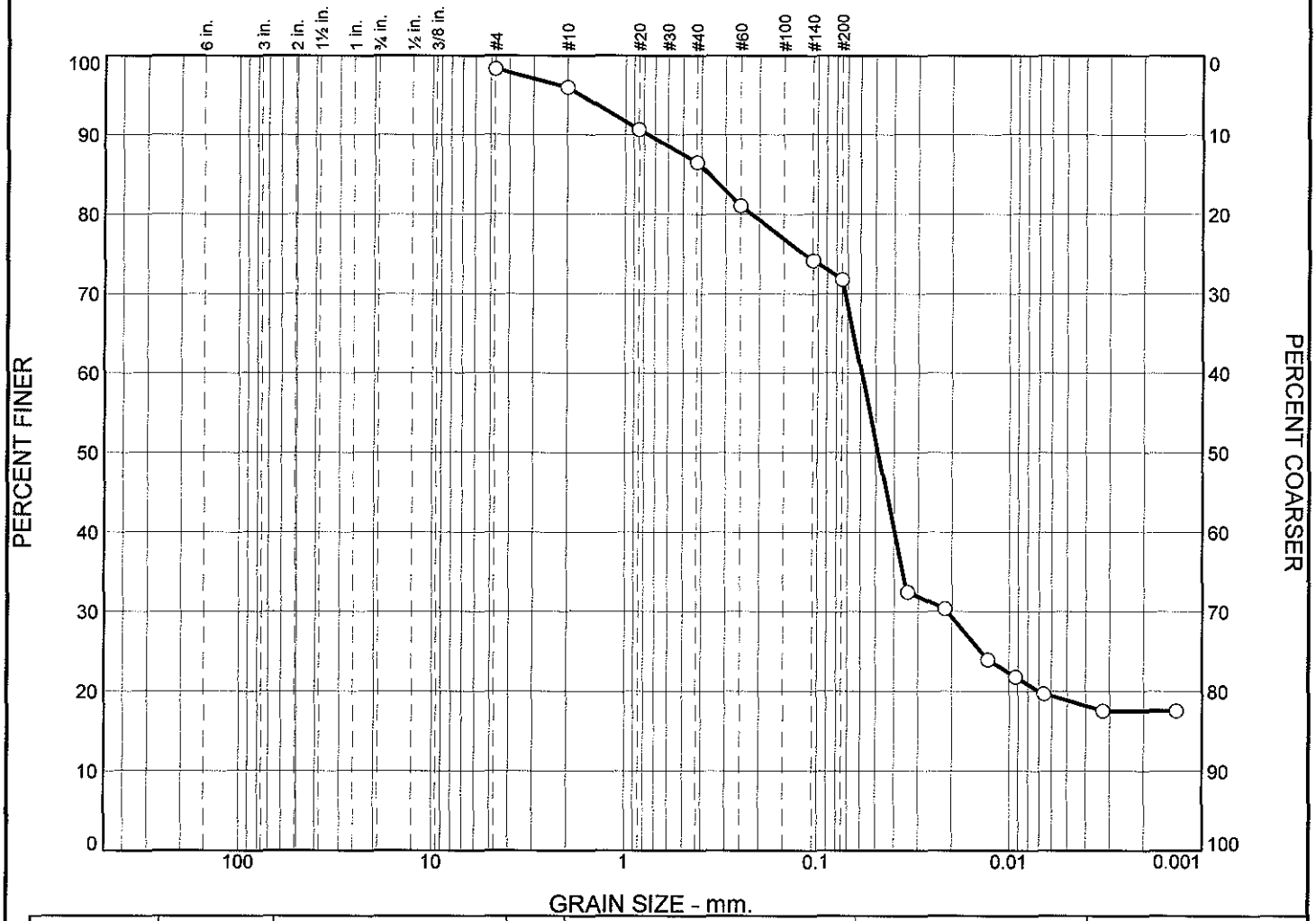
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	0.8	0.5	2.5	2.2	11.0	17.0	31.4	9.2	7.0	4.0	51.6	30.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0038	0.0302	0.0401	0.0602	0.0667	0.0739	0.2468

Fineness Modulus
0.16

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.9	4.3	4.2	6.5	5.5	12.8	30.7	5.8	5.5	2.6	18.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3665	0.0592	0.0484	0.0212				

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503313 **Sample Number:** L0912912-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503313
Sample Number: L0912912-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 19.91
Tare Wt. = 4.60
Minus #200 from wash = 71.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
53.97	0.00	#4	521.71	520.81	98.3	1.7
		#10	483.38	482.11	96.0	4.0
		#20	413.95	411.09	90.7	9.3
		#40	380.10	377.86	86.5	13.5
		#60	372.80	369.84	81.0	19.0
		#140	350.89	347.17	74.2	25.8
		#200	347.79	346.51	71.8	28.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 71.8
Weight of hydrometer sample =53.97
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	32.5	67.5
5.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0218	30.4	69.6
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	23.9	76.1
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	21.8	78.2
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	19.7	80.3
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	17.5	82.5
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	17.5	82.5

Fractional Components

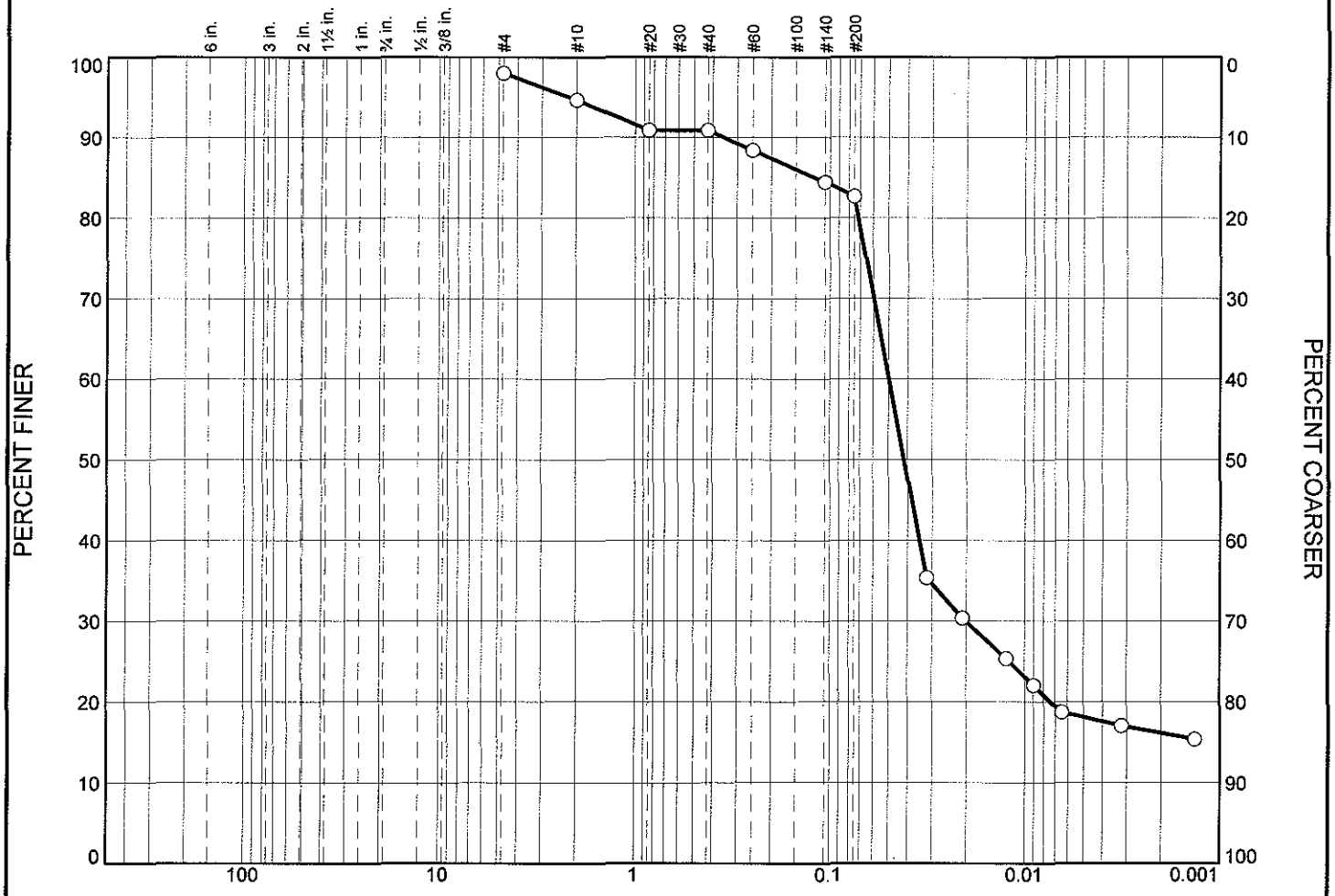
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.9	4.3	4.2	6.5	5.5	12.8	33.3	30.7	5.8	5.5	2.6	44.6	18.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0069	0.0212	0.0484	0.0592	0.2195	0.3665	0.7587	1.7075

Fineness Modulus
0.64

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.6	3.1	0.7	2.5	3.2	12.6	37.6	7.5	6.9	3.1	17.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1192	0.0498	0.0416	0.0201				

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503326 **Sample Number:** L0912912-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 503326
Sample Number: L0912912-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 20.33
Tare Wt. = 4.55
Minus #200 from wash = 80.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.61	0.00	#4	523.37	521.77	98.0	2.0
		#10	487.46	484.81	94.7	5.3
		#20	408.43	405.42	90.9	9.1
		#40	362.75	362.74	90.9	9.1
		#60	368.14	366.18	88.4	11.6
		#140	345.96	342.82	84.5	15.5
		#200	346.67	345.25	82.7	17.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 82.7
Weight of hydrometer sample =79.61
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0210	1.0212	0.0133	18.0	11.5	0.0320	35.4	64.6
5.00	22.0	1.0180	1.0182	0.0133	15.0	12.3	0.0209	30.4	69.6
15.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0125	25.4	74.6
30.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0090	22.0	78.0
60.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0065	18.7	81.3
250.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0032	17.0	83.0
1440.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0013	15.4	84.6

Fractional Components

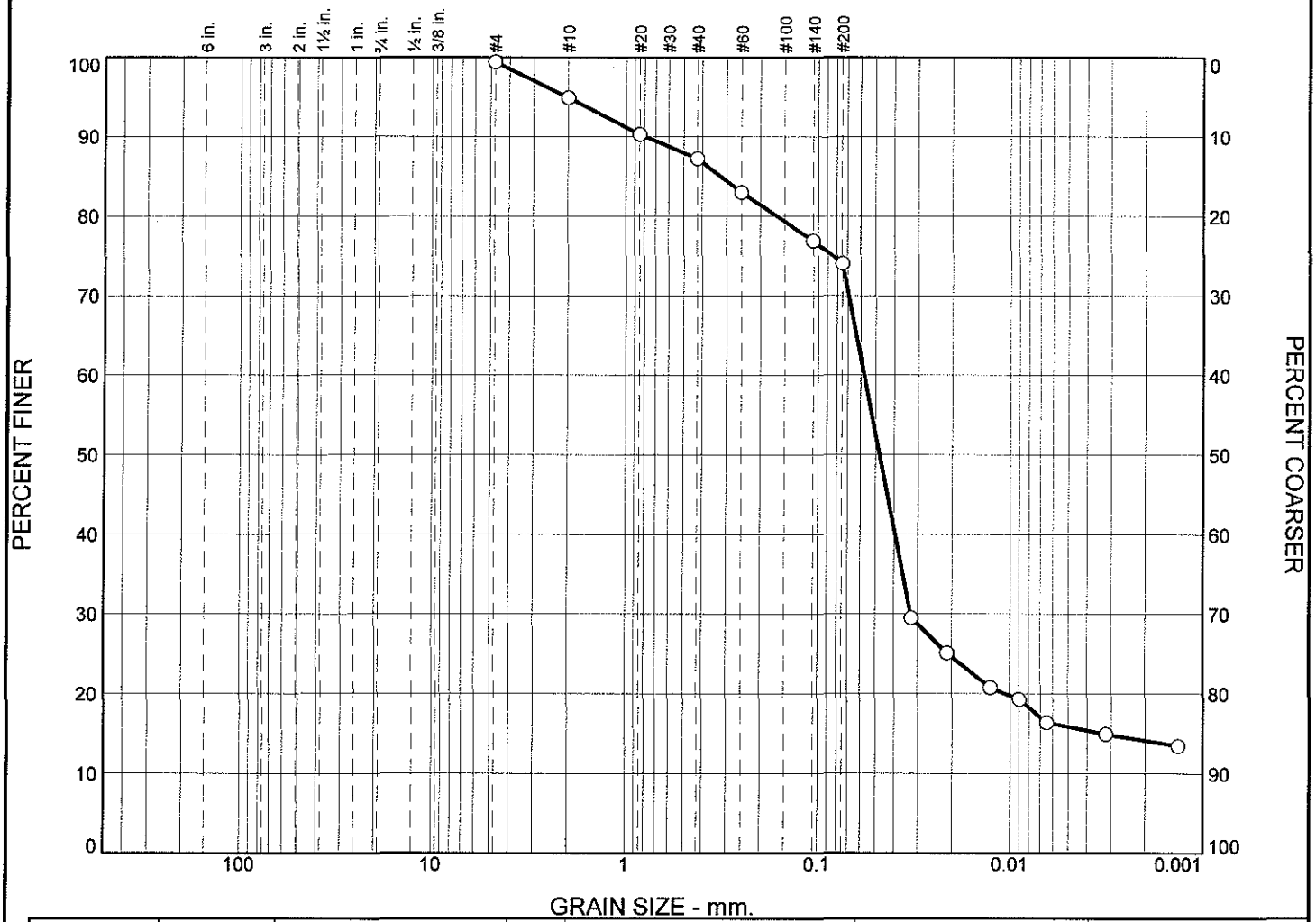
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.6	3.1	0.7	2.5	3.2	12.6	22.1	37.6	7.5	6.9	3.1	55.1	17.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0074	0.0201	0.0416	0.0498	0.0715	0.1192	0.3525	2.1839

Fineness Modulus
0.48

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.6	3.7	3.2	5.0	4.9	13.7	35.3	6.5	4.6	2.7	15.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.3208	0.0575	0.0476	0.0326	0.0033			

	Material Description	USCS	AASHTO
○			

Project No. L0912912 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 508136 **Sample Number:** L0912912-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912912
Location: 508136
Sample Number: L0912912-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 25.75
Tare Wt. = 4.60
Minus #200 from wash = 74.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
81.46	0.00	#4	521.30	520.81	99.4	0.6
		#10	485.77	482.11	94.9	5.1
		#20	414.84	411.09	90.3	9.7
		#40	380.34	377.86	87.3	12.7
		#60	373.31	369.84	83.0	17.0
		#140	352.12	347.17	76.9	23.1
		#200	348.50	346.15	74.0	26.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 74.0
Weight of hydrometer sample =81.46
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0200	1.0202	0.0133	17.0	11.8	0.0323	29.5	70.5
5.00	22.0	1.0170	1.0172	0.0133	14.0	12.6	0.0211	25.1	74.9
15.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0126	20.7	79.3
30.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0090	19.3	80.7
60.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0065	16.4	83.6
250.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0032	14.9	85.1
1440.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0013	13.4	86.6

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.6	3.7	3.2	5.0	4.9	13.7	30.5	35.3	6.5	4.6	2.7	49.1	15.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0033	0.0106	0.0326	0.0476	0.0575	0.1637	0.3208	0.7935	2.0367

Fineness Modulus
0.60

Alpha Analytical

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 207

CHAIN OF CUSTODY

PAGE 36 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08316:18

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912912

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
1	503011	9/27/09	13:25	SE	HC	☐	☐	☒	☐	ben gs	1
2	503012	9/27/09	13:30	SE	HC	☐	☐	☒	☐	ben gs	1
3	503013	9/27/09	13:33	SE	HC	☐	☐	☒	☐	ben gs	1
	503025	9/27/09	13:42	SE	DB	☒	☒	☐	☐	sed chem	1
4	503026	9/27/09	13:42	SE	DB	☐	☐	☒	☐	sed gs	1
	503027	9/27/09	13:42	SE	DB	☐	☐	☐	☒	sed arch	1
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	
Preservative	A	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9/27/09 16:10		9/27/09
	9/28/09 09:15		9/28/09 9:25
	9/28/09 10:20		9/28/09 1120

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 208

CHAIN OF COUNTY

PAGE 18 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08016:18

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Date Rec'd in Lab:

ALPHA Job #: L0912912

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
5	503111	9/26/09	15:20	SE	HC	☐	☐	☒	☐	ben gs	1
6	503112	9/26/09	15:20	SE	HC	☐	☐	☒	☐	ben gs	1
7	503113	9/26/09	15:20	SE	HC	☐	☐	☒	☐	ben gs	1
	503125	9/26/09	15:40	SE	HC	☒	☒	☐	☐	sed chem	1
8	503126	9/26/09	15:40	SE	HC	☐	☐	☒	☐	sed gs	1
	503127	9/26/09	15:40	SE	HC	☐	☐	☐	☒	sed arch	1

	total PCB congeners NOAA 18	TOC	grain size	archive
Container Type	G	G	G	-
Preservative	A	A	A	-

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	9/26/09 19:12	[illegible]	9-26-09 19:17
[illegible]	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[illegible]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 11

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08116:18

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912912

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	503211	9-27-09	13:42	SE	JB	☐	☐	☒	☐								ben gs	1
10	503212	9-27-09	14:05	SE	JB	☐	☐	☒	☐								ben gs	1
11	503213	9-27-09	14:12	SE	JB	☐	☐	☒	☐								ben gs	1
	503225	9-27-09	13:50	SE	JB	☒	☒	☐	☐								sed chem	1
12	503226	9-27-09	13:50	SE	JB	☐	☐	☒	☐								sed gs	1
	503227	9-27-09	13:50	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/27/09 1605	Beth Bump	9-27-09
Beth Bump	9-28-09 09:18	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station 212

CHAIN OF CUSTODY

PAGE 19 OF 41

Date Rec'd in Lab:

ALPHA Job #: L0912912

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:18

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	503311	9/26/09	13:55	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
14	503312	9/26/09	13:55	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
15	503313	9/26/09	13:55	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	503325	9/26/09	14:02	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
16	503326	9/26/09	14:02	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	503327	9/26/09	14:02	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
	508135	9/26/09	14:15	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem F Dup	1
17	508136	9/26/09	14:15	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs F Dup	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/26/09 15:12		9/26/09 19:17
	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912913
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912913-01	503411	NEW BEDFORD, MA	09/27/09 12:19
L0912913-02	503412	NEW BEDFORD, MA	09/27/09 12:34
L0912913-03	503413	NEW BEDFORD, MA	09/27/09 13:00
L0912913-04	503426	NEW BEDFORD, MA	09/27/09 12:28
L0912913-05	503511	NEW BEDFORD, MA	09/26/09 12:35
L0912913-06	503512	NEW BEDFORD, MA	09/26/09 12:35
L0912913-07	503513	NEW BEDFORD, MA	09/26/09 12:35
L0912913-08	503526	NEW BEDFORD, MA	09/26/09 12:57
L0912913-09	503611	NEW BEDFORD, MA	09/26/09 11:35
L0912913-10	503612	NEW BEDFORD, MA	09/26/09 11:35
L0912913-11	503613	NEW BEDFORD, MA	09/26/09 11:35
L0912913-12	503626	NEW BEDFORD, MA	09/26/09 11:15
L0912913-13	503711	NEW BEDFORD, MA	09/27/09 11:07
L0912913-14	503712	NEW BEDFORD, MA	09/27/09 11:24
L0912913-15	503713	NEW BEDFORD, MA	09/27/09 11:41
L0912913-16	503726	NEW BEDFORD, MA	09/27/09 11:11
L0912913-17	503811	NEW BEDFORD, MA	09/26/09 09:00
L0912913-18	503812	NEW BEDFORD, MA	09/26/09 09:00
L0912913-19	503813	NEW BEDFORD, MA	09/26/09 09:00
L0912913-20	503826	NEW BEDFORD, MA	09/26/09 09:26

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912913
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 3, 2010. The report was ammended to include revised Grain Size data.

The WG383163-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve gravel (29%), % very coarse sand (29%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-01
Client ID: 503411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 12:19
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.300		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	20.9		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	24.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-02
Client ID: 503412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 12:34
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.80		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.9		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.4		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-03
Client ID: 503413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 13:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.80		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	33.5		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	29.7		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.2		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.50		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-04
Client ID: 503426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 12:28
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.300		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.600		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	23.4		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	24.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.4		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-05
Client ID: 503511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 12:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.400		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.50		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.1		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	34.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-06
Client ID: 503512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 12:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	34.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-07
Client ID: 503513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 12:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.200		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.800		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	7.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.2		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	38.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-08
Client ID: 503526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 12:57
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.900		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.600		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.700		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	60.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-09
Client ID: 503611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 11:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	11.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	28.5		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	2.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.300		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-10
Client ID: 503612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 11:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	8.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.80		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	30.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	4.60		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	3.10		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.400		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-11
Client ID: 503613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 11:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	9.50		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.60		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	35.1		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.10		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	2.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.300		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-12
Client ID: 503626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 11:15
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	6.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	38.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	3.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-13
Client ID: 503711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 11:07
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.60		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	25.5		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.5		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.4		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-14
Client ID: 503712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 11:24
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.7		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	19.9		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-15
Client ID: 503713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/27/09 11:41
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.90		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.4		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	33.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	18.7		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.60		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-16
Client ID: 503726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 11:11
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.5		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.7		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.1		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.00		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-17
Client ID: 503811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 09:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.80		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.80		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.4		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.1		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.80		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-18
Client ID: 503812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 09:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	7.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.10		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	22.8		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-19
Client ID: 503813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 09:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	5.10		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.30		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.40		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.6		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.1		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	14.1		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.70		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912913
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912913-20
Client ID: 503826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 09:26
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.50		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.50		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.0		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.7		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.2		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	20.3		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.20		%	0.100	--	1	-	10/06/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG383163-1 QC Sample: L0912913-04 Client ID: 503426						
Gravel (>2.00mm)	0.3	0.400	%	**29**	Q	20
Very Coarse Sand (1.00-2.00 mm)	0.6	0.800	%	**29**	Q	20
Coarse Sand (0.50-1.00 mm)	5.0	5.60	%	11		20
Medium Sand (0.25-0.50 mm)	23.4	23.3	%	0		20
Fine Sand (0.125-0.25 mm)	24.8	23.5	%	5		20
Very Fine Sand (0.063-0.125 mm)	16.6	16.0	%	4		20
Silt - (1.95-62.5 um)	25.4	23.9	%	6		20
Clay - (<1.95 um)	3.7	3.30	%	11		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information	Custody Seal
Cooler	
B	Absent
F	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-01A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-02A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-03A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-04A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-05A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-06A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-07A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-08A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-09A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-10A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-11A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-12A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-13A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-14A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-15A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-16A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-17A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-18A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912913-19A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912913
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912913-20A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912913
Project Number:	TO-0018	**Report Date:**	08/03/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912913
Project Number:	TO-0018	**Report Date:**	08/03/10

Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

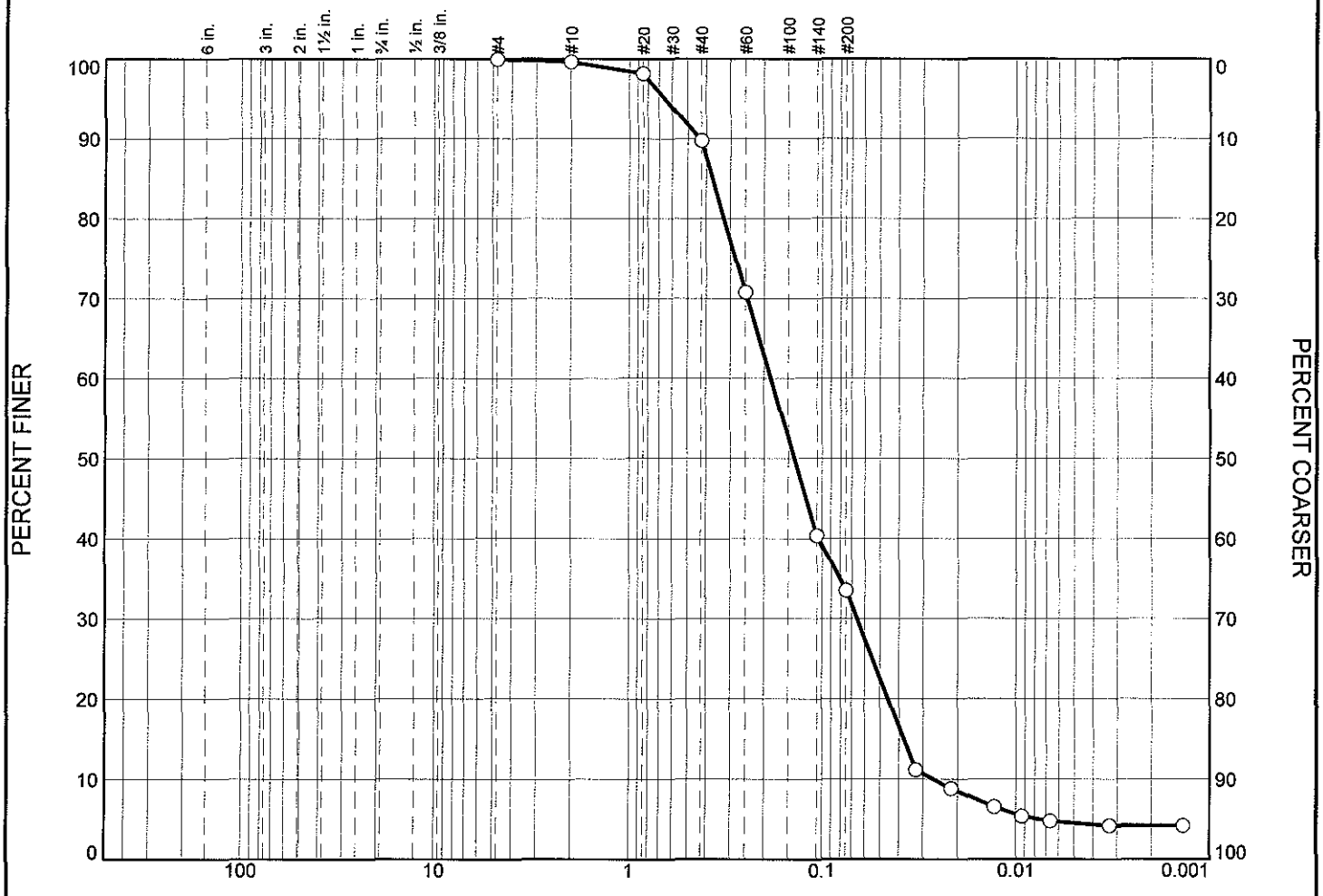
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	1.2	6.7	20.9	24.6	17.6	17.8	3.4	2.4	0.7	4.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3719	0.1844	0.1391	0.0658	0.0377	0.0266	0.88	6.92

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503411 **Sample Number:** L0912913-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503411
Sample Number: L0912913-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 67.42
Tare Wt. = 4.57
Minus #200 from wash = 32.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
92.85	0.00	#4	520.85	520.81	100.0	0.0
		#10	482.47	482.11	99.6	0.4
		#20	412.38	411.09	98.2	1.8
		#40	385.67	377.86	89.8	10.2
		#60	387.46	369.84	70.8	29.2
		#140	375.41	347.17	40.4	59.6
		#200	352.86	346.51	33.5	66.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 33.5
Weight of hydrometer sample =92.85
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0190	1.0192	0.0133	16.0	12.1	0.0327	11.1	88.9
5.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0216	8.8	91.2
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	6.5	93.5
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	5.3	94.7
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	4.8	95.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	4.2	95.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	4.2	95.8

Fractional Components

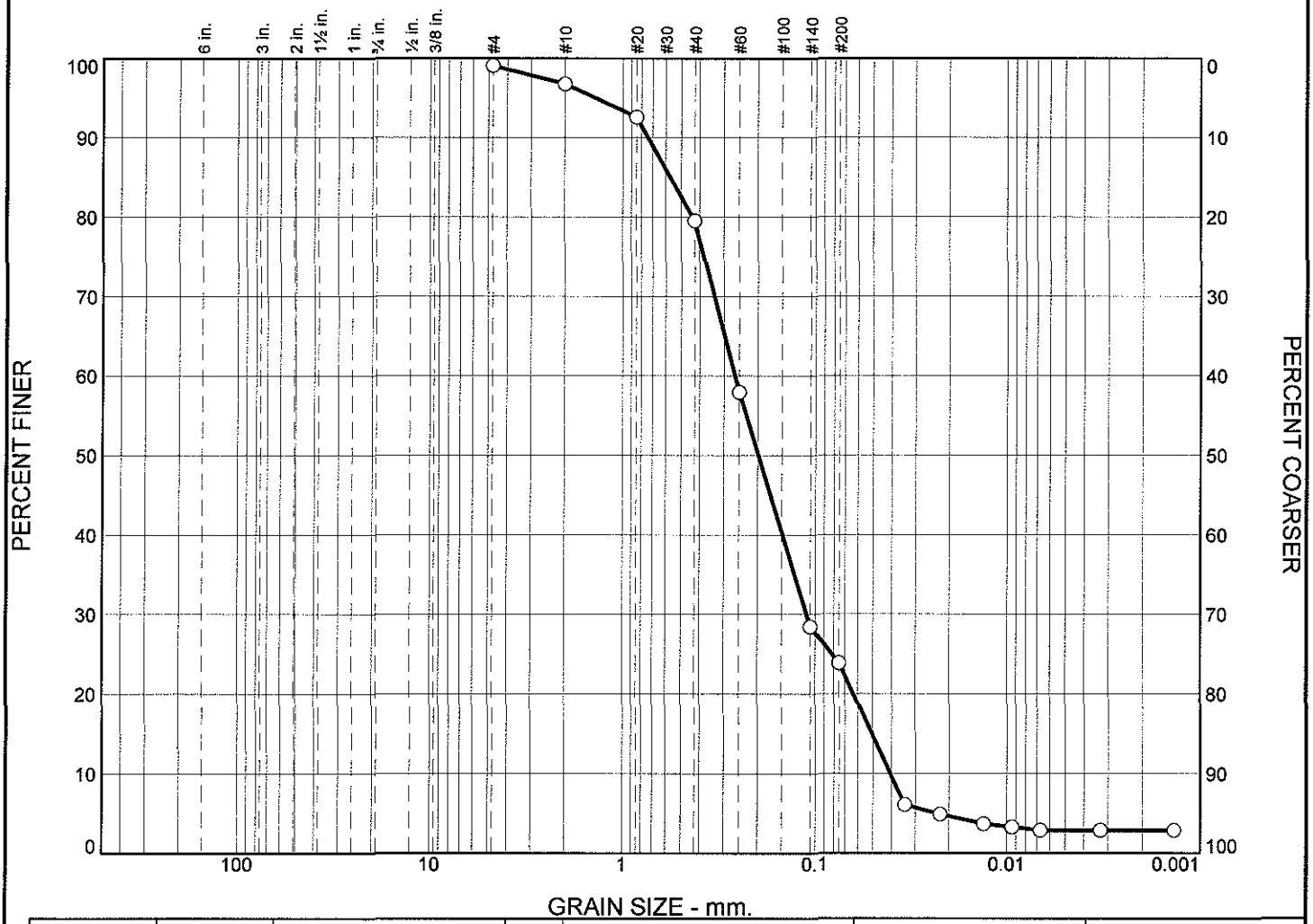
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	1.2	6.7	20.9	24.6	17.6	71.0	17.8	3.4	2.4	0.7	24.3	4.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0266	0.0377	0.0454	0.0658	0.1391	0.1844	0.3234	0.3719	0.4332	0.6541

Fineness Modulus	C_u	C_c
0.78	6.92	0.88

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.8	3.4	10.8	24.6	23.9	14.4	13.9	1.7	1.0	0.2	2.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5684	0.2629	0.1983	0.1108	0.0506	0.0406	1.15	6.48

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503412 **Sample Number:** L0912913-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503412
Sample Number: L0912913-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 80.60
Tare Wt. = 4.63
Minus #200 from wash = 20.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
96.09	0.00	#4	522.67	521.77	99.1	0.9
		#10	487.02	484.81	96.8	3.2
		#20	409.42	405.42	92.6	7.4
		#40	375.32	362.74	79.5	20.5
		#60	386.85	366.14	58.0	42.0
		#140	371.16	342.82	28.5	71.5
		#200	349.67	345.25	23.9	76.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 23.9
Weight of hydrometer sample =96.09
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	6.1	93.9
5.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0222	4.9	95.1
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	3.7	96.3
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	3.3	96.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	2.9	97.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.9	97.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.9	97.1

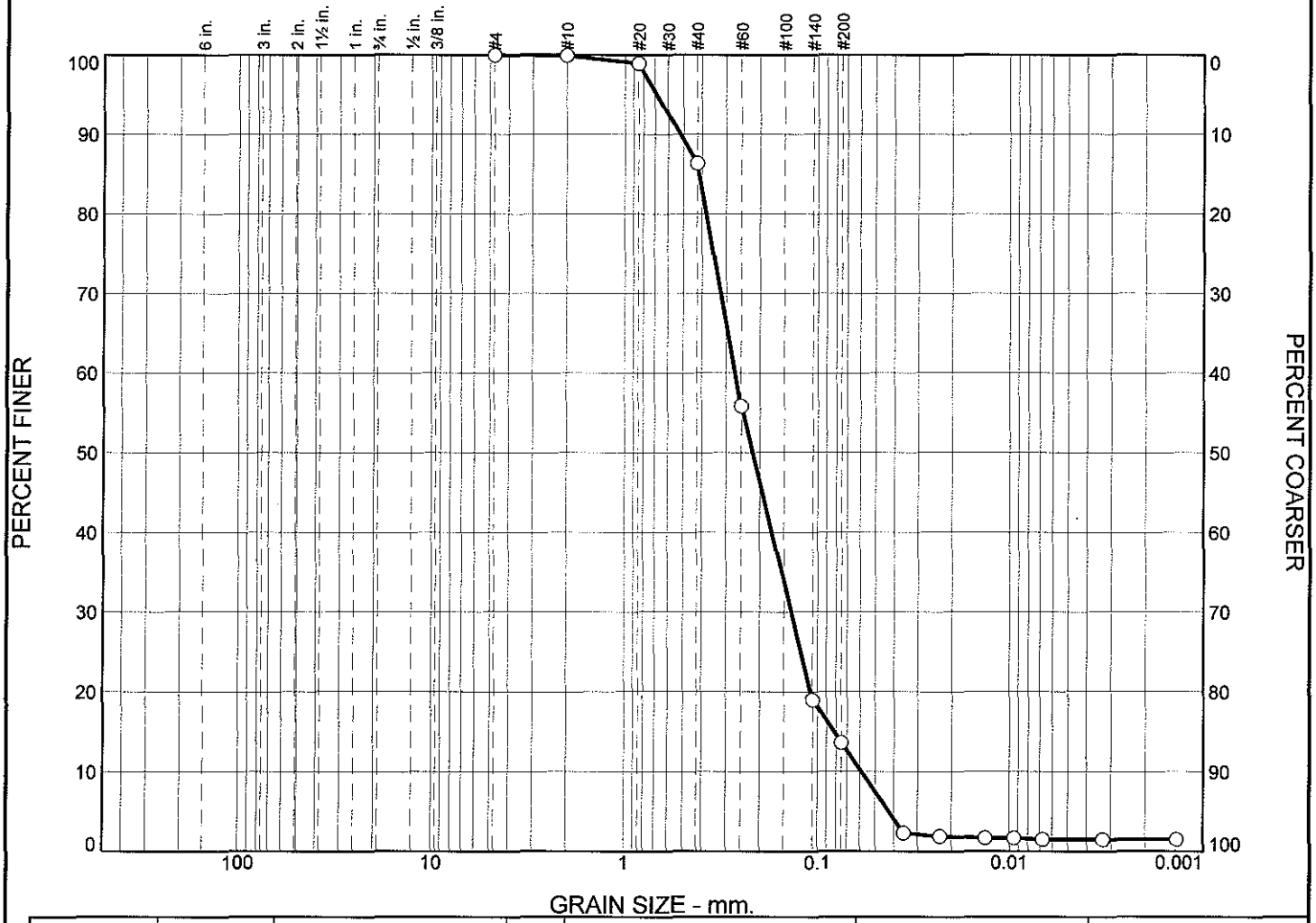
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.8	3.4	10.8	24.6	23.9	14.4	77.1	13.9	1.7	1.0	0.2	16.8	2.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0406	0.0506	0.0632	0.1108	0.1983	0.2629	0.4362	0.5684	0.7407	1.3919

Fineness Modulus	C_u	C_c
1.18	6.48	1.15

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.8	9.8	33.5	29.7	15.2	8.7	0.5	0.1	0.1	1.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4152	0.2688	0.2182	0.1370	0.0820	0.0590	1.18	4.56

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503413 **Sample Number:** L0912913-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503413
Sample Number: L0912913-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 97.72
Tare Wt. = 4.58
Minus #200 from wash = 12.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
106.42	0.00	#4	520.83	520.81	100.0	0.0
		#10	482.20	482.11	99.9	0.1
		#20	412.10	411.09	98.9	1.1
		#40	391.27	377.86	86.3	13.7
		#60	402.31	369.84	55.8	44.2
		#140	386.38	347.17	19.0	81.0
		#200	352.22	346.51	13.6	86.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 13.6
Weight of hydrometer sample =106.42
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	2.3	97.7
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	1.9	98.1
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.7	98.3
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.7	98.3
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.5	98.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.5	98.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.5	98.5

Fractional Components

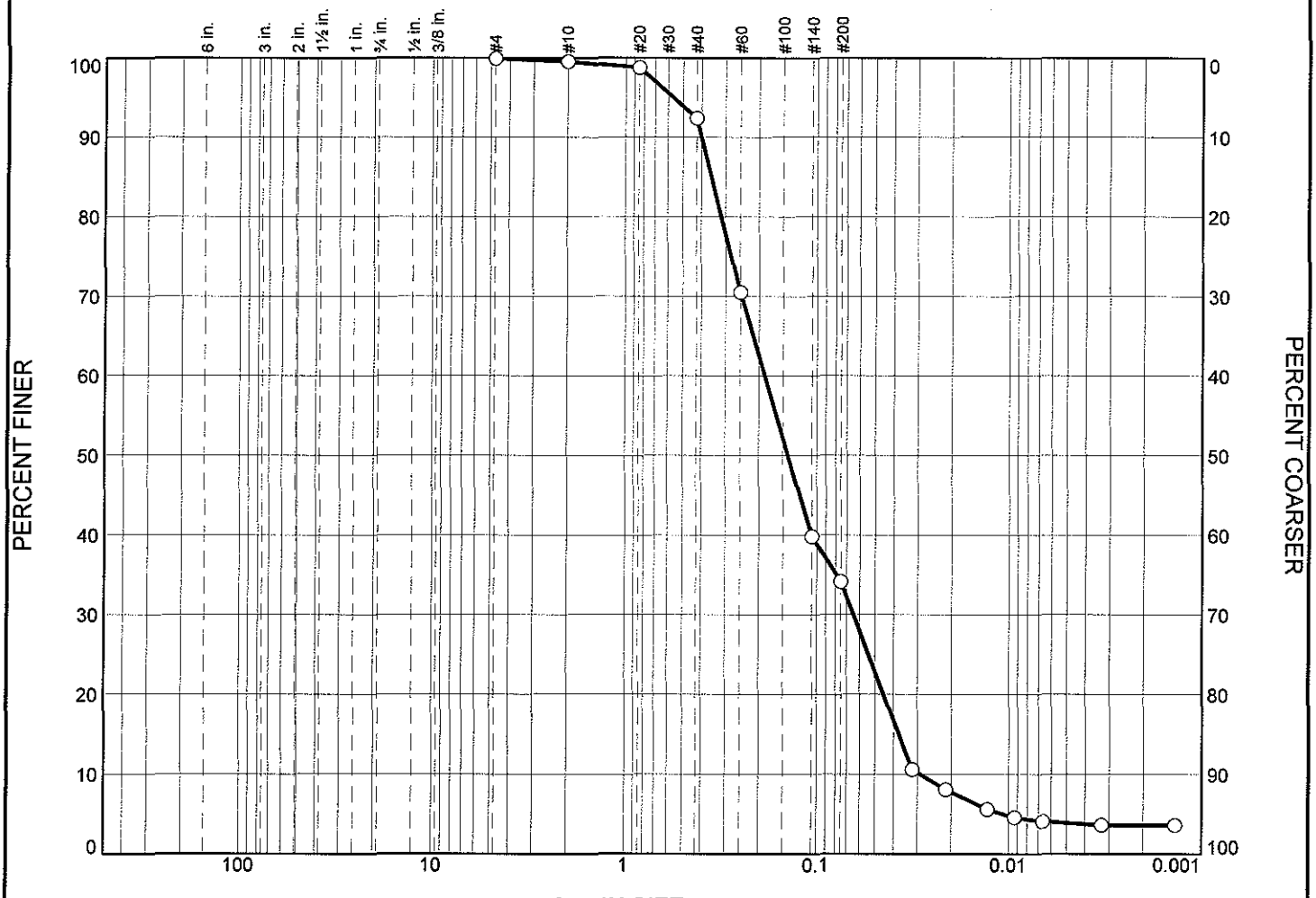
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.8	9.8	33.5	29.7	15.2	89.0	8.7	0.5	0.1	0.1	9.4	1.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0590	0.0820	0.1085	0.1370	0.2182	0.2688	0.3806	0.4152	0.5196	0.6841

Fineness Modulus	C_u	C_c
1.08	4.56	1.18

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.6	5.0	23.4	24.8	16.6	18.7	3.9	2.2	0.6	3.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3552	0.1864	0.1409	0.0646	0.0375	0.0292	0.77	6.38

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503426 **Sample Number:** L0912913-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503426
Sample Number: L0912913-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 78.59
Tare Wt. = 4.61
Minus #200 from wash = 32.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
110.23	0.00	#4	521.86	521.77	99.9	0.1
		#10	485.23	484.81	99.5	0.5
		#20	406.28	405.42	98.8	1.2
		#40	369.73	362.74	92.4	7.6
		#60	390.32	366.16	70.5	29.5
		#140	376.63	342.82	39.8	60.2
		#200	351.51	345.25	34.1	65.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 34.1
Weight of hydrometer sample =110.23
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0210	1.0212	0.0133	18.0	11.5	0.0320	10.6	89.4
5.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0213	8.1	91.9
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	5.6	94.4
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	4.6	95.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	4.1	95.9
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	3.6	96.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	3.6	96.4

Fractional Components

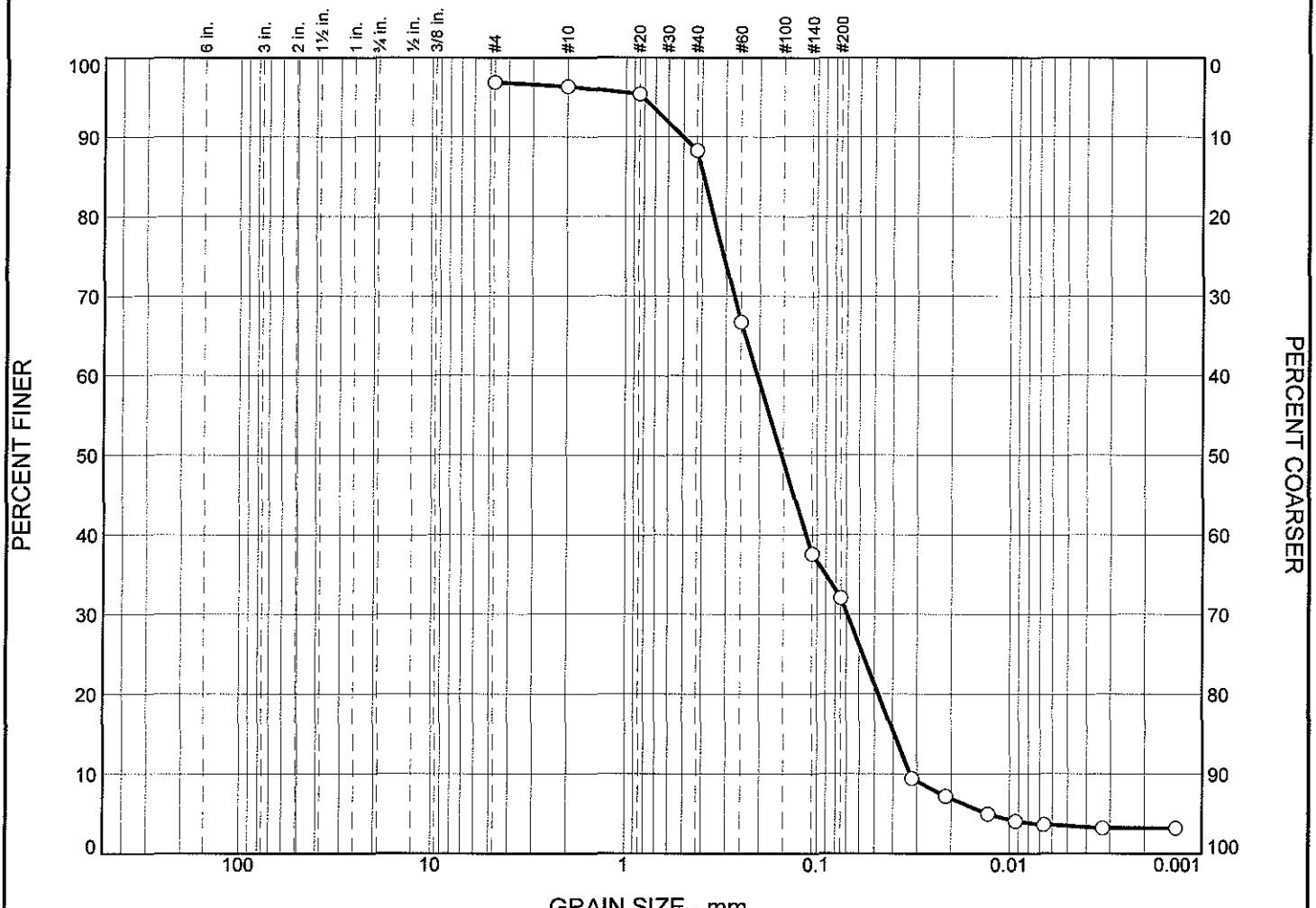
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.6	5.0	23.4	24.8	16.6	70.4	18.7	3.9	2.2	0.6	25.4	3.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0292	0.0375	0.0450	0.0646	0.1409	0.1864	0.3147	0.3552	0.4009	0.5637

Fineness Modulus	C_u	C_c
0.76	6.38	0.77

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	0.8	5.6	23.3	23.5	16.0	18.0	3.4	1.9	0.6	3.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3918	0.2052	0.1528	0.0693	0.0394	0.0327	0.72	6.28

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503426 **Sample Number:** WG383163-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503426
Sample Number: WG383163-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 84.35
Tare Wt. = 4.47
Minus #200 from wash = 31.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
116.22	0.00	#4	524.45	520.81	96.9	3.1
		#10	482.70	482.11	96.4	3.6
		#20	412.23	411.09	95.4	4.6
		#40	386.08	377.86	88.3	11.7
		#60	394.94	369.84	66.7	33.3
		#140	381.03	347.17	37.6	62.4
		#200	352.88	346.51	32.1	67.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 32.1
Weight of hydrometer sample =116.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0210	1.0212	0.0133	18.0	11.5	0.0320	9.4	90.6
5.00	22.0	1.0160	1.0162	0.0133	13.0	12.9	0.0213	7.2	92.8
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	5.0	95.0
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	4.1	95.9
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	3.6	96.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	3.2	96.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	3.2	96.8

Fractional Components

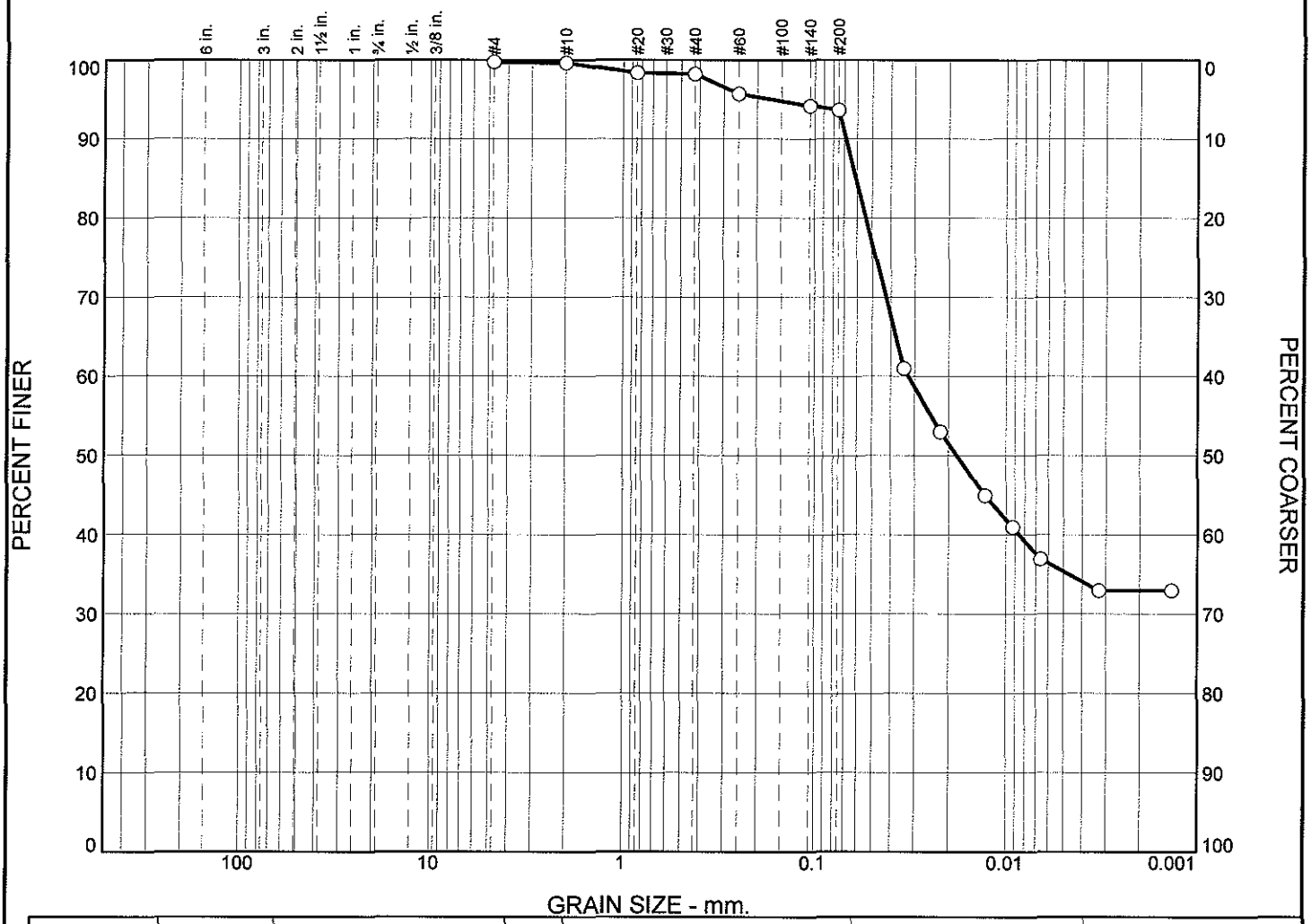
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	0.8	5.6	23.3	23.5	16.0	69.2	18.0	3.4	1.9	0.6	23.9	3.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0327	0.0394	0.0476	0.0693	0.1528	0.2052	0.3465	0.3918	0.5017	0.8190

Fineness Modulus	C_u	C_c
0.96	6.28	0.72

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	1.0	0.4	2.5	1.2	8.4	26.8	11.5	8.9	4.9	34.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0609	0.0323	0.0181					

Material Description	USCS	AASHTO
○		

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503511 **Sample Number:** L0912913-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503511
Sample Number: L0912913-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 6.39
Tare Wt. = 4.50
Minus #200 from wash = 95.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
37.51	0.00	#4	521.87	521.77	99.7	0.3
		#10	484.85	484.81	99.6	0.4
		#20	405.90	405.42	98.3	1.7
		#40	362.79	362.74	98.2	1.8
		#60	367.10	366.16	95.7	4.3
		#140	343.39	342.82	94.2	5.8
		#200	345.45	345.25	93.7	6.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.7
Weight of hydrometer sample =37.51
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0341	61.0	39.0
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	53.0	47.0
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	45.0	55.0
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	41.0	59.0
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	36.9	63.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	32.9	67.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	32.9	67.1

Fractional Components

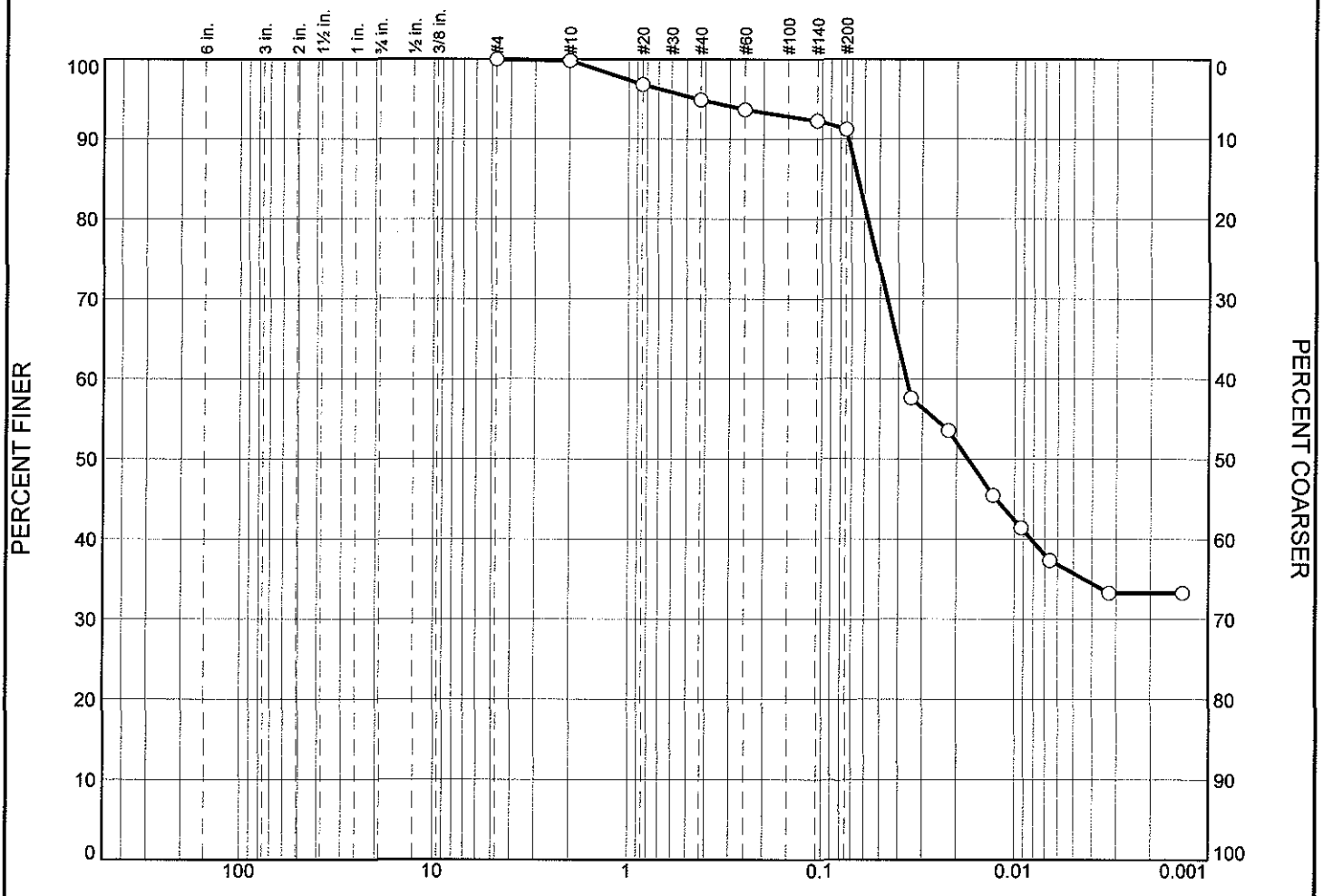
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	1.0	0.4	2.5	1.2	8.4	13.5	26.8	11.5	8.9	4.9	52.1	34.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0181	0.0323	0.0539	0.0609	0.0687	0.1676

Fineness Modulus
0.12

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	2.4	2.0	1.7	1.2	9.2	26.6	8.4	8.9	5.1	34.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.0650	0.0364	0.0174					

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503512 **Sample Number:** L0912913-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503512
Sample Number: L0912913-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 7.13
Tare Wt. = 4.51
Minus #200 from wash = 92.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
36.13	0.00	#4	520.82	520.81	100.0	0.0
		#10	482.17	482.11	99.8	0.2
		#20	412.17	411.09	96.8	3.2
		#40	378.55	377.86	94.9	5.1
		#60	370.28	369.84	93.7	6.3
		#140	347.68	347.17	92.3	7.7
		#200	346.90	346.51	91.2	8.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 91.2
Weight of hydrometer sample =36.13
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	57.6	42.4
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	53.6	46.4
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	45.5	54.5
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	41.4	58.6
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	37.3	62.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	33.3	66.7
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	33.3	66.7

Fractional Components

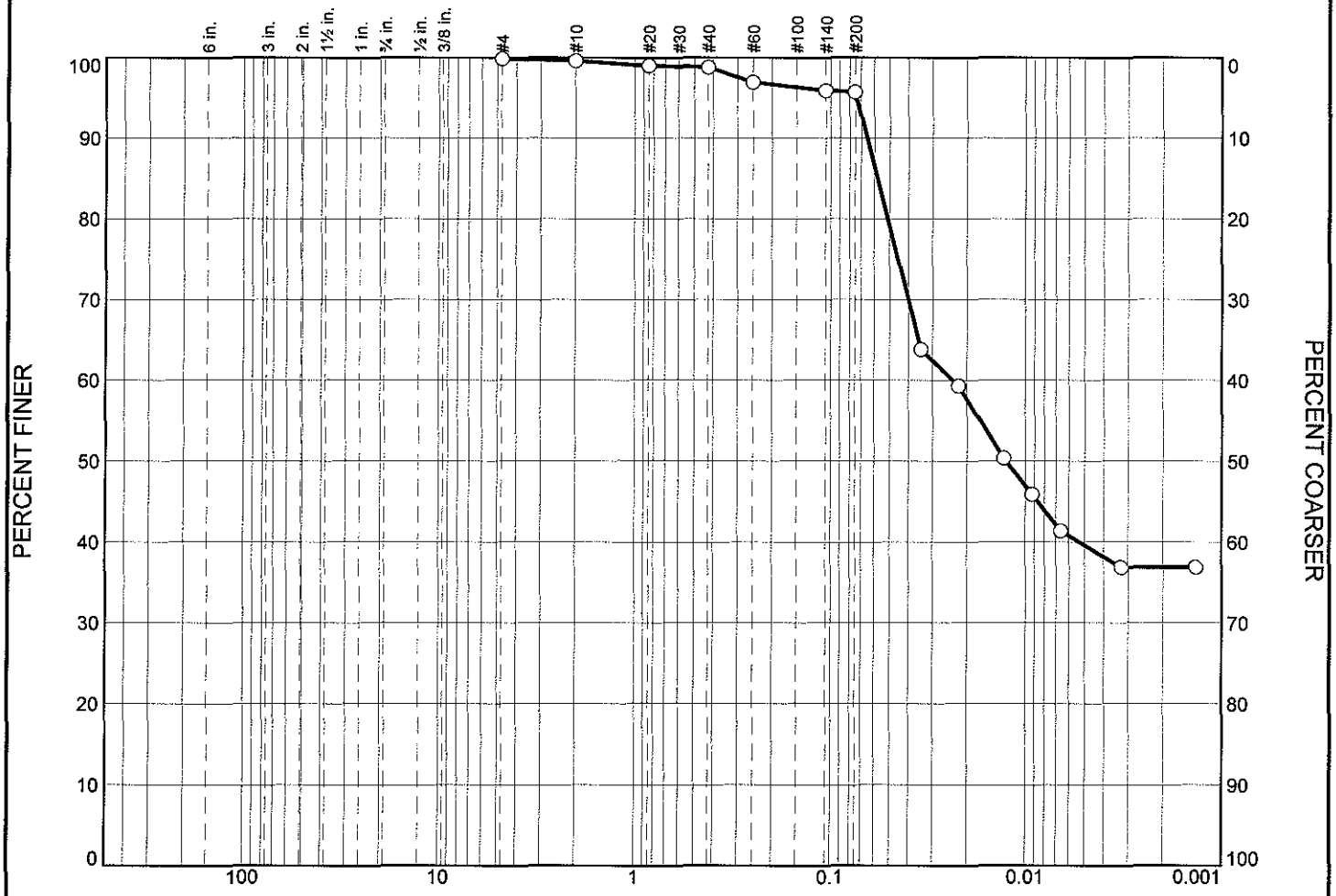
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	2.4	2.0	1.7	1.2	9.2	16.5	26.6	8.4	8.9	5.1	49.0	34.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0174	0.0364	0.0579	0.0650	0.0729	0.4395

Fineness Modulus
0.19

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.5	0.2	2.0	0.8	7.9	25.4	9.3	9.9	5.6	38.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0578	0.0235	0.0126					

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503513 **Sample Number:** L0912913-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503513
Sample Number: L0912913-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 5.69
Tare Wt. = 4.55
Minus #200 from wash = 96.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
34.23	0.00	#4	521.81	521.77	99.9	0.1
		#10	484.91	484.81	99.6	0.4
		#20	405.62	405.42	99.0	1.0
		#40	362.81	362.74	98.8	1.2
		#60	366.80	366.16	96.9	3.1
		#140	343.16	342.82	95.9	4.1
		#200	345.33	345.25	95.7	4.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 95.7
Weight of hydrometer sample =34.23
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	63.8	36.2
5.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0220	59.3	40.7
15.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0129	50.3	49.7
30.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0092	45.9	54.1
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	41.4	58.6
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	36.9	63.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	36.9	63.1

Fractional Components

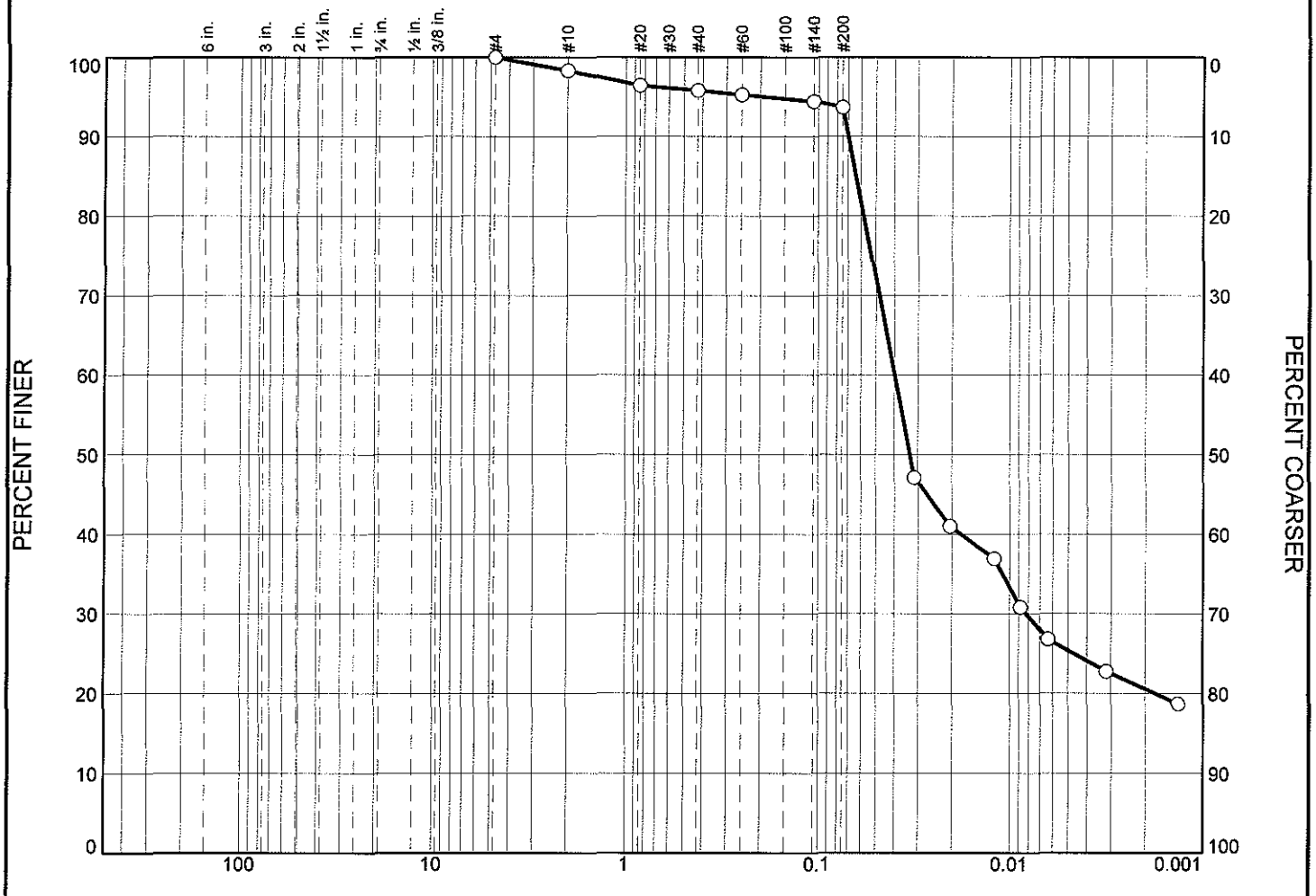
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.5	0.2	2.0	0.8	7.9	11.4	25.4	9.3	9.9	5.6	50.2	38.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0126	0.0235	0.0511	0.0578	0.0653	0.0737

Fineness Modulus
0.08

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.3	1.5	0.9	0.6	0.7	10.6	37.0	8.1	9.5	5.4	24.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0637	0.0398	0.0330	0.0082				

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503526 **Sample Number:** L0912913-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503526
Sample Number: L0912913-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 8.98
Tare Wt. = 4.56
Minus #200 from wash = 94.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.17	0.00	#4	520.83	520.81	100.0	0.0
		#10	483.34	482.11	98.3	1.7
		#20	412.50	411.09	96.4	3.6
		#40	378.31	377.86	95.8	4.2
		#60	370.24	369.84	95.3	4.7
		#140	347.79	347.17	94.4	5.6
		#200	347.06	346.51	93.7	6.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.7
Weight of hydrometer sample =74.17
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0230	1.0232	0.0133	20.0	11.0	0.0312	47.1	52.9
5.00	22.0	1.0200	1.0202	0.0133	17.0	11.8	0.0205	41.0	59.0
15.00	22.0	1.0180	1.0182	0.0133	15.0	12.3	0.0121	36.9	63.1
30.00	22.0	1.0150	1.0152	0.0133	12.0	13.1	0.0088	30.9	69.1
60.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0064	26.8	73.2
250.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0032	22.7	77.3
1440.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0013	18.7	81.3

Fractional Components

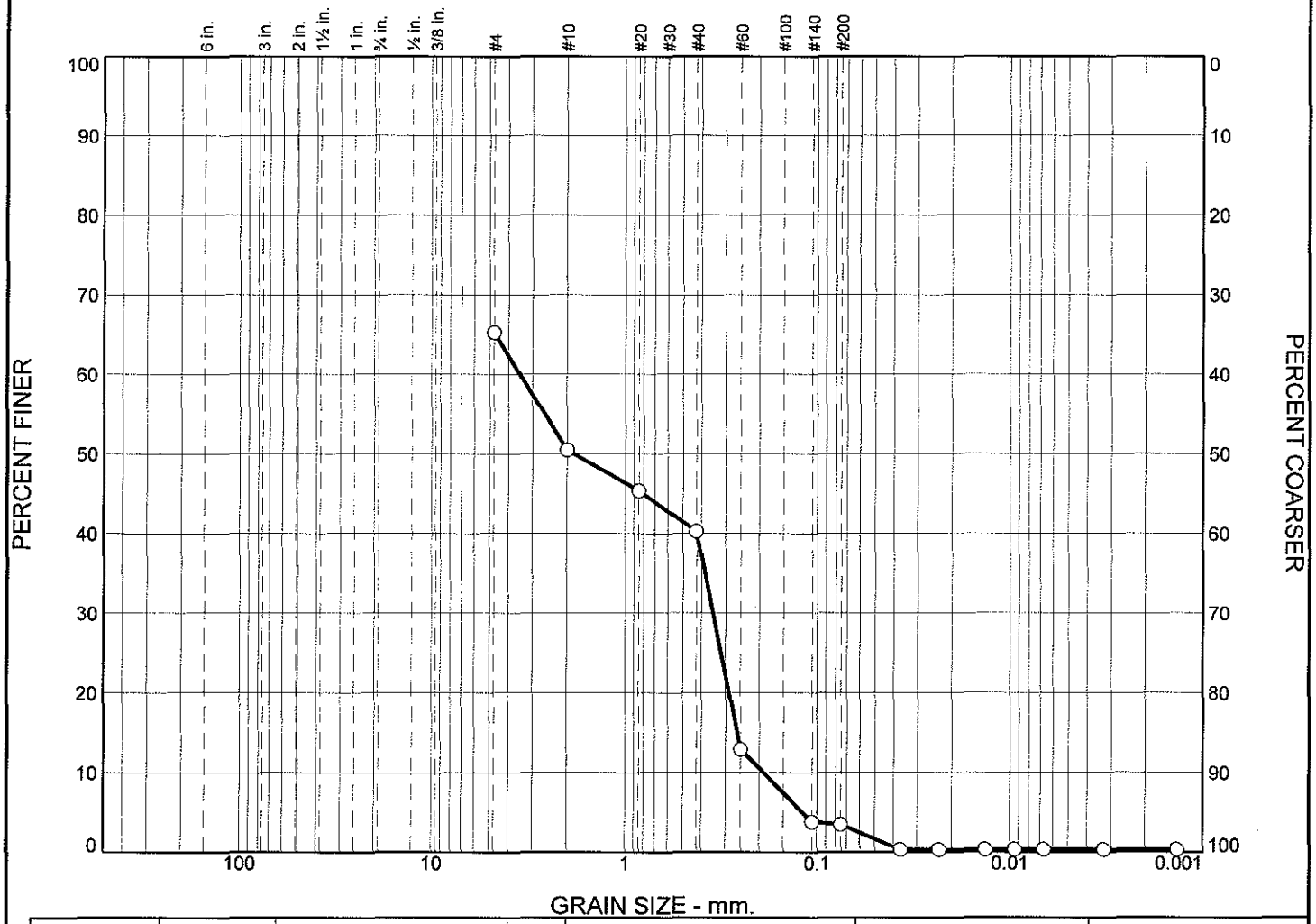
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.3	1.5	0.9	0.6	0.7	10.6	14.3	37.0	8.1	9.5	5.4	60.0	24.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0018	0.0082	0.0330	0.0398	0.0580	0.0637	0.0700	0.1899

Fineness Modulus
0.18

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				11.8	4.2	4.9	28.5	7.4	2.9	2.3	0.0	0.0		0.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				3.4927	1.8524	0.3484	0.2604	0.1902	0.18	18.36

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503611 **Sample Number:** L0912913-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503611
Sample Number: L0912913-09
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 124.43
Tare Wt. = 4.50
Minus #200 from wash = 2.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
122.78	0.00	#4	564.42	521.77	65.3	34.7
		#10	502.99	484.81	50.5	49.5
		#20	411.67	405.42	45.4	54.6
		#40	369.04	362.74	40.2	59.8
		#60	399.72	366.16	12.9	87.1
		#140	354.01	342.82	3.8	96.2
		#200	345.67	345.25	3.4	96.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.4
Weight of hydrometer sample =122.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.3	99.7
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.3	99.7
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.3	99.7
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.3	99.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.3	99.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.3	99.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.3	99.7

Fractional Components

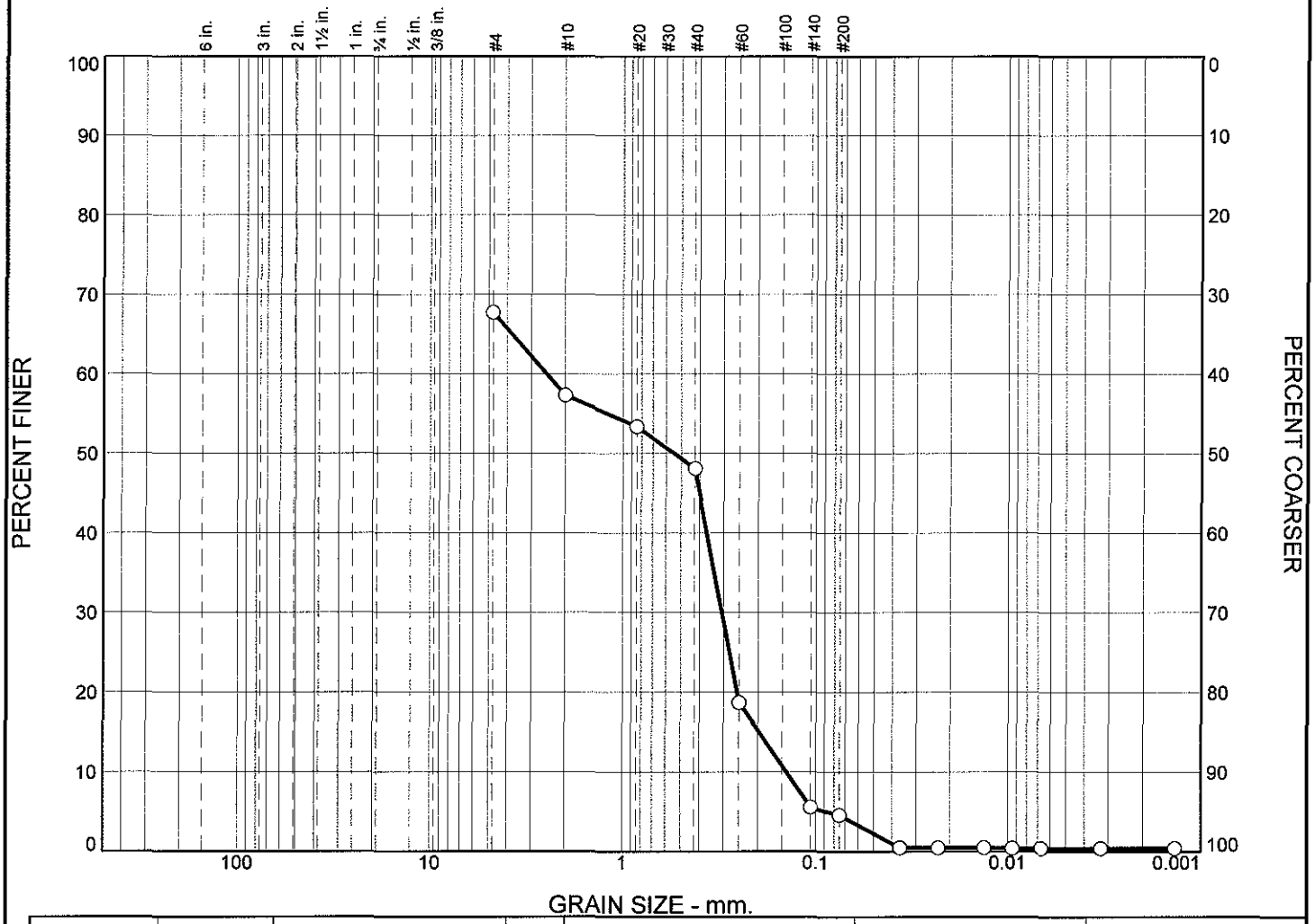
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			11.8	4.2	4.9	28.5	7.4	2.9	47.9	2.3	0.0	0.0		2.3	0.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1902	0.2604	0.2869	0.3484	1.8524	3.4927				

Fineness Modulus	C_u	C_c
3.62	18.36	0.18

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				8.4	3.2	4.8	30.6	10.6	4.6	3.0	0.0	0.1		0.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.5055	0.5451	0.3065	0.1964	0.1418	0.26	17.67

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503612 **Sample Number:** L0912913-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503612
Sample Number: L0912913-10
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 123.86
Tare Wt. = 4.55
Minus #200 from wash = 4.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
125.05	0.00	#4	561.15	520.81	67.7	32.3
		#10	495.20	482.11	57.3	42.7
		#20	415.98	411.09	53.4	46.6
		#40	384.42	377.86	48.1	51.9
		#60	406.63	369.84	18.7	81.3
		#140	363.62	347.17	5.5	94.5
		#200	347.72	346.51	4.6	95.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 4.6
Weight of hydrometer sample =125.05
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.5	99.5
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	0.5	99.5
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	0.5	99.5
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.4	99.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.4	99.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.4	99.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.4	99.6

Fractional Components

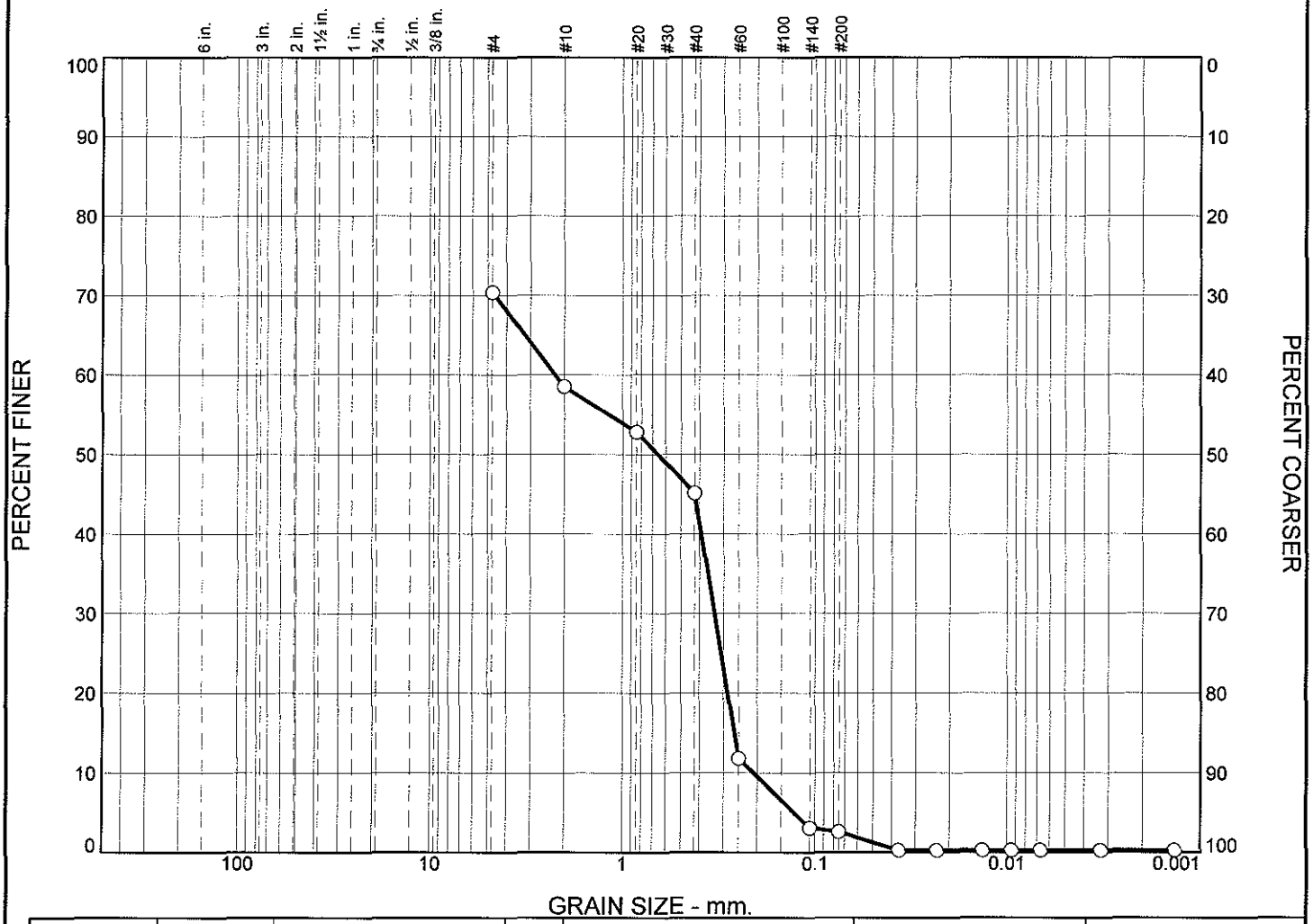
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			8.4	3.2	4.8	30.6	10.6	4.6	53.8	3.0	0.0	0.1		3.1	0.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1418	0.1964	0.2559	0.3065	0.5451	2.5055				

Fineness Modulus	C_u	C_c
3.28	17.67	0.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				9.5	4.6	7.0	35.1	7.1	2.7	1.7	0.0	0.0		0.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.2291	0.6582	0.3340	0.2630	0.2094	0.24	10.64

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503613 **Sample Number:** L0912913-11

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503613
Sample Number: L0912913-11
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 118.09
Tare Wt. = 4.60
Minus #200 from wash = 2.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
116.44	0.00	#4	556.25	521.77	70.4	29.6
		#10	498.64	484.81	58.5	41.5
		#20	412.02	405.42	52.8	47.2
		#40	371.71	362.74	45.1	54.9
		#60	404.97	366.16	11.8	88.2
		#140	353.02	342.82	3.0	97.0
		#200	345.80	345.25	2.6	97.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 2.6
Weight of hydrometer sample =116.44
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0367	0.3	99.7
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.3	99.7
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.3	99.7
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.3	99.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.3	99.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.3	99.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.3	99.7

Fractional Components

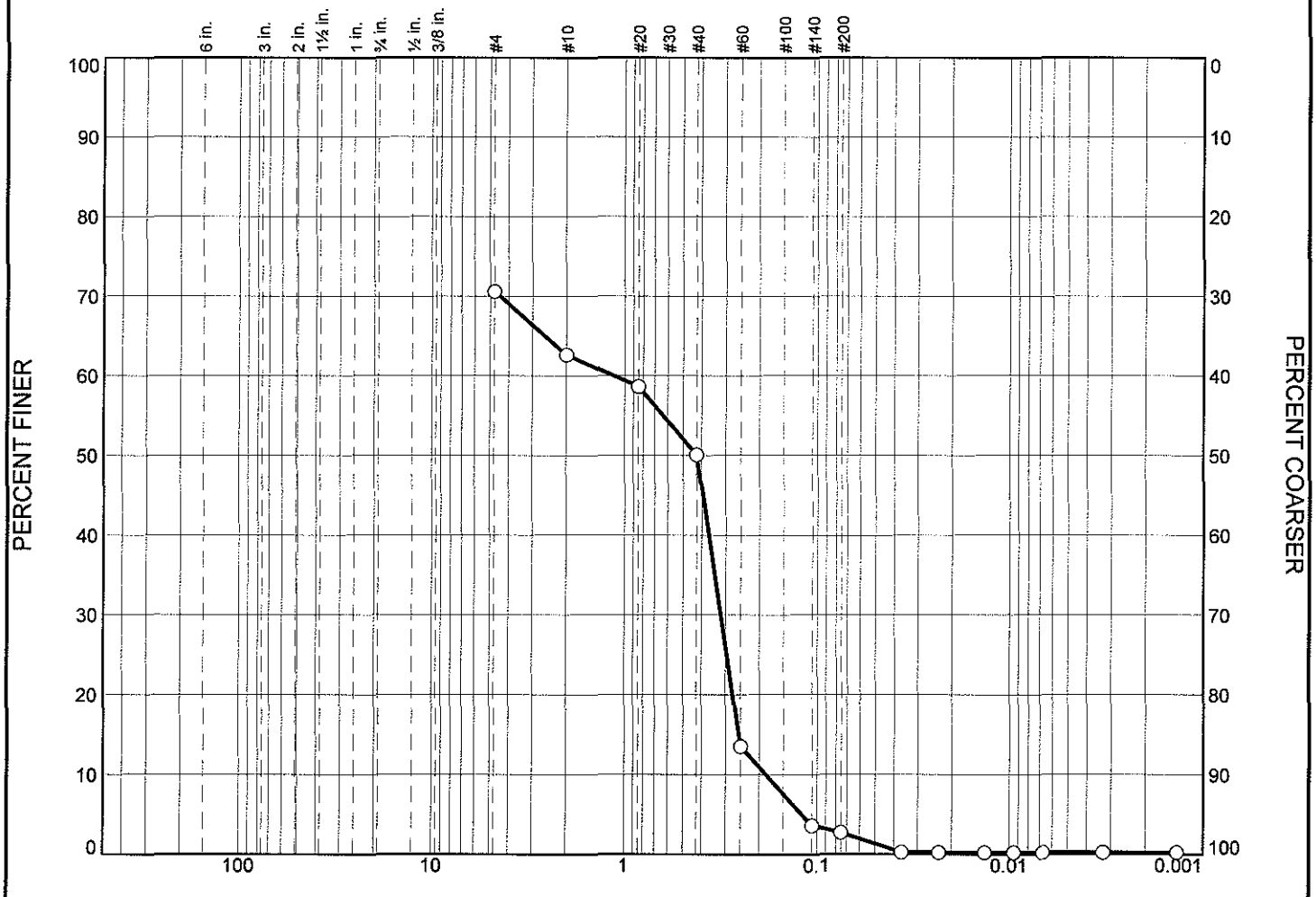
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			9.5	4.6	7.0	35.1	7.1	2.7	56.5	1.7	0.0	0.0		1.7	0.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2094	0.2630	0.2848	0.3340	0.6582	2.2291				

Fineness Modulus	C_u	C_c
3.35	10.64	0.24

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.4	3.2	7.3	38.6	8.0	3.4	1.8	0.1	0.0		0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.1381	0.4246	0.3176	0.2555	0.1845	0.48	6.17

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503626 **Sample Number:** L0912913-12

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503626
Sample Number: L0912913-12
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 132.85
Tare Wt. = 4.51
Minus #200 from wash = 2.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
131.79	0.00	#4	559.58	520.81	70.6	29.4
		#10	492.61	482.11	62.6	37.4
		#20	416.32	411.09	58.6	41.4
		#40	389.16	377.86	50.1	49.9
		#60	418.02	369.84	13.5	86.5
		#140	360.25	347.17	3.6	96.4
		#200	347.66	346.51	2.7	97.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 2.7
Weight of hydrometer sample =131.79
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	0.3	99.7
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	0.2	99.8
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	0.2	99.8
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	0.2	99.8
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	0.2	99.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	0.2	99.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	0.2	99.8

Fractional Components

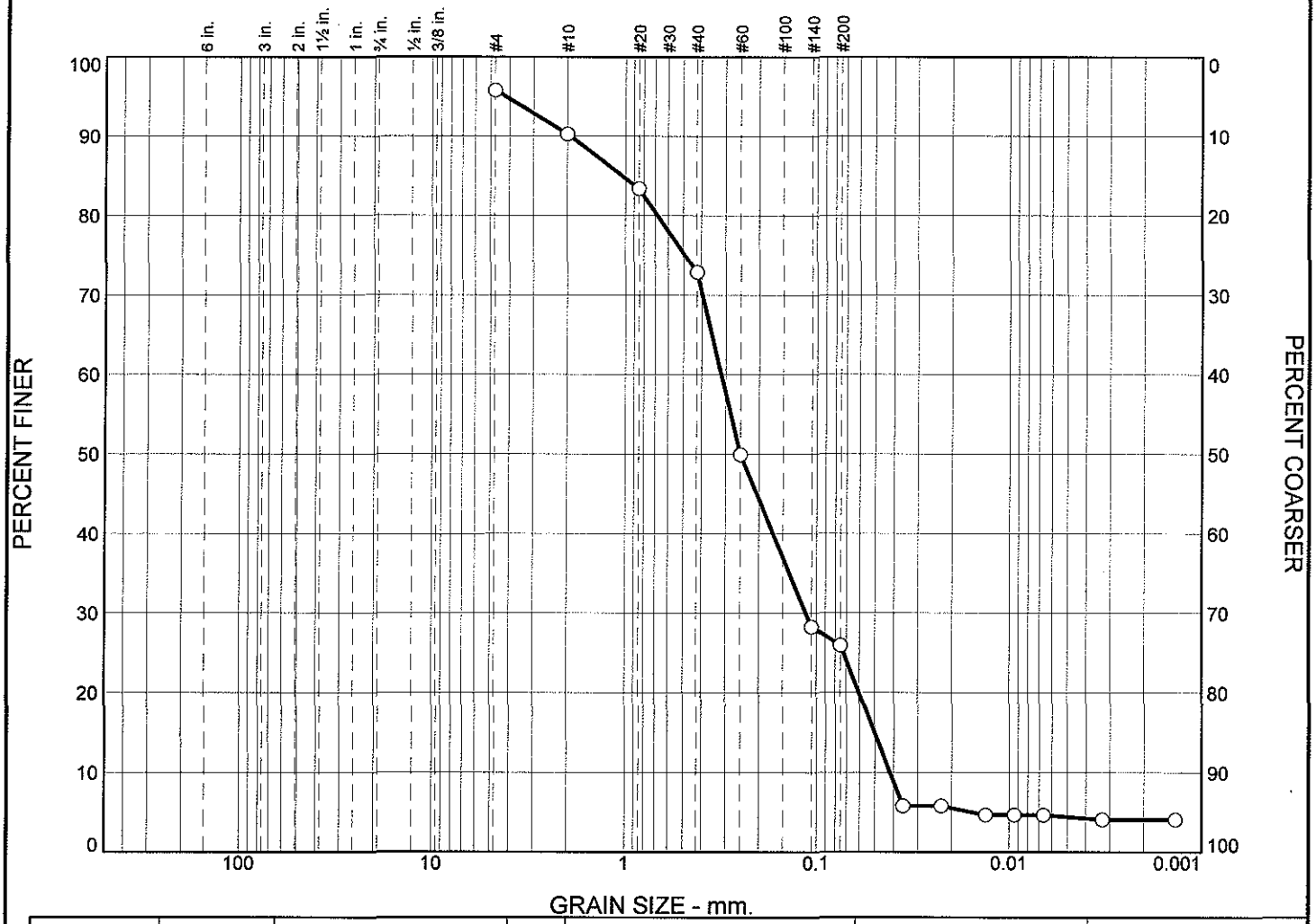
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.4	3.2	7.3	38.6	8.0	3.4	60.5	1.8	0.1	0.0		1.9	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1845	0.2555	0.2747	0.3176	0.4246	1.1381				

Fineness Modulus	C_u	C_c
3.17	6.17	0.48

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.4	5.6	9.3	25.5	17.5	11.4	15.2	0.8	0.4	0.4	4.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.0377	0.3155	0.2504	0.1135	0.0502	0.0418	0.98	7.55

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503711 **Sample Number:** L0912913-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503711
Sample Number: L0912913-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 59.96
Tare Wt. = 4.76
Minus #200 from wash = 25.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
73.77	0.00	#4	524.88	521.77	95.8	4.2
		#10	488.87	484.81	90.3	9.7
		#20	410.50	405.42	83.4	16.6
		#40	370.49	362.74	72.9	27.1
		#60	383.09	366.16	49.9	50.1
		#140	358.81	342.82	28.3	71.7
		#200	346.95	345.25	26.0	74.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 26.0
Weight of hydrometer sample =73.77
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	5.8	94.2
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	5.8	94.2
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	4.6	95.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	4.6	95.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	4.6	95.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	4.1	95.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	4.1	95.9

Fractional Components

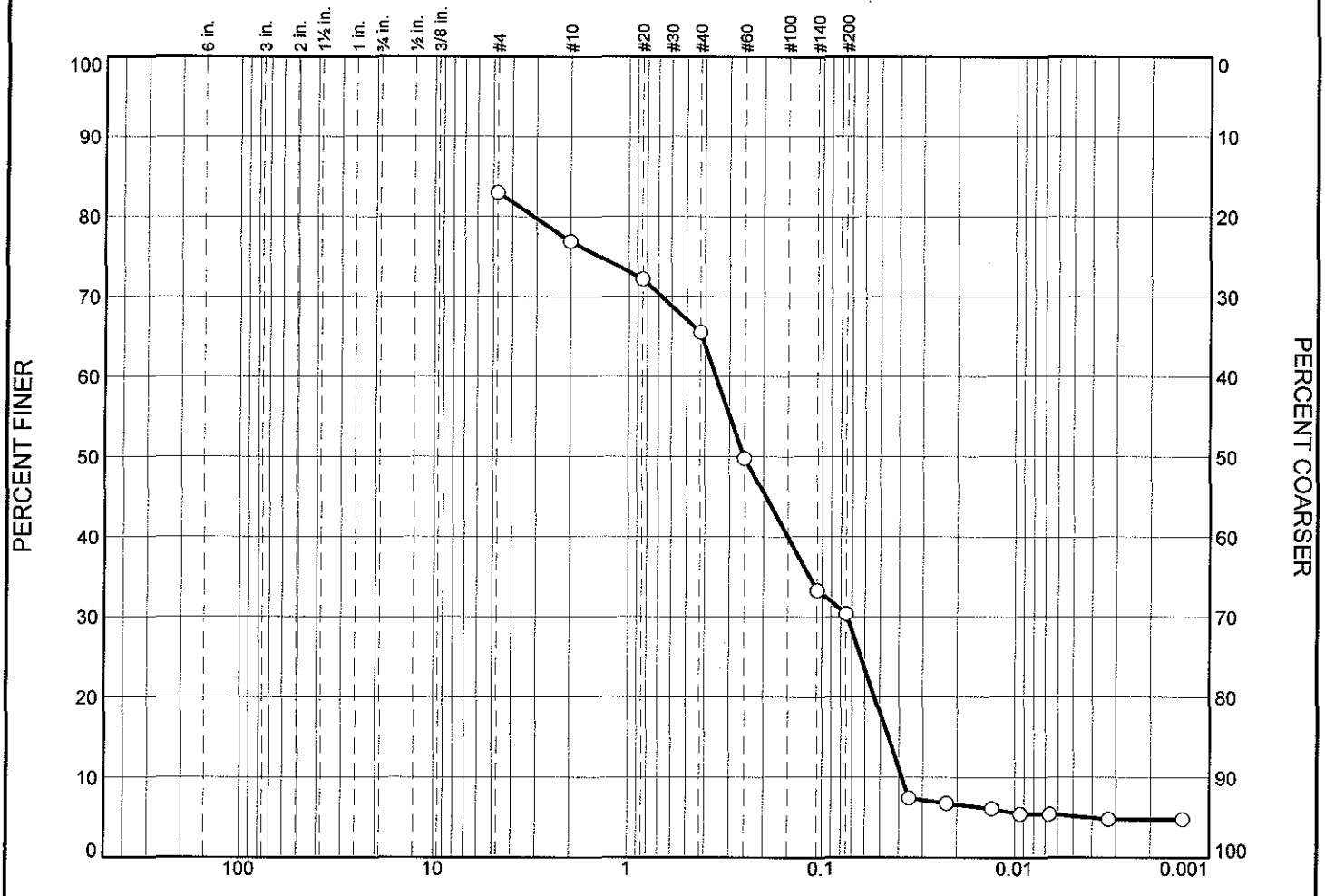
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.4	5.6	9.3	25.5	17.5	11.4	69.3	15.2	0.8	0.4	0.4	16.8	4.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0418	0.0502	0.0603	0.1135	0.2504	0.3155	0.6794	1.0377	1.9315	4.1992

Fineness Modulus	C_u	C_c
1.54	7.55	0.98

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.9	3.9	5.9	17.3	13.3	11.7	17.6	0.9	0.9	0.5	4.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.3527	0.2518	0.0741	0.0454	0.0386	0.40	9.14

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503712 **Sample Number:** L0912913-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503712
Sample Number: L0912913-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 56.41
Tare Wt. = 4.10
Minus #200 from wash = 29.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
73.81	0.00	#4	533.35	520.81	83.0	17.0
		#10	486.64	482.11	76.9	23.1
		#20	414.58	411.09	72.1	27.9
		#40	382.74	377.86	65.5	34.5
		#60	381.46	369.84	49.8	50.2
		#140	359.33	347.17	33.3	66.7
		#200	348.69	346.51	30.4	69.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 30.4
Weight of hydrometer sample =73.81
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	7.4	92.6
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	6.7	93.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	6.1	93.9
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	5.4	94.6
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	5.4	94.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	4.8	95.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	4.8	95.2

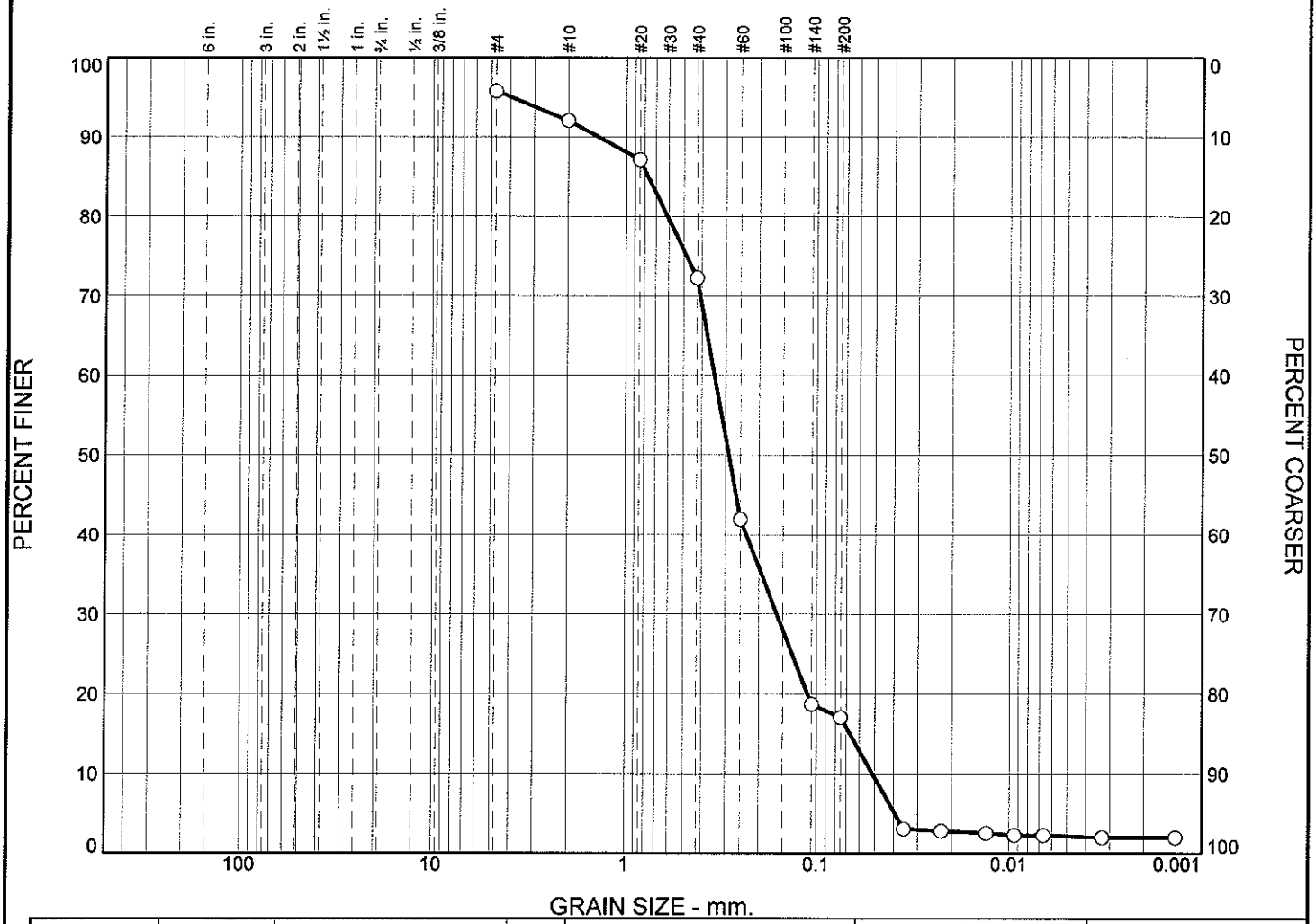
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.9	3.9	5.9	17.3	13.3	11.7	52.1	17.6	0.9	0.9	0.5	19.9	4.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0386	0.0454	0.0535	0.0741	0.2518	0.3527	3.1076			

Fineness Modulus	C_u	C_c
2.01	9.14	0.40

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.0	3.9	12.4	33.8	18.7	9.6	10.6	0.4	0.4	0.2	2.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7694	0.3430	0.2880	0.1610	0.0673	0.0514	1.47	6.67

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503713 **Sample Number:** L0912913-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503713
Sample Number: L0912913-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 88.70
Tare Wt. = 4.92
Minus #200 from wash = 16.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
99.99	0.00	#4	525.98	521.77	95.8	4.2
		#10	488.57	484.81	92.0	8.0
		#20	410.31	405.42	87.1	12.9
		#40	377.62	362.74	72.3	27.7
		#60	396.51	366.16	41.9	58.1
		#140	366.03	342.82	18.7	81.3
		#200	346.91	345.25	17.0	83.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 17.0
Weight of hydrometer sample =99.99
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	3.1	96.9
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	2.8	97.2
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	2.5	97.5
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	2.2	97.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	2.2	97.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.0	98.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.0	98.0

Fractional Components

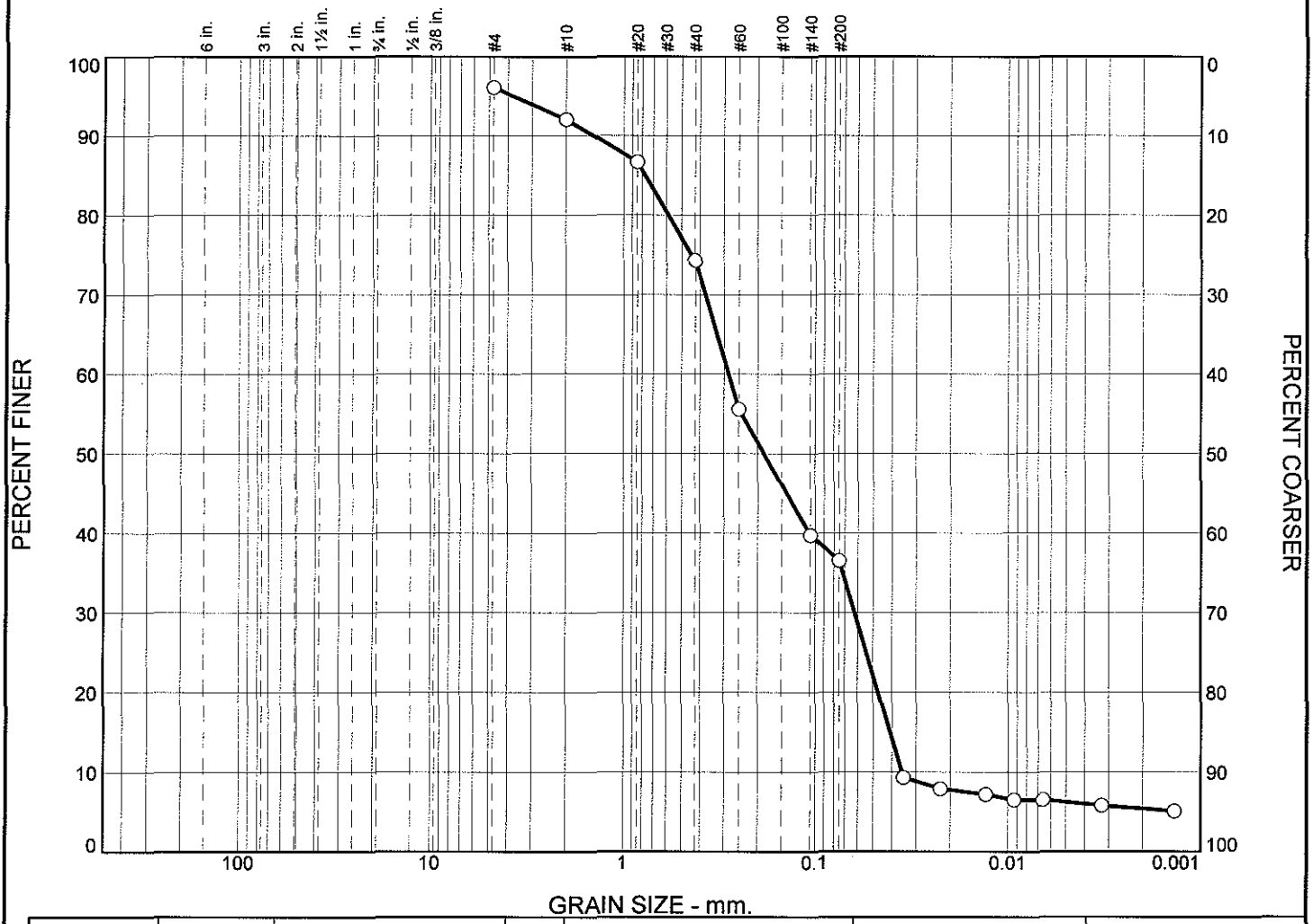
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.0	3.9	12.4	33.8	18.7	9.6	78.4	10.6	0.4	0.4	0.2	11.6	2.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0514	0.0673	0.1113	0.1610	0.2880	0.3430	0.6096	0.7694	1.4023	3.9611

Fineness Modulus	C_u	C_c
1.62	6.67	1.47

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.2	4.4	10.5	21.6	12.8	12.7	21.2	1.5	0.9	0.5	6.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7724	0.2834	0.1848	0.0624	0.0408	0.0355	0.39	7.99

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503726 **Sample Number:** L0912913-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503726
Sample Number: L0912913-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 57.61
Tare Wt. = 4.61
Minus #200 from wash = 36.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
83.33	0.00	#4	524.07	520.81	96.1	3.9
		#10	485.45	482.11	92.1	7.9
		#20	415.56	411.09	86.7	13.3
		#40	388.21	377.86	74.3	25.7
		#60	385.44	369.84	55.6	44.4
		#140	360.36	347.17	39.7	60.3
		#200	349.19	346.51	36.5	63.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 36.5
Weight of hydrometer sample =83.33
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	9.3	90.7
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	7.9	92.1
15.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0131	7.2	92.8
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	6.5	93.5
60.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0066	6.5	93.5
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	5.8	94.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	5.1	94.9

Fractional Components

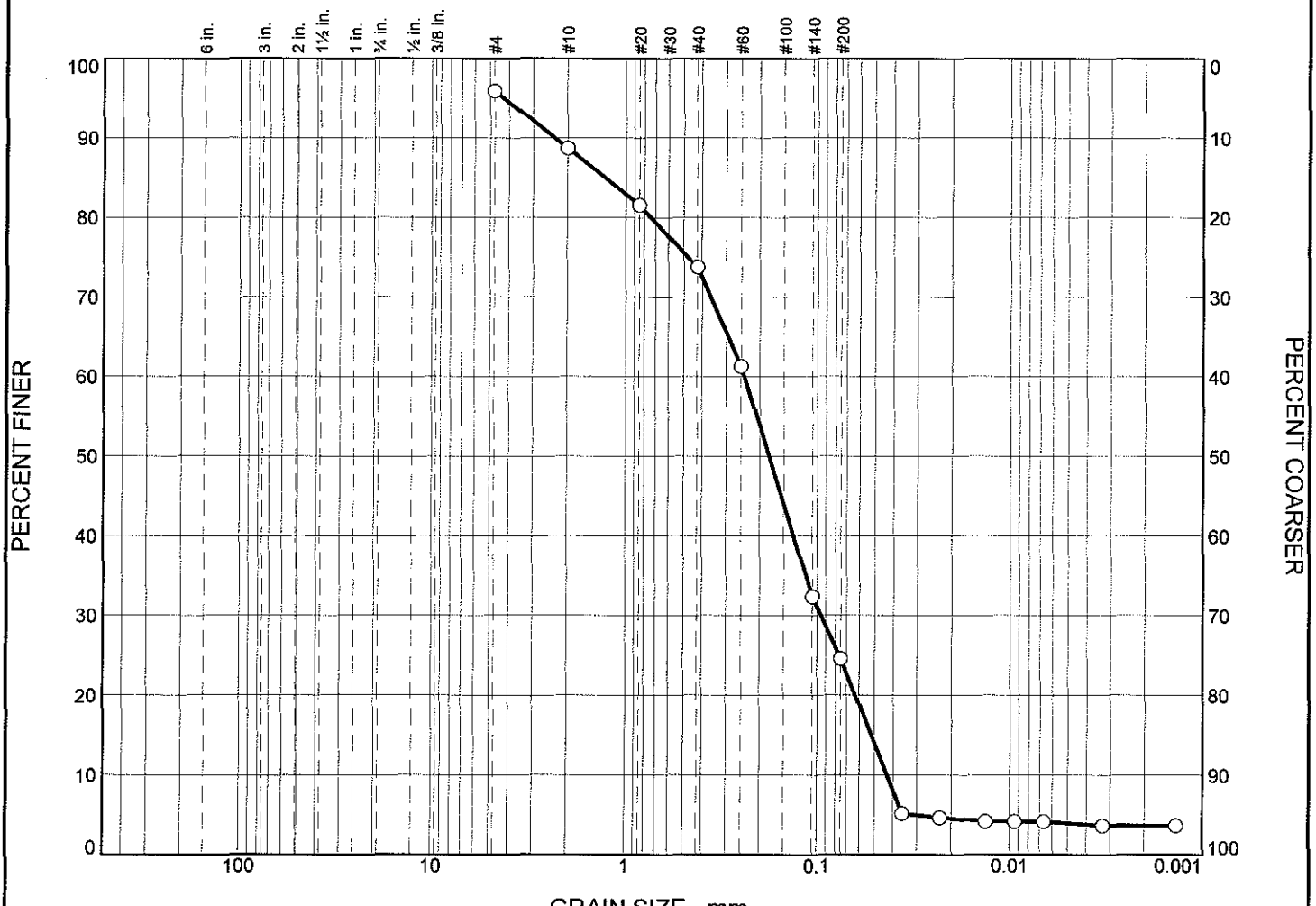
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.2	4.4	10.5	21.6	12.8	12.7	62.0	21.2	1.5	0.9	0.5	24.1	6.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0355	0.0408	0.0470	0.0624	0.1848	0.2834	0.5843	0.7724	1.4354	3.7561

Fineness Modulus	C_u	C_c
1.34	7.99	0.39

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.8	5.8	7.3	14.3	23.4	18.1	14.8	0.7	0.1	0.4	3.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2821	0.2406	0.1788	0.0954	0.0521	0.0430	0.88	5.59

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503811 **Sample Number:** L0912913-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503811
Sample Number: L0912913-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 64.28
Tare Wt. = 4.71
Minus #200 from wash = 23.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
78.03	0.00	#4	524.96	521.77	95.9	4.1
		#10	490.43	484.81	88.7	11.3
		#20	410.99	405.42	81.6	18.4
		#40	368.83	362.74	73.8	26.2
		#60	375.90	366.16	61.3	38.7
		#140	365.37	342.82	32.4	67.6
		#200	351.34	345.25	24.6	75.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 24.6
Weight of hydrometer sample =78.03
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	5.2	94.8
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	4.7	95.3
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	4.2	95.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	4.2	95.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	4.2	95.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	3.6	96.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	3.6	96.4

Fractional Components

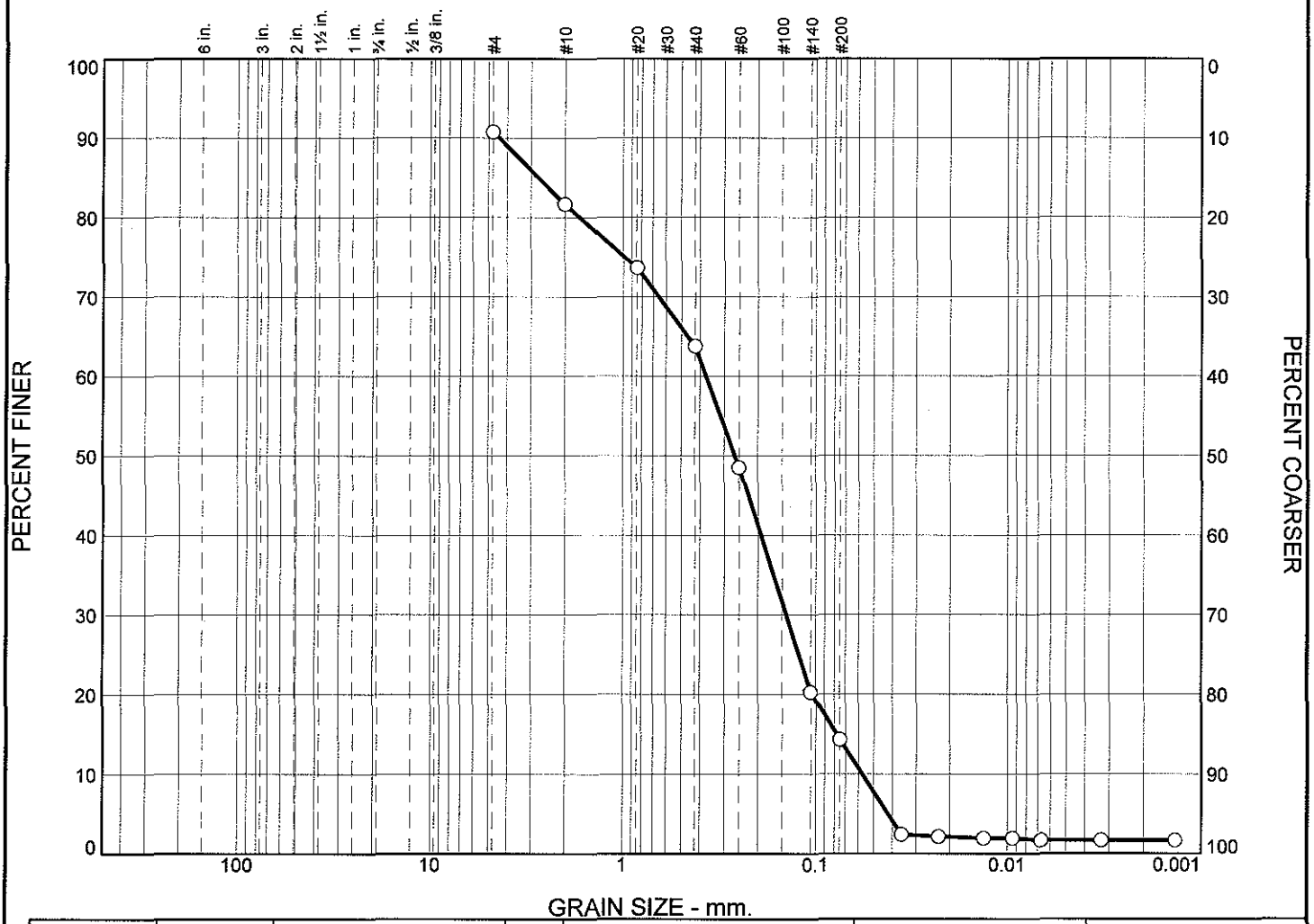
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.8	5.8	7.3	14.3	23.4	18.1	68.9	14.8	0.7	0.1	0.4	16.0	3.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0430	0.0521	0.0630	0.0954	0.1788	0.2406	0.7393	1.2821	2.3353	4.2573

Fineness Modulus	C_u	C_c
1.42	5.59	0.88

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.4	6.4	9.1	17.6	22.8	14.3	9.1	0.3	0.2	0.1	1.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.7480	0.3727	0.2632	0.1424	0.0780	0.0574	0.95	6.50

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503812 **Sample Number:** L0912913-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503812
Sample Number: L0912913-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 89.95
Tare Wt. = 4.74
Minus #200 from wash = 13.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
98.41	0.00	#4	529.89	520.81	90.8	9.2
		#10	491.09	482.11	81.6	18.4
		#20	418.95	411.09	73.7	26.3
		#40	387.59	377.86	63.8	36.2
		#60	384.85	369.84	48.5	51.5
		#140	374.95	347.17	20.3	79.7
		#200	352.38	346.51	14.3	85.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 14.3
Weight of hydrometer sample =98.41
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	2.4	97.6
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	2.2	97.8
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.9	98.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.9	98.1
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	1.7	98.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.7	98.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.7	98.3

Fractional Components

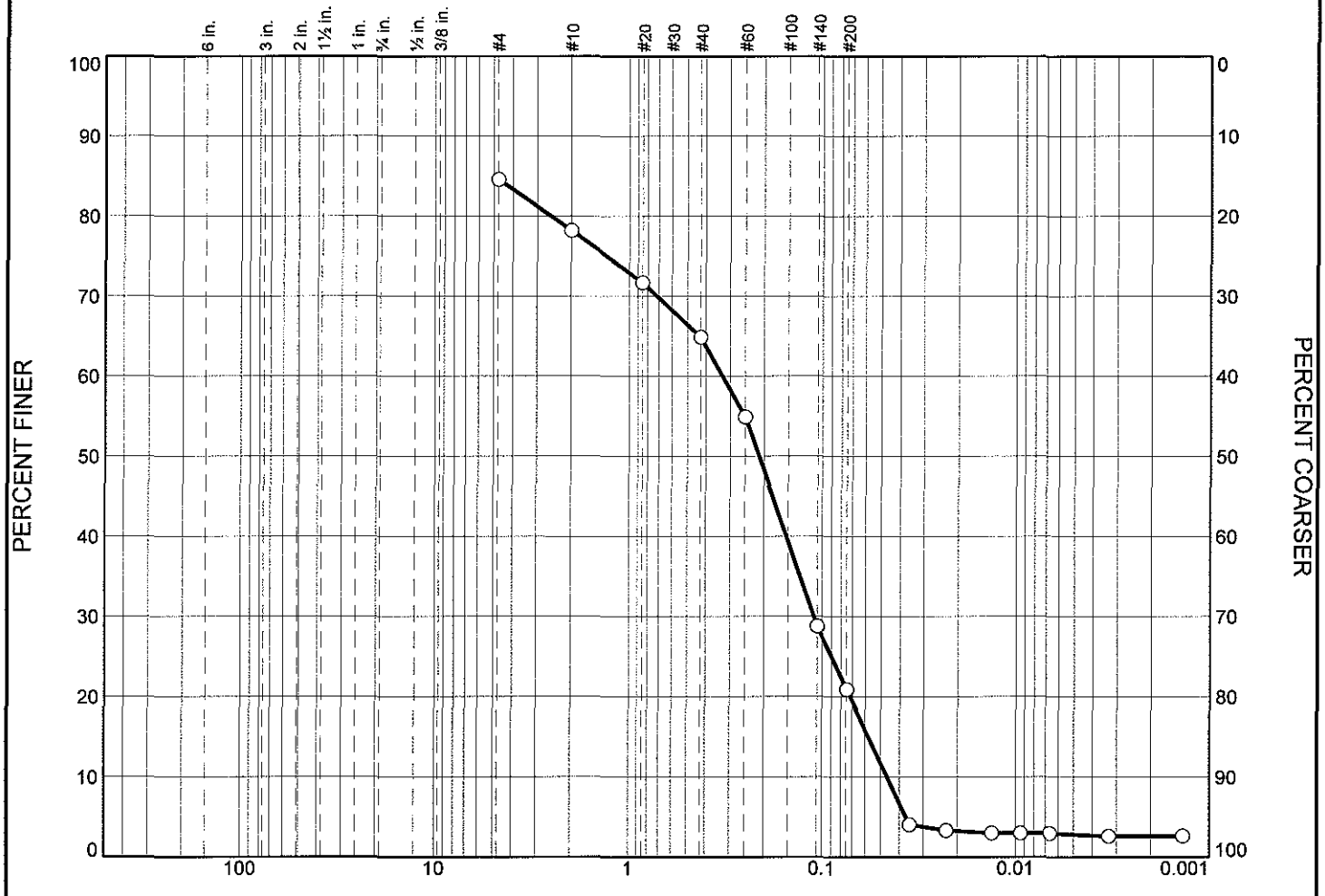
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.4	6.4	9.1	17.6	22.8	14.3	70.2	9.1	0.3	0.2	0.1	9.7	1.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0574	0.0780	0.1042	0.1424	0.2632	0.3727	1.6763	2.7480	4.4143	

Fineness Modulus	C_u	C_c
1.95	6.50	0.95

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.1	5.3	6.4	11.6	21.1	17.0	13.0	0.7	0.1	0.3	2.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.3281	0.2129	0.1103	0.0577	0.0462	0.80	7.10

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503813 **Sample Number:** L0912913-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503813
Sample Number: L0912913-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 79.26
Tare Wt. = 4.58
Minus #200 from wash = 19.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
93.03	0.00	#4	536.12	521.77	84.6	15.4
		#10	490.76	484.81	78.2	21.8
		#20	411.46	405.42	71.7	28.3
		#40	369.09	362.74	64.9	35.1
		#60	375.43	366.16	54.9	45.1
		#140	367.12	342.82	28.8	71.2
		#200	352.56	345.25	20.9	79.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 20.9
Weight of hydrometer sample =93.03
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	4.0	96.0
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	3.3	96.7
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	3.0	97.0
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	3.0	97.0
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	3.0	97.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.6	97.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.6	97.4

Fractional Components

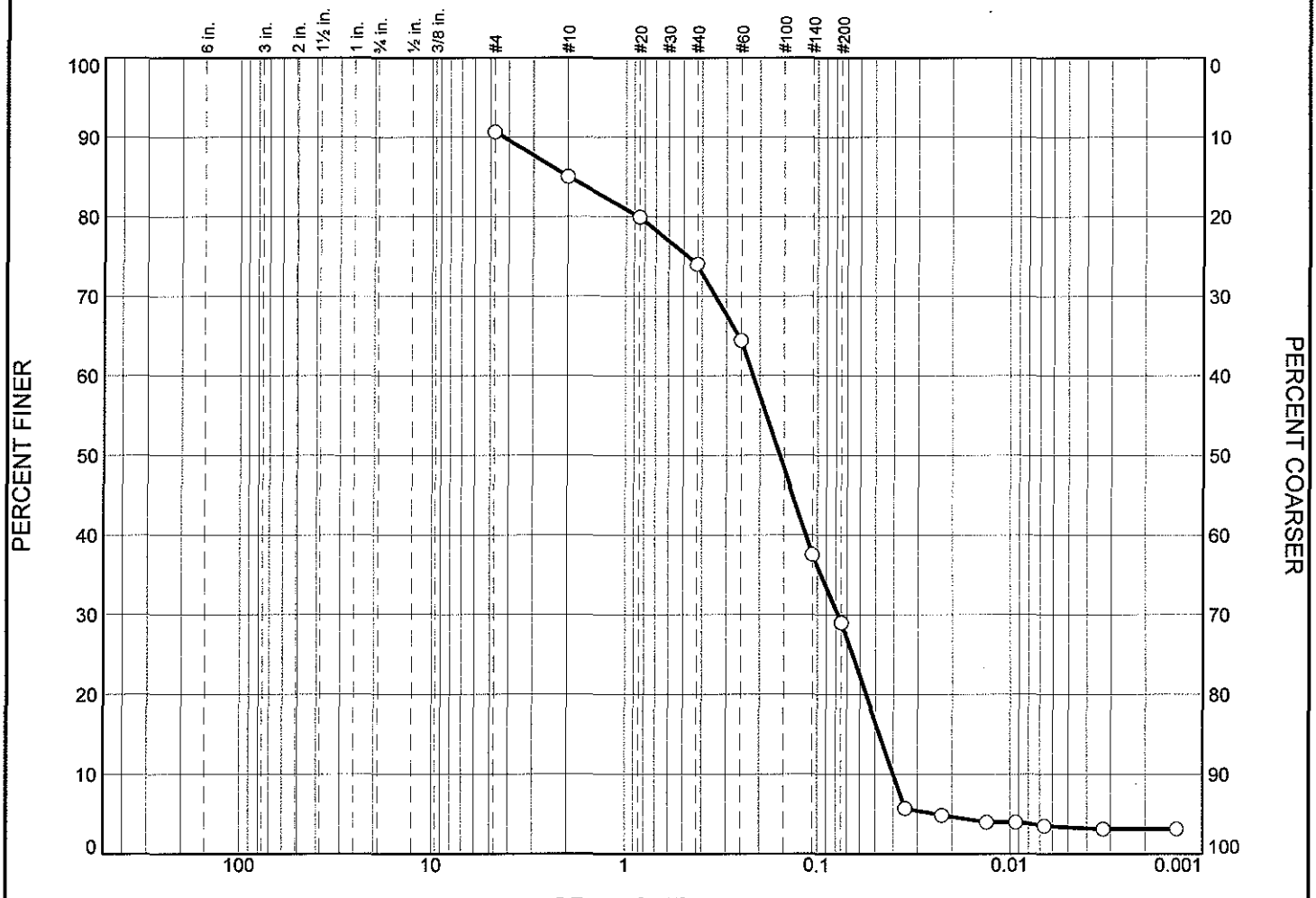
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.1	5.3	6.4	11.6	21.1	17.0	61.4	13.0	0.7	0.1	0.3	14.1	2.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0462	0.0577	0.0720	0.1103	0.2129	0.3281	2.5585			

Fineness Modulus	C_u	C_c
1.96	7.10	0.80

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.5	4.2	5.5	11.0	21.7	19.2	18.0	1.3	0.5	0.5	3.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.9821	0.2171	0.1578	0.0781	0.0473	0.0401	0.70	5.42

	Material Description	USCS	AASHTO
○			

Project No. L0912913 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503826 **Sample Number:** L0912913-20

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912913
Location: 503826
Sample Number: L0912913-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 82.58
Tare Wt. = 4.86
Minus #200 from wash = 28.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
107.92	0.00	#4	530.87	520.81	90.7	9.3
		#10	488.18	482.11	85.1	14.9
		#20	416.60	411.09	79.9	20.1
		#40	384.28	377.86	74.0	26.0
		#60	380.18	369.84	64.4	35.6
		#140	376.17	347.17	37.5	62.5
		#200	355.75	346.51	29.0	71.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 29.0
Weight of hydrometer sample =107.92
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0130	1.0132	0.0133	10.0	13.6	0.0348	5.7	94.3
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	4.8	95.2
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	4.0	96.0
30.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0093	4.0	96.0
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	3.5	96.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	3.1	96.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	3.1	96.9

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.5	4.2	5.5	11.0	21.7	19.2	61.6	18.0	1.3	0.5	0.5	20.3	3.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0401	0.0473	0.0558	0.0781	0.1578	0.2171	0.8574	1.9821	4.2795	

Fineness Modulus	C_u	C_c
1.48	5.42	0.70

Alpha Analytical

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 21b

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08316:17

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L09129I3

Report Information ☐ FAX ☒ ADEx
Data Deliverables ☒ EMAIL ☐ Add'l Deliverables
Billing Information ☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
1	503411	9-27-09	12:19	SE	JB	☐	☐	☒	☐								ben gs	1
2	503412	9-27-09	12:34	SE	JB	☐	☐	☒	☐								ben gs	1
3	503413	9-27-09	13:00	SE	JB	☐	☐	☒	☐								ben gs	1
	503425	9-27-09	12:28	SE	JB	☒	☒	☐	☐								sed chem	1
4	503426	9-27-09	12:28	SE	JB	☐	☐	☒	☐								sed gs	1
	503427	9-27-09	12:28	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyd	9/27/09 1605	Kate Bang	9/27/09
Kate Bang	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

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CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:17

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L091293

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
S	503511	9/26/09	12:35	SE	HC	☐	☐	☒	☐									ben gs	1
6	503512	9/26/09	12:35	SE	HC	☐	☐	☒	☐									ben gs	1
7	503513	9/26/09	12:35	SE	HC	☐	☐	☒	☐									ben gs	1
	503525	9/26/09	12:57	SE	HC	☒	☒	☐	☐									sed chem	1
8	503526	9/26/09	12:57	SE	HC	☐	☐	☒	☐									sed gs	1
	503527	9/26/09	12:57	SE	HC	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/26/09 19:12		9/26/09 19:17
	9/28/09 0917	P. Gilbert	9/28/09 925
P. Gilbert	9/28/09 10:20		9/28/09 1020

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CHAIN OF CUSTODY

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Date Rec'd in Lab:

ALPHA Job #: L0912913

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:17

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	503611	9/26/09	11:35	SE	HC	☐	☐	☒	☐								ben gs	1
10	503612	9/26/09	11:35	SE	HC	☐	☐	☒	☐								ben gs	1
11	503613	9/26/09	11:35	SE	HC	☐	☐	☒	☐								ben gs	1
	503625	9/26/09	11:15	SE	HC	☒	☒	☐	☐								sed chem	1
12	503626	9/26/09	11:15	SE	HC	☐	☐	☒	☐								sed gs	1
	503627	9/26/09	11:15	SE	HC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	
Preservative	A	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9/26/09 19:12		9/26/09 19:17
	9/28/09 09:13		9/28/09 9:25
	9/28/09 10:20		9/28/09 1020

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FORM NO: 01-01(I-NJ)
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CHAIN OF COUNTY

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Serial No:08016:7

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912913

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
13	503711	9-27-09	11:07	SE	JB	☐	☐	☒	☐	ben gs	1
14	503712	9-27-09	11:24	SE	JB	☐	☐	☒	☐	ben gs	1
15	503713	9-27-09	11:41	SE	JB	☐	☐	☒	☐	ben gs	1
	503725	9-27-09	11:11	SE	JB	☒	☒	☐	☐	sed chem	1
16	503726	9-27-09	11:11	SE	JB	☐	☐	☒	☐	sed gs	1
	503727	9-27-09	11:11	SE	JB	☐	☐	☐	☒	sed arch	1

	total PCB congeners NOAA 18	TOC	grain size	archive
Container Type	G	G	G	-
Preservative	A	A	A	-

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/27/09 1605	Beth Hay	9-27-09
Beth Hay	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[illegible]	9/28/09 1020

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FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

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CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:17

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L09129I3

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	503811	9/26/09	09:00	SE	HC	☐	☐	☒	☐								ben gs	1
18	503812	9/26/09	09:50	SE	HC	☐	☐	☒	☐								ben gs	1
19	503813	9/26/09	09:00	SE	HC	☐	☐	☒	☐								ben gs	1
	503825	9/26/09	09:04	SE	HC	☒	☒	☐	☐								sed chem	1
20	503826	9/26/09	09:26	SE	HC	☐	☐	☒	☐								sed gs	1
	503827	9/26/09	09:05	SE	HC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-	-	
Preservative						A	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	9/24/09 19:12		9/26/09 19:17
	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/29/09 1020

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FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912914
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912914
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912914-01	503911	NEW BEDFORD, MA	09/26/09 10:08
L0912914-02	503912	NEW BEDFORD, MA	09/26/09 10:08
L0912914-03	503913	NEW BEDFORD, MA	09/26/09 10:08
L0912914-04	503926	NEW BEDFORD, MA	09/26/09 10:08
L0912914-05	504011	NEW BEDFORD, MA	09/25/09 08:35
L0912914-06	504012	NEW BEDFORD, MA	09/25/09 08:35
L0912914-07	504013	NEW BEDFORD, MA	09/25/09 08:35
L0912914-08	504026	NEW BEDFORD, MA	09/25/09 08:25
L0912914-09	504111	NEW BEDFORD, MA	09/25/09 12:13
L0912914-10	504112	NEW BEDFORD, MA	09/25/09 12:38
L0912914-11	504113	NEW BEDFORD, MA	09/25/09 12:45
L0912914-12	504126	NEW BEDFORD, MA	09/25/09 12:22
L0912914-13	504211	NEW BEDFORD, MA	09/25/09 09:58
L0912914-14	504212	NEW BEDFORD, MA	09/25/09 09:58
L0912914-15	504213	NEW BEDFORD, MA	09/25/09 09:58
L0912914-16	504226	NEW BEDFORD, MA	09/25/09 10:02
L0912914-17	504311	NEW BEDFORD, MA	09/25/09 11:14
L0912914-18	504312	NEW BEDFORD, MA	09/25/09 11:14
L0912914-19	504313	NEW BEDFORD, MA	09/25/09 11:14
L0912914-20	504326	NEW BEDFORD, MA	09/25/09 11:18

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912914
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 3, 2010. The report was ammended to include revised Grain Size data.

Grain Size

The WG383815-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve, gravel (42%), % very coarse sand (43%), % coarse sand (118%), clay (26%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-01
Client ID: 503911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 10:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.5		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	28.5		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	16.8		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-02
Client ID: 503912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 10:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.00		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	51.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-03
Client ID: 503913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 10:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.00		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.20		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.20		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	32.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	13.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-04
Client ID: 503926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 10:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.20		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.8		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.7		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-05
Client ID: 504011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 08:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.300		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.2		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	29.8		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-06
Client ID: 504012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 08:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.900		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.20		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	46.9		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	20.2		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-07
Client ID: 504013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 08:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.8		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.2		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-08
Client ID: 504026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 08:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.700		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.80		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.20		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.9		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-09
Client ID: 504111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 12:13
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.80		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-10
Client ID: 504112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 12:38
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.2		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	37.7		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.5		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-11
Client ID: 504113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 12:45
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	34.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-12
Client ID: 504126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 12:22
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	20.2		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	20.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.7		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	17.5		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-13
Client ID: 504211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 09:58
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.50		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-14
Client ID: 504212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 09:58
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.80		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-15
Client ID: 504213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 09:58
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.700		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	47.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.9		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-16
Client ID: 504226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 10:02
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	51.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-17
Client ID: 504311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 11:14
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.00		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.80		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	22.0		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	37.8		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.2		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-18
Client ID: 504312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 11:14
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.10		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	18.7		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	21.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	30.5		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912914
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912914-19
Client ID: 504313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 11:14
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.90		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.800		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.1		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.8		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	23.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.5		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.3		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

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SAMPLE RESULTS

Lab ID: L0912914-20
Client ID: 504326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 11:18
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.60		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.70		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.40		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.9		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	21.6		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.4		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.30		%	0.100	--	1	-	10/09/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
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Lab Number: L0912914
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Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG383815-1 QC Sample: L0912914-20 Client ID: 504326						
Gravel (>2.00mm)	2.6	1.70	%	**42**	Q	20
Very Coarse Sand (1.00-2.00 mm)	1.7	1.10	%	**43**	Q	20
Coarse Sand (0.50-1.00 mm)	2.7	0.700	%	**118**	Q	20
Medium Sand (0.25-0.50 mm)	9.4	7.80	%	19		20
Fine Sand (0.125-0.25 mm)	21.9	21.8	%	0		20
Very Fine Sand (0.063-0.125 mm)	21.6	23.0	%	6		20
Silt - (1.95-62.5 um)	25.4	29.9	%	16		20
Clay - (<1.95 um)	6.3	8.20	%	**26**	Q	20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
D	Absent
E	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-01A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-02A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-03A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-04A	Glass 250ml unpreserved	B	N/A	2.7	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-05A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-06A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-07A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-08A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-09A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-10A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-11A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-12A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-13A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-14A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-15A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-16A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-17A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-18A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912914-19A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912914
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912914-20A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912914
Project Number:	TO-0018	**Report Date:**	08/03/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912914
Project Number:	TO-0018	**Report Date:**	08/03/10

Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

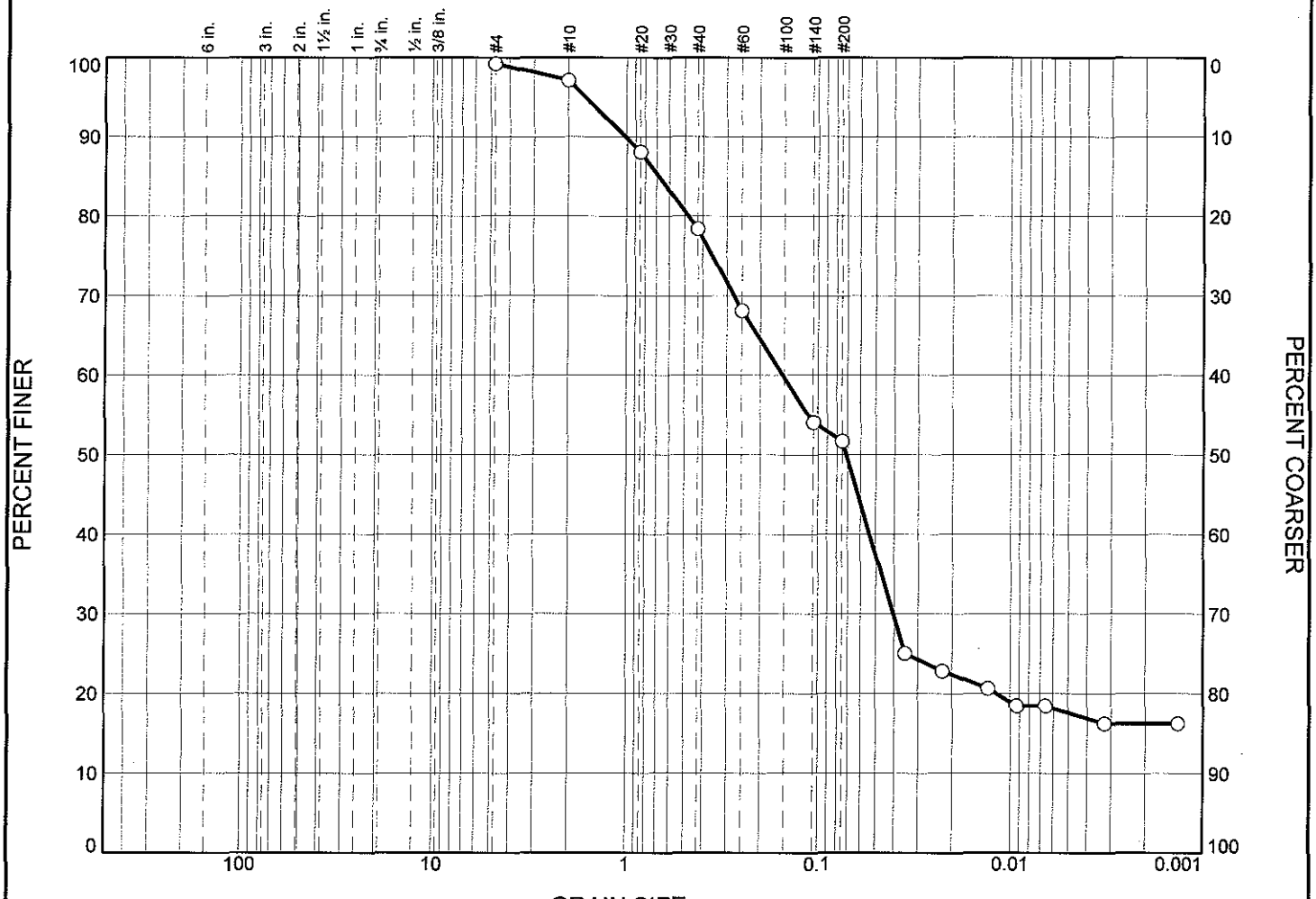
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	7.3	9.1	12.6	11.3	11.5	20.9	3.0	3.0	1.6	16.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6813	0.1523	0.0715	0.0404				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503911 **Sample Number:** L0912914-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 503911
Sample Number: L0912914-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 23.63
Tare Wt. = 4.83
Minus #200 from wash = 50.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
37.70	0.00	#4	522.06	521.77	99.2	0.8
		#10	485.60	484.81	97.1	2.9
		#20	408.83	405.42	88.1	11.9
		#40	366.40	362.75	78.4	21.6
		#60	370.04	366.16	68.1	31.9
		#140	348.12	342.82	54.1	45.9
		#200	346.15	345.25	51.7	48.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 51.7
Weight of hydrometer sample =37.70
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	25.0	75.0
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	22.8	77.2
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	20.6	79.4
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	18.4	81.6
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	18.4	81.6
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	16.2	83.8
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	16.2	83.8

Fractional Components

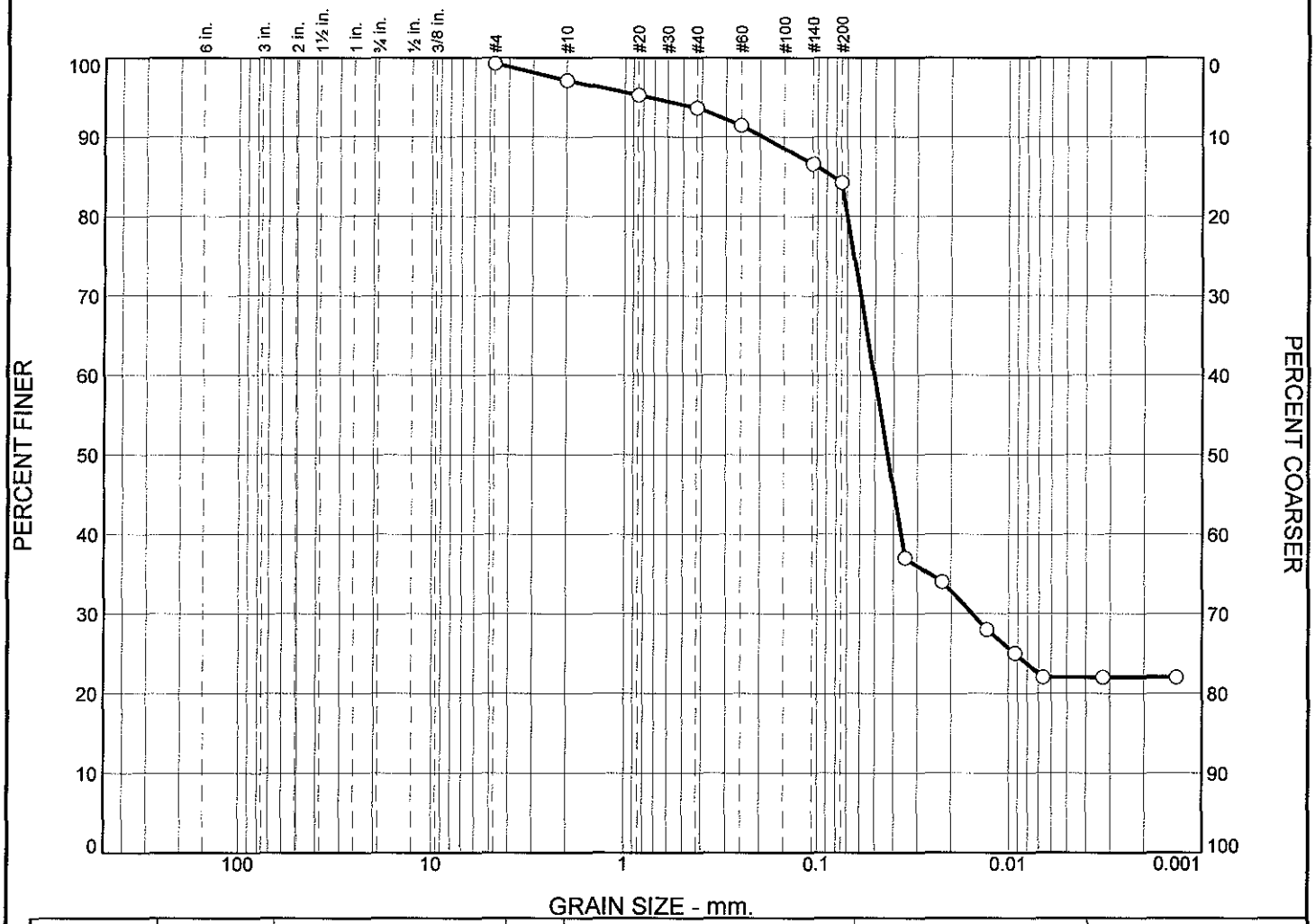
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	7.3	9.1	12.6	11.3	11.5	51.8	20.9	3.0	3.0	1.6	28.5	16.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0118	0.0404	0.0715	0.1523	0.4763	0.6813	1.0183	1.6342

Fineness Modulus
0.97

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	1.5	1.5	2.6	4.0	14.4	36.9	6.1	6.6	1.5	22.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.0839	0.0505	0.0429	0.0155				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503912 **Sample Number:** L0912914-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 503912
Sample Number: L0912914-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 11.73
Tare Wt. = 4.64
Minus #200 from wash = 84.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.24	0.00	#4	521.14	520.81	99.3	0.7
		#10	483.09	482.11	97.1	2.9
		#20	411.92	411.09	95.3	4.7
		#40	378.58	377.86	93.7	6.3
		#60	370.84	369.84	91.5	8.5
		#140	349.38	347.17	86.6	13.4
		#200	347.57	346.51	84.2	15.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 84.2
Weight of hydrometer sample =45.24
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	37.0	63.0
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	34.0	66.0
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	28.0	72.0
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	25.0	75.0
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	22.0	78.0
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	22.0	78.0
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	22.0	78.0

Fractional Components

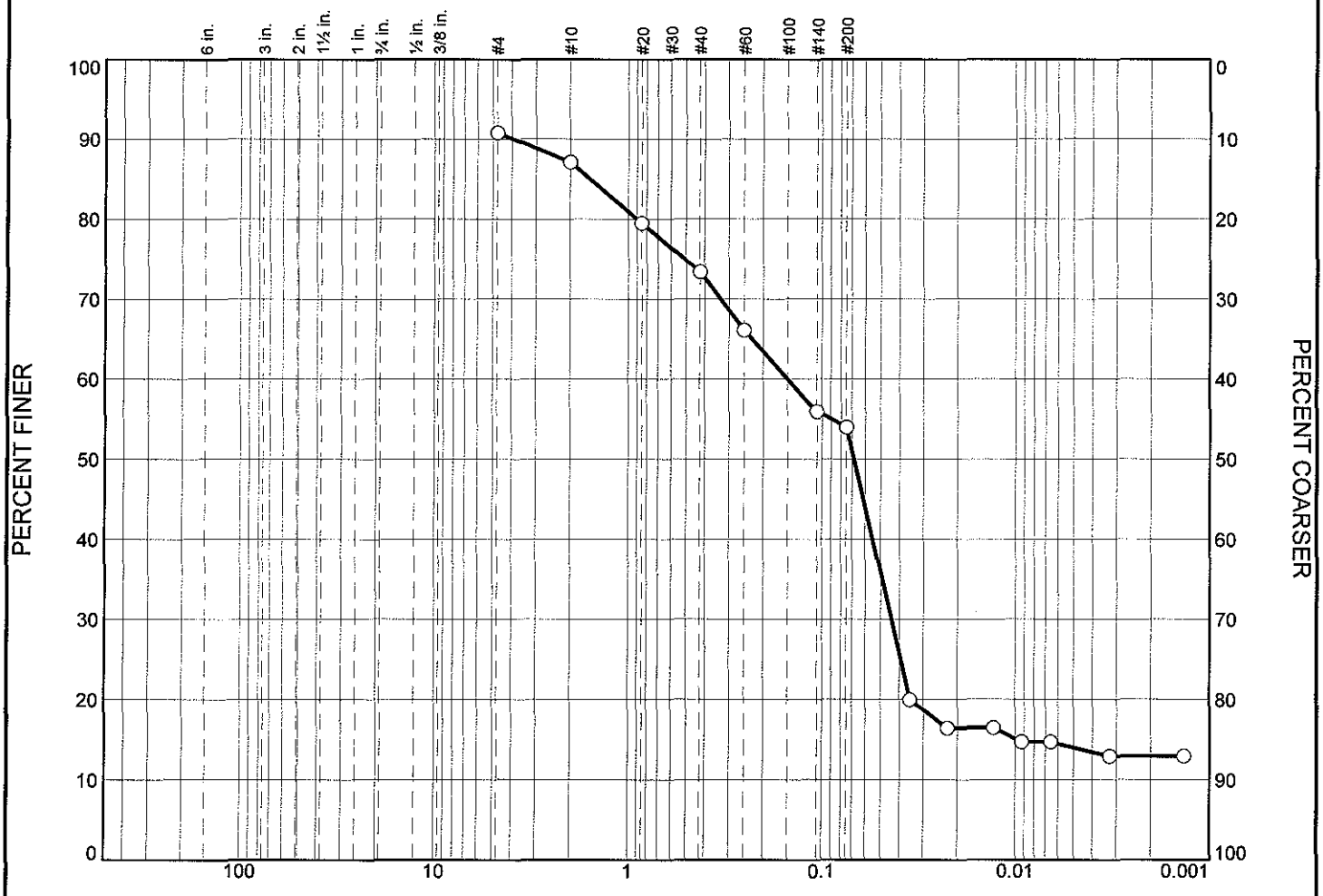
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	1.5	1.5	2.6	4.0	14.4	24.0	36.9	6.1	6.6	1.5	51.1	22.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0155	0.0429	0.0505	0.0700	0.0839	0.1932	0.7558

Fineness Modulus
0.32

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.0	6.2	6.1	8.7	8.2	12.1	26.8	2.6	1.7	1.3	13.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.5791	0.1494	0.0687	0.0439	0.0099			

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503913 **Sample Number:** L0912914-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 503913
Sample Number: L0912914-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 28.66
Tare Wt. = 5.01
Minus #200 from wash = 52.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
49.37	0.00	#4	526.31	521.77	90.8	9.2
		#10	486.64	484.81	87.1	12.9
		#20	409.17	405.42	79.5	20.5
		#40	365.75	362.74	73.4	26.6
		#60	369.77	366.16	66.1	33.9
		#140	347.83	342.82	55.9	44.1
		#200	346.24	345.25	53.9	46.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 53.9
Weight of hydrometer sample =49.37
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	20.0	80.0
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	16.4	83.6
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	16.4	83.6
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	14.7	85.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	14.7	85.3
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	12.9	87.1
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	12.9	87.1

Fractional Components

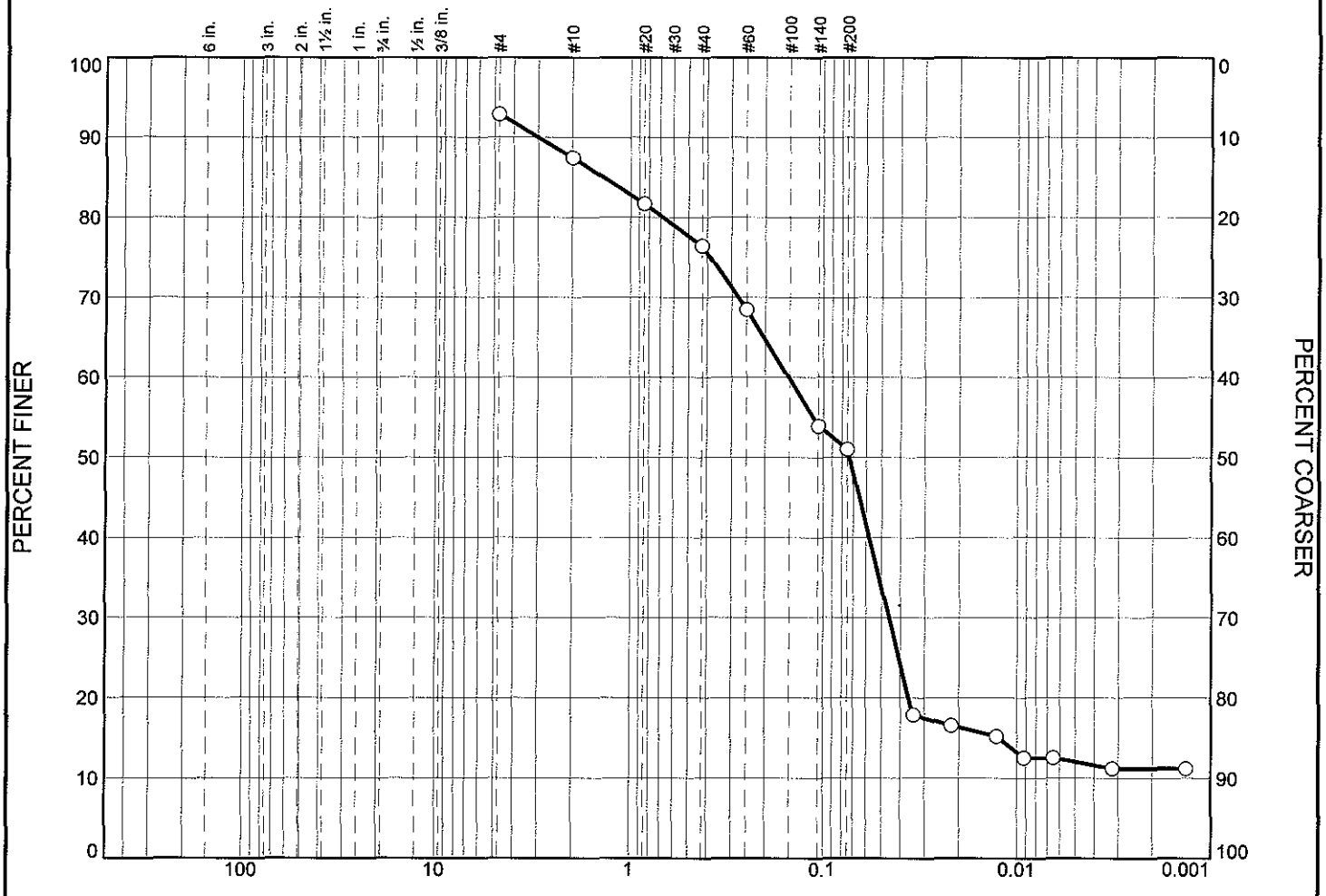
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.0	6.2	6.1	8.7	8.2	12.1	41.3	26.8	2.6	1.7	1.3	32.4	13.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0099	0.0351	0.0439	0.0687	0.1494	0.8991	1.5791	3.9373	

Fineness Modulus
1.34

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.4	4.6	5.1	9.2	11.8	13.4	25.7	1.9	3.2	0.9	11.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.3887	0.1518	0.0732	0.0457	0.0125			

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 503926 **Sample Number:** L0912914-04

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 503926
Sample Number: L0912914-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 34.98
Tare Wt. = 4.82
Minus #200 from wash = 50.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
61.27	0.00	#4	525.17	520.81	92.9	7.1
		#10	485.44	482.11	87.4	12.6
		#20	414.61	411.09	81.7	18.3
		#40	381.09	377.86	76.4	23.6
		#60	374.73	369.84	68.5	31.5
		#140	356.07	347.17	53.9	46.1
		#200	348.30	346.51	51.0	49.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 51.0
Weight of hydrometer sample =61.27
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	17.9	82.1
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	16.5	83.5
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	15.2	84.8
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	12.5	87.5
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	12.5	87.5
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	11.2	88.8
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	11.2	88.8

Fractional Components

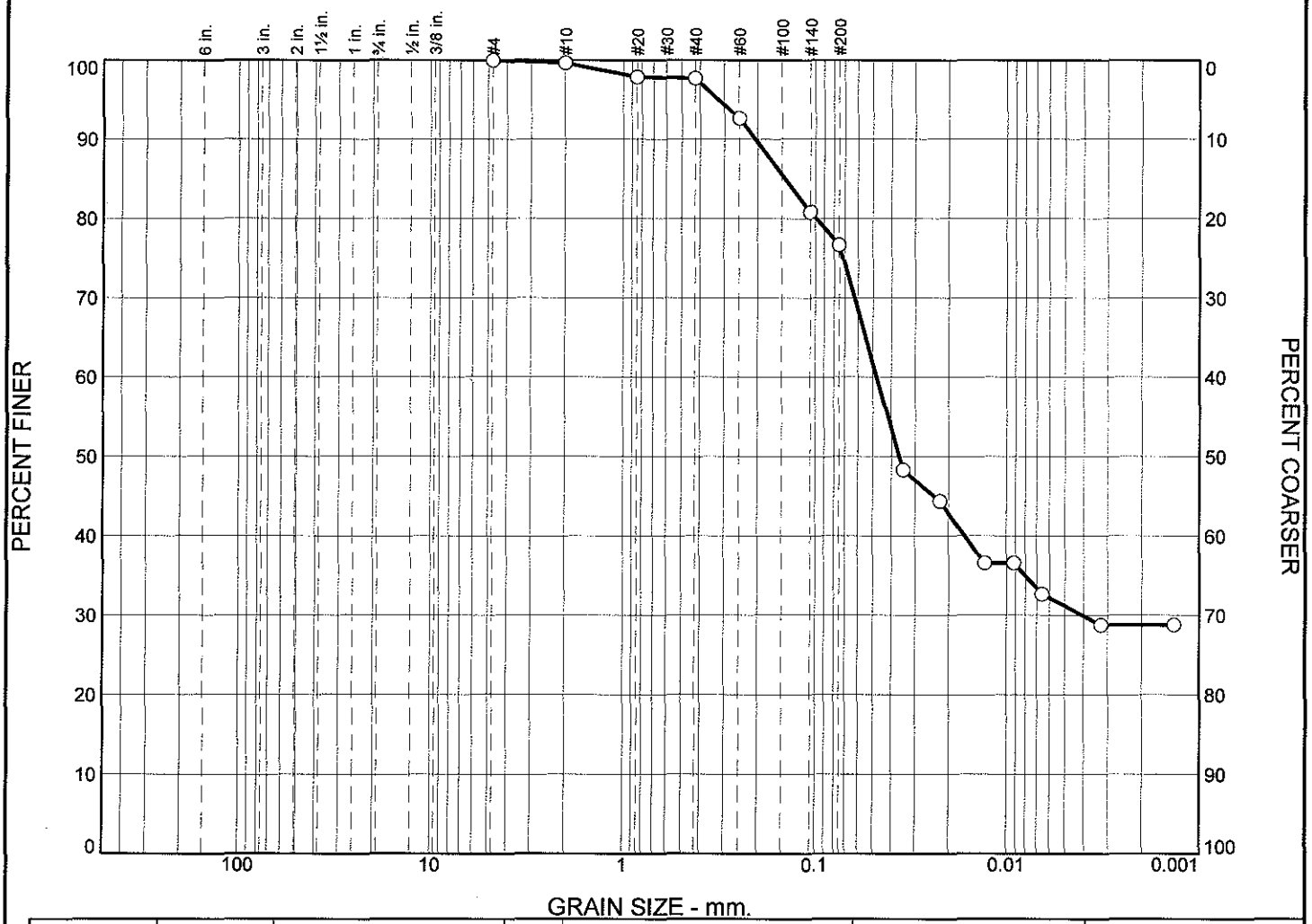
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.4	4.6	5.1	9.2	11.8	13.4	44.1	25.7	1.9	3.2	0.9	31.7	11.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0125	0.0361	0.0457	0.0732	0.1518	0.6794	1.3887	3.0016	

Fineness Modulus
1.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	1.4	0.5	5.1	9.5	13.1	22.7	8.1	4.5	4.9	29.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1437	0.0477	0.0364	0.0041				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504011 **Sample Number:** L0912914-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504011
Sample Number: L0912914-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 12.65
Tare Wt. = 4.60
Minus #200 from wash = 74.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
31.55	0.00	#4	521.78	521.77	100.0	0.0
		#10	484.92	484.81	99.6	0.4
		#20	405.97	405.42	97.9	2.1
		#40	362.80	362.74	97.7	2.3
		#60	367.75	366.16	92.6	7.4
		#140	346.56	342.82	80.8	19.2
		#200	346.55	345.25	76.7	23.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 76.7
Weight of hydrometer sample =31.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	48.3	51.7
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	44.4	55.6
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	36.6	63.4
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	36.6	63.4
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	32.7	67.3
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	28.8	71.2
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	28.8	71.2

Fractional Components

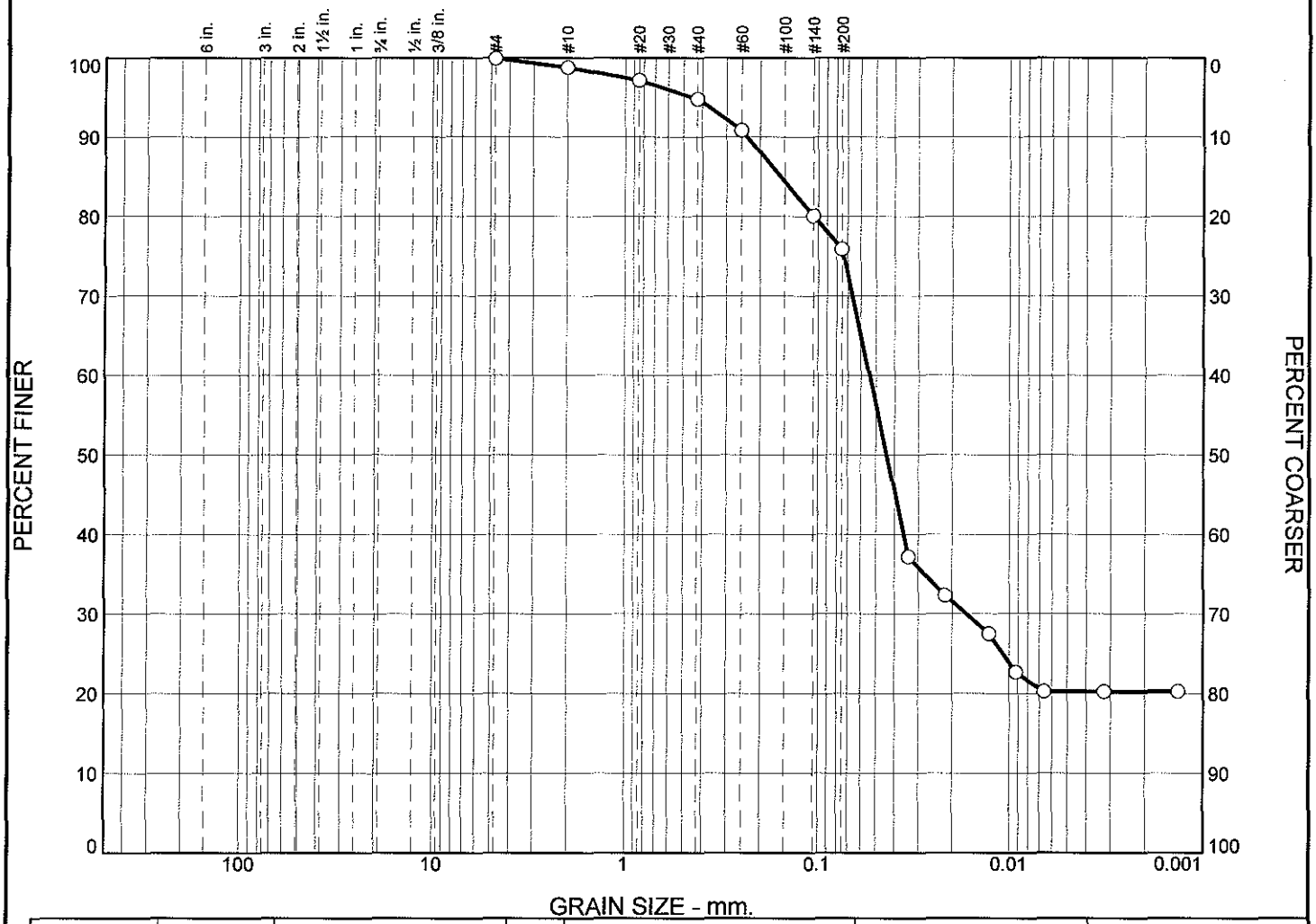
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	1.4	0.5	5.1	9.5	13.1	29.6	22.7	8.1	4.5	4.9	40.2	29.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0041	0.0364	0.0477	0.0992	0.1437	0.2064	0.3203

Fineness Modulus
0.24

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	1.3	2.2	4.5	8.7	15.0	30.8	7.0	7.8	1.3	20.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.1571	0.0540	0.0439	0.0168				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504012 **Sample Number:** L0912914-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504012
Sample Number: L0912914-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 16.90
Tare Wt. = 4.65
Minus #200 from wash = 75.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.39	0.00	#4	520.86	520.81	99.9	0.1
		#10	482.67	482.11	98.8	1.2
		#20	411.92	411.09	97.1	2.9
		#40	379.04	377.86	94.8	5.2
		#60	371.84	369.84	90.8	9.2
		#140	352.60	347.17	80.1	19.9
		#200	348.61	346.51	75.9	24.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 75.9
Weight of hydrometer sample =50.39
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0150	1.0154	0.0132	12.0	13.1	0.0337	37.2	62.8
5.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0217	32.3	67.7
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	27.5	72.5
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	22.7	77.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	20.2	79.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	20.2	79.8
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	20.2	79.8

Fractional Components

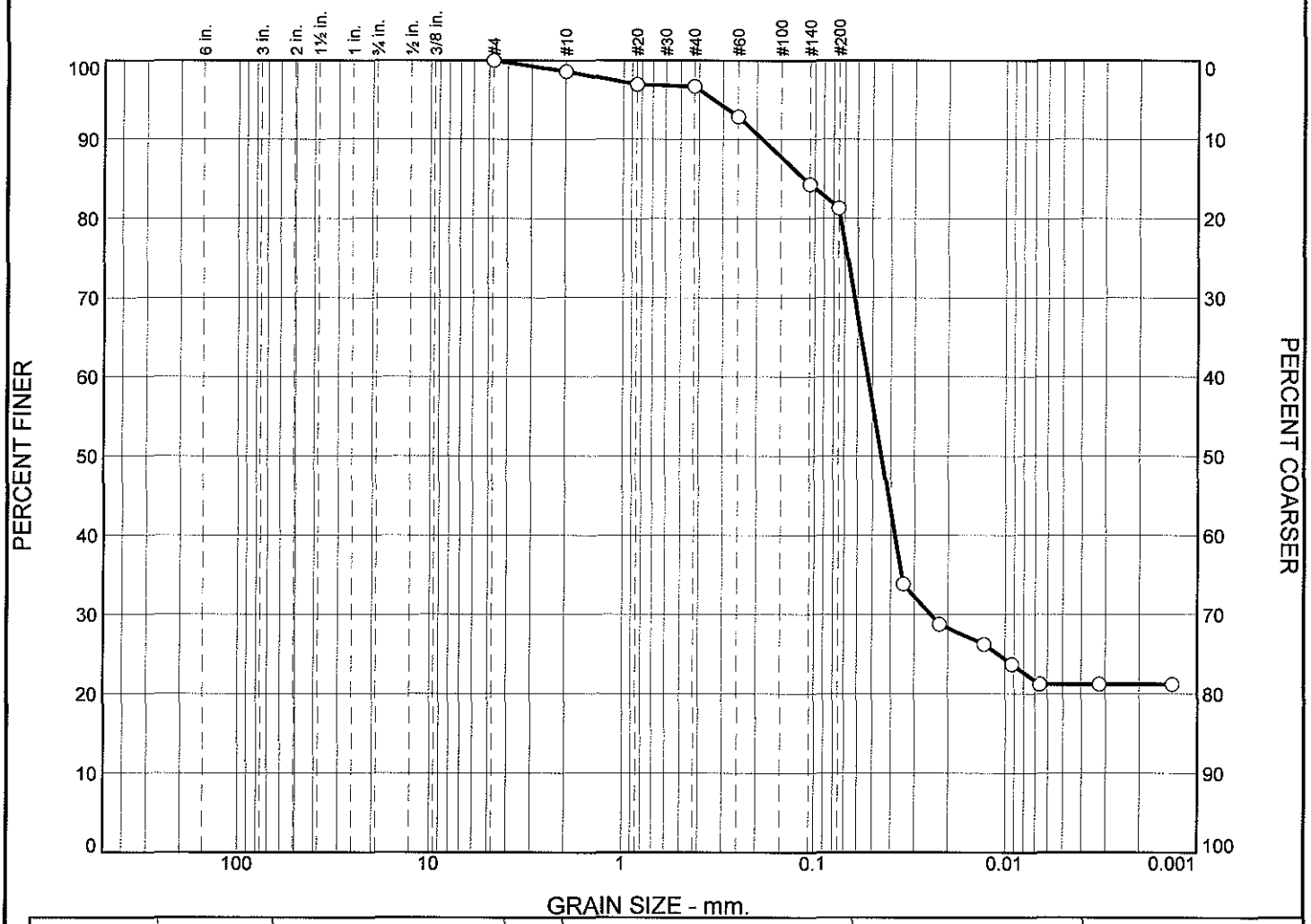
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	1.3	2.2	4.5	8.7	15.0	31.7	30.8	7.0	7.8	1.3	46.9	20.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0168	0.0439	0.0540	0.1055	0.1571	0.2340	0.4508

Fineness Modulus
0.31

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.1	1.3	0.5	3.9	6.9	15.8	37.6	5.5	4.6	1.3	21.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1134	0.0528	0.0448	0.0246				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504013 **Sample Number:** L0912914-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504013
Sample Number: L0912914-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 15.12
Tare Wt. = 4.58
Minus #200 from wash = 79.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.61	0.00	#4	521.78	521.77	100.0	0.0
		#10	485.52	484.81	98.6	1.4
		#20	406.28	405.42	96.9	3.1
		#40	362.86	362.74	96.7	3.3
		#60	368.13	366.16	92.9	7.1
		#140	347.24	342.82	84.3	15.7
		#200	346.80	345.25	81.3	18.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 81.3
Weight of hydrometer sample =51.61
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	33.8	66.2
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	28.8	71.2
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	26.2	73.8
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	23.7	76.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	21.2	78.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	21.2	78.8
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	21.2	78.8

Fractional Components

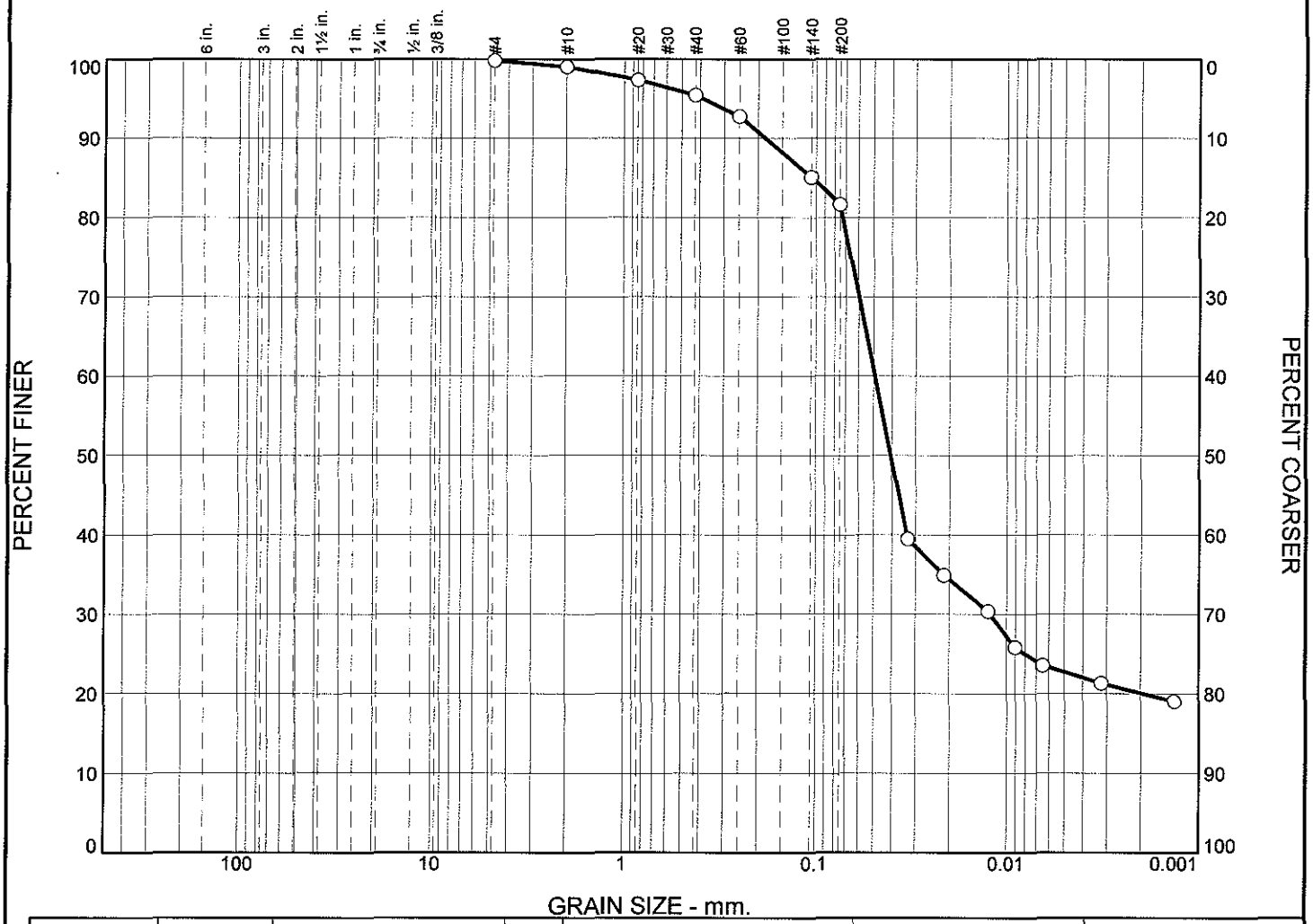
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.1	1.3	0.5	3.9	6.9	15.8	28.4	37.6	5.5	4.6	1.3	49.0	21.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0246	0.0448	0.0528	0.0734	0.1134	0.1872	0.3353

Fineness Modulus
0.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	1.3	1.8	3.1	6.2	14.3	33.5	6.6	7.4	2.9	21.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1046	0.0492	0.0405	0.0122				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504026 **Sample Number:** L0912914-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504026
Sample Number: L0912914-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 15.58
Tare Wt. = 4.68
Minus #200 from wash = 81.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.70	0.00	#4	520.92	520.81	99.8	0.2
		#10	482.55	482.11	99.0	1.0
		#20	412.07	411.09	97.3	2.7
		#40	378.96	377.86	95.4	4.6
		#60	371.38	369.84	92.8	7.2
		#140	351.58	347.17	85.1	14.9
		#200	348.53	346.51	81.6	18.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 81.6
Weight of hydrometer sample =57.70
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0170	1.0174	0.0132	14.0	12.6	0.0330	39.5	60.5
5.00	23.0	1.0150	1.0154	0.0132	12.0	13.1	0.0213	34.9	65.1
15.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0125	30.4	69.6
30.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0090	25.8	74.2
60.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0065	23.6	76.4
250.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0032	21.3	78.7
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	19.0	81.0

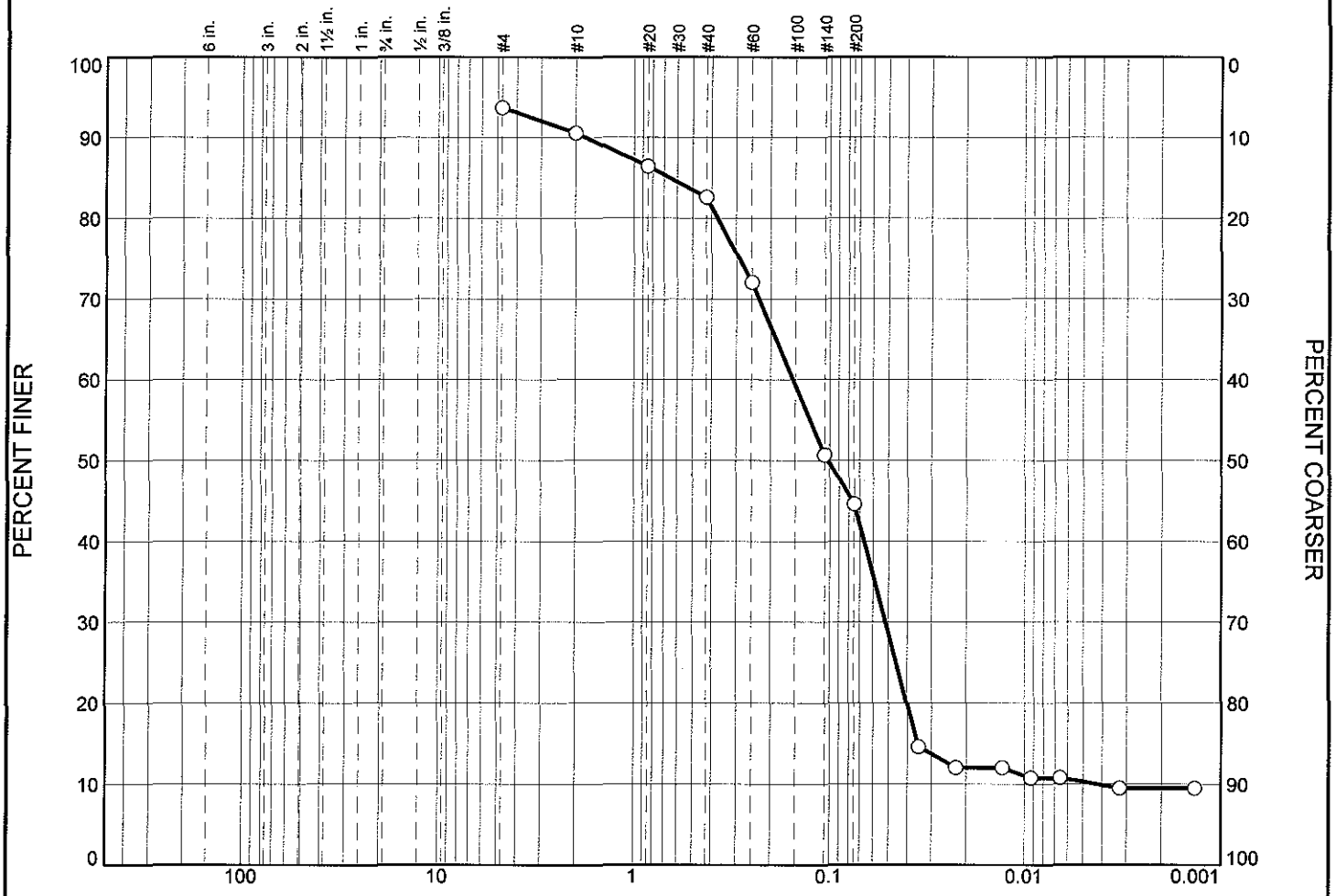
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	1.3	1.8	3.1	6.2	14.3	26.7	33.5	6.6	7.4	2.9	50.4	21.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0019	0.0122	0.0405	0.0492	0.0727	0.1046	0.1831	0.3893

Fineness Modulus
0.25

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.5	3.4	3.7	11.4	17.3	17.4	23.5	1.9	1.3	0.9	9.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6566	0.1540	0.1019	0.0518	0.0354	0.0044	3.99	35.29

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504111 **Sample Number:** L0912914-09

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504111
Sample Number: L0912914-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 38.19
Tare Wt. = 5.03
Minus #200 from wash = 40.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.78	0.00	#4	525.28	521.77	93.7	6.3
		#10	486.55	484.81	90.6	9.4
		#20	407.74	405.42	86.4	13.6
		#40	364.88	362.74	82.6	17.4
		#60	372.03	366.16	72.1	27.9
		#140	354.74	342.82	50.7	49.3
		#200	348.66	345.25	44.6	55.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 44.6
Weight of hydrometer sample =55.78
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	14.6	85.4
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	12.0	88.0
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	12.0	88.0
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	10.7	89.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	10.7	89.3
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	9.5	90.5
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	9.5	90.5

Fractional Components

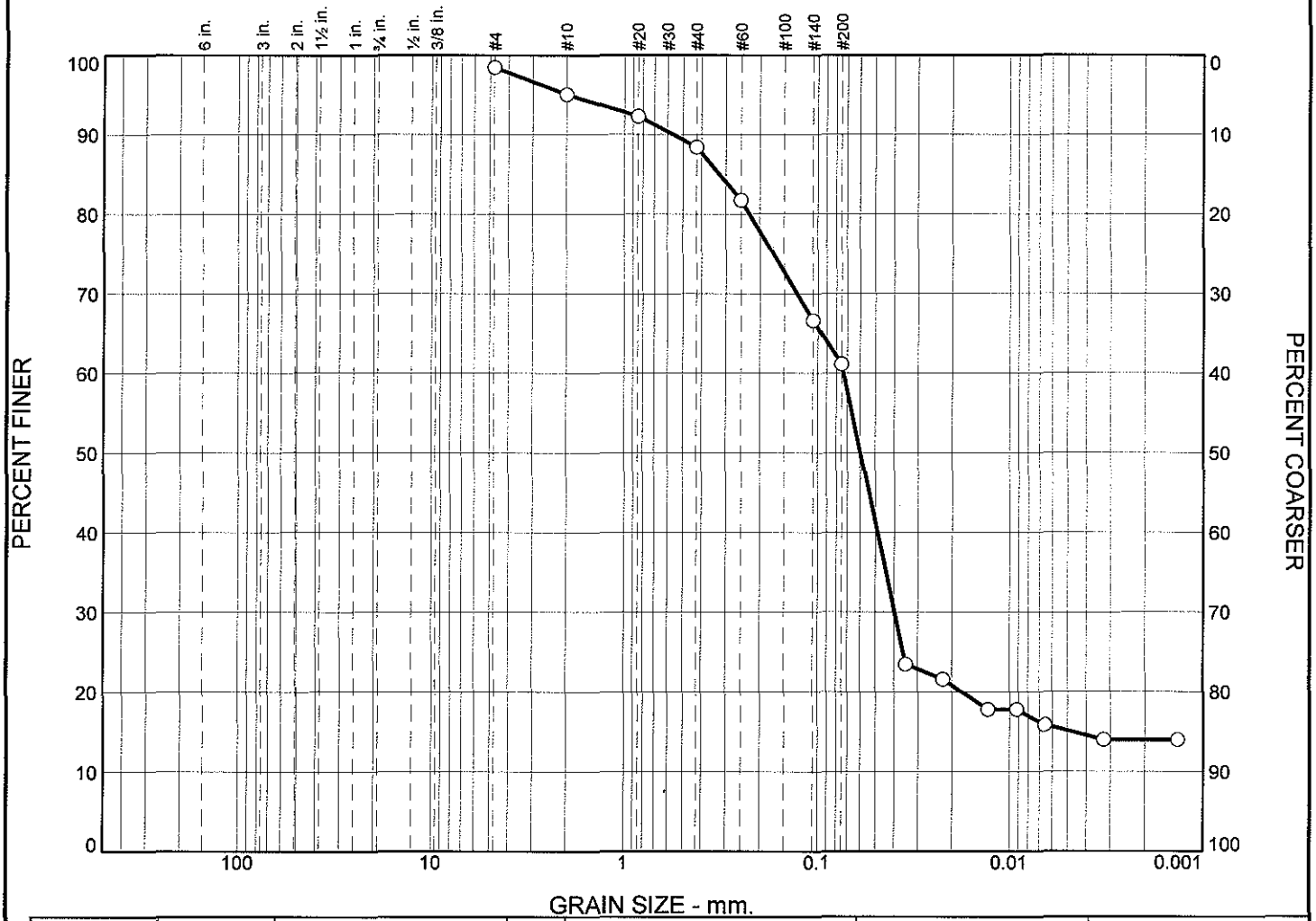
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.5	3.4	3.7	11.4	17.3	17.4	53.2	23.5	1.9	1.3	0.9	27.6	9.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0044	0.0354	0.0402	0.0518	0.1019	0.1540	0.3729	0.6566	1.7721	

Fineness Modulus	C_u	C_c
1.08	35.29	3.99

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.7	2.3	3.5	7.6	12.2	17.3	29.2	3.9	2.3	2.3	14.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3237	0.0733	0.0597	0.0397	0.0048			

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504112 **Sample Number:** L0912914-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504112
Sample Number: L0912914-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 25.33
Tare Wt. = 4.68
Minus #200 from wash = 60.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.77	0.00	#4	521.61	520.81	98.5	1.5
		#10	483.87	482.11	95.1	4.9
		#20	412.52	411.09	92.3	7.7
		#40	379.86	377.86	88.4	11.6
		#60	373.30	369.84	81.7	18.3
		#140	355.01	347.17	66.6	33.4
		#200	349.35	346.51	61.1	38.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 61.1
Weight of hydrometer sample =51.77
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	23.5	76.5
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	21.6	78.4
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	17.8	82.2
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	17.8	82.2
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	15.9	84.1
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	14.0	86.0
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	14.0	86.0

Fractional Components

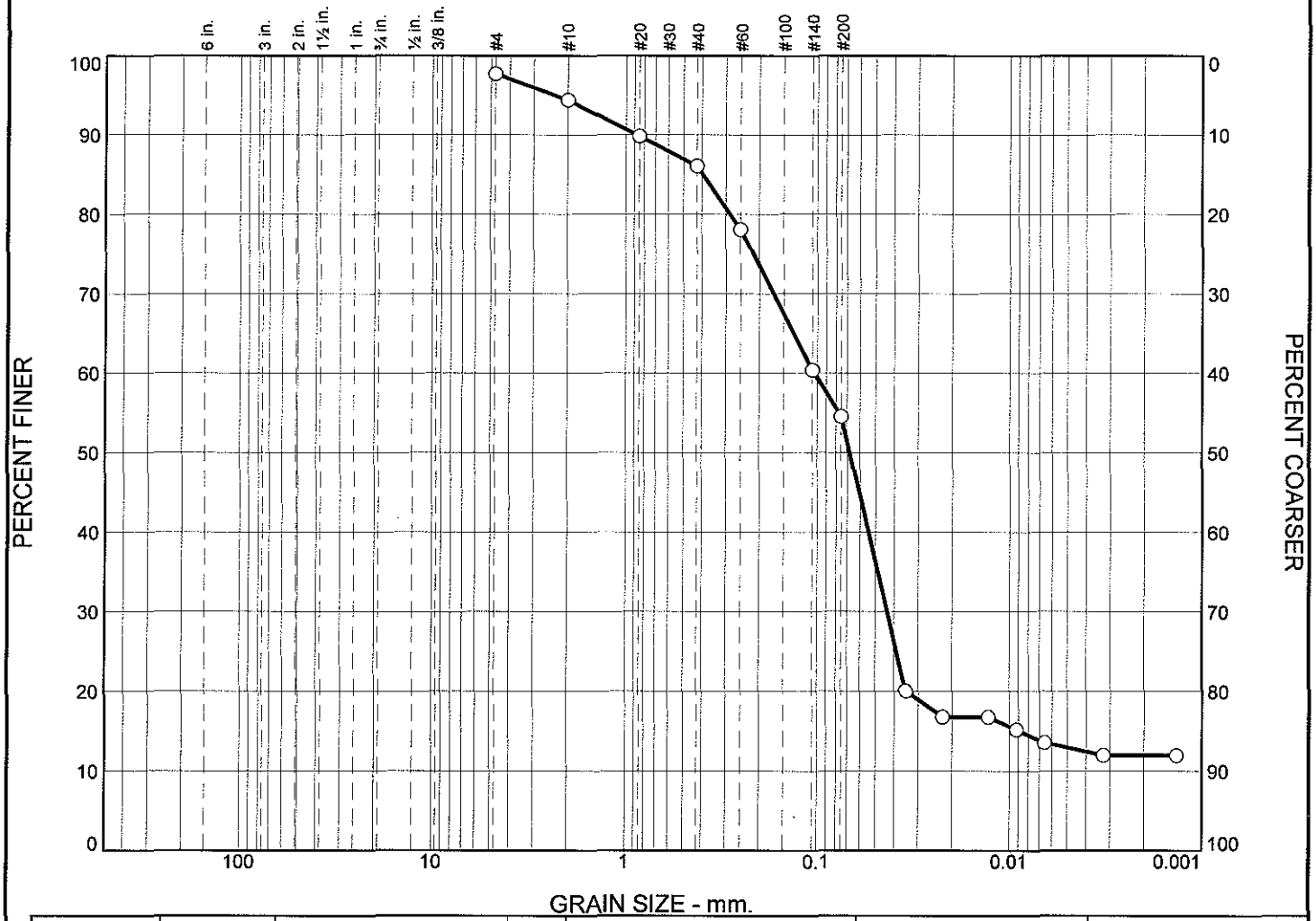
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.7	2.3	3.5	7.6	12.2	17.3	42.9	29.2	3.9	2.3	2.3	37.7	14.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0048	0.0178	0.0397	0.0597	0.0733	0.2265	0.3237	0.5633	1.9662

Fineness Modulus
0.65

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.6	3.7	3.7	8.9	14.3	17.4	27.2	2.4	2.4	2.1	12.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3952	0.1036	0.0678	0.0434	0.0089			

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504113 **Sample Number:** L0912914-11

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504113
Sample Number: L0912914-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 30.61
Tare Wt. = 4.80
Minus #200 from wash = 52.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.11	0.00	#4	523.02	521.77	97.7	2.3
		#10	486.59	484.81	94.4	5.6
		#20	407.90	405.42	89.8	10.2
		#40	364.75	362.74	86.1	13.9
		#60	370.51	366.16	78.1	21.9
		#140	352.38	342.82	60.4	39.6
		#200	348.43	345.25	54.5	45.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 54.5
Weight of hydrometer sample =54.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	20.0	80.0
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	16.8	83.2
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	16.8	83.2
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	15.2	84.8
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	13.5	86.5
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	11.9	88.1
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	11.9	88.1

Fractional Components

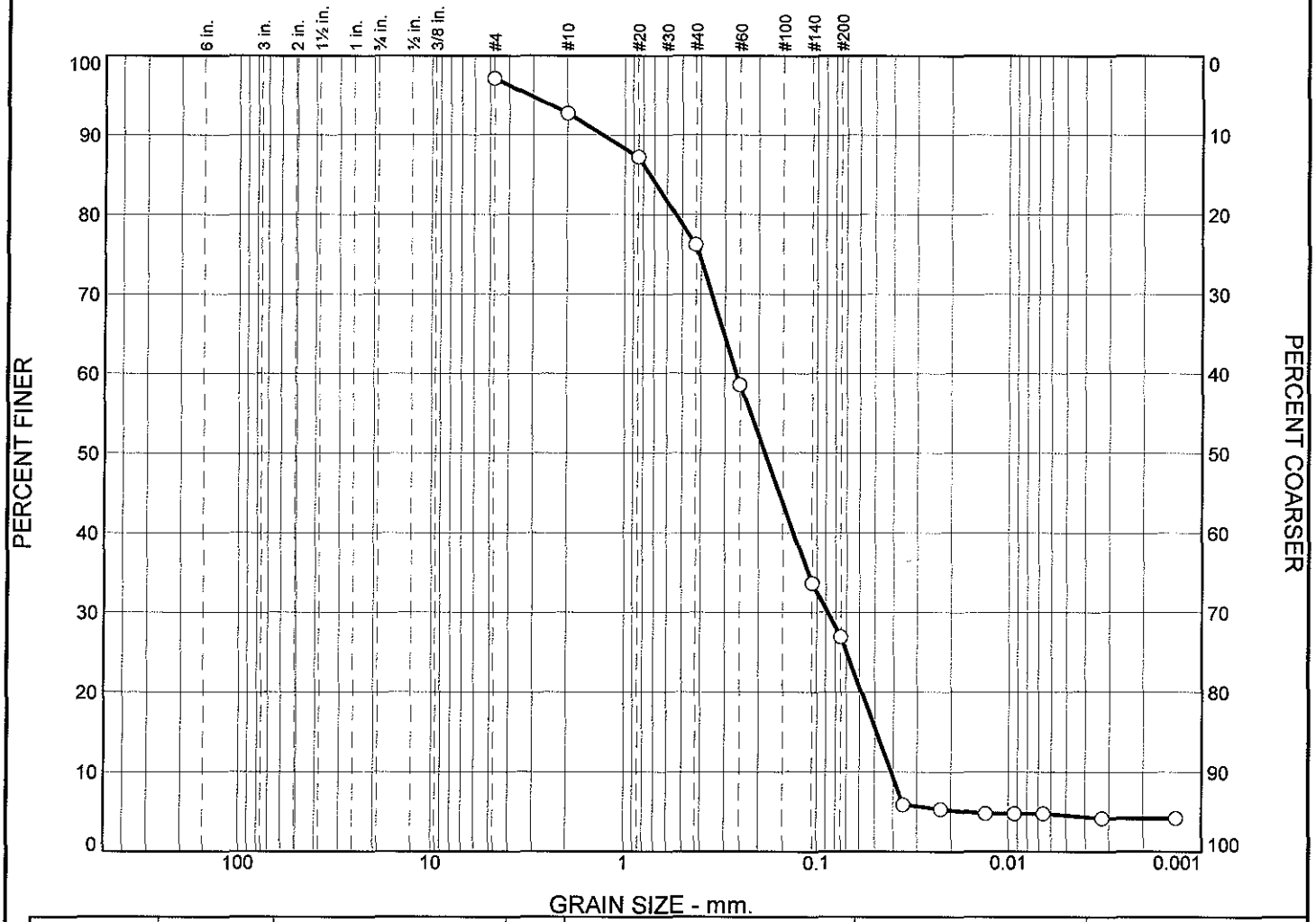
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.6	3.7	3.7	8.9	14.3	17.4	48.0	27.2	2.4	2.4	2.1	34.1	12.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0089	0.0346	0.0434	0.0678	0.1036	0.2841	0.3952	0.8795	2.3416

Fineness Modulus
0.79

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.6	4.4	9.5	20.2	20.1	16.7	16.1	0.8	0.1	0.5	4.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7380	0.2607	0.1859	0.0878	0.0490	0.0409	0.72	6.37

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504126 **Sample Number:** L0912914-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504126
Sample Number: L0912914-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 61.30
Tare Wt. = 4.70
Minus #200 from wash = 25.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
76.15	0.00	#4	522.98	520.81	97.2	2.8
		#10	485.47	482.11	92.7	7.3
		#20	415.27	411.09	87.2	12.8
		#40	386.26	377.86	76.2	23.8
		#60	383.25	369.84	58.6	41.4
		#140	366.15	347.17	33.7	66.3
		#200	351.66	346.51	26.9	73.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 26.9
Weight of hydrometer sample =76.15
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0353	5.9	94.1
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	5.3	94.7
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	4.8	95.2
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	4.8	95.2
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	4.8	95.2
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	4.2	95.8
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	4.2	95.8

Fractional Components

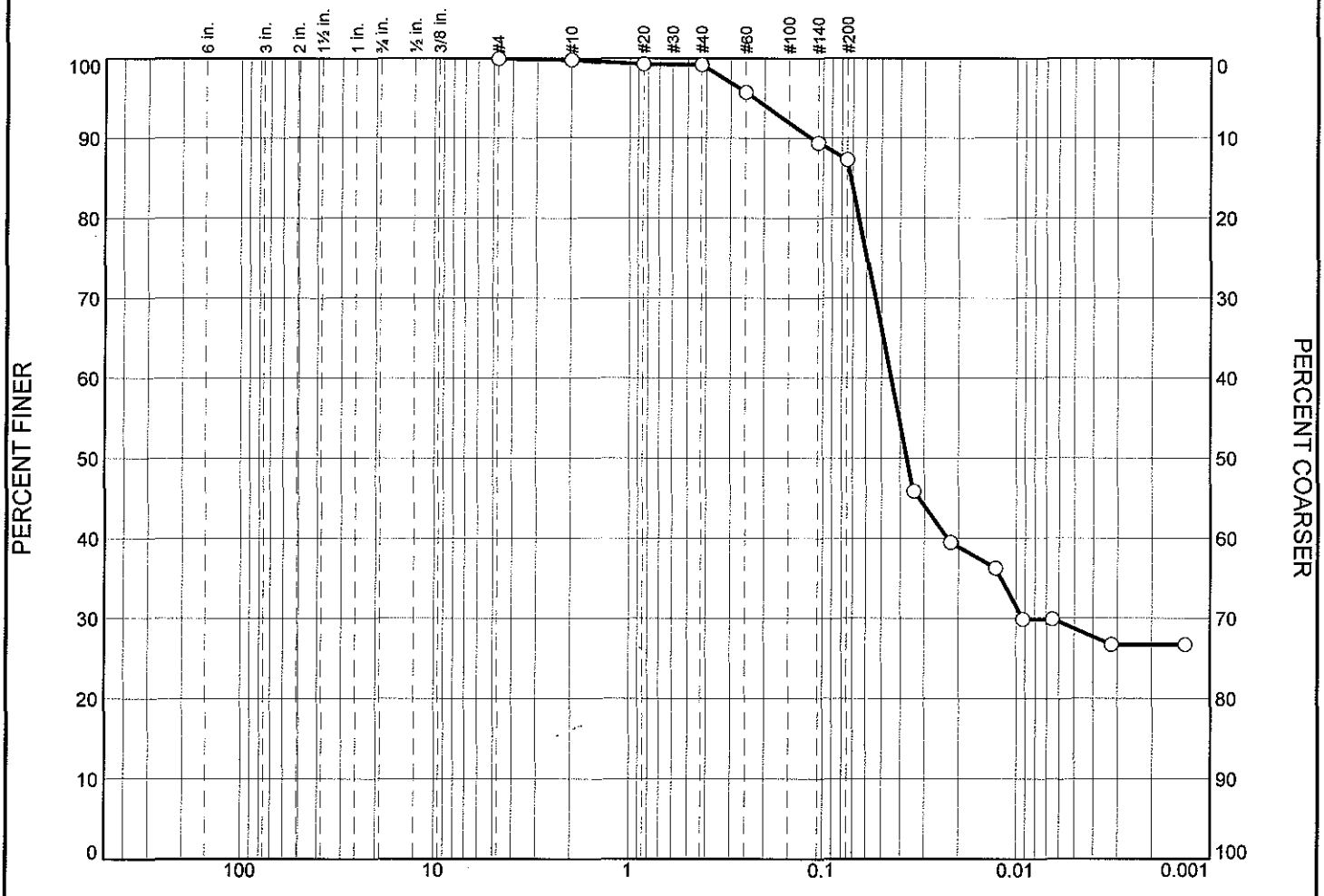
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.6	4.4	9.5	20.2	20.1	16.7	70.9	16.1	0.8	0.1	0.5	17.5	4.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0409	0.0490	0.0586	0.0878	0.1859	0.2607	0.5390	0.7380	1.3052	3.1161

Fineness Modulus	C_u	C_c
1.30	6.37	0.72

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.4	0.2	3.5	5.1	12.9	33.2	7.0	7.6	2.3	27.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0718	0.0446	0.0368	0.0093				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504211 **Sample Number:** L0912914-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504211
Sample Number: L0912914-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 10.96
Tare Wt. = 4.68
Minus #200 from wash = 85.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.92	0.00	#4	521.80	521.77	99.9	0.1
		#10	484.87	484.81	99.8	0.2
		#20	405.66	405.42	99.2	0.8
		#40	362.77	362.74	99.2	0.8
		#60	367.67	366.16	95.7	4.3
		#140	345.61	342.82	89.4	10.6
		#200	346.18	345.25	87.3	12.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 87.3
Weight of hydrometer sample =43.92
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0140	1.0144	0.0132	11.0	13.4	0.0340	45.9	54.1
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	39.5	60.5
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	36.3	63.7
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	29.9	70.1
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	29.9	70.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	26.7	73.3
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	26.7	73.3

Fractional Components

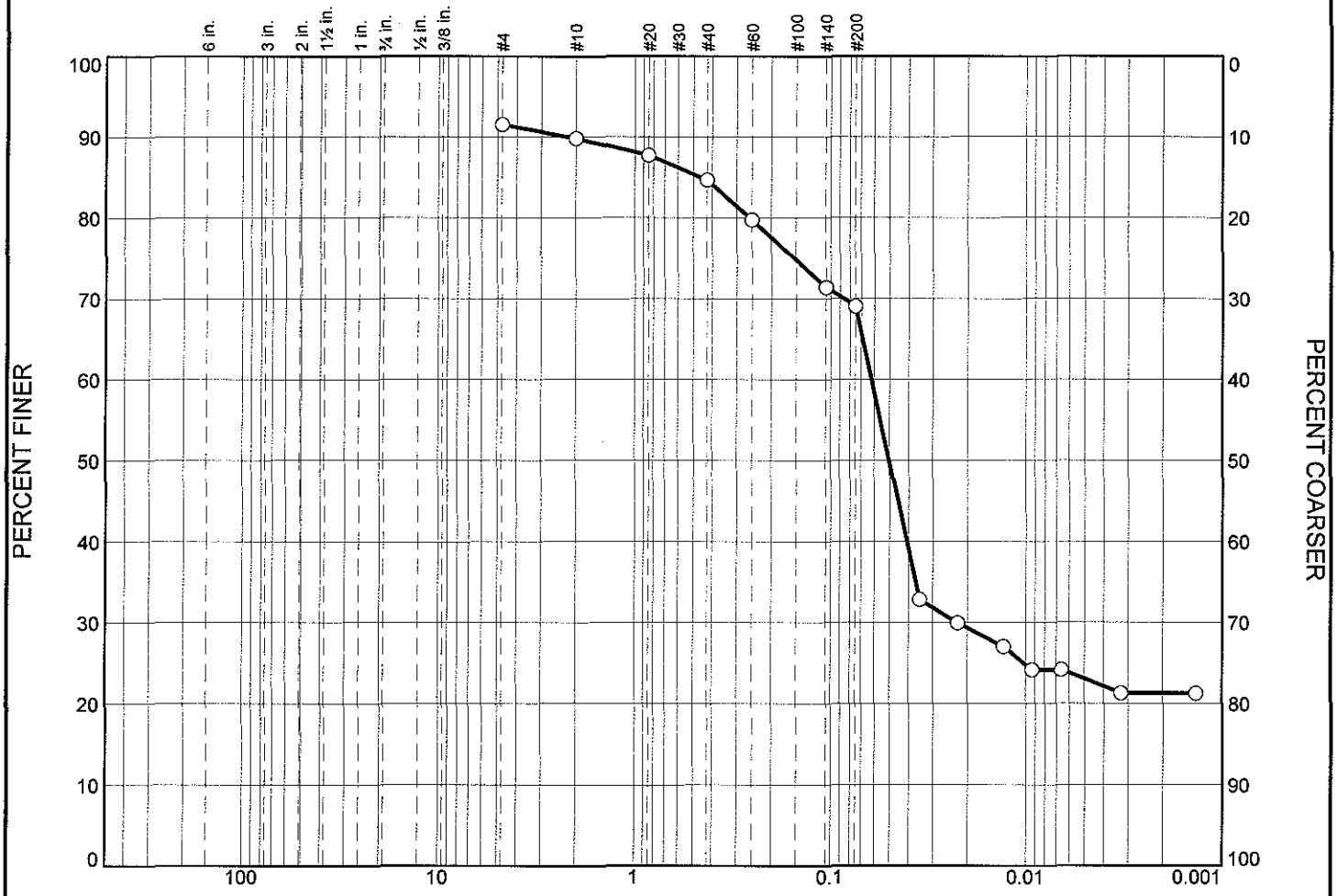
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.4	0.2	3.5	5.1	12.9	22.1	33.2	7.0	7.6	2.3	50.1	27.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0093	0.0368	0.0446	0.0653	0.0718	0.1151	0.2262

Fineness Modulus
0.13

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.4	1.7	2.7	5.6	6.8	12.6	28.4	4.0	3.8	2.2	22.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4579	0.0620	0.0503	0.0226				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504212 **Sample Number:** L0912914-14

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504212
Sample Number: L0912914-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 16.85
Tare Wt. = 4.70
Minus #200 from wash = 68.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
38.42	0.00	#4	524.06	520.81	91.5	8.5
		#10	482.77	482.11	89.8	10.2
		#20	411.89	411.09	87.7	12.3
		#40	379.04	377.86	84.7	15.3
		#60	371.73	369.84	79.8	20.2
		#140	350.38	347.17	71.4	28.6
		#200	347.41	346.51	69.1	30.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 69.1
Weight of hydrometer sample =38.42
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	32.8	67.2
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	29.9	70.1
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	27.0	73.0
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	24.2	75.8
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	24.2	75.8
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	21.3	78.7
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	21.3	78.7

Fractional Components

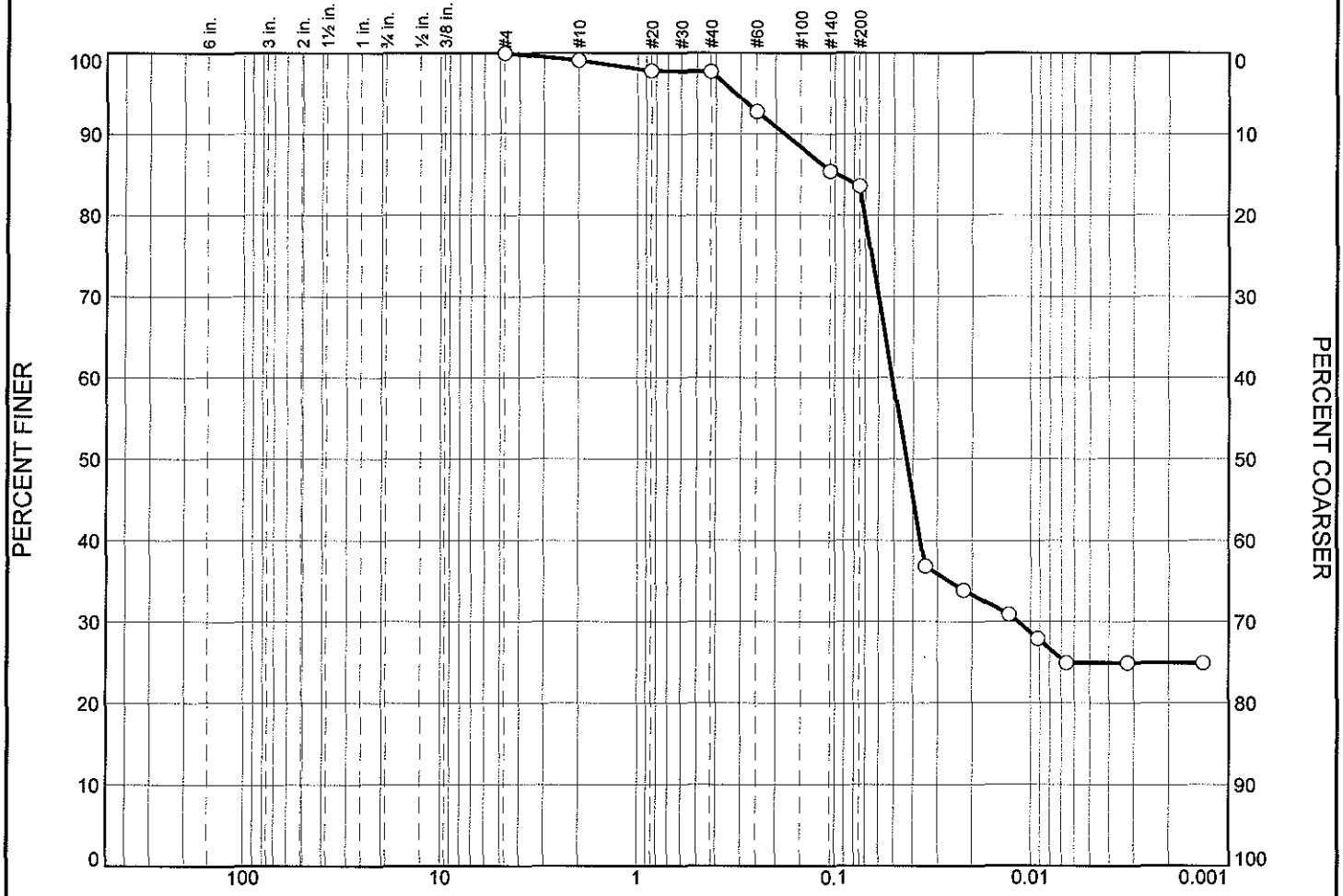
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.4	1.7	2.7	5.6	6.8	12.6	29.4	28.4	4.0	3.8	2.2	38.4	22.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0226	0.0503	0.0620	0.2568	0.4579	2.1864	

Fineness Modulus
0.87

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.2	0.7	1.1	0.3	4.9	5.9	14.4	36.4	4.2	5.5	1.5	24.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0975	0.0508	0.0431	0.0117				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504213 **Sample Number:** L0912914-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504213
Sample Number: L0912914-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 13.16
Tare Wt. = 4.74
Minus #200 from wash = 81.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.08	0.00	#4	521.77	521.77	100.0	0.0
		#10	485.23	484.81	99.1	0.9
		#20	405.99	405.42	97.8	2.2
		#40	362.79	362.74	97.7	2.3
		#60	368.38	366.16	92.8	7.2
		#140	346.12	342.82	85.4	14.6
		#200	346.09	345.25	83.6	16.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 83.6
Weight of hydrometer sample =45.08
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	36.8	63.2
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	33.9	66.1
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	30.9	69.1
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	27.9	72.1
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	24.9	75.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	24.9	75.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	24.9	75.1

Fractional Components

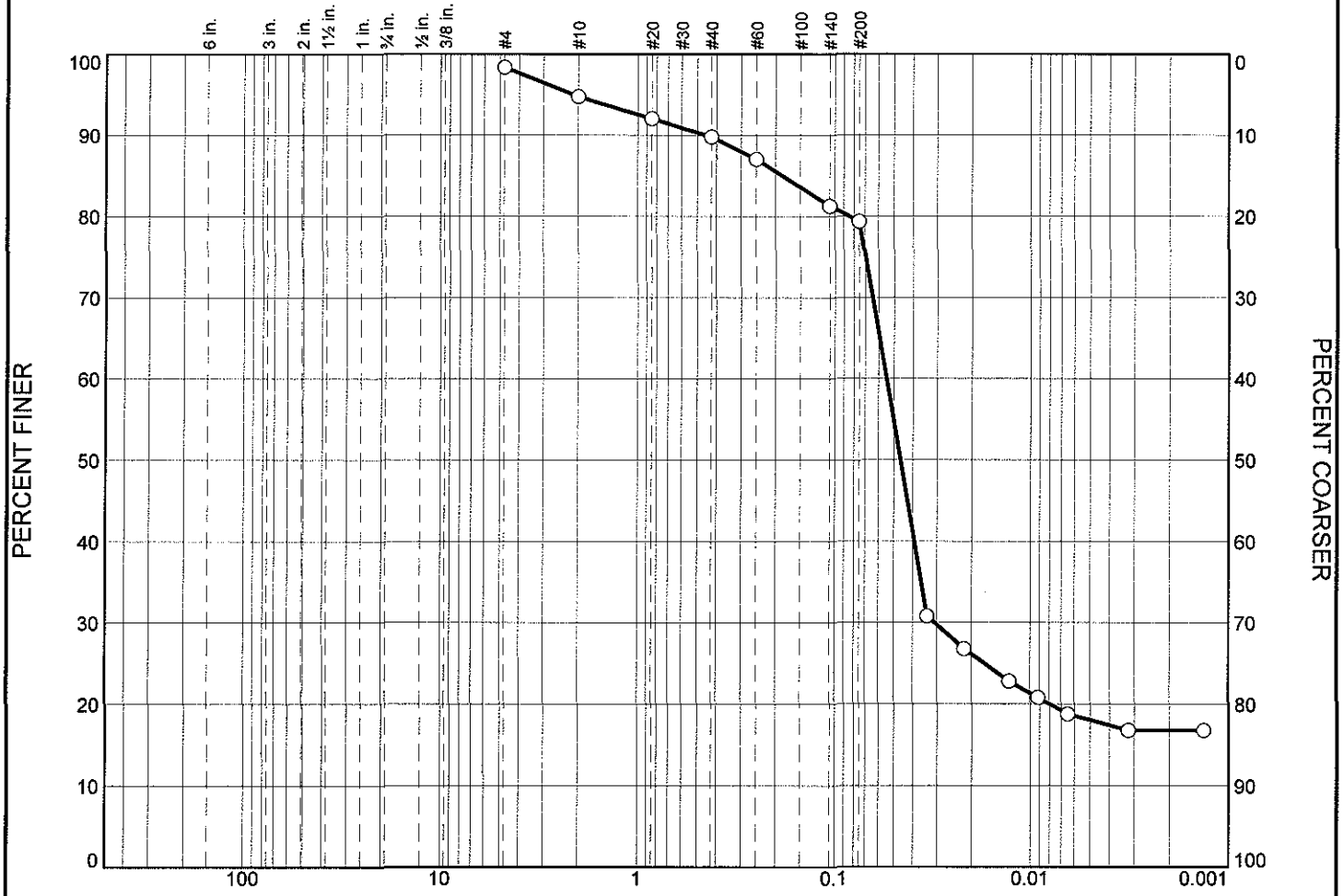
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.2	0.7	1.1	0.3	4.9	5.9	14.4	26.6	36.4	4.2	5.5	1.5	47.6	24.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0117	0.0431	0.0508	0.0707	0.0975	0.1807	0.3180

Fineness Modulus
0.22

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.9	2.1	2.3	3.3	4.6	14.1	38.3	5.7	4.4	2.6	17.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1848	0.0545	0.0462	0.0308				

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504226 **Sample Number:** L0912914-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504226
Sample Number: L0912914-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 18.31
Tare Wt. = 4.90
Minus #200 from wash = 78.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
63.57	0.00	#4	521.85	520.81	98.4	1.6
		#10	484.41	482.11	94.7	5.3
		#20	412.81	411.09	92.0	8.0
		#40	379.29	377.86	89.8	10.2
		#60	371.60	369.84	87.0	13.0
		#140	350.82	347.17	81.3	18.7
		#200	347.75	346.51	79.3	20.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 79.3
Weight of hydrometer sample =63.57
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0150	1.0154	0.0132	12.0	13.1	0.0337	30.8	69.2
5.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0217	26.8	73.2
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	22.8	77.2
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	20.8	79.2
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	18.8	81.2
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	16.8	83.2
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	16.8	83.2

Fractional Components

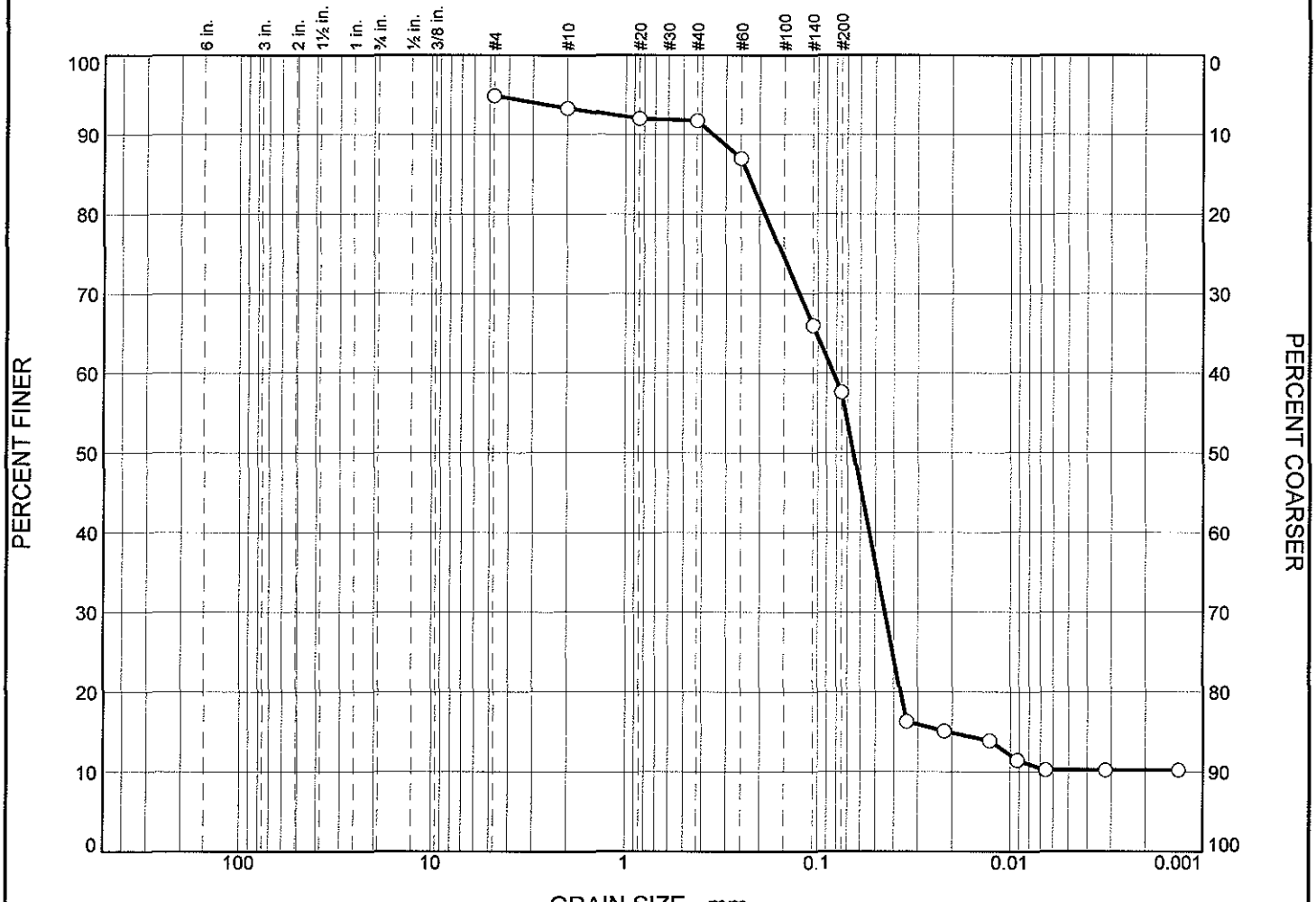
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.9	2.1	2.3	3.3	4.6	14.1	26.4	38.3	5.7	4.4	2.6	51.0	17.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0080	0.0308	0.0462	0.0545	0.0845	0.1848	0.4533	2.1252

Fineness Modulus
0.51

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.3	1.0	0.5	4.8	17.0	22.0	32.0	1.7	3.5	0.6	10.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2304	0.0828	0.0650	0.0445	0.0211			

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504311 **Sample Number:** L0912914-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504311
Sample Number: L0912914-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 39.99
Tare Wt. = 4.70
Minus #200 from wash = 53.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
75.85	0.00	#4	525.66	521.77	94.9	5.1
		#10	485.98	484.81	93.3	6.7
		#20	406.42	405.42	92.0	8.0
		#40	362.94	362.74	91.7	8.3
		#60	369.76	366.16	87.0	13.0
		#140	358.76	342.82	66.0	34.0
		#200	351.61	345.25	57.6	42.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 57.6
Weight of hydrometer sample =75.85
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	16.3	83.7
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	15.1	84.9
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	13.9	86.1
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	11.4	88.6
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	10.2	89.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	10.2	89.8
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	10.2	89.8

Fractional Components

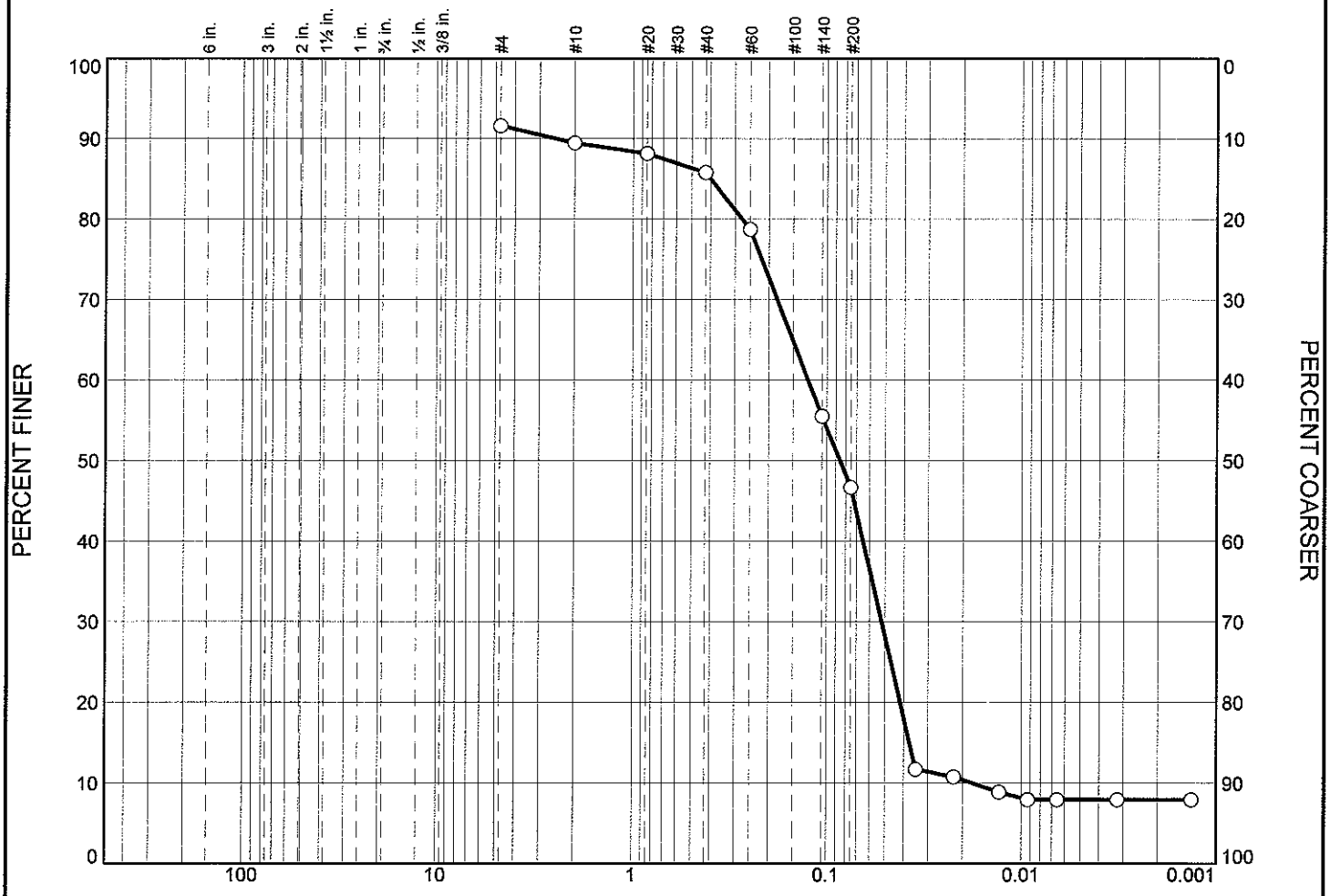
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.3	1.0	0.5	4.8	17.0	22.0	45.3	32.0	1.7	3.5	0.6	37.8	10.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0211	0.0368	0.0445	0.0650	0.0828	0.1878	0.2304	0.3496	

Fineness Modulus
0.64

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	1.1	2.1	7.6	18.7	21.6	26.9	2.0	1.6	0.0	7.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4004	0.1252	0.0855	0.0519	0.0373	0.0179	1.20	6.99

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504312 **Sample Number:** L0912914-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504312
Sample Number: L0912914-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 48.01
Tare Wt. = 4.70
Minus #200 from wash = 45.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.20	0.00	#4	527.46	520.81	91.6	8.4
		#10	483.81	482.11	89.5	10.5
		#20	412.12	411.09	88.2	11.8
		#40	379.73	377.86	85.8	14.2
		#60	375.45	369.84	78.7	21.3
		#140	365.55	347.17	55.5	44.5
		#200	353.52	346.51	46.7	53.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 46.7
Weight of hydrometer sample =79.20
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	11.7	88.3
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	10.8	89.2
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	8.9	91.1
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	7.9	92.1
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	7.9	92.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	7.9	92.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	7.9	92.1

Fractional Components

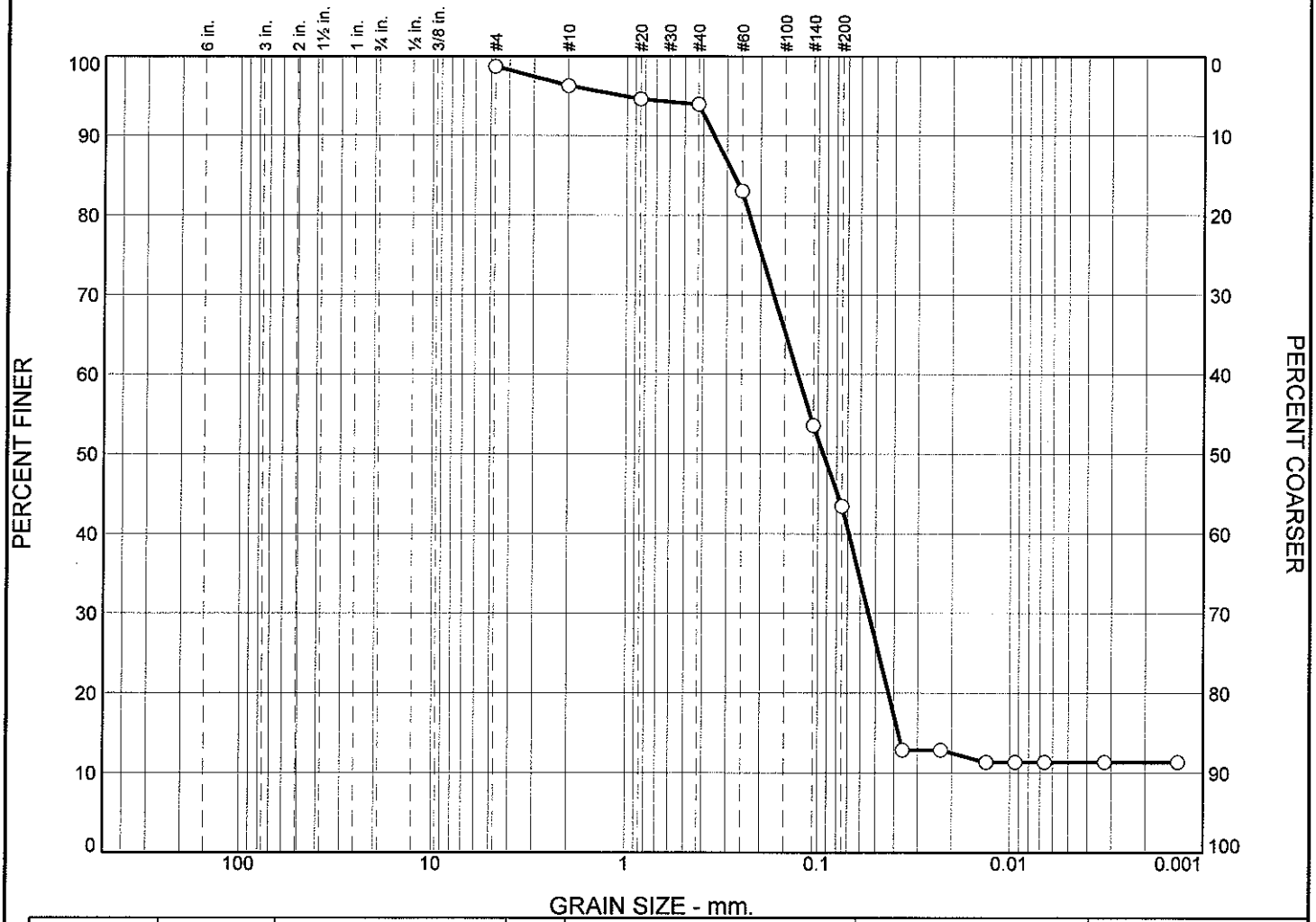
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	1.1	2.1	7.6	18.7	21.6	51.1	26.9	2.0	1.6	0.0	30.5	7.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0179	0.0373	0.0417	0.0519	0.0855	0.1252	0.2753	0.4004	2.4891	

Fineness Modulus	C_u	C_c
0.97	6.99	1.20

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.9	1.4	0.8	11.1	23.8	23.4	23.0	1.0	0.5	0.0	11.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2750	0.1278	0.0938	0.0543	0.0379			

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504313 **Sample Number:** L0912914-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504313
Sample Number: L0912914-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 32.81
Tare Wt. = 4.69
Minus #200 from wash = 38.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.45	0.00	#4	522.35	521.77	98.7	1.3
		#10	485.91	484.81	96.3	3.7
		#20	406.19	405.42	94.6	5.4
		#40	363.04	362.74	93.9	6.1
		#60	371.12	366.16	83.0	17.0
		#140	356.21	342.82	53.6	46.4
		#200	349.86	345.25	43.4	56.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 43.4
Weight of hydrometer sample =45.45
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	12.8	87.2
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	12.8	87.2
15.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0133	11.3	88.7
30.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0094	11.3	88.7
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	11.3	88.7
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	11.3	88.7
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	11.3	88.7

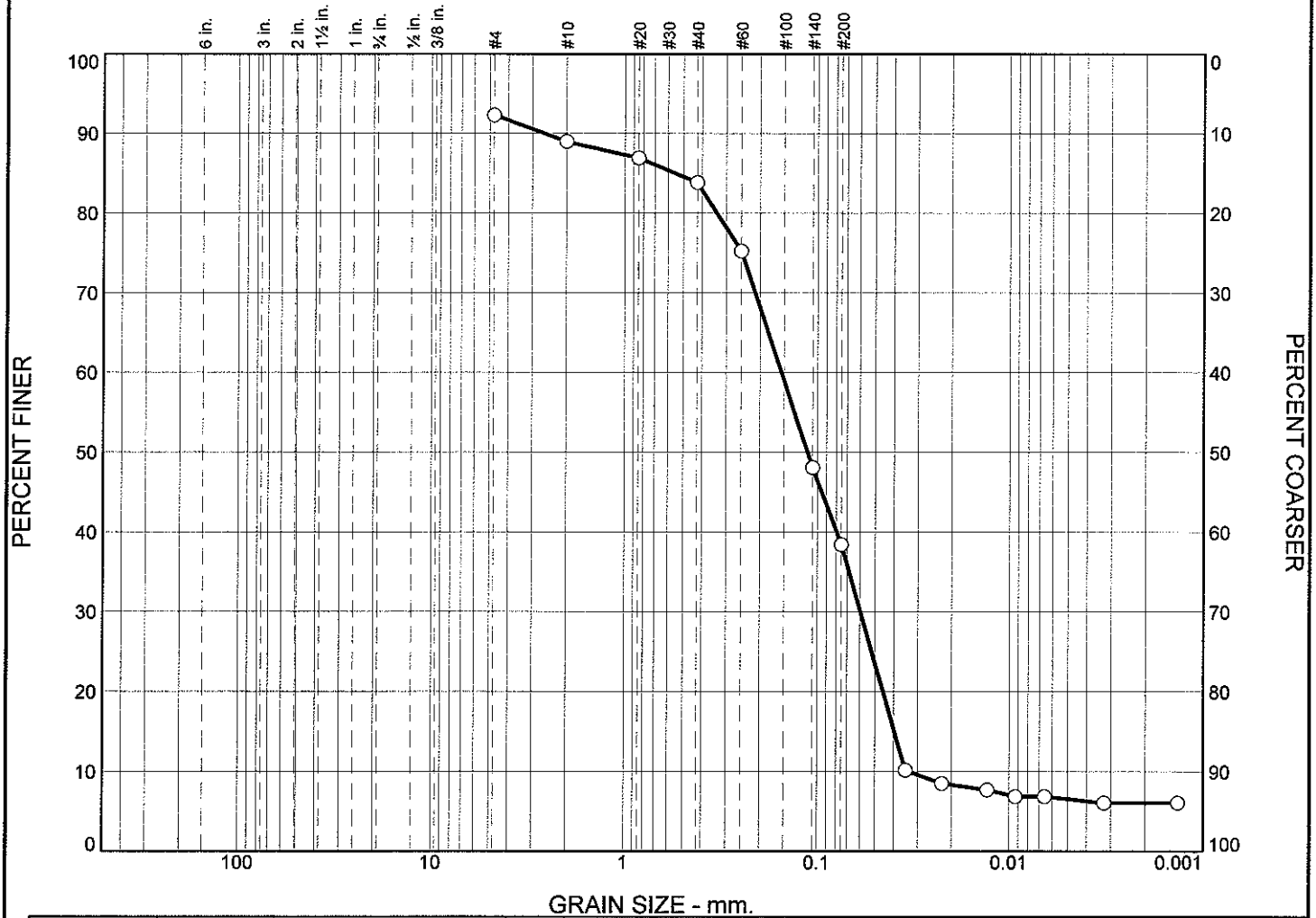
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.9	1.4	0.8	11.1	23.8	23.4	60.5	23.0	1.0	0.5	0.0	24.5	11.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0379	0.0427	0.0543	0.0938	0.1278	0.2288	0.2750	0.3507	1.0353

Fineness Modulus
0.63

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.6	1.7	2.7	9.4	21.9	21.6	22.0	1.7	1.1	0.6	6.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.5516	0.1545	0.1127	0.0596	0.0396	0.0333	0.69	4.64

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504326 **Sample Number:** L0912914-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504326
Sample Number: L0912914-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 52.42
Tare Wt. = 4.87
Minus #200 from wash = 36.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
75.14	0.00	#4	526.60	520.81	92.3	7.7
		#10	484.60	482.11	89.0	11.0
		#20	412.64	411.09	86.9	13.1
		#40	380.17	377.86	83.8	16.2
		#60	376.31	369.84	75.2	24.8
		#140	367.59	347.17	48.1	51.9
		#200	353.76	346.51	38.4	61.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 38.4
Weight of hydrometer sample =75.14
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	10.2	89.8
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	8.5	91.5
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	7.7	92.3
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	6.9	93.1
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	6.9	93.1
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	6.1	93.9
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	6.1	93.9

Fractional Components

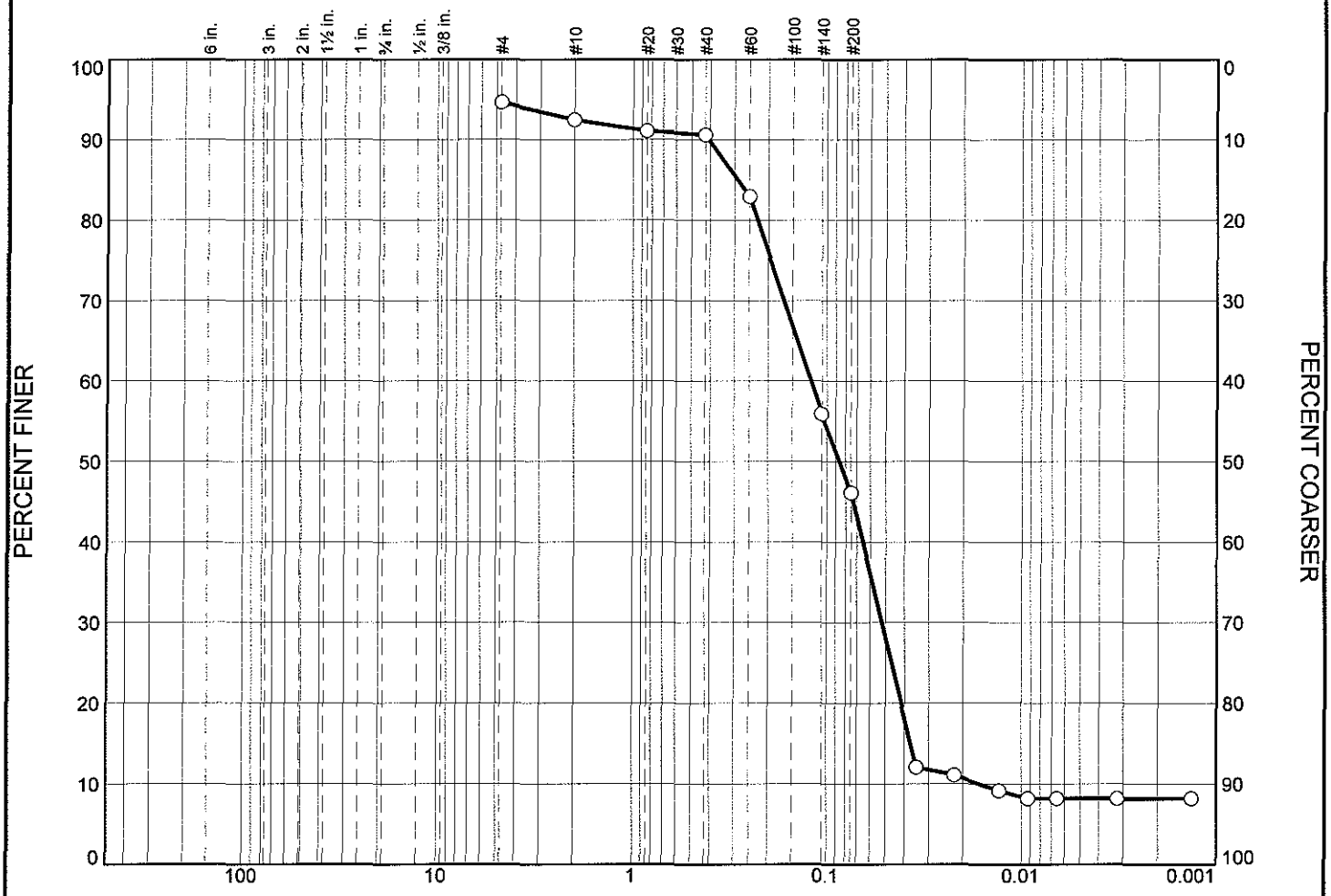
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.6	1.7	2.7	9.4	21.9	21.6	57.3	22.0	1.7	1.1	0.6	25.4	6.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0333	0.0396	0.0454	0.0596	0.1127	0.1545	0.3354	0.5516	2.6097	

Fineness Modulus	C_u	C_c
1.08	4.64	0.69

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	1.1	0.7	7.8	21.8	23.0	26.3	2.0	1.6		8.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2882	0.1207	0.0860	0.0521	0.0371	0.0165	1.36	7.33

	Material Description	USCS	AASHTO
○			

Project No. L0912914 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504326 **Sample Number:** WG383815-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912914
Location: 504326
Sample Number: WG383815-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 48.79
Tare Wt. = 4.80
Minus #200 from wash = 42.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
75.96	0.00	#4	525.84	521.77	94.6	5.4
		#10	486.45	484.81	92.5	7.5
		#20	406.48	405.42	91.1	8.9
		#40	363.08	362.74	90.6	9.4
		#60	372.01	366.16	82.9	17.1
		#140	363.35	342.82	55.9	44.1
		#200	352.68	345.25	46.1	53.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 46.1
Weight of hydrometer sample =75.96
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	12.1	87.9
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	11.1	88.9
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	9.1	90.9
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	8.2	91.8
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	8.2	91.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	8.2	91.8
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	8.2	91.8

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	1.1	0.7	7.8	21.8	23.0	54.4	26.3	2.0	1.6		29.9	8.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0165	0.0371	0.0415	0.0521	0.0860	0.1207	0.2277	0.2882	0.4067	

Fineness Modulus	C_u	C_c
0.78	7.33	1.36

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 222

CHAIN OF COUNTING CUSTODY

PAGE 23 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08016:17

Date Rec'd in Lab:

ALPHA Job #: L0912914

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	503911	9/26/09	10:08	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	503912	9/26/09	10:08	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	503913	9/26/09	10:08	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	503925	9/26/09	10:08	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	503926	9/26/09	10:08	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	503927	9/26/09	10:08	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
					Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/26/09 19:12	[signature]	9/26/09 19:17
[signature]	9-28-09 9:23	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[signature]	9/28/09 10:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 224

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08016:17

Date Rec'd in Lab:

ALPHA Job #: L0912914

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	504011	9/25/09	08:35	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
6	504012	9/25/09	08:35	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	504013	9/25/09	08:35	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	504025	9/25/09	08:40	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
8	504026	9/25/09	08:25	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	504027	9/25/09	08:25	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
					Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/25/09 19:04	[signature]	9/25/09 19:07
[signature]	9/28/09 09:13	F. Gilbert	9/28/09 9:25
F. Gilbert	9/28/09 10:20	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 22S

CHAIN OF CUSTODY

PAGE 2 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:17

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-00018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L409129-14

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	504111	9/25/09	12:13	SE	JB	☐	☐	☒	☐								ben gs	1
10	504112	9/25/09	12:38	SE	JB	☐	☐	☒	☐								ben gs	1
11	504113	9/25/09	12:45	SE	JB	☐	☐	☒	☐								ben gs	1
	504125	9/25/09	12:22	SE	JB	☒	☒	☐	☐								sed chem	1
12	504126	9/25/09	12:22	SE	JB	☐	☐	☒	☐								sed gs	1
	504127	9/25/09	12:22	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-	-	
Preservative						A	A	A	-	-	-	-	-	-	-	-	-	

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/25/09 1853		9/25/09 1907
Kathleen McCann	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station 226

CHAIN OF CUSTODY

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Date Rec'd in Lab:

ALPHA Job #: L0912914

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:17

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive
E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
13	504211	9/25/09	09:58	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
14	504212	9/25/09	09:58	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
15	504213	9/25/09	09:58	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	504225	9/25/09	10:02	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
16	504226	9/25/09	10:02	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	504227	9/25/09	10:02	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/25/09 19:04		9/25/09 19:07
	9/28/09 09:13	P. Gillett	9/28/09 9:25
P. Gillett	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 227

CHAIN OF CUSTODY

PAGE 4 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:17

Date Rec'd in Lab:

ALPHA Job #: L0912914

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	504311	9/25/09	11:14	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
18	504312	9/25/09	11:14	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
19	504313	9/25/09	11:14	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	504325	9/25/09	11:18	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
20	504326	9/25/09	11:18	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	504327	9/25/09	11:18	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	9/25/09 19:05		9/25/09 1907
	9/28/09 09:13	P. Gillett	9/28/09 9:25
P. Gillett	9/28/09 10:20		9/25/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912915
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912915
Report Date: 02/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912915-01	504411	NEW BEDFORD, MA	09/25/09 10:48
L0912915-02	504412	NEW BEDFORD, MA	09/25/09 11:25
L0912915-03	504413	NEW BEDFORD, MA	09/25/09 11:30
L0912915-04	504426	NEW BEDFORD, MA	09/25/09 11:00
L0912915-05	504511	NEW BEDFORD, MA	09/25/09 10:00
L0912915-06	504512	NEW BEDFORD, MA	09/25/09 10:16
L0912915-07	504513	NEW BEDFORD, MA	09/25/09 10:21
L0912915-08	504526	NEW BEDFORD, MA	09/25/09 10:08
L0912915-09	504611	NEW BEDFORD, MA	09/25/09 13:30
L0912915-10	504612	NEW BEDFORD, MA	09/25/09 13:58
L0912915-11	504613	NEW BEDFORD, MA	09/25/09 14:06
L0912915-12	504626	NEW BEDFORD, MA	09/25/09 13:40
L0912915-13	504711	NEW BEDFORD, MA	09/25/09 14:37
L0912915-14	504712	NEW BEDFORD, MA	09/25/09 14:55
L0912915-15	504713	NEW BEDFORD, MA	09/25/09 15:04
L0912915-16	504726	NEW BEDFORD, MA	09/25/09 14:45
L0912915-17	504811	NEW BEDFORD, MA	09/25/09 13:06
L0912915-18	504812	NEW BEDFORD, MA	09/25/09 13:06
L0912915-19	504813	NEW BEDFORD, MA	09/25/09 13:06
L0912915-20	504826	NEW BEDFORD, MA	09/25/09 13:09

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912915
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 23, 2009. The report was ammended to include revised Grain Size data.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912915
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative (continued)

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newl

Title: Technical Director/Representative Date: 02/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-01
Client ID: 504411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 10:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.90		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	18.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.5		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	19.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.60		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-02
Client ID: 504412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 11:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	15.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.6		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-03
Client ID: 504413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 11:30
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.20		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	18.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	21.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.90		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-04
Client ID: 504426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 11:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.5		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	22.6		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.60		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-05
Client ID: 504511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 10:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.400		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.400		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.800		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.30		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	43.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	46.4		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-06
Client ID: 504512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 10:16
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.200		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.20		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.50		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	7.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.4		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	43.4		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-07
Client ID: 504513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 10:21
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.600		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.500		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.40		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	38.5		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-08
Client ID: 504526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 10:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.900		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.4		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	32.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-09
Client ID: 504611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:30
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.90		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.50		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	19.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-10
Client ID: 504612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:58
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.30		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.90		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.2		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	41.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-11
Client ID: 504613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 14:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.600		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.700		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.40		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	46.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.4		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-12
Client ID: 504626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:40
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.50		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.40		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	18.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-13
Client ID: 504711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 14:37
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	6.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.5		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	21.6		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.60		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-14
Client ID: 504712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 14:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.600		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	33.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	35.1		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-15
Client ID: 504713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 15:04
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	8.20		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.5		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	20.6		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-16
Client ID: 504726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 14:45
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	11.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.7		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.9		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	8.70		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.20		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-17
Client ID: 504811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	12.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.6		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.3		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	7.30		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	7.60		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-18
Client ID: 504812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	16.0		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.00		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.60		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	2.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	2.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.400		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
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Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-19
Client ID: 504813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.600		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.700		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.40		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.10		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	22.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	60.4		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.30		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912915
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912915-20
Client ID: 504826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 13:09
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	9.90		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.30		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.6		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.80		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	7.90		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	15.8		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.60		%	0.100	1	-	10/09/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912915
Report Date: 02/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG383817-1 QC Sample: L0912915-20 Client ID: 504826						
Gravel (>2.00mm)	9.9	9.60	%	3		20
Very Coarse Sand (1.00-2.00 mm)	8.3	8.50	%	2		20
Coarse Sand (0.50-1.00 mm)	10.6	9.90	%	7		20
Medium Sand (0.25-0.50 mm)	12.8	12.3	%	4		20
Fine Sand (0.125-0.25 mm)	8.8	8.10	%	8		20
Very Fine Sand (0.063-0.125 mm)	7.9	8.10	%	2		20
Silt - (1.95-62.5 um)	15.8	15.2	%	4		20
Clay - (<1.95 um)	2.6	2.50	%	4		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912915
Report Date: 02/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
D	Absent
E	Absent
G	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912915-01A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-02A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-03A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-04A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-05A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-06A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-07A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-08A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912915
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912915-09A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-10A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-11A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-12A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-13A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-14A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-15A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-16A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-17A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-18A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912915
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912915-19A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912915-20A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912915
Project Number:	TO-0018	**Report Date:**	02/03/10

GLOSSARY

Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
Q	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

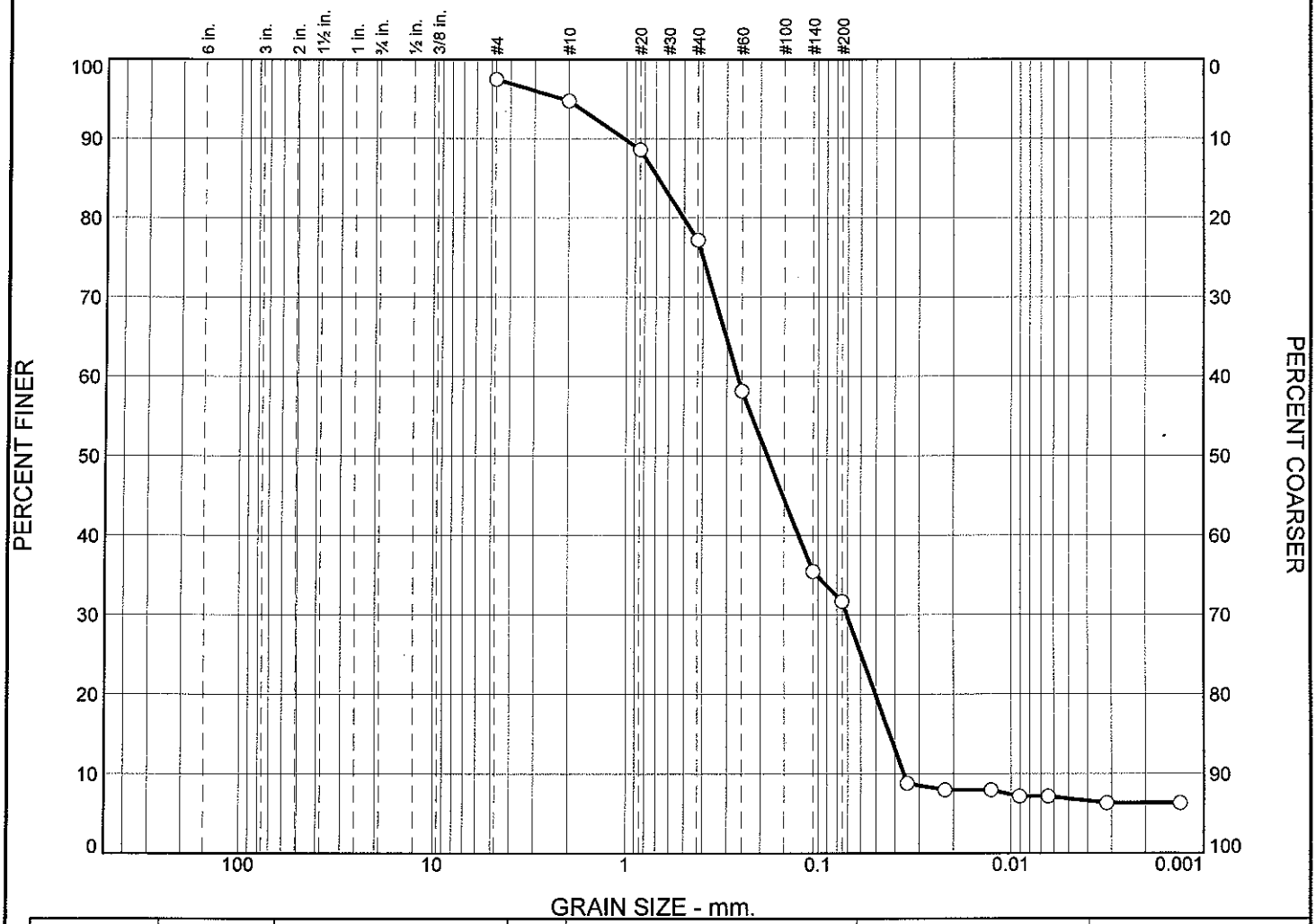
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.1	5.0	9.9	21.8	18.3	13.5	17.7	0.6	0.9	0.5	6.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6831	0.2633	0.1838	0.0709	0.0426	0.0360	0.53	7.32

	Material Description	USCS	AASHTO
○			

Project No. I0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504411 **Sample Number:** L0912915-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912915
Location: 504411
Sample Number: L0912915-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.09	0.00	#4	522.37	520.81	97.5	2.5
		#10	483.80	482.11	94.8	5.2
		#20	414.92	411.09	88.6	11.4
		#40	384.94	377.86	77.2	22.8
		#60	381.67	369.84	58.1	41.9
		#140	361.26	347.17	35.4	64.6
		#200	348.86	346.51	31.7	68.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 31.7
Weight of hydrometer sample =62.29
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0345	8.8	91.2
5.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0220	8.0	92.0
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	8.0	92.0
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	7.1	92.9
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	7.1	92.9
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	6.3	93.7
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	6.3	93.7

Fractional Components

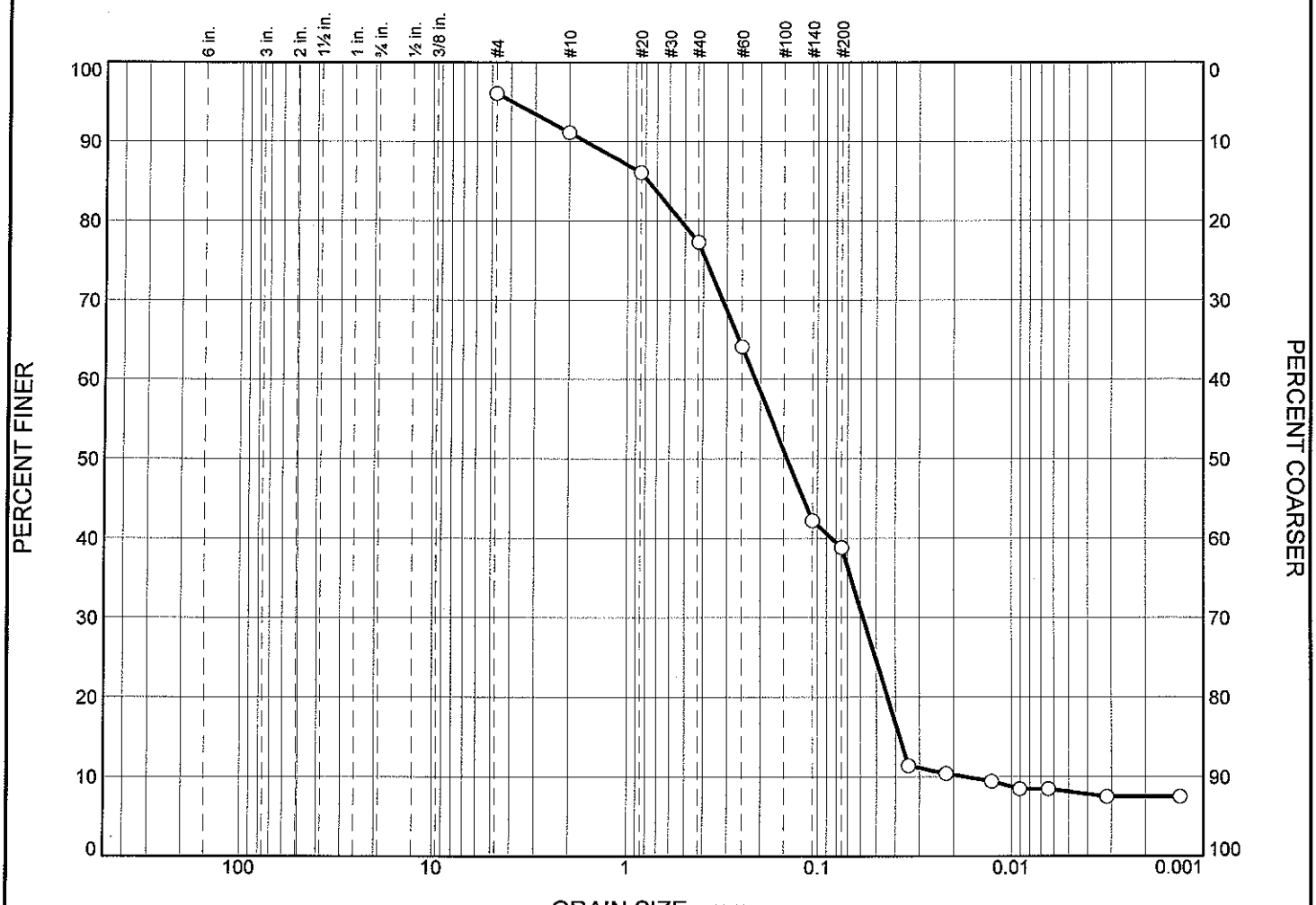
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.1	5.0	9.9	21.8	18.3	13.5	68.5	17.7	0.6	0.9	0.5	19.7	6.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0360	0.0426	0.0505	0.0709	0.1838	0.2633	0.5040	0.6831	1.0326	2.1546

Fineness Modulus	C_u	C_c
1.24	7.32	0.53

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.0	4.0	7.7	15.3	17.7	14.0	21.3	1.3	1.3	0.7	7.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7798	0.2127	0.1438	0.0583	0.0380	0.0176	0.91	12.10

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504412 **Sample Number:** L0912915-02

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504412
Sample Number: L0912915-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
64.50	0.00	#4	524.31	521.77	96.1	3.9
		#10	487.99	484.81	91.1	8.9
		#20	408.67	405.42	86.1	13.9
		#40	366.95	361.28	77.3	22.7
		#60	374.66	366.16	64.1	35.9
		#140	356.96	342.82	42.2	57.8
		#200	347.44	345.25	38.8	61.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 38.8
Weight of hydrometer sample =64.50
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0342	11.4	88.6
5.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0218	10.4	89.6
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	9.4	90.6
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	8.5	91.5
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	8.5	91.5
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	7.5	92.5
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	7.5	92.5

Fractional Components

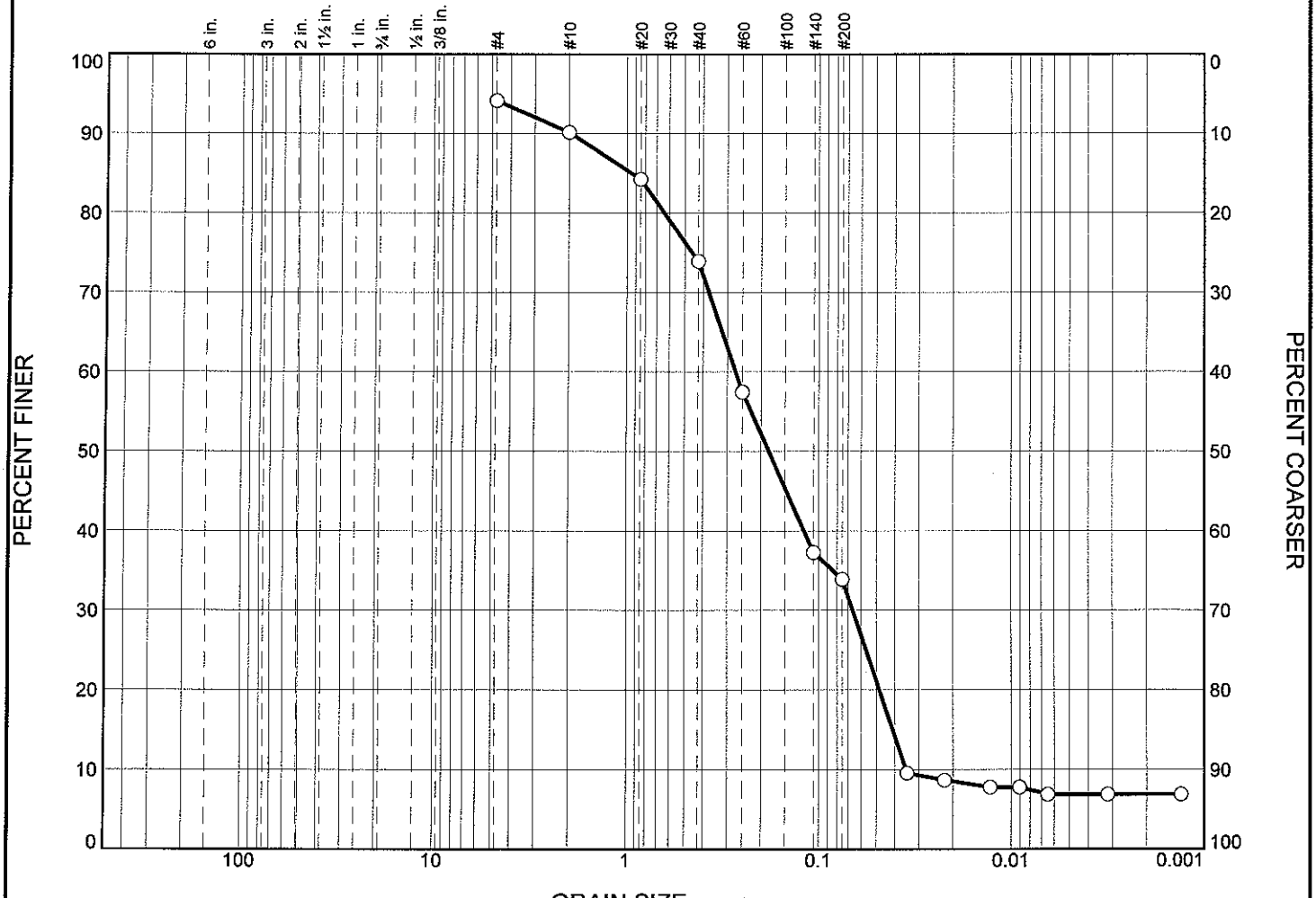
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.0	4.0	7.7	15.3	17.7	14.0	58.7	21.3	1.3	1.3	0.7	24.6	7.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0176	0.0380	0.0438	0.0583	0.1438	0.2127	0.5257	0.7798	1.6503	3.9425

Fineness Modulus	C_u	C_c
1.22	12.10	0.91

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.2	4.8	9.1	18.9	16.3	12.9	18.9	1.2	0.7	0.5	6.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9491	0.2715	0.1822	0.0663	0.0411	0.0350	0.46	7.75

	Material Description	USCS	AASHTO
○			

Project No. I0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504413 **Sample Number:** L0912915-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504413
Sample Number: L0912915-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
61.28	0.00	#4	524.39	520.81	94.2	5.8
		#10	484.56	482.11	90.2	9.8
		#20	414.72	411.09	84.2	15.8
		#40	384.19	377.86	73.9	26.1
		#60	379.93	369.84	57.4	42.6
		#140	359.53	347.17	37.3	62.7
		#200	348.59	346.51	33.9	66.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 33.9
Weight of hydrometer sample =61.28
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0345	9.5	90.5
5.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0220	8.7	91.3
15.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0128	7.8	92.2
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	7.8	92.2
60.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0065	6.9	93.1
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	6.9	93.1
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	6.9	93.1

Fractional Components

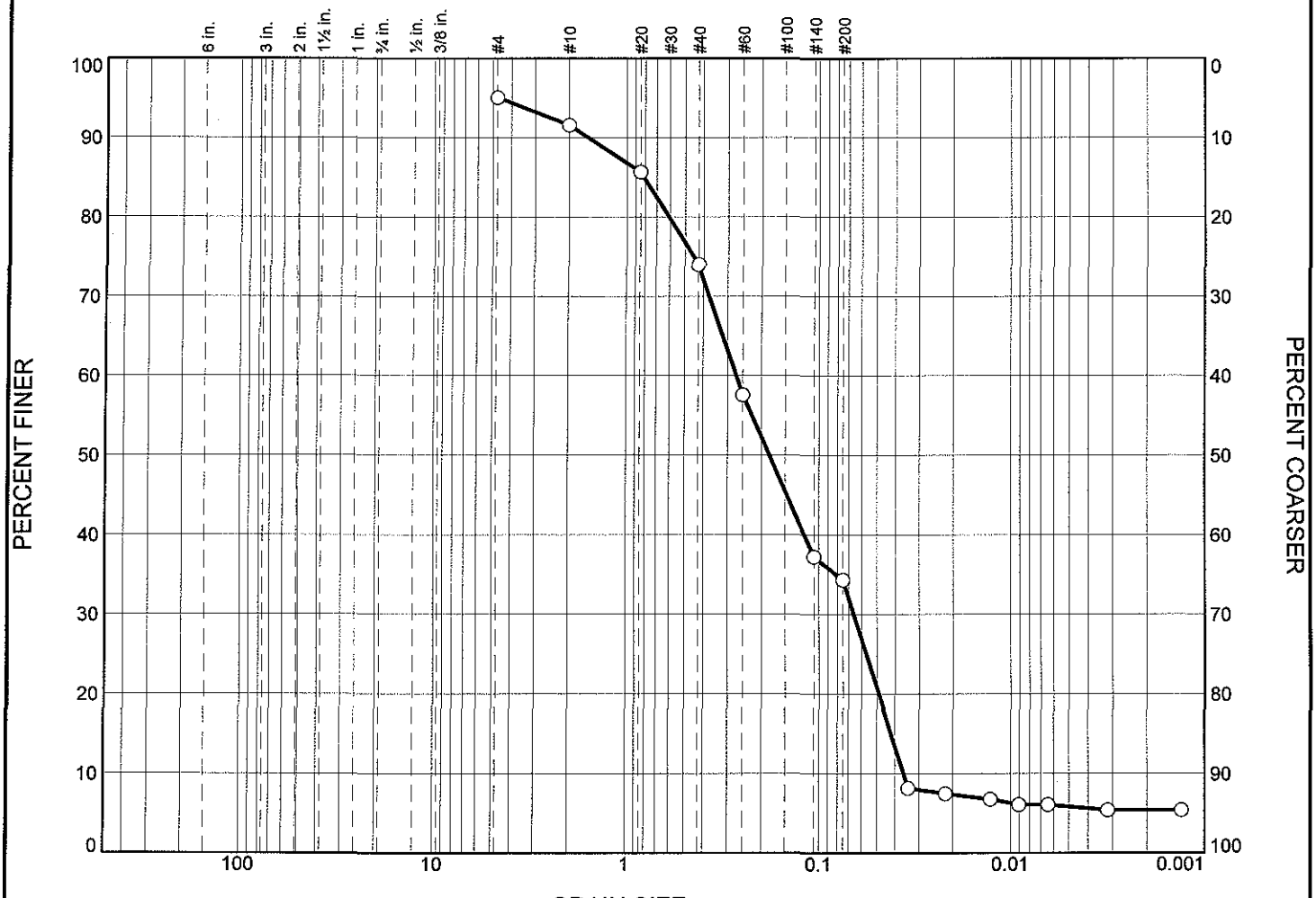
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.2	4.8	9.1	18.9	16.3	12.9	62.0	18.9	1.2	0.7	0.5	21.3	6.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0350	0.0411	0.0482	0.0663	0.1822	0.2715	0.6397	0.9491	1.9543	

Fineness Modulus	C_u	C_c
1.41	7.75	0.46

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.8	4.8	10.1	19.1	16.5	12.9	20.2	1.0	0.9	0.5	5.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8172	0.2703	0.1816	0.0659	0.0420	0.0362	0.44	7.47

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504426 **Sample Number:** L0912915-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504426
Sample Number: L0912915-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.51	0.00	#4	525.70	521.77	95.1	4.9
		#10	487.58	484.81	91.6	8.4
		#20	410.12	405.42	85.7	14.3
		#40	370.56	361.28	74.0	26.0
		#60	379.20	366.16	57.6	42.4
		#140	359.02	342.82	37.2	62.8
		#200	347.55	345.25	34.3	65.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 34.3
Weight of hydrometer sample =79.51
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0342	8.1	91.9
5.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0218	7.5	92.5
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	6.8	93.2
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	6.1	93.9
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	6.1	93.9
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	5.4	94.6
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	5.4	94.6

Fractional Components

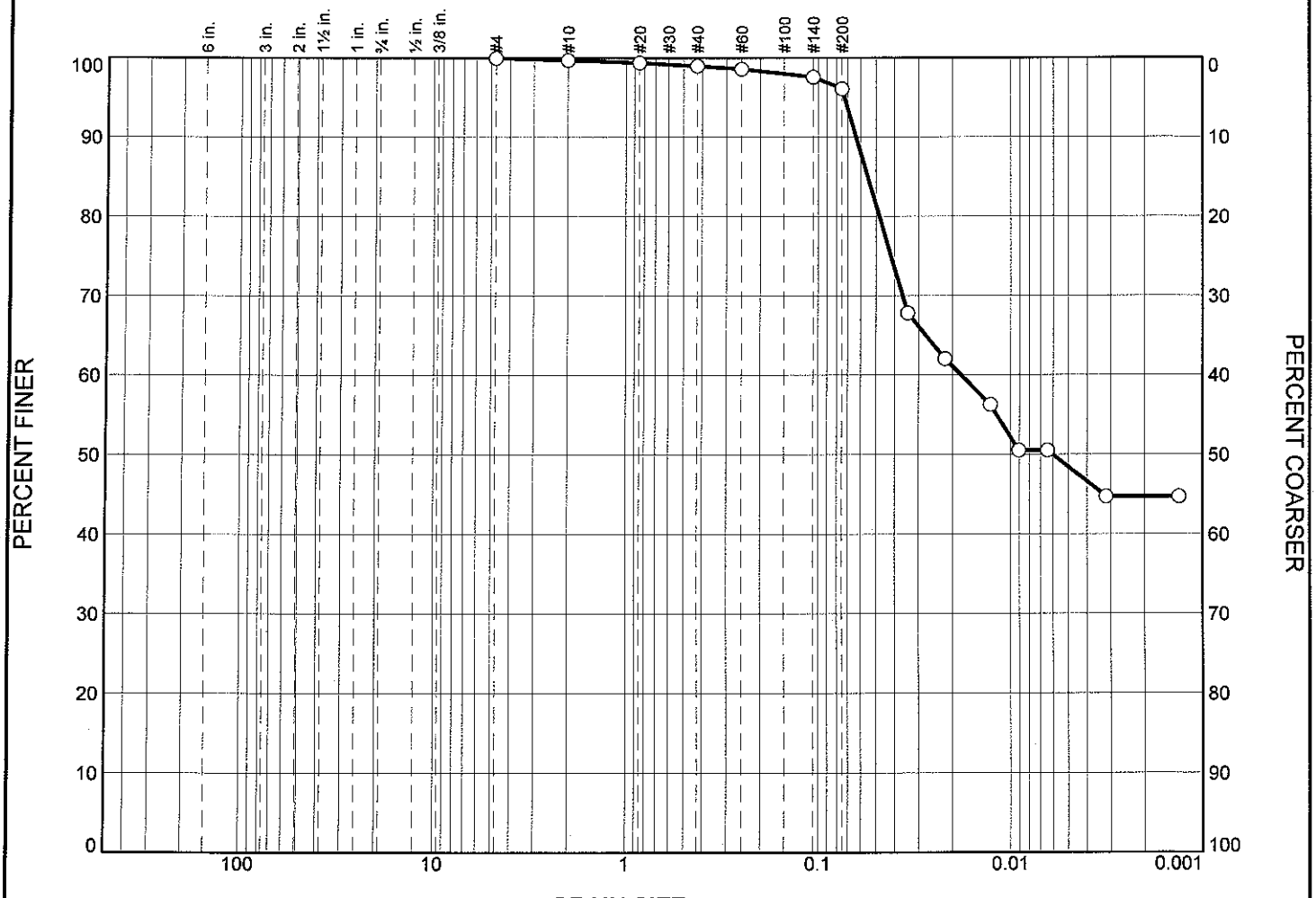
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.8	4.8	10.1	19.1	16.5	12.9	63.4	20.2	1.0	0.9	0.5	22.6	5.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0362	0.0420	0.0488	0.0659	0.1816	0.2703	0.6073	0.8172	1.5926	4.6830

Fineness Modulus	C_u	C_c
1.36	7.47	0.44

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.3	0.4	0.4	0.8	8.3	23.0	8.1	7.9	4.1	46.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0551	0.0181	0.0060					

Material Description	USCS	AASHTO
○		

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504511 **Sample Number:** L0912915-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504511
Sample Number: L0912915-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
26.74	0.00	#4	520.82	520.81	100.0	0.0
		#10	482.18	482.11	99.7	0.3
		#20	411.18	411.09	99.4	0.6
		#40	377.97	377.86	99.0	1.0
		#60	369.94	369.84	98.6	1.4
		#140	347.44	347.17	97.6	2.4
		#200	346.91	346.51	96.1	3.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 96.1
Weight of hydrometer sample =26.74
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0342	67.8	32.2
5.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0218	62.0	38.0
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	56.3	43.7
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	50.5	49.5
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	50.5	49.5
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	44.7	55.3
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	44.7	55.3

Fractional Components

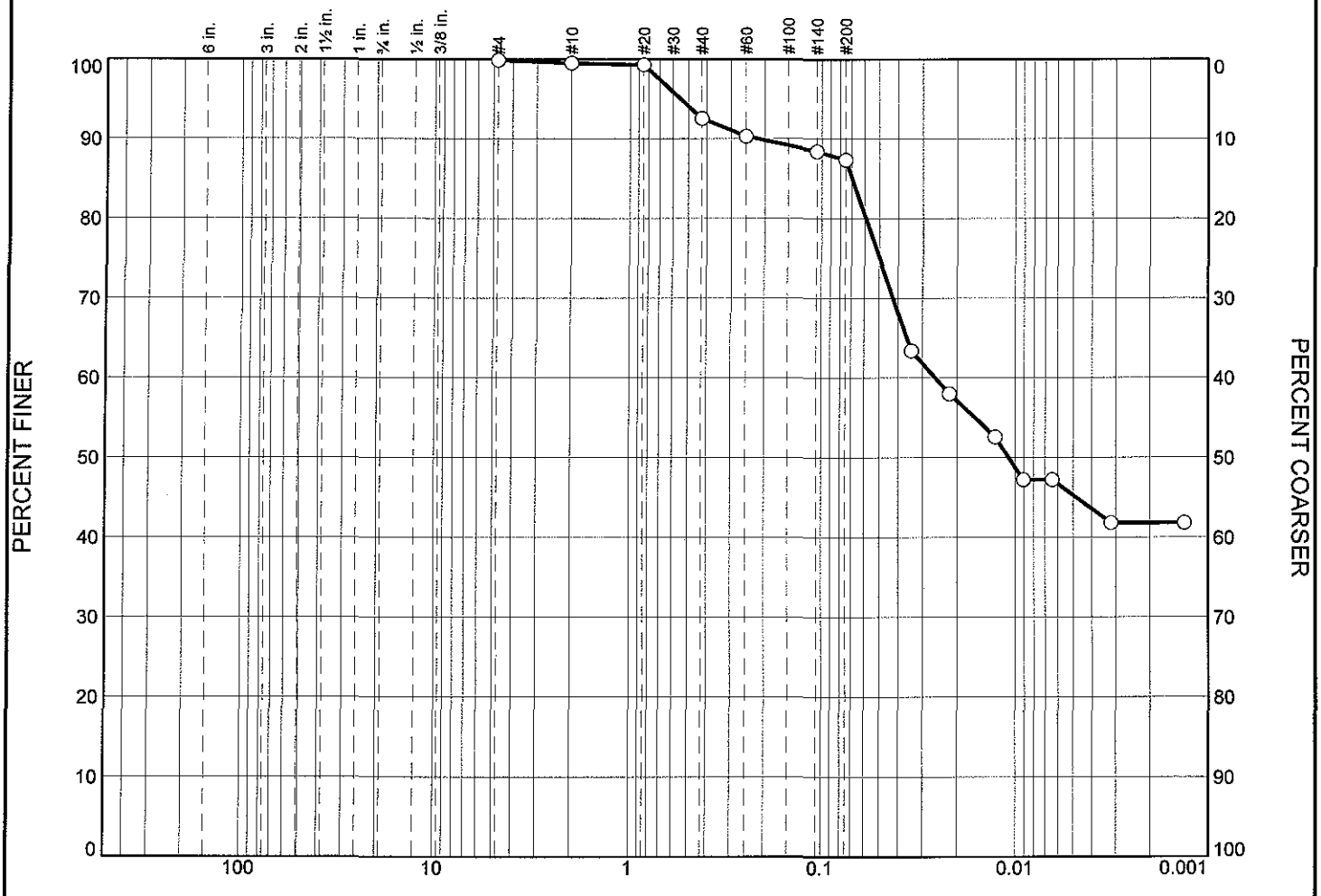
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.3	0.4	0.4	0.8	8.3	10.2	23.0	8.1	7.9	4.1	43.1	46.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0060	0.0181	0.0480	0.0551	0.0634	0.0728

Fineness Modulus
0.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.2	5.2	3.8	1.5	7.0	19.6	7.6	7.4	3.8	43.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0694	0.0258	0.0108					

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504512 **Sample Number:** L0912915-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504512
Sample Number: L0912915-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
26.01	0.00	#4	521.80	521.77	99.9	0.1
		#10	484.91	484.81	99.5	0.5
		#20	405.47	405.42	99.3	0.7
		#40	363.04	361.28	92.5	7.5
		#60	366.74	366.16	90.3	9.7
		#140	343.31	342.82	88.4	11.6
		#200	345.53	345.25	87.4	12.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 87.4
Weight of hydrometer sample =26.01
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0342	63.4	36.6
5.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0218	58.0	42.0
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	52.6	47.4
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	47.2	52.8
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	47.2	52.8
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	41.8	58.2
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	41.8	58.2

Fractional Components

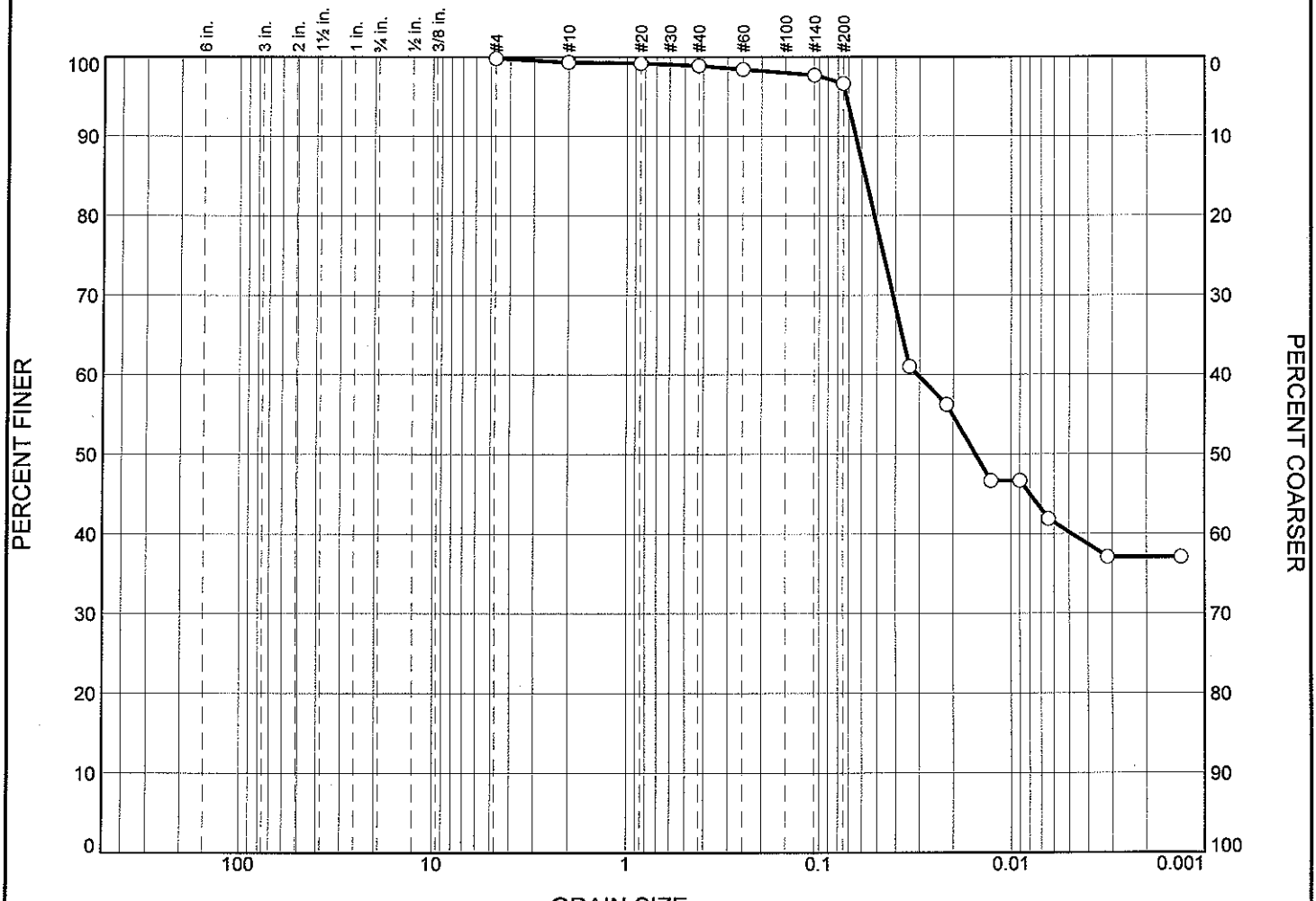
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.2	5.2	3.8	1.5	7.0	17.7	19.6	7.6	7.4	3.8	38.4	43.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0108	0.0258	0.0590	0.0694	0.2169	0.5467

Fineness Modulus
0.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	0.1	0.2	0.6	0.5	9.4	28.4	9.7	5.7	6.2	38.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0578	0.0307	0.0153					

Material Description	USCS	AASHTO
○		

Project No. I0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504513 **Sample Number:** L0912915-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504513
Sample Number: L0912915-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
32.42	0.00	#4	520.87	520.81	99.8	0.2
		#10	482.27	482.11	99.3	0.7
		#20	411.13	411.09	99.2	0.8
		#40	377.96	377.86	98.9	1.1
		#60	369.99	369.84	98.4	1.6
		#140	347.40	347.17	97.7	2.3
		#200	346.86	346.51	96.6	3.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 96.6
Weight of hydrometer sample =32.42
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0339	61.0	39.0
5.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0216	56.2	43.8
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	46.7	53.3
30.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0090	46.7	53.3
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	41.9	58.1
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	37.1	62.9
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	37.1	62.9

Fractional Components

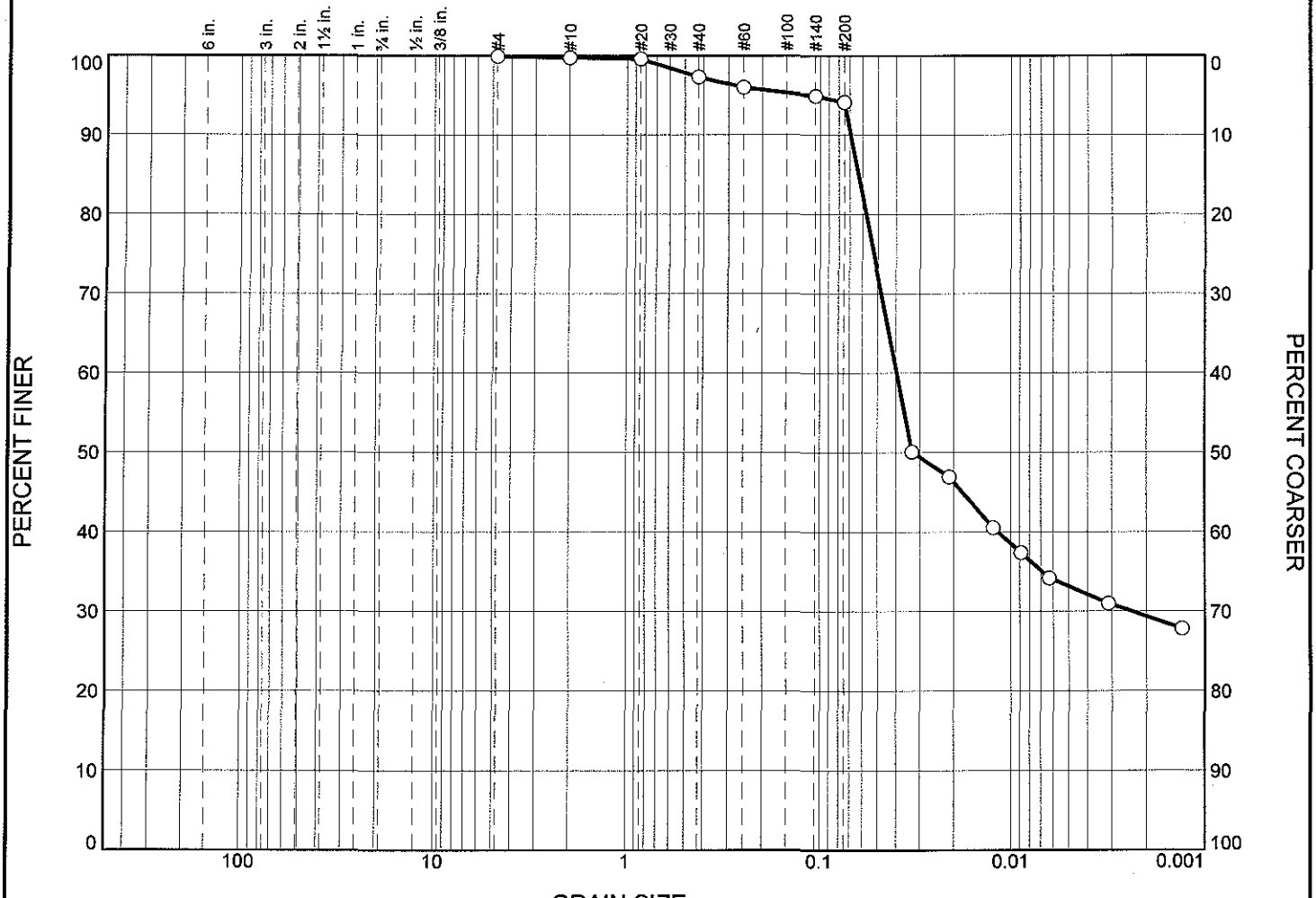
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	0.1	0.2	0.6	0.5	9.4	10.8	28.4	9.7	5.7	6.2	50.0	38.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0153	0.0307	0.0517	0.0578	0.0647	0.0723

Fineness Modulus
0.06

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.1	1.8	1.8	0.9	10.7	34.7	6.4	7.1	4.2	32.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0632	0.0396	0.0325	0.0024				

Material Description	USCS	AASHTO
○		

Project No. I0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504526 **Sample Number:** L0912915-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912915
Location: 504526
Sample Number: L0912915-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
47.55	0.00	#4	521.81	521.77	99.9	0.1
		#10	484.89	484.81	99.7	0.3
		#20	405.50	405.42	99.6	0.4
		#40	362.37	361.28	97.3	2.7
		#60	366.78	366.16	96.0	4.0
		#140	343.34	342.82	94.9	5.1
		#200	345.60	345.25	94.2	5.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.2
Weight of hydrometer sample =47.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0150	1.0157	0.0128	12.0	13.1	0.0329	50.1	49.9
5.00	25.0	1.0140	1.0147	0.0128	11.0	13.4	0.0210	46.9	53.1
15.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0124	40.5	59.5
30.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0088	37.4	62.6
60.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0063	34.2	65.8
250.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0031	31.0	69.0
1440.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0013	27.8	72.2

Fractional Components

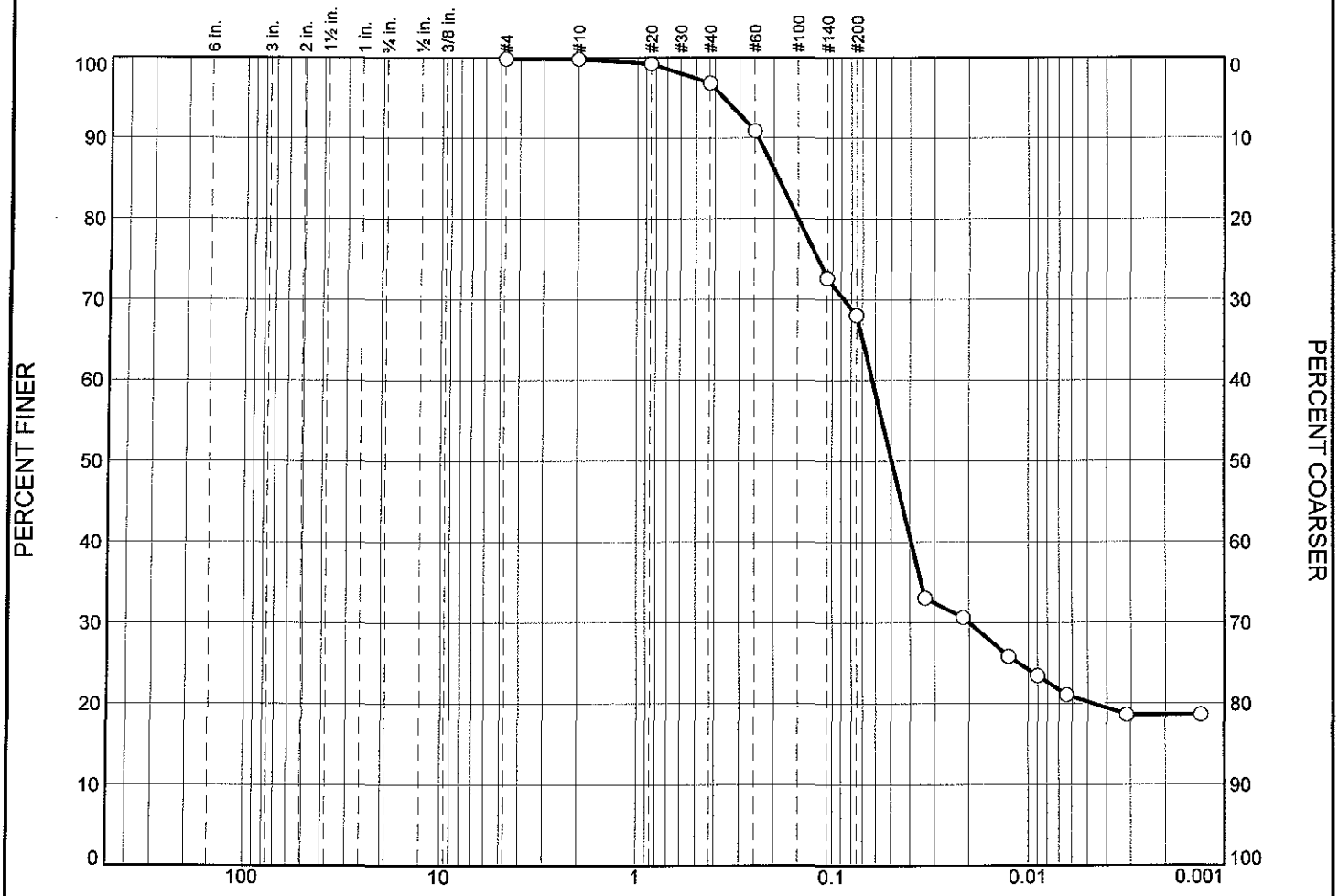
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.1	1.8	1.8	0.9	10.7	15.3	34.7	6.4	7.1	4.2	52.4	32.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0024	0.0325	0.0396	0.0576	0.0632	0.0694	0.1156

Fineness Modulus
0.10

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.0	0.5	1.9	6.5	14.8	16.0	27.5	4.8	5.4	3.1	19.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1895	0.0624	0.0495	0.0199				

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504611 **Sample Number:** L0912915-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504611
Sample Number: L0912915-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.43	0.00	#4	520.88	520.81	99.8	0.2
		#10	482.13	482.11	99.8	0.2
		#20	411.36	411.09	99.2	0.8
		#40	378.94	377.86	96.8	3.2
		#60	372.54	369.84	90.9	9.1
		#140	355.46	347.17	72.6	27.4
		#200	348.61	346.51	68.0	32.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 68.0
Weight of hydrometer sample =45.43
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0130	1.0137	0.0128	10.0	13.6	0.0336	33.1	66.9
5.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0214	30.7	69.3
15.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0126	25.8	74.2
30.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0090	23.4	76.6
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	21.0	79.0
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	18.6	81.4
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	18.6	81.4

Fractional Components

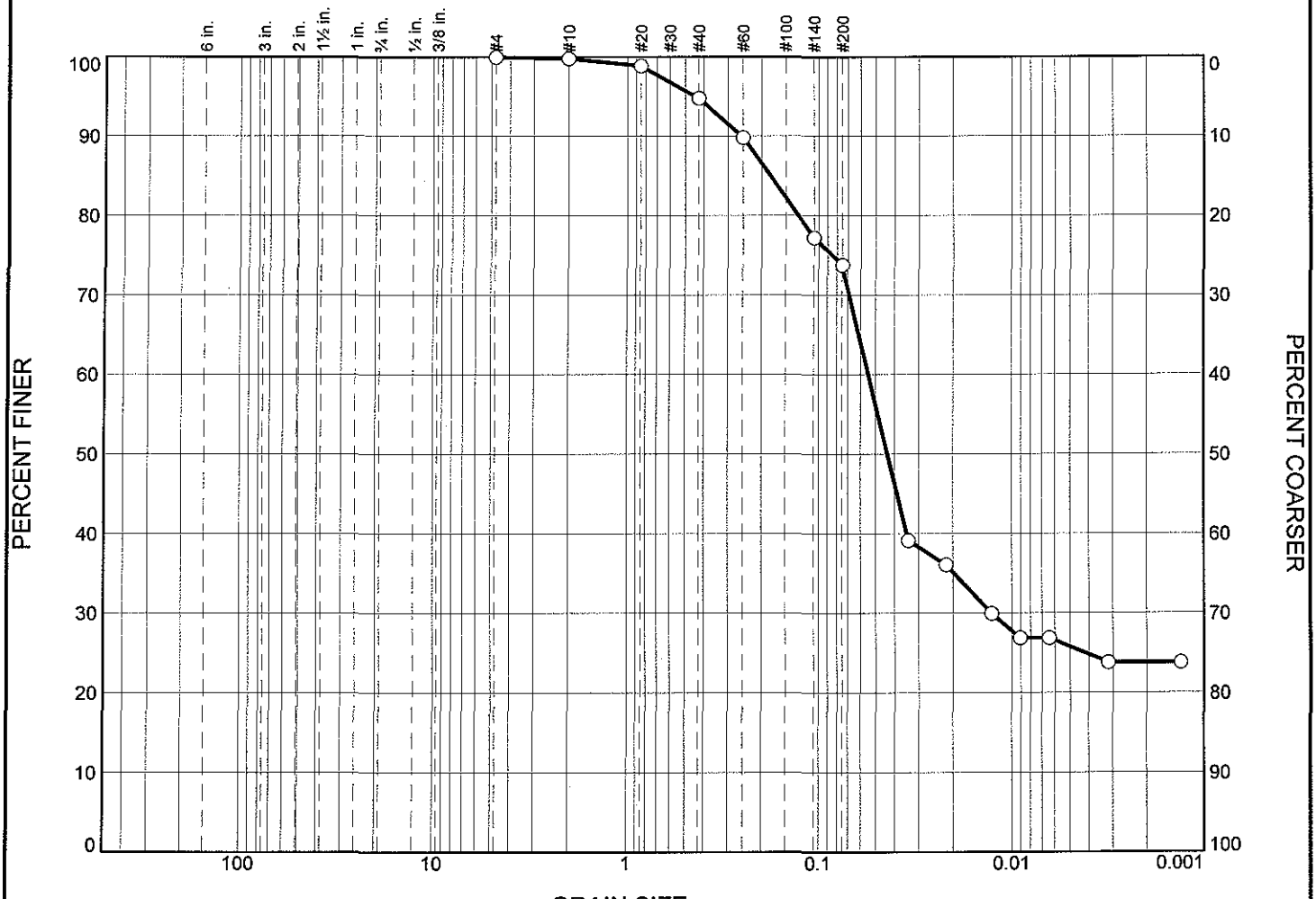
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.0	0.5	1.9	6.5	14.8	16.0	39.7	27.5	4.8	5.4	3.1	40.8	19.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0047	0.0199	0.0495	0.0624	0.1498	0.1895	0.2398	0.3609

Fineness Modulus
0.30

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.8	3.3	5.9	10.2	13.8	27.3	6.2	5.4	2.2	24.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1803	0.0547	0.0435	0.0128				

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504612 **Sample Number:** L0912915-10

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504612
Sample Number: L0912915-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
38.89	0.00	#4	521.79	521.77	99.9	0.1
		#10	484.88	484.81	99.8	0.2
		#20	405.78	405.42	98.8	1.2
		#40	362.87	361.28	94.8	5.2
		#60	368.09	366.16	89.8	10.2
		#140	347.71	342.82	77.2	22.8
		#200	346.60	345.25	73.7	26.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 73.7
Weight of hydrometer sample =38.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0339	39.1	60.9
5.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0216	36.1	63.9
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	29.9	70.1
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	26.9	73.1
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	26.9	73.1
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	23.8	76.2
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	23.8	76.2

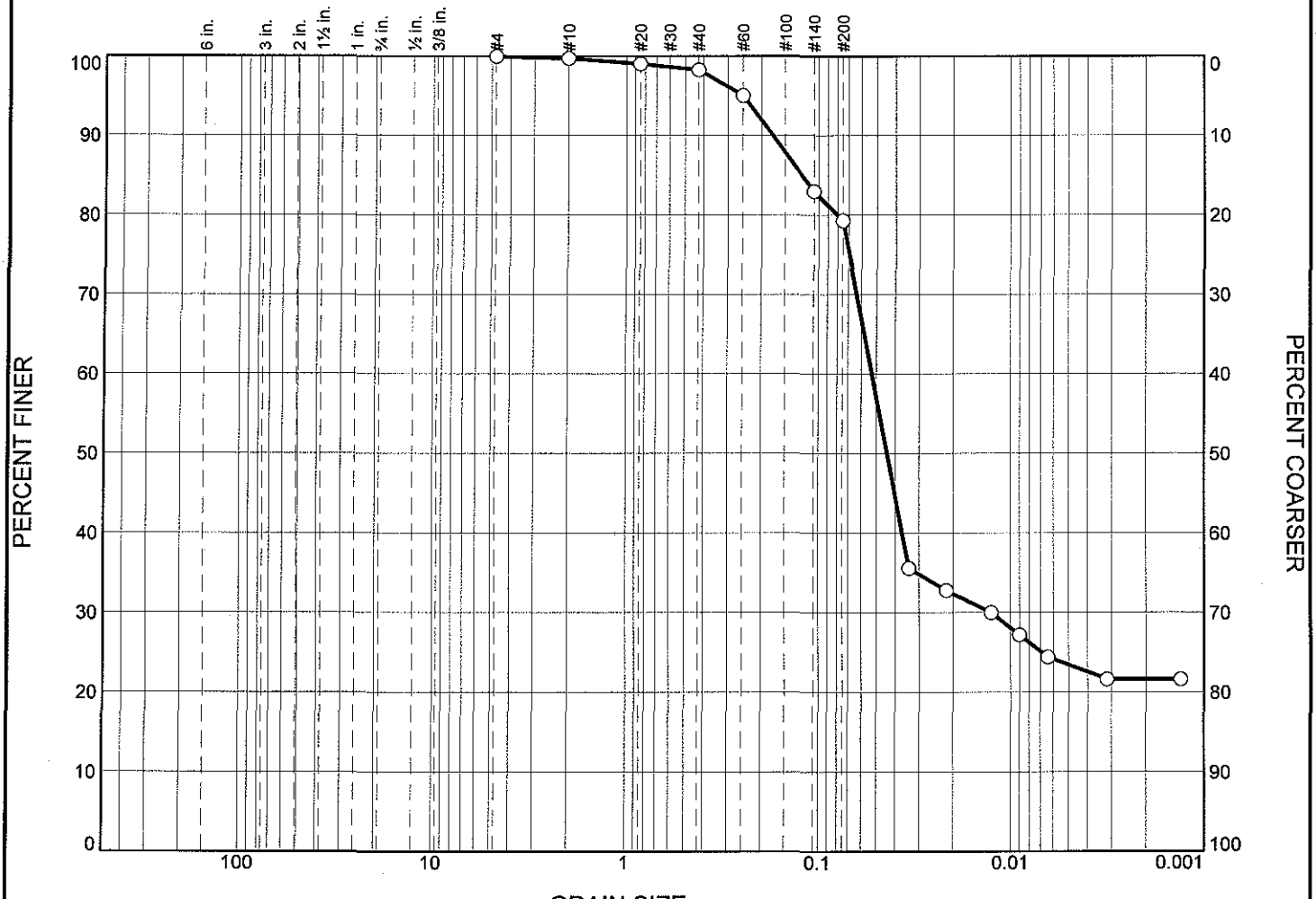
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.8	3.3	5.9	10.2	13.8	34.0	27.3	6.2	5.4	2.2	41.1	24.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0128	0.0435	0.0547	0.1282	0.1803	0.2556	0.4431

Fineness Modulus
0.30

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.6	0.7	3.4	9.7	16.1	34.2	3.9	5.1	3.6	22.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1224	0.0528	0.0441	0.0127				

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504613 **Sample Number:** L0912915-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504613
Sample Number: L0912915-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.66	0.00	#4	520.84	520.81	99.9	0.1
		#10	482.22	482.11	99.7	0.3
		#20	411.40	411.09	99.0	1.0
		#40	378.21	377.86	98.2	1.8
		#60	371.31	369.84	95.0	5.0
		#140	352.67	347.17	83.0	17.0
		#200	348.20	346.51	79.3	20.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 79.3
Weight of hydrometer sample =45.66
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0339	35.6	64.4
5.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0216	32.8	67.2
15.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0126	30.0	70.0
30.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0090	27.2	72.8
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	24.4	75.6
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	21.6	78.4
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	21.6	78.4

Fractional Components

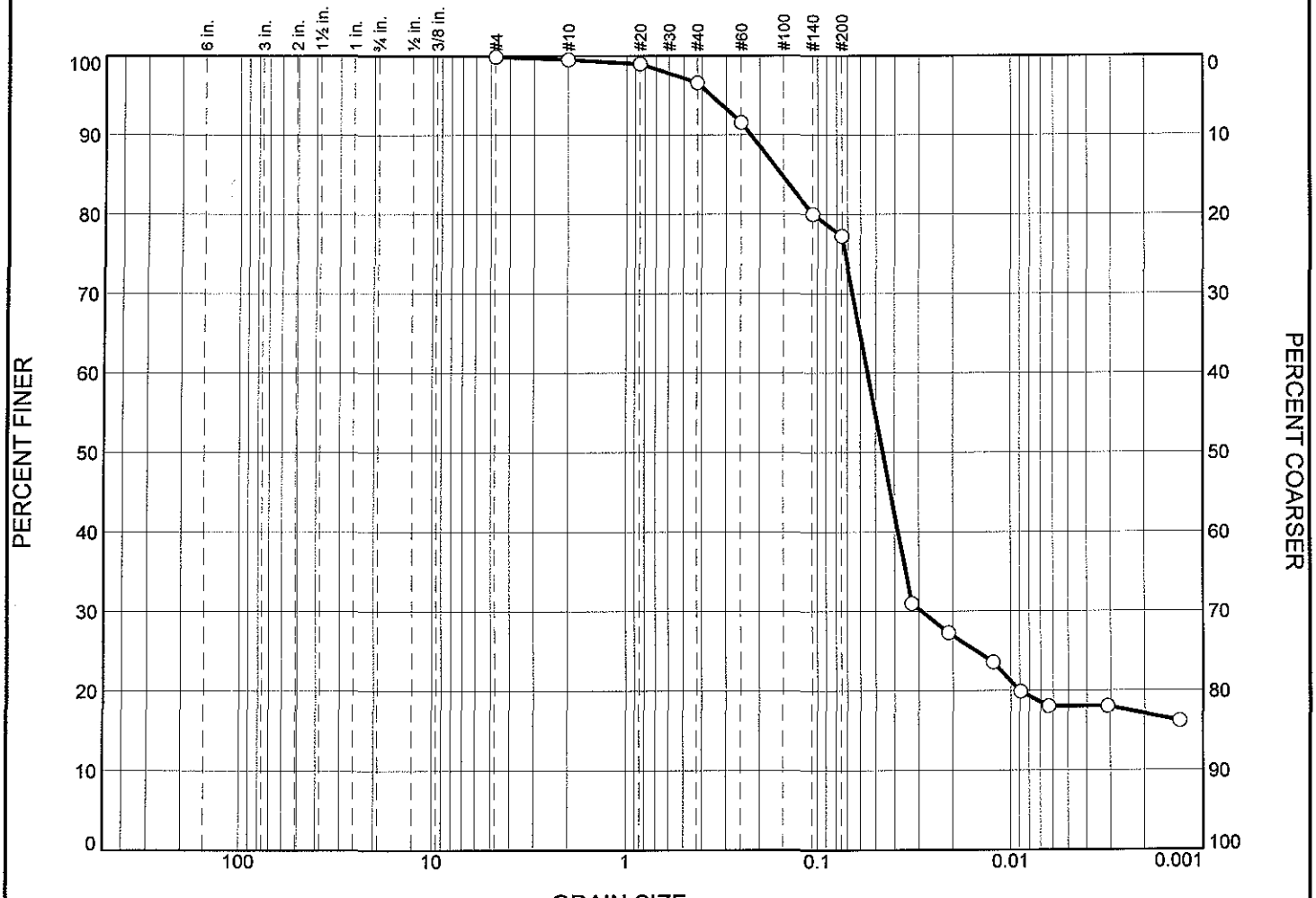
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.6	0.7	3.4	9.7	16.1	30.5	34.2	3.9	5.1	3.6	46.8	22.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0127	0.0441	0.0528	0.0802	0.1224	0.1747	0.2495

Fineness Modulus
0.18

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	0.4	2.0	5.5	9.4	15.1	36.5	5.4	6.0	1.2	18.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1535	0.0550	0.0459	0.0290				

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504626 **Sample Number:** L0912915-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504626
Sample Number: L0912915-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
67.06	0.00	#4	521.86	521.77	99.9	0.1
		#10	485.05	484.81	99.5	0.5
		#20	405.79	405.42	99.0	1.0
		#40	362.87	361.28	96.6	3.4
		#60	369.52	366.16	91.6	8.4
		#140	350.58	342.82	80.0	20.0
		#200	347.11	345.25	77.2	22.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 77.2
Weight of hydrometer sample =67.06
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0160	1.0167	0.0128	13.0	12.9	0.0326	31.0	69.0
5.00	25.0	1.0140	1.0147	0.0128	11.0	13.4	0.0210	27.3	72.7
15.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0124	23.6	76.4
30.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0089	19.9	80.1
60.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0064	18.0	82.0
250.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0031	18.0	82.0
1440.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0013	16.2	83.8

Fractional Components

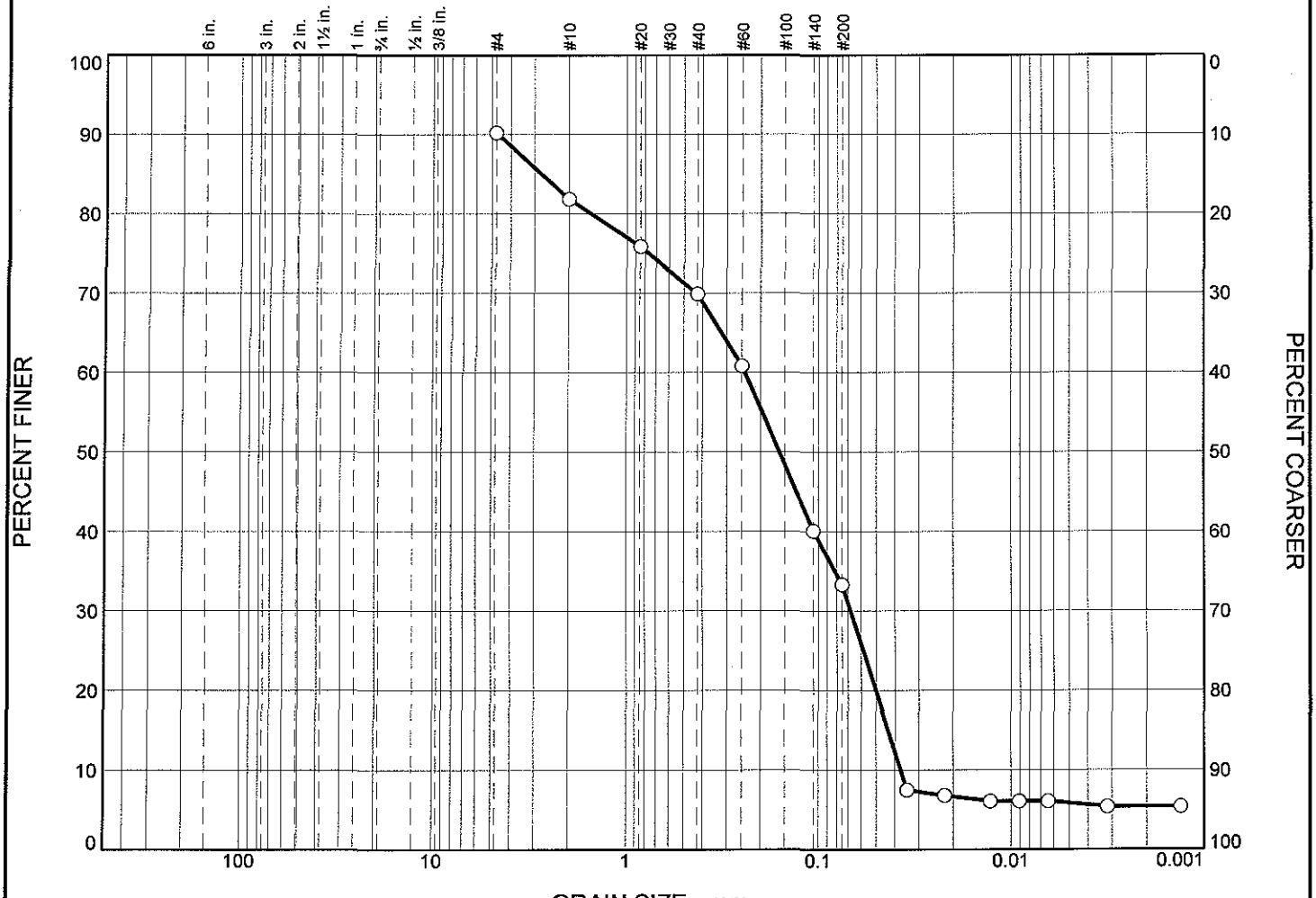
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	0.4	2.0	5.5	9.4	15.1	32.4	36.5	5.4	6.0	1.2	49.1	18.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0090	0.0290	0.0459	0.0550	0.1060	0.1535	0.2224	0.3593

Fineness Modulus
0.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.7	4.8	5.7	10.5	16.7	16.9	19.9	1.0	0.2	0.5	5.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.7709	0.2417	0.1598	0.0679	0.0433	0.0372	0.51	6.49

	Material Description	USCS	AASHTO
○			

Project No. 10912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504711 **Sample Number:** L0912915-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504711
Sample Number: L0912915-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
76.91	0.00	#4	528.34	520.81	90.2	9.8
		#10	488.54	482.11	81.8	18.2
		#20	415.70	411.09	75.9	24.1
		#40	382.47	377.86	69.9	30.1
		#60	376.80	369.84	60.8	39.2
		#140	363.12	347.17	40.1	59.9
		#200	351.72	346.51	33.3	66.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 33.3
Weight of hydrometer sample =76.91
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0345	7.5	92.5
5.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0220	6.8	93.2
15.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0128	6.1	93.9
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	6.1	93.9
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	6.1	93.9
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	5.4	94.6
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	5.4	94.6

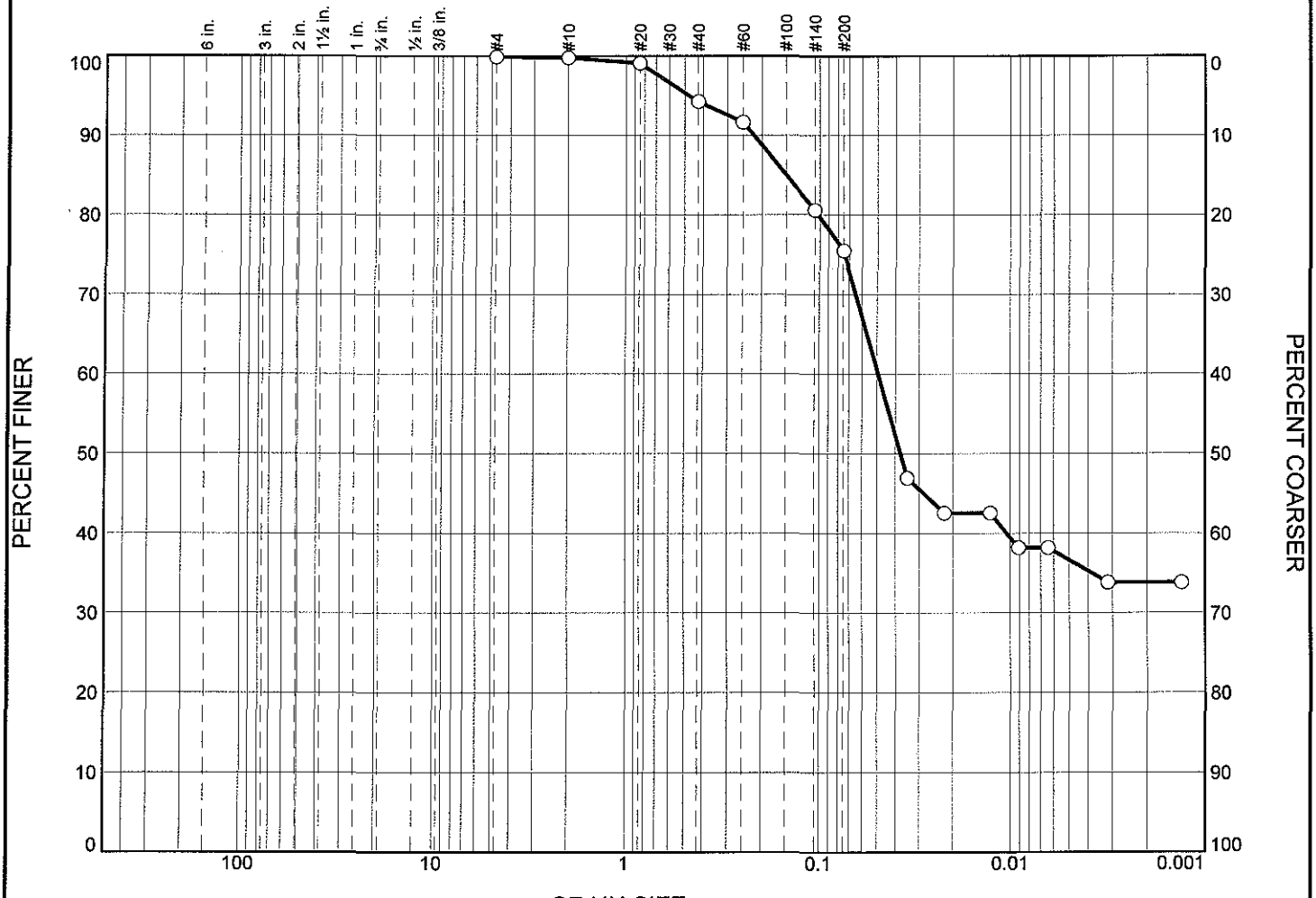
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.7	4.8	5.7	10.5	16.7	16.9	54.6	19.9	1.0	0.2	0.5	21.6	5.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0372	0.0433	0.0503	0.0679	0.1598	0.2417	1.5360	2.7709	4.6482	

Fineness Modulus	C_u	C_c
1.63	6.49	0.51

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.6	3.8	3.7	9.0	13.9	22.9	3.4	4.3	3.1	35.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1491	0.0493	0.0375					

Material Description	USCS	AASHTO
○		

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504712 **Sample Number:** L0912915-14

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504712
Sample Number: L0912915-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
27.79	0.00	#4	521.80	521.77	99.9	0.1
		#10	484.84	484.81	99.8	0.2
		#20	405.62	405.42	99.1	0.9
		#40	362.62	361.28	94.2	5.8
		#60	366.88	366.16	91.7	8.3
		#140	345.89	342.82	80.6	19.4
		#200	346.67	345.25	75.5	24.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 75.5
Weight of hydrometer sample =27.79
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0345	46.9	53.1
5.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0220	42.5	57.5
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	42.5	57.5
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	38.2	61.8
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	38.2	61.8
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	33.8	66.2
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	33.8	66.2

Fractional Components

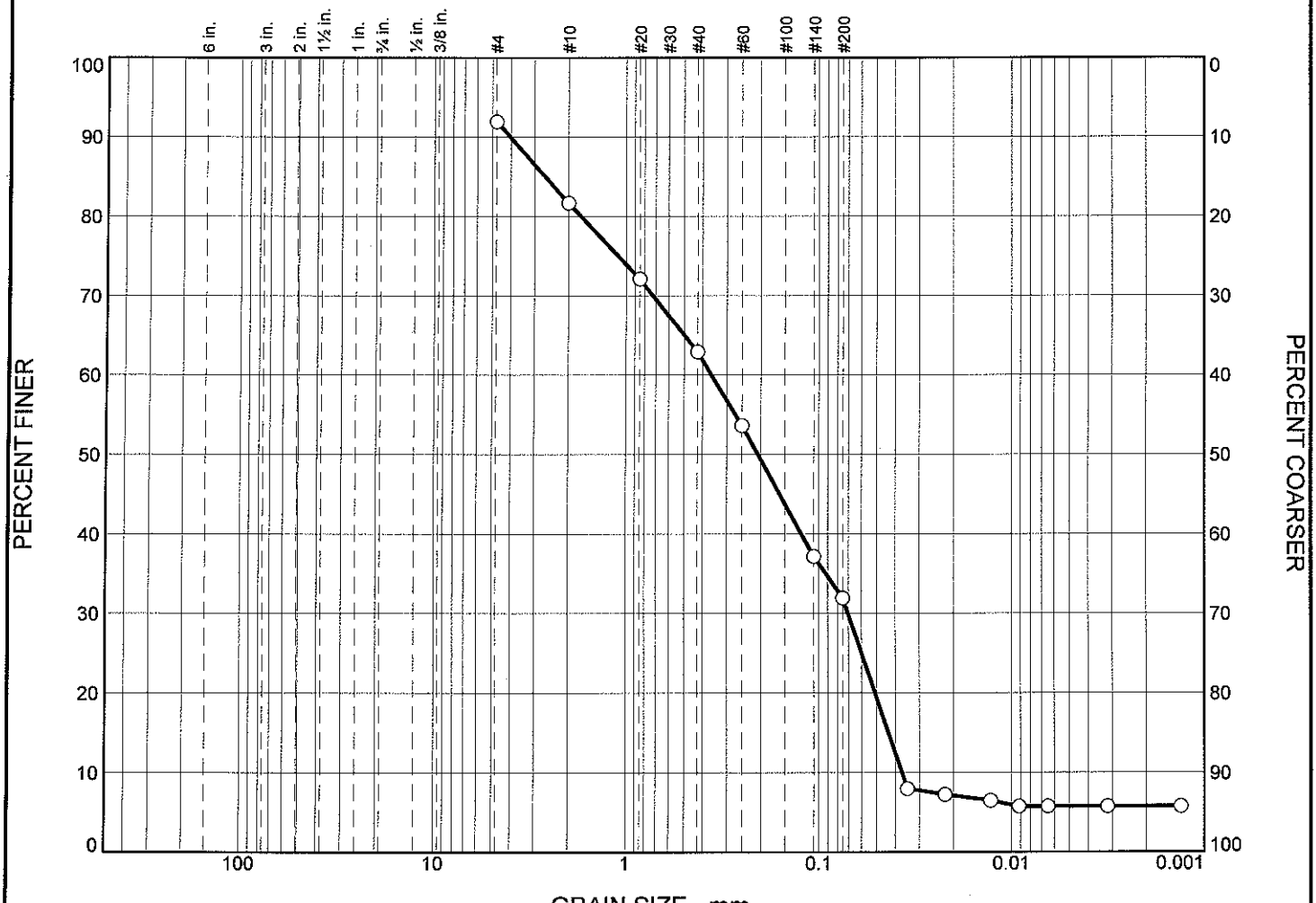
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.6	3.8	3.7	9.0	13.9	31.0	22.9	3.4	4.3	3.1	33.7	35.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0375	0.0493	0.1017	0.1491	0.2199	0.4739

Fineness Modulus
0.27

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				8.2	7.8	8.8	11.5	13.3	14.0	18.5	1.1	1.0		5.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.6503	0.3601	0.2070	0.0705	0.0434	0.0369	0.37	9.76

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504713 **Sample Number:** L0912915-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912915
Location: 504713
Sample Number: L0912915-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.24	0.00	#4	526.40	520.81	91.9	8.1
		#10	489.22	482.11	81.7	18.3
		#20	417.72	411.09	72.1	27.9
		#40	384.22	377.86	62.9	37.1
		#60	376.26	369.84	53.6	46.4
		#140	358.57	347.17	37.2	62.8
		#200	350.14	346.51	31.9	68.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 31.9
Weight of hydrometer sample =69.24
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0345	8.0	92.0
5.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0220	7.2	92.8
15.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0128	6.5	93.5
30.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0092	5.7	94.3
60.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0065	5.7	94.3
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	5.7	94.3
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	5.7	94.3

Fractional Components

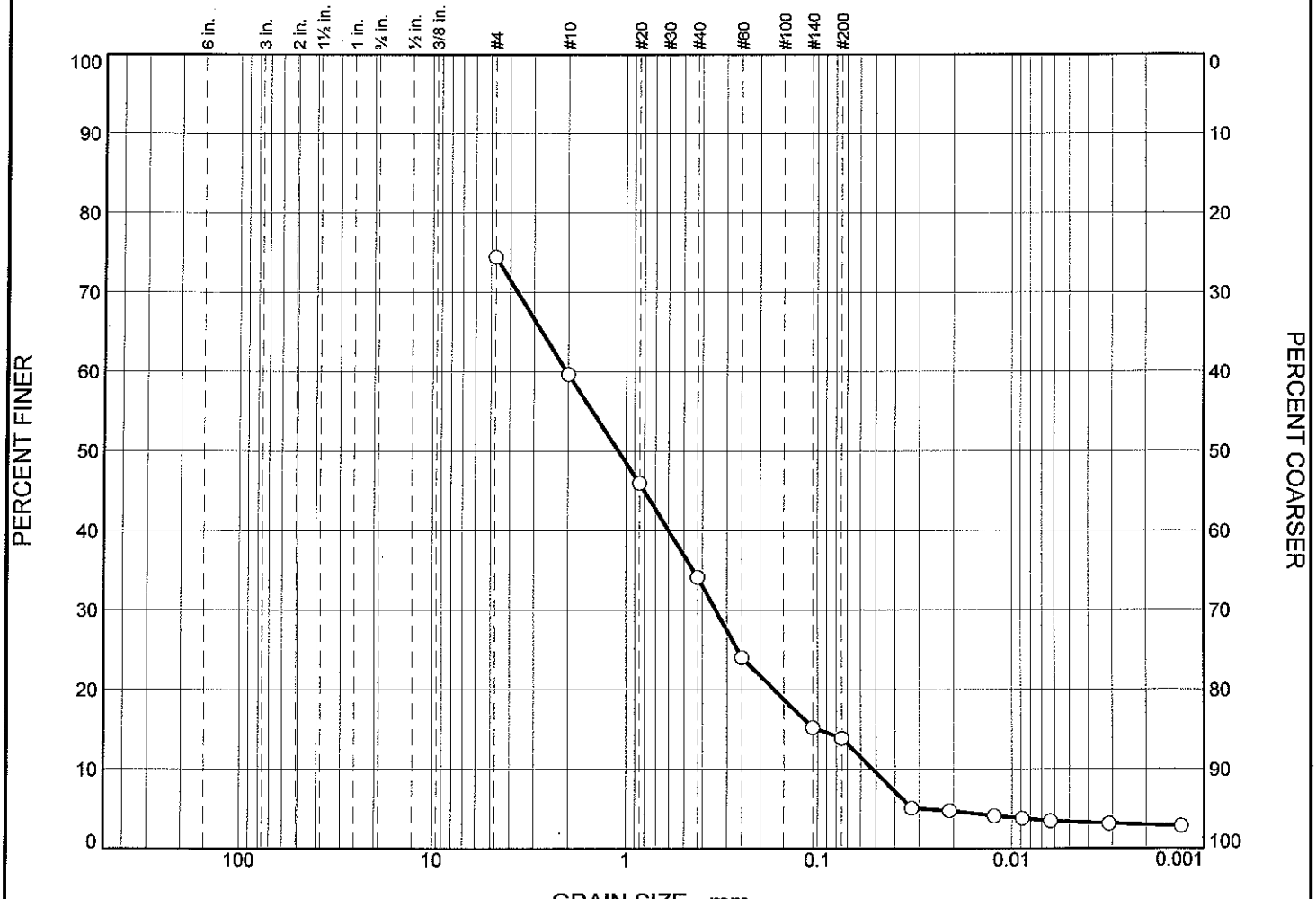
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			8.2	7.8	8.8	11.5	13.3	14.0	55.4	18.5	1.1	1.0		20.6	5.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0369	0.0434	0.0510	0.0705	0.2070	0.3601	1.7246	2.6503	4.0384	

Fineness Modulus	C_u	C_c
1.81	9.76	0.37

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				11.9	11.0	11.7	12.9	7.1	5.0	6.9	0.6	0.7	0.5	3.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.0424	1.0943	0.3422	0.1003	0.0521	1.10	39.17

	Material Description	USCS	AASHTO
○			

Project No. 10912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504726 **Sample Number:** L0912915-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504726
Sample Number: L0912915-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.08	0.00	#4	539.42	521.77	74.4	25.6
		#10	495.04	484.81	59.6	40.4
		#20	414.87	405.42	46.0	54.0
		#40	369.45	361.28	34.1	65.9
		#60	373.15	366.16	24.0	76.0
		#140	348.90	342.82	15.2	84.8
		#200	346.17	345.25	13.9	86.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 13.9
Weight of hydrometer sample =69.08
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0150	1.0157	0.0128	12.0	13.1	0.0329	5.1	94.9
5.00	25.0	1.0140	1.0147	0.0128	11.0	13.4	0.0210	4.8	95.2
15.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0124	4.1	95.9
30.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0088	3.8	96.2
60.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0063	3.5	96.5
250.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0031	3.1	96.9
1440.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0013	2.8	97.2

Fractional Components

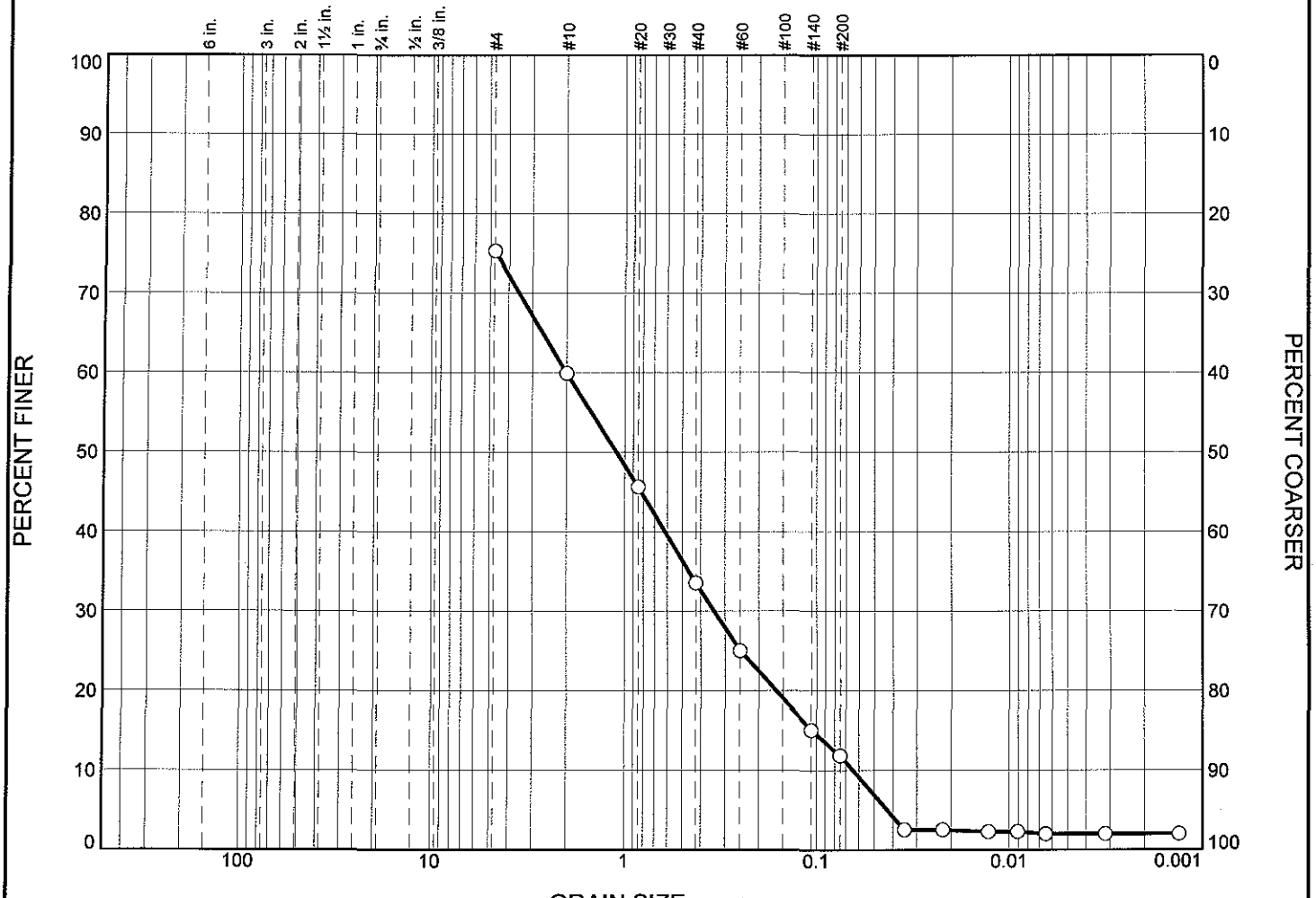
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			11.9	11.0	11.7	12.9	7.1	5.0	47.7	6.9	0.6	0.7	0.5	8.7	3.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0521	0.1003	0.1690	0.3422	1.0943	2.0424				

Fineness Modulus	C_u	C_c
3.26	39.17	1.10

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				12.3	11.6	12.0	11.3	8.1	7.3	7.1	0.1	0.2	0.2	2.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.0126	1.1055	0.3413	0.1057	0.0644	0.90	31.24

	Material Description	USCS	AASHTO
○			

Project No. I0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504811 **Sample Number:** L0912915-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504811
Sample Number: L0912915-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
73.02	0.00	#4	538.84	520.81	75.3	24.7
		#10	493.37	482.11	59.9	40.1
		#20	421.51	411.09	45.6	54.4
		#40	386.70	377.86	33.5	66.5
		#60	376.04	369.84	25.0	75.0
		#140	354.47	347.17	15.0	85.0
		#200	348.83	346.51	11.8	88.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 11.8
Weight of hydrometer sample =73.02
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0348	2.5	97.5
5.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0220	2.5	97.5
15.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0128	2.3	97.7
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	2.3	97.7
60.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0065	2.0	98.0
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	2.0	98.0
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	2.0	98.0

Fractional Components

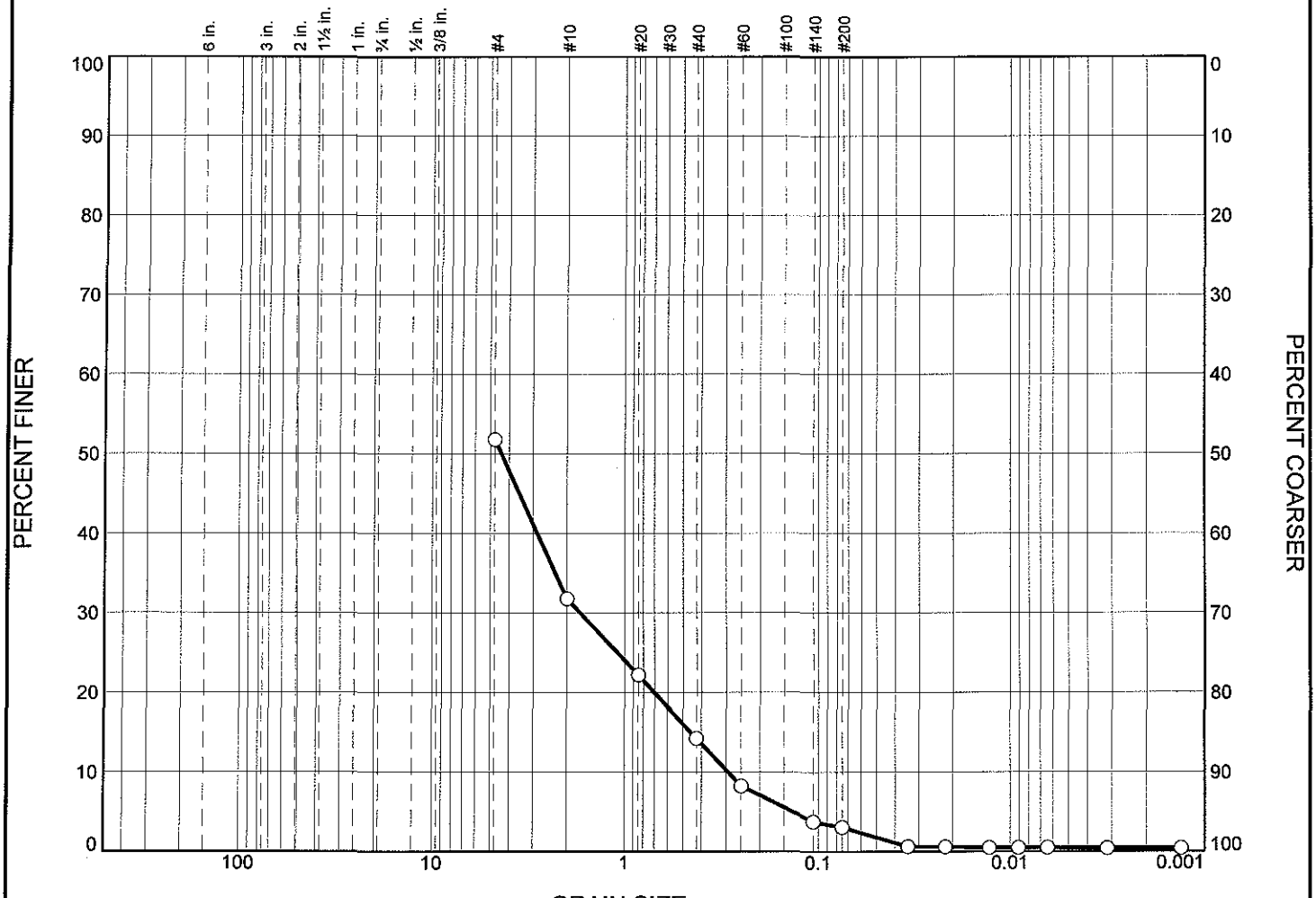
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			12.3	11.6	12.0	11.3	8.1	7.3	50.3	7.1	0.1	0.2	0.2	7.6	2.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0644	0.1057	0.1625	0.3413	1.1055	2.0126				

Fineness Modulus	C_u	C_c
3.24	31.24	0.90

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				16.0	7.8	8.0	7.8	3.6	2.1	1.9	0.1	0.0	0.1	0.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○					4.3983	1.7104	0.4564	0.2931		

	Material Description	USCS	AASHTO
○		SP	

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504812 **Sample Number:** L0912915-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504812
Sample Number: L0912915-18
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 125.96
Tare Wt. = 4.58

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
90.13	0.00	#4	565.23	521.77	51.8	48.2
		#10	502.86	484.81	31.8	68.2
		#20	414.07	405.42	22.2	77.8
		#40	368.47	361.28	14.2	85.8
		#60	371.54	366.16	8.2	91.8
		#140	346.86	342.82	3.7	96.3
		#200	345.86	345.25	3.1	96.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.1
Weight of hydrometer sample =90.13
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0342	0.6	99.4
5.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0218	0.6	99.4
15.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0128	0.5	99.5
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	0.5	99.5
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	0.5	99.5
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	0.4	99.6
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	0.4	99.6

Fractional Components

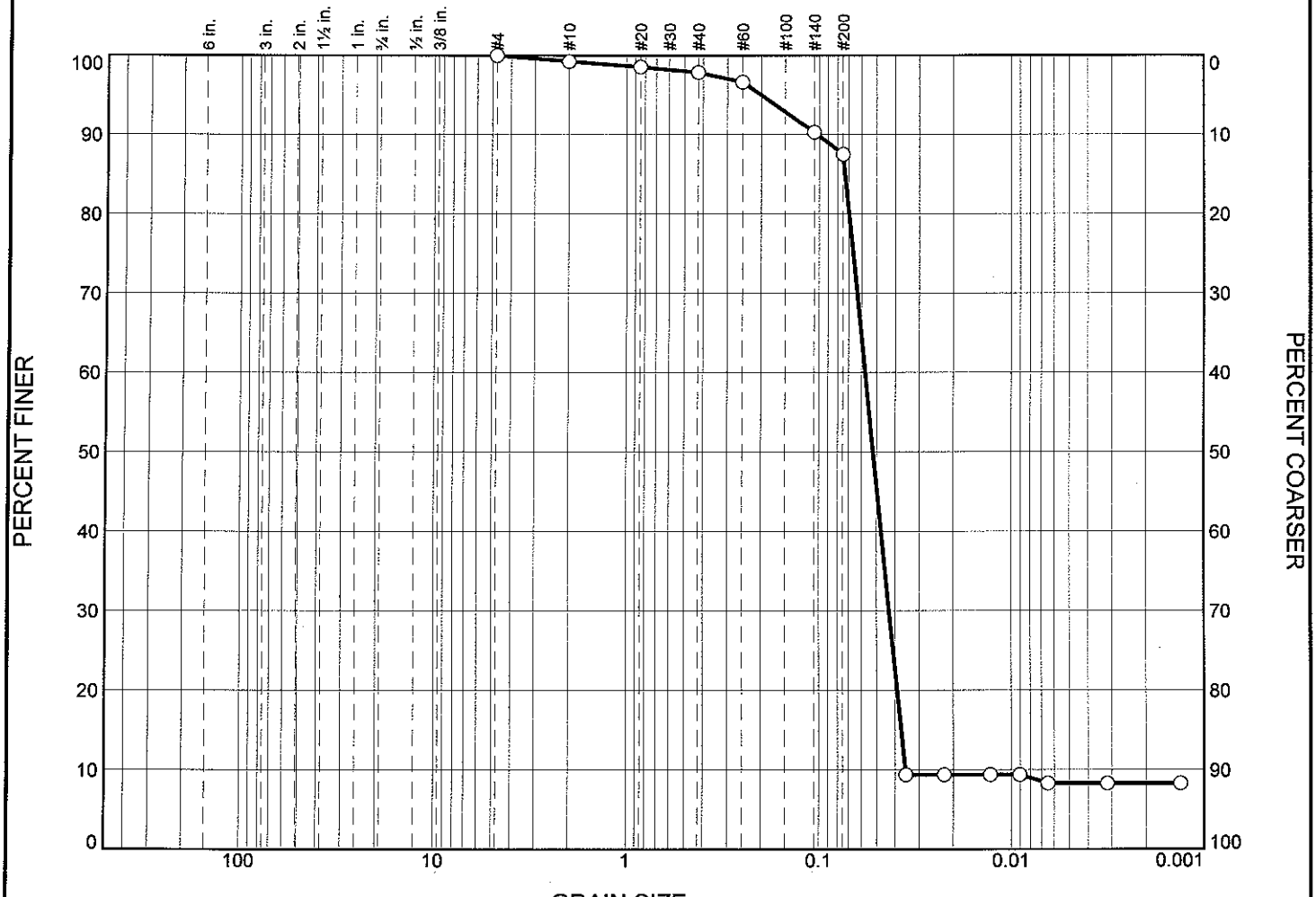
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			16.0	7.8	8.0	7.8	3.6	2.1	29.3	1.9	0.1	0.0	0.1	2.1	0.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2931	0.4564	0.7047	1.7104	4.3983					

Fineness Modulus
4.53

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.2	0.6	0.5	0.7	1.4	5.1	22.8	59.3	0.0	0.5	0.6	8.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0732	0.0574	0.0521	0.0429	0.0371	0.0354	0.91	1.62

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504813 **Sample Number:** L0912915-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504813
Sample Number: L0912915-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
131.36	0.00	#4	520.81	520.81	100.0	0.0
		#10	483.11	482.11	99.2	0.8
		#20	412.03	411.09	98.5	1.5
		#40	378.75	377.86	97.8	2.2
		#60	371.46	369.84	96.6	3.4
		#140	355.47	347.17	90.3	9.7
		#200	350.18	346.51	87.5	12.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 87.5
Weight of hydrometer sample =131.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0351	9.4	90.6
5.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0222	9.4	90.6
15.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0128	9.4	90.6
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	9.4	90.6
60.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0065	8.3	91.7
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	8.3	91.7
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	8.3	91.7

Fractional Components

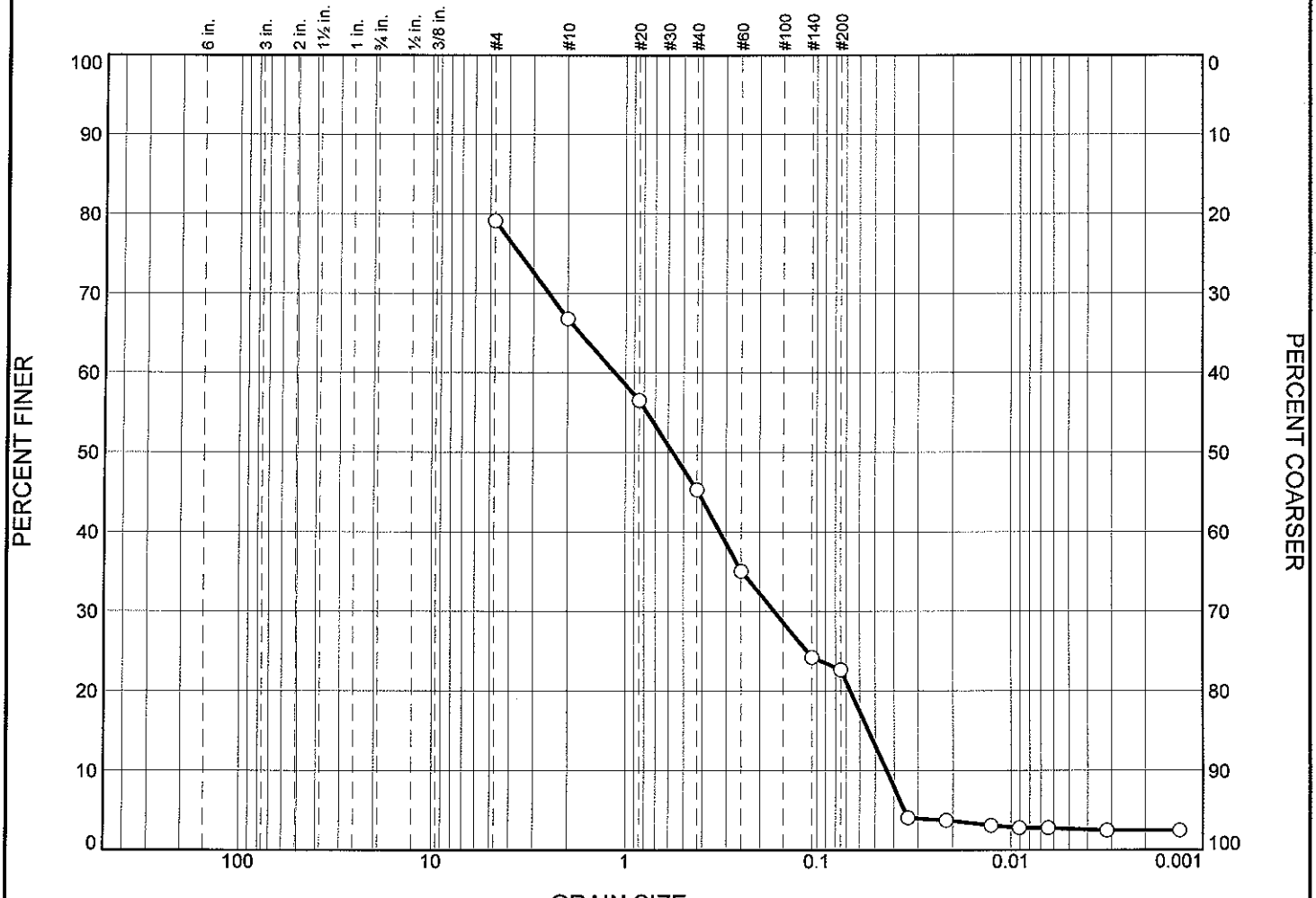
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.2	0.6	0.5	0.7	1.4	5.1	22.8	30.5	59.3	0.0	0.5	0.6	60.4	8.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0354	0.0371	0.0390	0.0429	0.0521	0.0574	0.0697	0.0732	0.1022	0.2008

Fineness Modulus	C_u	C_c
0.14	1.62	0.91

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				9.9	8.3	10.6	12.8	8.8	7.9	14.4	0.6	0.6	0.2	2.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.1366	0.5688	0.1675	0.0541	0.0437	0.57	26.03

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504826 **Sample Number:** L0912915-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504826
Sample Number: L0912915-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
114.15	0.00	#4	545.61	521.77	79.1	20.9
		#10	498.89	484.81	66.8	33.2
		#20	417.14	405.42	56.5	43.5
		#40	374.11	361.28	45.3	54.7
		#60	377.82	366.16	35.1	64.9
		#140	355.20	342.82	24.2	75.8
		#200	347.03	345.25	22.7	77.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 22.7
Weight of hydrometer sample =114.15
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0339	4.1	95.9
5.00	25.0	1.0110	1.0117	0.0128	8.0	14.2	0.0216	3.7	96.3
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	3.1	96.9
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	2.8	97.2
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	2.8	97.2
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	2.5	97.5
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	2.5	97.5

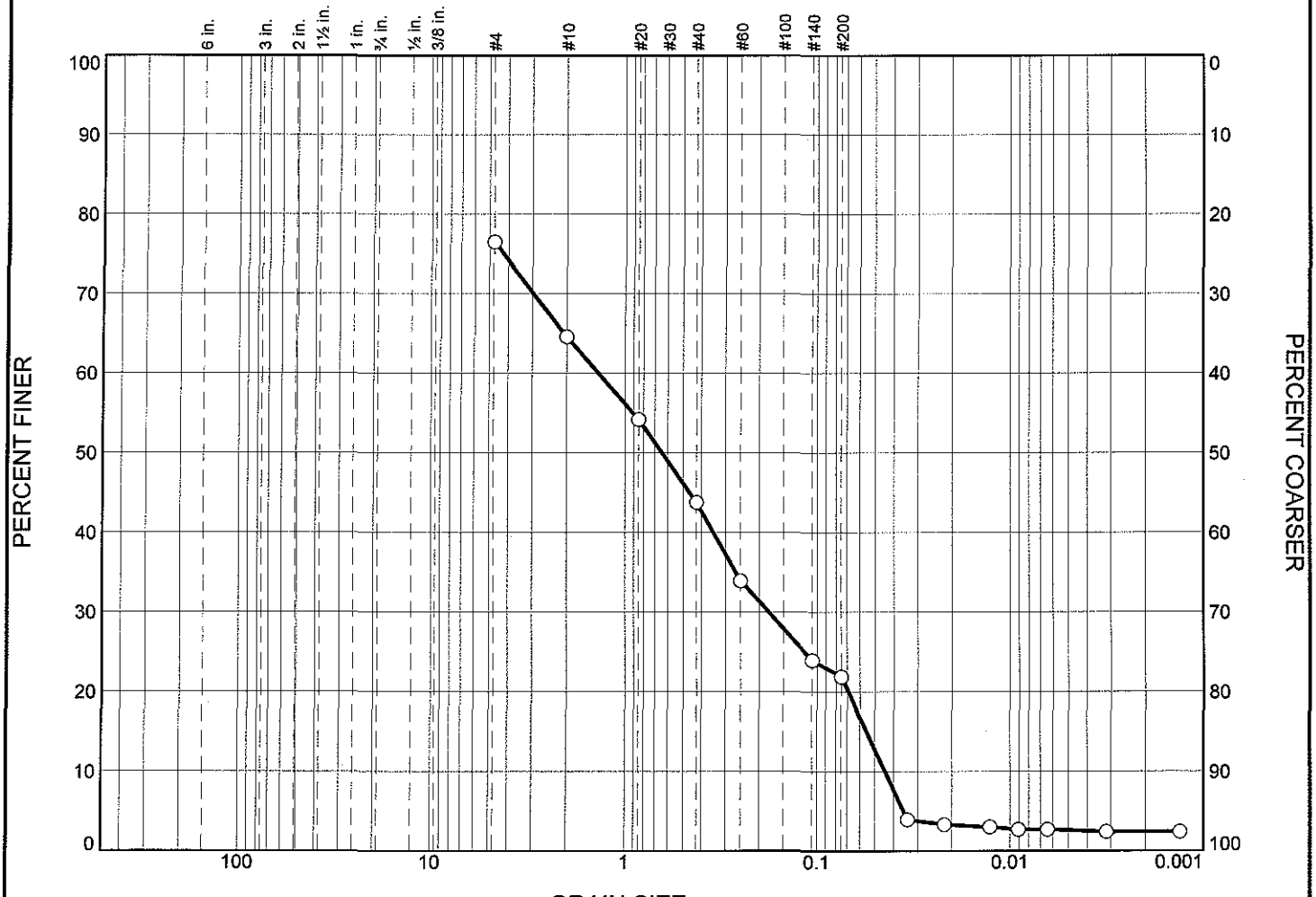
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			9.9	8.3	10.6	12.8	8.8	7.9	48.4	14.4	0.6	0.6	0.2	15.8	2.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0437	0.0541	0.0670	0.1675	0.5688	1.1366				

Fineness Modulus	C_u	C_c
2.73	26.03	0.57

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				9.6	8.5	9.9	12.3	8.1	8.1	13.9	0.7	0.4	0.2	2.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.3725	0.6443	0.1788	0.0553	0.0443	0.53	30.96

	Material Description	USCS	AASHTO
○			

Project No. l0912915 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504826 **Sample Number:** WG383817-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912915
Location: 504826
Sample Number: WG383817-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
113.76	0.00	#4	547.51	520.81	76.5	23.5
		#10	495.70	482.11	64.6	35.4
		#20	422.94	411.09	54.2	45.8
		#40	389.72	377.86	43.7	56.3
		#60	381.03	369.84	33.9	66.1
		#140	358.55	347.17	23.9	76.1
		#200	348.83	346.51	21.9	78.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 21.9
Weight of hydrometer sample =113.76
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	25.0	1.0120	1.0127	0.0128	9.0	13.9	0.0339	3.9	96.1
5.00	25.0	1.0100	1.0107	0.0128	7.0	14.4	0.0218	3.3	96.7
15.00	25.0	1.0090	1.0097	0.0128	6.0	14.7	0.0127	3.0	97.0
30.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0091	2.7	97.3
60.00	25.0	1.0080	1.0087	0.0128	5.0	15.0	0.0064	2.7	97.3
250.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0032	2.4	97.6
1440.00	25.0	1.0070	1.0077	0.0128	4.0	15.2	0.0013	2.4	97.6

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			9.6	8.5	9.9	12.3	8.1	8.1	46.9	13.9	0.7	0.4	0.2	15.2	2.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0443	0.0553	0.0691	0.1788	0.6443	1.3725				

Fineness Modulus	C_u	C_c
2.84	30.96	0.53

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 233

CHAIN OF CUSTODY

PAGE 5 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02 011:43

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912915

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
1	504411	9/25/09	10:48	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	504412	9/25/09	11:25	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	504413	9/25/09	11:30	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	504425	9/25/09	11:00	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	504426	9/25/09	11:00	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	504427	9/25/09	11:00	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bayek	9/25/09 1355	Kathy McCain	9/25/09 1907
Kathy McCain	9/28/09 09:13	P. Dillon	9/28/09 9:25
P. Dillon	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

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CHAIN OF CUSTODY

PAGE 6 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 9/25/09 11:43

ALPHA Job #: L0912915

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
5	504511	9/25/09	10:00	SE	JB	☐	☐	☒	☐	ben gs	1
6	504512	9/25/09	10:16	SE	JB	☐	☐	☒	☐	ben gs	1
7	504513	9/25/09	10:21	SE	JB	☐	☐	☒	☐	ben gs	1
	504525	9/25/09	10:08	SE	JB	☒	☒	☐	☐	sed chem	1
8	504526	9/25/09	10:08	SE	JB	☐	☐	☒	☐	sed gs	1
	504527	9/25/09	10:08	SE	JB	☐	☐	☐	☒	sed arch	1
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
Container Type						G	G	G	-		
Preservative						A	A	A	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/25/09 1855	Kelly McCann	9/25/09 1907
Kelly McCann	9-28/09 0913	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

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CHAIN OF CUSTODY

PAGE 7 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02 011:43

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912915

Report Information
☐ FAX ☒ ADEx

Data Deliverables
☒ EMAIL ☐ Add'l Deliverables

Billing Information
☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	504611	9/25/09	13:30	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
10	504612	9/25/09	13:58	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
11	504613	9/25/09	14:06	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	504625	9/25/09	13:40	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
12	504626	9/25/09	13:40	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	504627	9/25/09	13:40	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bayh	9/25/09 1853	Kathleen McCarthy	9/25/09 1907
Kathleen McCarthy	9/28/09 09:13	R Gilbert	9/28/09 9:25
R. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

04011:43

Date Rec'd in Lab: 9/25/09

ALPHA Job #: L0912915

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	504711	9/25/09	14:37	SE	JB	☐	☐	☒	☐									ben gs	1
14	504712	9/25/09	14:55	SE	JB	☐	☐	☒	☐									ben gs	1
15	504713	9/25/09	15:04	SE	JB	☐	☐	☒	☐									ben gs	1
	504725	9/25/09	14:45	SE	JB	☒	☒	☐	☐									sed chem	1
16	504726	9/25/09	14:45	SE	JB	☐	☐	☒	☐									sed gs	1
	504727	9/25/09	14:45	SE	JB	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bach	9/25/09 18:55	Kathy McCann	9/25/09 19:07
Kathy McCann	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/25/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

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CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L091295

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	504811	9/25/09	13:06	SE	HC	☐	☐	☒	☐								ben gs	1
18	504812	9/25/09	13:06	SE	HC	☐	☐	☒	☐								ben gs	1
19	504813	9/25/09	13:06	SE	HC	☐	☐	☒	☐								ben gs	1
	504825	9/25/09	13:09	SE	HC	☒	☒	☐	☐								sed chem	1
20	504826	9/25/09	13:09	SE	HC	☐	☐	☒	☐								sed gs	1
	504827	9/25/09	13:09	SE	HC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	9/25/09 19:05		9/25/09 1907
	9/28/09 09:13		9/28/09 9:25
	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912916
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Phone:	(508) 540-8080
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	08/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912916-01	504911	NEW BEDFORD, MA	09/25/09 15:45
L0912916-02	504912	NEW BEDFORD, MA	09/25/09 15:55
L0912916-03	504913	NEW BEDFORD, MA	09/25/09 16:07
L0912916-04	504926	NEW BEDFORD, MA	09/25/09 15:50
L0912916-05	505011	NEW BEDFORD, MA	09/25/09 08:18
L0912916-06	505012	NEW BEDFORD, MA	09/25/09 08:35
L0912916-07	505013	NEW BEDFORD, MA	09/25/09 08:47
L0912916-08	505026	NEW BEDFORD, MA	09/25/09 08:25
L0912916-09	505111	NEW BEDFORD, MA	09/25/09 14:06
L0912916-10	505112	NEW BEDFORD, MA	09/25/09 14:06
L0912916-11	505113	NEW BEDFORD, MA	09/25/09 14:06
L0912916-12	505126	NEW BEDFORD, MA	09/25/09 14:10
L0912916-13	505211	NEW BEDFORD, MA	09/25/09 15:25
L0912916-14	505212	NEW BEDFORD, MA	09/25/09 15:24
L0912916-15	505213	NEW BEDFORD, MA	09/25/09 15:24
L0912916-16	505226	NEW BEDFORD, MA	09/25/09 15:30
L0912916-17	505311	NEW BEDFORD, MA	09/25/09 16:40
L0912916-18	505312	NEW BEDFORD, MA	09/25/09 16:40
L0912916-19	505313	NEW BEDFORD, MA	09/25/09 16:40
L0912916-20	505326	NEW BEDFORD, MA	09/25/09 16:43

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912916
Project Number:	TO-0018	**Report Date:**	08/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on February 3, 2010. The report was ammended to include revised Grain Size data.

The WG383974-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve, gravel (111%), % very coarse sand (67%), % coarse sand (21%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Henriksen

Title: Technical Director/Representative Date: 08/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-01
Client ID: 504911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 15:45
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.200		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	41.7		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-02
Client ID: 504912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 15:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	39.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	34.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-03
Client ID: 504913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 16:07
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	ND		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.100		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.500		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	41.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	48.1		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-04
Client ID: 504926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 15:50
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.400		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.80		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.70		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.30		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	53.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	24.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-05
Client ID: 505011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 08:18
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.80		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.3		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	19.7		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-06
Client ID: 505012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 08:35
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.70		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.30		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	18.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	19.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	19.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.80		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-07
Client ID: 505013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 08:47
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.40		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.70		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.3		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	22.4		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	14.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-08
Client ID: 505026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 08:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	4.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.1		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	18.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	12.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-09
Client ID: 505111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 14:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	3.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	35.3		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	26.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	13.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-10
Client ID: 505112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 14:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.900		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.70		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	28.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	26.1		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	21.3		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-11
Client ID: 505113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 14:06
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.40		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	26.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	26.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	23.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.80		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-12
Client ID: 505126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 14:10
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	2.40		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	29.7		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	23.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	17.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-13
Client ID: 505211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 15:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	20.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	23.7		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-14
Client ID: 505212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 15:24
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.4		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	19.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-15
Client ID: 505213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 15:24
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.30		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.30		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.4		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	27.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	19.1		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.70		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-16
Client ID: 505226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 15:30
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	1.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	28.5		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.40		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-17
Client ID: 505311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 16:40
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.100		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.600		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.00		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.30		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	37.6		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	13.8		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-18
Client ID: 505312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 16:40
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.800		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.60		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	26.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	22.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	21.3		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.70		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-19
Client ID: 505313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 16:40
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.800		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.90		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.20		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	29.1		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	24.1		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.4		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912916
Report Date: 08/03/10

SAMPLE RESULTS

Lab ID: L0912916-20
Client ID: 505326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/25/09 16:43
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab										
Gravel (>2.00mm)	0.200		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.10		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.30		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.9		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	23.3		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.0		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.2		%	0.100	--	1	-	10/12/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG383974-1 QC Sample: L0912916-20 Client ID: 505326						
Gravel (>2.00mm)	0.2	0.700	%	**111**	Q	20
Very Coarse Sand (1.00-2.00 mm)	0.3	0.600	%	**67**	Q	20
Coarse Sand (0.50-1.00 mm)	2.1	1.70	%	**21**	Q	20
Medium Sand (0.25-0.50 mm)	6.3	6.60	%	5		20
Fine Sand (0.125-0.25 mm)	23.9	25.7	%	7		20
Very Fine Sand (0.063-0.125 mm)	23.3	24.6	%	5		20
Silt - (1.95-62.5 um)	31.0	28.9	%	7		20
Clay - (<1.95 um)	10.2	9.70	%	5		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
D	Absent
E	Absent
G	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-01A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-02A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-03A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-04A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-05A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-06A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-07A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-08A	Glass 250ml unpreserved	G	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-09A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-10A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-11A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-12A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-13A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-14A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-15A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-16A	Glass 250ml unpreserved	E	N/A	3.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-17A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-18A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912916-19A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912916
Report Date: 08/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L0912916-20A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Values in parentheses indicate holding time in days

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912916
Project Number:	TO-0018	**Report Date:**	08/03/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I · The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R · Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912916
Project Number:	TO-0018	**Report Date:**	08/03/10

Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

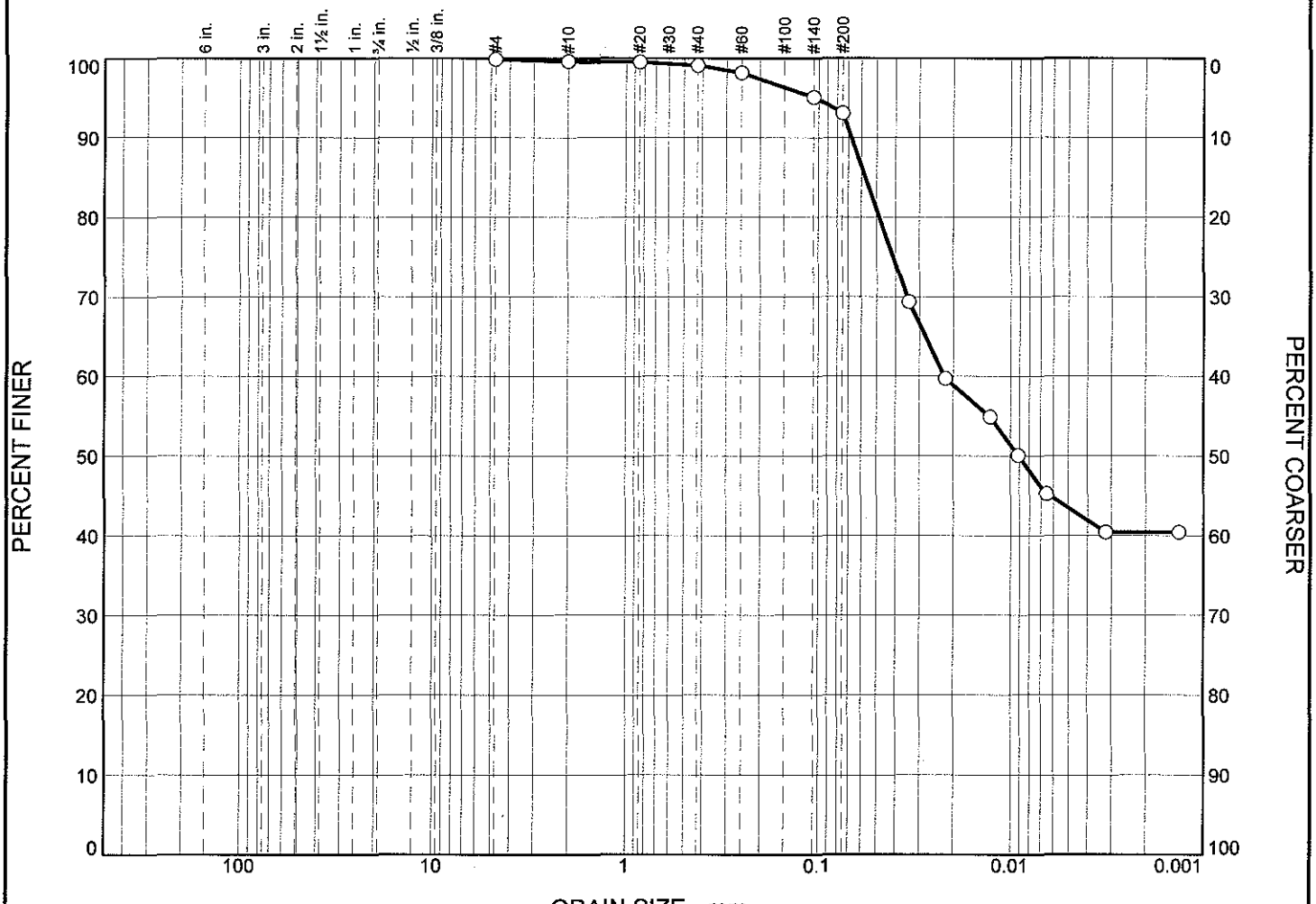
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63
Wet Sieve Hydrometer

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.1	0.3	1.0	2.5	8.1	20.3	10.6	8.9	6.1	41.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0573	0.0222	0.0091					

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504911 **Sample Number:** L0912916-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 504911
Sample Number: L0912916-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
30.97	0.00	#4	520.85	520.81	99.9	0.1
		#10	482.19	482.11	99.6	0.4
		#20	411.12	411.09	99.5	0.5
		#40	377.99	377.86	99.1	0.9
		#60	370.13	369.84	98.2	1.8
		#140	348.12	347.17	95.1	4.9
		#200	347.13	346.51	93.1	6.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.1
Weight of hydrometer sample =30.97
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0140	1.0144	0.0132	11.0	13.4	0.0340	69.4	30.6
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	59.7	40.3
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	54.9	45.1
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	50.1	49.9
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	45.2	54.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	40.4	59.6
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	40.4	59.6

Fractional Components

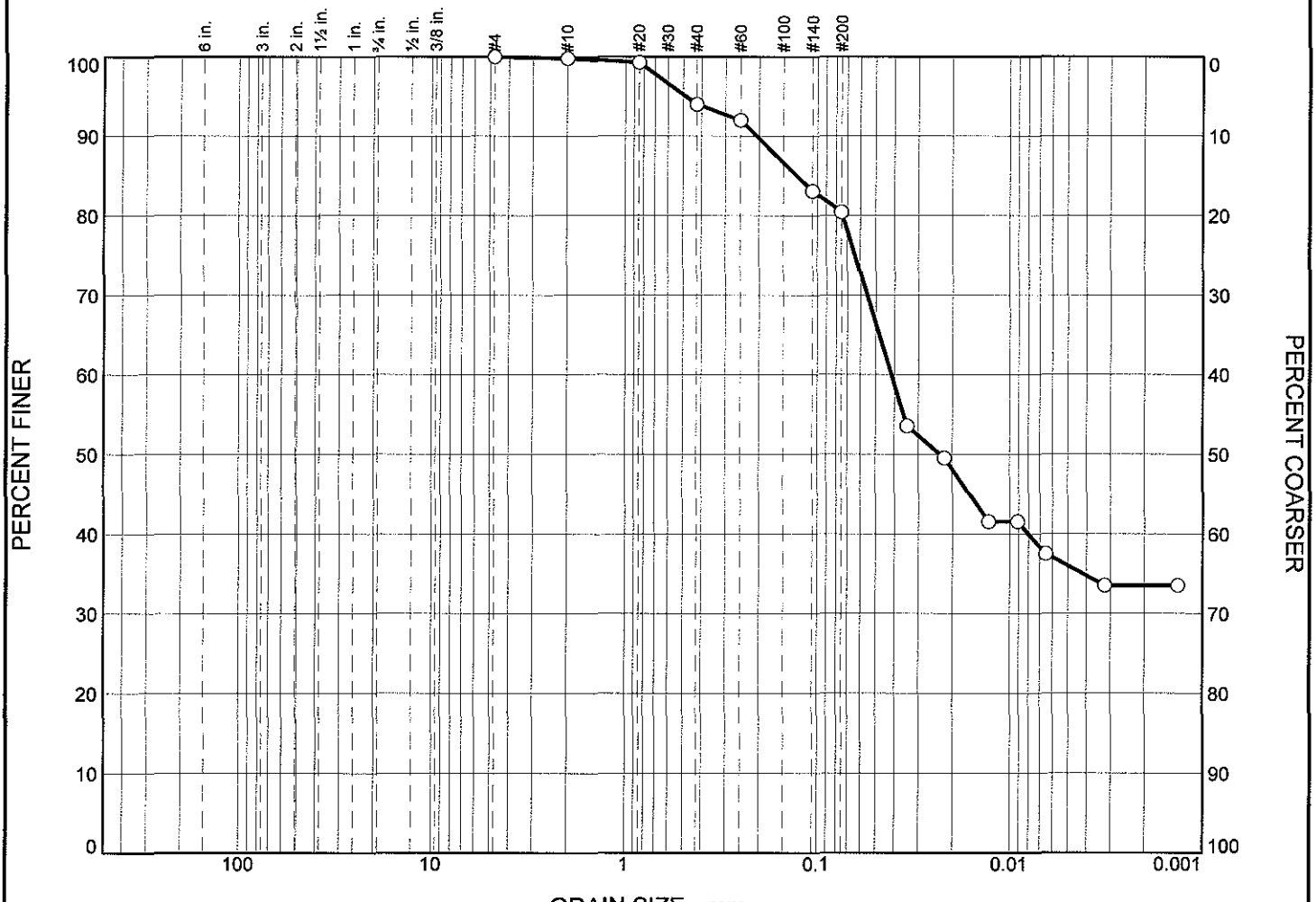
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.1	0.3	1.0	2.5	8.1	12.0	20.3	10.6	8.9	6.1	45.9	41.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0091	0.0222	0.0485	0.0573	0.0677	0.1043

Fineness Modulus
0.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.4	4.2	3.2	7.2	10.6	21.6	8.2	4.7	5.1	34.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1275	0.0414	0.0231					

Material Description	USCS	AASHTO
○		

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504912 **Sample Number:** L0912916-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 504912
Sample Number: L0912916-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
32.26	0.00	#4	521.78	521.77	100.0	0.0
		#10	484.86	484.81	99.8	0.2
		#20	405.60	405.42	99.3	0.7
		#40	362.97	361.28	94.0	6.0
		#60	366.81	366.16	92.0	8.0
		#140	345.70	342.82	83.1	16.9
		#200	346.10	345.25	80.4	19.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 80.4
Weight of hydrometer sample =32.26
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	53.5	46.5
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	49.5	50.5
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	41.5	58.5
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	41.5	58.5
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	37.5	62.5
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	33.5	66.5
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	33.5	66.5

Fractional Components

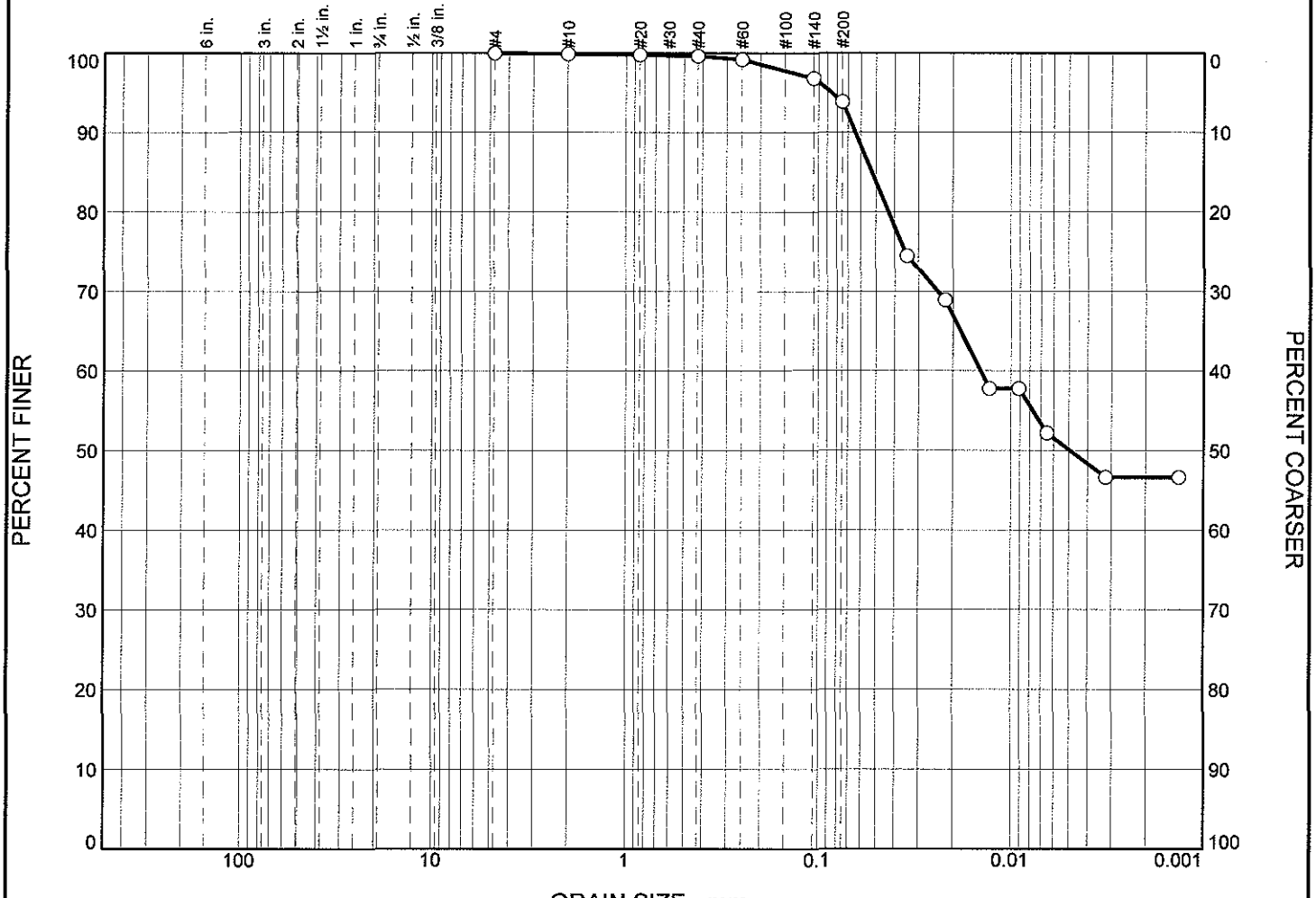
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.4	4.2	3.2	7.2	10.6	25.6	21.6	8.2	4.7	5.1	39.6	34.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0231	0.0414	0.0740	0.1275	0.2062	0.4840

Fineness Modulus
0.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.0	0.1	0.1	0.5	1.9	8.0	16.1	11.5	6.5	7.1	48.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0525	0.0144	0.0049					

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504913 **Sample Number:** L0912916-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 504913
Sample Number: L0912916-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
27.07	0.00	#4	520.82	520.81	100.0	0.0
		#10	482.13	482.11	99.9	0.1
		#20	411.12	411.09	99.8	0.2
		#40	377.90	377.86	99.6	0.4
		#60	369.96	369.84	99.2	0.8
		#140	347.81	347.17	96.8	3.2
		#200	346.95	346.15	93.9	6.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.9
Weight of hydrometer sample =27.07
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	74.5	25.5
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	68.9	31.1
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	57.8	42.2
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	57.8	42.2
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	52.2	47.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	46.6	53.4
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	46.6	53.4

Fractional Components

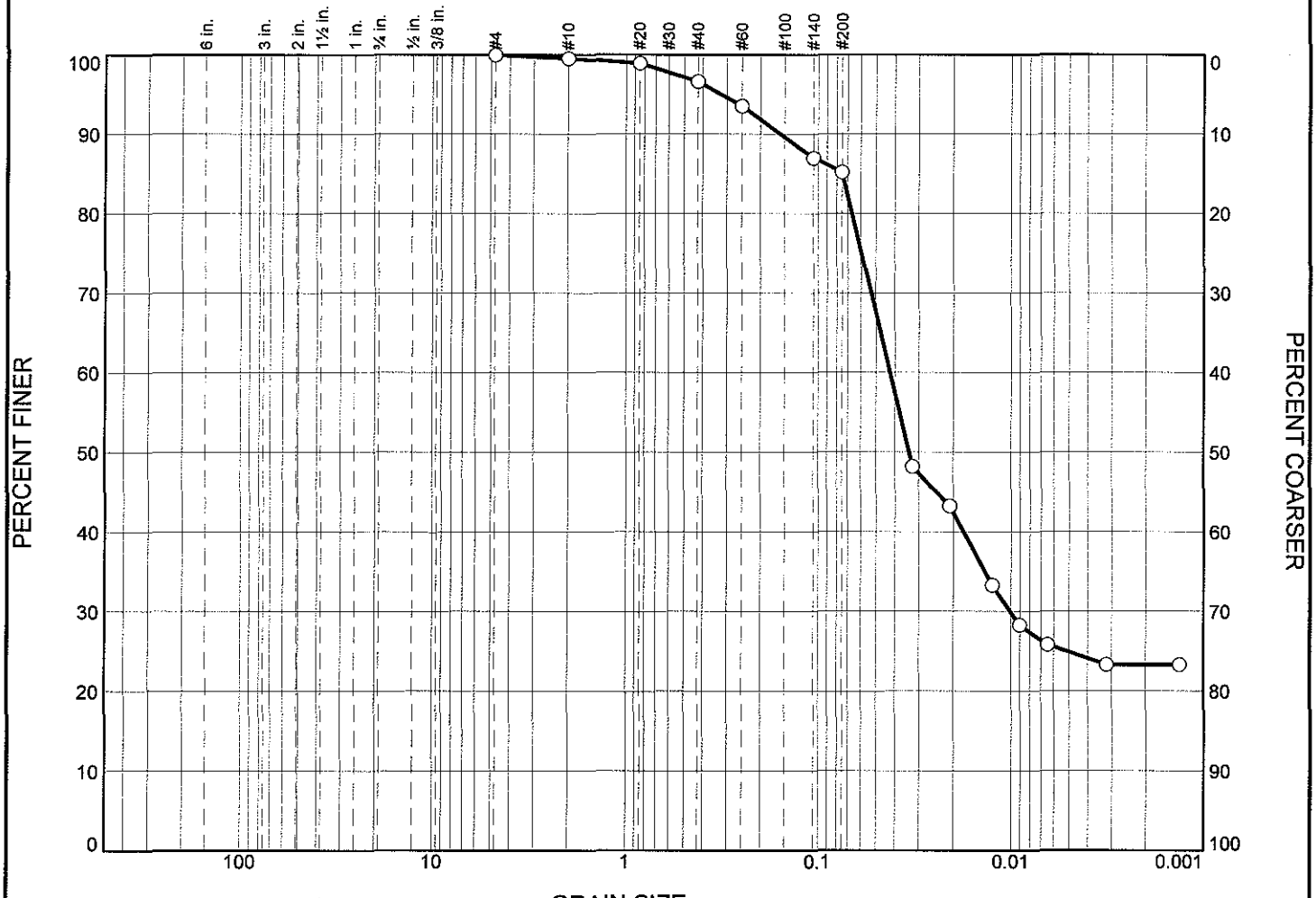
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.0	0.1	0.1	0.5	1.9	8.0	10.6	16.1	11.5	6.5	7.1	41.2	48.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0049	0.0144	0.0429	0.0525	0.0642	0.0856

Fineness Modulus
0.03

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	0.5	1.8	3.7	5.3	11.0	29.5	10.2	10.3	3.2	24.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0747	0.0423	0.0337	0.0101				

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 504926 **Sample Number:** L0912916-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 504926
Sample Number: L0912916-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.00	0.00	#4	521.79	521.77	100.0	0.0
		#10	485.05	484.81	99.5	0.5
		#20	405.77	405.42	98.9	1.1
		#40	362.53	361.28	96.6	3.4
		#60	367.85	366.16	93.5	6.5
		#140	346.44	342.82	87.0	13.0
		#200	346.23	345.25	85.2	14.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 85.2
Weight of hydrometer sample =55.00
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0190	1.0194	0.0132	16.0	12.1	0.0323	48.2	51.8
5.00	23.0	1.0170	1.0174	0.0132	14.0	12.6	0.0209	43.2	56.8
15.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0125	33.3	66.7
30.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0090	28.3	71.7
60.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0065	25.8	74.2
250.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0032	23.3	76.7
1440.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0013	23.3	76.7

Fractional Components

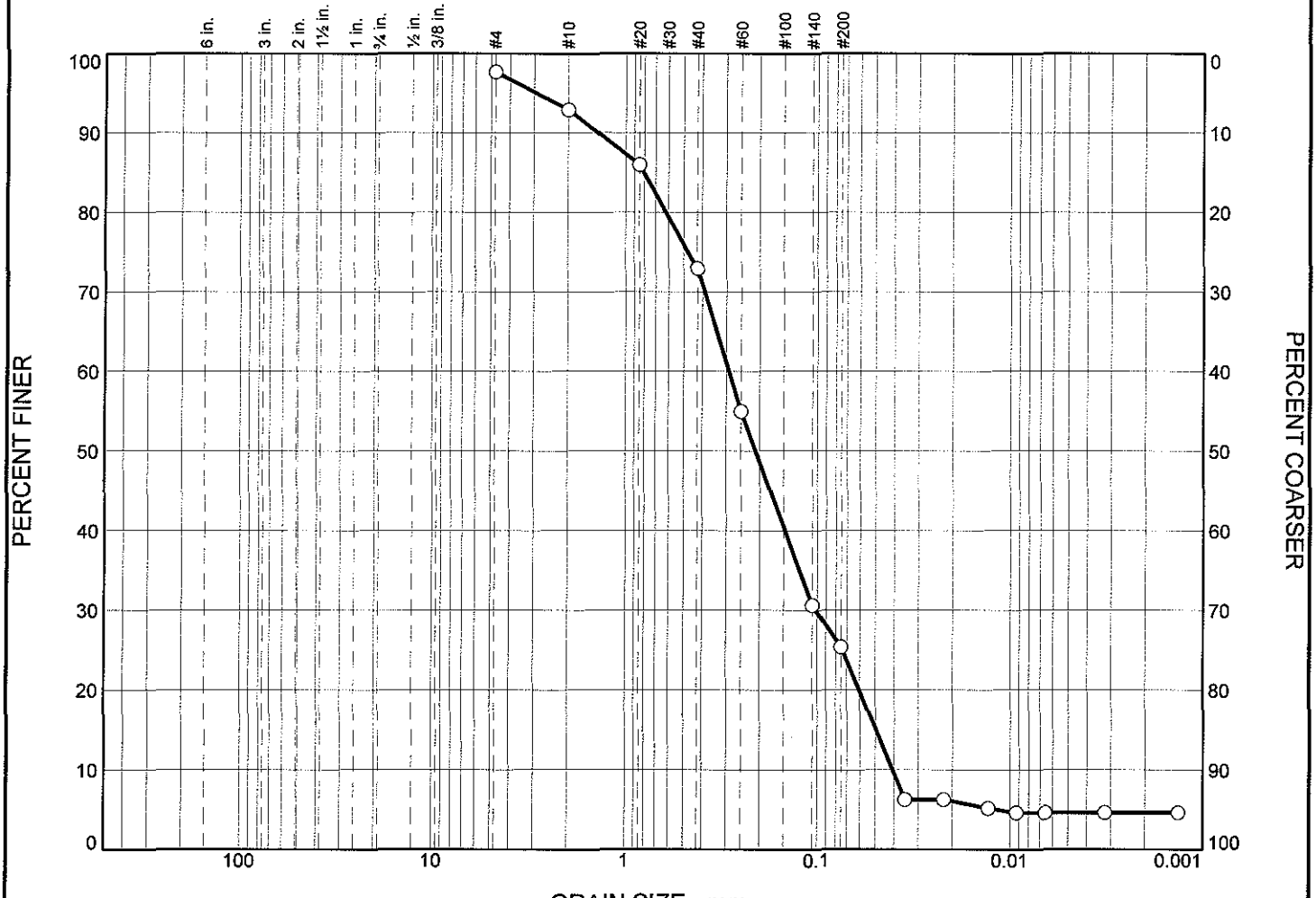
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	0.5	1.8	3.7	5.3	11.0	22.3	29.5	10.2	10.3	3.2	53.2	24.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0101	0.0337	0.0423	0.0667	0.0747	0.1575	0.3214

Fineness Modulus
0.19

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.8	5.6	11.3	21.0	19.7	14.5	14.5	0.8	0.9		4.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8063	0.2901	0.2099	0.1017	0.0496	0.0407	0.88	7.14

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505011 **Sample Number:** L0912916-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505011
Sample Number: L0912916-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.05	0.00	#4	522.54	520.81	97.7	2.3
		#10	485.62	482.11	92.9	7.1
		#20	416.22	411.09	86.0	14.0
		#40	387.54	377.86	72.9	27.1
		#60	383.14	369.84	55.0	45.0
		#140	365.19	347.17	30.6	69.4
		#200	350.40	346.51	25.4	74.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 25.4
Weight of hydrometer sample =74.05
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	6.3	93.7
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	6.3	93.7
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	5.2	94.8
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	4.6	95.4
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	4.6	95.4
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	4.6	95.4
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	4.6	95.4

Fractional Components

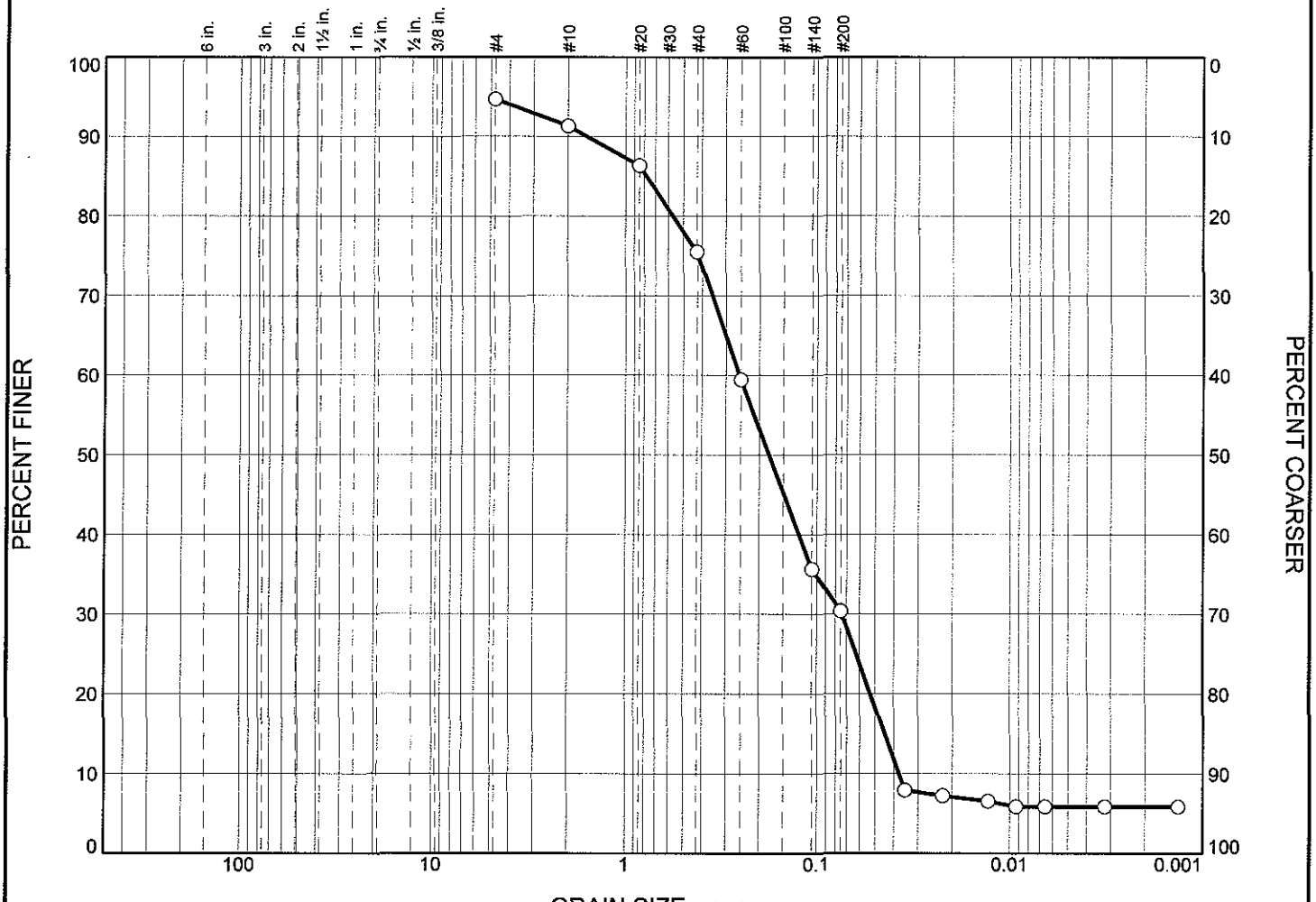
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.8	5.6	11.3	21.0	19.7	14.5	72.1	14.5	0.8	0.9		16.2	4.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0407	0.0496	0.0605	0.1017	0.2099	0.2901	0.6185	0.8063	1.3938	2.9213

Fineness Modulus	C_u	C_c
1.39	7.14	0.88

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.7	4.0	9.3	18.6	19.2	15.2	17.3	0.9	1.0		5.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7795	0.2548	0.1780	0.0741	0.0445	0.0376	0.57	6.78

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505012 **Sample Number:** L0912916-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505012
Sample Number: L0912916-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
70.00	0.00	#4	525.50	521.77	94.7	5.3
		#10	487.15	484.81	91.3	8.7
		#20	408.90	405.42	86.4	13.6
		#40	368.89	361.28	75.5	24.5
		#60	377.40	366.16	59.4	40.6
		#140	359.48	342.82	35.6	64.4
		#200	348.93	345.25	30.4	69.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 30.4
Weight of hydrometer sample =70.00
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	7.9	92.1
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	7.2	92.8
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	6.5	93.5
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	5.8	94.2
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	5.8	94.2
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	5.8	94.2
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	5.8	94.2

Fractional Components

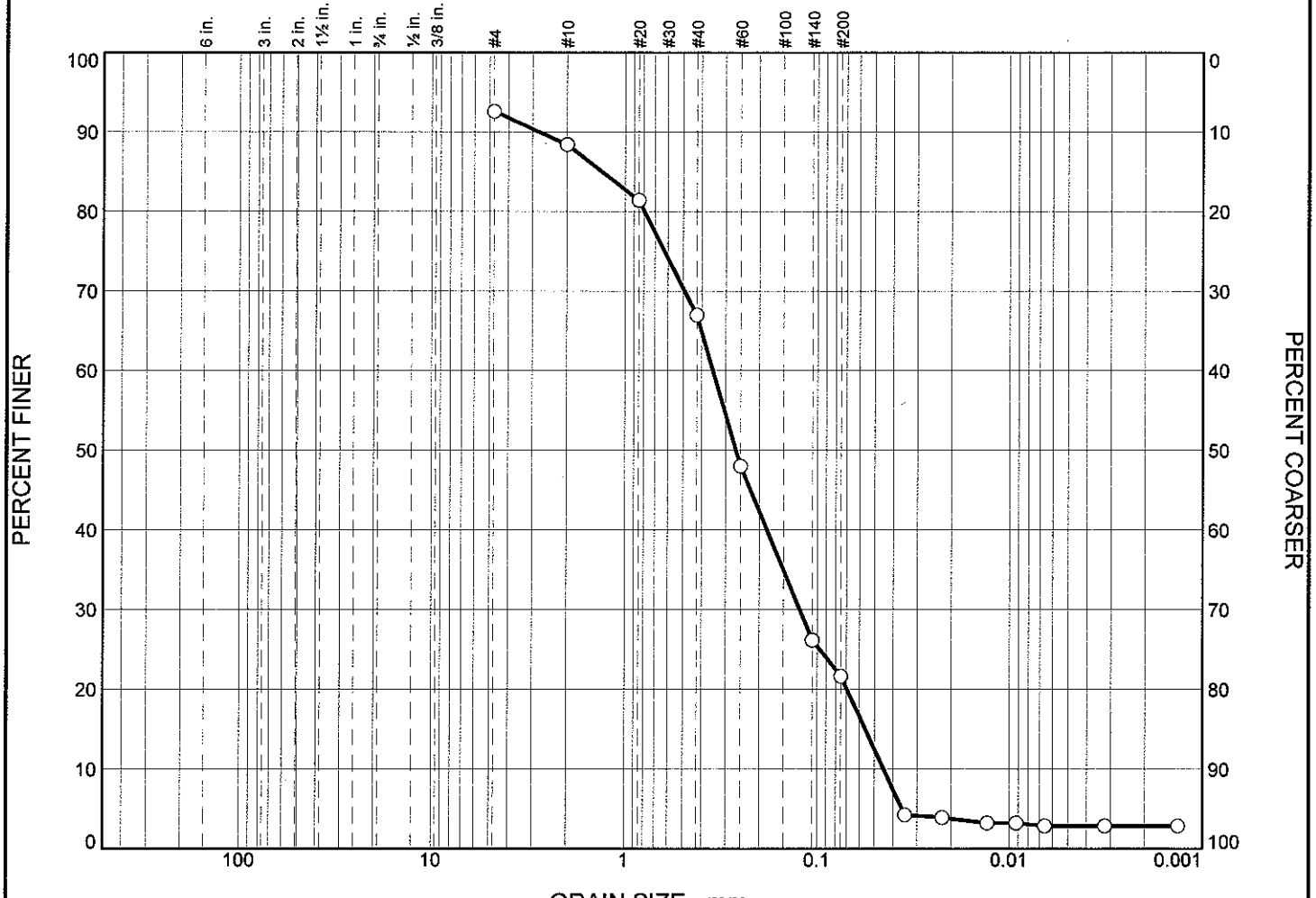
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.7	4.0	9.3	18.6	19.2	15.2	66.3	17.3	0.9	1.0		19.2	5.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0376	0.0445	0.0528	0.0741	0.1780	0.2548	0.5667	0.7795	1.5912	

Fineness Modulus	C_u	C_c
1.34	6.78	0.57

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.4	5.7	12.3	22.4	17.6	12.9	13.3	0.7	0.4	0.2	2.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.3198	0.3497	0.2644	0.1232	0.0559	0.0447	0.97	7.82

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505013 **Sample Number:** L0912916-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505013
Sample Number: L0912916-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
100.83	0.00	#4	528.29	520.81	92.6	7.4
		#10	486.32	482.11	88.4	11.6
		#20	418.16	411.09	81.4	18.6
		#40	392.40	377.86	67.0	33.0
		#60	388.98	369.84	48.0	52.0
		#140	369.17	347.17	26.2	73.8
		#200	351.08	346.51	21.6	78.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 21.6
Weight of hydrometer sample =100.83
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	4.3	95.7
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	3.9	96.1
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	3.2	96.8
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	3.2	96.8
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	2.9	97.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	2.9	97.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	2.9	97.1

Fractional Components

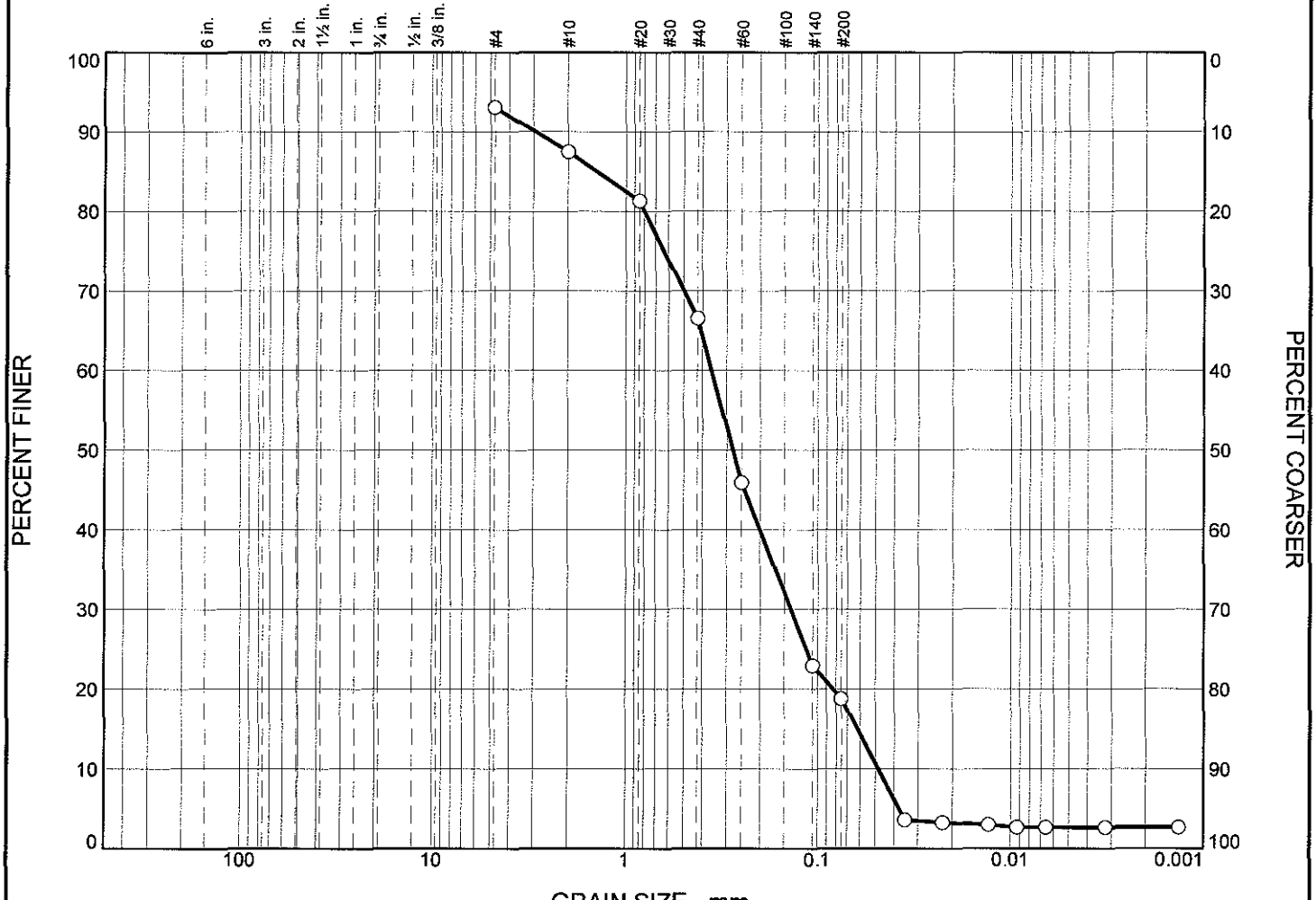
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.4	5.7	12.3	22.4	17.6	12.9	70.9	13.3	0.7	0.4	0.2	14.6	2.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0447	0.0559	0.0697	0.1232	0.2644	0.3497	0.7949	1.3198	2.7824	

Fineness Modulus	C_u	C_c
1.70	7.82	0.97

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.5	5.0	12.5	24.1	18.6	12.2	11.6	0.4	0.5	0.0	2.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.4194	0.3593	0.2779	0.1381	0.0620	0.0483	1.10	7.44

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505026 **Sample Number:** L0912916-08

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505026
Sample Number: L0912916-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
95.31	0.00	#4	528.37	521.77	93.1	6.9
		#10	490.15	484.81	87.5	12.5
		#20	411.30	405.42	81.3	18.7
		#40	375.36	361.28	66.5	33.5
		#60	385.84	366.16	45.9	54.1
		#140	364.70	342.82	22.9	77.1
		#200	349.20	345.25	18.8	81.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 18.8
Weight of hydrometer sample =95.31
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	3.6	96.4
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	3.3	96.7
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	3.0	97.0
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	2.6	97.4
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	2.6	97.4
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	2.6	97.4
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	2.6	97.4

Fractional Components

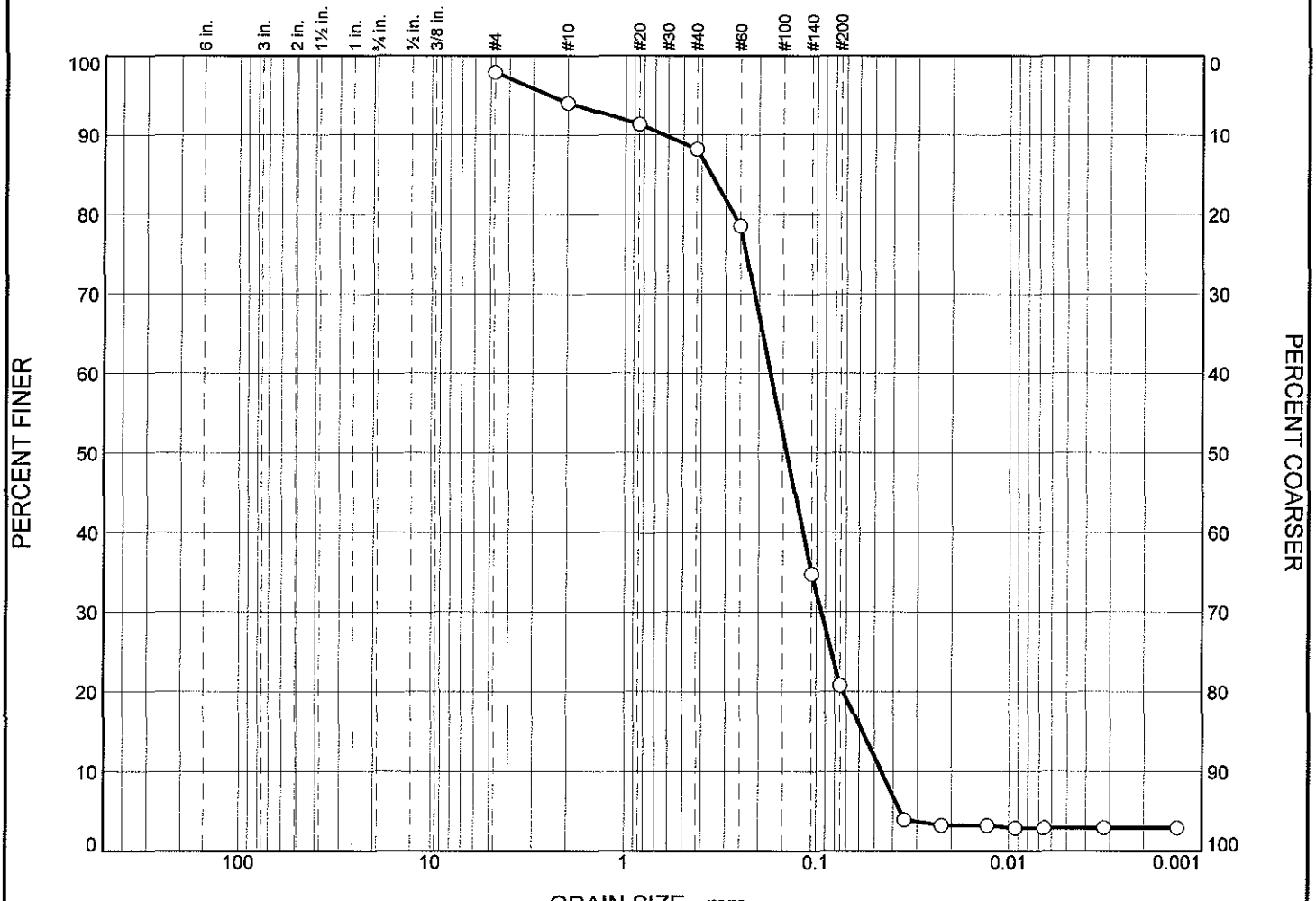
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.5	5.0	12.5	24.1	18.6	12.2	72.4	11.6	0.4	0.5	0.0	12.5	2.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0483	0.0620	0.0830	0.1381	0.2779	0.3593	0.7996	1.4194	2.9546	

Fineness Modulus	C_u	C_c
1.76	7.44	1.10

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.1	2.1	2.9	10.5	35.3	26.5	12.9	0.5	0.4		2.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3563	0.1737	0.1428	0.0941	0.0578	0.0461	1.11	3.77

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505111 **Sample Number:** L0912916-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505111
Sample Number: L0912916-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
96.21	0.00	#4	522.84	520.81	97.9	2.1
		#10	485.84	482.11	94.0	6.0
		#20	413.64	411.09	91.4	8.6
		#40	380.89	377.86	88.2	11.8
		#60	379.14	369.84	78.5	21.5
		#140	389.25	347.17	34.8	65.2
		#200	360.01	346.51	20.8	79.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 20.8
Weight of hydrometer sample =96.21
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	3.9	96.1
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	3.3	96.7
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	3.3	96.7
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	2.9	97.1
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	2.9	97.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	2.9	97.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	2.9	97.1

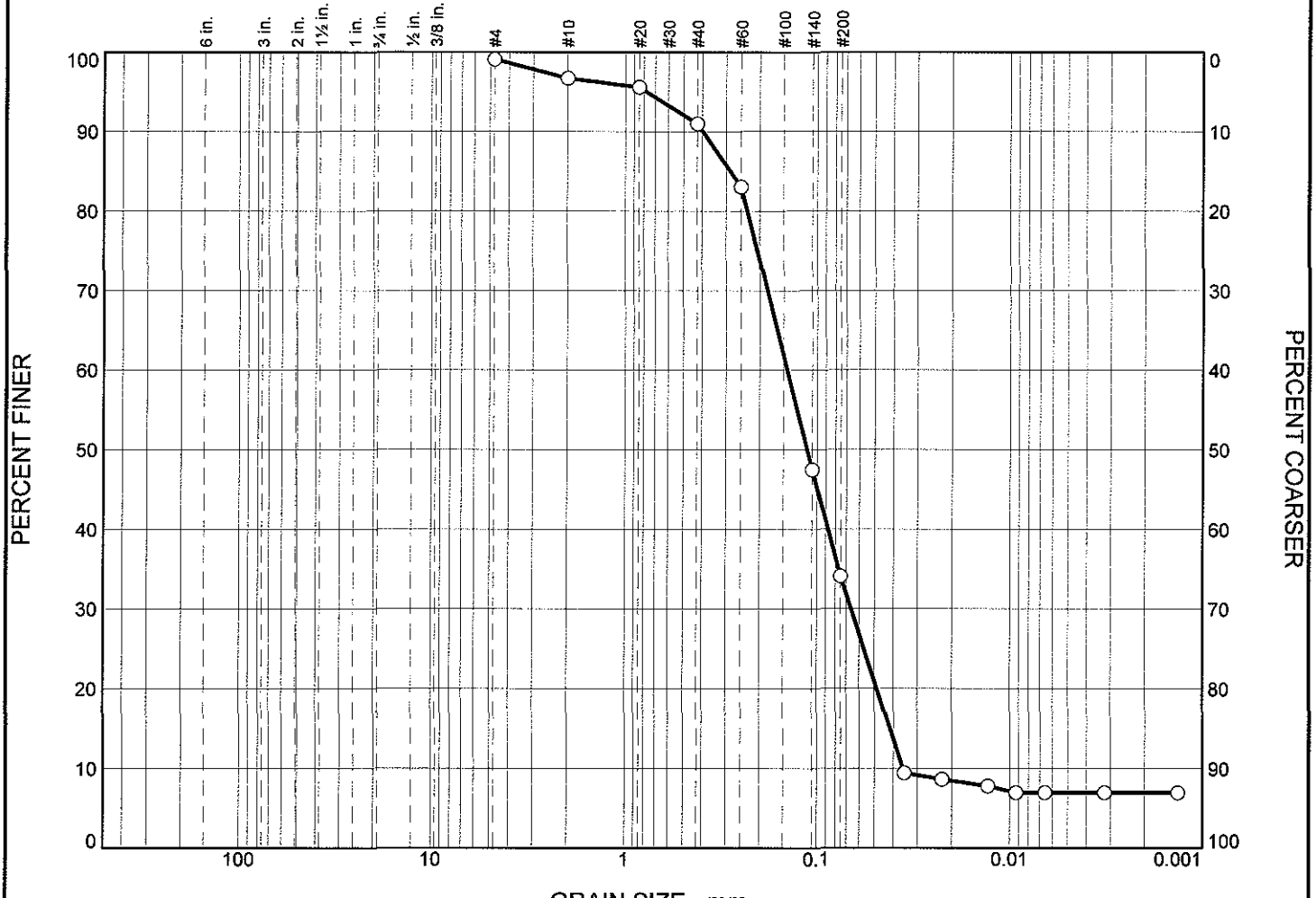
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.1	2.1	2.9	10.5	35.3	26.5	77.3	12.9	0.5	0.4		13.8	2.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0461	0.0578	0.0724	0.0941	0.1428	0.1737	0.2708	0.3563	0.6298	2.4926

Fineness Modulus	C_u	C_c
0.91	3.77	1.11

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.9	0.9	3.7	9.0	28.8	26.1	19.0	1.2	1.1	0.0	6.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2847	0.1433	0.1126	0.0661	0.0416	0.0357	0.85	4.02

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505112 **Sample Number:** L0912916-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505112
Sample Number: L0912916-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
66.10	0.00	#4	522.38	521.77	99.1	0.9
		#10	486.37	484.81	96.7	3.3
		#20	406.57	405.82	95.6	4.4
		#40	364.32	361.28	91.0	9.0
		#60	371.40	366.16	83.1	16.9
		#140	366.32	342.82	47.5	52.5
		#200	354.11	345.25	34.1	65.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 34.1
Weight of hydrometer sample =66.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	9.4	90.6
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	8.6	91.4
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	7.8	92.2
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	6.9	93.1
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	6.9	93.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	6.9	93.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	6.9	93.1

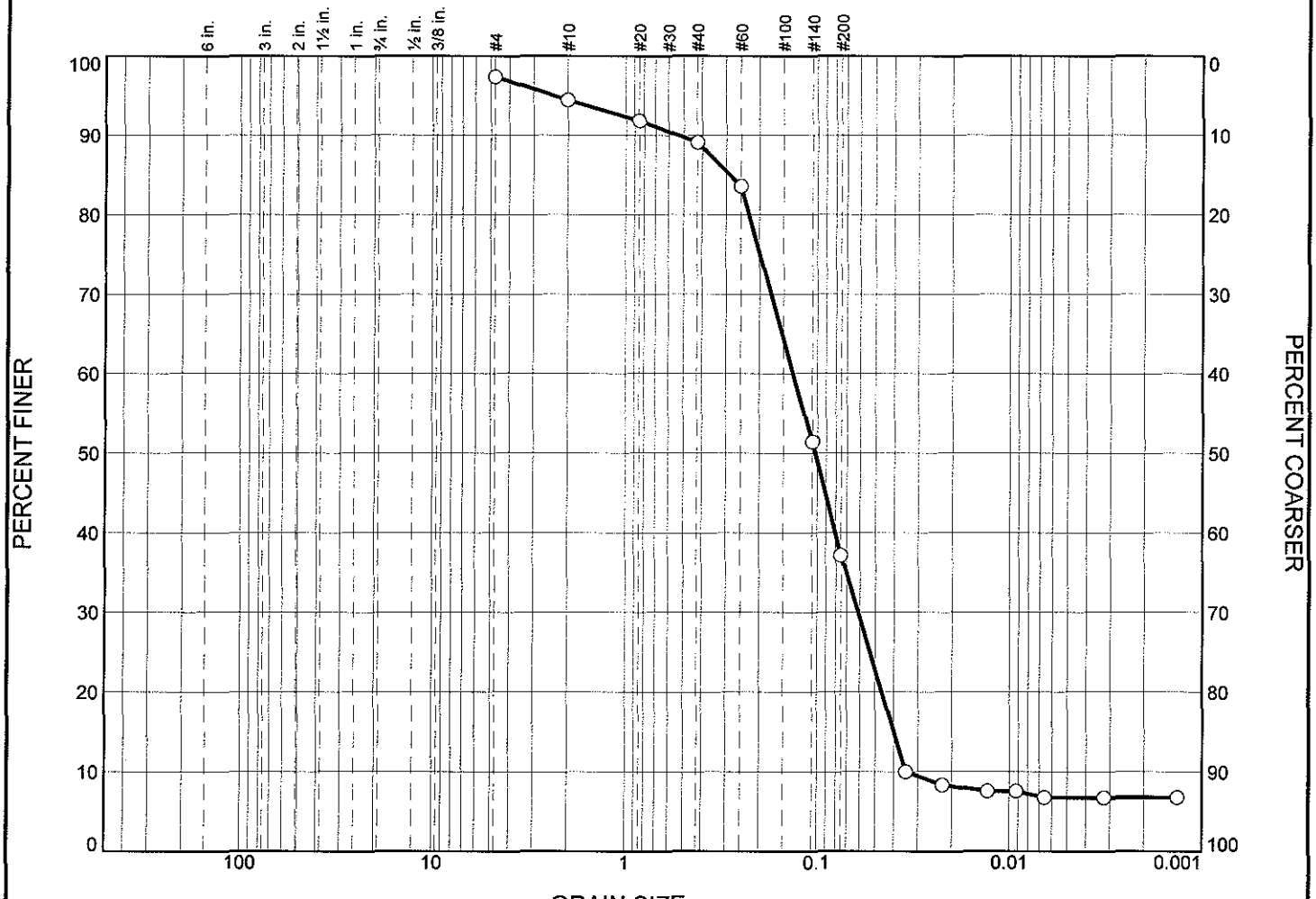
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.9	0.9	3.7	9.0	28.8	26.1	68.5	19.0	1.2	1.1	0.0	21.3	6.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0357	0.0416	0.0485	0.0661	0.1126	0.1433	0.2322	0.2847	0.3979	0.7786

Fineness Modulus	C_u	C_c
0.67	4.02	0.85

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	2.1	2.6	6.1	26.0	26.9	21.1	1.8	0.6	0.4	6.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2861	0.1332	0.1024	0.0612	0.0400	0.0347	0.81	3.84

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505113 **Sample Number:** L0912916-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505113
Sample Number: L0912916-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
73.98	0.00	#4	522.75	520.81	97.4	2.6
		#10	484.29	482.11	94.4	5.6
		#20	413.00	411.09	91.8	8.2
		#40	379.90	377.86	89.1	10.9
		#60	373.90	369.84	83.6	16.4
		#140	370.97	347.17	51.4	48.6
		#200	357.08	346.51	37.1	62.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 37.1
Weight of hydrometer sample =73.98
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	10.0	90.0
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	8.4	91.6
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	7.6	92.4
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	7.6	92.4
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	6.8	93.2
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	6.8	93.2
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	6.8	93.2

Fractional Components

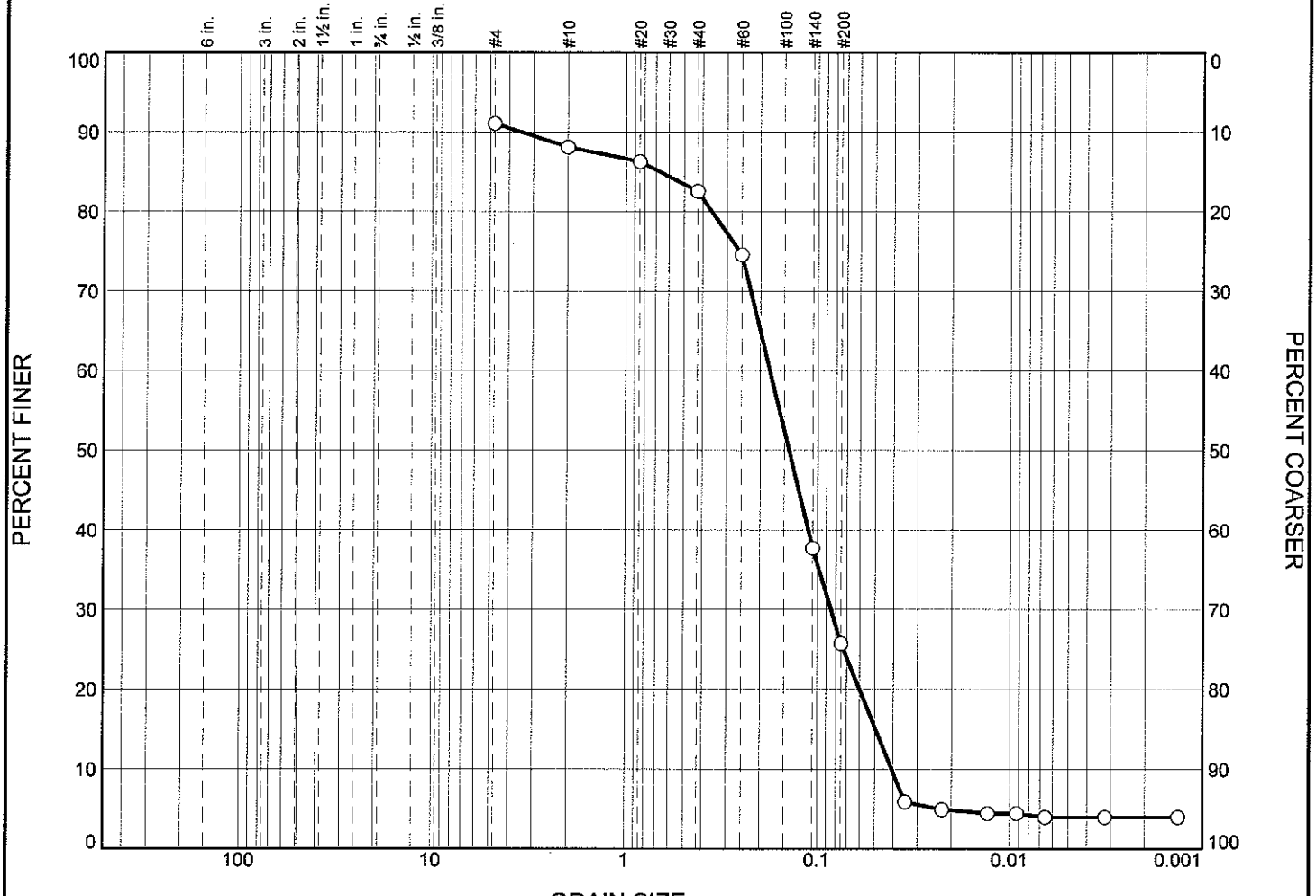
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	2.1	2.6	6.1	26.0	26.9	63.7	21.1	1.8	0.6	0.4	23.9	6.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0347	0.0400	0.0461	0.0612	0.1024	0.1332	0.2271	0.2861	0.5340	2.3636

Fineness Modulus	C_u	C_c
0.74	3.84	0.81

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	1.5	3.2	8.9	29.7	23.8	15.4	1.0	0.4	0.2	4.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6707	0.1782	0.1412	0.0849	0.0495	0.0407	0.99	4.37

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505126 **Sample Number:** L0912916-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505126
Sample Number: L0912916-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
87.05	0.00	#4	529.55	521.77	91.1	8.9
		#10	487.39	484.81	88.1	11.9
		#20	407.00	405.42	86.3	13.7
		#40	364.55	361.28	82.5	17.5
		#60	373.11	366.16	74.5	25.5
		#140	374.90	342.82	37.7	62.3
		#200	355.67	345.25	25.7	74.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 25.7
Weight of hydrometer sample =87.05
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	5.9	94.1
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	4.9	95.1
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	4.4	95.6
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	4.4	95.6
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	4.0	96.0
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	4.0	96.0
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	4.0	96.0

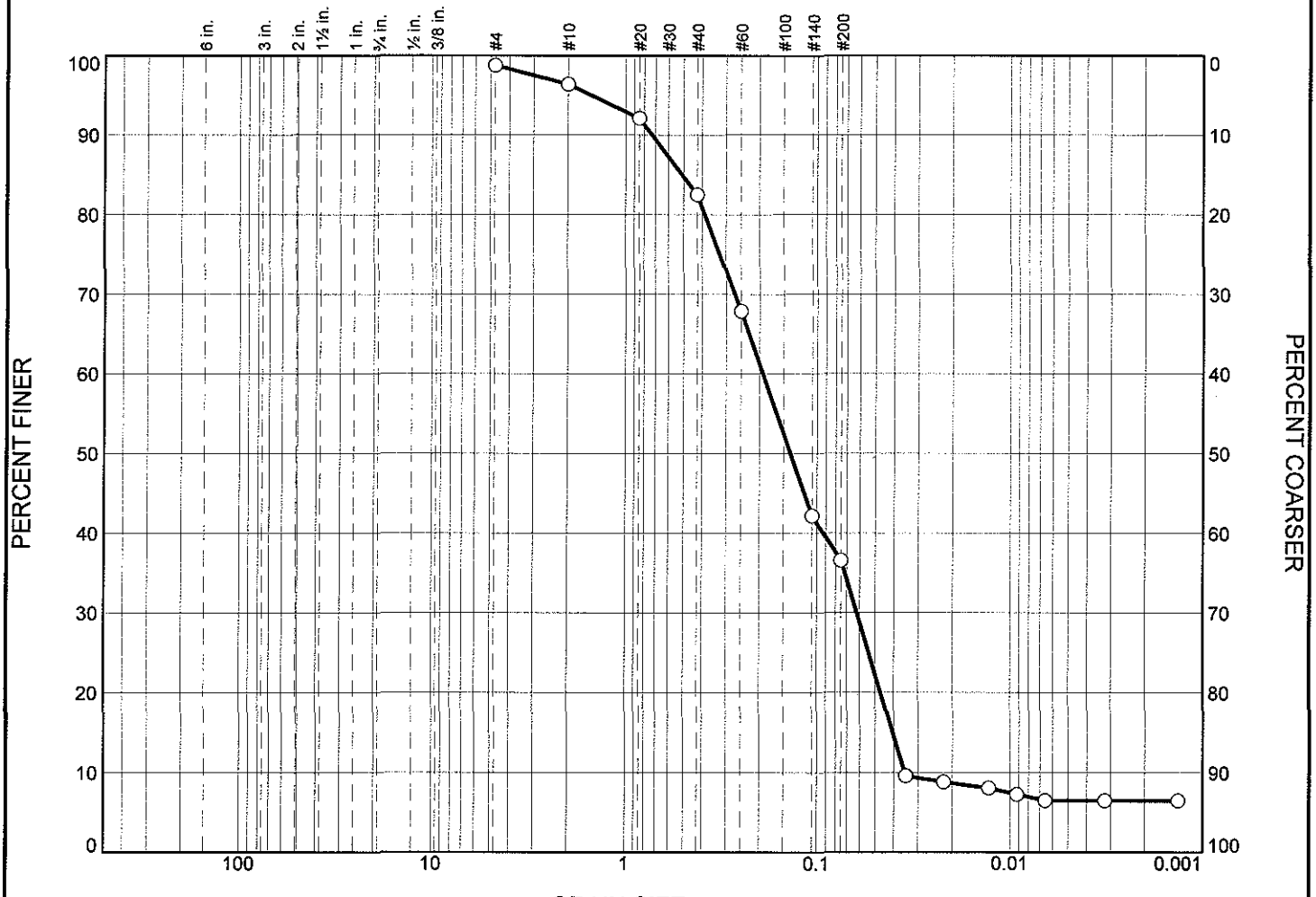
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	1.5	3.2	8.9	29.7	23.8	67.1	15.4	1.0	0.4	0.2	17.0	4.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0407	0.0495	0.0601	0.0849	0.1412	0.1782	0.3593	0.6707	3.4834	

Fineness Modulus	C_u	C_c
1.19	4.37	0.99

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.9	3.5	8.1	16.9	20.8	16.9	20.8	1.1	1.4	0.4	6.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.5086	0.1921	0.1376	0.0622	0.0405	0.0351	0.57	5.47

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505211 **Sample Number:** L0912916-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505211
Sample Number: L0912916-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
76.07	0.00	#4	521.76	520.81	98.8	1.2
		#10	483.91	482.11	96.4	3.6
		#20	414.35	411.09	92.1	7.9
		#40	385.15	377.86	82.5	17.5
		#60	380.97	369.84	67.9	32.1
		#140	366.72	347.17	42.2	57.8
		#200	350.77	346.51	36.6	63.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 36.6
Weight of hydrometer sample =76.07
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	9.6	90.4
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	8.8	91.2
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	8.0	92.0
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	7.2	92.8
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	6.5	93.5
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	6.5	93.5
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	6.5	93.5

Fractional Components

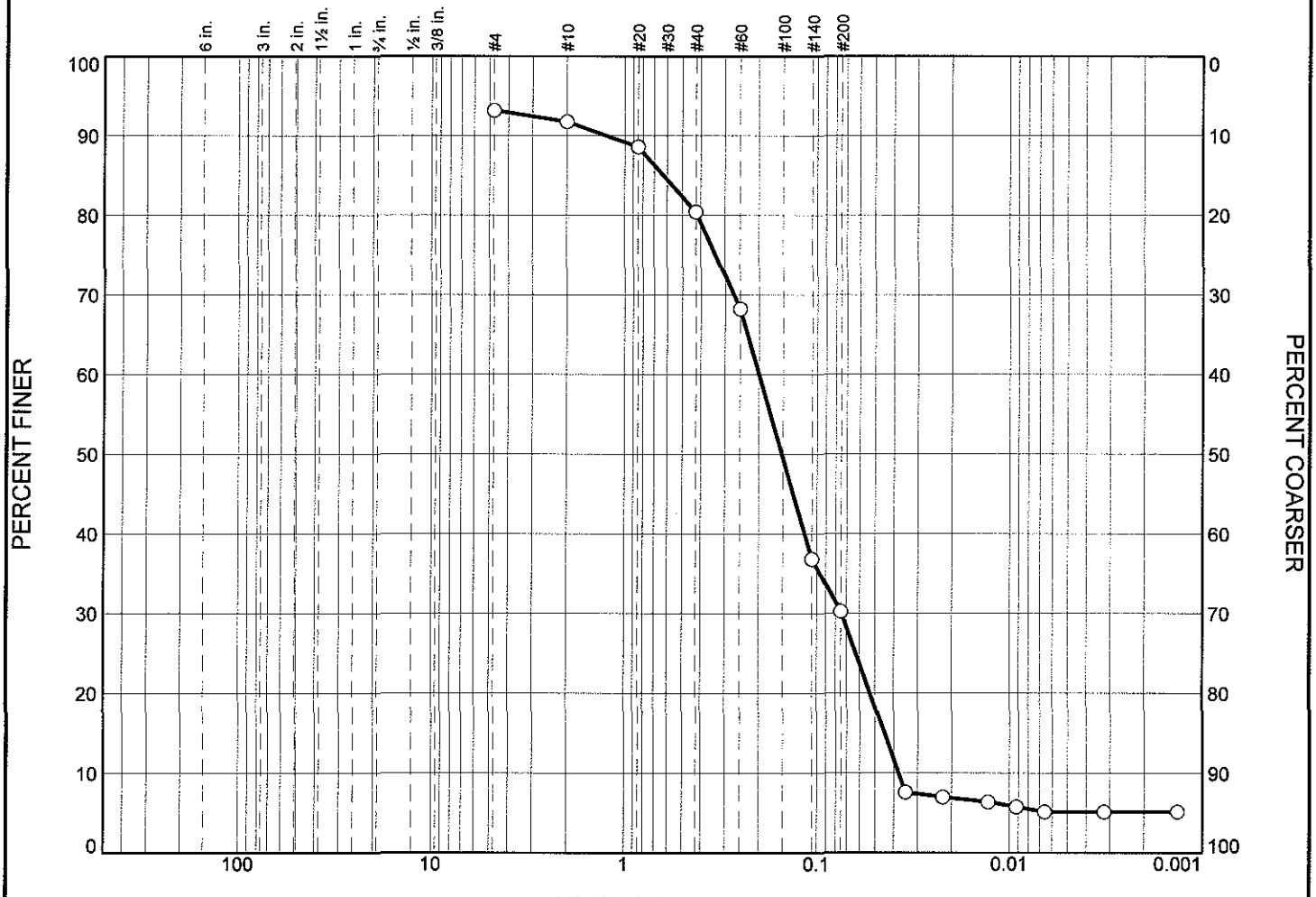
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.9	3.5	8.1	16.9	20.8	16.9	66.2	20.8	1.1	1.4	0.4	23.7	6.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0351	0.0405	0.0467	0.0622	0.1376	0.1921	0.3879	0.5086	0.7303	1.5168

Fineness Modulus	C_u	C_c
0.98	5.47	0.57

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	2.5	6.9	14.0	25.4	18.0	17.5	0.8	1.1	0.4	5.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6265	0.1996	0.1519	0.0744	0.0446	0.0377	0.74	5.30

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505212 **Sample Number:** L0912916-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505212
Sample Number: L0912916-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.13	0.00	#4	527.17	521.77	93.2	6.8
		#10	485.95	484.81	91.7	8.3
		#20	407.91	405.42	88.6	11.4
		#40	367.73	361.28	80.4	19.6
		#60	375.80	366.16	68.3	31.7
		#140	367.69	342.82	36.8	63.2
		#200	350.45	345.25	30.3	69.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 30.3
Weight of hydrometer sample =79.13
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	7.6	92.4
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	7.0	93.0
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	6.4	93.6
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	5.8	94.2
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	5.1	94.9
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	5.1	94.9
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	5.1	94.9

Fractional Components

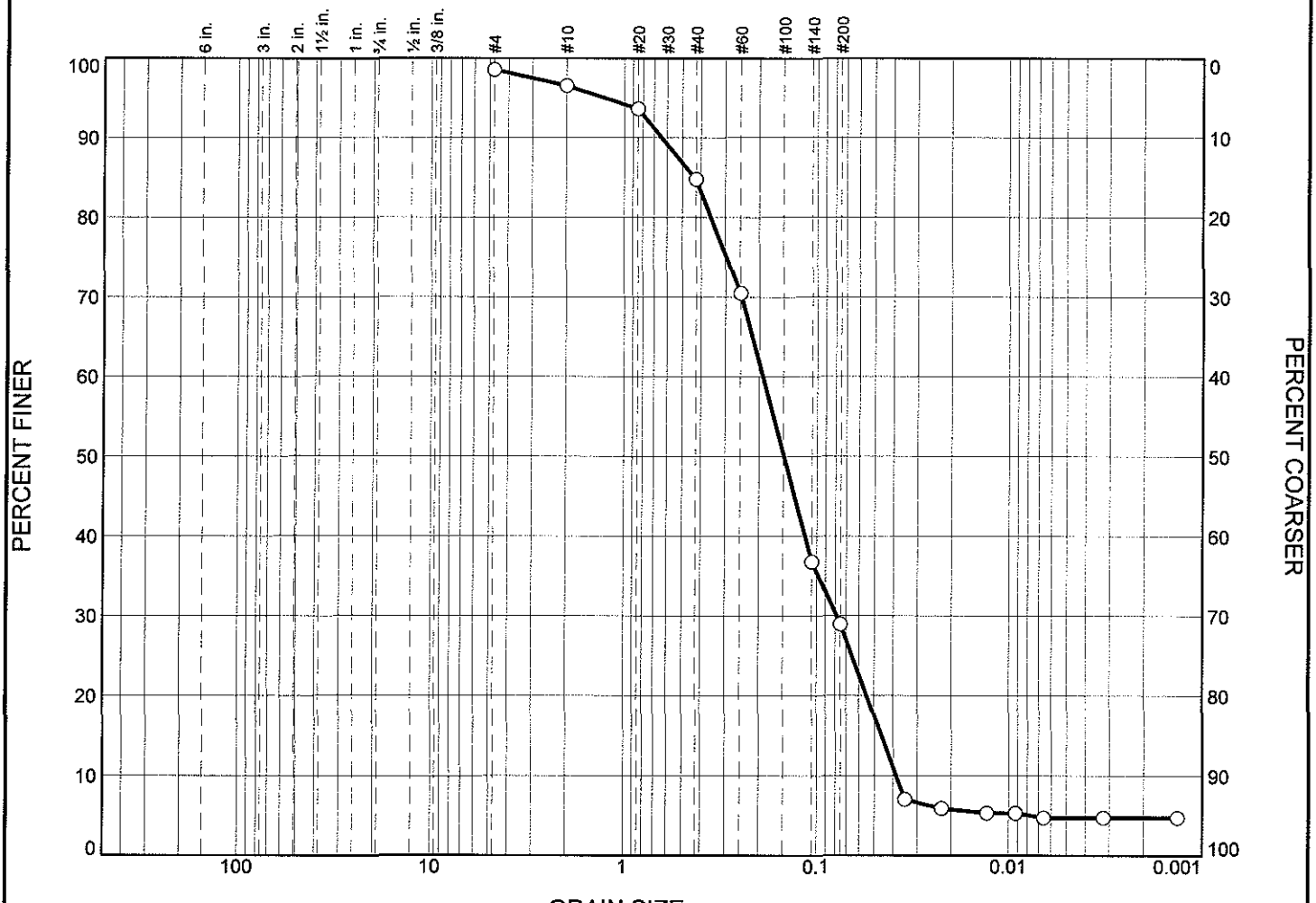
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	2.5	6.9	14.0	25.4	18.0	66.8	17.5	0.8	1.1	0.4	19.8	5.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0377	0.0446	0.0529	0.0744	0.1519	0.1996	0.4170	0.6265	1.2477	

Fineness Modulus	C_u	C_c
1.19	5.30	0.74

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.6	2.3	7.3	16.4	27.2	19.5	17.1	1.2	0.5	0.3	4.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4326	0.1914	0.1483	0.0785	0.0459	0.0385	0.84	4.97

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505213 **Sample Number:** L0912916-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505213
Sample Number: L0912916-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
82.15	0.00	#4	522.01	520.81	98.5	1.5
		#10	483.76	482.11	96.5	3.5
		#20	413.46	411.09	93.6	6.4
		#40	385.15	377.86	84.8	15.2
		#60	381.58	369.84	70.5	29.5
		#140	374.83	347.17	36.8	63.2
		#200	352.95	346.51	29.0	71.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 29.0
Weight of hydrometer sample =82.15
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	7.0	93.0
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	5.9	94.1
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	5.3	94.7
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	5.3	94.7
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	4.7	95.3
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	4.7	95.3
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	4.7	95.3

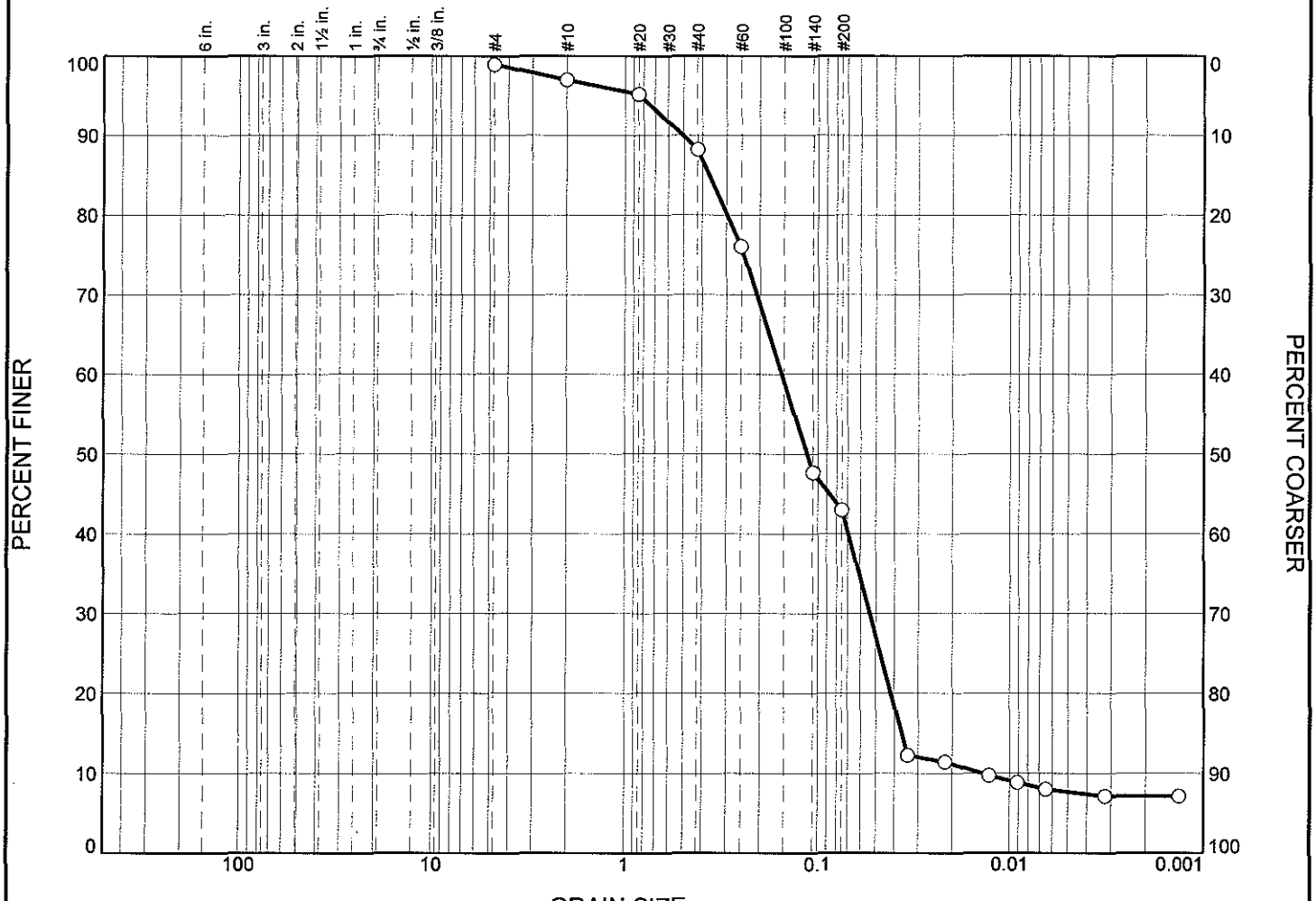
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.6	2.3	7.3	16.4	27.2	19.5	72.7	17.1	1.2	0.5	0.3	19.1	4.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0385	0.0459	0.0547	0.0785	0.1483	0.1914	0.3560	0.4326	0.6394	1.2702

Fineness Modulus	C_u	C_c
0.95	4.97	0.84

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.6	1.5	5.6	13.8	23.0	17.2	23.8	1.8	1.9	1.0	7.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3690	0.1539	0.1138	0.0537	0.0365	0.0141	1.33	10.92

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505226 **Sample Number:** L0912916-16

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505226
Sample Number: L0912916-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
81.01	0.00	#4	522.62	521.77	99.0	1.0
		#10	486.42	484.81	97.0	3.0
		#20	406.85	405.42	95.2	4.8
		#40	366.91	361.28	88.2	11.8
		#60	376.04	366.16	76.1	23.9
		#140	365.82	342.82	47.7	52.3
		#200	349.05	345.25	43.0	57.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 43.0
Weight of hydrometer sample =81.01
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0140	1.0144	0.0132	11.0	13.4	0.0340	12.2	87.8
5.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0217	11.4	88.6
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	9.7	90.3
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	8.8	91.2
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	8.0	92.0
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	7.1	92.9
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	7.1	92.9

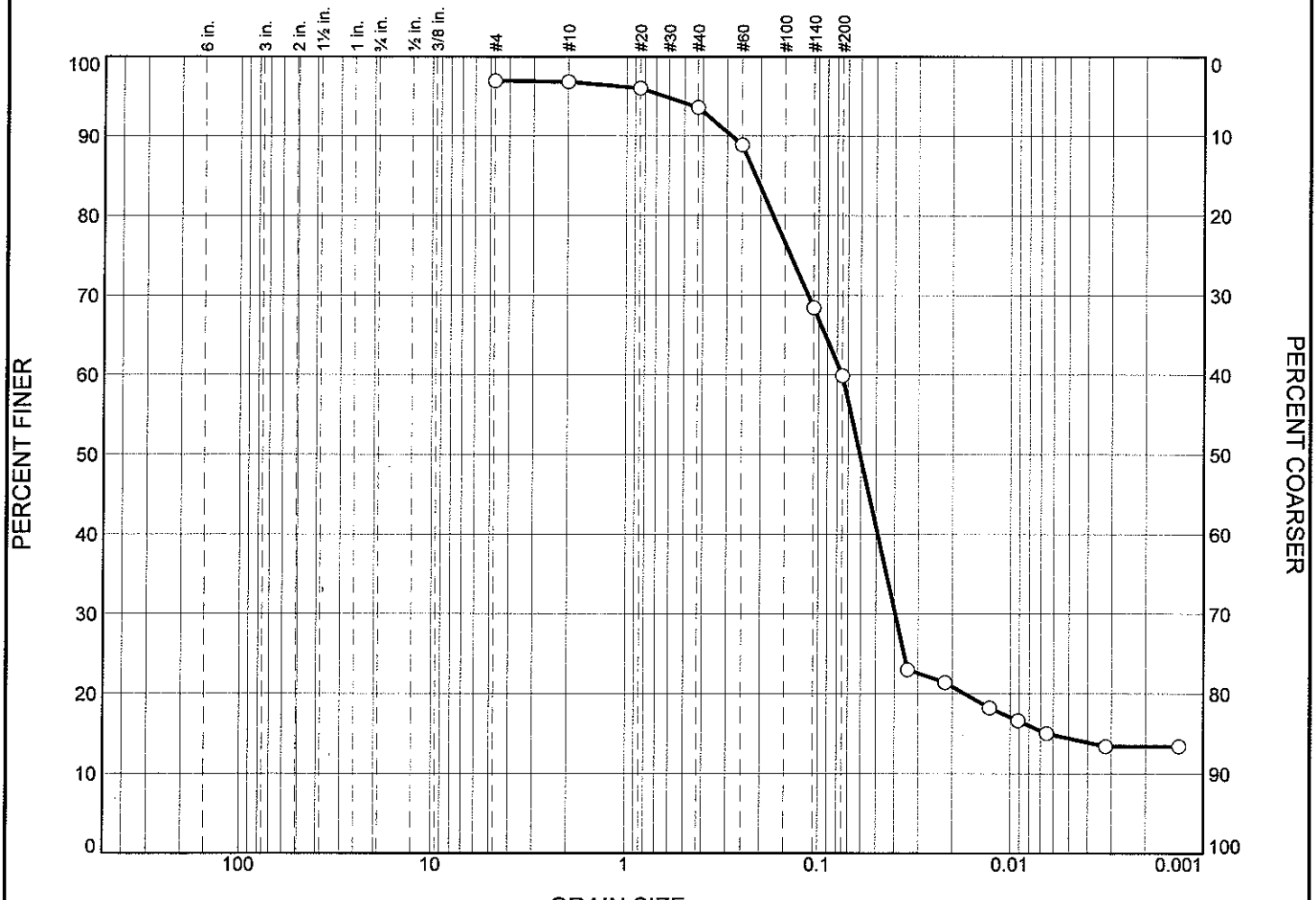
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.6	1.5	5.6	13.8	23.0	17.2	61.1	23.8	1.8	1.9	1.0	28.5	7.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0141	0.0365	0.0415	0.0537	0.1138	0.1539	0.2968	0.3690	0.5061	0.8334

Fineness Modulus	C_u	C_c
0.77	10.92	1.33

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.6	2.0	5.3	16.6	20.9	28.7	3.3	3.5	2.1	13.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2125	0.0753	0.0607	0.0395	0.0065			

Material Description	USCS	AASHTO
○		

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505311 **Sample Number:** L0912916-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505311
Sample Number: L0912916-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
60.03	0.00	#4	522.64	520.81	97.0	3.0
		#10	482.19	482.11	96.8	3.2
		#20	411.57	411.09	96.0	4.0
		#40	379.31	377.86	93.6	6.4
		#60	372.68	369.84	88.9	11.1
		#140	359.45	347.17	68.4	31.6
		#200	351.63	346.51	59.9	40.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 59.9
Weight of hydrometer sample =60.03
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0140	1.0144	0.0132	11.0	13.4	0.0340	23.0	77.0
5.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0217	21.4	78.6
15.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0128	18.2	81.8
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	16.6	83.4
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	15.0	85.0
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	13.4	86.6
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	13.4	86.6

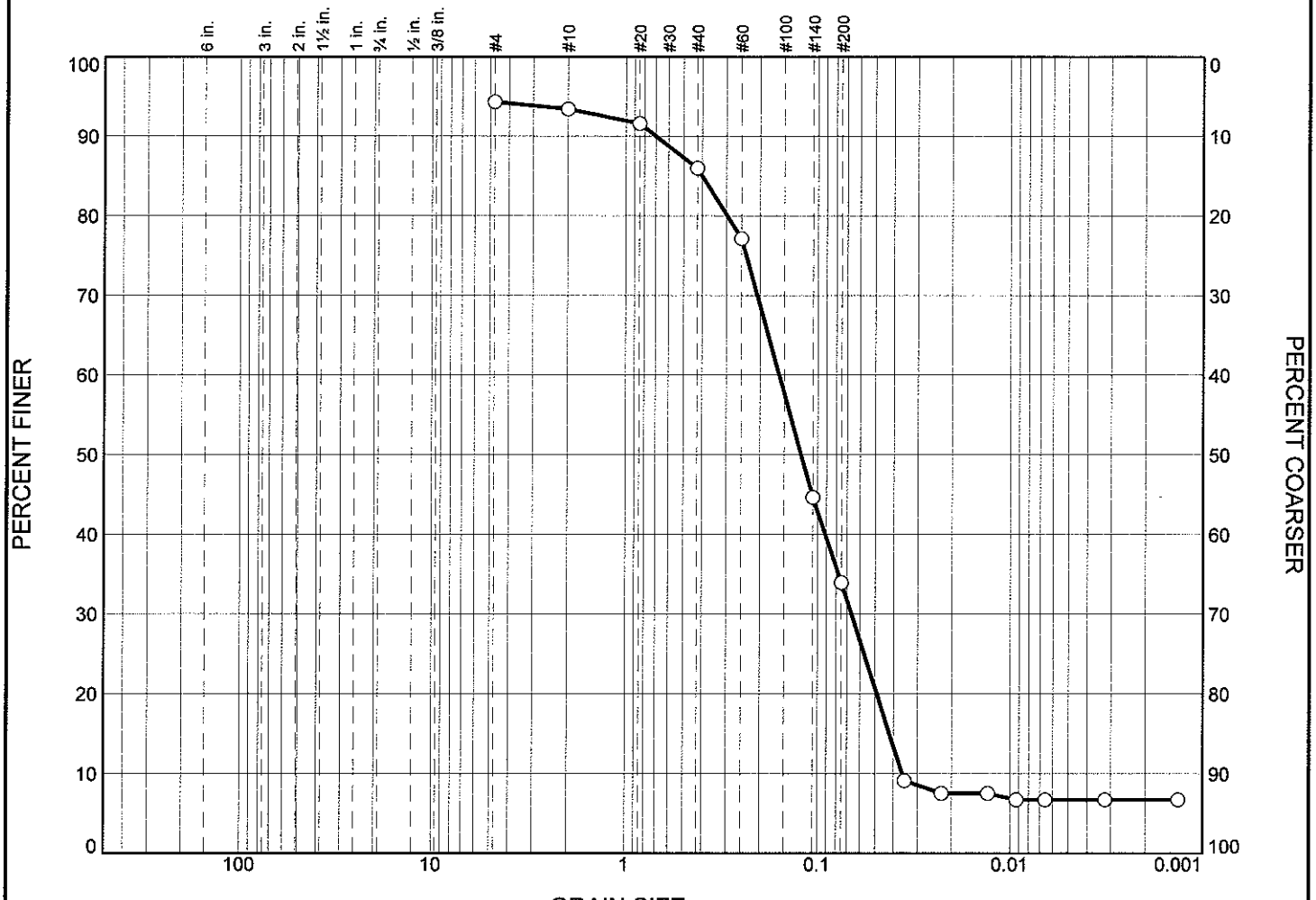
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.6	2.0	5.3	16.6	20.9	45.4	28.7	3.3	3.5	2.1	37.6	13.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0065	0.0172	0.0395	0.0607	0.0753	0.1723	0.2125	0.2837	0.6346

Fineness Modulus
0.48

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	1.5	4.6	10.2	26.2	22.9	19.3	1.2	0.8	0.0	6.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4010	0.1590	0.1221	0.0665	0.0419	0.0360	0.77	4.42

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505312 **Sample Number:** L0912916-18

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505312
Sample Number: L0912916-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
67.91	0.00	#4	525.62	521.77	94.3	5.7
		#10	485.42	484.81	93.4	6.6
		#20	406.67	405.42	91.6	8.4
		#40	365.10	361.28	86.0	14.0
		#60	372.16	366.16	77.1	22.9
		#140	364.89	342.82	44.6	55.4
		#200	352.52	345.25	33.9	66.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 33.9
Weight of hydrometer sample =67.91
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	9.1	90.9
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	7.5	92.5
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	7.5	92.5
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	6.7	93.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	6.7	93.3
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	6.7	93.3
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	6.7	93.3

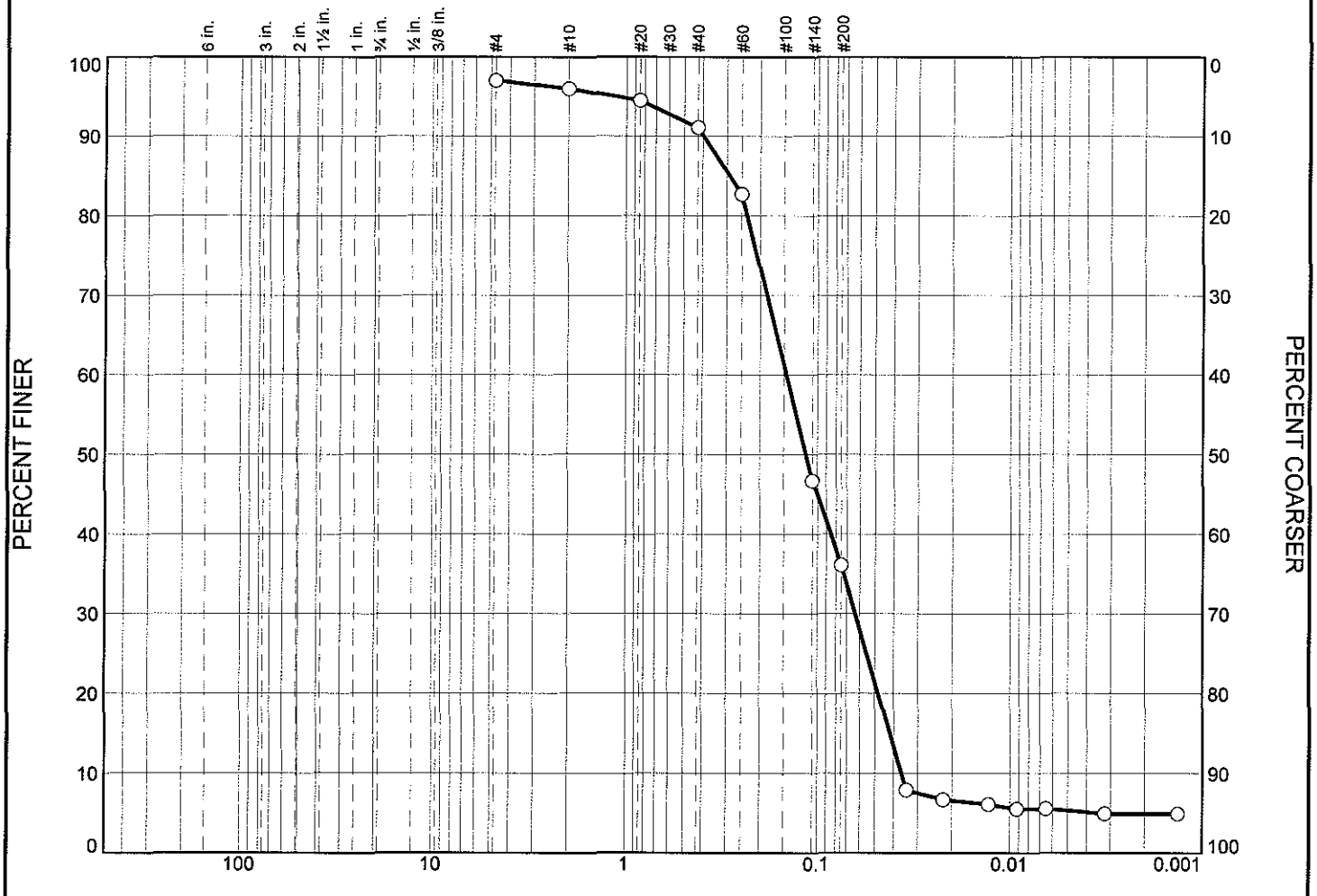
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	1.5	4.6	10.2	26.2	22.9	65.4	19.3	1.2	0.8	0.0	21.3	6.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0360	0.0419	0.0489	0.0665	0.1221	0.1590	0.2970	0.4010	0.6986	

Fineness Modulus	C_u	C_c
0.93	4.42	0.77

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	1.2	2.9	9.2	29.1	24.1	21.9	1.3	0.8	0.4	5.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2887	0.1455	0.1147	0.0634	0.0419	0.0365	0.76	3.99

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505313 **Sample Number:** L0912916-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505313
Sample Number: L0912916-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
98.57	0.00	#4	523.74	520.81	97.0	3.0
		#10	483.12	482.11	96.0	4.0
		#20	412.57	411.09	94.5	5.5
		#40	381.23	377.86	91.1	8.9
		#60	378.07	369.84	82.7	17.3
		#140	382.69	347.17	46.7	53.3
		#200	359.96	349.51	36.1	63.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 36.1
Weight of hydrometer sample =98.57
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	7.9	92.1
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	6.7	93.3
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	6.1	93.9
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	5.5	94.5
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	5.5	94.5
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	4.9	95.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	4.9	95.1

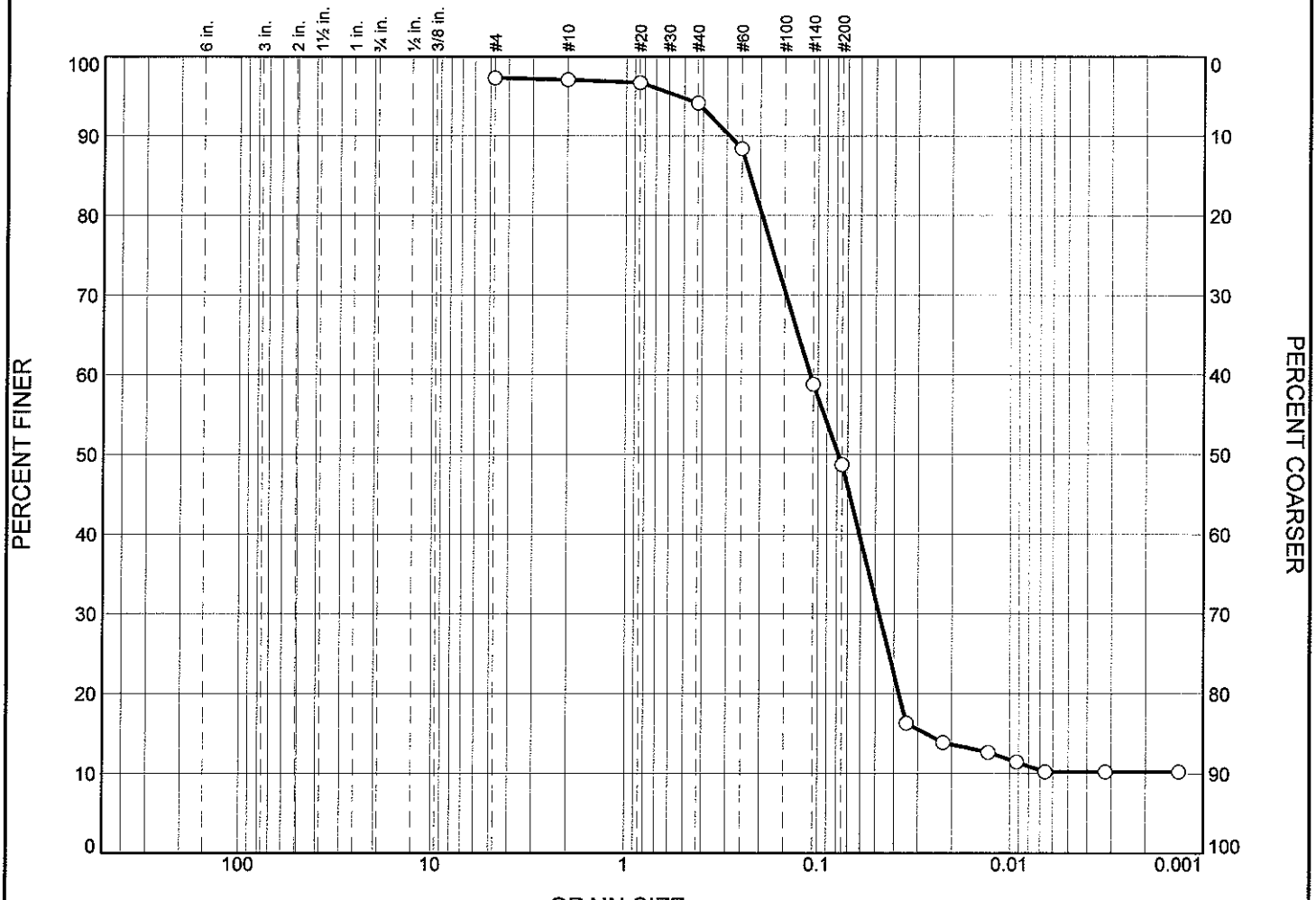
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	1.2	2.9	9.2	29.1	24.1	66.5	21.9	1.3	0.8	0.4	24.4	5.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0365	0.0419	0.0481	0.0634	0.1147	0.1455	0.2342	0.2887	0.3967	1.1294

Fineness Modulus	C_u	C_c
0.72	3.99	0.76

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.3	2.1	6.3	23.9	23.3	25.5	2.6	2.3	0.6	10.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2264	0.1097	0.0783	0.0478	0.0272			

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505326 **Sample Number:** L0912916-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505326
Sample Number: L0912916-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
64.21	0.00	#4	523.50	521.77	97.3	2.7
		#10	484.96	484.81	97.1	2.9
		#20	405.65	405.42	96.7	3.3
		#40	362.93	361.28	94.1	5.9
		#60	369.84	366.16	88.4	11.6
		#140	361.82	342.82	58.8	41.2
		#200	351.73	345.25	48.7	51.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 48.7
Weight of hydrometer sample =64.21
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	16.3	83.7
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	13.9	86.1
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	12.6	87.4
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	11.4	88.6
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	10.2	89.8
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	10.2	89.8
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	10.2	89.8

Fractional Components

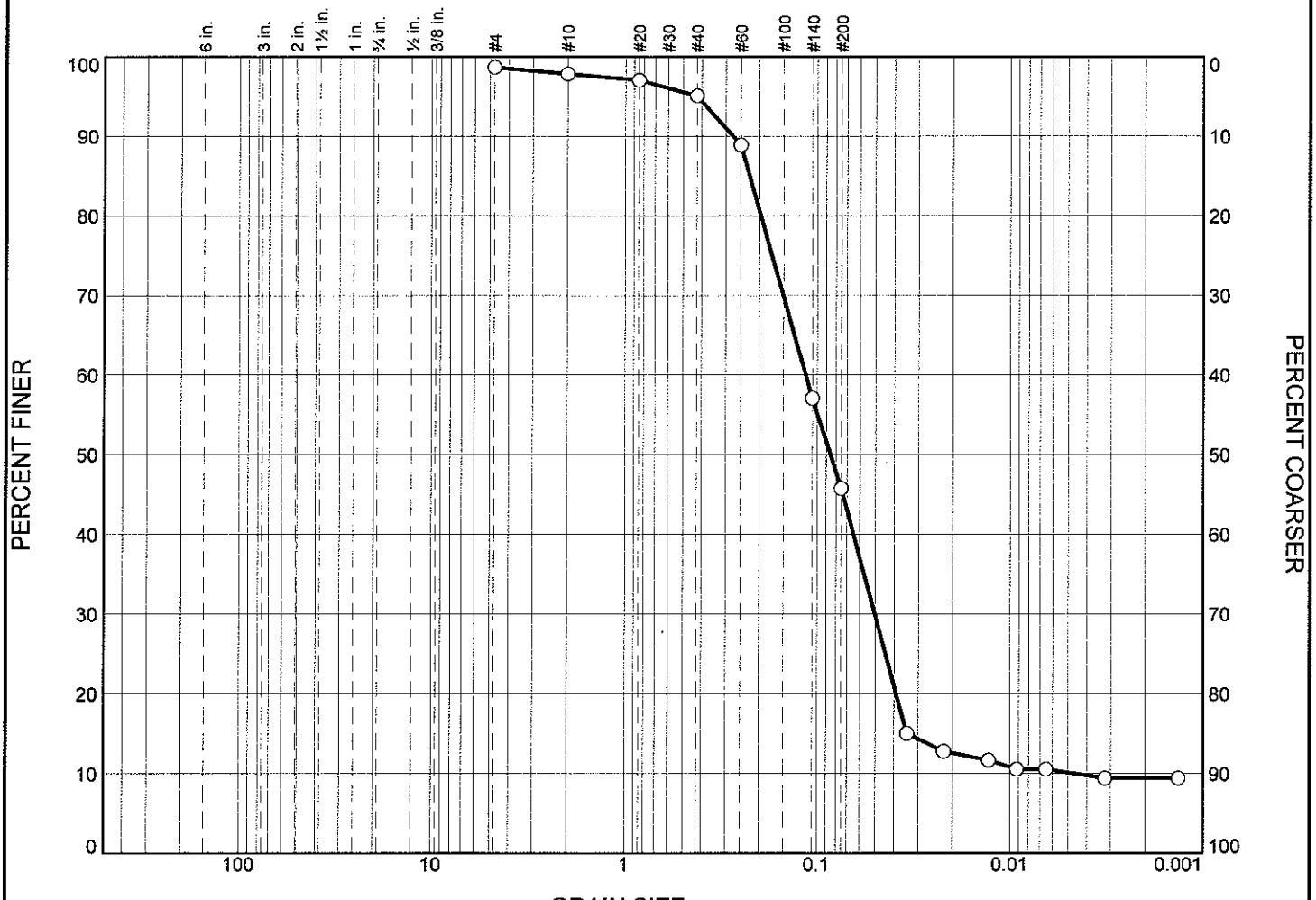
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.3	2.1	6.3	23.9	23.3	55.9	25.5	2.6	2.3	0.6	31.0	10.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0272	0.0376	0.0478	0.0783	0.1097	0.1959	0.2264	0.2896	0.5354

Fineness Modulus
0.52

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	0.6	1.7	6.6	25.7	24.6	24.1	2.4	1.6	0.8	9.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2252	0.1148	0.0854	0.0503	0.0342	0.0047	4.72	24.62

	Material Description	USCS	AASHTO
○			

Project No. L0912916 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505326 **Sample Number:** WG383974-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912916
Location: 505326
Sample Number: WG383974-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.36	0.00	#4	521.68	520.81	98.7	1.3
		#10	482.65	482.11	97.8	2.2
		#20	411.60	411.09	97.1	2.9
		#40	379.16	377.86	95.1	4.9
		#60	373.89	369.84	88.9	11.1
		#140	367.97	347.17	57.1	42.9
		#200	353.90	346.51	45.7	54.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.7
Weight of hydrometer sample =65.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	15.0	85.0
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	12.8	87.2
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	11.7	88.3
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	10.5	89.5
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	10.5	89.5
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	9.4	90.6
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	9.4	90.6

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	0.6	1.7	6.6	25.7	24.6	59.2	24.1	2.4	1.6	0.8	28.9	9.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0047	0.0342	0.0390	0.0503	0.0854	0.1148	0.1968	0.2252	0.2752	0.4223

Fineness Modulus	C_u	C_c
0.49	24.62	4.72

Certificate/Approval Program Summary

Last revised July 19, 2010 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 240

CHAIN OF CUSTODY

PAGE 10 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08016:16

Date Rec'd in Lab:

ALPHA Job #: L0912916

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
1	504911	9/25/09	15:45	SE	JB	☐	☐	☒	☐	ben gs	1
2	504912	9/25/09	15:55	SE	JB	☐	☐	☒	☐	ben gs	1
3	504913	9/25/09	16:07	SE	JB	☐	☐	☒	☐	ben gs	1
	504925	9/25/09	15:50	SE	JB	☒	☒	☐	☐	sed chem	1
4	504926	9/25/09	15:50	SE	JB	☐	☐	☒	☐	sed gs	1
	504927	9/25/09	15:50	SE	JB	☐	☐	☐	☒	sed arch	1

	total PCB congeners NOAA 18	TOC	grain size	archive
Container Type	G	G	G	-
Preservative	A	A	A	-

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajck	9/25/09 1855	[signature]	9/25/09 1910
Bert Hwy	9-28-09 09:13	P. Gillert	9/28/09 9:25
P. Gillert	9/28/09 10:20	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

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CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:16

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912916

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	505011	9/25/09	08:18	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
6	505012	9/25/09	08:35	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	505013	9/25/09	08:47	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	505025	9/25/09	08:25	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
8	505026	9/25/09	08:25	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	505027	9/25/09	08:25	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyle	9/25/09 1855	[illegible] McCall	9/25/09 1907
Betty Harp	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 16:20	[illegible]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 242

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:08016:16

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L09129l6

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	505111	9/25/09	14:06	SE	AC	☐	☐	☒	☐								ben gs	1
10	505112	9/25/09	14:06	SE	AC	☐	☐	☒	☐								ben gs	1
11	505113	9/25/09	14:06	SE	AC	☐	☐	☒	☐								ben gs	1
	505125	9/25/09	14:10	SE	AC	☒	☒	☐	☐								sed chem	1
12	505126	9/25/09	14:10	SE	AC	☐	☐	☒	☐								sed gs	1
	505127	9/25/09	14:10	SE	AC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-	-	
Preservative						A	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/25/09 19:05	[signature]	9/25/09 1907
[signature]	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

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CHAIN OF CUSTODY

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Date Rec'd in Lab:

ALPHA Job #: L0912916

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08016:16

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	505211	9/25/09	15:25	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
14	505212	9/25/09	15:24	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
15	505213	9/25/09	15:24	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	505225	9/25/09	15:30	SE	HC	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
16	505226	9/25/09	15:30	SE	HC	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	505227	9/25/09	15:30	SE	HC	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
					Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
Heidi [signature]	9/25/09 19:05	Katie McCarn	9/25/09 1900
Katie McCarn	9/28/09 0913	P. Gilbert	9/28/09 925
P. Gilbert	9/28/09 1020	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station 247

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08016:16

Date Rec'd in Lab:

ALPHA Job #: L0912916

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do

Preservation
☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
17	505311	9/25/09	16:40	SE	HC	☐	☐	☒	☐	ben gs	1
18	505312	9/25/09	16:40	SE	HC	☐	☐	☒	☐	ben gs	1
19	505313	9/25/09	16:40	SE	HC	☐	☐	☒	☐	ben gs	1
	505325	9/25/09	16:43	SE	HC	☒	☒	☐	☐	sed chem	1
20	505326	9/25/09	16:43	SE	HC	☐	☐	☒	☐	sed gs	1
	505327	9/25/09	16:43	SE	HC	☐	☐	☐	☒	sed arch	1

	total PCB congeners NOAA 18	TOC	grain size	archive
Container Type	G	G	G	-
Preservative	A	A	A	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/25/09 19:05	[signature]	9/25/09 19:05
[signature]	9/28/09 0913	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[signature]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912917
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912917
Report Date: 02/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912917-01	505411	NEW BEDFORD, MA	09/25/09 17:48
L0912917-02	505412	NEW BEDFORD, MA	09/25/09 17:46
L0912917-03	505413	NEW BEDFORD, MA	09/25/09 17:48
L0912917-04	505426	NEW BEDFORD, MA	09/25/09 17:48
L0912917-05	505511	NEW BEDFORD, MA	09/27/09 09:48
L0912917-06	505512	NEW BEDFORD, MA	09/27/09 10:20
L0912917-07	505513	NEW BEDFORD, MA	09/27/09 10:30
L0912917-08	505526	NEW BEDFORD, MA	09/27/09 10:03
L0912917-09	505611	NEW BEDFORD, MA	09/27/09 08:23
L0912917-10	505612	NEW BEDFORD, MA	09/27/09 08:42
L0912917-11	505613	NEW BEDFORD, MA	09/27/09 08:45
L0912917-12	505626	NEW BEDFORD, MA	09/27/09 08:36
L0912917-13	505711	NEW BEDFORD, MA	09/25/09 16:48
L0912917-14	505712	NEW BEDFORD, MA	09/25/09 17:15
L0912917-15	505713	NEW BEDFORD, MA	09/25/09 17:32
L0912917-16	505726	NEW BEDFORD, MA	09/25/09 17:00
L0912917-17	505811	NEW BEDFORD, MA	09/28/09 09:02
L0912917-18	505812	NEW BEDFORD, MA	09/28/09 09:11
L0912917-19	505813	NEW BEDFORD, MA	09/28/09 09:16
L0912917-20	505826	NEW BEDFORD, MA	09/28/09 09:08

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912917
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 23, 2009. The report was ammended to include revised Grain Size data.

The WG383974-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve, gravel(111%),% very coarse sand(67%),% coarse sand(21%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912917
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative (continued)

The WG383975-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve,% medium sand(29%),% fine sand(43%),silt(23%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newell

Title: Technical Director/Representative Date: 02/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-01
Client ID: 505411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	17.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	23.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.5		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	5.50		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-02
Client ID: 505412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:46
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	6.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.50		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	13.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	22.3		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.60		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-03
Client ID: 505413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	6.70		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.70		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.4		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.0		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	18.0		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.90		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-04
Client ID: 505426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.50		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.50		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.4		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.3		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-05
Client ID: 505511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 09:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	8.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	9.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	14.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.5		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.00		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	7.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.4		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-06
Client ID: 505512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.70		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	10.3		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	24.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	33.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.90		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	6.20		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	10.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-07
Client ID: 505513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:30
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	11.4		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	27.0		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	33.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.00		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	8.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.50		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-08
Client ID: 505526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 10:03
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	6.20		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	23.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	27.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.70		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.90		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	10.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.70		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-09
Client ID: 505611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 08:23
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.500		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	16.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	15.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	22.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-10
Client ID: 505612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 08:42
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	13.0		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.4		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	20.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.3		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-11
Client ID: 505613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 08:45
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	14.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	15.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	21.0		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-12
Client ID: 505626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/27/09 08:36
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	12.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	12.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	13.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.90		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	25.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.20		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-13
Client ID: 505711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 16:48
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.00		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	20.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-14
Client ID: 505712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:15
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.50		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	19.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	18.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-15
Client ID: 505713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:32
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.70		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	20.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	25.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	19.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	17.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.60		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-16
Client ID: 505726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/25/09 17:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.6		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.3		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.9		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	16.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.00		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-17
Client ID: 505811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 09:02
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.20		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.90		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	23.4		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	32.3		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.600		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	25.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.10		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.600		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-18
Client ID: 505812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 09:11
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.20		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	21.7		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	50.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	4.30		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.100		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	ND		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-19
Client ID: 505813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 09:16
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.00		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.90		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	23.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	50.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	14.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	3.60		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.200		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	ND		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912917
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912917-20
Client ID: 505826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 09:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.600		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.40		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	16.8		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	49.1		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.2		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.80		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	5.20		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.800		%	0.100	1	-	10/12/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912917
Report Date: 02/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-07,09-11,13-20 QC Batch ID: WG383974-1 QC Sample: L0912916-20 Client ID: DUP Sample						
Gravel (>2.00mm)	0.2	0.700	%	**111**	Q	20
Very Coarse Sand (1.00-2.00 mm)	0.3	0.600	%	**67**	Q	20
Coarse Sand (0.50-1.00 mm)	2.1	1.70	%	**21**	Q	20
Medium Sand (0.25-0.50 mm)	6.3	6.60	%	5		20
Fine Sand (0.125-0.25 mm)	23.9	25.7	%	7		20
Very Fine Sand (0.063-0.125 mm)	23.3	24.6	%	5		20
Silt - (1.95-62.5 um)	31.0	28.9	%	7		20
Clay - (<1.95 um)	10.2	9.70	%	5		20
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 08,12 QC Batch ID: WG383975-1 QC Sample: L0912917-12 Client ID: 505626						
Gravel (>2.00mm)	4.8	4.40	%	9		20
Very Coarse Sand (1.00-2.00 mm)	12.9	13.5	%	5		20
Coarse Sand (0.50-1.00 mm)	12.8	11.3	%	12		20
Medium Sand (0.25-0.50 mm)	13.2	9.90	%	**29**	Q	20
Fine Sand (0.125-0.25 mm)	9.9	6.40	%	**43**	Q	20
Very Fine Sand (0.063-0.125 mm)	11.7	10.2	%	14		20
Silt - (1.95-62.5 um)	25.6	32.2	%	**23**	Q	20
Clay - (<1.95 um)	7.2	8.70	%	19		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912917
Report Date: 02/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
D	Absent
A	Absent
F	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912917-01A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-02A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-03A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-04A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-05A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-06A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-07A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-08A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912917
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912917-09A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-10A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-11A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-12A	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-12B	Glass 250ml unpreserved	F	N/A	2.0	Y	Absent	A2-DUP()
L0912917-13A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-14A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-15A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-16A	Glass 250ml unpreserved	D	N/A	2.5	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-17A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-18A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912917
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912917-19A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912917-20A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912917
Project Number:	TO-0018	**Report Date:**	02/03/10

GLOSSARY

Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
Q	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

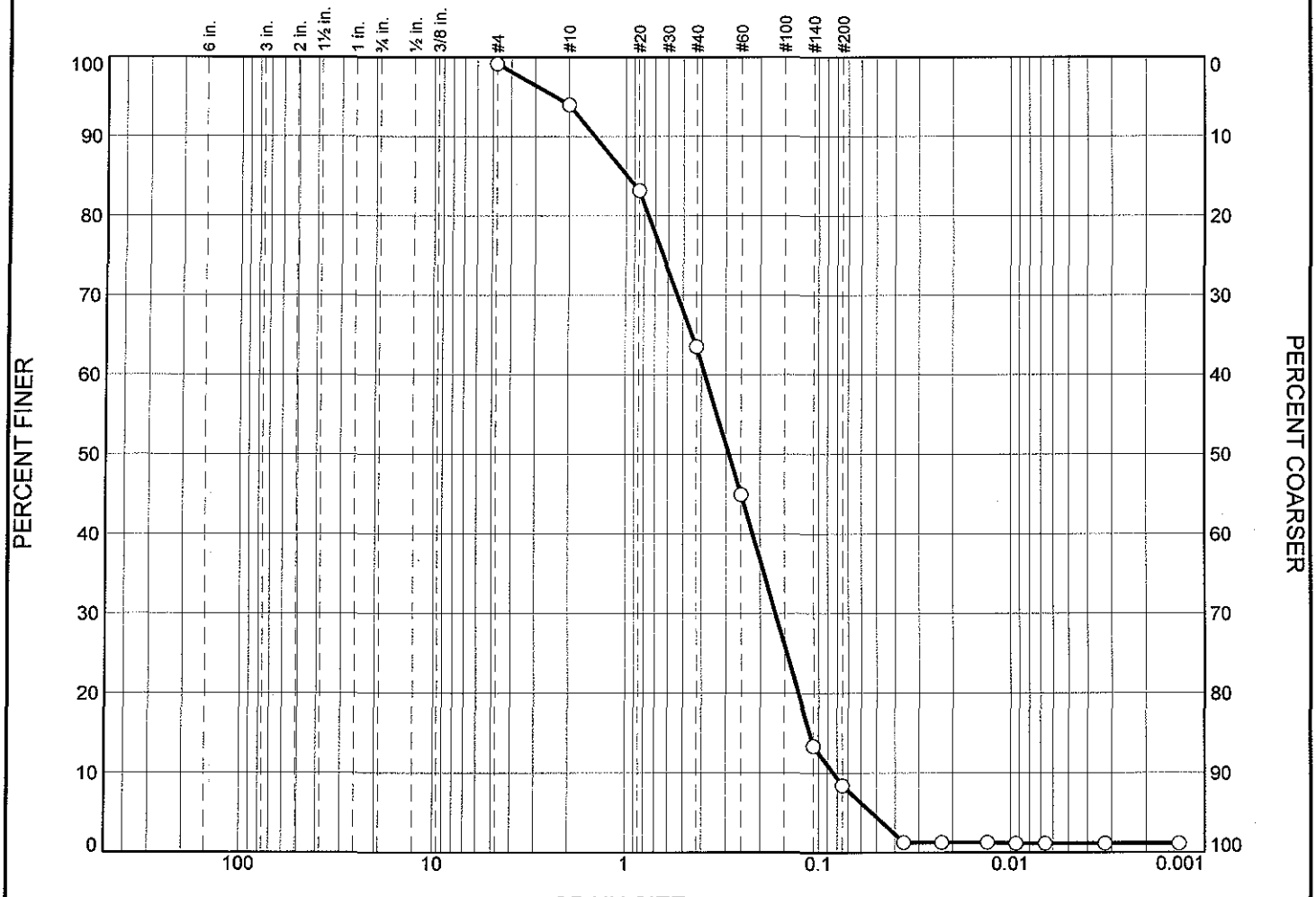
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.1	8.8	17.1	23.2	25.5	12.8	5.3	0.0	0.2	0.0	1.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9814	0.3844	0.2890	0.1667	0.1109	0.0839	0.86	4.58

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505411 **Sample Number:** L0912917-01

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505411
Sample Number: L0912917-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
87.42	0.00	#4	522.50	521.77	99.2	0.8
		#10	489.33	484.81	94.0	6.0
		#20	414.87	405.42	83.2	16.8
		#40	378.47	361.28	63.5	36.5
		#60	382.42	366.16	44.9	55.1
		#140	370.44	342.82	13.3	86.7
		#200	349.56	345.25	8.4	91.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 8.4
Weight of hydrometer sample =87.42
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	1.3	98.7
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	1.3	98.7
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	1.3	98.7
30.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0094	1.1	98.9
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	1.1	98.9
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	1.1	98.9
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	1.1	98.9

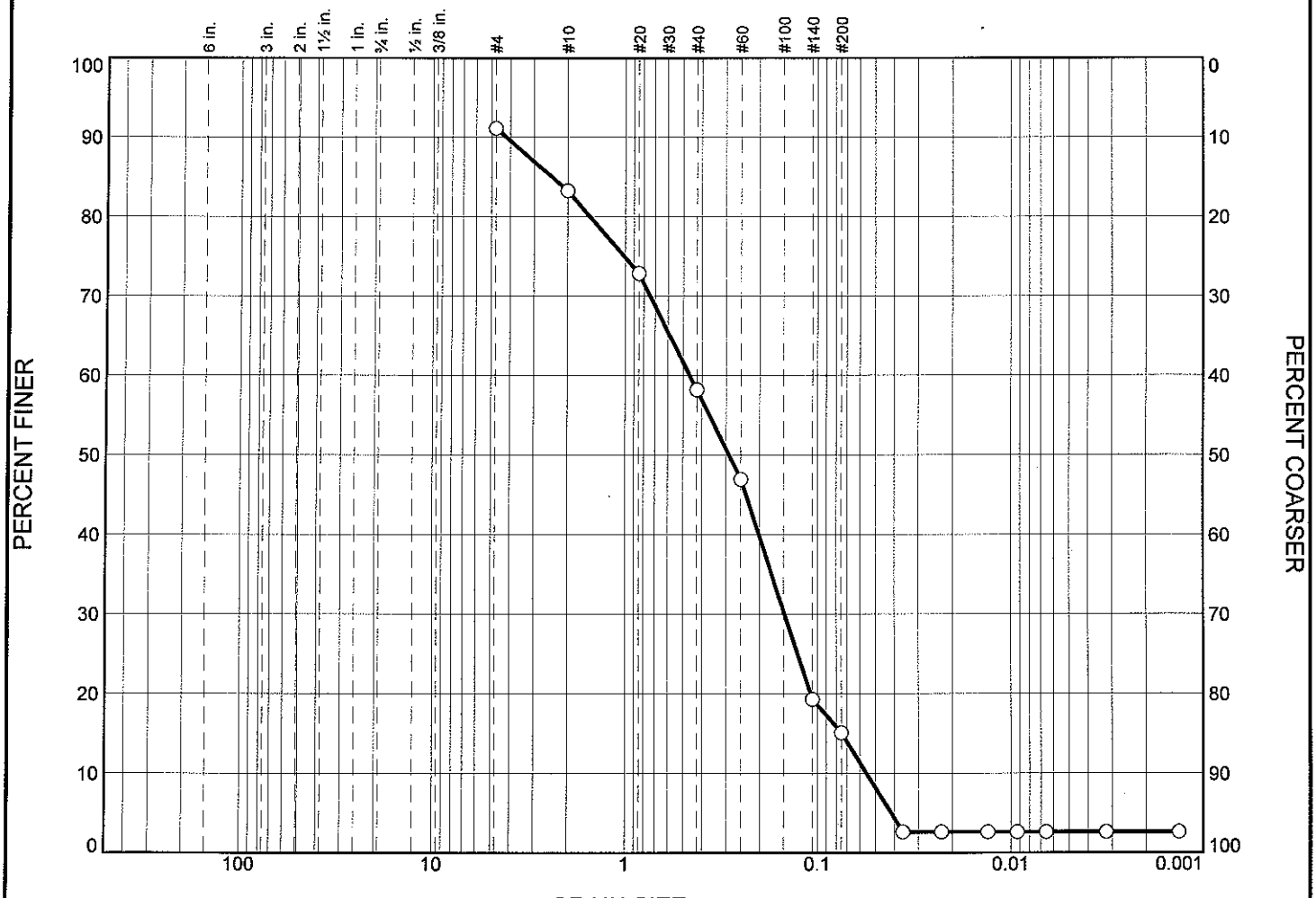
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.1	8.8	17.1	23.2	25.5	12.8	87.4	5.3	0.0	0.2	0.0	5.5	1.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0839	0.1109	0.1271	0.1667	0.2890	0.3844	0.7597	0.9814	1.4578	2.3664

Fineness Modulus	C_u	C_c
1.68	4.58	0.86

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.3	8.5	13.2	14.7	22.3	12.6	9.4	0.0	0.0	0.0	2.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.4235	0.4629	0.2892	0.1479	0.0747	0.0556	0.85	8.32

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505412 **Sample Number:** L0912917-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505412
Sample Number: L0912917-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
77.57	0.00	#4	527.70	520.81	91.1	8.9
		#10	488.21	482.11	83.3	16.7
		#20	419.16	411.09	72.9	27.1
		#40	389.23	377.86	58.2	41.8
		#60	378.60	369.84	46.9	53.1
		#140	368.60	347.17	19.3	80.7
		#200	349.41	346.15	15.1	84.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 15.1
Weight of hydrometer sample =77.57
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	2.6	97.4
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	2.6	97.4
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	2.6	97.4
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	2.6	97.4
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	2.6	97.4
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	2.6	97.4
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	2.6	97.4

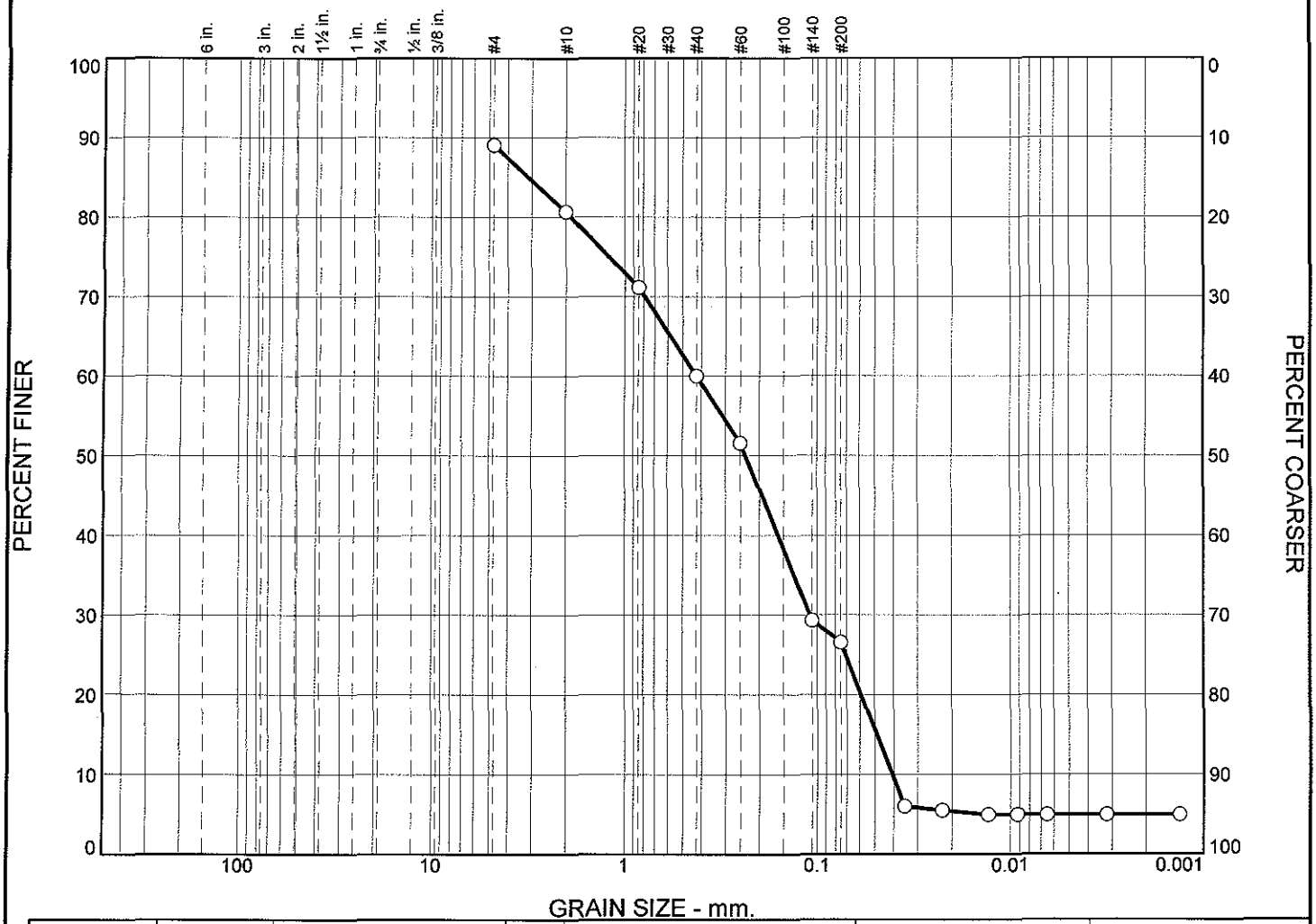
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.3	8.5	13.2	14.7	22.3	12.6	71.3	9.4	0.0	0.0	0.0	9.4	2.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0556	0.0747	0.1084	0.1479	0.2892	0.4629	1.5304	2.4235	4.2005	

Fineness Modulus	C_u	C_c
2.01	8.32	0.85

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.7	7.7	10.4	11.0	18.0	11.9	15.8	0.8	0.2		4.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.1202	0.4245	0.2352	0.1088	0.0489	0.0406	0.69	10.45

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505413 **Sample Number:** L0912917-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505413
Sample Number: L0912917-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
80.86	0.00	#4	530.61	521.77	89.1	10.9
		#10	491.58	484.81	80.7	19.3
		#20	413.13	405.42	71.2	28.8
		#40	370.29	361.28	60.0	40.0
		#60	372.98	366.16	51.6	48.4
		#140	360.82	342.82	29.3	70.7
		#200	347.47	345.25	26.6	73.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 26.6
Weight of hydrometer sample =80.86
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	6.0	94.0
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	5.5	94.5
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	4.9	95.1
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	4.9	95.1
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	4.9	95.1
250.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0032	4.9	95.1
1440.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0013	4.9	95.1

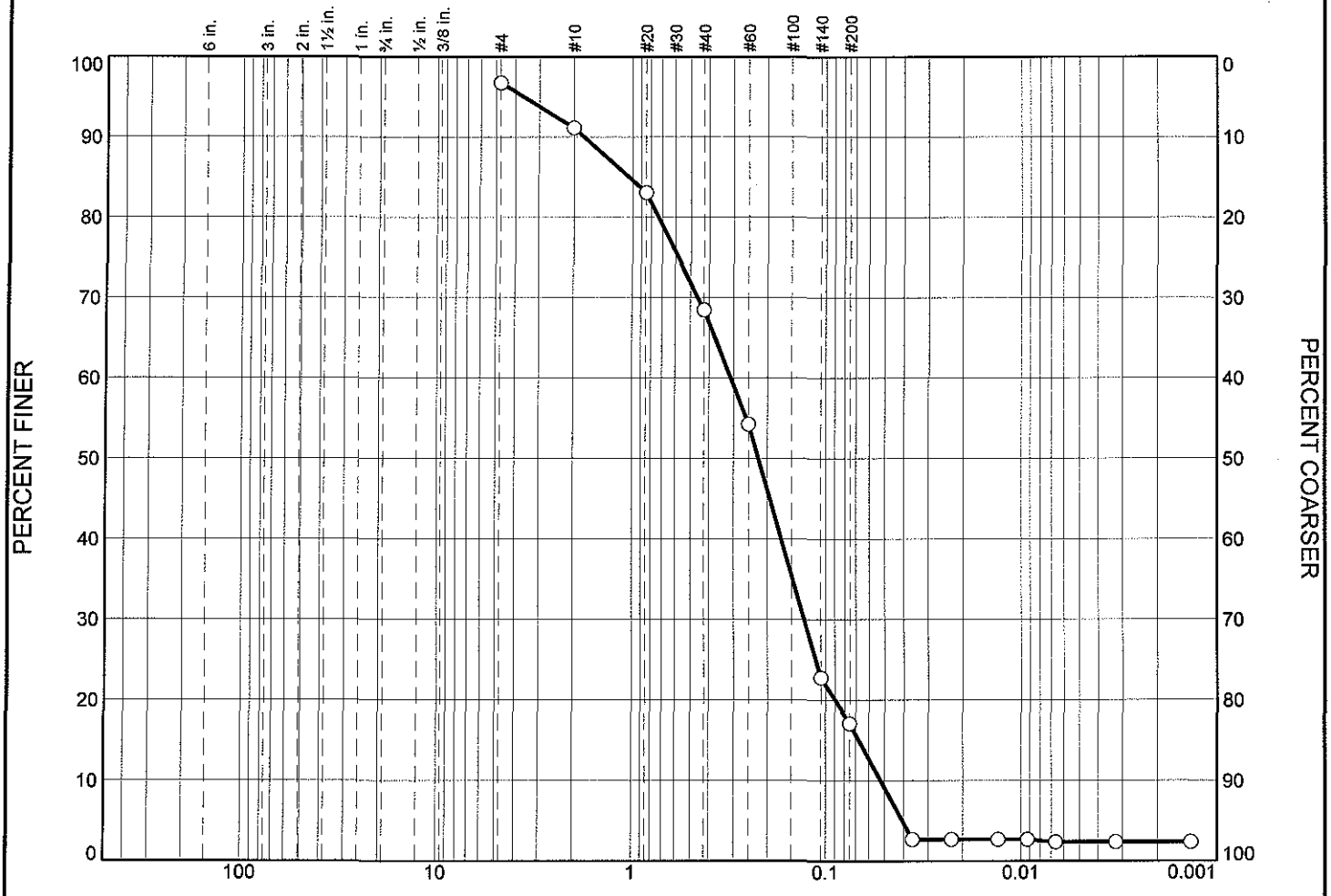
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.7	7.7	10.4	11.0	18.0	11.9	59.0	15.8	0.8	0.2		16.8	4.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0406	0.0489	0.0588	0.1088	0.2352	0.4245	1.8791	3.1202		

Fineness Modulus	C_u	C_c
1.95	10.45	0.69

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.5	6.5	12.7	17.7	25.4	15.3	10.8	0.0	0.2	0.1	2.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.0422	0.3099	0.2228	0.1292	0.0675	0.0523	1.03	5.93

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505426 **Sample Number:** L0912917-04

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505426
Sample Number: L0912917-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
85.71	0.00	#4	523.58	520.81	96.8	3.2
		#10	486.94	482.11	91.1	8.9
		#20	417.99	411.09	83.1	16.9
		#40	390.38	377.86	68.5	31.5
		#60	382.05	369.84	54.2	45.8
		#140	374.16	347.17	22.7	77.3
		#200	351.38	346.51	17.1	82.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 17.1
Weight of hydrometer sample =85.71
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	2.7	97.3
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	2.7	97.3
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	2.7	97.3
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	2.7	97.3
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	2.4	97.6
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	2.4	97.6
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	2.4	97.6

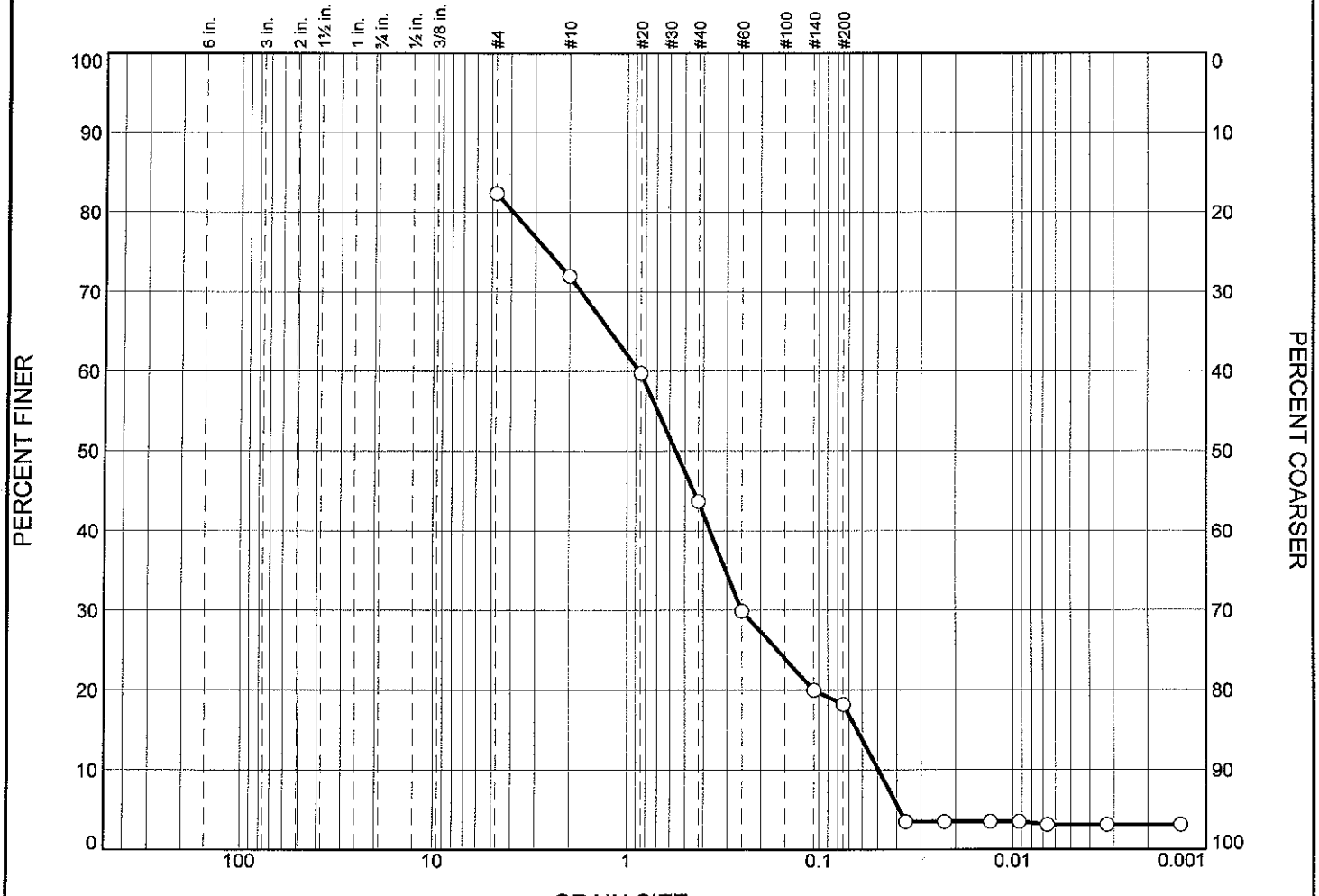
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.5	6.5	12.7	17.7	25.4	15.3	77.6	10.8	0.0	0.2	0.1	11.1	2.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0523	0.0675	0.0897	0.1292	0.2228	0.3099	0.7343	1.0422	1.7731	3.6209

Fineness Modulus	C_u	C_c
1.55	5.93	1.03

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				8.4	9.8	14.7	17.5	8.0	7.4	11.0	0.0	0.2	0.2	3.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.8657	0.5587	0.2511	0.0639	0.0498	1.46	17.38

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505511 **Sample Number:** L0912917-05

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505511
Sample Number: L0912917-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.92	0.00	#4	534.11	521.77	82.4	17.6
		#10	492.09	484.81	71.9	28.1
		#20	413.95	405.42	59.7	40.3
		#40	372.53	361.28	43.6	56.4
		#60	375.78	366.16	29.9	70.1
		#140	349.76	342.82	20.0	80.0
		#200	346.49	345.25	18.2	81.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 18.2
Weight of hydrometer sample =69.92
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	3.5	96.5
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	3.5	96.5
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	3.5	96.5
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	3.5	96.5
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	3.1	96.9
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	3.1	96.9
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	3.1	96.9

Fractional Components

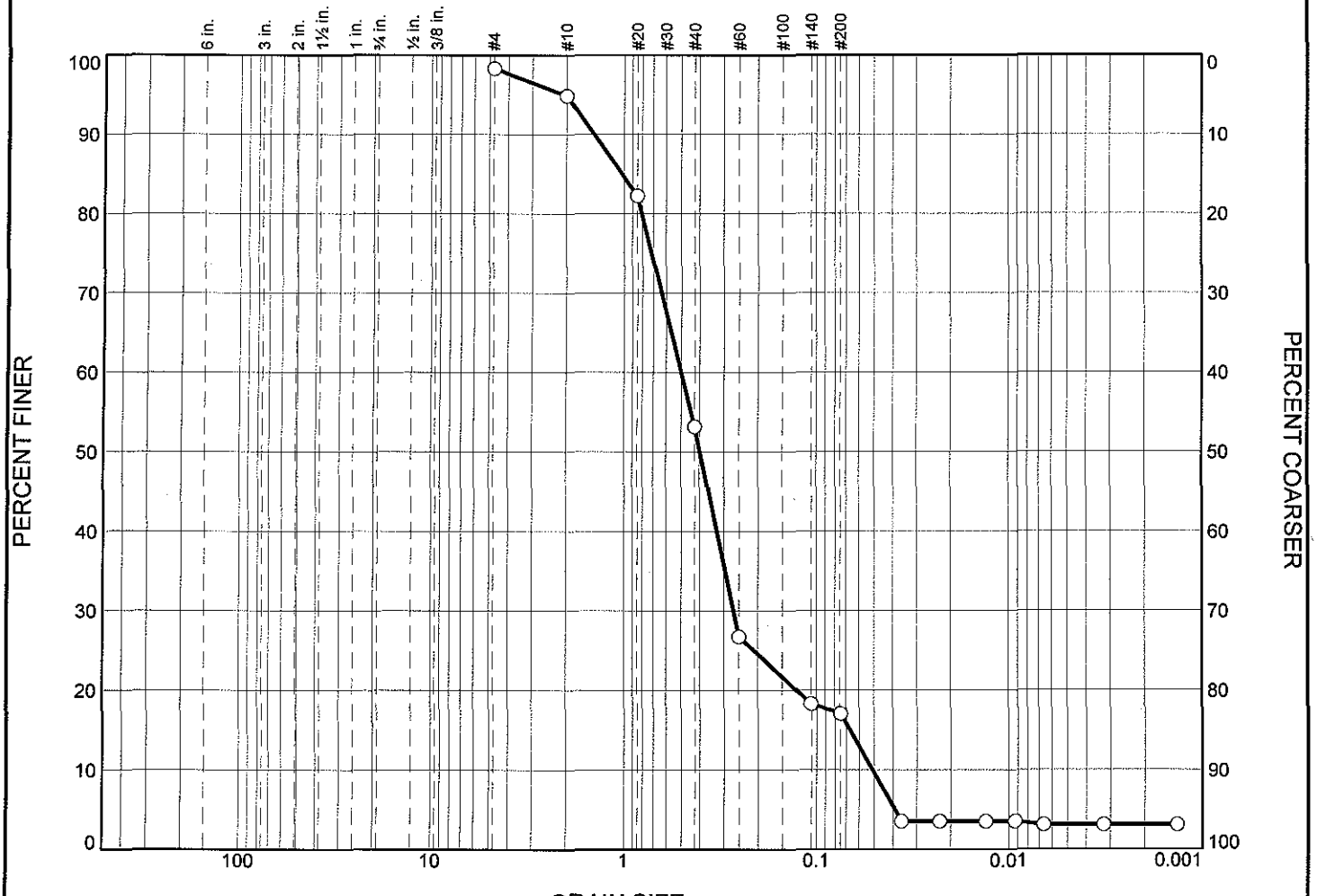
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			8.4	9.8	14.7	17.5	8.0	7.4	57.4	11.0	0.0	0.2	0.2	11.4	3.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0498	0.0639	0.1063	0.2511	0.5587	0.8657	3.9071			

Fineness Modulus	C_u	C_c
2.69	17.38	1.46

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.7	10.3	24.6	33.2	6.9	6.2	10.2	0.0	0.2	0.2	3.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.0250	0.5002	0.3988	0.2668	0.0671	0.0511	2.78	9.78

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505512 **Sample Number:** L0912917-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505512
Sample Number: L0912917-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
64.96	0.00	#4	521.90	520.81	98.3	1.7
		#10	484.35	482.11	94.9	5.1
		#20	419.30	411.09	82.2	17.8
		#40	396.74	377.86	53.2	46.8
		#60	387.00	369.84	26.8	73.2
		#140	352.67	347.17	18.3	81.7
		#200	347.31	346.51	17.1	82.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 17.1
Weight of hydrometer sample =64.96
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	3.5	96.5
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	3.5	96.5
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	3.5	96.5
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	3.5	96.5
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	3.1	96.9
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	3.1	96.9
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	3.1	96.9

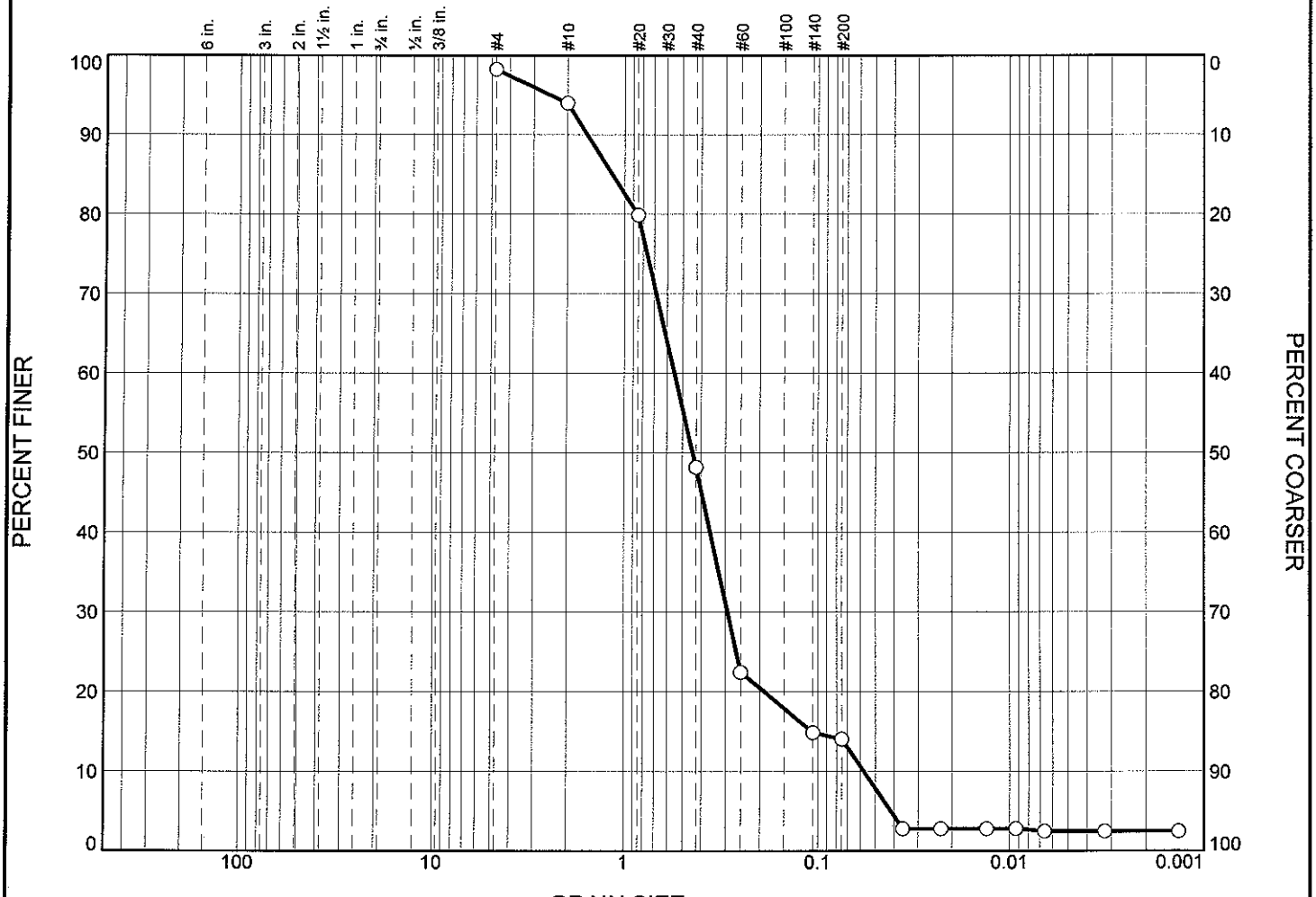
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.7	10.3	24.6	33.2	6.9	6.2	81.2	10.2	0.0	0.2	0.2	10.6	3.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0511	0.0671	0.1261	0.2668	0.3988	0.5002	0.8059	1.0250	1.4379	2.0643

Fineness Modulus	C_u	C_c
1.94	9.78	2.78

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.4	11.4	27.0	33.2	6.1	5.0	8.5	0.0	0.2	0.1	2.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.1593	0.5502	0.4421	0.2921	0.1077	0.0576	2.69	9.55

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505513 **Sample Number:** L0912917-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505513
Sample Number: L0912917-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
67.10	0.00	#4	522.96	521.77	98.2	1.8
		#10	487.65	484.81	94.0	6.0
		#20	414.89	405.42	79.9	20.1
		#40	382.54	361.28	48.2	51.8
		#60	383.44	366.16	22.4	77.6
		#140	347.91	342.82	14.9	85.1
		#200	345.80	345.25	14.0	86.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 14.0
Weight of hydrometer sample =67.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0360	2.8	97.2
5.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0228	2.8	97.2
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	2.8	97.2
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	2.8	97.2
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	2.5	97.5
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	2.5	97.5
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	2.5	97.5

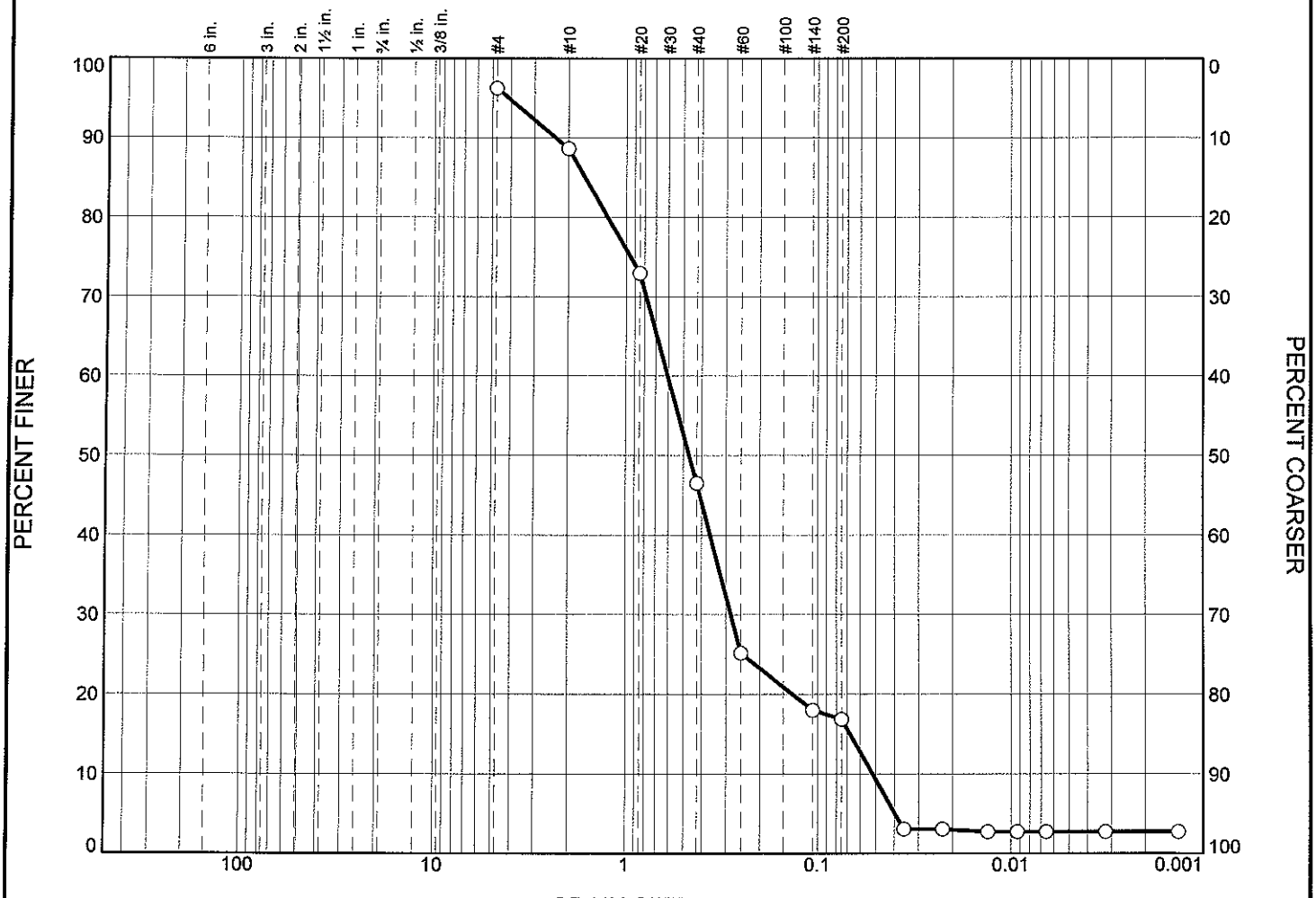
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.4	11.4	27.0	33.2	6.1	5.0	82.7	8.5	0.0	0.2	0.1	8.8	2.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0576	0.1077	0.1896	0.2921	0.4421	0.5502	0.8562	1.1593	1.5699	2.4565

Fineness Modulus	C_u	C_c
2.08	9.55	2.69

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				6.2	12.7	23.2	27.6	5.7	5.9	10.5	0.2	0.1	0.0	2.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.6408	0.6054	0.4657	0.2821	0.0679	0.0519	2.53	11.67

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group
Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505526 **Sample Number:** L0912917-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505526
Sample Number: L0912917-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
83.31	0.00	#4	523.92	520.81	96.3	3.7
		#10	488.47	482.11	88.6	11.4
		#20	424.17	411.09	72.9	27.1
		#40	399.87	377.86	46.5	53.5
		#60	387.65	369.84	25.1	74.9
		#140	353.13	347.17	18.0	82.0
		#200	347.46	346.51	16.8	83.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 16.8
Weight of hydrometer sample =83.31
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0357	3.0	97.0
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	3.0	97.0
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	2.7	97.3
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	2.7	97.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	2.7	97.3
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	2.7	97.3
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	2.7	97.3

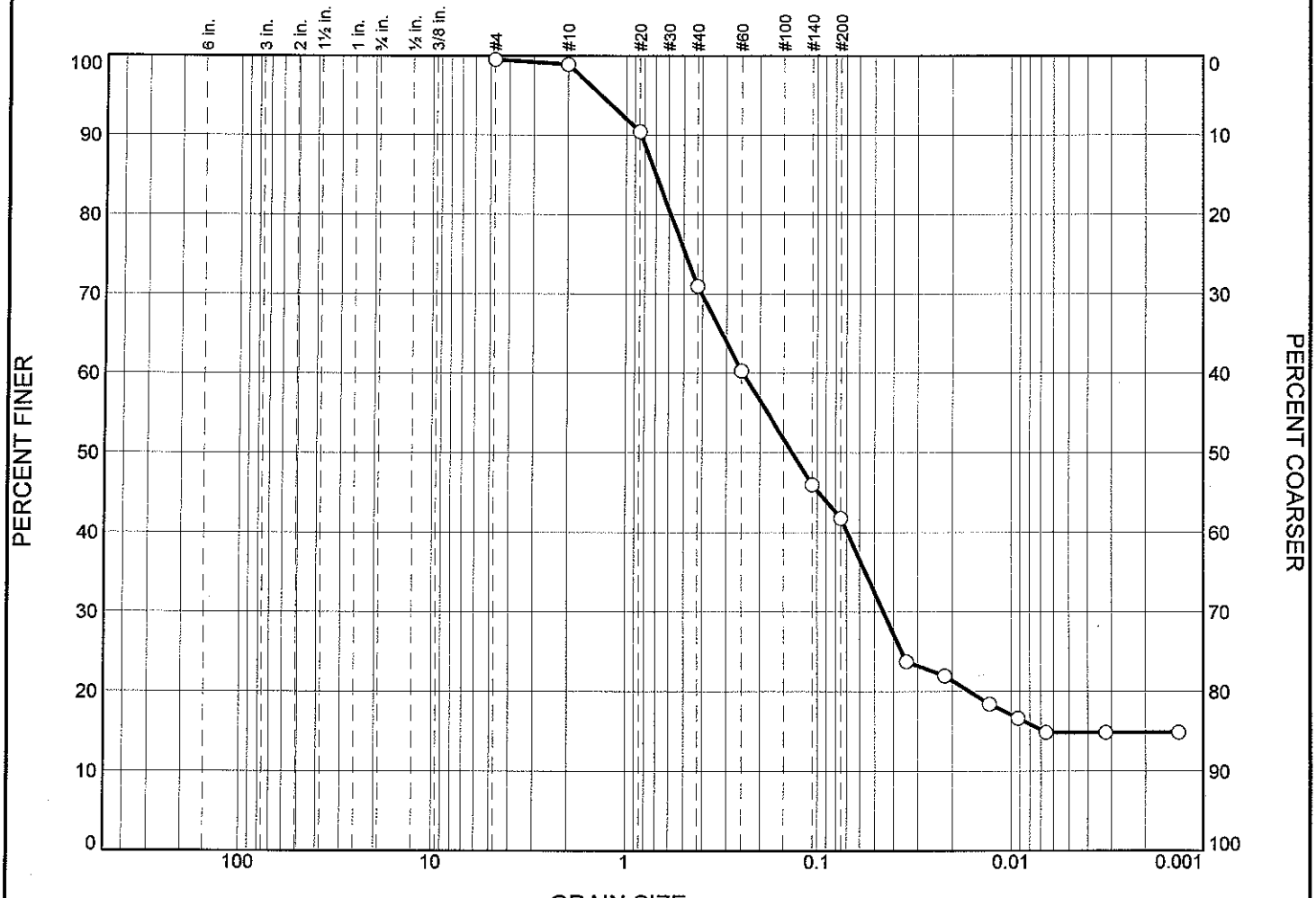
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			6.2	12.7	23.2	27.6	5.7	5.9	75.1	10.5	0.2	0.1	0.0	10.8	2.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0519	0.0679	0.1350	0.2821	0.4657	0.6054	1.2494	1.6408	2.3351	4.1148

Fineness Modulus	C_u	C_c
2.22	11.67	2.53

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.5	6.8	16.6	15.2	11.6	11.1	14.3	3.6	3.9	0.9	14.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7001	0.2457	0.1349	0.0451	0.0068			

Material Description	USCS	AASHTO
○		

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505611 **Sample Number:** L0912917-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505611
Sample Number: L0912917-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
37.80	0.00	#4	521.95	521.77	99.5	0.5
		#10	485.04	484.81	98.9	1.1
		#20	408.62	405.42	90.4	9.6
		#40	368.64	361.28	71.0	29.0
		#60	370.20	366.16	60.3	39.7
		#140	348.23	342.82	46.0	54.0
		#200	346.84	345.25	41.8	58.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 41.8
Weight of hydrometer sample =37.80
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0344	23.7	76.3
5.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0219	22.0	78.0
15.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0129	18.4	81.6
30.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0092	16.6	83.4
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	14.9	85.1
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	14.9	85.1
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	14.9	85.1

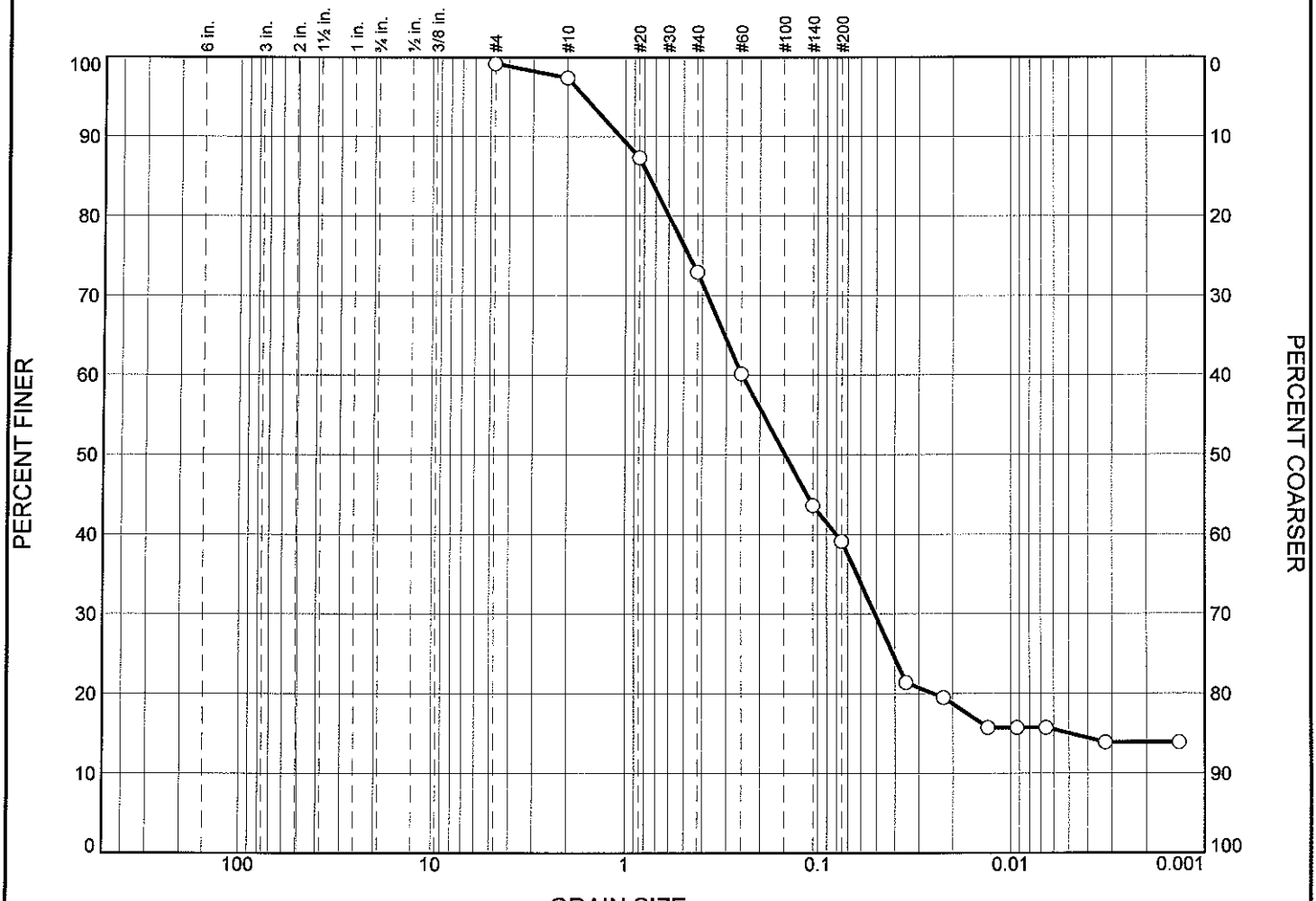
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.5	6.8	16.6	15.2	11.6	11.1	61.3	14.3	3.6	3.9	0.9	22.7	14.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0068	0.0164	0.0451	0.1349	0.2457	0.5860	0.7001	0.8365	1.3464

Fineness Modulus
1.11

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.4	8.1	13.0	16.1	13.4	11.9	14.0	4.0	1.2	1.4	14.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7582	0.2480	0.1476	0.0507	0.0050			

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505612 **Sample Number:** L0912917-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505612
Sample Number: L0912917-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
33.43	0.00	#4	521.08	520.81	99.2	0.8
		#10	482.70	482.11	97.4	2.6
		#20	414.45	411.09	87.4	12.6
		#40	382.68	377.86	73.0	27.0
		#60	374.12	369.84	60.2	39.8
		#140	352.70	347.17	43.6	56.4
		#200	348.01	346.51	39.1	60.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 39.1
Weight of hydrometer sample =33.43
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0350	21.4	78.6
5.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0224	19.5	80.5
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	15.7	84.3
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	15.7	84.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	15.7	84.3
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	13.9	86.1
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	13.9	86.1

Fractional Components

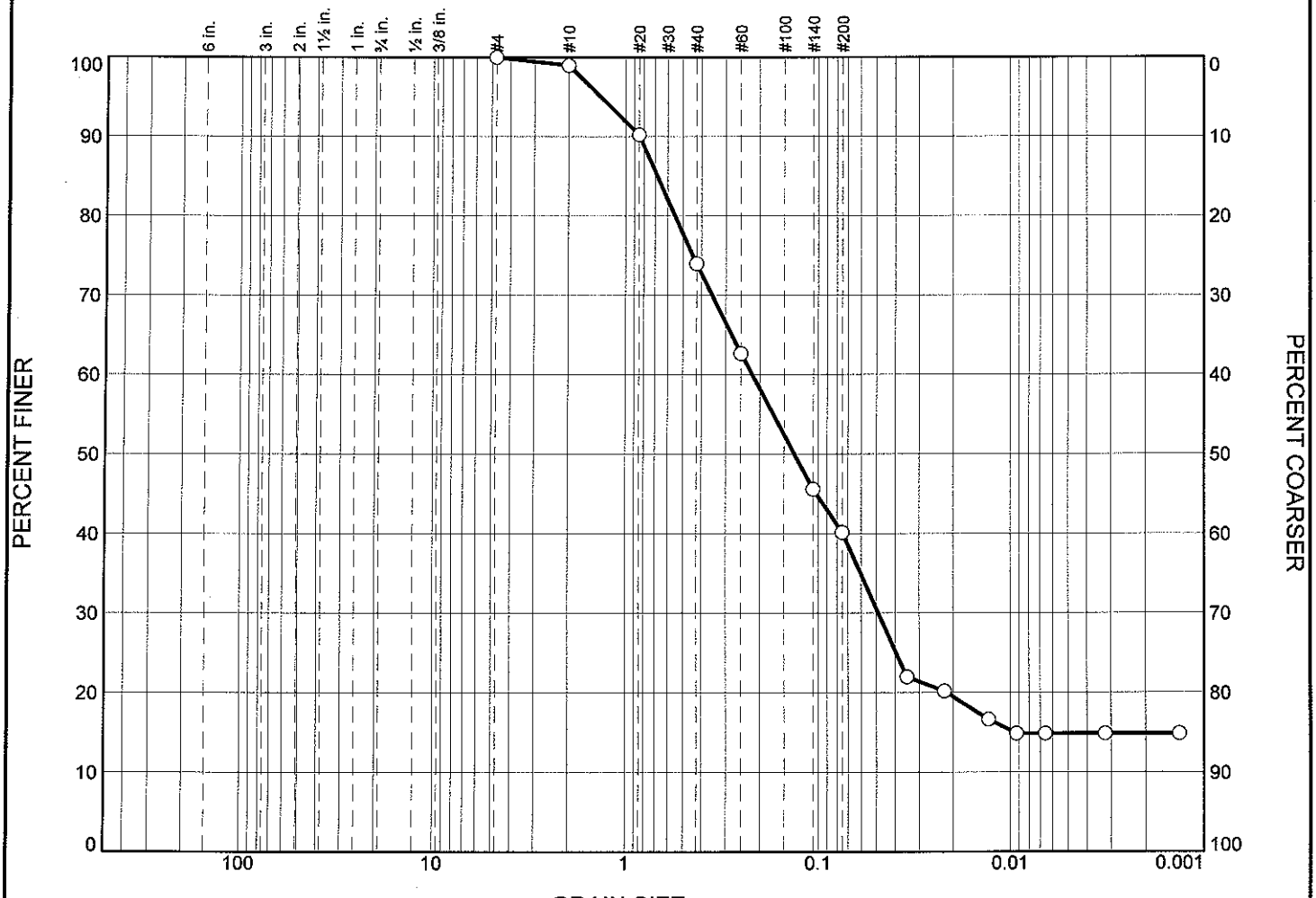
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.4	8.1	13.0	16.1	13.4	11.9	62.5	14.0	4.0	1.2	1.4	20.6	14.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0050	0.0252	0.0507	0.1476	0.2480	0.5962	0.7582	1.0627	1.6266

Fineness Modulus
1.17

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	7.1	14.1	15.1	13.8	13.1	14.3	3.7	3.0	0.0	14.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6801	0.2187	0.1324	0.0488	0.0096			

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505613 **Sample Number:** L0912917-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505613
Sample Number: L0912917-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
36.32	0.00	#4	521.78	521.77	100.0	0.0
		#10	485.17	484.81	99.0	1.0
		#20	408.60	405.42	90.2	9.8
		#40	367.18	361.28	74.0	26.0
		#60	370.27	366.16	62.7	37.3
		#140	349.03	342.82	45.6	54.4
		#200	347.23	345.25	40.1	59.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 40.1
Weight of hydrometer sample =36.32
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0347	21.9	78.1
5.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0222	20.2	79.8
15.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0130	16.6	83.4
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	14.8	85.2
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	14.8	85.2
250.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0032	14.8	85.2
1440.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0013	14.8	85.2

Fractional Components

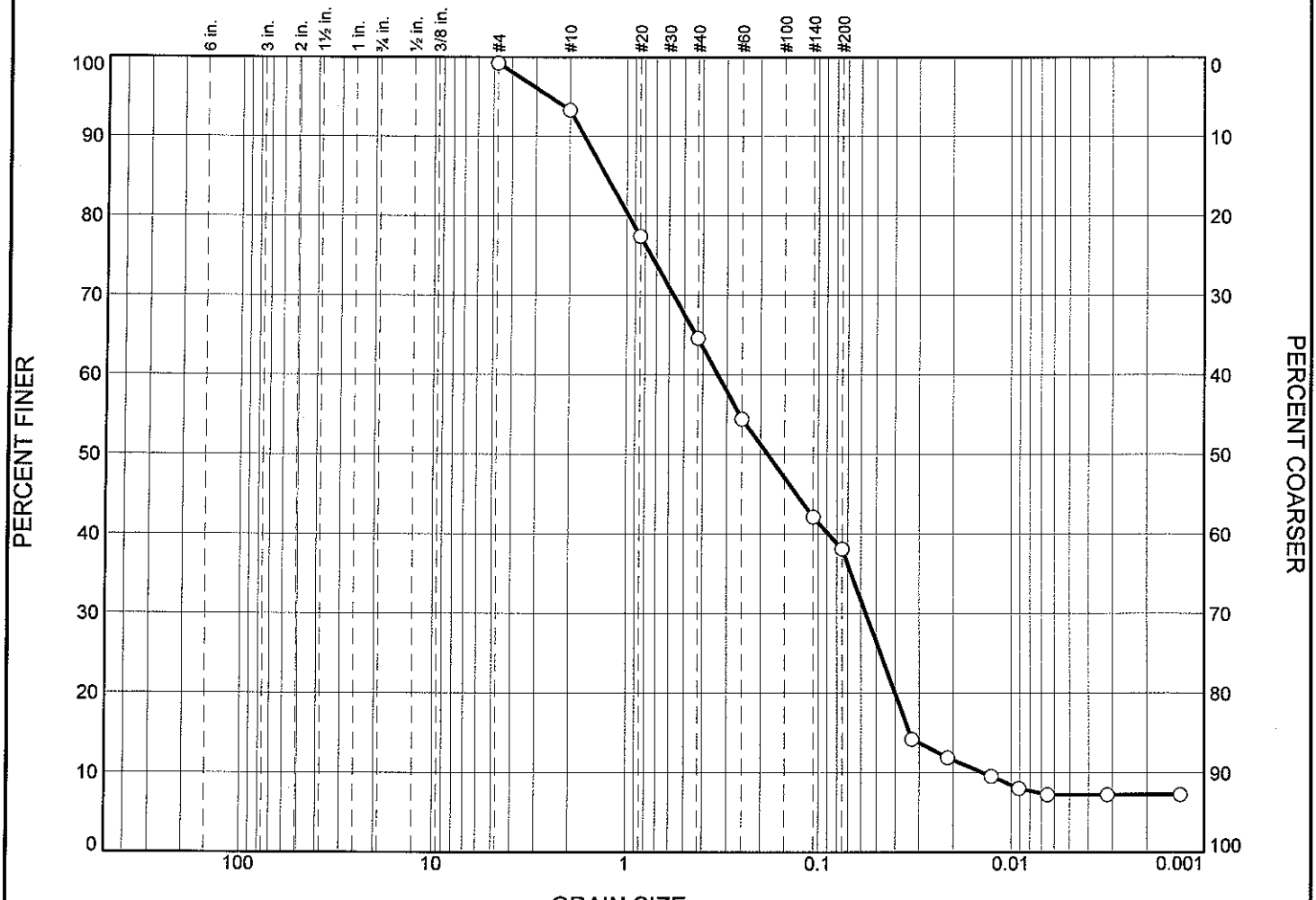
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	7.1	14.1	15.1	13.8	13.1	63.2	14.3	3.7	3.0	0.0	21.0	14.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0096	0.0216	0.0488	0.1324	0.2187	0.5494	0.6801	0.8419	1.3554

Fineness Modulus
1.06

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.8	12.9	12.8	13.2	9.9	11.7	18.9	3.4	2.8	0.5	7.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2778	0.3345	0.1836	0.0566	0.0336	0.0140	0.69	23.95

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505626 **Sample Number:** L0912917-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505626
Sample Number: L0912917-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
79.11	0.00	#4	521.42	520.81	99.2	0.8
		#10	486.78	482.11	93.3	6.7
		#20	423.67	411.09	77.4	22.6
		#40	388.02	377.86	64.6	35.4
		#60	377.87	369.84	54.4	45.6
		#140	356.91	347.17	42.1	57.9
		#200	349.70	346.51	38.1	61.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 38.1
Weight of hydrometer sample =79.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0180	1.0184	0.0132	15.0	12.3	0.0327	14.2	85.8
5.00	23.0	1.0150	1.0154	0.0132	12.0	13.1	0.0213	11.9	88.1
15.00	23.0	1.0120	1.0124	0.0132	9.0	13.9	0.0127	9.6	90.4
30.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0091	8.0	92.0
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	7.2	92.8
250.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0032	7.2	92.8
1440.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0013	7.2	92.8

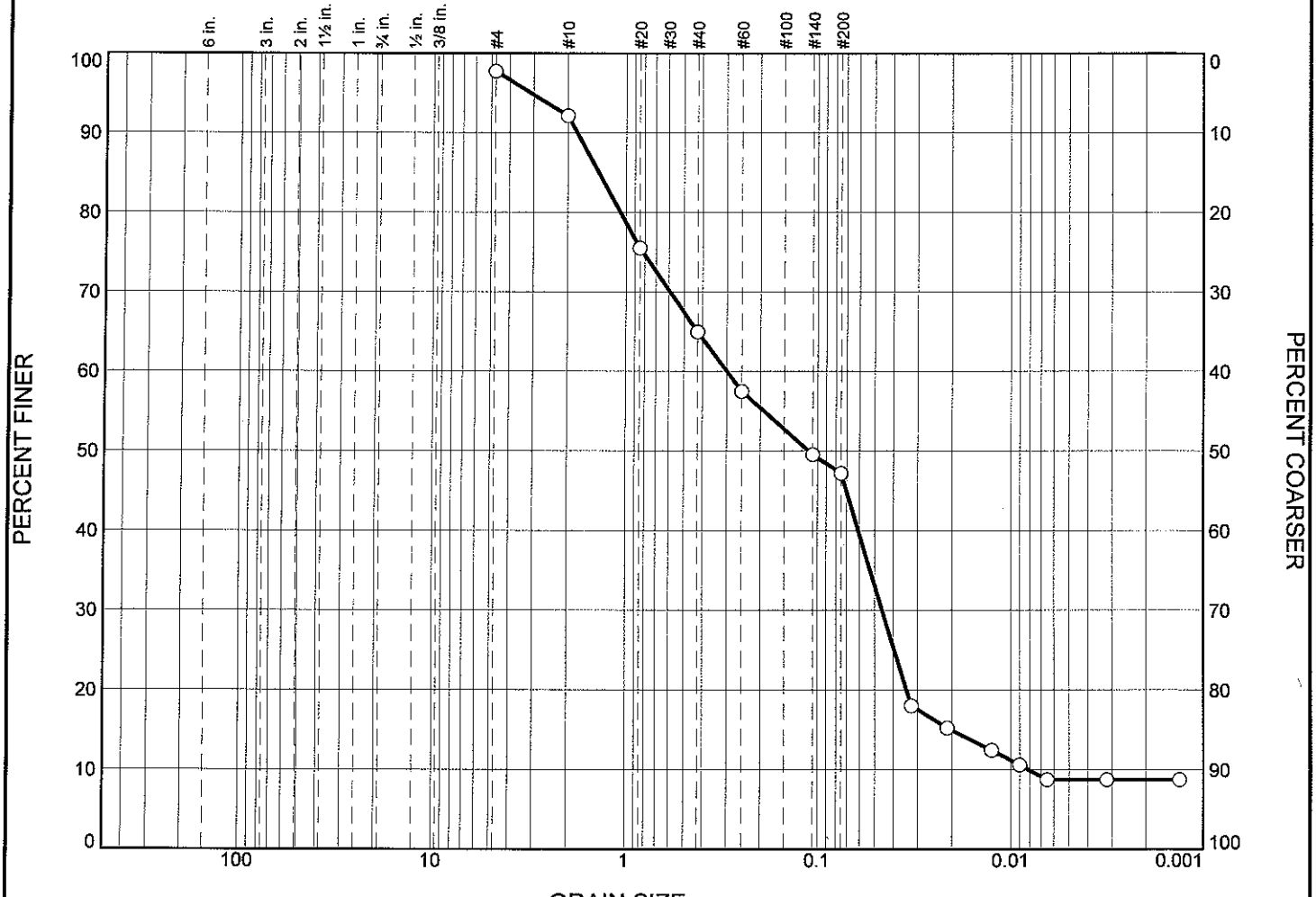
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.8	12.9	12.8	13.2	9.9	11.7	60.5	18.9	3.4	2.8	0.5	25.6	7.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0140	0.0336	0.0400	0.0566	0.1836	0.3345	0.9764	1.2778	1.6723	2.5561

Fineness Modulus	C_u	C_c
1.47	23.95	0.69

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.4	13.5	11.3	9.9	6.4	10.2	23.2	4.1	3.9	1.0	8.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.3843	0.2993	0.1116	0.0457	0.0202	0.0082	0.85	36.62

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505626 **Sample Number:** WG383975-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505626
Sample Number: WG383975-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
81.47	0.00	#4	523.61	521.77	97.7	2.3
		#10	489.36	484.81	92.2	7.8
		#20	418.98	405.42	75.5	24.5
		#40	369.88	361.28	65.0	35.0
		#60	372.27	366.16	57.5	42.5
		#140	349.28	342.82	49.5	50.5
		#200	347.17	345.25	47.2	52.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 47.2
Weight of hydrometer sample =81.47
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0190	1.0194	0.0132	16.0	12.1	0.0323	18.0	82.0
5.00	23.0	1.0160	1.0164	0.0132	13.0	12.9	0.0211	15.2	84.8
15.00	23.0	1.0130	1.0134	0.0132	10.0	13.6	0.0125	12.4	87.6
30.00	23.0	1.0110	1.0114	0.0132	8.0	14.2	0.0090	10.6	89.4
60.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0065	8.7	91.3
250.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0032	8.7	91.3
1440.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0013	8.7	91.3

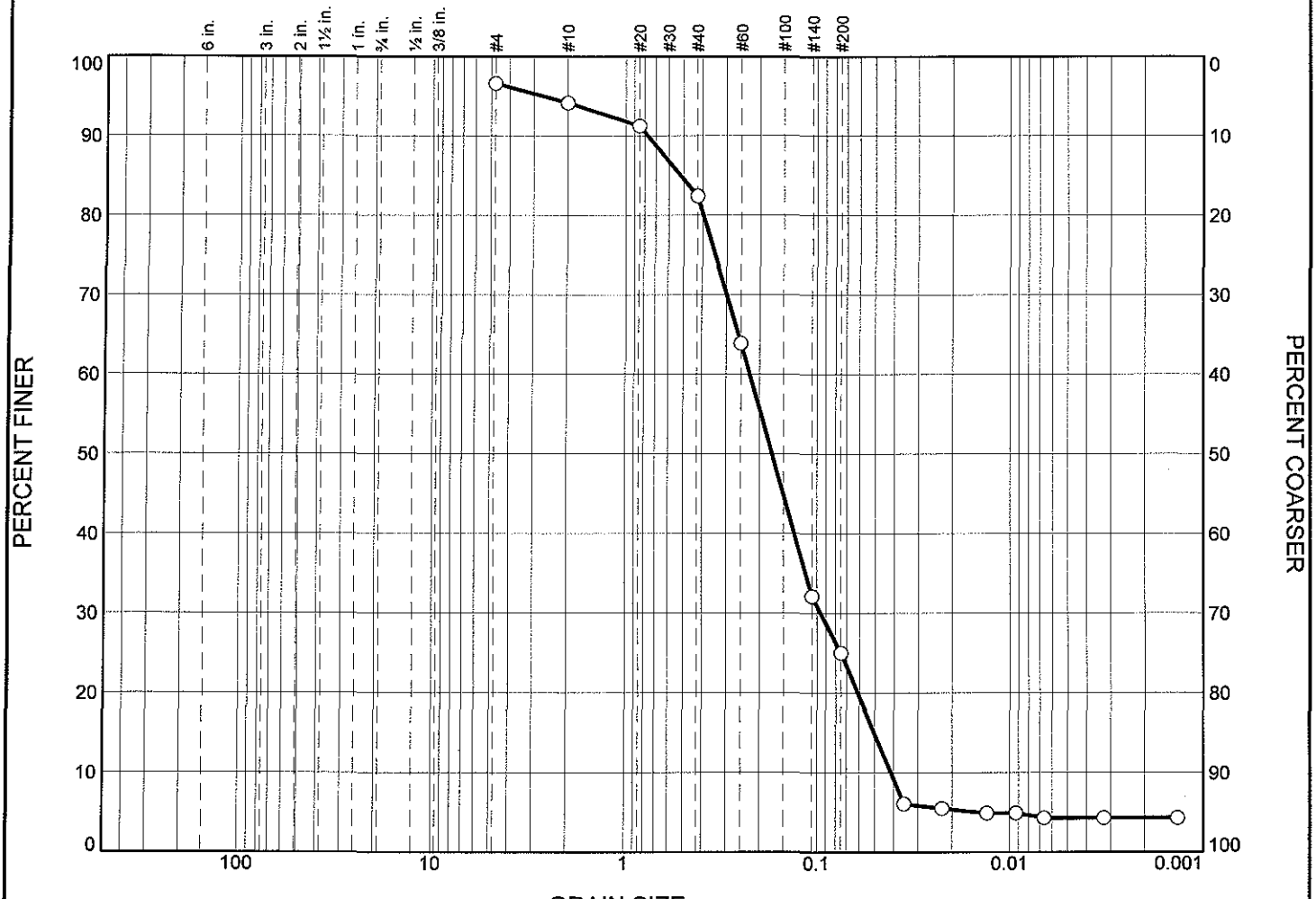
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.4	13.5	11.3	9.9	6.4	10.2	51.3	23.2	4.1	3.9	1.0	32.2	8.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0082	0.0202	0.0342	0.0457	0.1116	0.2993	1.0706	1.3843	1.7901	3.1066

Fineness Modulus	C_u	C_c
1.44	36.62	0.85

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.0	2.3	7.3	20.6	25.7	17.8	14.5	0.8	0.5	0.3	4.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5197	0.2251	0.1718	0.0957	0.0504	0.0413	0.98	5.45

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505711 **Sample Number:** L0912917-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505711
Sample Number: L0912917-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.70	0.00	#4	523.14	520.81	96.6	3.4
		#10	483.80	482.11	94.1	5.9
		#20	413.08	411.09	91.3	8.7
		#40	383.14	377.09	82.4	17.6
		#60	382.59	369.84	63.9	36.1
		#140	369.00	347.17	32.1	67.9
		#200	351.40	346.51	25.0	75.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 25.0
Weight of hydrometer sample =68.70
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0353	6.1	93.9
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	5.5	94.5
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	4.9	95.1
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	4.9	95.1
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	4.3	95.7
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	4.3	95.7
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	4.3	95.7

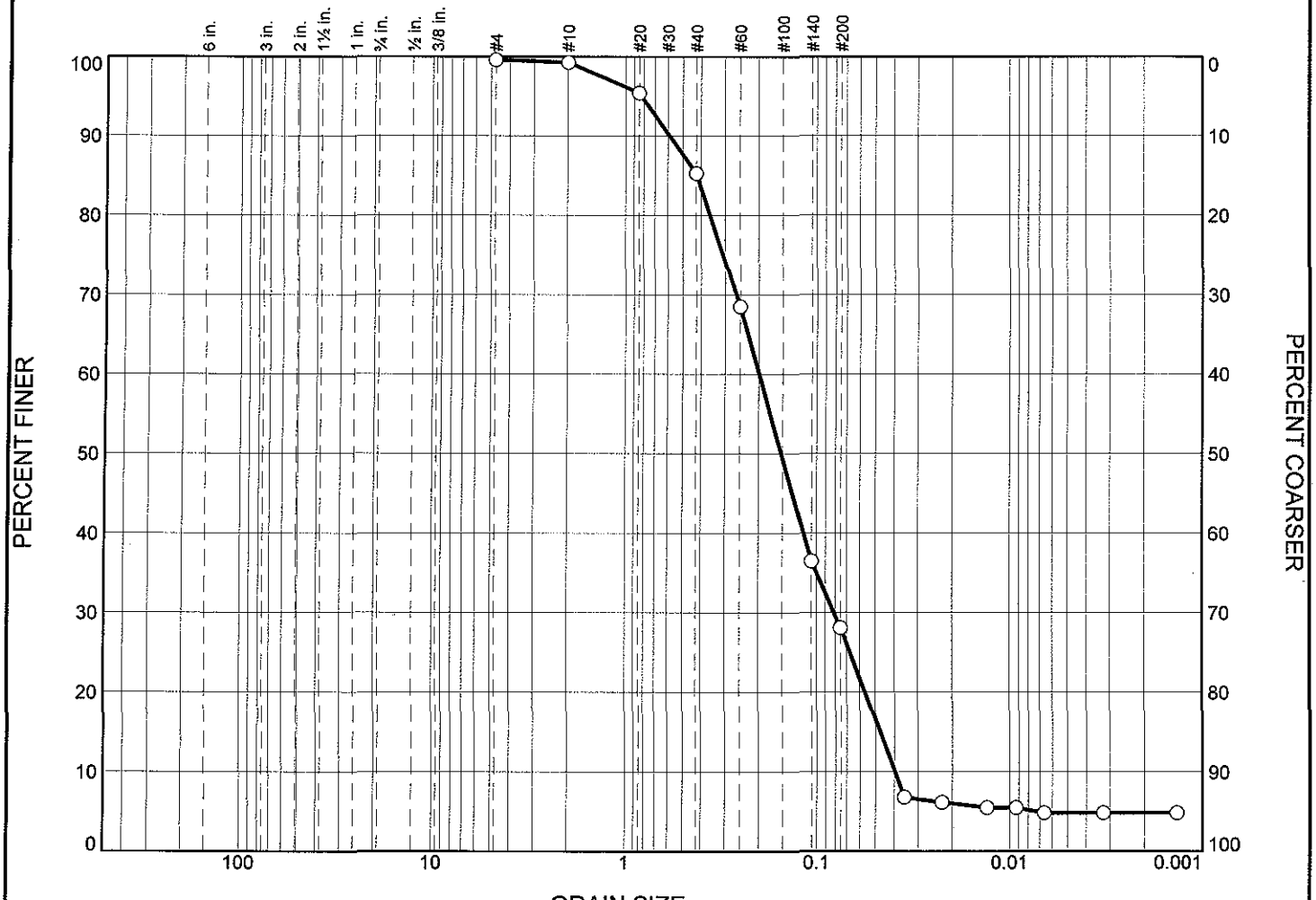
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.0	2.3	7.3	20.6	25.7	17.8	73.7	14.5	0.8	0.5	0.3	16.1	4.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0413	0.0504	0.0615	0.0957	0.1718	0.2251	0.3963	0.5197	0.7702	2.6982

Fineness Modulus	C_u	C_c
1.14	5.45	0.98

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	3.1	8.5	19.2	25.9	19.7	16.3	0.9	0.6	0.3	4.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4208	0.1991	0.1523	0.0812	0.0472	0.0396	0.84	5.03

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505712 **Sample Number:** L0912917-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505712
Sample Number: L0912917-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.83	0.00	#4	522.05	521.77	99.6	0.4
		#10	485.03	484.81	99.3	0.7
		#20	408.07	405.42	95.4	4.6
		#40	368.24	361.28	85.3	14.7
		#60	377.73	366.16	68.5	31.5
		#140	364.88	342.82	36.5	63.5
		#200	351.02	345.25	28.1	71.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 28.1
Weight of hydrometer sample =68.83
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0353	6.8	93.2
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	6.1	93.9
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	5.5	94.5
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	5.5	94.5
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	4.8	95.2
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	4.8	95.2
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	4.8	95.2

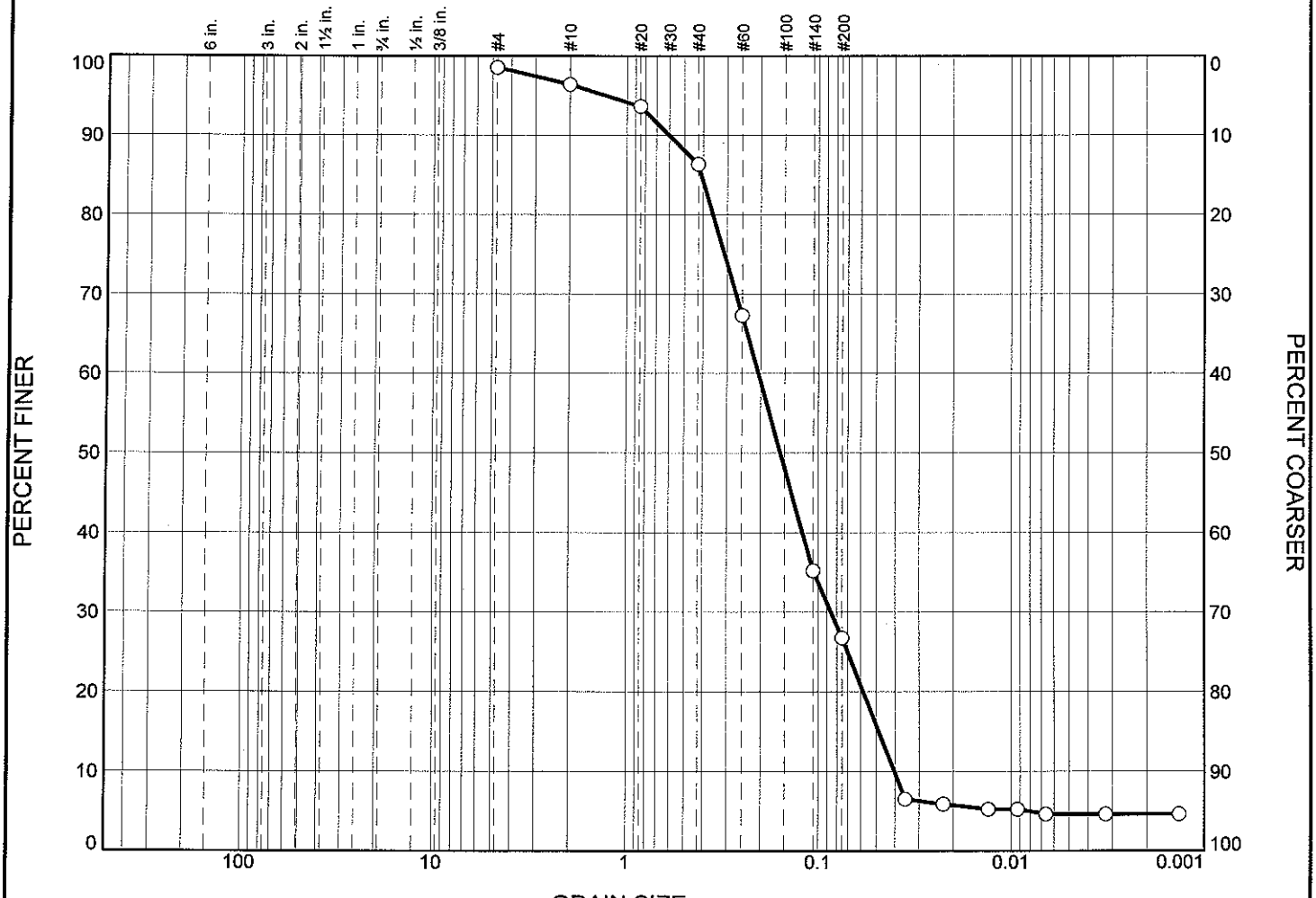
Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	3.1	8.5	19.2	25.9	19.7	76.4	16.3	0.9	0.6	0.3	18.1	4.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0396	0.0472	0.0564	0.0812	0.1523	0.1991	0.3594	0.4208	0.5861	0.8257

Fineness Modulus	C_u	C_c
0.90	5.03	0.84

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.7	2.3	6.1	20.7	25.9	19.6	15.5	0.9	0.5	0.3	4.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4095	0.2056	0.1575	0.0857	0.0485	0.0403	0.89	5.11

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505713 **Sample Number:** L0912917-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505713
Sample Number: L0912917-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.50	0.00	#4	521.82	520.81	98.5	1.5
		#10	483.57	482.11	96.4	3.6
		#20	412.99	411.09	93.6	6.4
		#40	382.85	377.86	86.3	13.7
		#60	382.87	369.84	67.3	32.7
		#140	369.18	347.17	35.2	64.8
		#200	352.29	346.51	26.7	73.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 26.7
Weight of hydrometer sample =68.50
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0353	6.5	93.5
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	5.9	94.1
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	5.2	94.8
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	5.2	94.8
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	4.6	95.4
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	4.6	95.4
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	4.6	95.4

Fractional Components

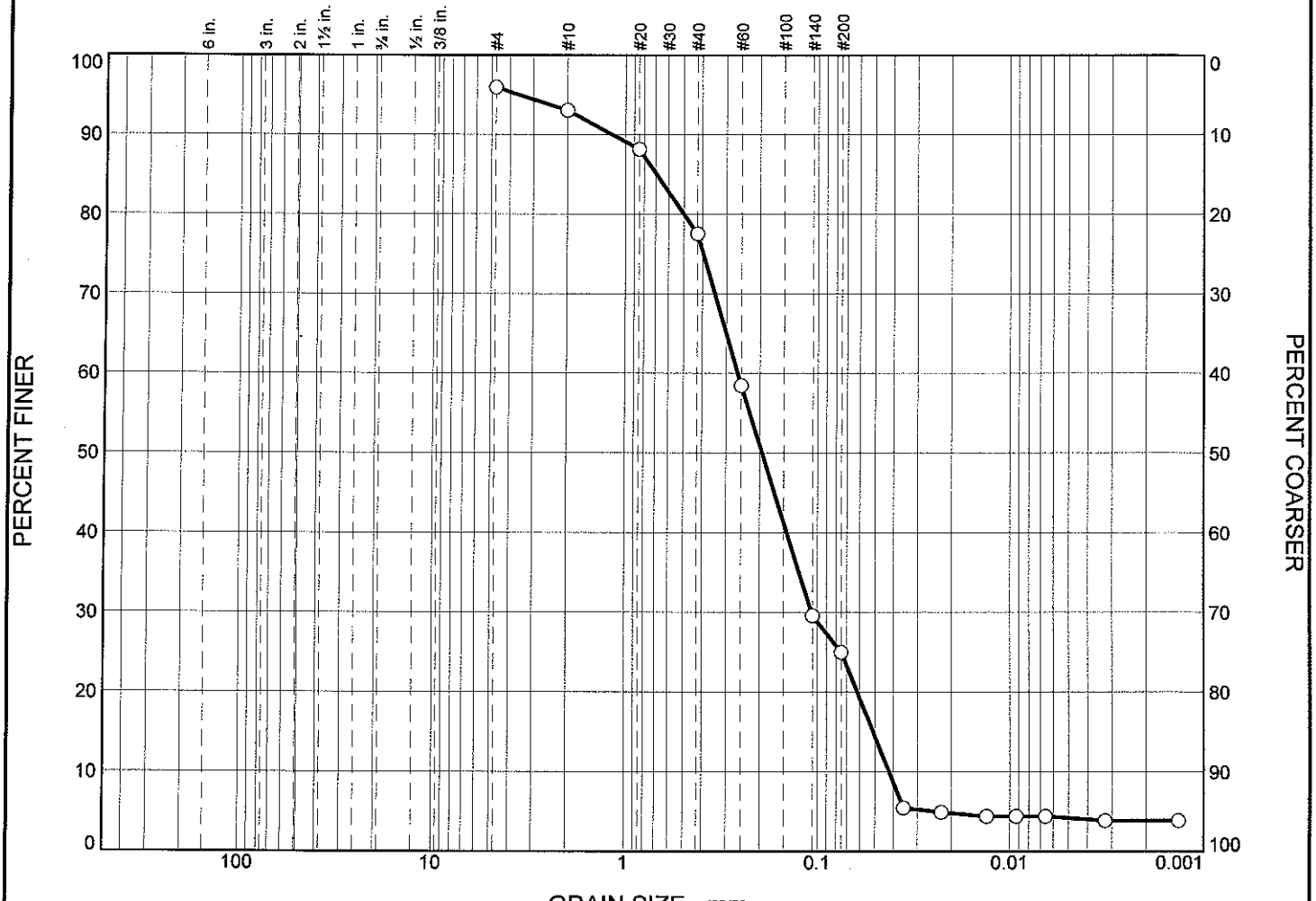
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.7	2.3	6.1	20.7	25.9	19.6	74.6	15.5	0.9	0.5	0.3	17.2	4.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0403	0.0485	0.0584	0.0857	0.1575	0.2056	0.3561	0.4095	0.6023	1.3009

Fineness Modulus	C_u	C_c
0.98	5.11	0.89

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.3	4.0	9.1	21.6	23.3	14.9	14.9	0.7	0.2	0.4	4.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6915	0.2611	0.1945	0.1074	0.0511	0.0421	1.05	6.19

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505726 **Sample Number:** L0912917-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505726
Sample Number: L0912917-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
76.49	0.00	#4	524.87	521.77	95.9	4.1
		#10	487.02	484.81	93.1	6.9
		#20	409.16	405.42	88.2	11.8
		#40	369.42	361.28	77.5	22.5
		#60	380.76	366.16	58.4	41.6
		#140	364.90	342.82	29.6	70.4
		#200	348.78	345.25	25.0	75.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 25.0
Weight of hydrometer sample =76.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0353	5.4	94.6
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	4.9	95.1
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	4.4	95.6
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	4.4	95.6
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	4.4	95.6
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	3.9	96.1
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	3.9	96.1

Fractional Components

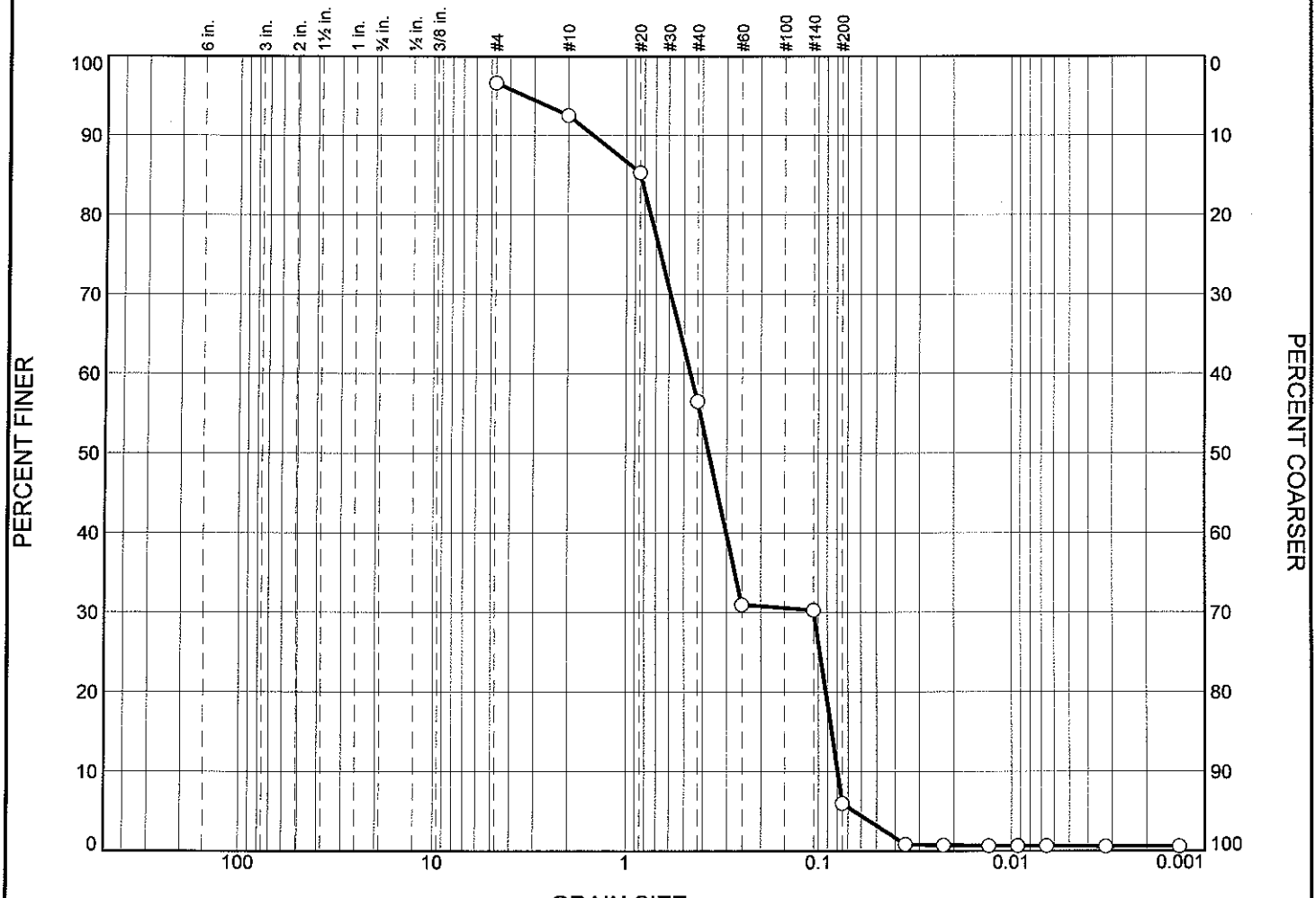
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.3	4.0	9.1	21.6	23.3	14.9	72.9	14.9	0.7	0.2	0.4	16.2	4.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0421	0.0511	0.0620	0.1074	0.1945	0.2611	0.4993	0.6915	1.1712	3.5772

Fineness Modulus	C_u	C_c
1.31	6.19	1.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.2	5.9	23.4	32.3	0.6	25.7	3.9	0.1	0.0	0.1	0.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8430	0.4621	0.3712	0.1056	0.0853	0.0794	0.30	5.82

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505811 **Sample Number:** L0912917-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505811
Sample Number: L0912917-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
120.57	0.00	#4	524.87	520.81	96.6	3.4
		#10	487.02	482.11	92.6	7.4
		#20	419.79	411.09	85.3	14.7
		#40	412.61	377.86	56.5	43.5
		#60	400.67	369.84	31.0	69.0
		#140	348.00	347.17	30.3	69.7
		#200	375.78	346.51	6.0	94.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 6.0
Weight of hydrometer sample =120.57
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0100	1.0104	0.0132	7.0	14.4	0.0353	0.8	99.2
5.00	23.0	1.0090	1.0094	0.0132	6.0	14.7	0.0226	0.7	99.3
15.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0131	0.7	99.3
30.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0093	0.7	99.3
60.00	23.0	1.0080	1.0084	0.0132	5.0	15.0	0.0066	0.7	99.3
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	0.6	99.4
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	0.6	99.4

Fractional Components

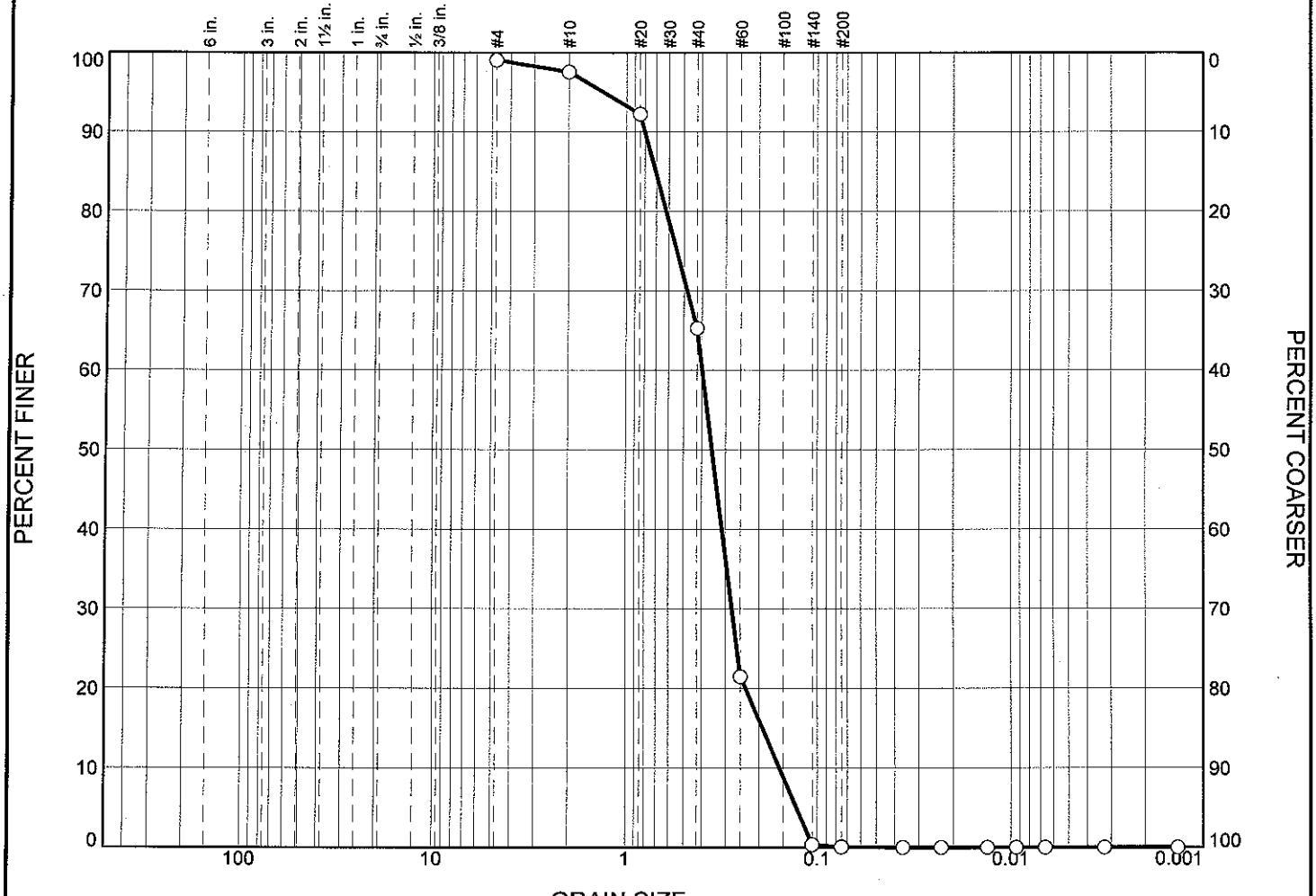
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.2	5.9	23.4	32.3	0.6	25.7	87.9	3.9	0.1	0.0	0.1	4.1	0.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0794	0.0853	0.0916	0.1056	0.3712	0.4621	0.7475	0.8430	1.4763	3.3580

Fineness Modulus	C_u	C_c
1.81	5.82	0.30

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	4.3	21.7	50.1	17.1	4.3	0.1	0.0	0.0	0.0	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7055	0.3987	0.3532	0.2773	0.1922	0.1568	1.23	2.54

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 515812 **Sample Number:** L0912917-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 515812
Sample Number: L0912917-18
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
121.27	0.00	#4	522.91	521.77	99.1	0.9
		#10	486.62	484.81	97.6	2.4
		#20	411.86	405.42	92.3	7.7
		#40	394.01	361.28	65.3	34.7
		#60	419.29	366.16	21.5	78.5
		#140	368.37	342.82	0.4	99.6
		#200	345.62	345.25	0.1	99.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 0.1
Weight of hydrometer sample =121.27
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0363	0.0	100.0
5.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0230	0.0	100.0
15.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0133	0.0	100.0
30.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0094	0.0	100.0
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	0.0	100.0
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	0.0	100.0
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	0.0	100.0

Fractional Components

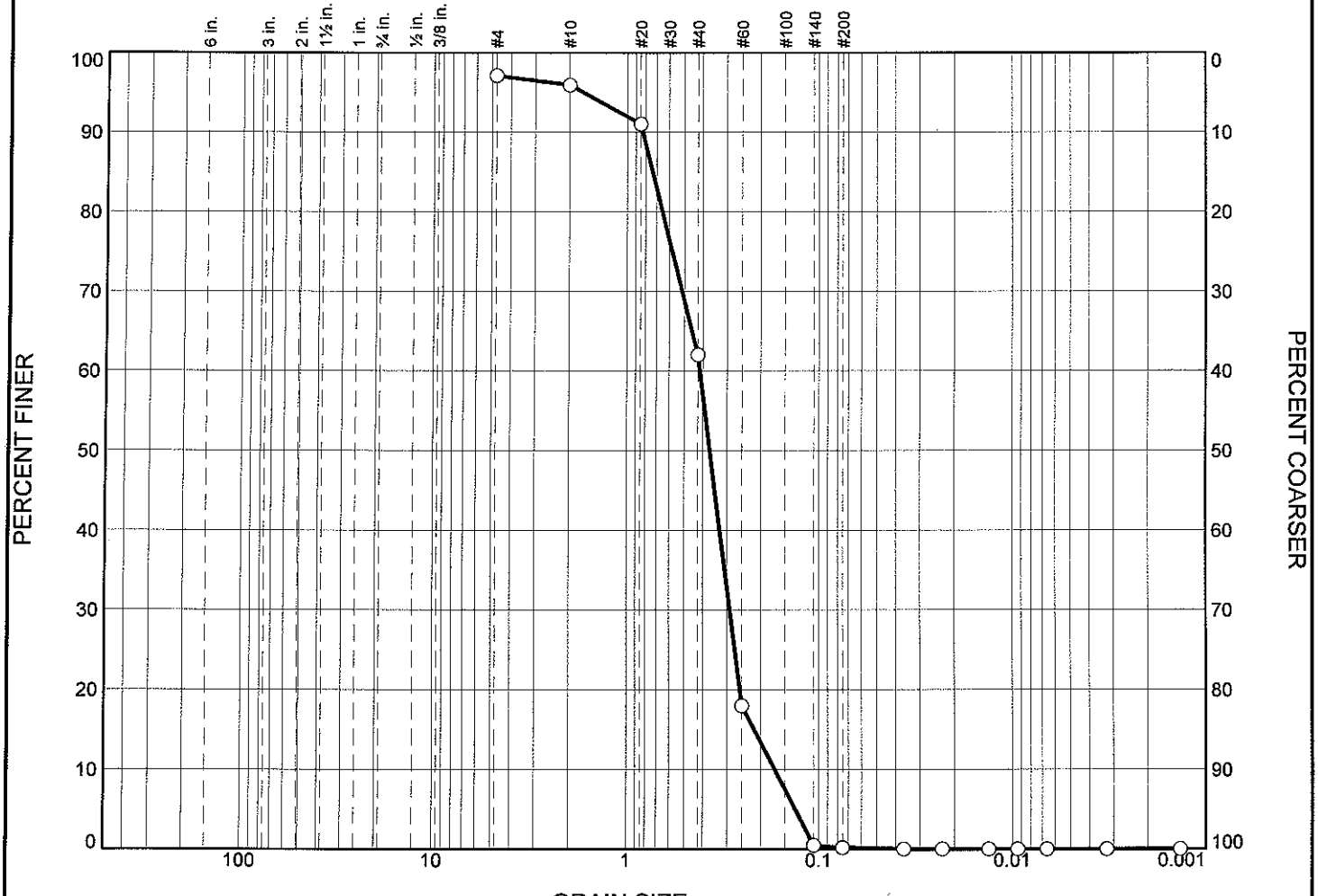
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	4.3	21.7	50.1	17.1	4.3	97.5	0.1	0.0	0.0	0.0	0.1	0.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1568	0.1922	0.2356	0.2773	0.3532	0.3987	0.6205	0.7055	0.8021	1.3224

Fineness Modulus	C_u	C_c
1.85	2.54	1.23

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.0	3.9	23.2	50.8	14.2	3.6	0.2	0.0	0.0	0.0	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7361	0.4148	0.3678	0.2890	0.2162	0.1691	1.19	2.45

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505813 **Sample Number:** L0912917-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505813
Sample Number: L0912917-19
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
119.84	0.00	#4	524.28	520.81	97.1	2.9
		#10	483.51	482.11	95.9	4.1
		#20	416.98	411.09	91.0	9.0
		#40	412.63	377.86	62.0	38.0
		#60	422.63	369.84	18.0	82.0
		#140	368.10	347.17	0.5	99.5
		#200	346.86	346.51	0.2	99.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 0.2
Weight of hydrometer sample =119.84
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0363	0.0	100.0
5.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0230	0.0	100.0
15.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0133	0.0	100.0
30.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0094	0.0	100.0
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	0.0	100.0
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	0.0	100.0
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	0.0	100.0

Fractional Components

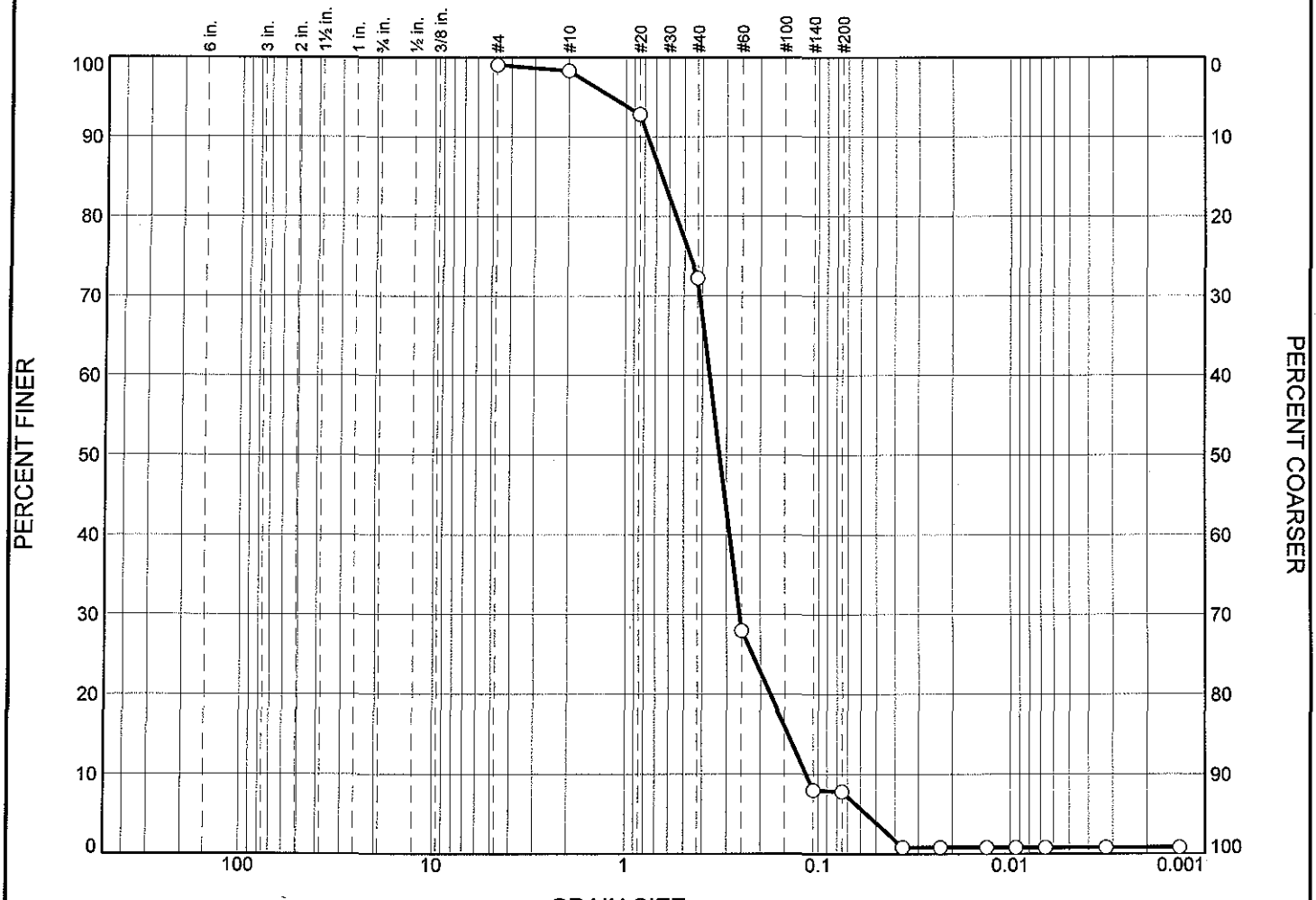
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.0	3.9	23.2	50.8	14.2	3.6	95.7	0.2	0.0	0.0	0.0	0.2	0.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1691	0.2162	0.2562	0.2890	0.3678	0.4148	0.6532	0.7361	0.8295	1.6992

Fineness Modulus	C_u	C_c
1.97	2.45	1.19

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.6	4.4	16.8	49.1	16.2	5.2	5.2	0.0	0.0		0.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6531	0.3671	0.3256	0.2562	0.1432	0.1156	1.55	3.18

	Material Description	USCS	AASHTO
○			

Project No. L0912917 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505826 **Sample Number:** L0912917-20

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912917
Location: 505826
Sample Number: L0912917-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
113.65	0.00	#4	522.84	521.77	99.1	0.9
		#10	485.66	484.81	98.3	1.7
		#20	411.64	405.42	92.8	7.2
		#40	384.71	361.28	72.2	27.8
		#60	416.45	366.16	28.0	72.0
		#140	365.53	342.82	8.0	92.0
		#200	345.47	345.25	7.8	92.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 7.8
Weight of hydrometer sample =113.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0363	0.8	99.2
5.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0230	0.8	99.2
15.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0133	0.8	99.2
30.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0094	0.8	99.2
60.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0066	0.8	99.2
250.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0032	0.8	99.2
1440.00	23.0	1.0070	1.0074	0.0132	4.0	15.2	0.0014	0.8	99.2

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.6	4.4	16.8	49.1	16.2	5.8	92.3	5.2	0.0	0.0		5.2	0.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1156	0.1432	0.1775	0.2562	0.3256	0.3671	0.5520	0.6531	0.7727	1.1919

Fineness Modulus	C_u	C_c
1.66	3.18	1.55

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 249

CHAIN OF CUSTODY

PAGE 15 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02-015-46

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912917

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
1	505411	9/25/09	17:48	SE	HC	☐	☐	☒	☐								ben gs	1
2	505412	9/25/09	17:46	SE	HC	☐	☐	☒	☐								ben gs	1
3	505413	9/25/09	17:48	SE	HC	☐	☐	☒	☐								ben gs	1
4	505425	9/25/09	17:48	SE	HC	☒	☒	☐	☐								sed chem	1
	505426	9/25/09	17:48	SE	HC	☐	☐	☒	☐								sed gs	1
	505427	9/25/09	17:48	SE	HC	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type		G	G	G	-	-	-	-	-	-	-	-	-					
Preservative		A	A	A	-	-	-	-	-	-	-	-	-					

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/25/09 19:05	[signature]	9/25/09 1907
[signature]	9/28/09 0913	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 1032	[signature]	9/28/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station: C50

L0912917

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02-015-46

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: ~~L0912917~~

Report Information
☐ FAX ☒ ADEx

Data Deliverables
☒ EMAIL ☐ Add'l Deliverables

Billing Information
☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									SAMPLE HANDLING	TOTAL # BOTTLES
5	505511	9-27-09	09:48	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
6	505512	9-27-09	10:20	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	505513	9-27-09	10:30	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	505525	9-27-09	10:03	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
8	505526	9-27-09	10:03	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	505527	9-27-09	10:03	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/27/09 1605		9-27-09
	9-28-09 09:13	P. Gillett	9/28/09 9:25
P. Gillett	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station CJ5

CHAIN OF CUSTODY

PAGE 41 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912917

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done ☒ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
9	505611	9-27-09	08:23	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
10	505612	9-27-09	08:42	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
11	505613	9-27-09	08:45	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	505625	9-27-09	08:36	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
12	505626	9-27-09	08:36	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	505627	9-27-09	08:36	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
12	505645	9-27-09	08:36	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem QC	
	505646	9-27-09	08:36	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs QC	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/29/09 1605	Beth Hargis	9-27-09
P. Gilbert	9-28-09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[illegible]	9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 304

CHAIN OF CUSTODY

PAGE 16 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02-015-46

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912917

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
13	505711	9/25/09	16:48	SE	JB	☐	☐	☒	☐	ben gs	1
14	505712	9/25/09	17:15	SE	JB	☐	☐	☒	☐	ben gs	1
15	505713	9/25/09	17:32	SE	JB	☐	☐	☒	☐	ben gs	1
	505725	9/25/09	17:00	SE	JB	☒	☒	☐	☐	sed chem	1
16	505726	9/25/09	17:00	SE	JB	☐	☐	☒	☐	sed gs	1
	505727	9/25/09	17:00	SE	JB	☐	☐	☐	☒	sed arch	1
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
Container Type						G	G	G	-		
Preservative						A	A	A	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyle	9/25/09 1855	Kathleen McCann	9/25/09 19:07
Kathleen McCann	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 1020		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 306

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

01-015-46

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912917

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	505811	9/28/09	09:02	SE	JB	☐	☐	☒	☐								ben gs	1
18	505812	9/28/09	09:11	SE	JB	☐	☐	☒	☐								ben gs	1
19	505813	9/28/09	09:16	SE	JB	☐	☐	☒	☐								ben gs	1
	505825	9/28/09	09:08	SE	JB	☒	☒	☐	☐								sed chem	1
20	505826	9/28/09	09:08	SE	JB	☐	☐	☒	☐								sed gs	1
	505827	9/28/09	09:08	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type		G	G	G	-	-	-	-	-	-	-	-	-					
Preservative		A	A	A	-	-	-	-	-	-	-	-	-					

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bojek	9/28/09 1522		9/29/09 1322

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912918
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912918
Report Date: 02/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912918-01	505911	NEW BEDFORD, MA	09/26/09 14:37
L0912918-02	505912	NEW BEDFORD, MA	09/26/09 15:03
L0912918-03	505913	NEW BEDFORD, MA	09/26/09 15:08
L0912918-04	505926	NEW BEDFORD, MA	09/26/09 14:50
L0912918-05	506011	NEW BEDFORD, MA	09/28/09 10:00
L0912918-06	506012	NEW BEDFORD, MA	09/28/09 10:17
L0912918-07	506013	NEW BEDFORD, MA	09/28/09 10:25
L0912918-08	506026	NEW BEDFORD, MA	09/28/09 10:10
L0912918-09	506111	NEW BEDFORD, MA	09/26/09 16:46
L0912918-10	506112	NEW BEDFORD, MA	09/26/09 17:07
L0912918-11	506113	NEW BEDFORD, MA	09/26/09 17:21
L0912918-12	506126	NEW BEDFORD, MA	09/26/09 16:58
L0912918-13	506211	NEW BEDFORD, MA	09/28/09 08:05
L0912918-14	506212	NEW BEDFORD, MA	09/28/09 08:16
L0912918-15	506213	NEW BEDFORD, MA	09/28/09 08:20
L0912918-16	506226	NEW BEDFORD, MA	09/28/09 08:10
L0912918-17	506311	NEW BEDFORD, MA	09/26/09 15:51
L0912918-18	506312	NEW BEDFORD, MA	09/26/09 16:12
L0912918-19	506313	NEW BEDFORD, MA	09/26/09 16:17
L0912918-20	506326	NEW BEDFORD, MA	09/26/09 16:03

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912918
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 26, 2009. The report was ammended to include revised Grain Size data.

The WG384169-1 Laboratory Duplicate RPD is outside the acceptance criteria for % fine sand (83%), silt (171%), clay (167%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912918
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative (continued)

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newell

Title: Technical Director/Representative Date: 02/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-01
Client ID: 505911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 14:37
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	9.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	15.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	22.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	34.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-02
Client ID: 505912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 15:03
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.700		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	20.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	39.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-03
Client ID: 505913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 15:08
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	37.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-04
Client ID: 505926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 14:50
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	22.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-05
Client ID: 506011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 10:00
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	18.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-06
Client ID: 506012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 10:17
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	8.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	15.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	20.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-07
Client ID: 506013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 10:25
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	11.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	17.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	22.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	32.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-08
Client ID: 506026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 10:10
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	15.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	16.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	20.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-09
Client ID: 506111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 16:46
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	36.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	32.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.300		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.100		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-10
Client ID: 506112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 17:07
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	38.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	32.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.700		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-11
Client ID: 506113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 17:21
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	13.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	38.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	7.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-12
Client ID: 506126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 16:58
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	34.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	31.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.600		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-13
Client ID: 506211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 08:05
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.900		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	45.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
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SAMPLE RESULTS

Lab ID: L0912918-14
Client ID: 506212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 08:16
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.700		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	22.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-15
Client ID: 506213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 08:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
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Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-16
Client ID: 506226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/28/09 08:10
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	21.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	39.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	10.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912918
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912918-17
Client ID: 506311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 15:51
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	20.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	43.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	20.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

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SAMPLE RESULTS

Lab ID: L0912918-18
Client ID: 506312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 16:12
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	18.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	44.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	22.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	6.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.800		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
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SAMPLE RESULTS

Lab ID: L0912918-19
Client ID: 506313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 16:17
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	17.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	45.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	22.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	6.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	1.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.300		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
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SAMPLE RESULTS

Lab ID: L0912918-20
Client ID: 506326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 16:03
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	19.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	45.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	19.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	0.600		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	0.200		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912918
Report Date: 02/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG384169-1 QC Sample: L0912918-20 Client ID: 506326						
Gravel (>2.00mm)	2.3	2.50	%	8		20
Very Coarse Sand (1.00-2.00 mm)	3.6	3.80	%	5		20
Coarse Sand (0.50-1.00 mm)	19.0	21.0	%	10		20
Medium Sand (0.25-0.50 mm)	45.2	45.8	%	1		20
Fine Sand (0.125-0.25 mm)	19.7	8.10	%	**83**	Q	20
Very Fine Sand (0.063-0.125 mm)	5.6	5.00	%	11		20
Silt - (1.95-62.5 um)	0.6	7.70	%	**171**	Q	20
Clay - (<1.95 um)	0.2	2.20	%	**167**	Q	20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912918
Report Date: 02/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912918-01A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-02A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-03A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-04A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-05A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-06A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-07A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-08A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
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Lab Number: L0912918
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912918-09A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-10A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-11A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-12A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-13A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-14A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-15A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-16A	Glass 250ml unpreserved	A	N/A	2.0	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-17A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-18A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912918-19A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912918-20A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912918
Project Number:	TO-0018	**Report Date:**	02/03/10

GLOSSARY

Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
Q	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912918
Project Number:	TO-0018	**Report Date:**	02/03/10

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

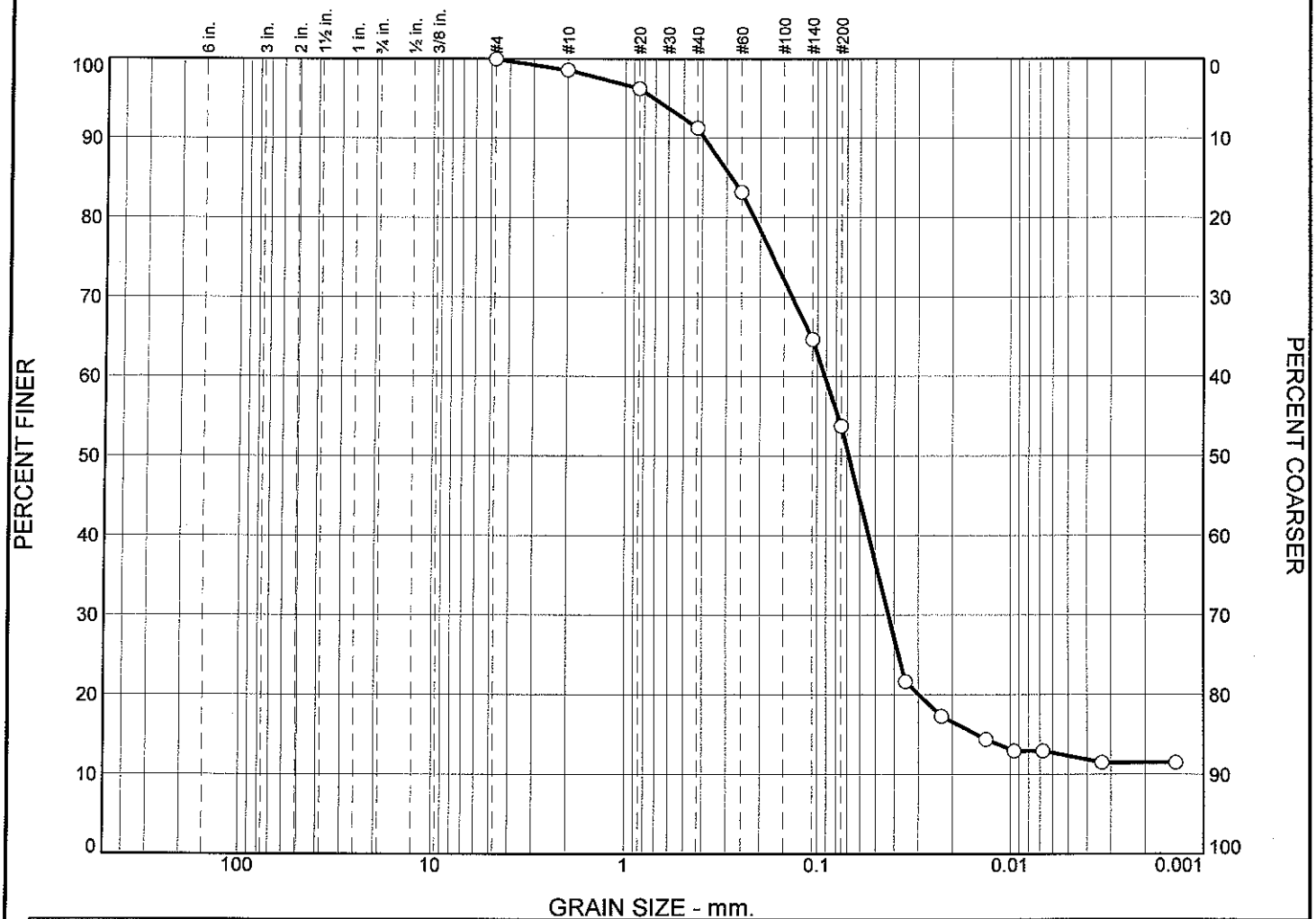
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.1	1.9	4.3	9.2	15.0	22.1	25.7	5.2	2.3	1.1	11.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2816	0.0915	0.0686	0.0427	0.0150			

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505911 **Sample Number:** L0912918-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 505911
Sample Number: L0912918-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
59.60	0.00	#4	521.81	521.77	99.9	0.1
		#10	485.63	484.81	98.6	1.4
		#20	406.79	405.42	96.3	3.7
		#40	364.25	361.28	91.3	8.7
		#60	370.98	366.16	83.2	16.8
		#140	353.86	342.82	64.7	35.3
		#200	351.77	345.25	53.7	46.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 53.7
Weight of hydrometer sample =59.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0150	1.0149	0.0136	12.0	13.1	0.0350	21.6	78.4
5.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0228	17.3	82.7
15.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0134	14.4	85.6
30.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0096	12.9	87.1
60.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0068	12.9	87.1
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	11.5	88.5
1440.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0014	11.5	88.5

Fractional Components

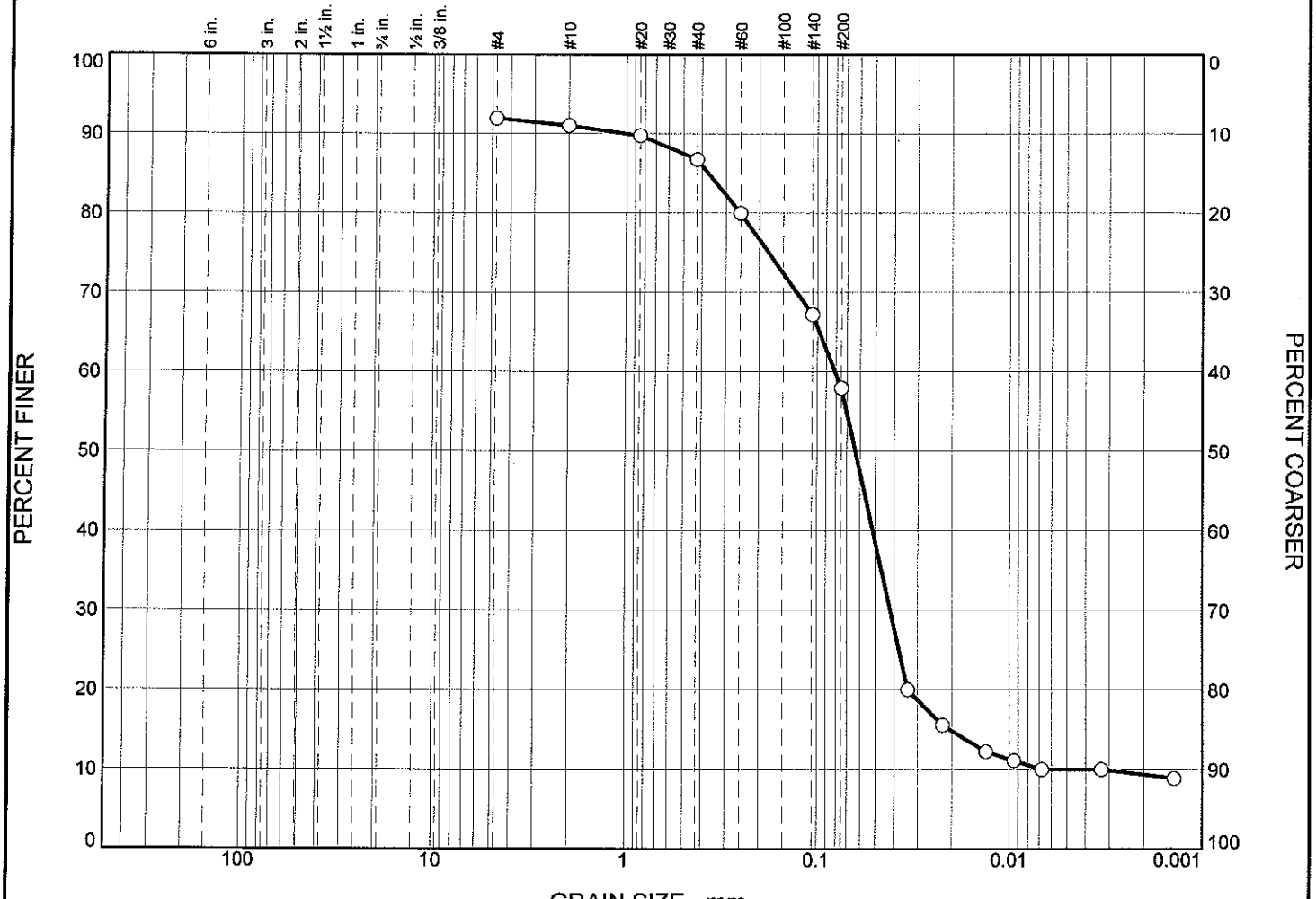
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.1	1.9	4.3	9.2	15.0	22.1	52.5	25.7	5.2	2.3	1.1	34.3	11.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0150	0.0298	0.0427	0.0686	0.0915	0.2157	0.2816	0.3909	0.7135

Fineness Modulus
0.52

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	1.0	2.5	7.5	10.3	20.5	30.2	5.8	2.8	0.4	10.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3705	0.0810	0.0635	0.0418	0.0206	0.0069	3.15	11.83

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505912 **Sample Number:** L0912918-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 505912
Sample Number: L0912918-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
83.50	0.00	#4	527.55	520.81	91.9	8.1
		#10	482.87	482.11	91.0	9.0
		#20	412.15	411.09	89.7	10.3
		#40	380.36	377.86	86.8	13.2
		#60	375.51	369.84	80.0	20.0
		#140	357.82	347.17	67.2	32.8
		#200	354.26	346.51	57.9	42.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 57.9
Weight of hydrometer sample =83.50
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0180	1.0179	0.0136	15.0	12.3	0.0339	20.0	80.0
5.00	20.0	1.0140	1.0139	0.0136	11.0	13.4	0.0223	15.5	84.5
15.00	20.0	1.0110	1.0109	0.0136	8.0	14.2	0.0133	12.2	87.8
30.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0095	11.1	88.9
60.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0068	10.0	90.0
250.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0033	10.0	90.0
1440.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0014	8.8	91.2

Fractional Components

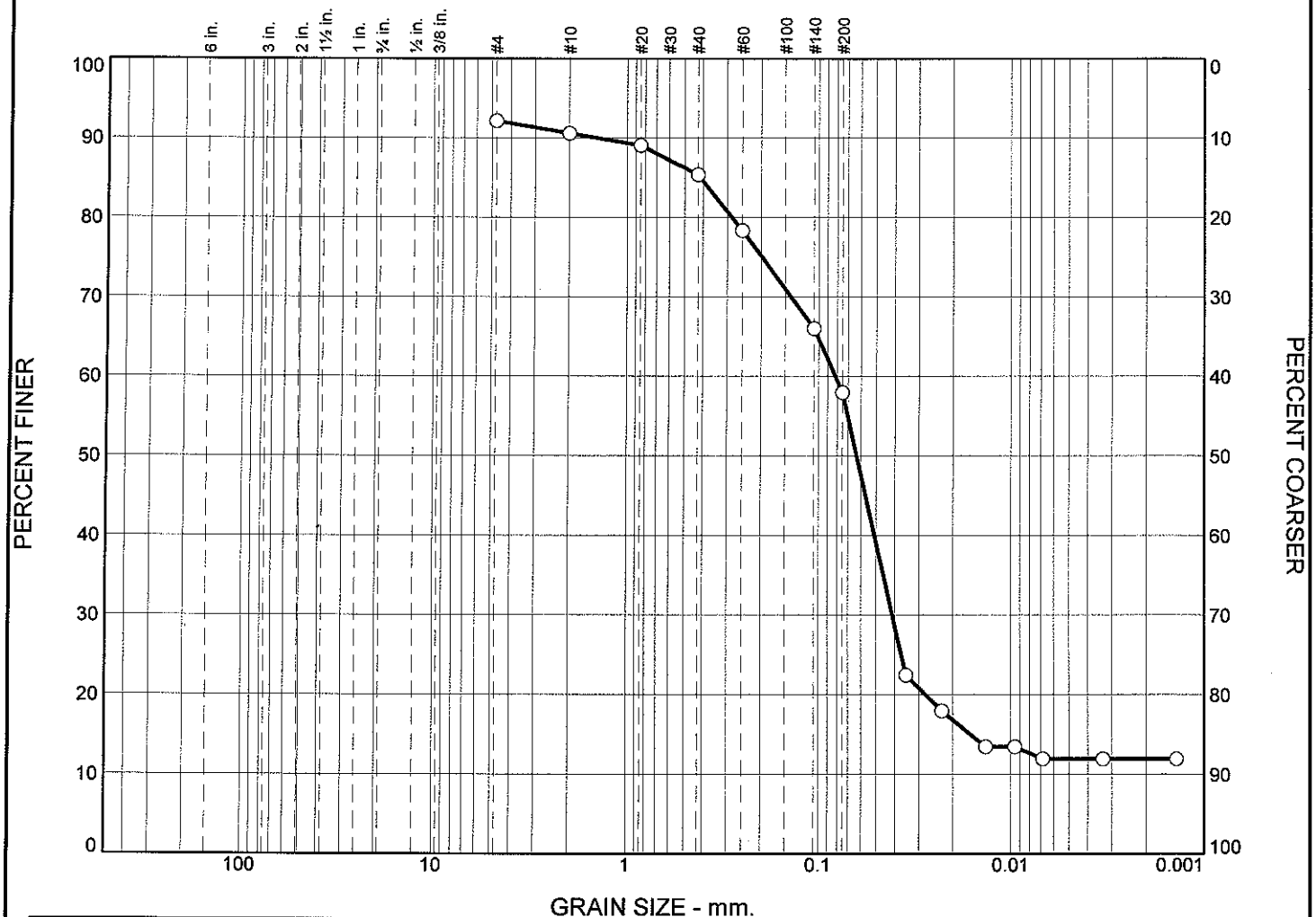
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	1.0	2.5	7.5	10.3	20.5	41.8	30.2	5.8	2.8	0.4	39.2	10.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0069	0.0206	0.0339	0.0418	0.0635	0.0810	0.2507	0.3705	1.0070	

Fineness Modulus	C_u	C_c
0.84	11.83	3.15

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	1.3	3.1	7.9	9.9	18.9	28.3	6.5	2.2	0.6	11.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4135	0.0819	0.0632	0.0411	0.0162			

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505913 **Sample Number:** L0912918-03

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 505913
Sample Number: L0912918-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
61.96	0.00	#4	526.64	521.77	92.1	7.9
		#10	485.77	484.81	90.6	9.4
		#20	406.37	405.42	89.1	10.9
		#40	363.57	361.28	85.4	14.6
		#60	370.51	366.16	78.3	21.7
		#140	350.46	342.82	66.0	34.0
		#200	350.25	345.25	57.9	42.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 57.9
Weight of hydrometer sample =61.96
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0150	1.0149	0.0136	12.0	13.1	0.0350	22.4	77.6
5.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0228	17.9	82.1
15.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0135	13.4	86.6
30.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0096	13.4	86.6
60.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0068	11.9	88.1
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	11.9	88.1
1440.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0014	11.9	88.1

Fractional Components

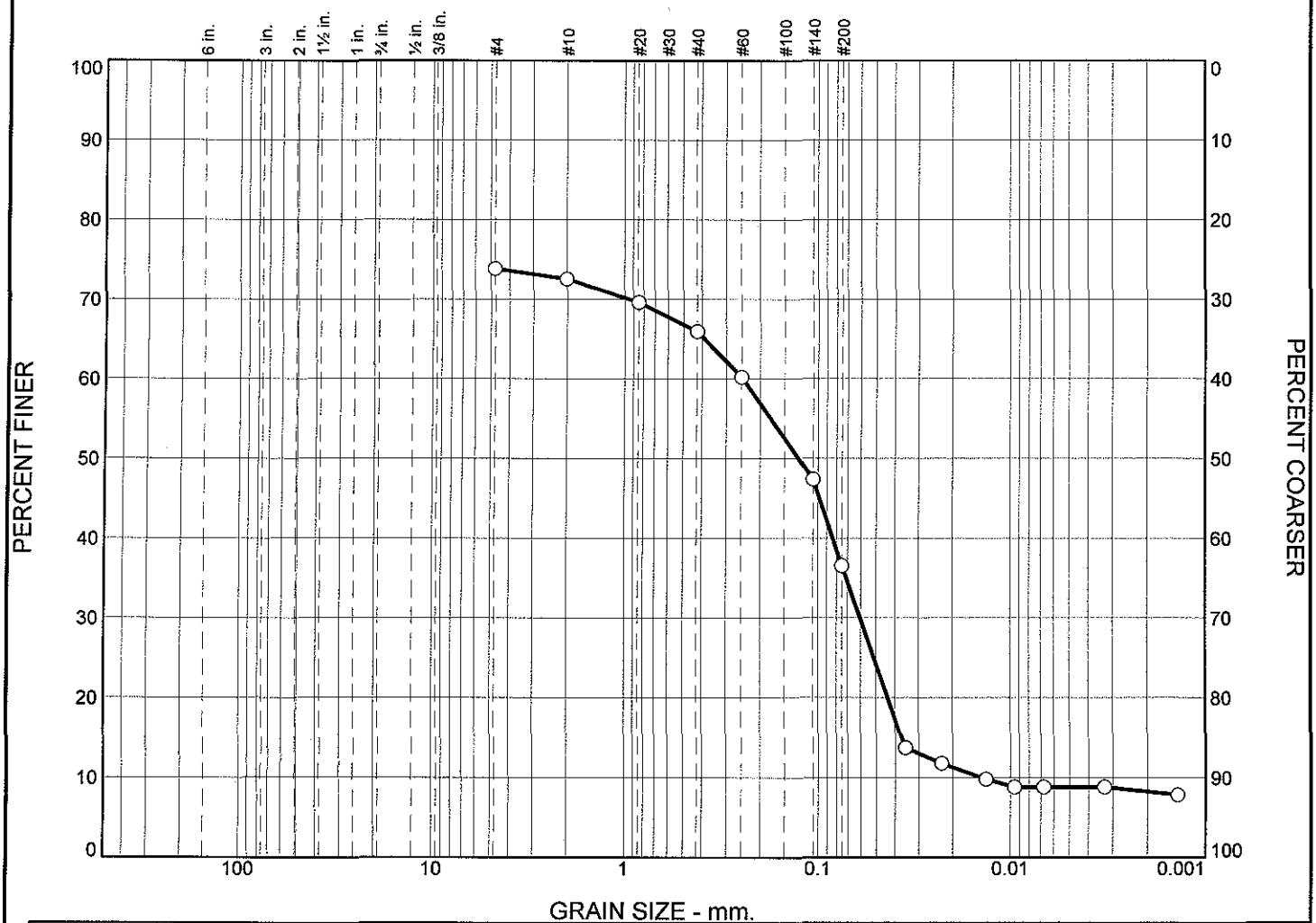
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	1.3	3.1	7.9	9.9	18.9	41.1	28.3	6.5	2.2	0.6	37.6	11.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0162	0.0277	0.0411	0.0632	0.0819	0.2834	0.4135	1.4383	

Fineness Modulus
0.88

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.1	2.3	3.4	6.6	10.3	18.9	17.9	2.8	1.5	0.0	8.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.2464	0.1262	0.0605	0.0368	0.0142	1.04	17.33

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 505926 **Sample Number:** L0912918-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 505926
Sample Number: L0912918-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
59.60	0.00	#4	536.41	520.81	73.8	26.2
		#10	482.88	482.11	72.5	27.5
		#20	412.83	411.09	69.6	30.4
		#40	380.04	377.86	66.0	34.0
		#60	373.26	369.84	60.2	39.8
		#140	354.81	347.17	47.4	52.6
		#200	352.99	346.51	36.5	63.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 36.5
Weight of hydrometer sample =59.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0140	1.0139	0.0136	11.0	13.4	0.0353	13.7	86.3
5.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0228	11.7	88.3
15.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0134	9.8	90.2
30.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0096	8.8	91.2
60.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0068	8.8	91.2
250.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0033	8.8	91.2
1440.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0014	7.8	92.2

Fractional Components

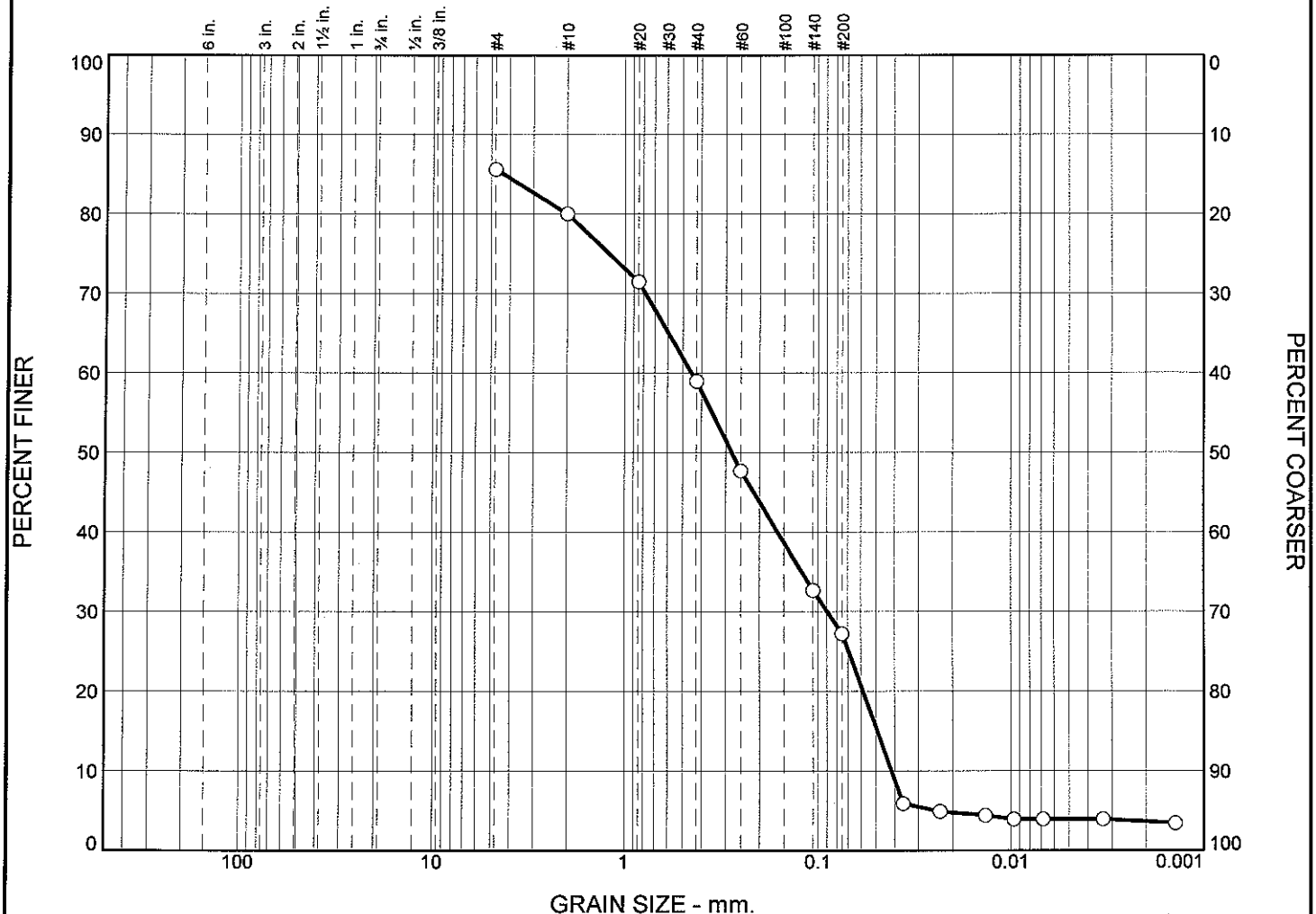
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.1	2.3	3.4	6.6	10.3	18.9	41.5	17.9	2.8	1.5	0.0	22.2	8.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0142	0.0368	0.0434	0.0605	0.1262	0.2464				

Fineness Modulus	C_u	C_c
2.00	17.33	1.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.5	6.9	11.2	14.2	12.2	13.6	16.3	1.1	0.6	0.0	3.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.3093	0.4504	0.2789	0.0895	0.0492	0.0415	0.43	10.87

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506011 **Sample Number:** L0912918-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506011
Sample Number: L0912918-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
88.53	0.00	#4	534.49	521.77	85.6	14.4
		#10	489.78	484.81	80.0	20.0
		#20	412.98	405.42	71.5	28.5
		#40	372.37	361.28	59.0	41.0
		#60	376.14	366.16	47.7	52.3
		#140	356.13	342.82	32.6	67.4
		#200	350.04	345.25	27.2	72.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 27.2
Weight of hydrometer sample =88.53
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0360	5.9	94.1
5.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0232	4.9	95.1
15.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0135	4.4	95.6
30.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0096	3.9	96.1
60.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0068	3.9	96.1
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	3.9	96.1
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	3.4	96.6

Fractional Components

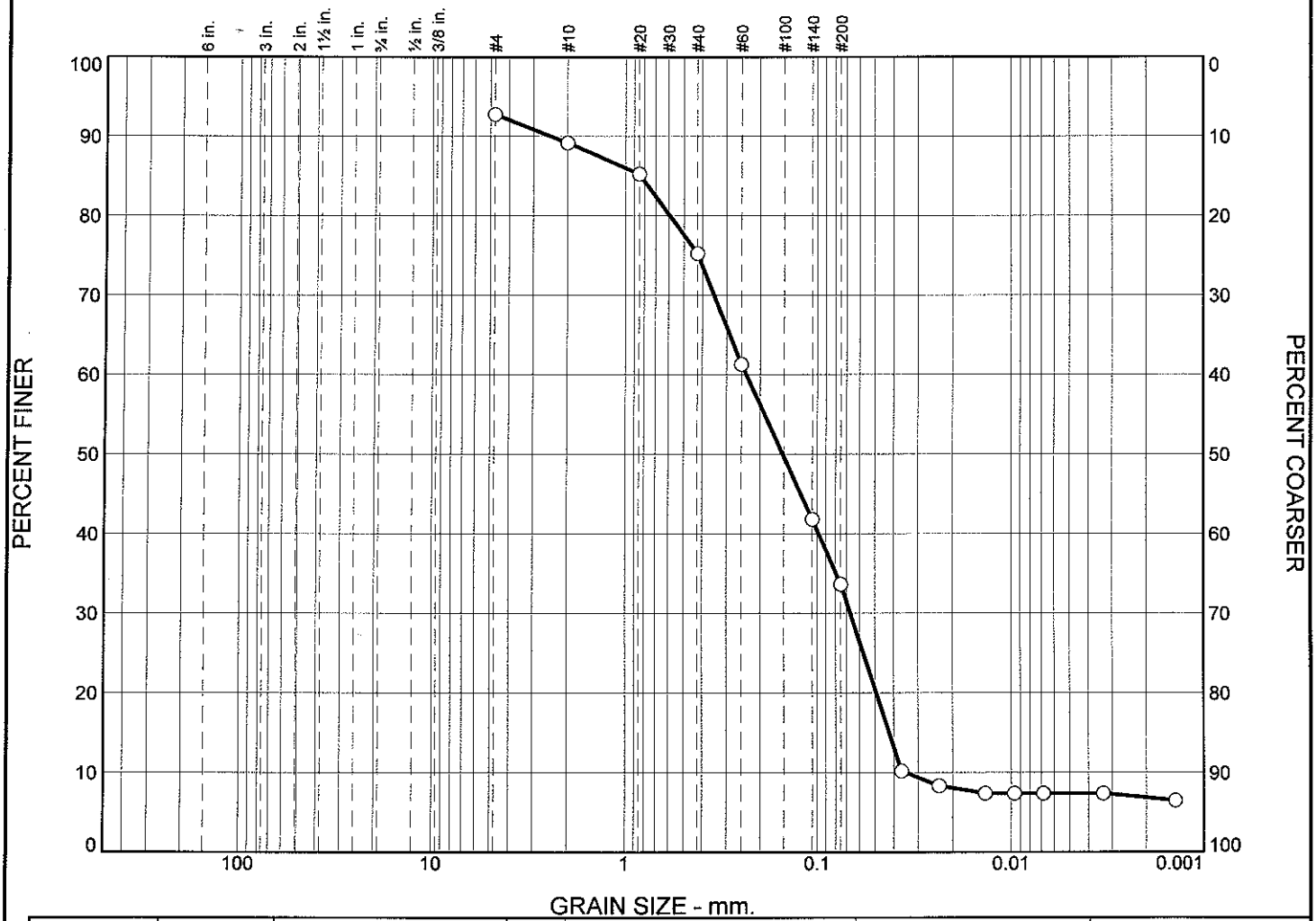
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.5	6.9	11.2	14.2	12.2	13.6	58.1	16.3	1.1	0.6	0.0	18.0	3.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0415	0.0492	0.0585	0.0895	0.2789	0.4504	1.9964	4.3093		

Fineness Modulus	C_u	C_c
2.03	10.87	0.43

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.9	3.2	8.4	16.3	15.8	17.8	18.2	1.9	0.2	0.0	7.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8348	0.2363	0.1522	0.0670	0.0422	0.0349	0.54	6.77

Material Description	USCS	AASHTO
○		

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506012 **Sample Number:** L0912918-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506012
Sample Number: L0912918-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
58.08	0.00	#4	525.01	520.81	92.8	7.2
		#10	484.19	482.11	89.2	10.8
		#20	413.37	411.09	85.3	14.7
		#40	383.68	377.86	75.2	24.8
		#60	377.95	369.84	61.3	38.7
		#140	358.49	347.17	41.8	58.2
		#200	351.24	346.51	33.6	66.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 33.6
Weight of hydrometer sample =58.08
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0110	1.0109	0.0136	8.0	14.2	0.0363	10.2	89.8
5.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0234	8.3	91.7
15.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0136	7.4	92.6
30.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0096	7.4	92.6
60.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0068	7.4	92.6
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	7.4	92.6
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	6.5	93.5

Fractional Components

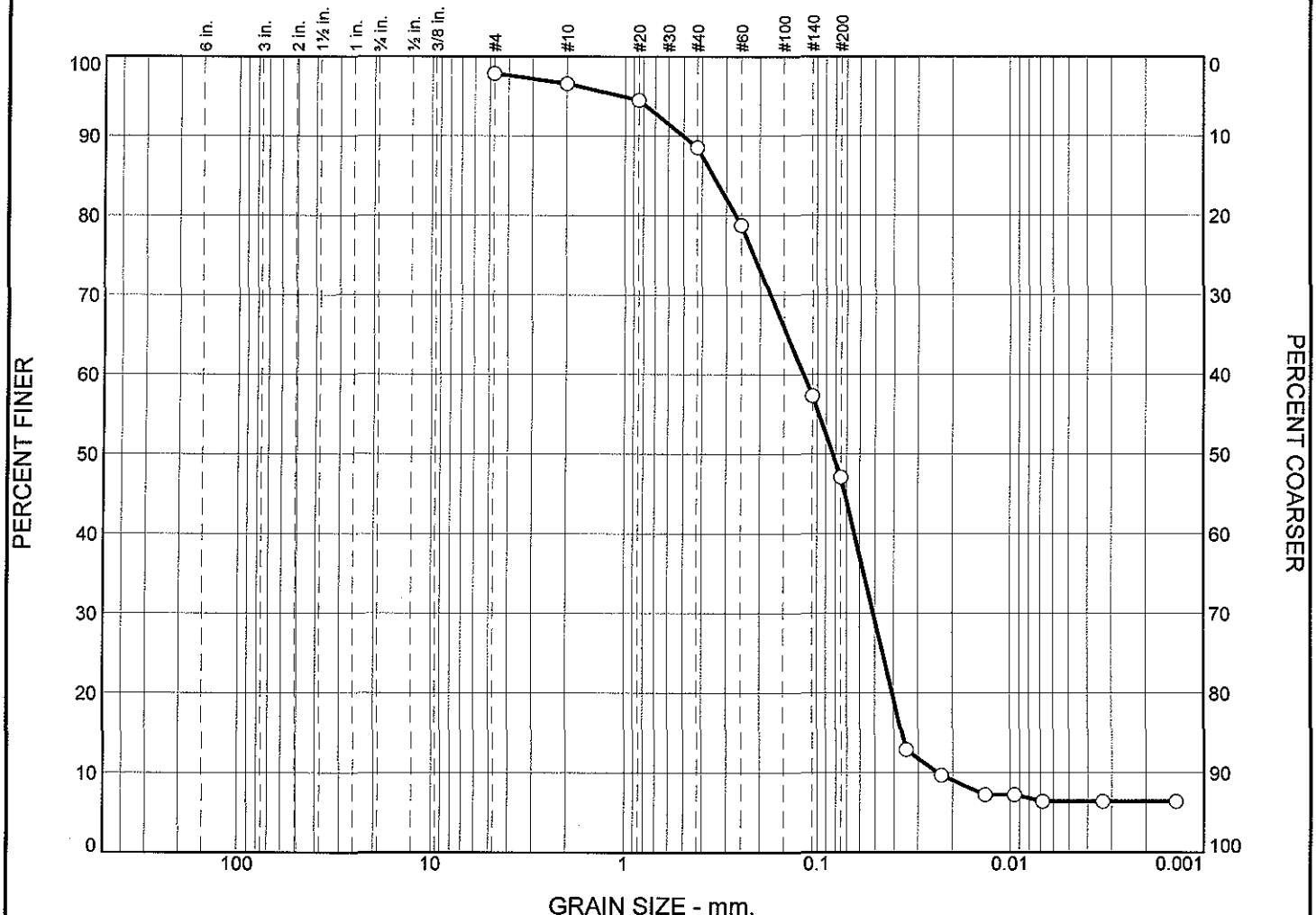
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.9	3.2	8.4	16.3	15.8	17.8	61.5	18.2	1.9	0.2	0.0	20.3	7.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0349	0.0422	0.0492	0.0670	0.1522	0.2363	0.5907	0.8348	2.4338	

Fineness Modulus	C_u	C_c
1.35	6.77	0.54

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.0	1.7	4.9	11.2	17.4	22.4	27.0	4.1	1.2	0.3	6.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3504	0.1182	0.0828	0.0510	0.0363	0.0238	0.92	4.95

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506013 **Sample Number:** L0912918-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506013
Sample Number: L0912918-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
93.56	0.00	#4	523.77	521.77	97.9	2.1
		#10	486.01	484.81	96.6	3.4
		#20	407.35	405.42	94.5	5.5
		#40	366.85	361.28	88.6	11.4
		#60	375.32	366.16	78.8	21.2
		#140	362.93	342.82	57.3	42.7
		#200	354.81	345.25	47.1	52.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 47.1
Weight of hydrometer sample =93.56
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0160	1.0159	0.0136	13.0	12.9	0.0346	12.9	87.1
5.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0228	9.6	90.4
15.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0135	7.2	92.8
30.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0096	7.2	92.8
60.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0068	6.4	93.6
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	6.4	93.6
1440.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0014	6.4	93.6

Fractional Components

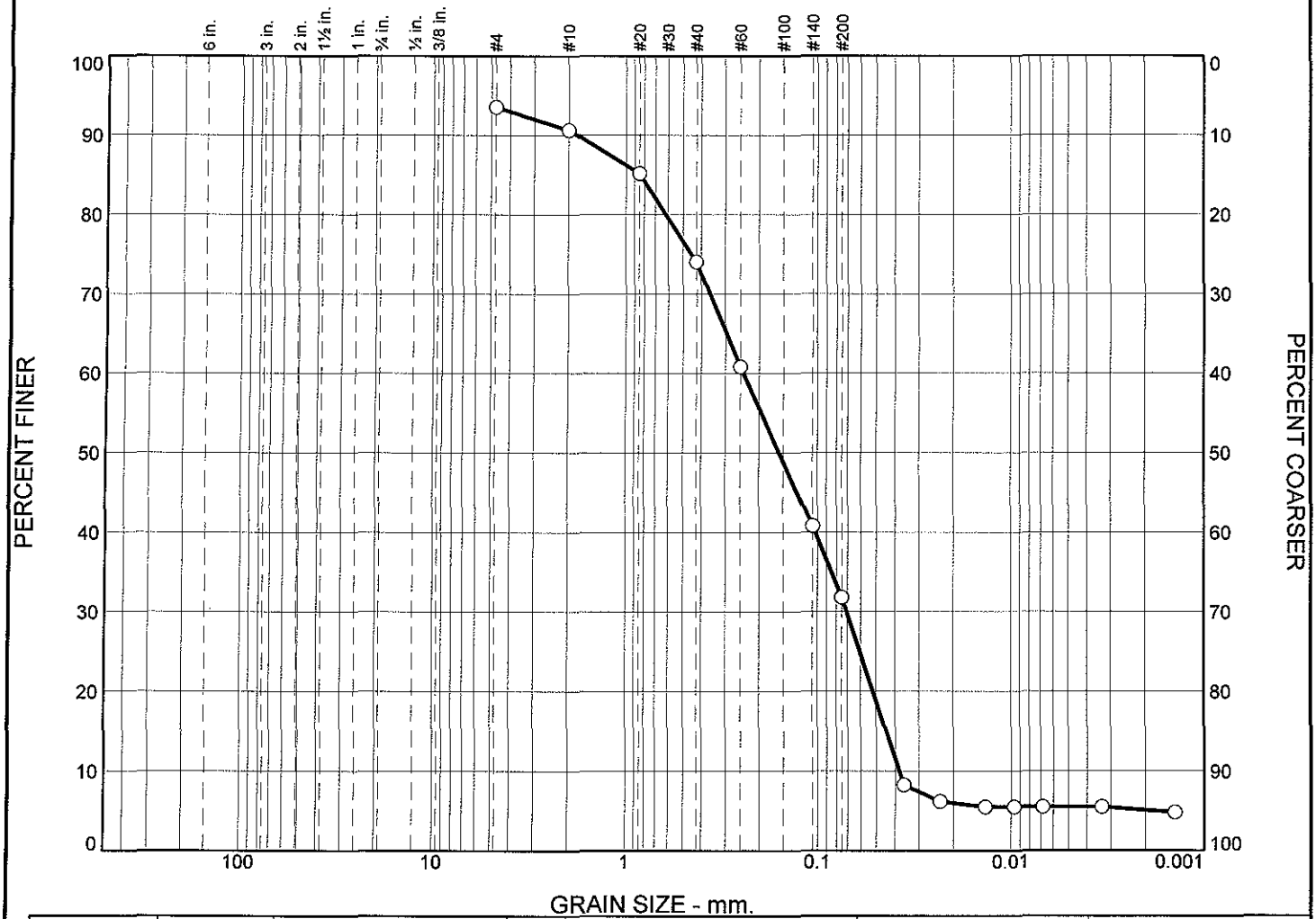
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.0	1.7	4.9	11.2	17.4	22.4	57.6	27.0	4.1	1.2	0.3	32.6	6.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0238	0.0363	0.0407	0.0510	0.0828	0.1182	0.2672	0.3504	0.5024	1.0386

Fineness Modulus	C_u	C_c
0.70	4.95	0.92

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.3	4.5	9.5	15.9	16.1	18.7	18.5	1.9	0.1	0.0	5.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8410	0.2412	0.1572	0.0709	0.0444	0.0380	0.55	6.34

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506026 **Sample Number:** L0912918-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506026
Sample Number: L0912918-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.04	0.00	#4	525.58	520.81	93.6	6.4
		#10	484.25	482.11	90.7	9.3
		#20	415.16	411.09	85.2	14.8
		#40	386.10	377.86	74.0	26.0
		#60	379.62	369.84	60.8	39.2
		#140	362.00	347.17	40.8	59.2
		#200	353.16	346.51	31.8	68.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 31.8
Weight of hydrometer sample =74.04
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0360	8.2	91.8
5.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0234	6.2	93.8
15.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0136	5.5	94.5
30.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0096	5.5	94.5
60.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0068	5.5	94.5
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	5.5	94.5
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	4.8	95.2

Fractional Components

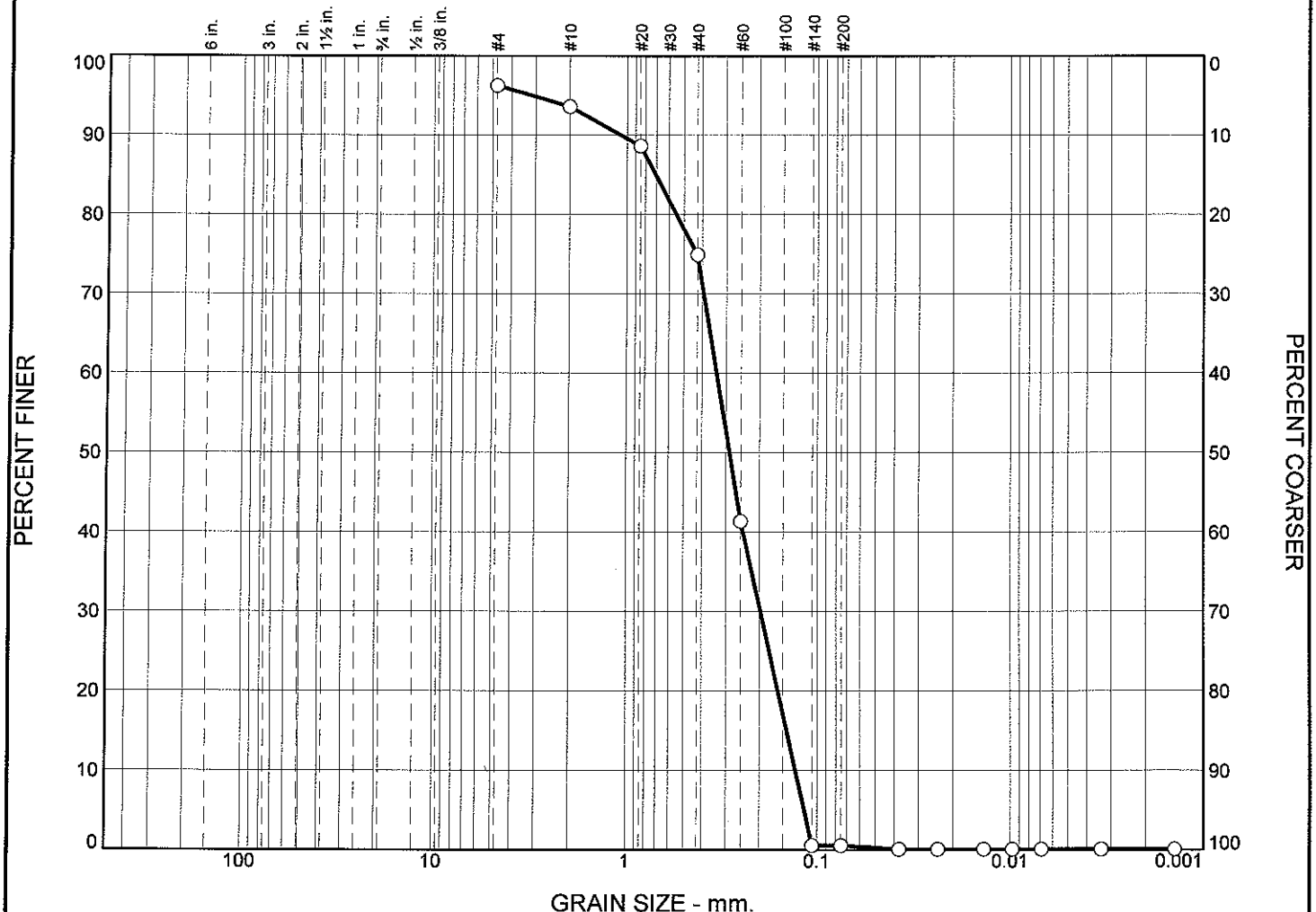
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.3	4.5	9.5	15.9	16.1	18.7	64.7	18.5	1.9	0.1	0.0	20.5	5.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0380	0.0444	0.0519	0.0709	0.1572	0.2412	0.6160	0.8410	1.8027	

Fineness Modulus	C_u	C_c
1.34	6.34	0.55

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.1	4.0	11.5	36.8	32.9	8.0	0.3	0.0	0.0		0.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7072	0.3358	0.2867	0.1970	0.1437	0.1293	0.89	2.60

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506111 **Sample Number:** L0912918-09

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506111
Sample Number: L0912918-09
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
70.35	0.00	#4	524.40	521.77	96.3	3.7
		#10	486.68	484.81	93.6	6.4
		#20	408.91	405.42	88.6	11.4
		#40	370.94	361.28	74.9	25.1
		#60	389.79	366.16	41.3	58.7
		#140	371.50	342.82	0.6	99.4
		#200	345.25	345.25	0.6	99.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 0.6
Weight of hydrometer sample =70.35
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	0.1	99.9
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	0.1	99.9
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	0.1	99.9
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	0.1	99.9
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	0.1	99.9
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	0.1	99.9
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	0.1	99.9

Fractional Components

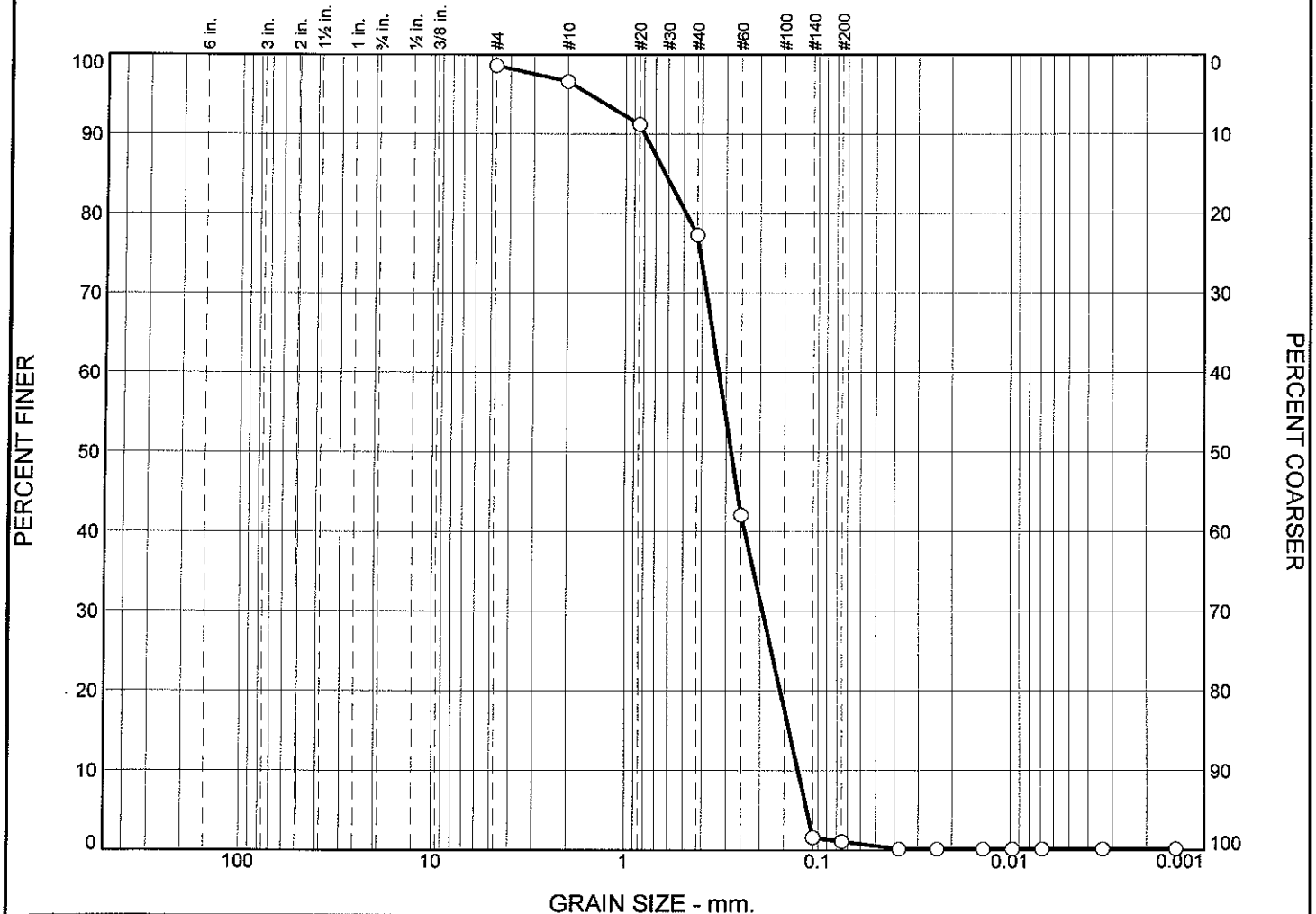
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.1	4.0	11.5	36.8	32.9	8.0	93.2	0.3	0.0	0.0		0.3	0.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1293	0.1437	0.1596	0.1970	0.2867	0.3358	0.5495	0.7072	1.0743	3.1507

Fineness Modulus	C_u	C_c
1.67	2.60	0.89

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.6	4.4	11.7	38.4	32.7	8.5	0.7	0.0	0.0		0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6244	0.3276	0.2817	0.1936	0.1408	0.1267	0.90	2.59

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506112 **Sample Number:** L0912918-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506112
Sample Number: L0912918-10
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
75.83	0.00	#4	521.87	520.81	98.6	1.4
		#10	483.62	482.11	96.6	3.4
		#20	415.20	411.09	91.2	8.8
		#40	388.41	377.86	77.3	22.7
		#60	396.54	369.84	42.1	57.9
		#140	377.86	347.17	1.6	98.4
		#200	346.88	346.51	1.1	98.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.1
Weight of hydrometer sample =75.83
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	0.2	99.8
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	0.2	99.8
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	0.2	99.8
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	0.2	99.8
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	0.2	99.8
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	0.2	99.8
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	0.2	99.8

Fractional Components

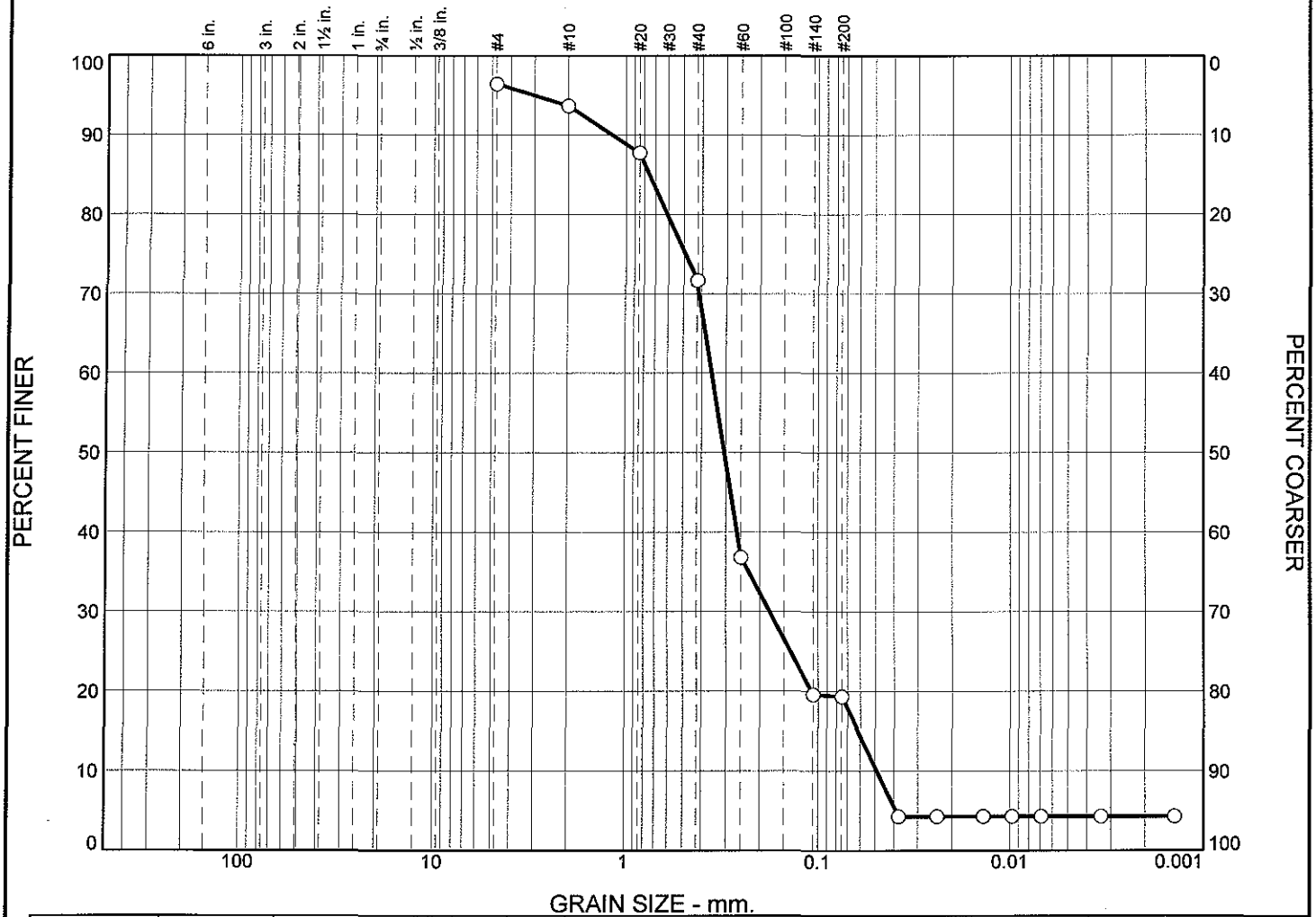
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.6	4.4	11.7	38.4	32.7	8.5	95.7	0.7	0.0	0.0		0.7	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1267	0.1408	0.1566	0.1936	0.2817	0.3276	0.4867	0.6244	0.8010	1.5509

Fineness Modulus	C_u	C_c
1.55	2.59	0.90

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.2	4.8	13.5	38.6	13.9	7.5	11.1	0.0	0.0		4.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7551	0.3558	0.3055	0.1779	0.0615	0.0489	1.82	7.28

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506113 **Sample Number:** L0912918-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506113
Sample Number: L0912918-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.36	0.00	#4	523.56	521.77	96.4	3.6
		#10	486.20	484.81	93.7	6.3
		#20	408.71	405.72	87.7	12.3
		#40	369.38	361.28	71.7	28.3
		#60	383.70	366.16	36.8	63.2
		#140	351.50	342.82	19.6	80.4
		#200	345.37	345.25	19.4	80.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 19.4
Weight of hydrometer sample =50.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	4.3	95.7
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	4.3	95.7
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	4.3	95.7
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	4.3	95.7
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	4.3	95.7
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	4.3	95.7
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	4.3	95.7

Fractional Components

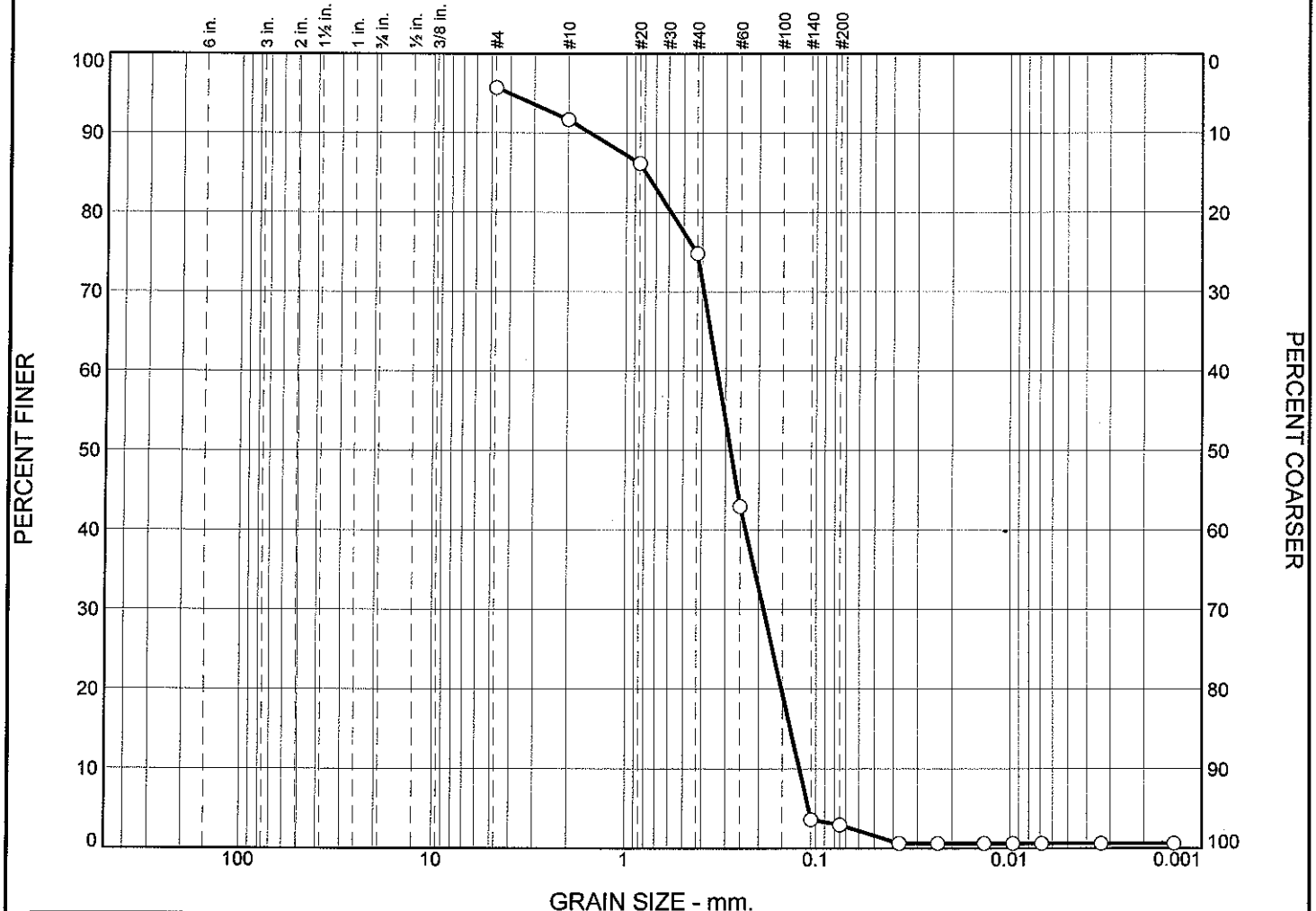
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.2	4.8	13.5	38.6	13.9	7.5	78.3	11.1	0.0	0.0		11.1	4.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0489	0.0615	0.1081	0.1779	0.3055	0.3558	0.6087	0.7551	1.1759	3.0196

Fineness Modulus	C_u	C_c
1.64	7.28	1.82

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.2	4.5	9.7	34.5	31.8	8.9	1.7	0.0	0.0	0.0	0.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7925	0.3321	0.2812	0.1885	0.1359	0.1219	0.88	2.73

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506126 **Sample Number:** L0912918-12

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506126
Sample Number: L0912918-12
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
61.65	0.00	#4	523.45	520.81	95.7	4.3
		#10	484.60	482.11	91.7	8.3
		#20	414.50	411.09	86.1	13.9
		#40	384.86	377.86	74.8	25.2
		#60	389.47	369.84	43.0	57.0
		#140	371.43	347.17	3.6	96.4
		#200	346.91	346.51	3.0	97.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 3.0
Weight of hydrometer sample =61.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0373	0.6	99.4
5.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0236	0.6	99.4
15.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0136	0.6	99.4
30.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0096	0.6	99.4
60.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0068	0.6	99.4
250.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0033	0.6	99.4
1440.00	20.0	1.0080	1.0079	0.0136	5.0	15.0	0.0014	0.6	99.4

Fractional Components

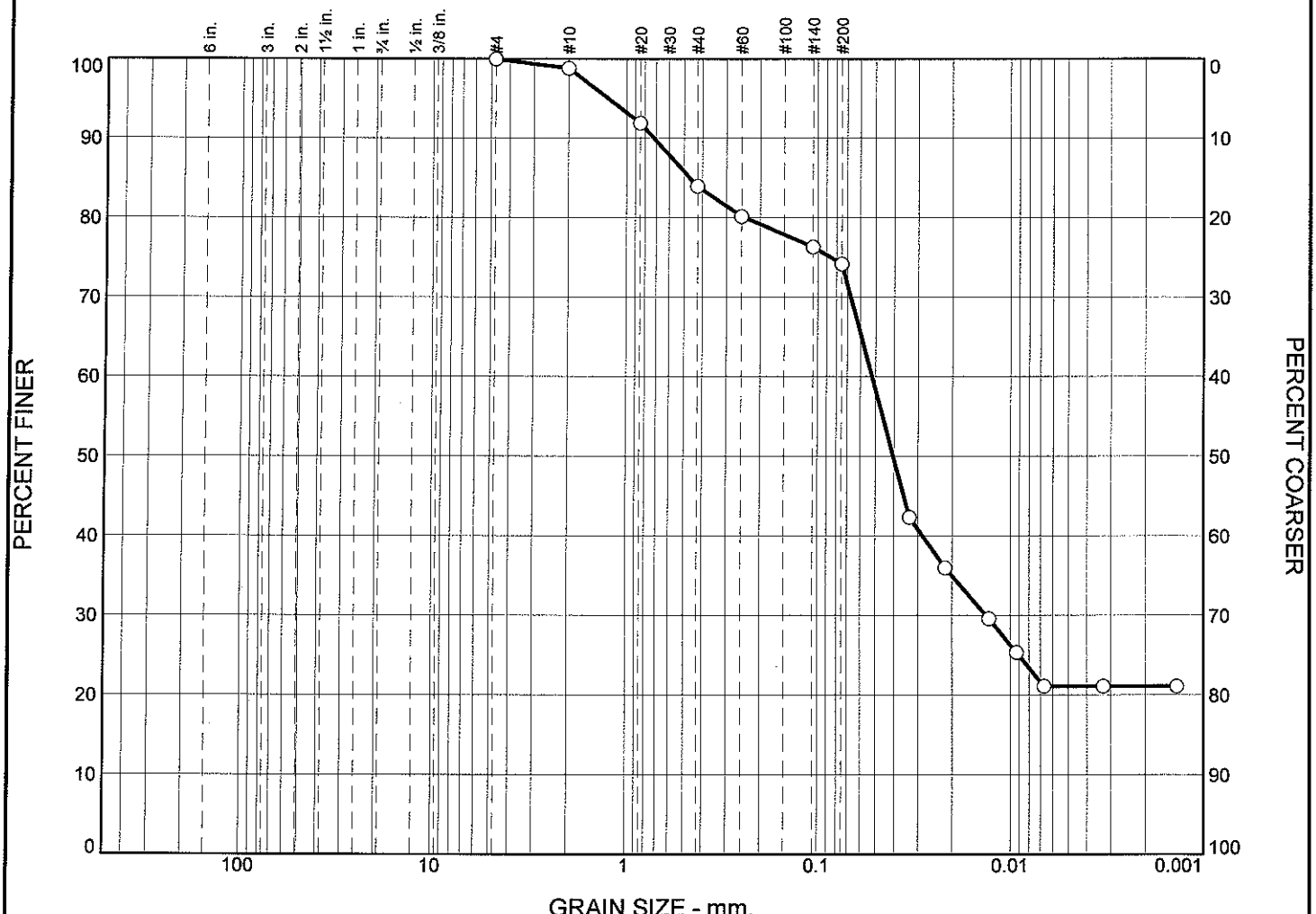
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.2	4.5	9.7	34.5	31.8	8.9	89.4	1.7	0.0	0.0	0.0	1.7	0.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1219	0.1359	0.1516	0.1885	0.2812	0.3321	0.5840	0.7925	1.5425	4.0732

Fineness Modulus	C_u	C_c
1.70	2.73	0.88

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	5.6	7.4	5.6	3.2	10.0	25.7	9.4	8.8	2.0	21.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4661	0.0522	0.0404	0.0133				

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506211 **Sample Number:** L0912918-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506211
Sample Number: L0912918-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
56.10	0.00	#4	521.80	521.77	99.9	0.1
		#10	485.45	484.81	98.8	1.2
		#20	409.29	405.42	91.9	8.1
		#40	365.75	361.28	83.9	16.1
		#60	368.28	366.16	80.2	19.8
		#140	344.99	342.82	76.3	23.7
		#200	346.45	345.25	74.2	25.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 74.2
Weight of hydrometer sample =56.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0200	1.0199	0.0136	17.0	11.8	0.0331	42.3	57.7
5.00	20.0	1.0170	1.0169	0.0136	14.0	12.6	0.0217	35.9	64.1
15.00	20.0	1.0140	1.0139	0.0136	11.0	13.4	0.0129	29.6	70.4
30.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0093	25.3	74.7
60.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0067	21.1	78.9
250.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0033	21.1	78.9
1440.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0014	21.1	78.9

Fractional Components

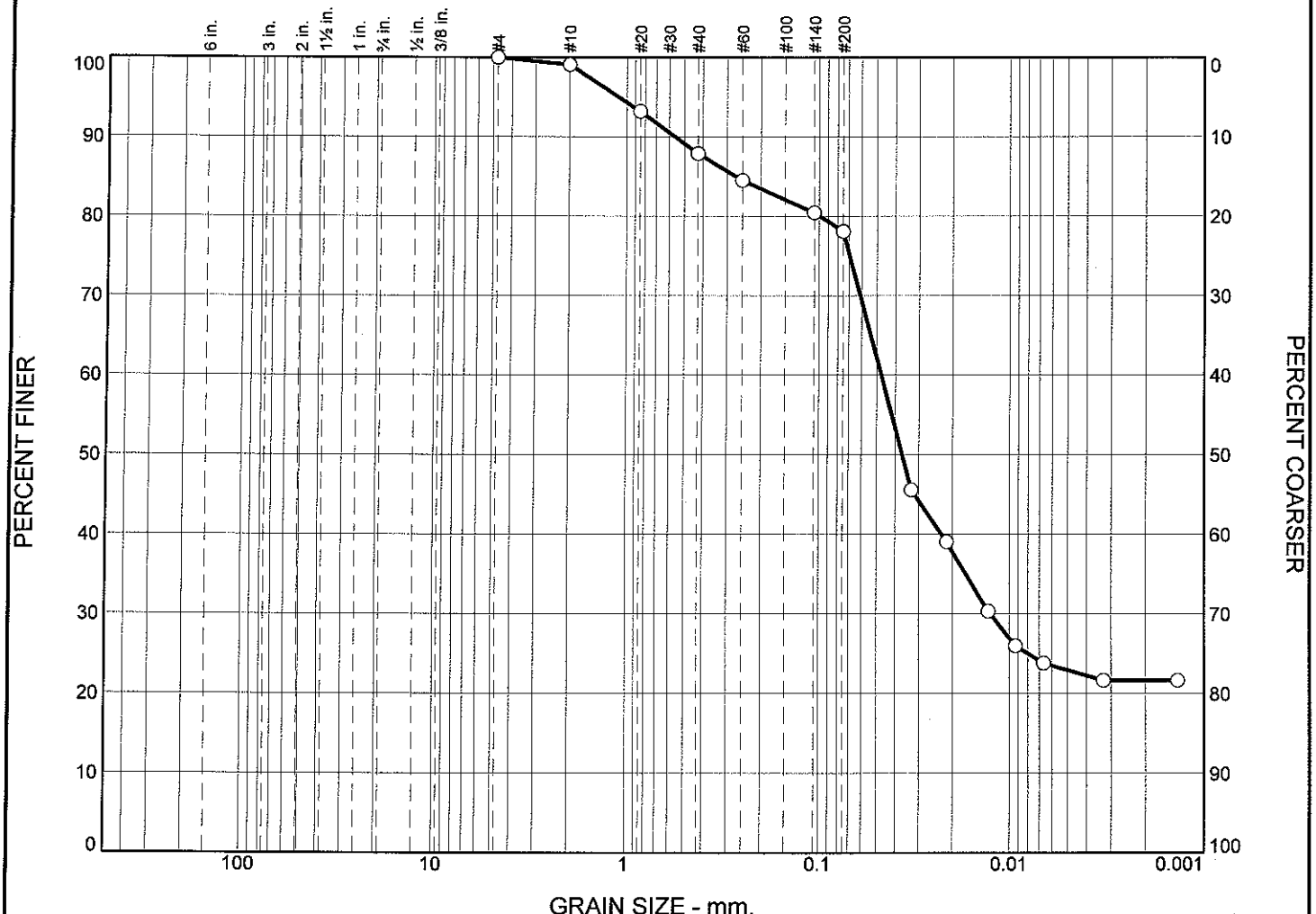
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	5.6	7.4	5.6	3.2	10.0	31.8	25.7	9.4	8.8	2.0	45.9	21.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0133	0.0404	0.0522	0.2413	0.4661	0.7200	1.2474

Fineness Modulus
0.59

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	4.8	5.2	4.6	3.3	10.3	26.2	11.1	8.8	2.6	22.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2710	0.0473	0.0367	0.0126				

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506212 **Sample Number:** L0912918-14

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506212
Sample Number: L0912918-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.62	0.00	#4	520.82	520.81	100.0	0.0
		#10	482.64	482.11	99.1	0.9
		#20	414.47	411.09	93.2	6.8
		#40	380.93	377.86	87.9	12.1
		#60	371.79	369.84	84.5	15.5
		#140	349.51	347.17	80.4	19.6
		#200	347.86	346.51	78.1	21.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 78.1
Weight of hydrometer sample =57.62
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0210	1.0209	0.0136	18.0	11.5	0.0328	45.6	54.4
5.00	20.0	1.0180	1.0179	0.0136	15.0	12.3	0.0214	39.0	61.0
15.00	20.0	1.0140	1.0139	0.0136	11.0	13.4	0.0129	30.3	69.7
30.00	20.0	1.0120	1.0119	0.0136	9.0	13.9	0.0093	26.0	74.0
60.00	20.0	1.0110	1.0109	0.0136	8.0	14.2	0.0066	23.8	76.2
250.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0033	21.6	78.4
1440.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0014	21.6	78.4

Fractional Components

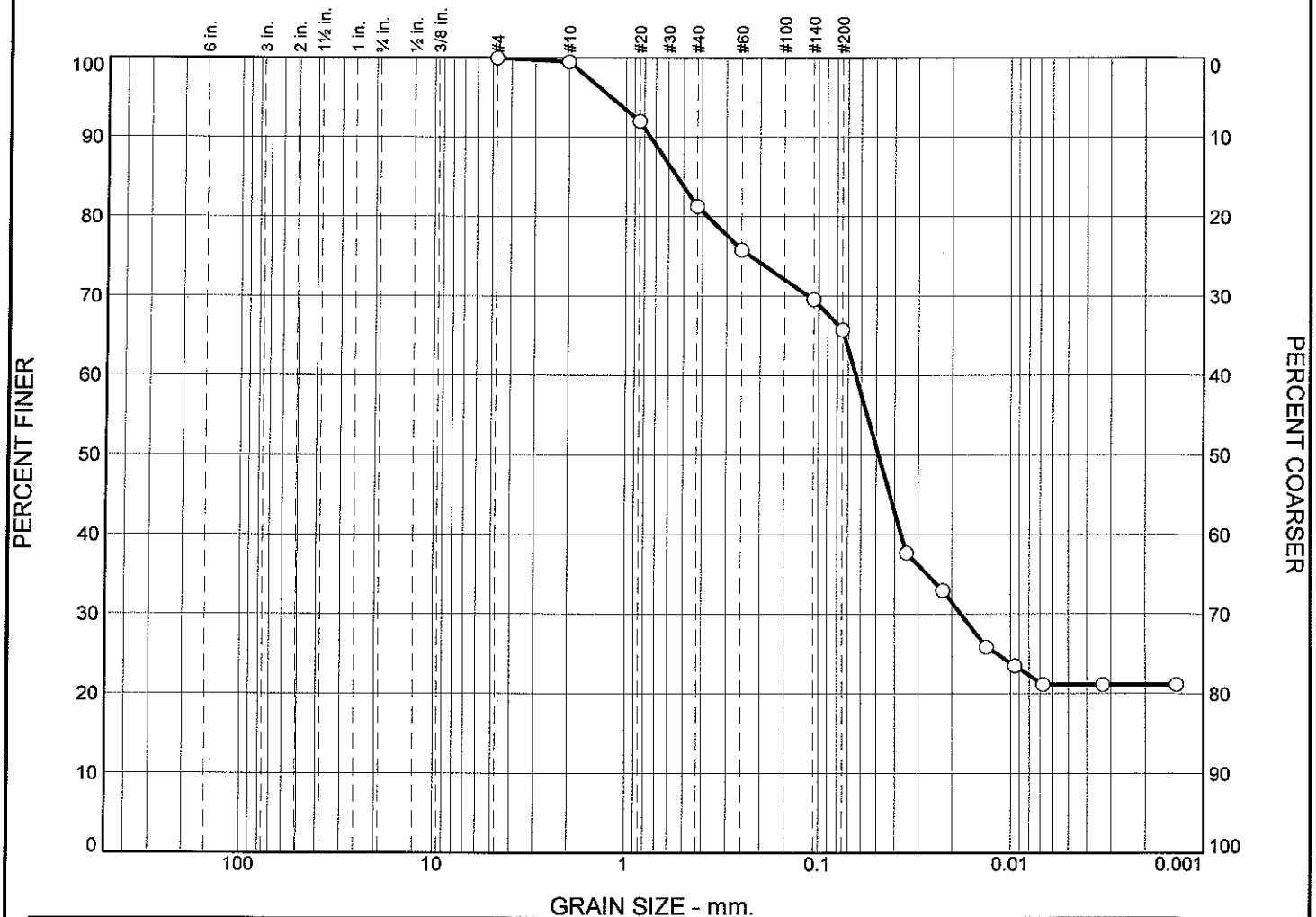
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	4.8	5.2	4.6	3.3	10.3	28.2	26.2	11.1	8.8	2.6	48.7	22.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0126	0.0367	0.0473	0.0996	0.2710	0.5608	1.1057

Fineness Modulus
0.47

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	6.1	9.6	8.0	5.1	11.6	22.6	8.4	6.0	1.0	21.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5406	0.0640	0.0486	0.0180				

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506213 **Sample Number:** L0912918-15

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506213
Sample Number: L0912918-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
44.65	0.00	#4	521.80	521.77	99.9	0.1
		#10	485.01	484.81	99.5	0.5
		#20	408.76	405.42	92.0	8.0
		#40	366.07	361.28	81.3	18.7
		#60	368.61	366.16	75.8	24.2
		#140	345.61	342.82	69.5	30.5
		#200	346.95	345.25	65.7	34.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 65.7
Weight of hydrometer sample =44.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0160	1.0159	0.0136	13.0	12.9	0.0346	37.7	62.3
5.00	20.0	1.0140	1.0139	0.0136	11.0	13.4	0.0223	32.9	67.1
15.00	20.0	1.0110	1.0109	0.0136	8.0	14.2	0.0133	25.9	74.1
30.00	20.0	1.0100	1.0099	0.0136	7.0	14.4	0.0095	23.5	76.5
60.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0068	21.1	78.9
250.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0033	21.1	78.9
1440.00	20.0	1.0090	1.0089	0.0136	6.0	14.7	0.0014	21.1	78.9

Fractional Components

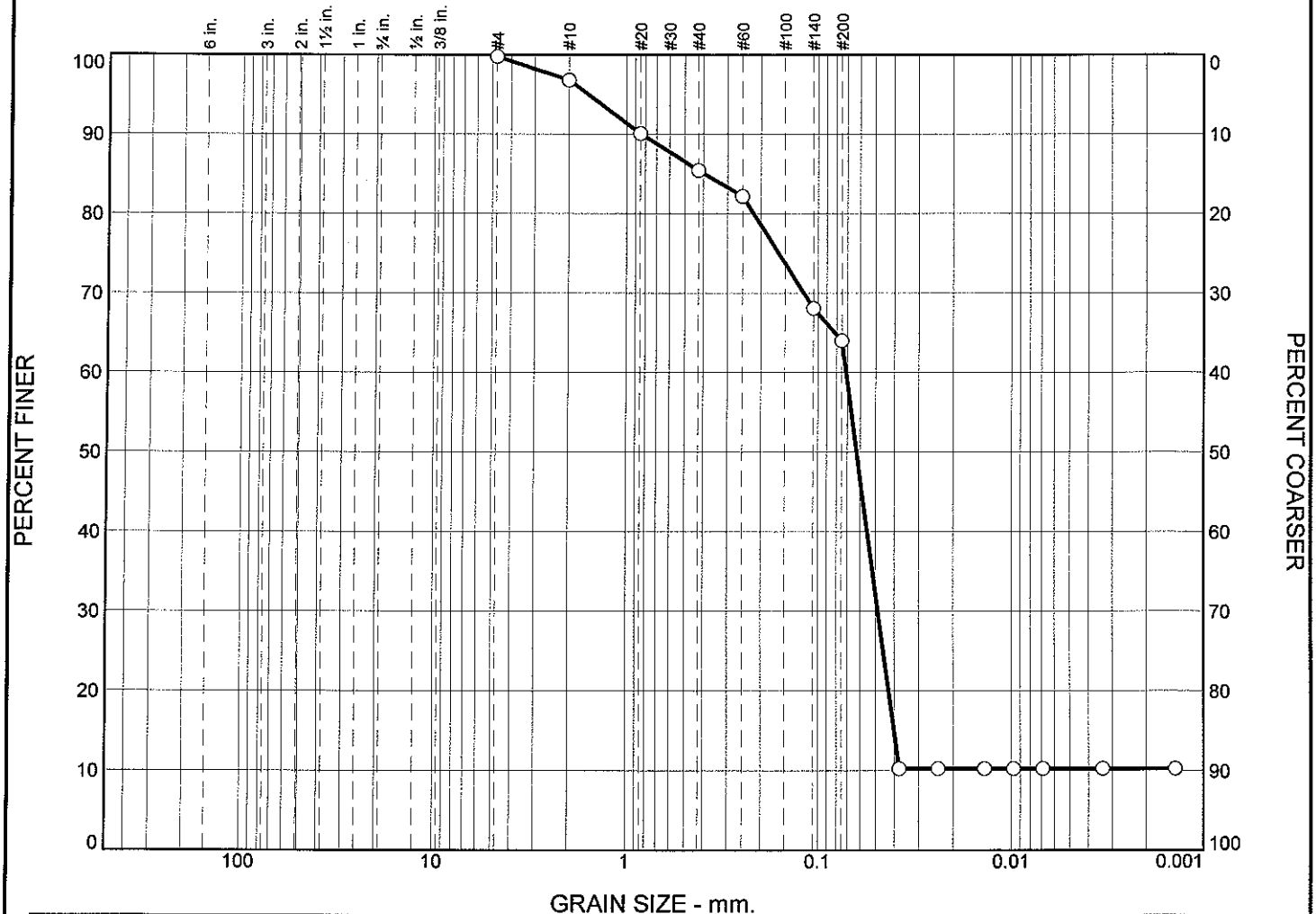
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	6.1	9.6	8.0	5.1	11.6	40.4	22.6	8.4	6.0	1.0	38.0	21.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0180	0.0486	0.0640	0.3756	0.5406	0.7467	1.1974

Fineness Modulus
0.69

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	5.4	4.9	4.3	11.4	21.0	39.5	0.0	0.0	0.0	10.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3952	0.0713	0.0627	0.0485	0.0400			

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506226 **Sample Number:** L0912918-16

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506226
Sample Number: L0912918-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.48	0.00	#4	520.98	520.81	99.8	0.2
		#10	484.16	482.11	96.8	3.2
		#20	415.76	411.09	90.1	9.9
		#40	381.08	377.86	85.4	14.6
		#60	372.12	369.84	82.2	17.8
		#140	356.97	347.17	68.1	31.9
		#200	349.34	346.51	64.0	36.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 64.0
Weight of hydrometer sample =69.48
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	10.3	89.7
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	10.3	89.7
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	10.3	89.7
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	10.3	89.7
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	10.3	89.7
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	10.3	89.7
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	10.3	89.7

Fractional Components

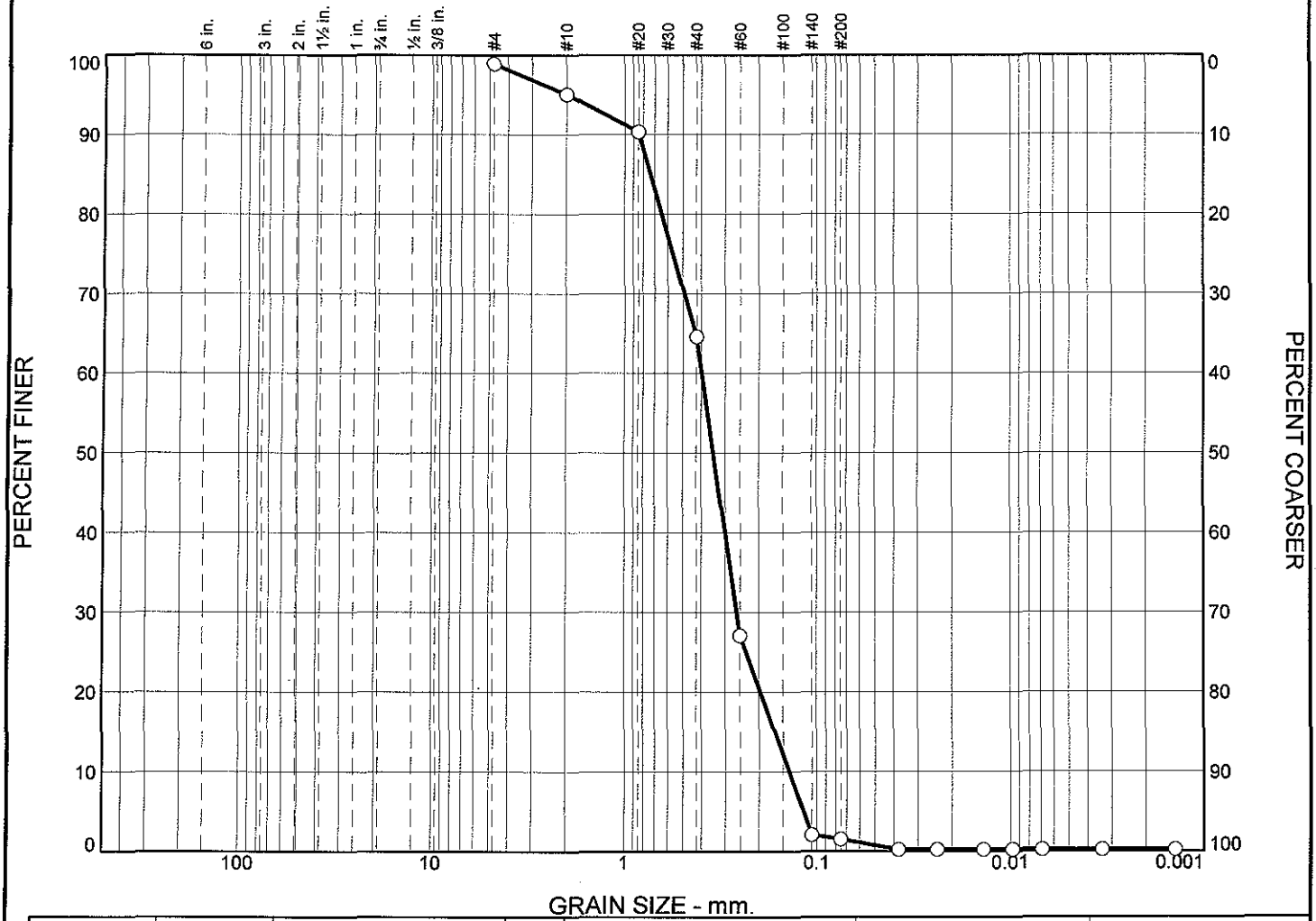
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	5.4	4.9	4.3	11.4	21.0	47.0	39.5	0.0	0.0	0.0	39.5	10.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0400	0.0427	0.0485	0.0627	0.0713	0.2191	0.3952	0.8395	1.5894

Fineness Modulus
0.65

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.0	3.9	20.6	43.5	20.2	5.7	1.0	0.0	0.0	0.0	0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7361	0.3983	0.3458	0.2606	0.1652	0.1391	1.23	2.86

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506311 **Sample Number:** L0912918-17

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506311
Sample Number: L0912918-17
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
72.33	0.00	#4	522.58	521.77	98.9	1.1
		#10	487.57	484.81	95.1	4.9
		#20	408.83	405.42	90.3	9.7
		#40	379.92	361.28	64.6	35.4
		#60	393.29	366.16	27.1	72.9
		#140	360.89	342.82	2.1	97.9
		#200	345.66	345.25	1.5	98.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.5
Weight of hydrometer sample =72.33
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	0.2	99.8
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	0.2	99.8
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	0.2	99.8
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	0.2	99.8
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	0.2	99.8
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	0.2	99.8
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	0.2	99.8

Fractional Components

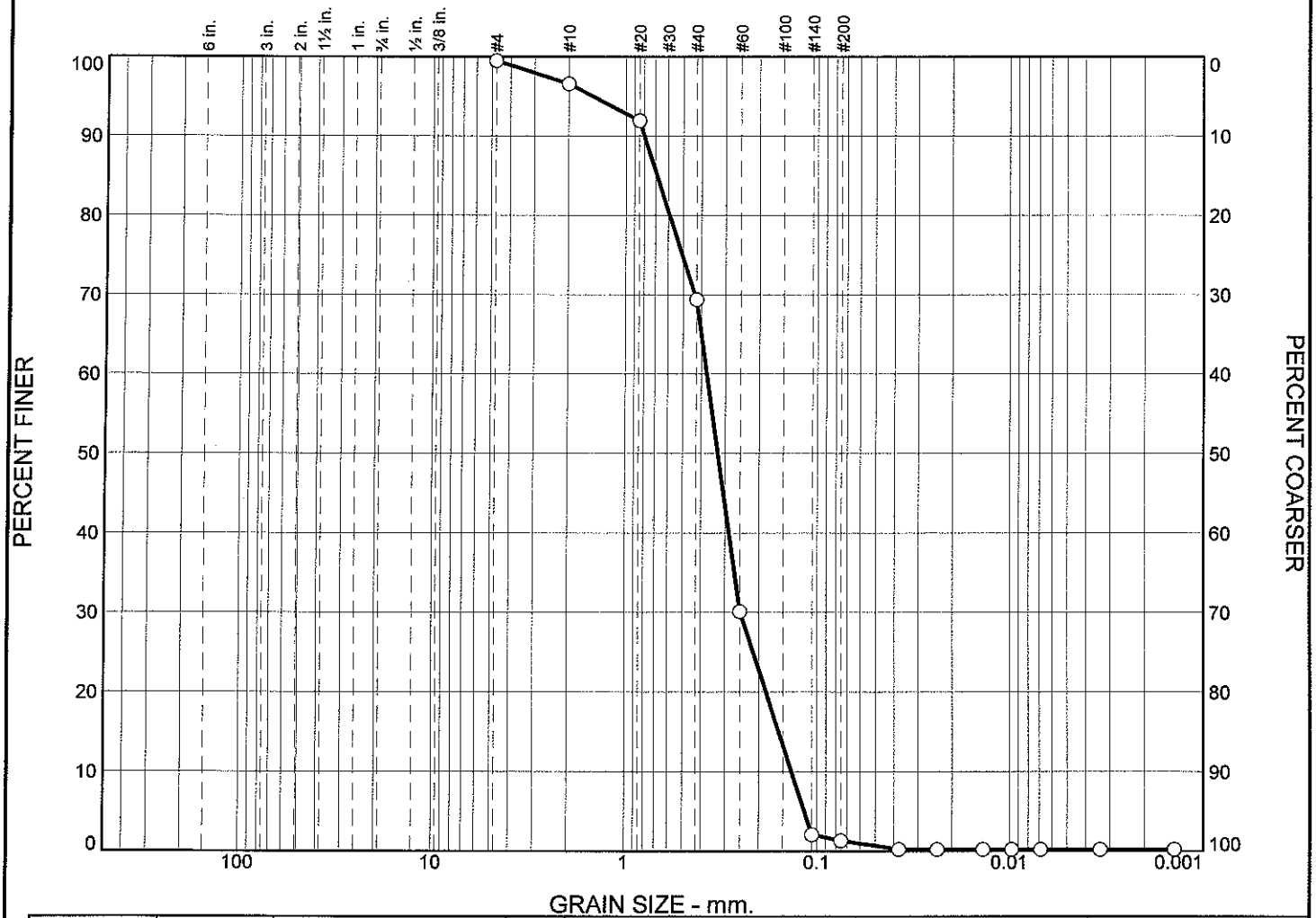
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.0	3.9	20.6	43.5	20.2	5.7	93.9	1.0	0.0	0.0	0.0	1.0	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1391	0.1652	0.1961	0.2606	0.3458	0.3983	0.6435	0.7361	0.8420	1.9768

Fineness Modulus	C_u	C_c
1.84	2.86	1.23

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.3	3.8	18.1	44.6	22.6	6.5	0.8	0.0	0.0		0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6871	0.3744	0.3271	0.2490	0.1574	0.1351	1.23	2.77

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506312 **Sample Number:** L0912918-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506312
Sample Number: L0912918-18
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.65	0.00	#4	521.14	520.81	99.5	0.5
		#10	483.92	482.11	96.6	3.4
		#20	414.01	411.09	91.9	8.1
		#40	391.99	377.86	69.4	30.6
		#60	394.42	369.84	30.1	69.9
		#140	364.76	347.17	2.1	97.9
		#200	346.97	346.51	1.3	98.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.3
Weight of hydrometer sample =62.65
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	0.2	99.8
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	0.2	99.8
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	0.2	99.8
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	0.2	99.8
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	0.2	99.8
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	0.2	99.8
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	0.2	99.8

Fractional Components

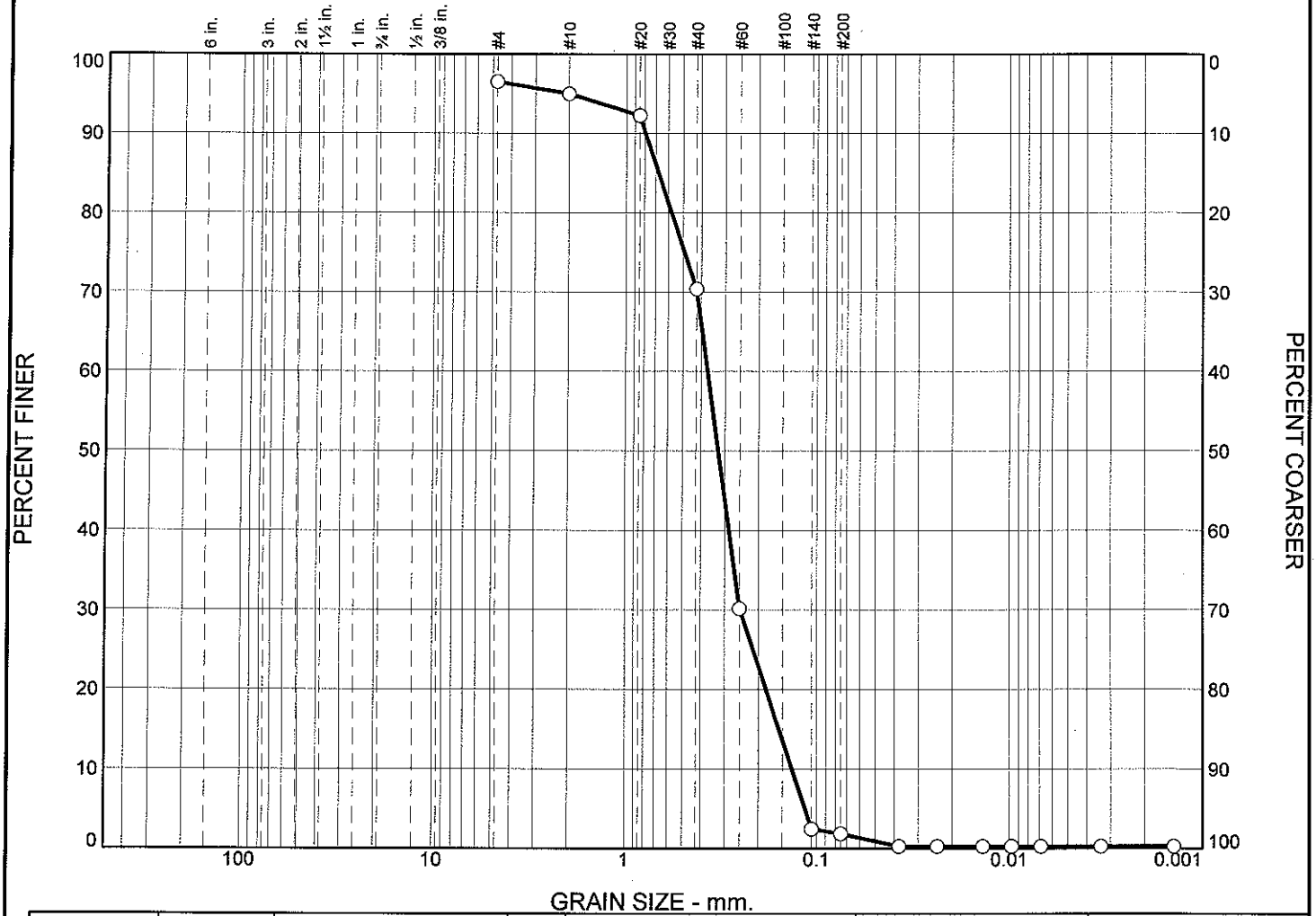
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.3	3.8	18.1	44.6	22.6	6.5	95.6	0.8	0.0	0.0		0.8	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1351	0.1574	0.1834	0.2490	0.3271	0.3744	0.5892	0.6871	0.8012	1.4953

Fineness Modulus	C_u	C_c
1.72	2.77	1.23

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	2.2	17.3	45.4	22.3	6.4	1.1	0.0	0.0		0.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6757	0.3707	0.3249	0.2489	0.1564	0.1340	1.25	2.77

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506313 **Sample Number:** L0912918-19

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506313
Sample Number: L0912918-19
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
75.66	0.00	#4	524.42	521.77	96.5	3.5
		#10	485.95	484.81	95.0	5.0
		#20	407.50	405.42	92.2	7.8
		#40	377.83	361.28	70.4	29.6
		#60	396.59	366.16	30.1	69.9
		#140	363.79	342.82	2.4	97.6
		#200	345.69	345.25	1.9	98.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.9
Weight of hydrometer sample =75.66
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	0.3	99.7
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	0.3	99.7
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	0.3	99.7
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	0.3	99.7
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	0.3	99.7
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	0.3	99.7
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	0.3	99.7

Fractional Components

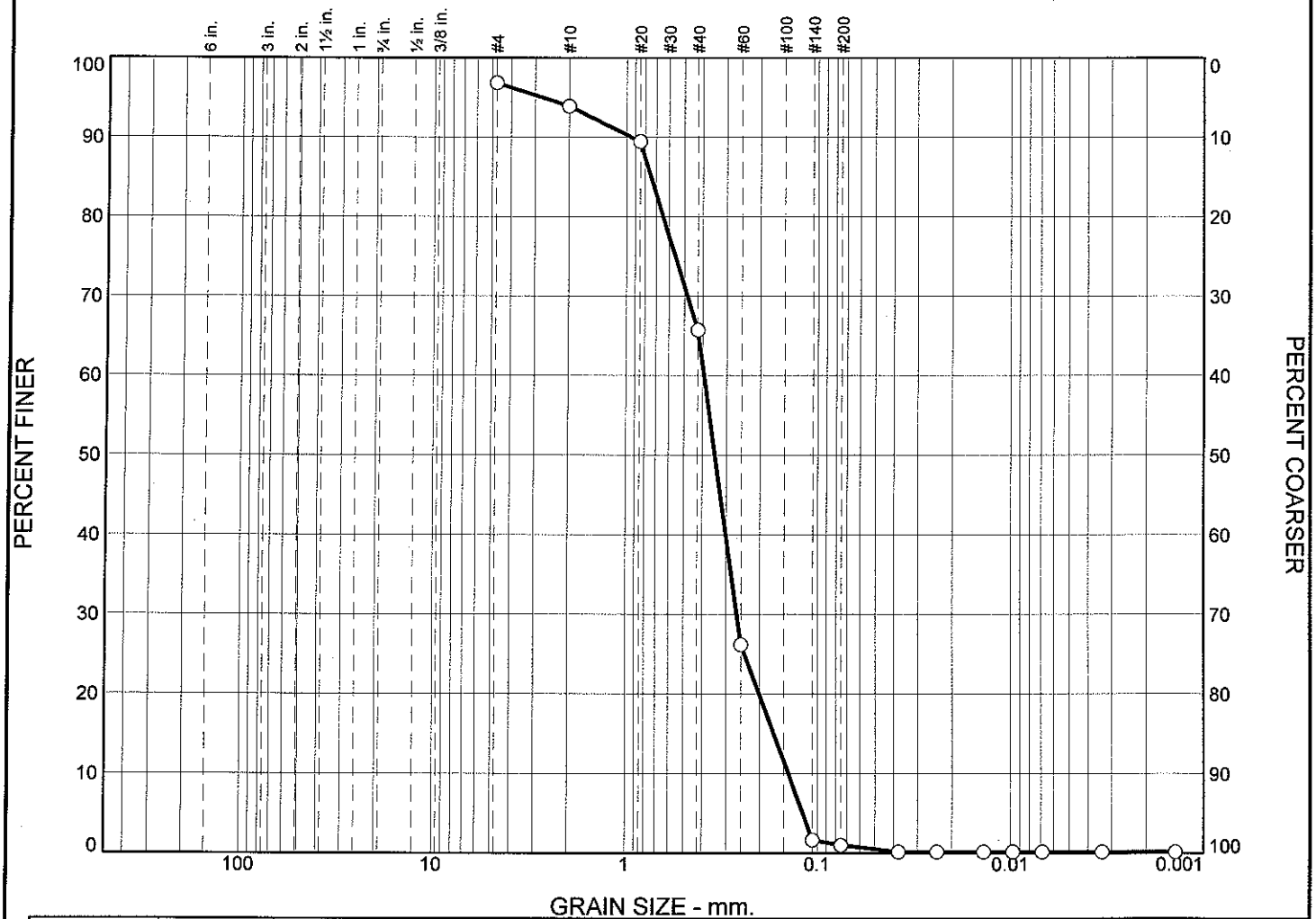
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	2.2	17.3	45.4	22.3	6.4	93.6	1.1	0.0	0.0		1.1	0.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1340	0.1564	0.1826	0.2489	0.3249	0.3707	0.5767	0.6757	0.7917	2.0107

Fineness Modulus	C_u	C_c
1.76	2.77	1.25

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.3	3.6	19.0	45.2	19.7	5.6	0.6	0.0	0.0		0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7465	0.3937	0.3443	0.2633	0.1692	0.1420	1.24	2.77

	Material Description	USCS	AASHTO
○		SP	

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506326 **Sample Number:** L0912918-20

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506326
Sample Number: L0912918-20
USCS Classification: SP
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.59	0.00	#4	522.90	520.81	96.8	3.2
		#10	484.02	482.11	93.9	6.1
		#20	414.01	411.09	89.4	10.6
		#40	393.44	377.86	65.7	34.3
		#60	395.78	369.84	26.1	73.9
		#140	363.24	347.17	1.6	98.4
		#200	346.94	346.51	1.0	99.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.0
Weight of hydrometer sample =65.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	0.2	99.8
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	0.2	99.8
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	0.2	99.8
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	0.2	99.8
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	0.2	99.8
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	0.2	99.8
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	0.2	99.8

Fractional Components

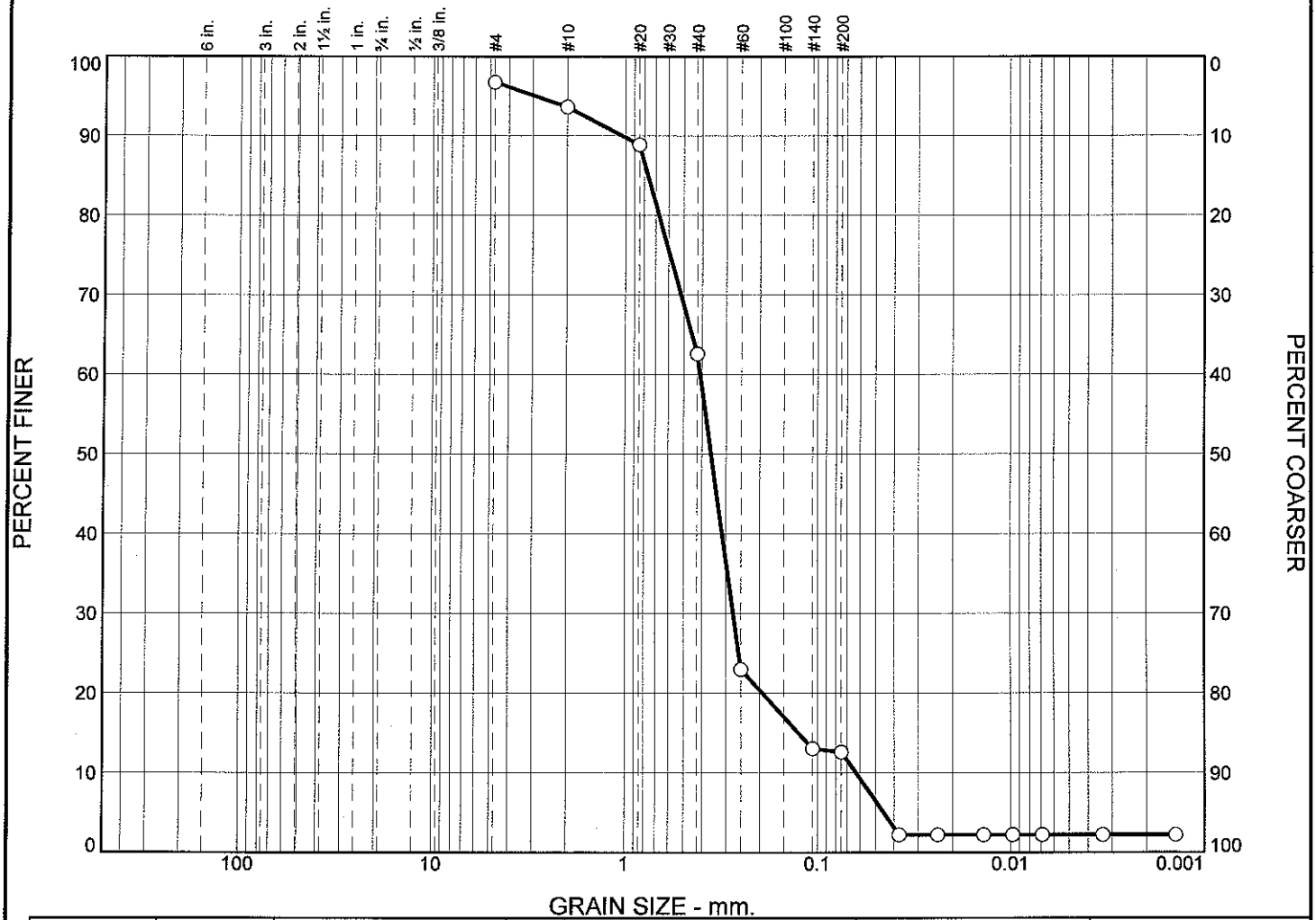
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.3	3.6	19.0	45.2	19.7	5.6	93.1	0.6	0.0	0.0		0.6	0.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1420	0.1692	0.2016	0.2633	0.3443	0.3937	0.6452	0.7465	0.9448	2.7717

Fineness Modulus	C_u	C_c
1.89	2.77	1.24

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.5	3.8	21.0	45.8	8.1	5.0	7.7	0.0	0.0	0.0	2.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7671	0.4105	0.3591	0.2747	0.1256	0.0631	2.91	6.51

	Material Description	USCS	AASHTO
○			

Project No. L0912918 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506326 **Sample Number:** WG384169-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912918
Location: 506326
Sample Number: WG384169-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
63.11	0.00	#4	523.81	521.77	96.8	3.2
		#10	486.79	484.81	93.6	6.4
		#20	408.41	405.42	88.9	11.1
		#40	377.88	361.28	62.6	37.4
		#60	391.17	366.16	23.0	77.0
		#140	349.08	342.82	13.0	87.0
		#200	345.52	345.25	12.6	87.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 12.6
Weight of hydrometer sample =63.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0377	2.2	97.8
5.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0238	2.2	97.8
15.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0138	2.2	97.8
30.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0097	2.2	97.8
60.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0069	2.2	97.8
250.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0034	2.2	97.8
1440.00	20.0	1.0070	1.0069	0.0136	4.0	15.2	0.0014	2.2	97.8

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.5	3.8	21.0	45.8	8.1	5.0	83.7	7.7	0.0	0.0	0.0	7.7	2.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0631	0.1256	0.1935	0.2747	0.3591	0.4105	0.6724	0.7671	1.0382	2.9178

Fineness Modulus	C_u	C_c
1.89	6.51	2.91

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 309

CHAIN OF CUSTODY

PAGE 24 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02012129

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912918

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
1	505911	9/26/09	14:37	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	505912	9/26/09	15:03	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	505913	9/26/09	15:08	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	505925	9/26/09	14:50	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	505926	9/26/09	14:50	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	505927	9/26/09	14:50	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bozek	9/26/09 1912	Kelly McCann	9/26/09
Kelly McCann	9-28-09 09:13	R. Gilbert	9/28/09 9:25
R. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station S1N

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

04012:29

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L091291B

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
5	506011	9/28/09	10:00	SE	JB	☐	☐	☒	☐								ben gs	1
6	506012	9/28/09	10:17	SE	JB	☐	☐	☒	☐								ben gs	1
7	506013	9/28/09	10:25	SE	JB	☐	☐	☒	☐								ben gs	1
	506025	9/28/09	10:10	SE	JB	☒	☒	☐	☐								sed chem	1
8	506026	9/28/09	10:10	SE	JB	☐	☐	☒	☐								sed gs	1
	506027	9/28/09	10:10	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
				Container Type		G	G	G	-	-	-	-	-	-	-	-		
				Preservative		A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bayek	9/28/09 1553		9/28/09 1582

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 311

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02:29:12

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L09129 18

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
9	506111	9/26/09	16:46	SE	JB	☐	☐	☒	☐								ben gs	1
10	506112	9/26/09	17:07	SE	JB	☐	☐	☒	☐								ben gs	1
11	506113	9/26/09	17:21	SE	JB	☐	☐	☒	☐								ben gs	1
	506125	9/26/09	16:58	SE	JB	☒	☒	☐	☐								sed chem	1
12	506126	9/26/09	16:58	SE	JB	☐	☐	☒	☐								sed gs	1
	506127	9/26/09	16:58	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
Container Type						G	G	G	-	-	-	-	-	-	-	-	-	
Preservative						A	A	A	-	-	-	-	-	-	-	-	-	

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/26/09 1902		9/26/09 19:17
	9/28/09 0913		9/28/09 9:25
	9/28/09 10:10		9/29/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

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CHAIN OF CUSTODY

PAGE 3 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02-12:29

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L2091218

Report Information — ☐ FAX ☒ ADEx
Data Deliverables — ☒ EMAIL ☐ Add'l Deliverables
Billing Information — ☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
13	506211	9/28/09	08:05	SE	JB	☐	☐	☒	☐								ben gs	1
14	506212	9/28/09	08:16	SE	JB	☐	☐	☒	☐								ben gs	1
15	506213	9/28/09	08:20	SE	JB	☐	☐	☒	☐								ben gs	1
7	506225	9/28/09	08:10	SE	JB	☒	☒	☐	☐								sed chem	1
16	506226	9/28/09	08:10	SE	JB	☐	☐	☒	☐								sed gs	1
	506227	9/28/09	08:10	SE	JB	☐	☐	☐	☒								sed arch	1
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									
						☐	☐	☐	☐									

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	
Preservative	A	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/28/09 1522		9/28/09 1522

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 318

CHAIN OF CUSTODY

PAGE 26 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02 01:29

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L2091298

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
17	506311	9/26/09	15:51	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
18	506312	9/26/09	16:12	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
19	506313	9/26/09	16:17	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	506325	9/26/09	16:03	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
20	506326	9/26/09	16:03	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	506327	9/26/09	16:03	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyd	9/26/09 19:12		
	9/25/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912919
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912919
Report Date: 02/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912919-01	506411	NEW BEDFORD, MA	09/26/09 12:55
L0912919-02	506412	NEW BEDFORD, MA	09/26/09 13:47
L0912919-03	506413	NEW BEDFORD, MA	09/26/09 14:02
L0912919-04	506426	NEW BEDFORD, MA	09/26/09 13:03
L0912919-05	508236	NEW BEDFORD, MA	09/26/09 13:12
L0912919-06	506511	NEW BEDFORD, MA	09/26/09 12:05
L0912919-07	506512	NEW BEDFORD, MA	09/26/09 12:20
L0912919-08	506513	NEW BEDFORD, MA	09/26/09 12:27
L0912919-09	506526	NEW BEDFORD, MA	09/26/09 12:12
L0912919-10	506611	NEW BEDFORD, MA	09/26/09 08:50
L0912919-11	506612	NEW BEDFORD, MA	09/26/09 11:10
L0912919-12	506613	NEW BEDFORD, MA	09/26/09 11:15
L0912919-13	506626	NEW BEDFORD, MA	09/26/09 09:15
L0912919-14	506711	NEW BEDFORD, MA	09/24/09 16:24
L0912919-15	506712	NEW BEDFORD, MA	09/24/09 16:48
L0912919-16	506713	NEW BEDFORD, MA	09/24/09 17:07
L0912919-17	506726	NEW BEDFORD, MA	09/24/09 16:41

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912919
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 26, 2009. The report was ammended to include revised Grain Size data.

The WG384170-1 Laboratory Duplicate RPD is outside the acceptance criteria for sieve,gravel (100%), % very fine sand (22%), clay (39%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912919
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative (continued)

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newl

Title: Technical Director/Representative Date: 02/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-01
Client ID: 506411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 12:55
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-02
Client ID: 506412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 13:47
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.900		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	17.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	47.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-03
Client ID: 506413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 14:02
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	42.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	11.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-04
Client ID: 506426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 13:03
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.700		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.900		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	51.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	20.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-05
Client ID: 508236
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 13:12
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	13.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-06
Client ID: 506511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 12:05
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	17.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-07
Client ID: 506512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 12:20
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	7.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	13.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-08
Client ID: 506513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 12:27
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.500		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	49.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	15.0		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-09
Client ID: 506526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 12:12
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	5.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	8.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	44.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	16.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-10
Client ID: 506611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 08:50
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.30		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-11
Client ID: 506612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/26/09 11:10
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	14.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	29.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-12
Client ID: 506613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 11:15
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	12.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	11.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	38.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-13
Client ID: 506626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/26/09 09:15
Date Received: 09/28/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.900		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.2		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	46.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	23.7		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-14
Client ID: 506711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 16:24
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	57.9		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	20.4		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-15
Client ID: 506712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 16:48
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.80		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.90		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.10		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	25.8		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-16
Client ID: 506713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 17:07
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.40		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.20		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.70		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	53.5		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912919
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912919-17
Client ID: 506726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 16:41
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	2.50		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.60		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.00		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.6		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	54.3		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	23.1		%	0.100	1	-	10/13/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912919
Report Date: 02/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG384170-1 QC Sample: L0912919-17 Client ID: 506726						
Gravel (>2.00mm)	0.3	0.900	%	**100**	Q	20
Very Coarse Sand (1.00-2.00 mm)	1.5	1.60	%	6		20
Coarse Sand (0.50-1.00 mm)	2.5	2.20	%	13		20
Medium Sand (0.25-0.50 mm)	3.6	3.60	%	0		20
Fine Sand (0.125-0.25 mm)	3.0	2.60	%	14		20
Very Fine Sand (0.063-0.125 mm)	11.6	14.5	%	**22**	Q	20
Silt - (1.95-62.5 um)	54.3	58.7	%	8		20
Clay - (<1.95 um)	23.1	15.6	%	**39**	Q	20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912919
Report Date: 02/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912919-01A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-02A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-03A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-04A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-05A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-06A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-07A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-08A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912919
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912919-09A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-10A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-11A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-12A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-13A	Glass 250ml unpreserved	B	N/A	1.6	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-14A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-15A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-16A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912919-17A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912919
Project Number:	TO-0018	**Report Date:**	02/03/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

ND · Not detected at the reported detection limit for the sample.

NI · Not Ignitable.

RDL · Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)

R · Analytical results are from sample re-analysis.

RE · Analytical results are from sample re-extraction.

J · Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

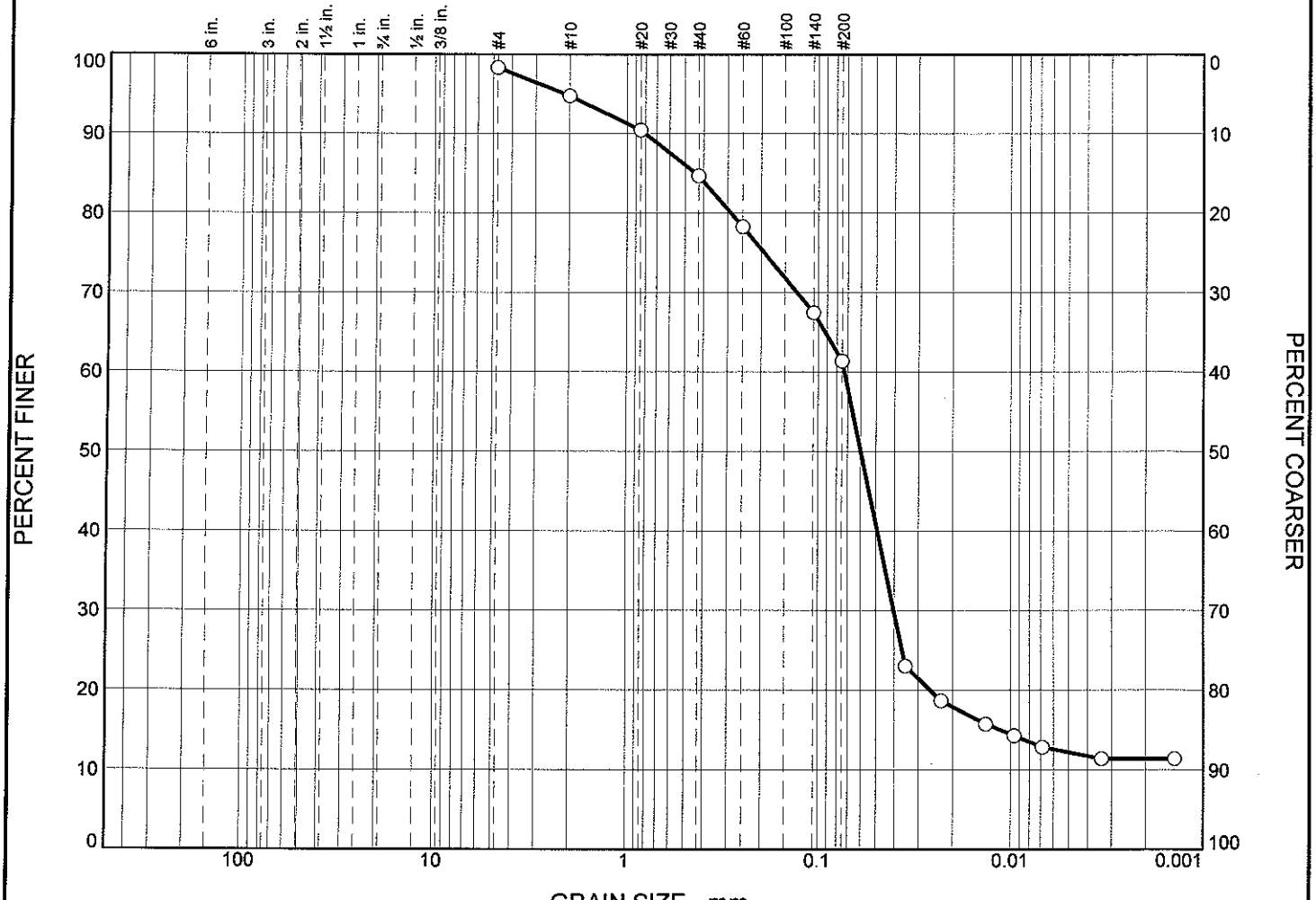
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.8	3.5	5.3	7.8	8.7	17.3	30.4	5.2	3.2	1.7	11.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4409	0.0730	0.0599	0.0402	0.0113			

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506411 **Sample Number:** L0912919-01

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506411
Sample Number: L0912919-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
67.69	0.00	#4	521.95	520.81	98.3	1.7
		#10	484.52	482.11	94.8	5.2
		#20	414.00	411.09	90.5	9.5
		#40	381.76	377.86	84.7	15.3
		#60	374.21	369.84	78.2	21.8
		#140	354.47	347.17	67.5	32.5
		#200	350.63	346.51	61.4	38.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 61.4
Weight of hydrometer sample =67.69
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0160	1.0158	0.0138	13.0	12.9	0.0350	23.0	77.0
5.00	19.0	1.0130	1.0128	0.0138	10.0	13.6	0.0228	18.6	81.4
15.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0134	15.7	84.3
30.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0096	14.3	85.7
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	12.8	87.2
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	11.4	88.6
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	11.4	88.6

Fractional Components

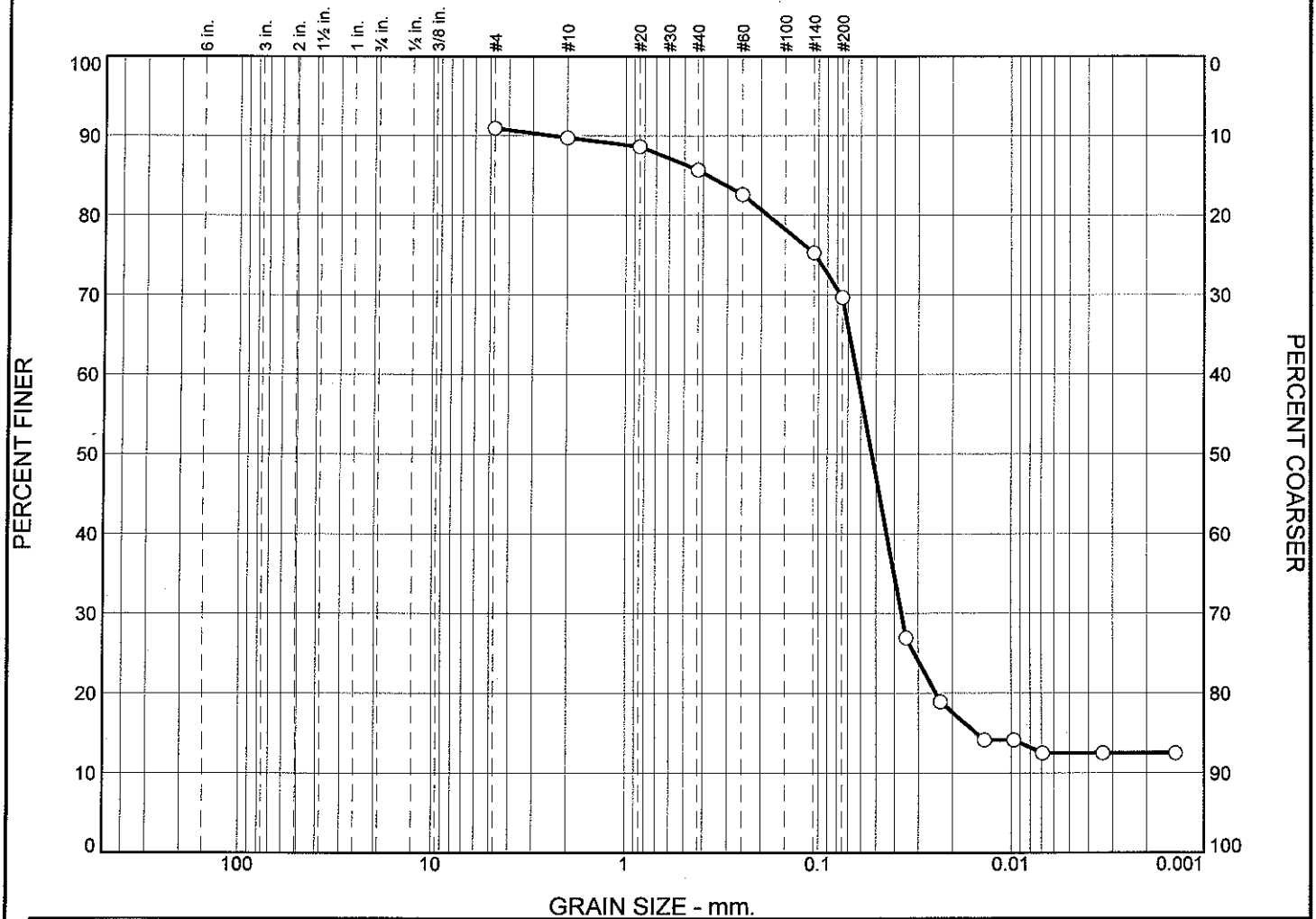
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.8	3.5	5.3	7.8	8.7	17.3	42.6	30.4	5.2	3.2	1.7	40.5	11.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0113	0.0261	0.0402	0.0599	0.0730	0.2889	0.4409	0.8046	2.1224

Fineness Modulus
0.74

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	1.0	2.4	3.8	5.9	17.1	34.9	9.4	2.2	0.6	12.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3771	0.0630	0.0526	0.0367	0.0151			

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506412 **Sample Number:** L0912919-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912919
Location: 506412
Sample Number: L0912919-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.86	0.00	#4	528.09	521.77	91.0	9.0
		#10	485.64	484.81	89.8	10.2
		#20	406.21	405.42	88.6	11.4
		#40	363.33	361.28	85.7	14.3
		#60	368.33	366.16	82.6	17.4
		#140	347.93	342.82	75.3	24.7
		#200	349.17	345.25	69.7	30.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 69.7
Weight of hydrometer sample =69.86
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	26.9	73.1
5.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0231	18.9	81.1
15.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0137	14.1	85.9
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	14.1	85.9
60.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0069	12.5	87.5
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	12.5	87.5
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	12.5	87.5

Fractional Components

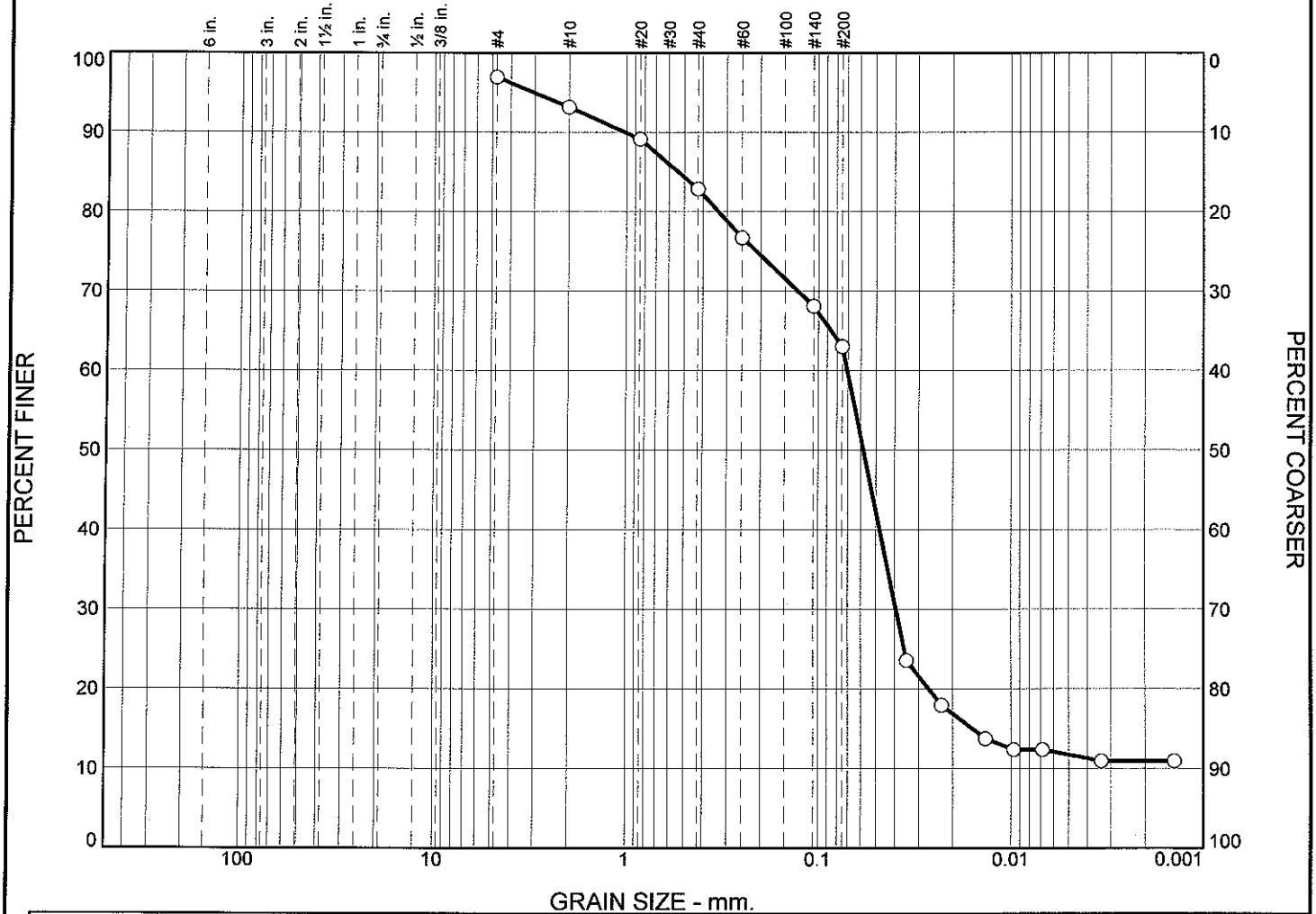
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	1.0	2.4	3.8	5.9	17.1	30.2	34.9	9.4	2.2	0.6	47.1	12.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0151	0.0244	0.0367	0.0526	0.0630	0.1844	0.3771	2.3728	

Fineness Modulus
0.81

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.0	3.3	5.6	7.6	7.0	16.0	31.7	7.1	2.6	1.1	11.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5380	0.0707	0.0581	0.0393	0.0159			

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506413 **Sample Number:** L0912919-03

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506413
Sample Number: L0912919-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
72.26	0.00	#4	523.02	520.81	96.9	3.1
		#10	484.83	482.11	93.2	6.8
		#20	414.01	411.09	89.1	10.9
		#40	382.39	377.86	82.9	17.1
		#60	374.29	369.84	76.7	23.3
		#140	353.40	347.17	68.1	31.9
		#200	350.17	346.51	63.0	37.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 63.0
Weight of hydrometer sample =72.26
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	23.5	76.5
5.00	19.0	1.0130	1.0128	0.0138	10.0	13.6	0.0228	17.9	82.1
15.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0136	13.7	86.3
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	12.3	87.7
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	12.3	87.7
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	10.9	89.1
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	10.9	89.1

Fractional Components

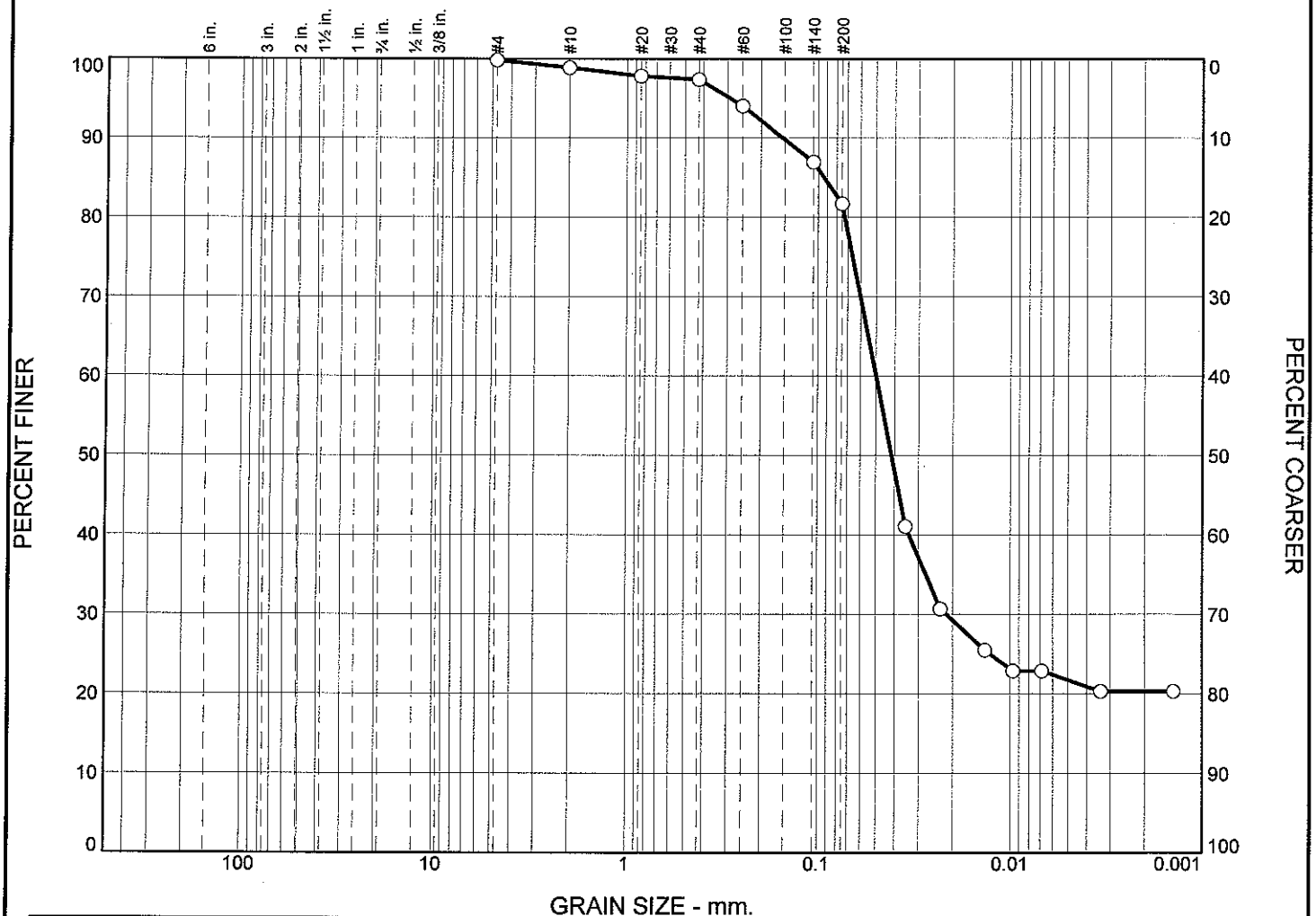
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.0	3.3	5.6	7.6	7.0	16.0	39.5	31.7	7.1	2.6	1.1	42.5	11.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0159	0.0266	0.0393	0.0581	0.0707	0.3320	0.5380	1.0205	3.0403

Fineness Modulus
0.82

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.7	0.9	0.5	3.5	5.7	16.3	34.0	11.2	3.9	2.1	20.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0932	0.0499	0.0414	0.0215				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506426 **Sample Number:** L0912919-04

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912919
Location: 506426
Sample Number: L0912919-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.52	0.00	#4	521.86	521.77	99.8	0.2
		#10	485.29	484.81	98.9	1.1
		#20	405.95	405.42	97.8	2.2
		#40	362.50	362.28	97.4	2.6
		#60	367.85	366.16	94.0	6.0
		#140	346.40	342.82	87.0	13.0
		#200	347.90	345.25	81.7	18.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 81.7
Weight of hydrometer sample =50.52
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0160	1.0158	0.0138	13.0	12.9	0.0350	41.1	58.9
5.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0231	30.7	69.3
15.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0136	25.5	74.5
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	22.9	77.1
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	22.9	77.1
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	20.3	79.7
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	20.3	79.7

Fractional Components

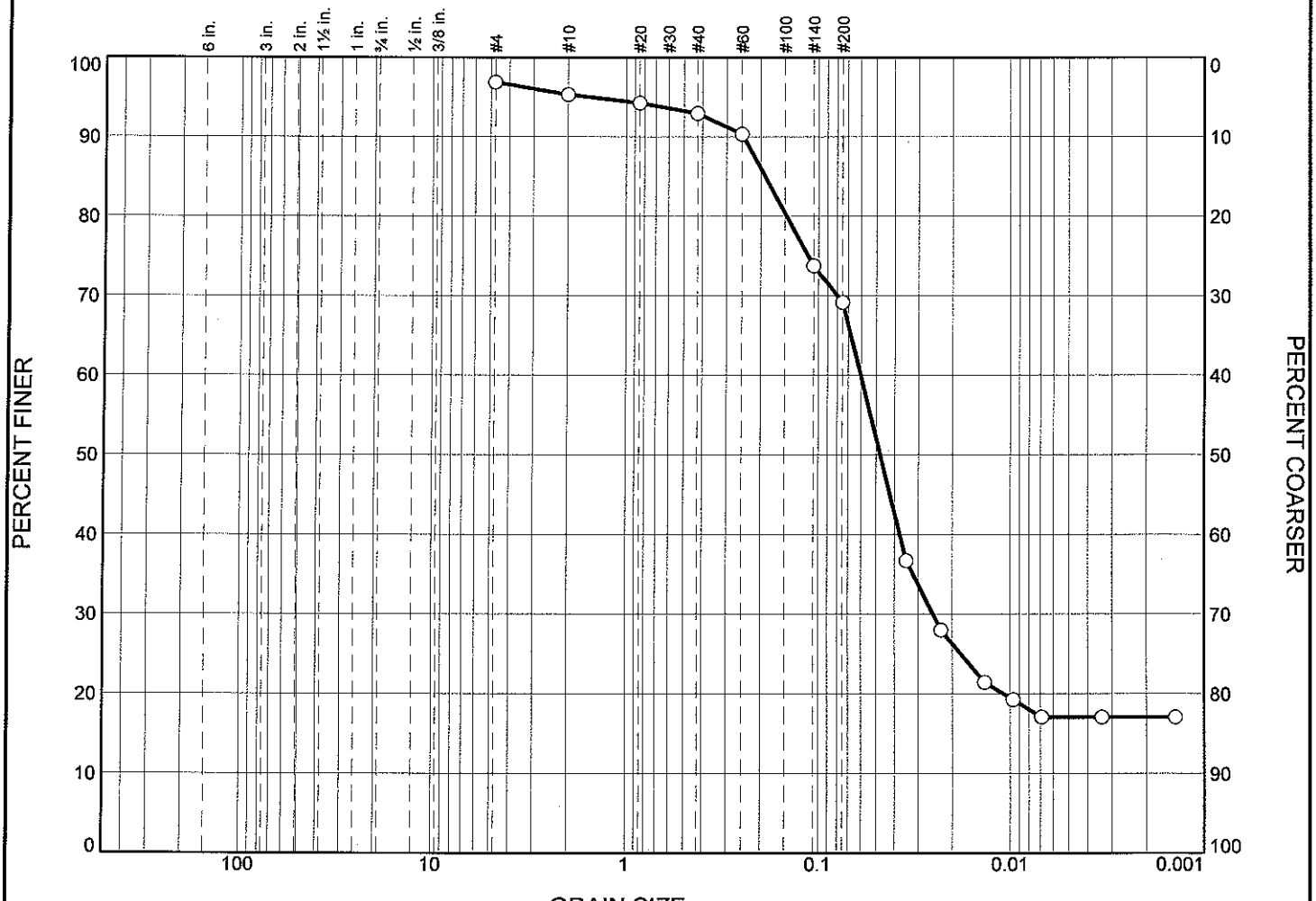
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.7	0.9	0.5	3.5	5.7	16.3	26.9	34.0	11.2	3.9	2.1	51.2	20.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0215	0.0414	0.0499	0.0726	0.0932	0.1532	0.2910

Fineness Modulus
0.20

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.3	0.8	1.2	3.0	13.4	15.4	27.1	11.2	5.4	0.8	17.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1896	0.0603	0.0476	0.0252				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 508236 **Sample Number:** L0912919-05

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 508236
Sample Number: L0912919-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.86	0.00	#4	522.40	520.81	96.9	3.1
		#10	482.91	482.11	95.3	4.7
		#20	411.62	411.09	94.3	5.7
		#40	378.53	377.86	92.9	7.1
		#60	371.16	369.84	90.3	9.7
		#140	350.61	342.17	73.8	26.2
		#200	348.85	346.51	69.2	30.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 69.2
Weight of hydrometer sample =50.86
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	36.7	63.3
5.00	19.0	1.0130	1.0128	0.0138	10.0	13.6	0.0228	28.0	72.0
15.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0136	21.4	78.6
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	19.2	80.8
60.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0069	17.0	83.0
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	17.0	83.0
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	17.0	83.0

Fractional Components

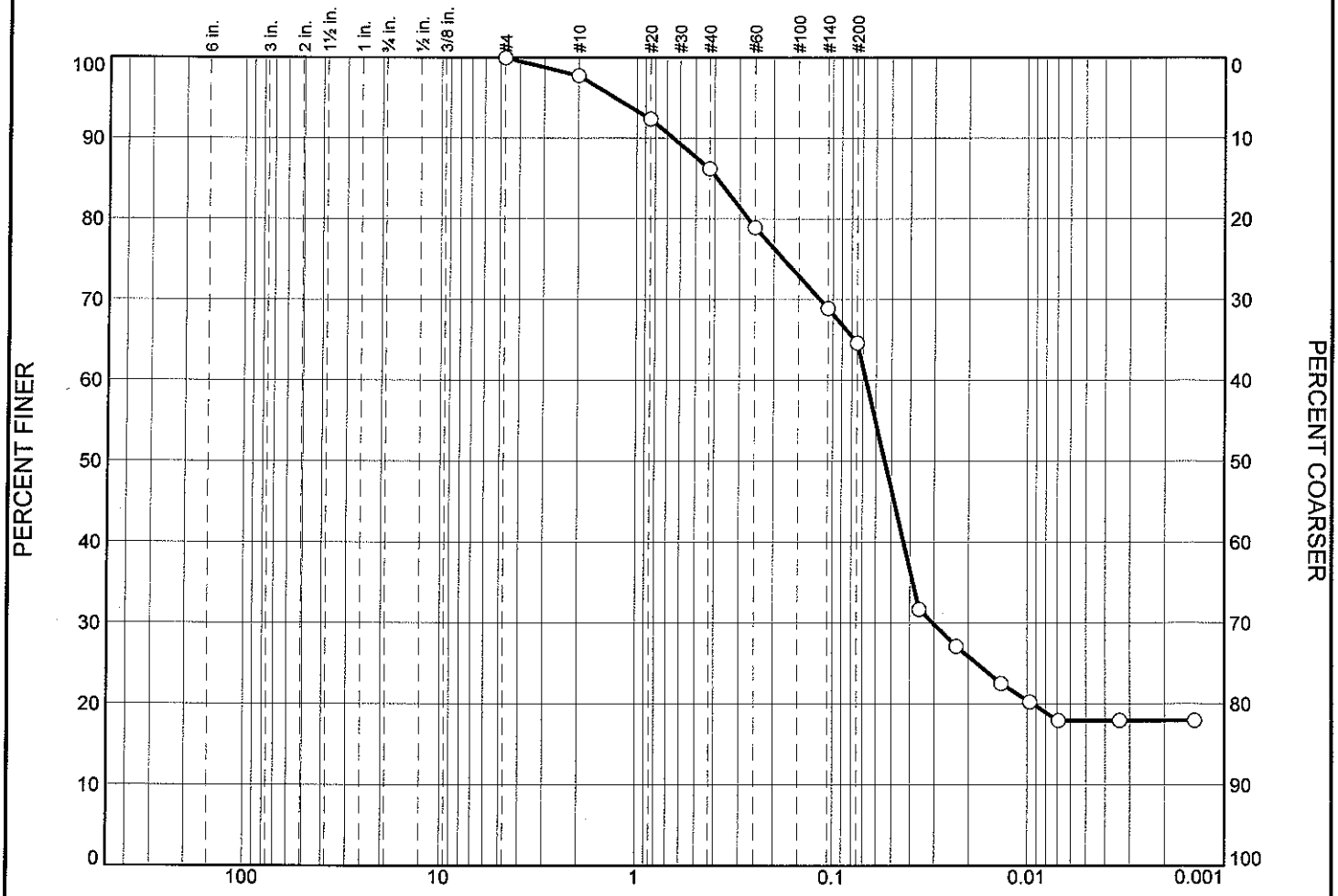
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.3	0.8	1.2	3.0	13.4	15.4	33.8	27.1	11.2	5.4	0.8	44.5	17.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0109	0.0252	0.0476	0.0603	0.1464	0.1896	0.2456	1.5623

Fineness Modulus
0.48

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.8	4.3	5.8	8.7	8.1	14.3	26.3	6.5	5.0	0.8	17.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3895	0.0676	0.0540	0.0304				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506511 **Sample Number:** L0912919-06

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912919
Location: 506511
Sample Number: L0912919-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.21	0.00	#4	521.79	521.77	100.0	0.0
		#10	485.82	484.81	97.7	2.3
		#20	407.84	405.42	92.4	7.6
		#40	364.07	361.28	86.2	13.8
		#60	369.45	366.16	78.9	21.1
		#140	347.35	342.82	68.9	31.1
		#200	347.19	345.25	64.6	35.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 64.6
Weight of hydrometer sample =45.21
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0357	31.7	68.3
5.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0231	27.1	72.9
15.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0136	22.5	77.5
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	20.2	79.8
60.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0069	17.9	82.1
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	17.9	82.1
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	17.9	82.1

Fractional Components

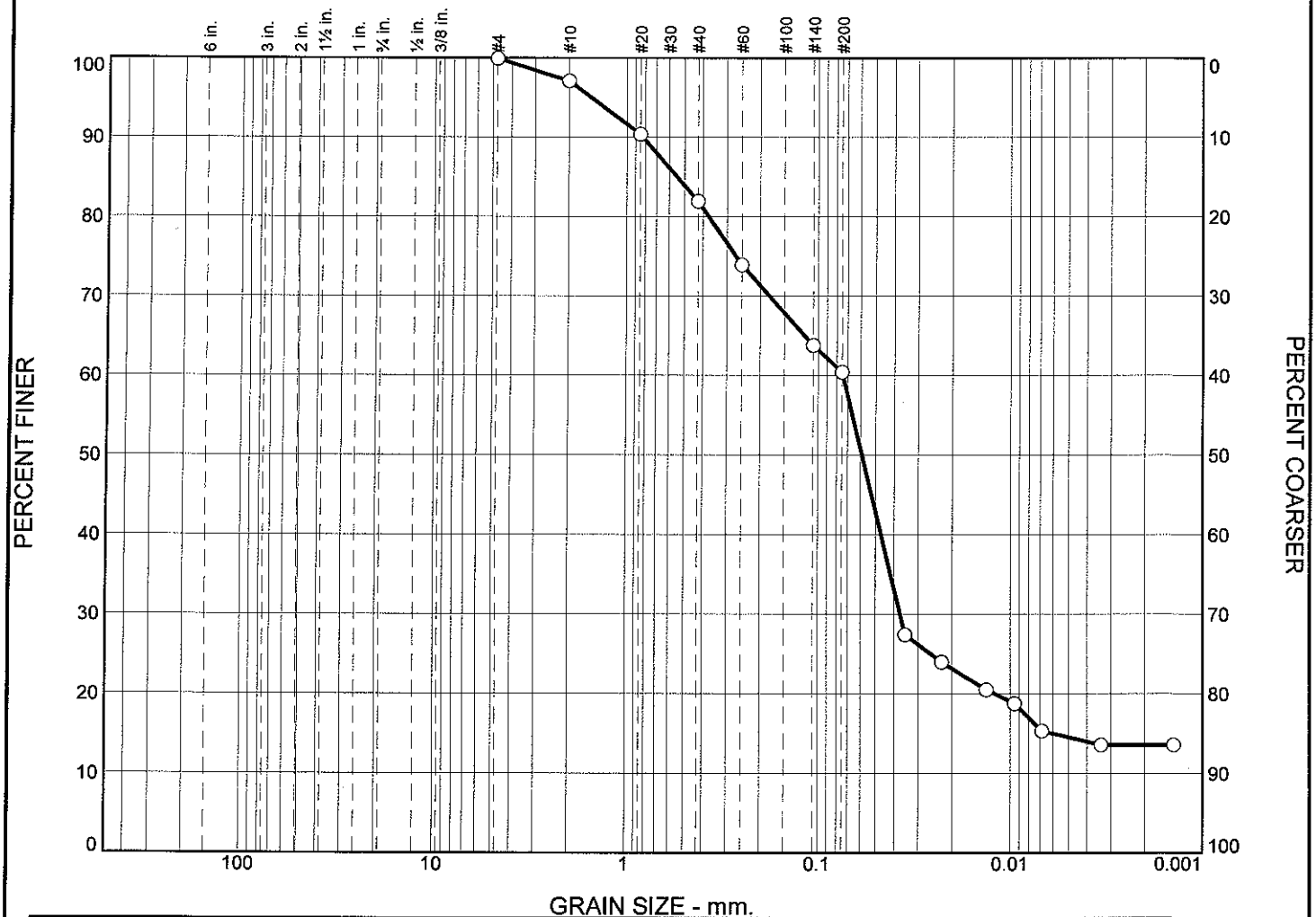
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.8	4.3	5.8	8.7	8.1	14.3	41.2	26.3	6.5	5.0	0.8	38.6	17.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0094	0.0304	0.0540	0.0676	0.2705	0.3895	0.6514	1.2944

Fineness Modulus
0.64

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.2	5.5	7.7	10.0	8.2	13.2	26.1	4.9	4.8	2.8	13.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5470	0.0743	0.0590	0.0372	0.0061			

Material Description	USCS	AASHTO
○		

Project No. I0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506512 **Sample Number:** L0912919-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506512
Sample Number: L0912919-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.94	0.00	#4	520.86	520.81	99.9	0.1
		#10	483.70	482.11	97.1	2.9
		#20	414.84	411.09	90.4	9.6
		#40	382.58	377.86	81.9	18.1
		#60	374.33	369.84	73.9	26.1
		#140	352.84	347.17	63.8	36.2
		#200	348.39	346.51	60.4	39.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 60.4
Weight of hydrometer sample =55.94
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0160	1.0158	0.0138	13.0	12.9	0.0350	27.4	72.6
5.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0226	23.9	76.1
15.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0133	20.5	79.5
30.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0095	18.7	81.3
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	15.3	84.7
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	13.5	86.5
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	13.5	86.5

Fractional Components

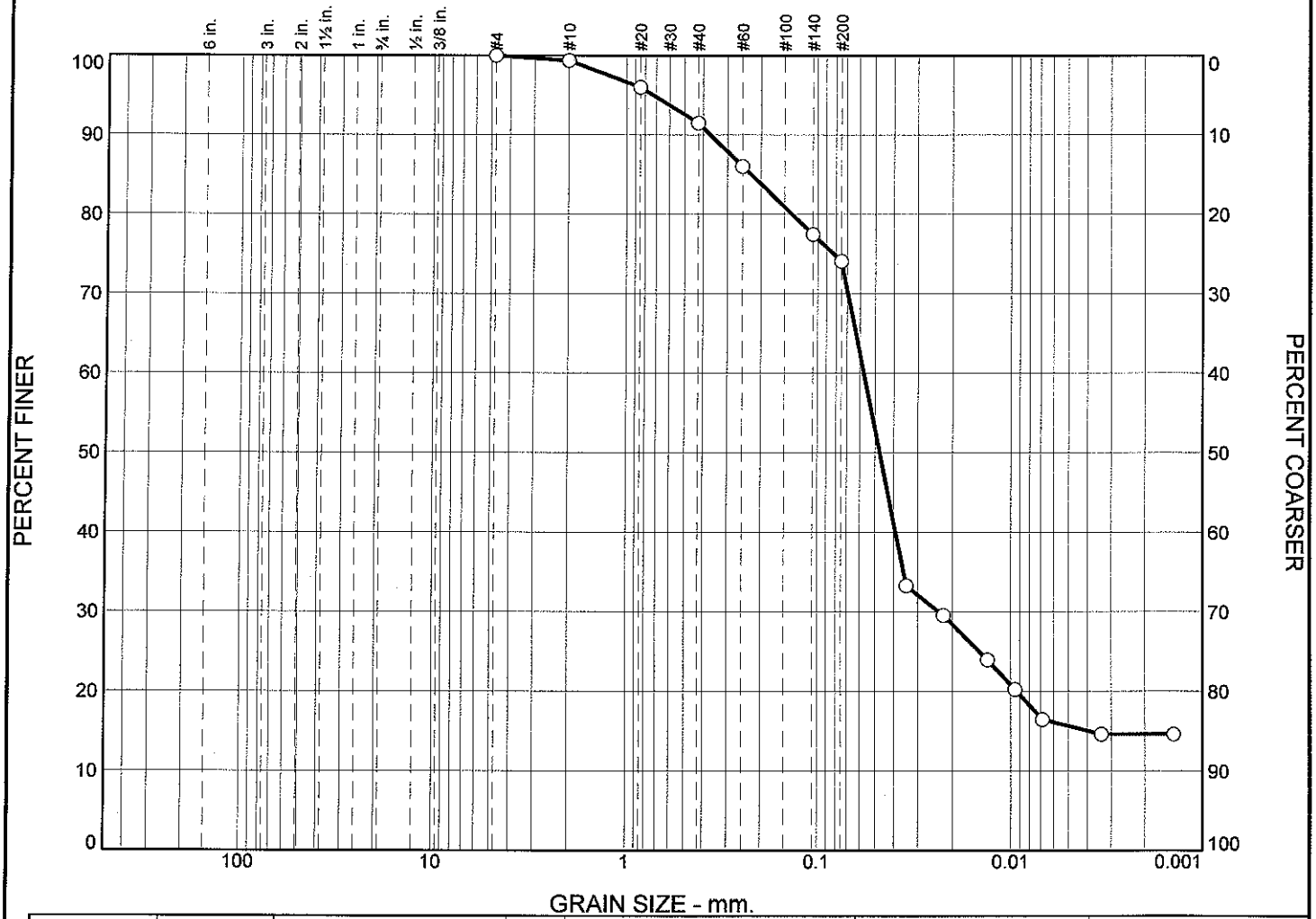
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.2	5.5	7.7	10.0	8.2	13.2	44.6	26.1	4.9	4.8	2.8	38.6	13.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0061	0.0121	0.0372	0.0590	0.0743	0.3742	0.5470	0.8249	1.5359

Fineness Modulus
0.79

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.5	2.8	4.0	6.6	6.9	14.5	32.2	6.6	7.8	3.0	15.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2254	0.0572	0.0473	0.0234	0.0039			

	Material Description	USCS	AASHTO
○			

Project No. I0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506513 **Sample Number:** L0912919-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506513
Sample Number: L0912919-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
63.66	0.00	#4	521.78	521.77	100.0	0.0
		#10	485.21	484.81	99.4	0.6
		#20	407.55	405.42	96.0	4.0
		#40	364.15	361.28	91.5	8.5
		#60	369.64	366.16	86.0	14.0
		#140	348.29	342.82	77.4	22.6
		#200	347.38	345.25	74.1	25.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 74.1
Weight of hydrometer sample =63.66
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0180	1.0178	0.0138	15.0	12.3	0.0343	33.3	66.7
5.00	19.0	1.0160	1.0158	0.0138	13.0	12.9	0.0222	29.5	70.5
15.00	19.0	1.0130	1.0128	0.0138	10.0	13.6	0.0132	23.9	76.1
30.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0095	20.2	79.8
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	16.5	83.5
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	14.6	85.4
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	14.6	85.4

Fractional Components

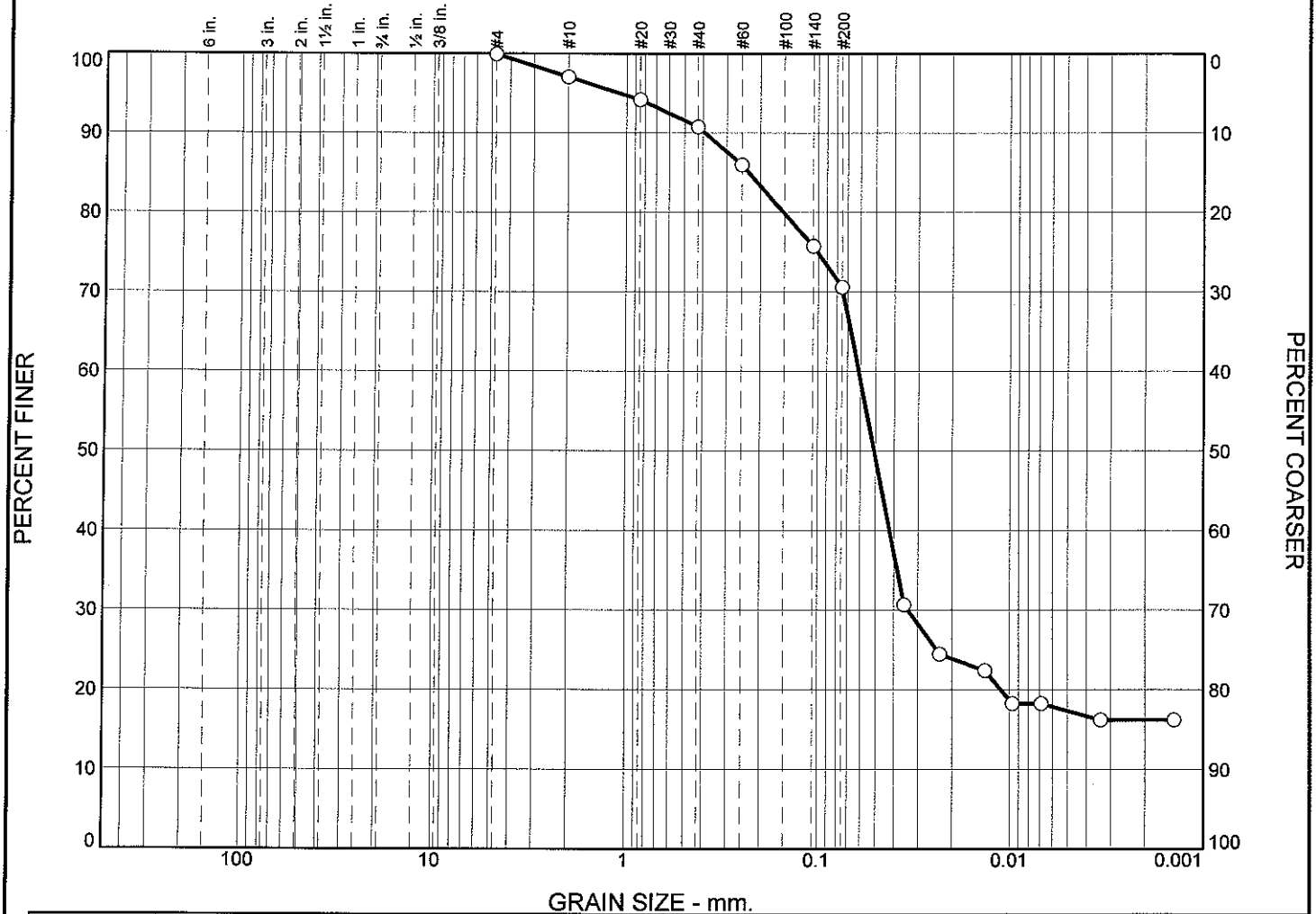
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.5	2.8	4.0	6.6	6.9	14.5	34.8	32.2	6.6	7.8	3.0	49.6	15.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0039	0.0093	0.0234	0.0473	0.0572	0.1368	0.2254	0.3674	0.7277

Fineness Modulus
0.41

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.2	2.4	3.1	5.6	8.3	16.8	32.1	5.8	4.8	1.6	16.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2304	0.0615	0.0509	0.0338				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506526 **Sample Number:** L0912919-09

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506526
Sample Number: L0912919-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
54.69	0.00	#4	520.86	520.81	99.9	0.1
		#10	483.67	482.11	97.1	2.9
		#20	412.67	411.09	94.2	5.8
		#40	379.72	377.86	90.8	9.2
		#60	372.46	369.84	86.0	14.0
		#140	352.77	347.17	75.7	24.3
		#200	349.34	346.51	70.6	29.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 70.6
Weight of hydrometer sample =54.69
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0150	1.0148	0.0138	12.0	13.1	0.0354	30.7	69.3
5.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0231	24.5	75.5
15.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0134	22.4	77.6
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	18.2	81.8
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	18.2	81.8
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	16.2	83.8
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	16.2	83.8

Fractional Components

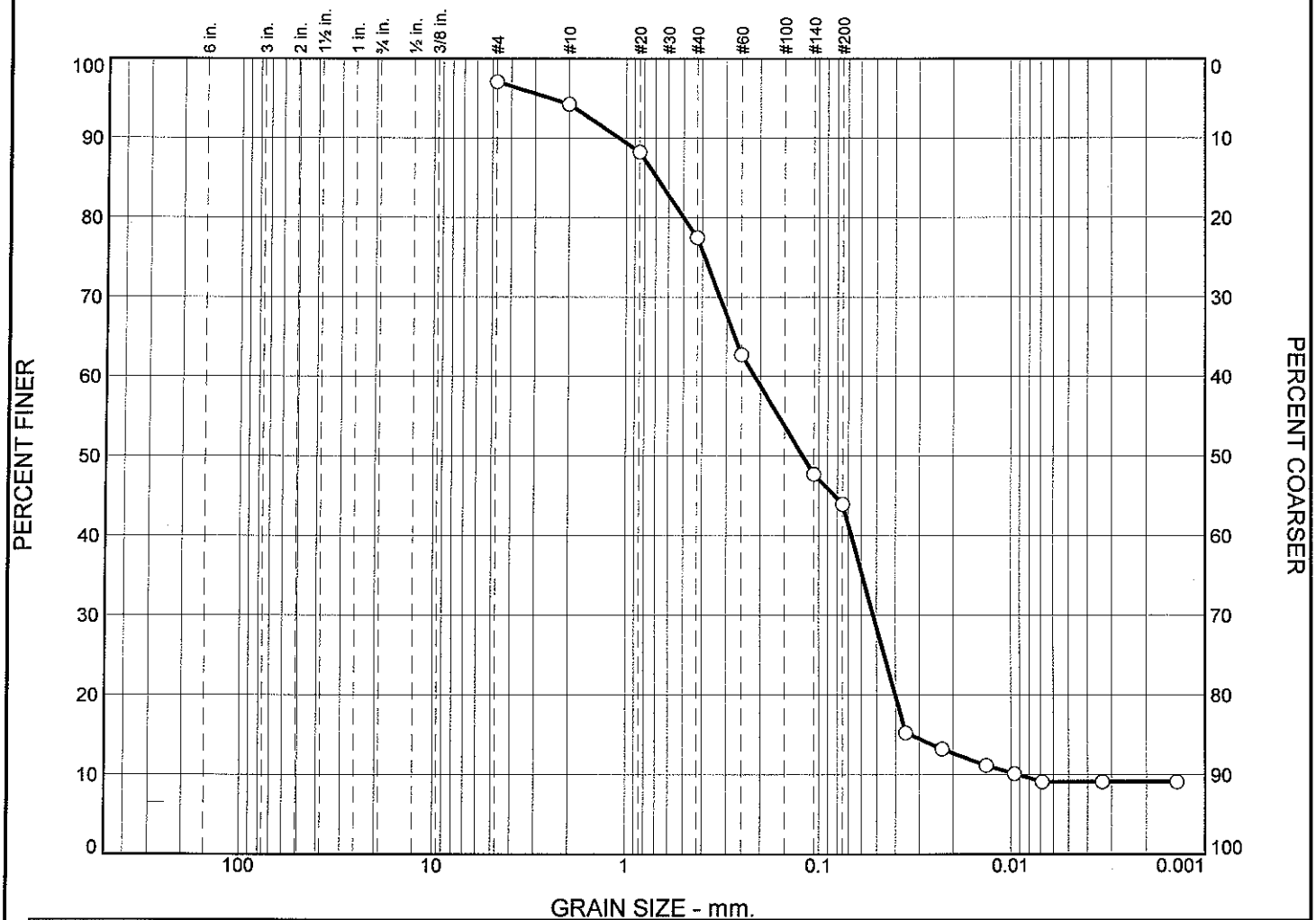
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.2	2.4	3.1	5.6	8.3	16.8	36.2	32.1	5.8	4.8	1.6	44.3	16.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0111	0.0338	0.0509	0.0615	0.1515	0.2304	0.3904	1.0878

Fineness Modulus
0.47

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.3	4.8	9.4	17.3	12.1	13.6	22.4	2.9	2.2	0.4	9.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6898	0.2139	0.1208	0.0521	0.0335	0.0093	1.37	23.09

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506611 **Sample Number:** L0912919-10

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506611
Sample Number: L0912919-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.49	0.00	#4	523.76	521.77	97.1	2.9
		#10	486.76	484.81	94.2	5.8
		#20	409.53	405.42	88.2	11.8
		#40	368.66	361.28	77.5	22.5
		#60	376.26	366.16	62.7	37.3
		#140	353.10	342.82	47.7	52.3
		#200	347.83	345.25	43.9	56.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 43.9
Weight of hydrometer sample =68.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0150	1.0148	0.0138	12.0	13.1	0.0354	15.3	84.7
5.00	19.0	1.0130	1.0128	0.0138	10.0	13.6	0.0228	13.2	86.8
15.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0134	11.1	88.9
30.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0096	10.1	89.9
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	9.1	90.9
250.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0034	9.1	90.9
1440.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0014	9.1	90.9

Fractional Components

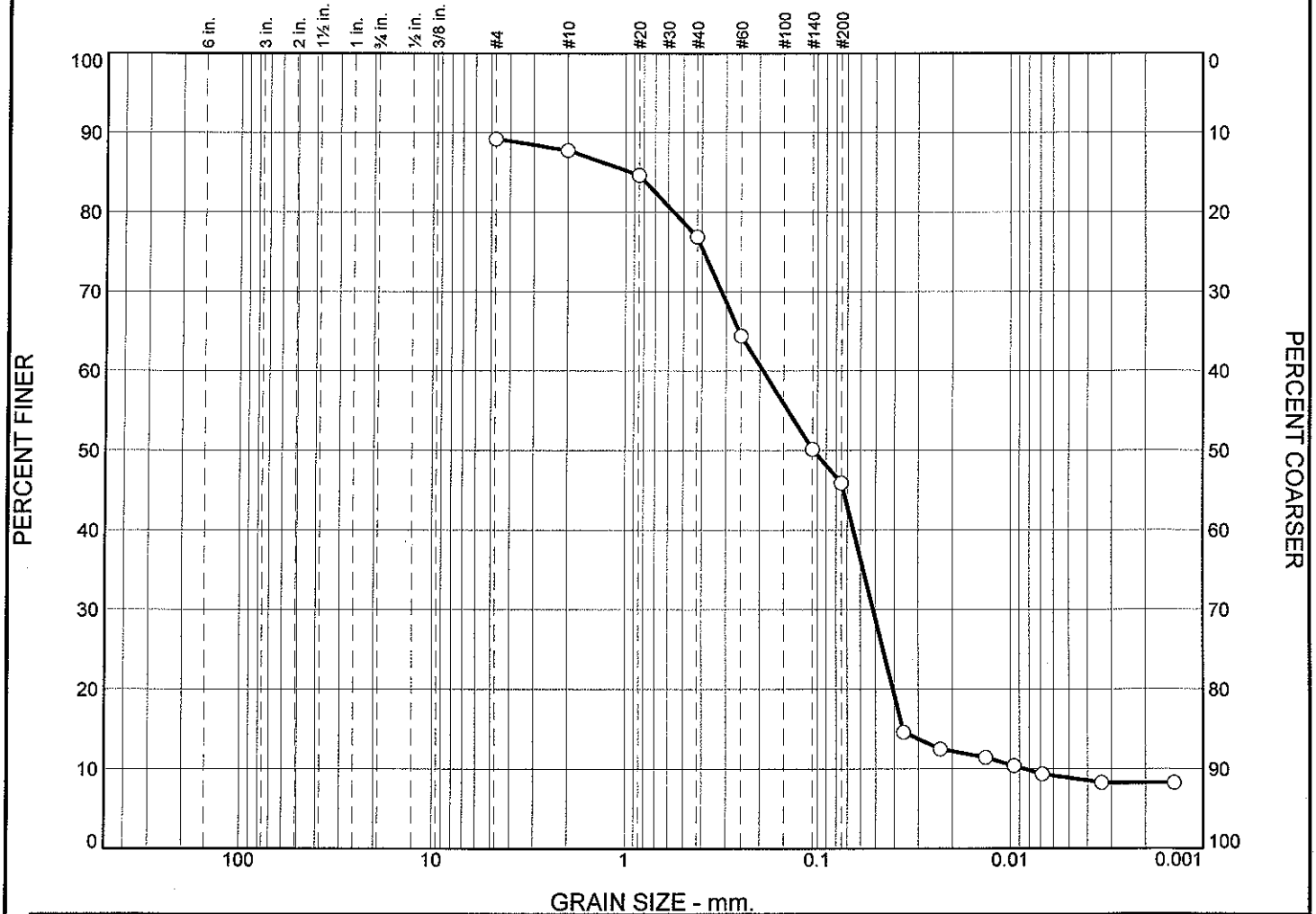
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.3	4.8	9.4	17.3	12.1	13.6	57.2	22.4	2.9	2.2	0.4	27.9	9.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0093	0.0335	0.0401	0.0521	0.1208	0.2139	0.5001	0.6898	1.0915	2.5139

Fineness Modulus	C_u	C_c
1.13	23.09	1.37

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.1	2.6	6.5	14.3	11.5	14.7	24.3	2.2	2.0	1.2	8.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9336	0.1918	0.1048	0.0515	0.0361	0.0085	1.62	22.55

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506612 **Sample Number:** L0912919-11

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912919
Location: 506612
Sample Number: L0912919-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.68	0.00	#4	528.32	520.81	89.2	10.8
		#10	483.12	482.11	87.8	12.2
		#20	413.26	411.09	84.7	15.3
		#40	383.29	377.86	76.9	23.1
		#60	378.52	369.84	64.4	35.6
		#140	357.11	347.17	50.1	49.9
		#200	349.46	346.51	45.9	54.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 45.9
Weight of hydrometer sample =69.68
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0357	14.6	85.4
5.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0231	12.5	87.5
15.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0134	11.4	88.6
30.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0096	10.4	89.6
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	9.3	90.7
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	8.3	91.7
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	8.3	91.7

Fractional Components

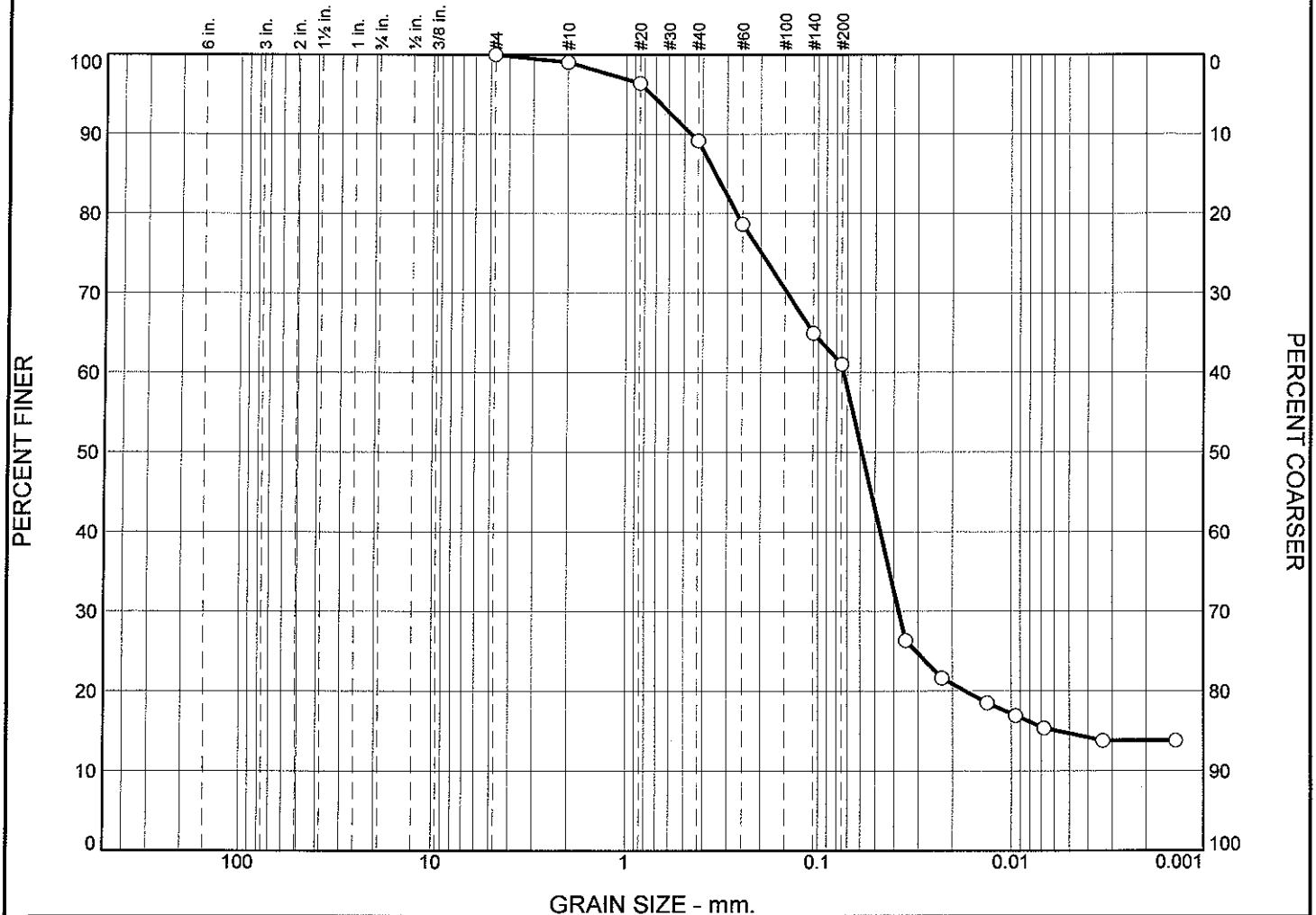
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.1	2.6	6.5	14.3	11.5	14.7	49.6	24.3	2.2	2.0	1.2	29.7	8.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0085	0.0361	0.0406	0.0515	0.1048	0.1918	0.5617	0.9336		

Fineness Modulus	C_u	C_c
1.32	22.55	1.62

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	2.1	6.0	12.2	11.1	14.8	27.7	5.7	3.4	1.9	14.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3444	0.0733	0.0587	0.0376	0.0058			

Material Description	USCS	AASHTO
○		

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506613 **Sample Number:** L0912919-12

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506613
Sample Number: L0912919-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.55	0.00	#4	521.78	521.77	100.0	0.0
		#10	485.40	484.81	99.0	1.0
		#20	407.07	405.42	96.4	3.6
		#40	365.81	361.28	89.2	10.8
		#60	372.73	366.16	78.7	21.3
		#140	351.39	342.82	65.0	35.0
		#200	347.71	345.25	61.0	39.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 61.0
Weight of hydrometer sample =62.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	26.3	73.7
5.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0226	21.6	78.4
15.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0133	18.5	81.5
30.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0095	16.9	83.1
60.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0068	15.4	84.6
250.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0034	13.8	86.2
1440.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0014	13.8	86.2

Fractional Components

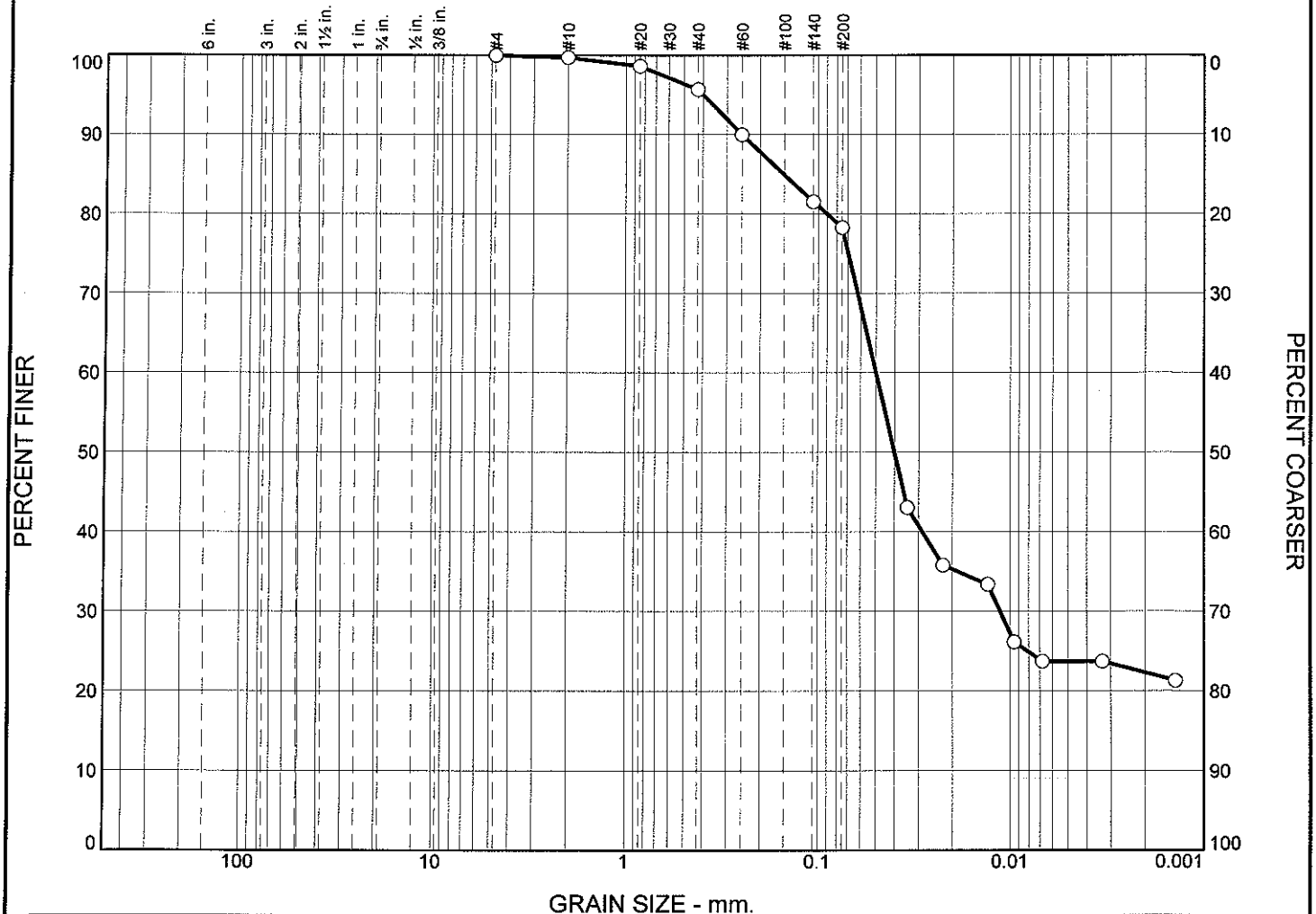
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	2.1	6.0	12.2	11.1	14.8	46.2	27.7	5.7	3.4	1.9	38.7	14.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0058	0.0172	0.0376	0.0587	0.0733	0.2675	0.3444	0.4605	0.7432

Fineness Modulus
0.58

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.9	2.4	6.4	6.8	13.2	28.7	7.1	9.5	1.0	23.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1509	0.0500	0.0400	0.0113				

	Material Description	USCS	AASHTO
○			

Project No. I0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506626 **Sample Number:** L0912919-13

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506626
Sample Number: L0912919-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
51.99	0.00	#4	520.83	520.81	100.0	0.0
		#10	482.25	482.11	99.7	0.3
		#20	411.66	411.09	98.6	1.4
		#40	379.38	377.86	95.7	4.3
		#60	372.81	369.84	90.0	10.0
		#140	351.55	347.17	81.5	18.5
		#200	348.22	346.51	78.2	21.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 78.2
Weight of hydrometer sample =51.99
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0180	1.0178	0.0138	15.0	12.3	0.0343	43.0	57.0
5.00	19.0	1.0150	1.0148	0.0138	12.0	13.1	0.0224	35.8	64.2
15.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0131	33.4	66.6
30.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0095	26.1	73.9
60.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0068	23.7	76.3
250.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0033	23.7	76.3
1440.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0014	21.3	78.7

Fractional Components

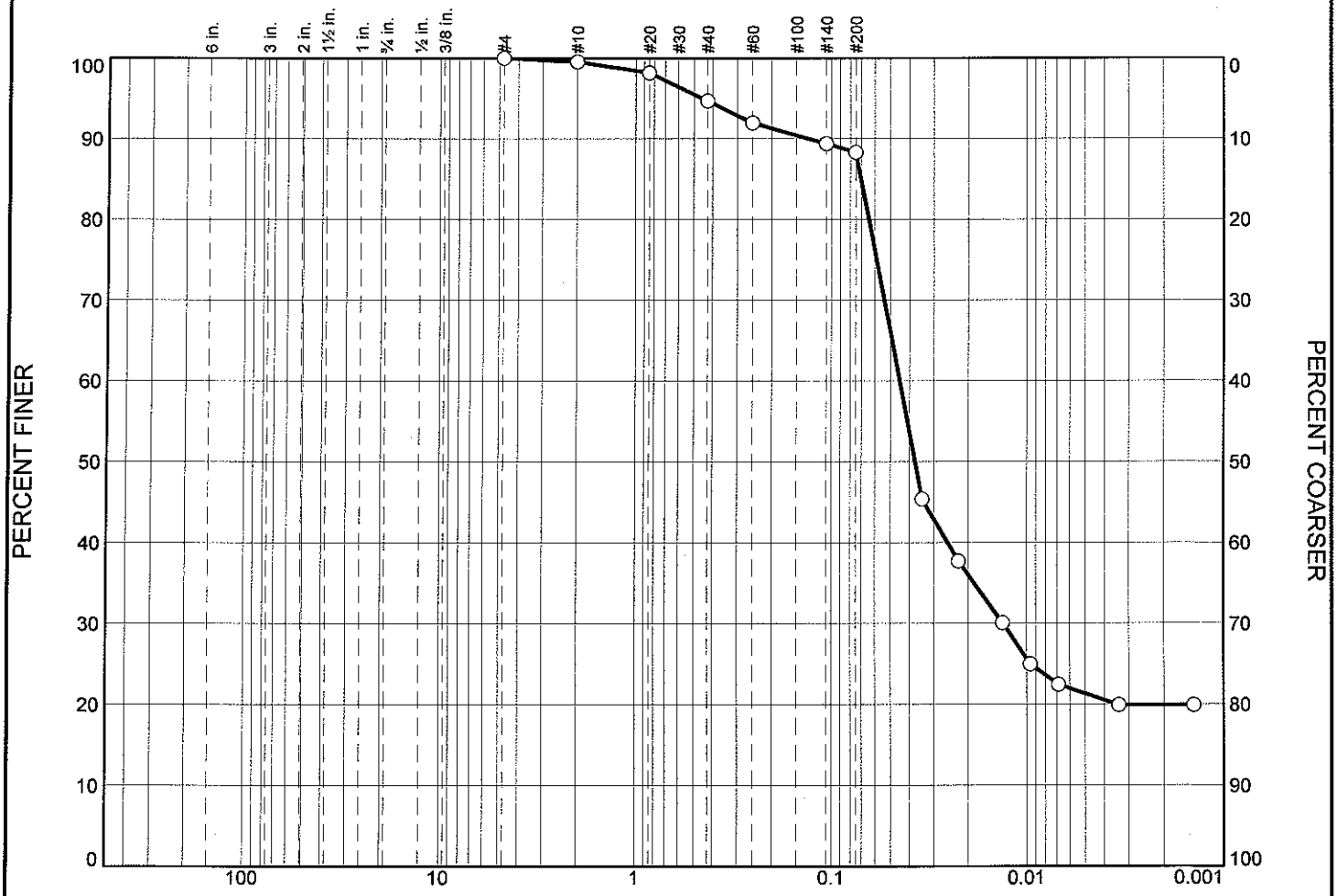
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.9	2.4	6.4	6.8	13.2	29.7	28.7	7.1	9.5	1.0	46.3	23.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0113	0.0400	0.0500	0.0902	0.1509	0.2509	0.3993

Fineness Modulus
0.27

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.4	1.1	2.9	3.5	2.1	11.6	34.8	11.1	9.0	3.0	20.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0706	0.0448	0.0373	0.0132				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506711 **Sample Number:** L0912919-14

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506711
Sample Number: L0912919-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.68	0.00	#4	521.77	521.77	100.0	0.0
		#10	485.07	484.81	99.5	0.5
		#20	406.17	405.42	98.2	1.8
		#40	363.23	361.28	94.7	5.3
		#60	367.68	366.16	92.0	8.0
		#140	344.25	342.82	89.4	10.6
		#200	345.85	345.25	88.3	11.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 88.3
Weight of hydrometer sample =55.68
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0180	1.0178	0.0138	15.0	12.3	0.0343	45.4	54.6
5.00	19.0	1.0150	1.0148	0.0138	12.0	13.1	0.0224	37.7	62.3
15.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0133	30.1	69.9
30.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0096	25.0	75.0
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	22.4	77.6
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	19.9	80.1
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	19.9	80.1

Fractional Components

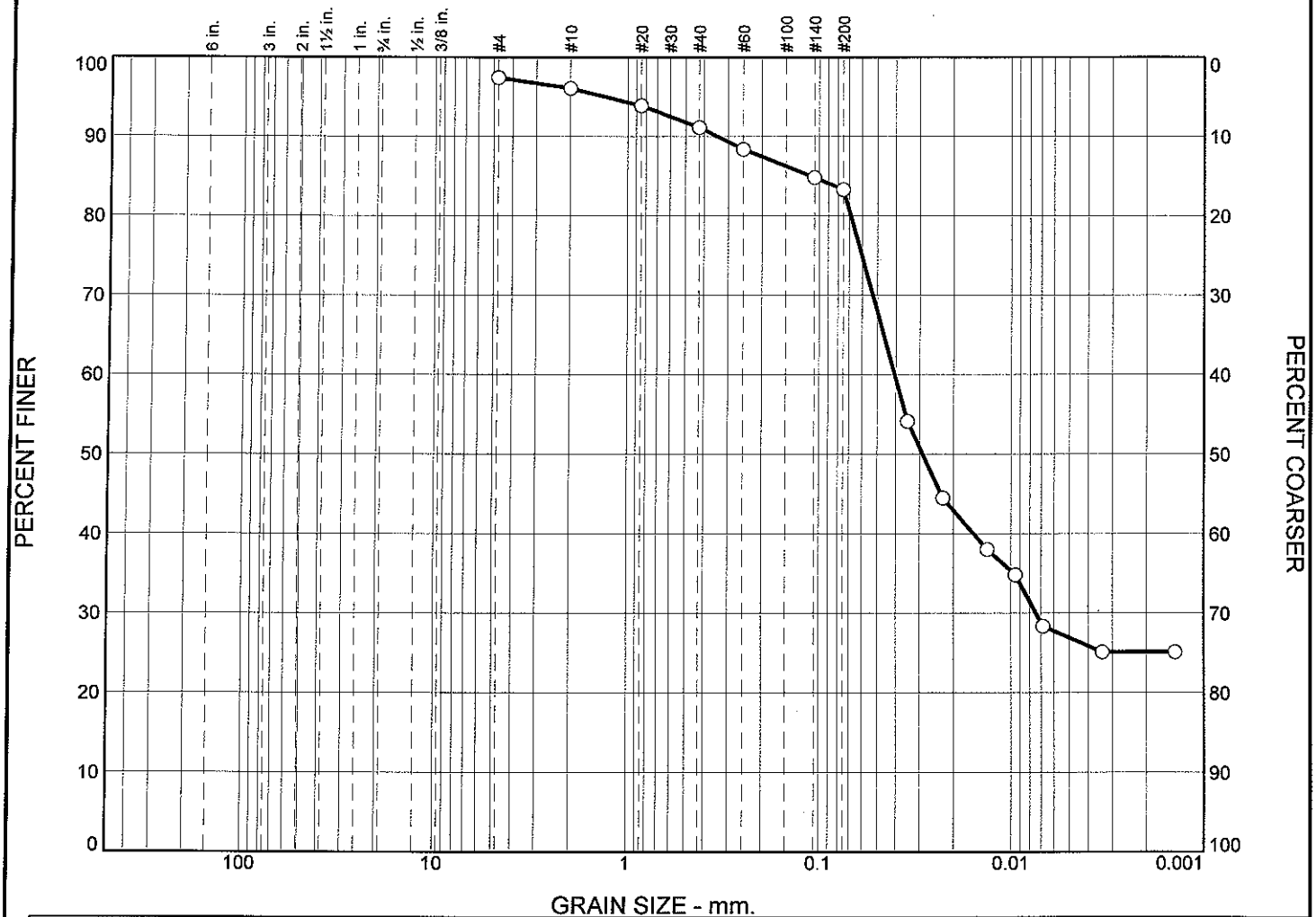
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.4	1.1	2.9	3.5	2.1	11.6	21.2	34.8	11.1	9.0	3.0	57.9	20.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0035	0.0132	0.0373	0.0448	0.0645	0.0706	0.1301	0.4524

Fineness Modulus
0.22

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.0	1.8	2.5	3.4	2.9	9.1	24.8	11.7	9.0	5.1	25.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1108	0.0405	0.0289	0.0074				

	Material Description	USCS	AASHTO
○			

Project No. I0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506712 **Sample Number:** L0912919-15

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912919
Location: 506712
Sample Number: L0912919-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
41.56	0.00	#4	521.89	520.81	97.4	2.6
		#10	482.66	482.11	96.1	3.9
		#20	412.00	411.09	93.9	6.1
		#40	379.00	377.86	91.1	8.9
		#60	370.99	369.84	88.4	11.6
		#140	348.65	347.17	84.8	15.2
		#200	347.14	346.51	83.3	16.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 83.3
Weight of hydrometer sample =41.56
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	54.1	45.9
5.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0226	44.4	55.6
15.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0133	38.0	62.0
30.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0095	34.8	65.2
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	28.3	71.7
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	25.1	74.9
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	25.1	74.9

Fractional Components

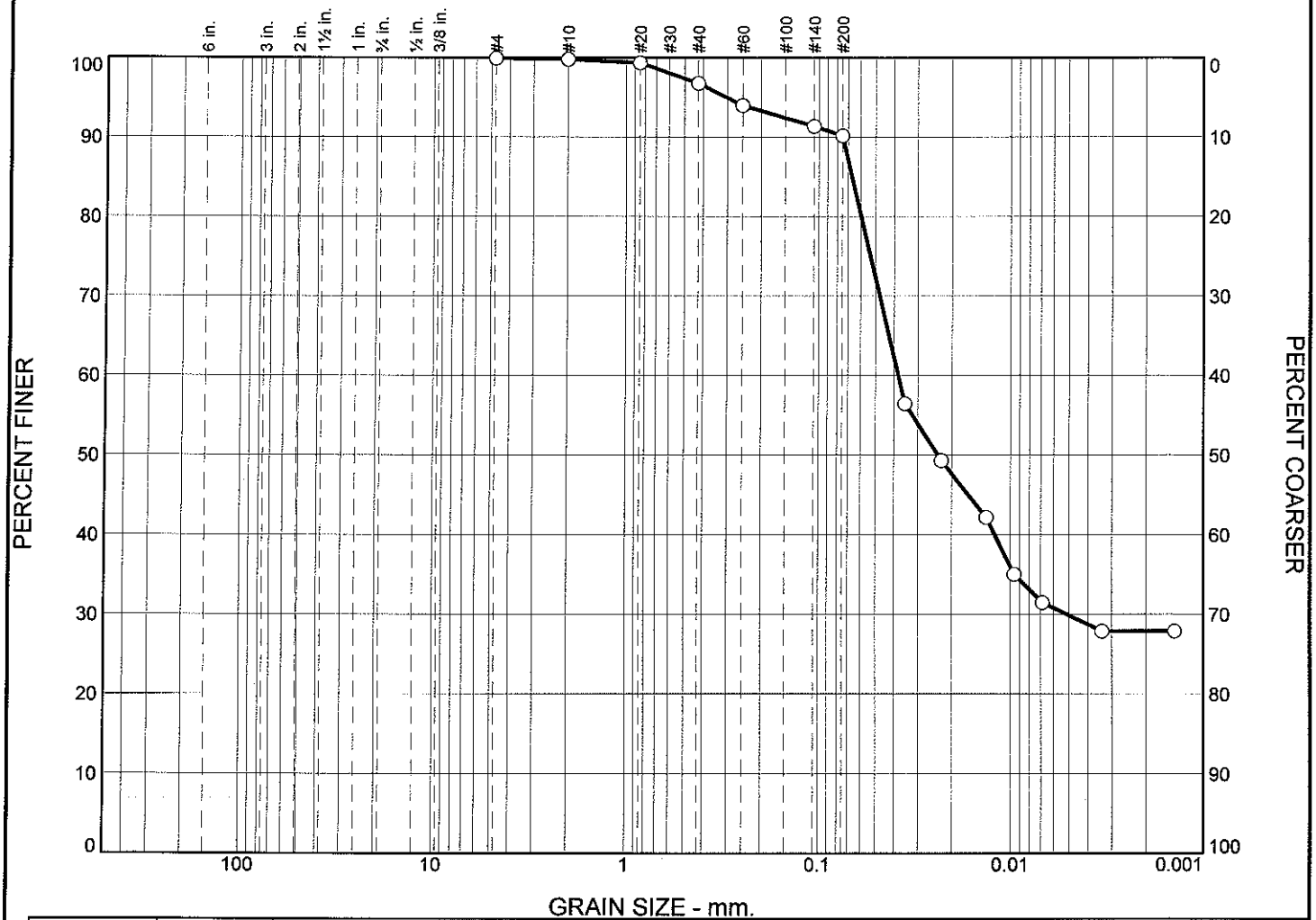
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.0	1.8	2.5	3.4	2.9	9.1	19.7	24.8	11.7	9.0	5.1	50.6	25.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0074	0.0289	0.0405	0.0687	0.1108	0.3412	1.3125

Fineness Modulus
0.43

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.1	0.4	2.0	3.4	2.2	9.7	27.6	10.2	11.5	4.2	28.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0668	0.0379	0.0236	0.0051				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506713 **Sample Number:** L0912919-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506713
Sample Number: L0912919-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
40.53	0.00	#4	521.80	521.77	99.9	0.1
		#10	484.87	484.81	99.8	0.2
		#20	405.60	405.42	99.3	0.7
		#40	362.32	361.28	96.8	3.2
		#60	367.29	366.16	94.0	6.0
		#140	343.89	342.82	91.3	8.7
		#200	345.73	345.25	90.2	9.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 90.2
Weight of hydrometer sample =40.53
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0160	1.0158	0.0138	13.0	12.9	0.0350	56.5	43.5
5.00	19.0	1.0140	1.0138	0.0138	11.0	13.4	0.0226	49.3	50.7
15.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0133	42.2	57.8
30.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0096	35.0	65.0
60.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0068	31.5	68.5
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	27.9	72.1
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	27.9	72.1

Fractional Components

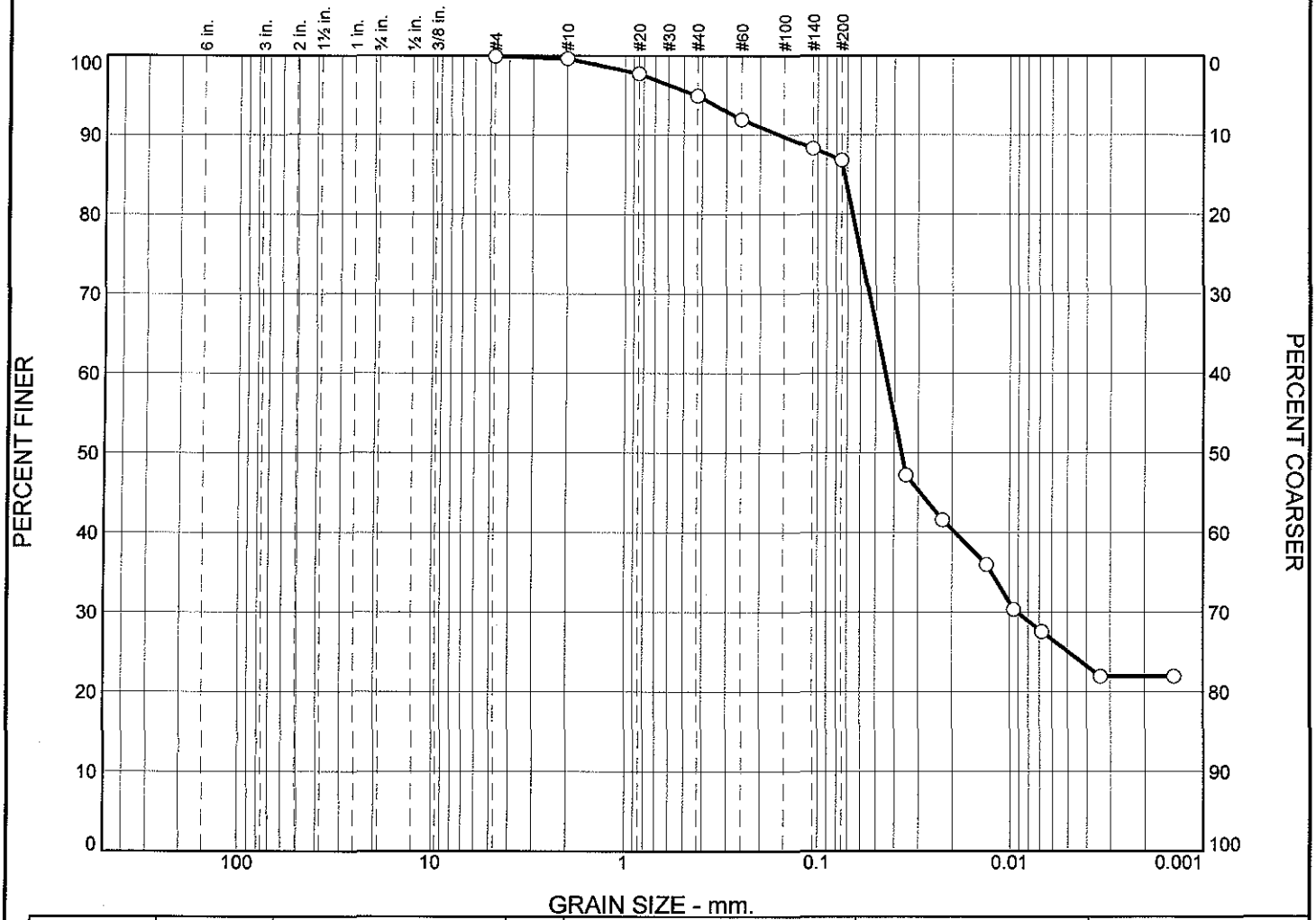
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.1	0.4	2.0	3.4	2.2	9.7	17.7	27.6	10.2	11.5	4.2	53.5	28.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0051	0.0236	0.0379	0.0596	0.0668	0.0747	0.3036

Fineness Modulus
0.15

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	1.5	2.5	3.6	3.0	11.6	31.6	8.0	9.1	5.6	23.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0724	0.0445	0.0366	0.0091				

	Material Description	USCS	AASHTO
○			

Project No. l0912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506726 **Sample Number:** L0912919-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: l0912919
Location: 506726
Sample Number: L0912919-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
49.63	0.00	#4	520.85	520.81	99.9	0.1
		#10	482.26	482.11	99.6	0.4
		#20	412.03	411.09	97.7	2.3
		#40	379.24	377.86	94.9	5.1
		#60	371.32	369.84	92.0	8.0
		#140	348.98	347.17	88.3	11.7
		#200	347.26	346.51	86.8	13.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.8
Weight of hydrometer sample =49.63
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	47.2	52.8
5.00	19.0	1.0150	1.0148	0.0138	12.0	13.1	0.0224	41.6	58.4
15.00	19.0	1.0130	1.0128	0.0138	10.0	13.6	0.0132	36.0	64.0
30.00	19.0	1.0110	1.0108	0.0138	8.0	14.2	0.0095	30.4	69.6
60.00	19.0	1.0100	1.0098	0.0138	7.0	14.4	0.0068	27.5	72.5
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	21.9	78.1
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	21.9	78.1

Fractional Components

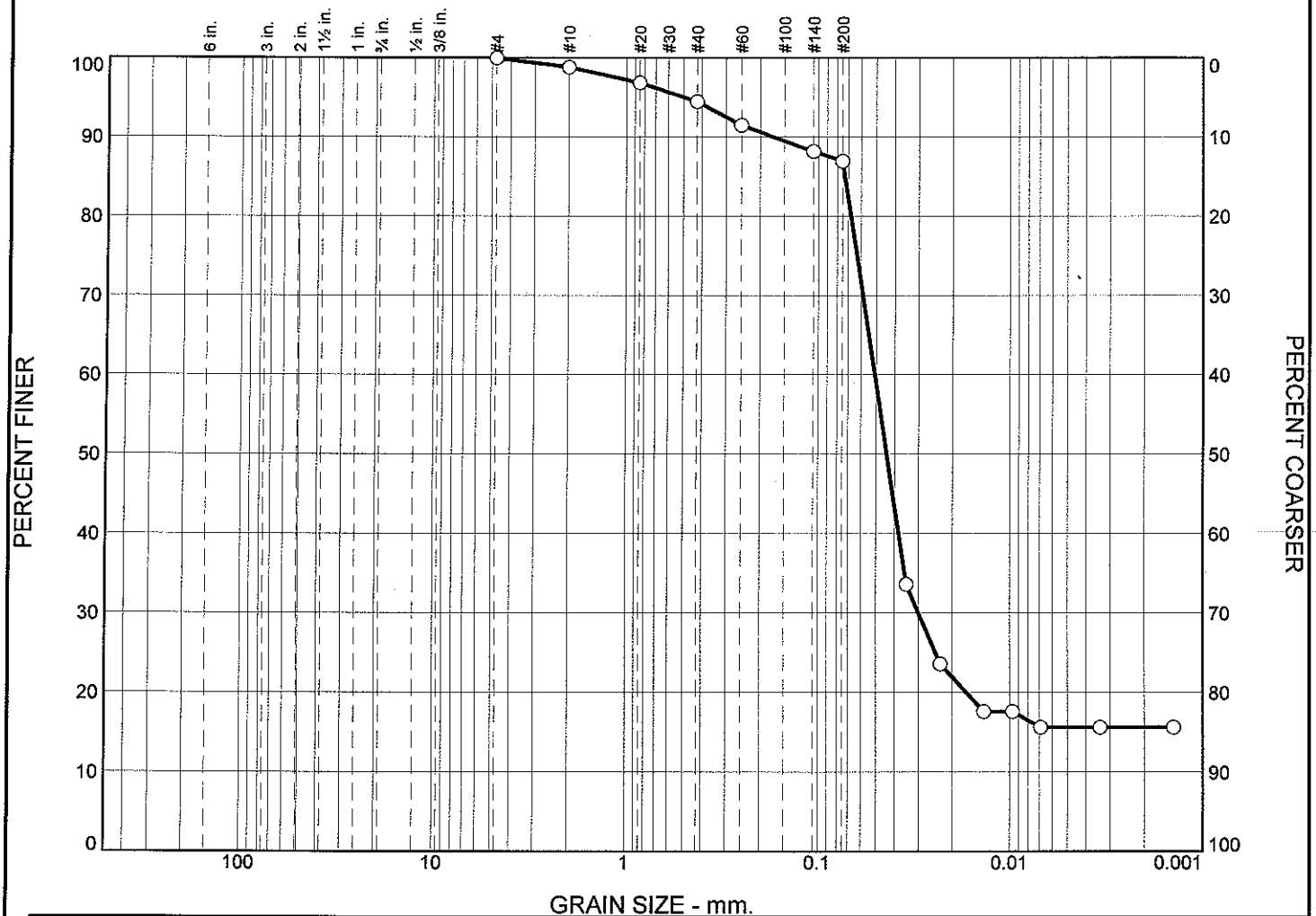
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	1.5	2.5	3.6	3.0	11.6	22.2	31.6	8.0	9.1	5.6	54.3	23.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0091	0.0366	0.0445	0.0657	0.0724	0.1576	0.4311

Fineness Modulus
0.23

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	1.6	2.2	3.6	2.6	14.5	43.5	11.7	2.8	0.7	15.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0729	0.0508	0.0440	0.0299				

	Material Description	USCS	AASHTO
○			

Project No. 10912919 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506726 **Sample Number:** WG384170-1

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: I0912919
Location: 506726
Sample Number: WG384170-I
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
58.23	0.00	#4	521.81	521.77	99.9	0.1
		#10	485.47	484.81	98.8	1.2
		#20	406.57	405.42	96.8	3.2
		#40	362.66	361.28	94.5	5.5
		#60	367.91	366.16	91.4	8.6
		#140	344.74	342.82	88.2	11.8
		#200	345.96	345.25	86.9	13.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.9
Weight of hydrometer sample =69.86
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	19.0	1.0170	1.0168	0.0138	14.0	12.6	0.0347	33.6	66.4
5.00	19.0	1.0120	1.0118	0.0138	9.0	13.9	0.0231	23.6	76.4
15.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0137	17.6	82.4
30.00	19.0	1.0090	1.0088	0.0138	6.0	14.7	0.0097	17.6	82.4
60.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0069	15.6	84.4
250.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0034	15.6	84.4
1440.00	19.0	1.0080	1.0078	0.0138	5.0	15.0	0.0014	15.6	84.4

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	1.6	2.2	3.6	2.6	14.5	24.5	43.5	11.7	2.8	0.7	58.7	15.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0169	0.0299	0.0440	0.0508	0.0678	0.0729	0.1715	0.4987

Fineness Modulus
0.26

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 323

CHAIN OF CUSTODY

PAGE 27 OF 41

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912919

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	506411	9/26/09	12:55	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	506412	9/26/09	13:47	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	506413	9/26/09	14:02	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
4	506425	9/26/09	13:03	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
5	506426	9/26/09	13:03	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	506427	9/26/09	13:03	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
3	508235	9/26/09	13:12	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem F Dup	1
5	508236	9/26/09	13:12	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs F Dup	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
	Container Type					G	G	G	G	-	-	-	-	-	-	-	-		
	Preservative					A	A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/26/09 19:12		9/26/09 19:17
	9/28/09 09:17	P Gilbert	9/28/09 9:25
P Gilbert	9/28/09 10:20		9/28/09 1020

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station 324

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

04012:12

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Date Rec'd in Lab:

ALPHA Job #: L0912919

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive								Sample Specific Comments	TOTAL # BOTTLES
6	506511	9/26/09	12:05	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
7	506512	9/26/09	12:20	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
8	506513	9/26/09	12:27	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	506525	9/26/09	12:12	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
9	506526	9/26/09	12:12	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	506527	9/26/09	12:12	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bayek	9/26/09 1912	Kelly McCarthy	9/26/09 19:17
Kelly McCarthy	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20		9/28/09 1020

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FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station 325

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912919

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
10	506611	9/26/09	08:50	SE	JB	☐	☐	☒	☐	ben gs	1
11	506612	9/26/09	11:10	SE	JB	☐	☐	☒	☐	ben gs	1
12	506613	9/26/09	11:15	SE	JB	☐	☐	☒	☐	ben gs	1
	506625	9/26/09	09:15	SE	JB	☒	☒	☐	☐	sed chem	1
13	506626	9/26/09	09:15	SE	JB	☐	☐	☒	☐	sed gs	1
	506627	9/26/09	09:15	SE	JB	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/26/09 1912	[signature]	9/26/09 19:17
[signature]	9/28/09 09:13	P. Gilbert	9/28/09 9:25
P. Gilbert	9/28/09 10:20	[signature]	9/28/09 1020

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FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

02031012:12

Date Rec'd in Lab:

ALPHA Job #: L0912919

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
14	506711	9/24/09	16:24	SE	JB	☐	☐	☒	☐									ben gs	1
15	506712	9/24/09	16:48	SE	JB	☐	☐	☒	☐									ben gs	1
16	506713	9/24/09	17:07	SE	JB	☐	☐	☒	☐									ben gs	1
	506725	9/24/09	16:41	SE	JB	☒	☒	☐	☐									sed chem	1
17	506726	9/24/09	16:41	SE	JB	☐	☐	☒	☐									sed gs	1
	506727	9/24/09	16:41	SE	JB	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bazik	9/24/09 19:10	Paul McCourt	9/24/09
Paul McCourt	9/25/09 9:15	Paul Gillett	9/25/09 9:15
Paul Gillett	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912920
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/05/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912920-01	506811	NEW BEDFORD, MA	09/24/09 14:02
L0912920-02	506812	NEW BEDFORD, MA	09/24/09 15:28
L0912920-03	506813	NEW BEDFORD, MA	09/24/09 15:32
L0912920-04	506826	NEW BEDFORD, MA	09/24/09 15:12
L0912920-05	506911	NEW BEDFORD, MA	09/24/09 13:38
L0912920-06	506912	NEW BEDFORD, MA	09/24/09 14:00
L0912920-07	506913	NEW BEDFORD, MA	09/24/09 14:15
L0912920-08	506926	NEW BEDFORD, MA	09/24/09 13:50
L0912920-09	507011	NEW BEDFORD, MA	09/24/09 12:11
L0912920-10	507012	NEW BEDFORD, MA	09/24/09 12:20
L0912920-11	507013	NEW BEDFORD, MA	09/24/09 11:35
L0912920-12	507026	NEW BEDFORD, MA	09/24/09 11:45
L0912920-13	507111	NEW BEDFORD, MA	09/24/09 09:06
L0912920-14	507112	NEW BEDFORD, MA	09/24/09 09:30
L0912920-15	507113	NEW BEDFORD, MA	09/24/09 10:40
L0912920-16	507126	NEW BEDFORD, MA	09/24/09 09:15

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912920
Project Number:	TO-0018	**Report Date:**	02/05/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 20, 2009. The report was ammended to include revised Grain Size data.

Grain Size

The WG382312-1 Laboratory Duplicate RPD is outside the acceptance criteria for Gravel (67%), % Very Coarse Sand (62%), % Coarse Sand (24%), % Medium sand (31%), % Fine Sand (32%), Clay (21%). The

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912920
Project Number:	TO-0018	**Report Date:**	02/05/10

Case Narrative (continued)

elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newell

Title: Technical Director/Representative Date: 02/05/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-01
Client ID: 506811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:02
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	13.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	37.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-02
Client ID: 506812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:28
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.700		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	30.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	15.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-03
Client ID: 506813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:32
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	34.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	20.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	14.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-04
Client ID: 506826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 15:12
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	10.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	35.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	23.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	10.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-05
Client ID: 506911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 13:38
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	13.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	8.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	4.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	29.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-06
Client ID: 506912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:00
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	14.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	10.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	7.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	8.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	22.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-07
Client ID: 506913
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 14:15
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	7.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.900		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	32.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-08
Client ID: 506926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 13:50
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	10.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	3.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-09
Client ID: 507011
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 12:11
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	4.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	36.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-10
Client ID: 507012
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 12:20
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	40.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	12.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-11
Client ID: 507013
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 11:35
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	3.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	42.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	14.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-12
Client ID: 507026
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 11:45
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.800		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	18.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	55.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	15.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-13
Client ID: 507111
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 09:06
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	21.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	26.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-14
Client ID: 507112
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 09:30
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	9.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	25.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	24.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	5.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-15
Client ID: 507113
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 10:40
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	11.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	20.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	10.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	9.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912920
Report Date: 02/05/10

SAMPLE RESULTS

Lab ID: L0912920-16
Client ID: 507126
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/24/09 09:15
Date Received: 09/25/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	8.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	7.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	31.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-16 QC Batch ID: WG382312-1 QC Sample: L0912920-16 Client ID: 507126						
Gravel (>2.00mm)	8.4	4.20	%	**67**	Q	20
Very Coarse Sand (1.00-2.00 mm)	7.0	3.70	%	**62**	Q	20
Coarse Sand (0.50-1.00 mm)	6.5	5.10	%	**24**	Q	20
Medium Sand (0.25-0.50 mm)	10.4	7.60	%	**31**	Q	20
Fine Sand (0.125-0.25 mm)	2.9	2.10	%	**32**	Q	20
Very Fine Sand (0.063-0.125 mm)	9.8	10.7	%	9		20
Silt - (1.95-62.5 um)	31.1	32.3	%	4		20
Clay - (<1.95 um)	8.8	10.9	%	**21**	Q	20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912920-01A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-02A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912920-03A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-04A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-05A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912920-06A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-07A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-08A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912920-09A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-10A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-11A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912920-12A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-13A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-14A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912920
Report Date: 02/05/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912920-15A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-16A	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(W)(7),A2-SIEVE_#200(W)(7),A2-SIEVE_#10(W)(7),A2-HYDRO-CLAY(W)(),A2-HYDRO-VFSAND(W)(),A2-HYDRO-SILT(W)(),A2-SIEVE_#40(W)(7),A2-SIEVE_#140(7),A2-SIEVE_#20(W)(7),A2-SIEVE_#60(7),A2-HYDRO-FSAND(W)(),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-HYDRO-CSAND(W)(),A2-HYDRO-GRAVEL(W)(),A2-HYDRO-MSAND(W)(),A2-HYDRO-VCSAND(W)(),A2-SIEVE_#20(7),A2-SIEVE_#200(7),A2-SIEVE_#60(W)(7),A2-SIEVE_#4(W)(7)
L0912920-16B	Glass 250ml unpreserved	A	N/A	2.1	Y	Absent	A2-DUP()

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912920
Project Number:	TO-0018	**Report Date:**	02/05/10

GLOSSARY

Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
Q	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

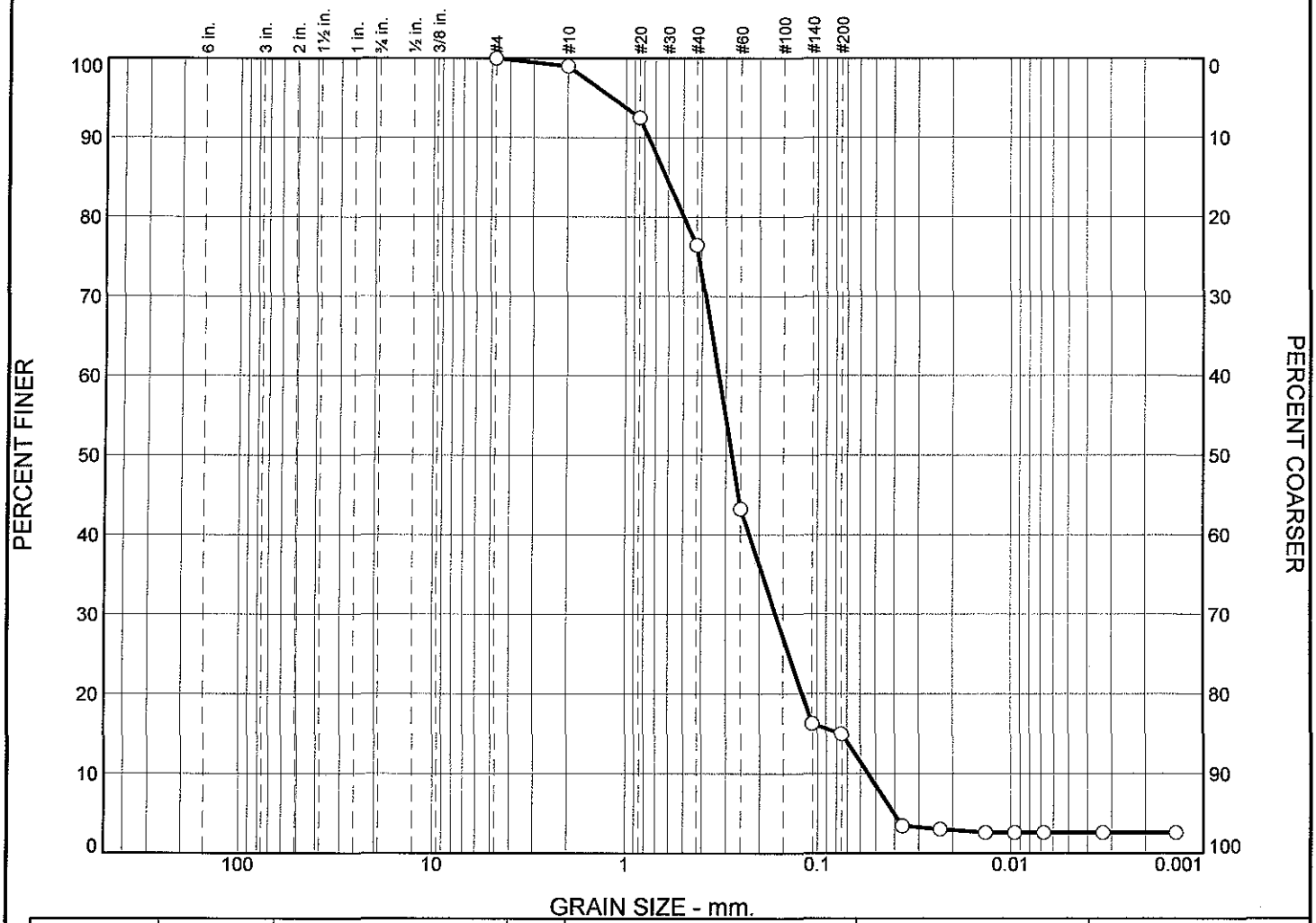
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.2	0.8	5.3	13.5	37.0	21.8	9.4	8.7	0.6	0.1	0.0	2.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6148	0.3268	0.2785	0.1641	0.0758	0.0550	1.50	5.95

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506811 **Sample Number:** L0912920-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506811
Sample Number: L0912920-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 53.76
Tare Wt. = 3.92
Minus #200 from wash = 13.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.49	0.00	#4	521.66	521.66	100.0	0.0
		#10	485.26	484.68	99.0	1.0
		#20	409.08	405.36	92.5	7.5
		#40	372.24	362.99	76.4	23.6
		#60	385.21	366.13	43.2	56.8
		#140	358.29	342.78	16.3	83.7
		#200	345.93	345.18	15.0	85.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 15.0
Weight of hydrometer sample =57.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	3.4	96.6
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	3.0	97.0
15.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0135	2.6	97.4
30.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0096	2.6	97.4
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	2.6	97.4
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	2.6	97.4
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	2.6	97.4

Fractional Components

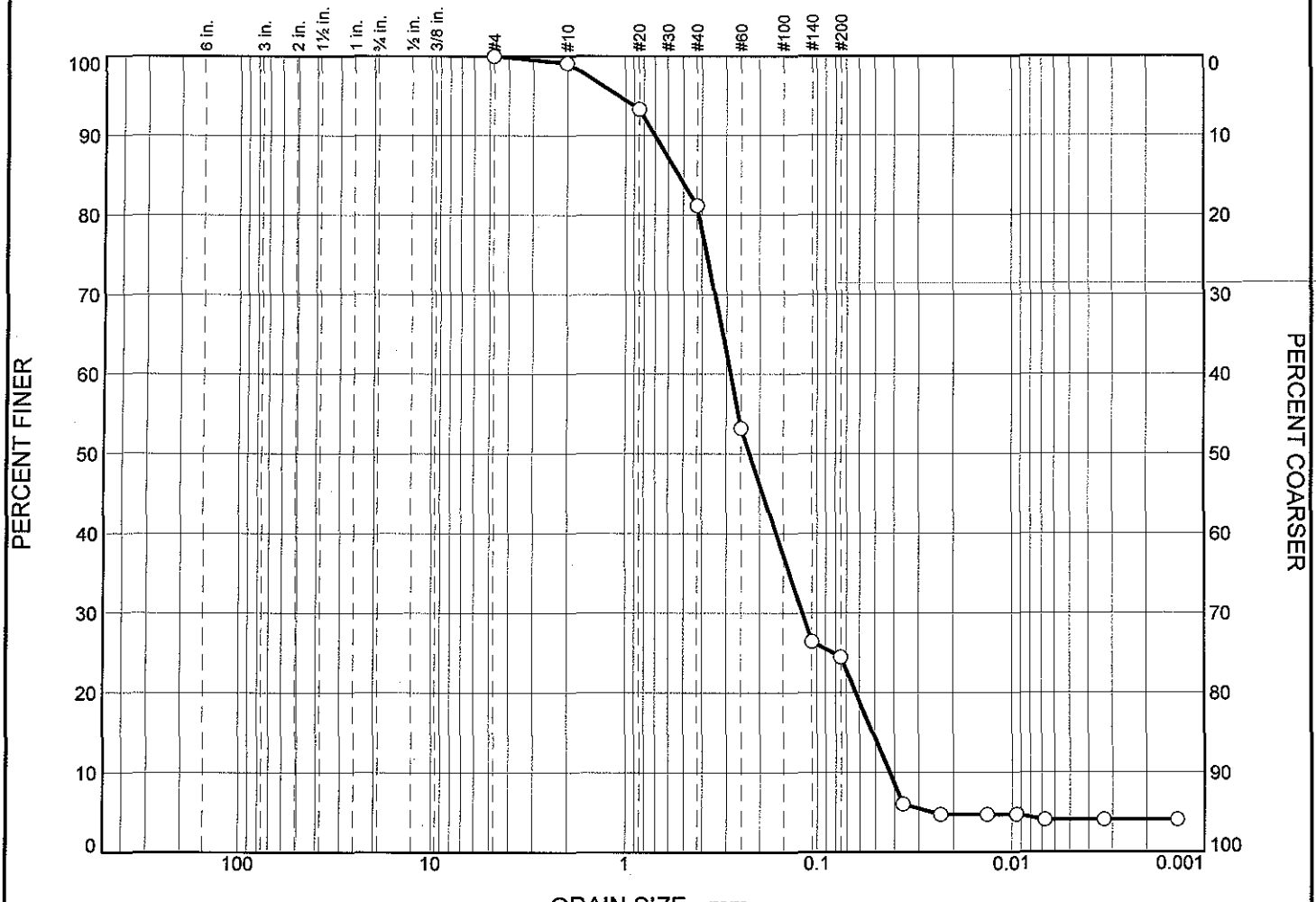
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.2	0.8	5.3	13.5	37.0	21.8	9.4	87.0	8.7	0.6	0.1	0.0	9.4	2.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0550	0.0758	0.1194	0.1641	0.2785	0.3268	0.4956	0.6148	0.7625	1.1798

Fineness Modulus	C_u	C_c
1.40	5.95	1.50

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.2	0.7	4.7	10.4	30.8	21.6	11.7	14.3	0.9	0.4	0.2	4.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5284	0.2845	0.2258	0.1189	0.0515	0.0423	1.18	6.73

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506812 **Sample Number:** L0912920-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506812
Sample Number: L0912920-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 49.94
Tare Wt. = 3.91
Minus #200 from wash = 23.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
60.06	0.00	#4	520.81	520.81	100.0	0.0
		#10	482.54	482.01	99.1	0.9
		#20	414.45	410.97	93.3	6.7
		#40	385.16	377.87	81.2	18.8
		#60	386.62	369.80	53.2	46.8
		#140	363.20	347.13	26.4	73.6
		#200	347.64	346.46	24.5	75.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 24.5
Weight of hydrometer sample =60.06
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	6.0	94.0
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	4.7	95.3
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	4.7	95.3
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	4.7	95.3
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	4.1	95.9
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	4.1	95.9
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	4.1	95.9

Fractional Components

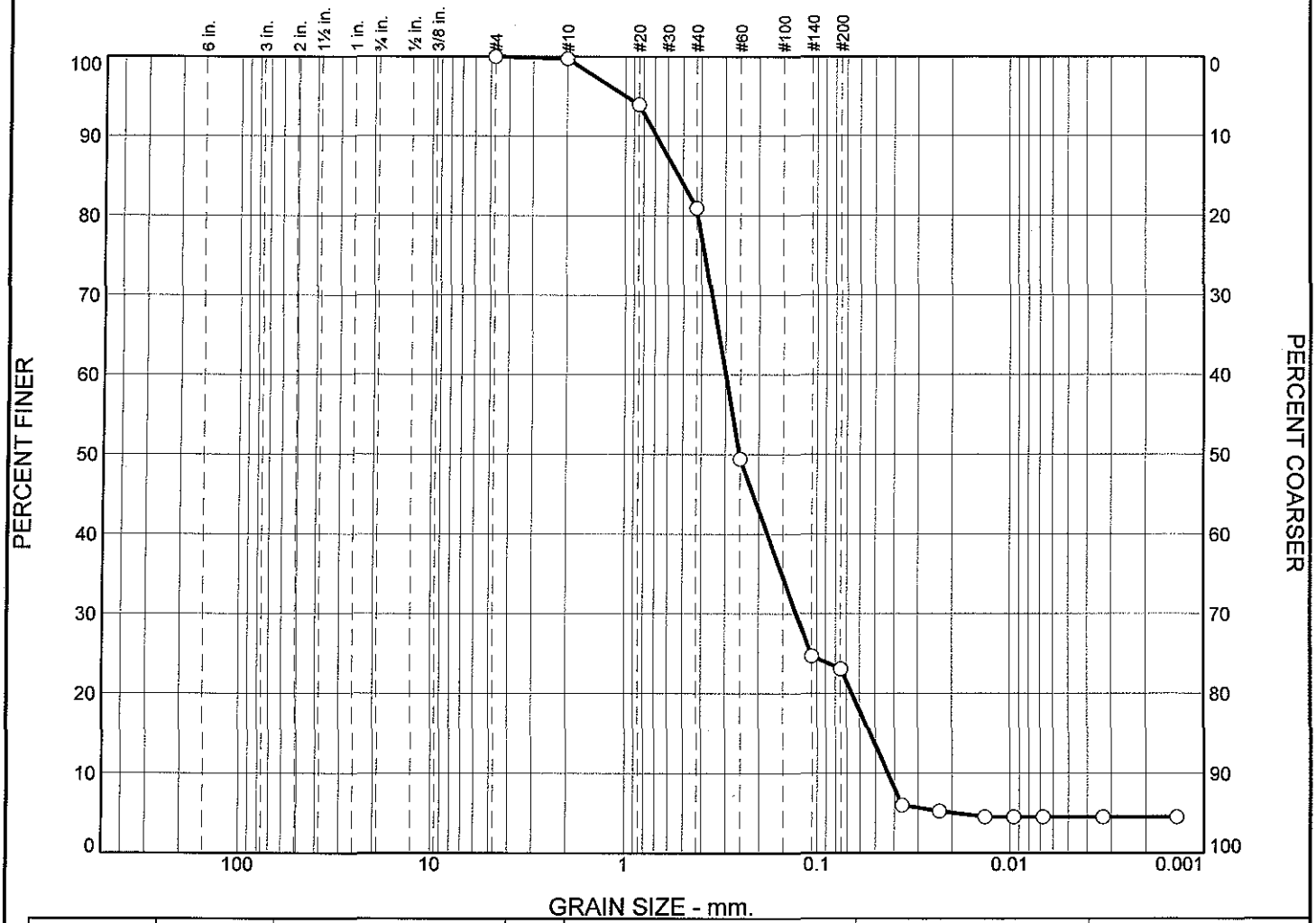
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.2	0.7	4.7	10.4	30.8	21.6	11.7	79.2	14.3	0.9	0.4	0.2	15.8	4.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0423	0.0515	0.0628	0.1189	0.2258	0.2845	0.4156	0.5284	0.7031	1.0888

Fineness Modulus	C_u	C_c
1.18	6.73	1.18

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.2	4.7	11.0	34.6	20.0	10.7	13.0	1.0	0.2		4.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5274	0.2987	0.2525	0.1275	0.0534	0.0432	1.26	6.92

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506813 **Sample Number:** L0912920-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506813
Sample Number: L0912920-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 45.07
Tare Wt. = 3.93
Minus #200 from wash = 19.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
50.88	0.00	#4	521.66	521.66	100.0	0.0
		#10	485.82	485.68	99.7	0.3
		#20	408.30	405.36	93.9	6.1
		#40	369.60	362.99	81.0	19.0
		#60	382.18	366.13	49.4	50.6
		#140	355.36	342.78	24.7	75.3
		#200	346.01	345.18	23.1	76.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 23.1
Weight of hydrometer sample =50.88
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	6.0	94.0
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	5.2	94.8
15.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0135	4.5	95.5
30.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0096	4.5	95.5
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	4.5	95.5
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	4.5	95.5
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	4.5	95.5

Fractional Components

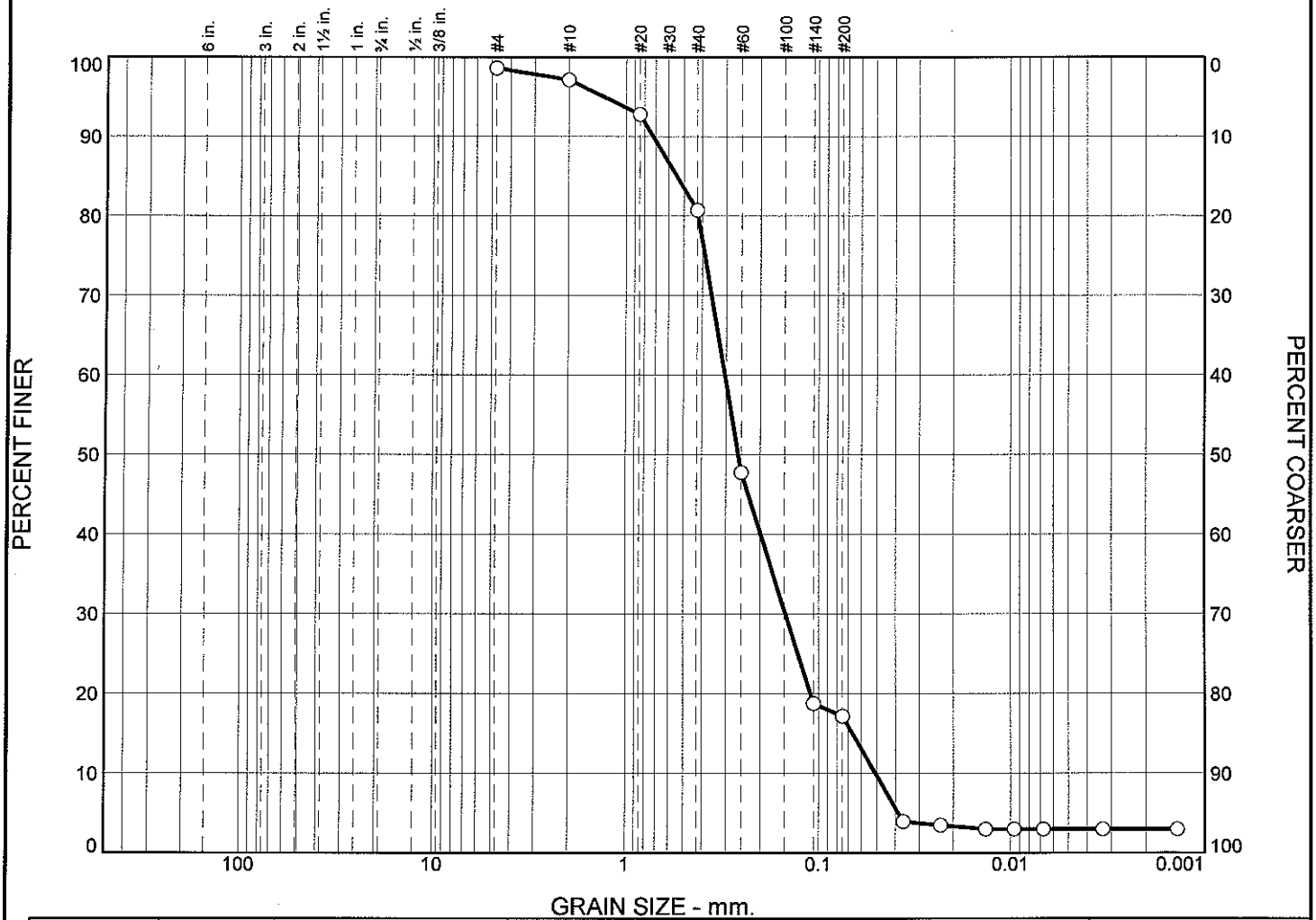
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.2	4.7	11.0	34.6	20.0	10.7	81.0	13.0	1.0	0.2		14.2	4.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0432	0.0534	0.0659	0.1275	0.2525	0.2987	0.4182	0.5274	0.6886	0.9935

Fineness Modulus	C_u	C_c
1.22	6.92	1.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	3.5	10.0	35.8	23.5	10.5	10.0	0.7	0.1	0.0	3.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5430	0.3044	0.2592	0.1478	0.0667	0.0507	1.42	6.00

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506826 **Sample Number:** L0912920-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506826
Sample Number: L0912920-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 52.26
Tare Wt. = 3.91
Minus #200 from wash = 15.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
57.14	0.00	#4	521.60	520.81	98.6	1.4
		#10	482.86	482.01	97.1	2.9
		#20	413.44	410.97	92.8	7.2
		#40	384.77	377.87	80.7	19.3
		#60	388.64	369.80	47.8	52.2
		#140	363.70	347.13	18.8	81.2
		#200	347.38	346.46	17.2	82.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 17.2
Weight of hydrometer sample =57.14
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0364	4.0	96.0
5.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0232	3.5	96.5
15.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0135	3.0	97.0
30.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0096	3.0	97.0
60.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0068	3.0	97.0
250.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0033	3.0	97.0
1440.00	22.0	1.0060	1.0062	0.0133	3.0	15.5	0.0014	3.0	97.0

Fractional Components

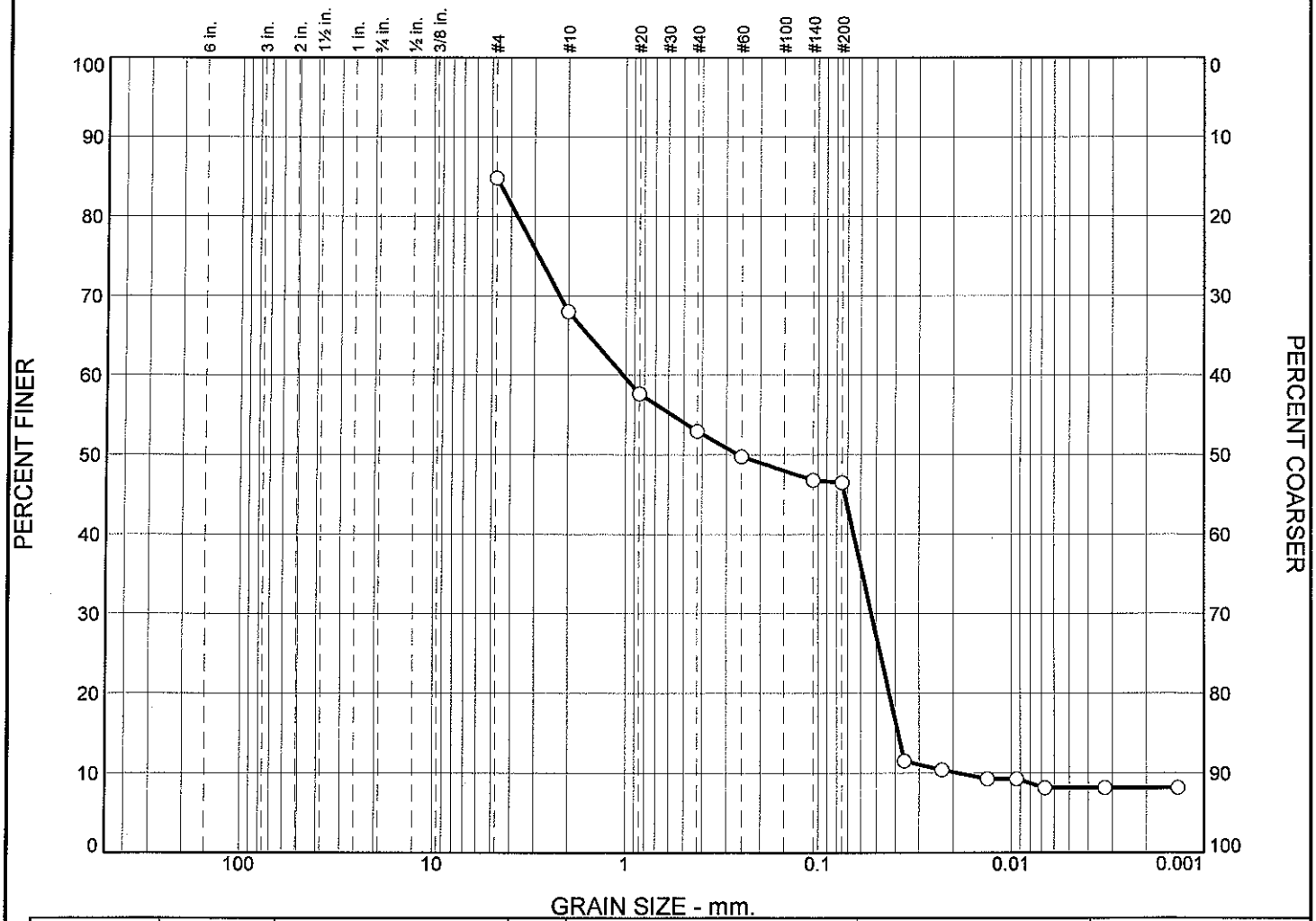
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	3.5	10.0	35.8	23.5	10.5	83.3	10.0	0.7	0.1	0.0	10.8	3.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0507	0.0667	0.1100	0.1478	0.2592	0.3044	0.4200	0.5430	0.7235	1.3120

Fineness Modulus	C_u	C_c
1.33	6.00	1.42

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				13.5	8.4	5.6	4.2	2.4	9.5	26.7	1.6	1.0	0.5	8.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				1.0318	0.2603	0.0529	0.0385	0.0190	0.14	54.35

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506911 **Sample Number:** L0912920-05

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506911
Sample Number: L0912920-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 40.16
Tare Wt. = 4.01
Minus #200 from wash = 45.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
66.22	0.00	#4	531.71	521.66	84.8	15.2
		#10	495.82	484.68	68.0	32.0
		#20	412.21	405.36	57.7	42.3
		#40	366.11	362.99	52.9	47.1
		#60	368.24	366.13	49.8	50.2
		#140	344.75	342.78	46.8	53.2
		#200	345.38	345.18	46.5	53.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 46.5
Weight of hydrometer sample =66.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	11.5	88.5
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	10.4	89.6
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	9.3	90.7
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	9.3	90.7
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	8.1	91.9
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	8.1	91.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	8.1	91.9

Fractional Components

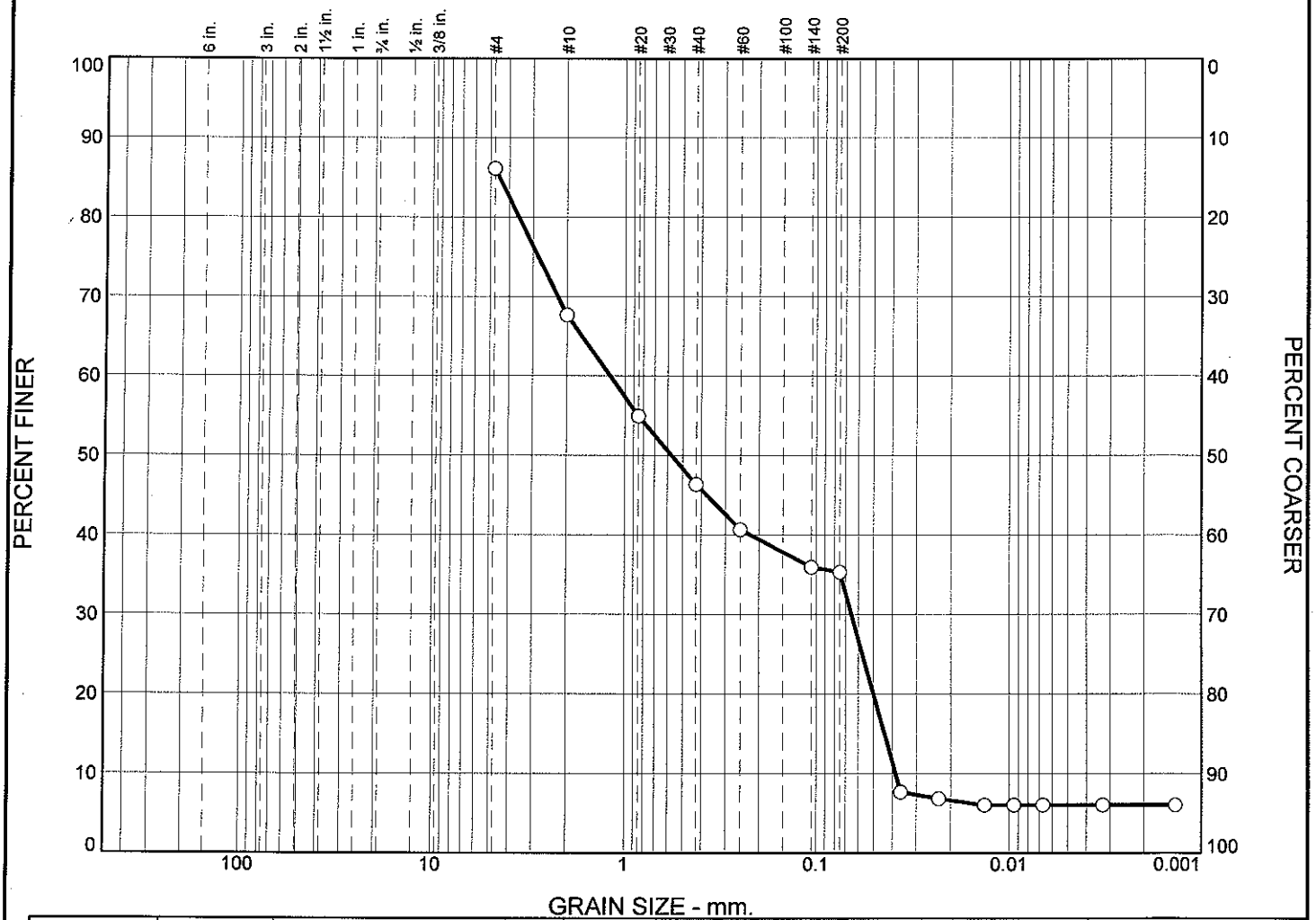
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			13.5	8.4	5.6	4.2	2.4	9.5	30.1	26.7	1.6	1.0	0.5	29.8	8.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0190	0.0385	0.0428	0.0529	0.2603	1.0318	3.7067			

Fineness Modulus	C_u	C_c
2.28	54.35	0.14

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				14.8	10.3	9.0	7.8	3.8	8.4	21.0	1.2	0.2		6.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.5044	1.1945	0.5705	0.0652	0.0438	0.0384	0.09	31.12

Material Description	USCS	AASHTO
○		

Project No. L0912920 **Client:** Woods Hole Group
Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506912 **Sample Number:** L0912920-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506912
Sample Number: L0912920-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 48.72
Tare Wt. = 4.00
Minus #200 from wash = 34.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.01	0.00	#4	530.24	520.81	86.1	13.9
		#10	494.58	482.01	67.7	32.3
		#20	419.61	410.97	54.9	45.1
		#40	383.72	377.87	46.3	53.7
		#60	373.68	369.80	40.6	59.4
		#140	350.34	347.13	35.9	64.1
		#200	346.88	346.46	35.3	64.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 35.3
Weight of hydrometer sample =68.01
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	7.7	92.3
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	6.8	93.2
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	6.0	94.0
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	6.0	94.0
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	6.0	94.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.0	94.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.0	94.0

Fractional Components

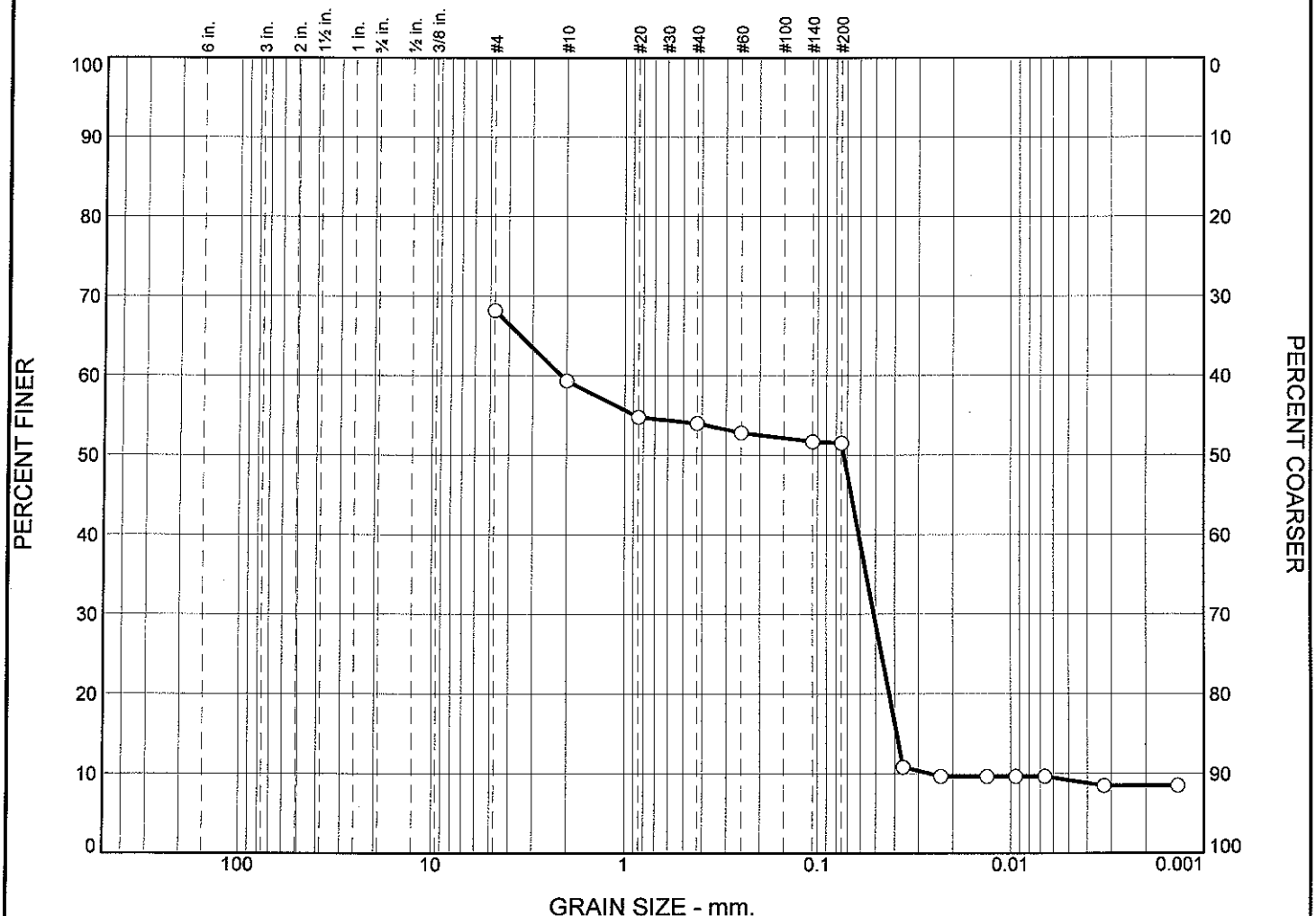
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			14.8	10.3	9.0	7.8	3.8	8.4	39.3	21.0	1.2	0.2		22.4	6.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0384	0.0438	0.0500	0.0652	0.5705	1.1945	3.5646	4.5044		

Fineness Modulus	C_u	C_c
2.52	31.12	0.09

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				7.1	3.7	1.4	1.4	0.9	10.6	30.9	0.8	0.0	0.9	8.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.1386	0.0730	0.0510	0.0389	0.0266	0.05	80.27

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506913 **Sample Number:** L0912920-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506913
Sample Number: L0912920-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 39.25
Tare Wt. = 4.16
Minus #200 from wash = 50.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
70.59	0.00	#4	544.13	521.66	68.2	31.8
		#10	490.93	484.68	59.3	40.7
		#20	408.57	405.36	54.8	45.2
		#40	363.55	362.99	54.0	46.0
		#60	366.97	366.13	52.8	47.2
		#140	343.56	342.78	51.7	48.3
		#200	345.31	345.18	51.5	48.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 51.5
Weight of hydrometer sample =70.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	10.8	89.2
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	9.6	90.4
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	9.6	90.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	9.6	90.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	9.6	90.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	8.4	91.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	8.4	91.6

Fractional Components

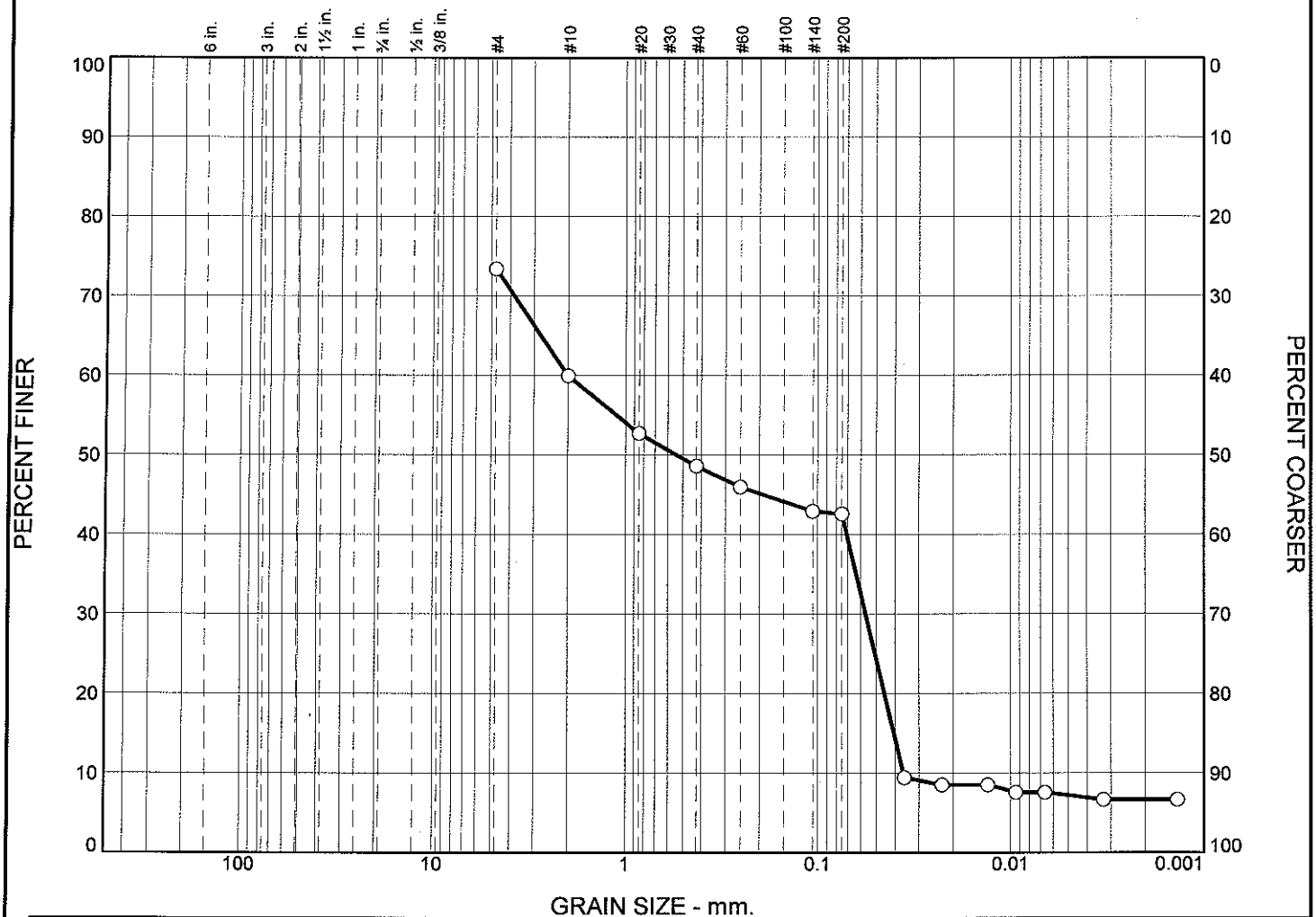
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			7.1	3.7	1.4	1.4	0.9	10.6	18.0	30.9	0.8	0.0	0.9	32.6	8.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0266	0.0389	0.0426	0.0510	0.0730	2.1386				

Fineness Modulus	C_u	C_c
2.55	80.27	0.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.8	5.8	4.6	3.6	2.4	9.1	25.3	0.6	0.9	0.7	6.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				2.0099	0.5412	0.0567	0.0405	0.0362	0.04	55.45

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 506926 **Sample Number:** L0912920-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 506926
Sample Number: L0912920-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 47.35
Tare Wt. = 4.06
Minus #200 from wash = 41.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.13	0.00	#4	540.52	520.81	73.4	26.6
		#10	492.01	482.01	59.9	40.1
		#20	416.34	410.97	52.7	47.3
		#40	380.92	377.87	48.6	51.4
		#60	371.76	369.80	45.9	54.1
		#140	349.37	347.13	42.9	57.1
		#200	346.72	346.46	42.5	57.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 42.5
Weight of hydrometer sample =74.13
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	9.4	90.6
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	8.5	91.5
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	8.5	91.5
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	7.6	92.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	7.6	92.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.6	93.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.6	93.4

Fractional Components

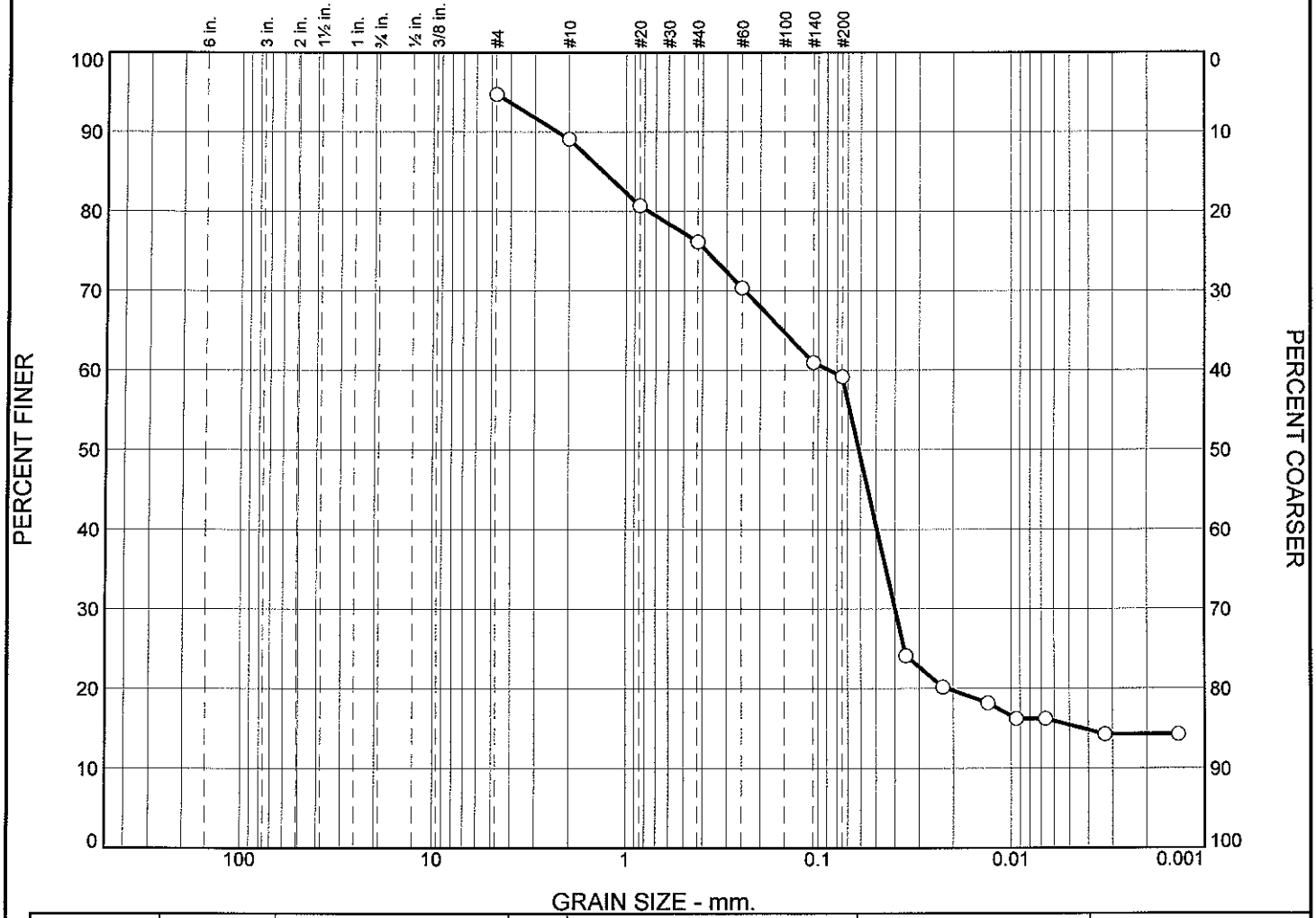
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.8	5.8	4.6	3.6	2.4	9.1	25.5	25.3	0.6	0.9	0.7	27.5	6.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0362	0.0405	0.0453	0.0567	0.5412	2.0099				

Fineness Modulus	C_u	C_c
2.67	55.45	0.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				4.5	6.8	5.1	6.9	7.5	12.1	27.7	4.2	2.6	1.5	14.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.3178	0.0881	0.0615	0.0399	0.0043			

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507011 **Sample Number:** L0912920-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507011
Sample Number: L0912920-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 26.62
Tare Wt. = 4.02
Minus #200 from wash = 53.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
48.10	0.00	#4	524.19	521.66	94.7	5.3
		#10	487.40	484.68	89.1	10.9
		#20	409.39	405.36	80.7	19.3
		#40	365.18	362.99	76.2	23.8
		#60	368.93	366.13	70.3	29.7
		#140	347.29	342.78	61.0	39.0
		#200	346.04	345.18	59.2	40.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 59.2
Weight of hydrometer sample =48.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	24.1	75.9
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	20.2	79.8
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	18.2	81.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	16.2	83.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	16.2	83.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	14.2	85.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	14.2	85.8

Fractional Components

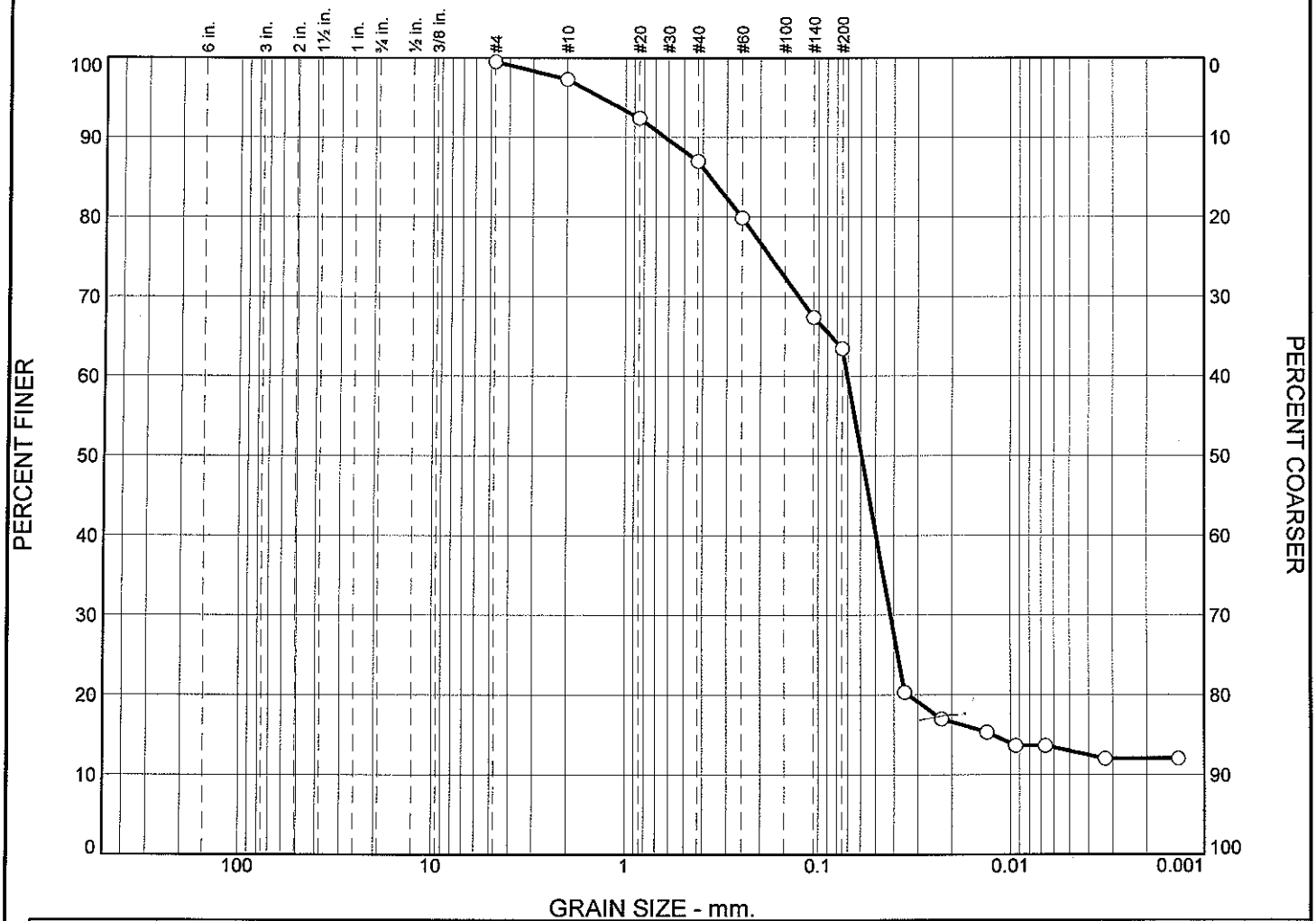
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			4.5	6.8	5.1	6.9	7.5	12.1	38.4	27.7	4.2	2.6	1.5	36.0	14.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0043	0.0216	0.0399	0.0615	0.0881	0.7633	1.3178	2.3004	

Fineness Modulus
1.16

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.8	4.0	5.0	8.4	10.1	16.7	33.7	3.6	2.1	1.3	12.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3662	0.0706	0.0592	0.0416	0.0123			

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507012 **Sample Number:** L0912920-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507012
Sample Number: L0912920-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 27.47
Tare Wt. = 3.95
Minus #200 from wash = 61.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
61.25	0.00	#4	521.11	520.81	99.5	0.5
		#10	483.37	482.01	97.3	2.7
		#20	413.95	410.97	92.4	7.6
		#40	381.20	377.87	87.0	13.0
		#60	374.14	369.80	79.9	20.1
		#140	354.80	347.13	67.4	32.6
		#200	348.86	346.46	63.5	36.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 63.5
Weight of hydrometer sample =61.25
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	20.3	79.7
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	17.0	83.0
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	15.3	84.7
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	13.7	86.3
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	13.7	86.3
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	12.0	88.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	12.0	88.0

Fractional Components

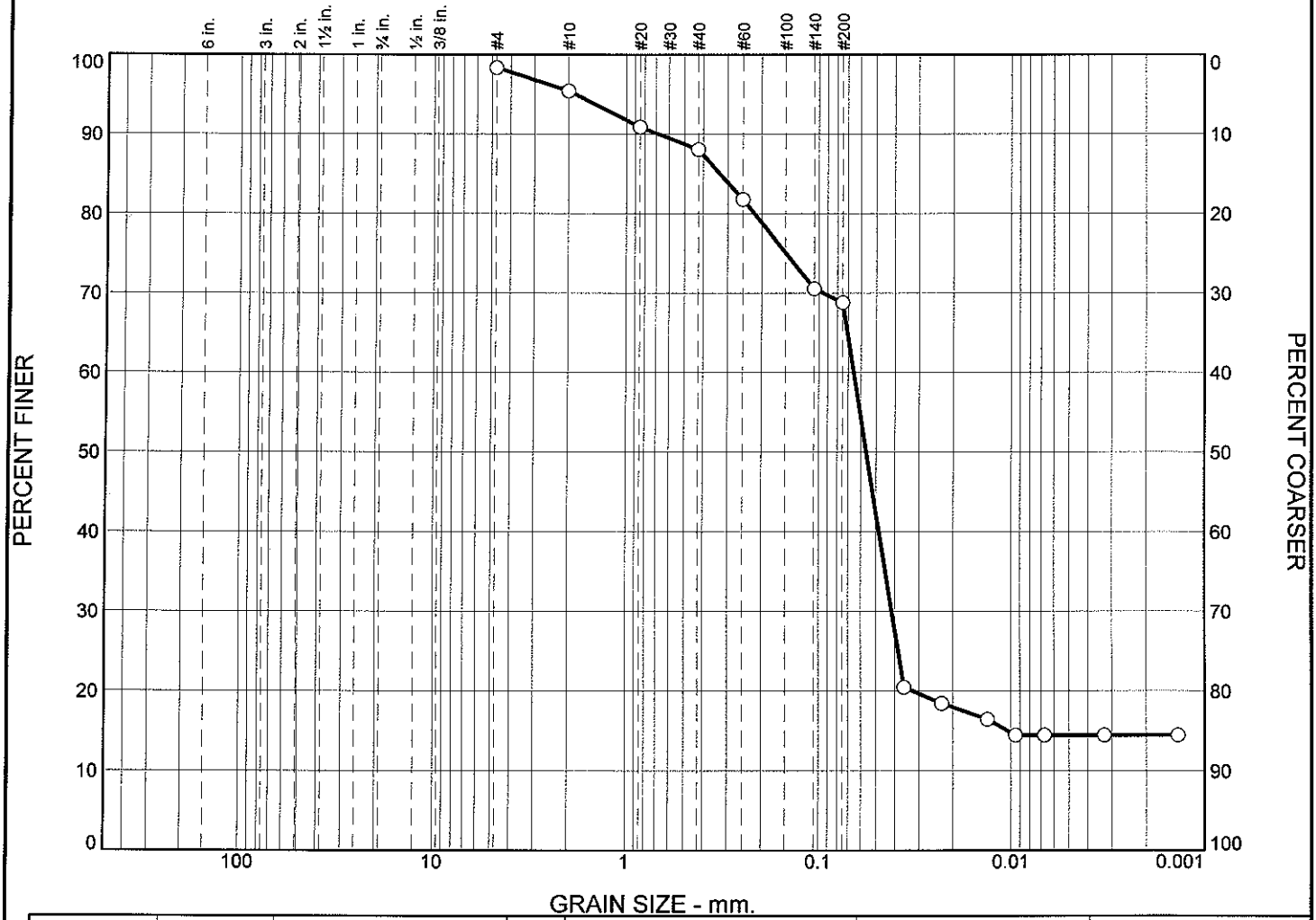
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.8	4.0	5.0	8.4	10.1	16.7	44.2	33.7	3.6	2.1	1.3	40.7	12.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0123	0.0337	0.0416	0.0592	0.0706	0.2518	0.3662	0.6240	1.3370

Fineness Modulus
0.64

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	3.6	3.1	6.9	9.1	15.8	37.1	2.8	2.6	0.0	14.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3286	0.0656	0.0562	0.0414	0.0104			

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507013 **Sample Number:** L0912920-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507013
Sample Number: L0912920-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 24.11
Tare Wt. = 3.95
Minus #200 from wash = 63.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
55.15	0.00	#4	522.50	521.60	98.4	1.6
		#10	486.30	484.68	95.4	4.6
		#20	407.86	405.36	90.9	9.1
		#40	364.56	362.99	88.1	11.9
		#60	369.60	366.13	81.8	18.2
		#140	348.97	342.78	70.5	29.5
		#200	346.14	345.18	68.8	31.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 68.8
Weight of hydrometer sample =55.15
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	20.5	79.5
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	18.5	81.5
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	16.5	83.5
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	14.4	85.6
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	14.4	85.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	14.4	85.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	14.4	85.6

Fractional Components

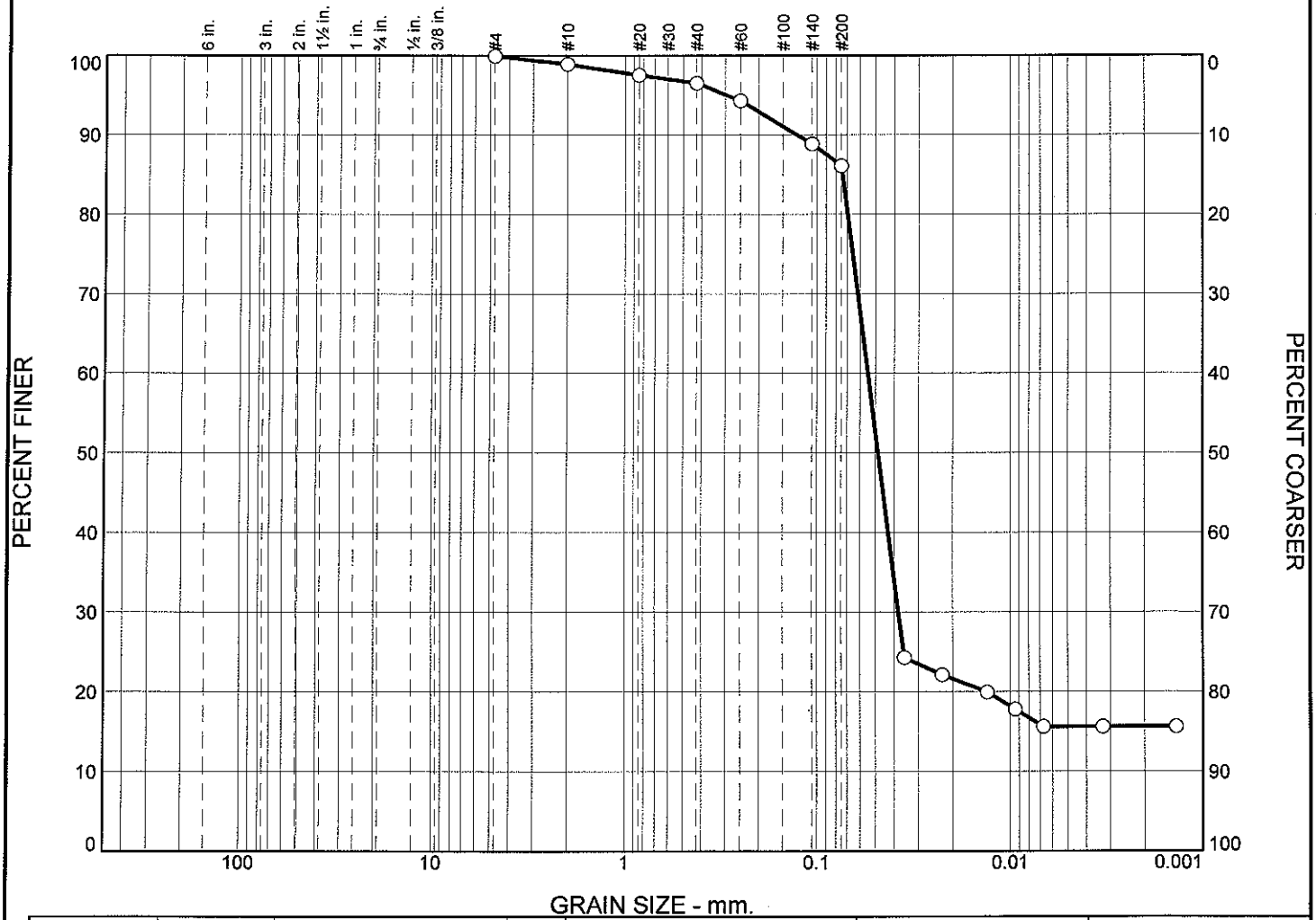
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	3.6	3.1	6.9	9.1	15.8	38.5	37.1	2.8	2.6	0.0	42.5	14.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0104	0.0323	0.0414	0.0562	0.0656	0.2185	0.3286	0.6831	1.8439

Fineness Modulus
0.65

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.8	1.1	1.1	2.4	4.4	18.8	47.5	3.0	4.0	1.0	15.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0740	0.0547	0.0484	0.0380				

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507026 **Sample Number:** L0912920-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507026
Sample Number: L0912920-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 13.57
Tare Wt. = 3.96
Minus #200 from wash = 85.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
63.91	0.00	#4	521.72	521.66	99.9	0.1
		#10	485.32	484.68	98.9	1.1
		#20	406.25	405.36	97.5	2.5
		#40	363.63	362.99	96.5	3.5
		#60	367.54	366.13	94.3	5.7
		#140	346.26	342.78	88.9	11.1
		#200	346.94	345.18	86.1	13.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 86.1
Weight of hydrometer sample =63.91
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	24.3	75.7
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	22.1	77.9
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	19.9	80.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	17.8	82.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	15.6	84.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	15.6	84.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	15.6	84.4

Fractional Components

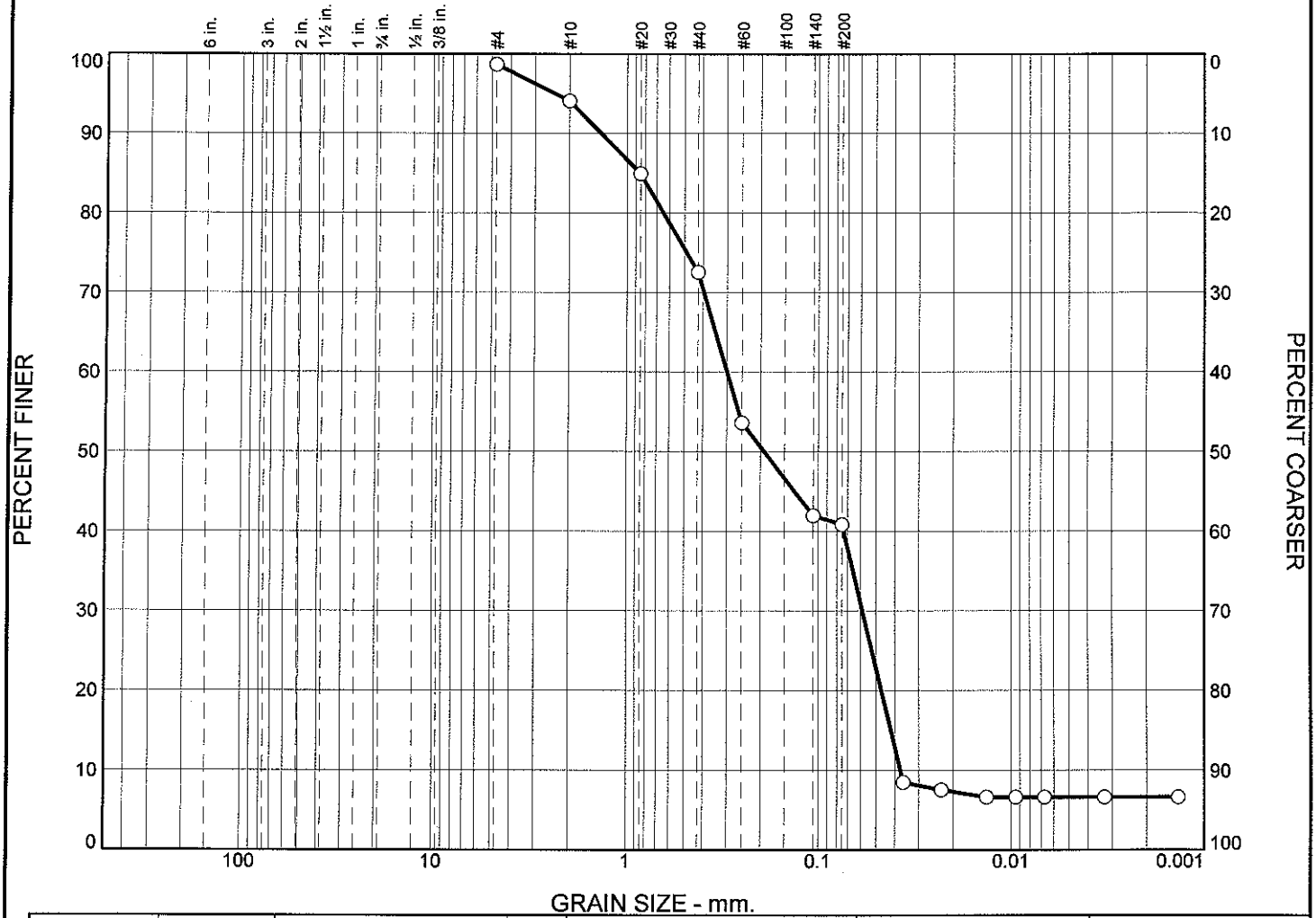
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.8	1.1	1.1	2.4	4.4	18.8	27.8	47.5	3.0	4.0	1.0	55.5	15.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0134	0.0380	0.0484	0.0547	0.0697	0.0740	0.1269	0.2955

Fineness Modulus
0.20

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.7	7.4	11.3	21.8	9.4	11.5	24.6	1.2	0.3	0.0	6.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8563	0.2992	0.1920	0.0587	0.0419	0.0374	0.31	8.00

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507111 **Sample Number:** L0912920-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507111
Sample Number: L0912920-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 46.64
Tare Wt. = 4.02
Minus #200 from wash = 40.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
71.49	0.00	#4	521.76	520.81	98.7	1.3
		#10	485.30	482.01	94.1	5.9
		#20	417.51	410.97	84.9	15.1
		#40	386.72	377.87	72.5	27.5
		#60	383.35	369.80	53.6	46.4
		#140	355.46	347.13	41.9	58.1
		#200	347.26	346.46	40.8	59.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 40.8
Weight of hydrometer sample =71.49
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	8.4	91.6
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	7.5	92.5
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	6.6	93.4
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	6.6	93.4
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	6.6	93.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.6	93.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.6	93.4

Fractional Components

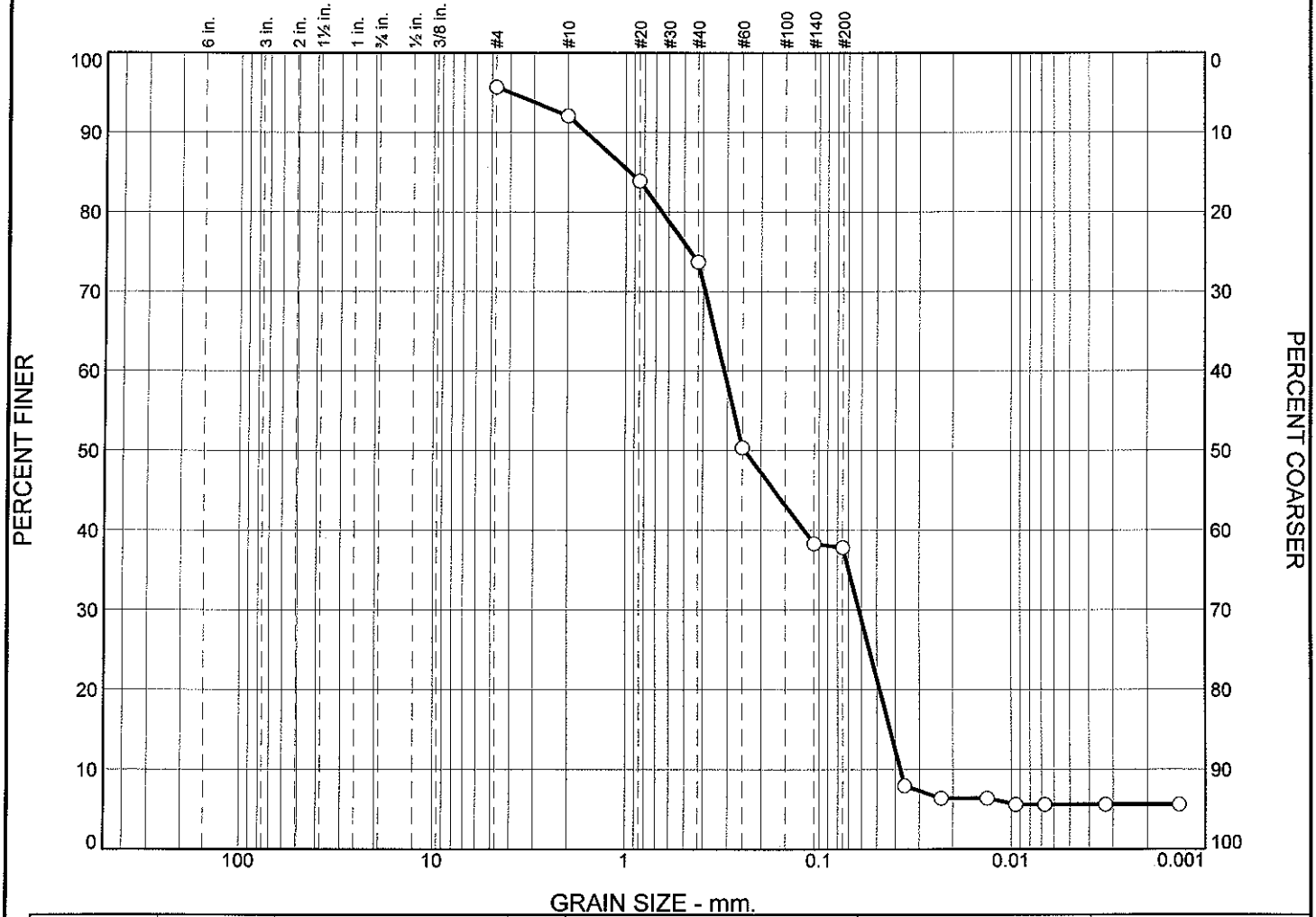
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.7	7.4	11.3	21.8	9.4	11.5	61.4	24.6	1.2	0.3	0.0	26.1	6.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0374	0.0419	0.0469	0.0587	0.1920	0.2992	0.6453	0.8563	1.3669	2.3824

Fineness Modulus	C_u	C_c
1.32	8.00	0.31

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.9	6.7	9.3	25.7	9.8	10.1	23.1	1.0	0.8	0.0	5.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9544	0.3113	0.2438	0.0618	0.0426	0.0376	0.33	8.27

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507112 **Sample Number:** L0912920-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507112
Sample Number: L0912920-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 54.38
Tare Wt. = 4.04
Minus #200 from wash = 35.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
78.03	0.00	#4	525.01	521.66	95.7	4.3
		#10	487.51	484.68	92.1	7.9
		#20	411.75	405.36	83.9	16.1
		#40	370.94	362.99	73.7	26.3
		#60	384.35	366.13	50.4	49.6
		#140	352.17	342.78	38.3	61.7
		#200	345.56	345.18	37.8	62.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 37.8
Weight of hydrometer sample =78.08
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	7.9	92.1
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	6.4	93.6
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	6.4	93.6
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	5.6	94.4
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	5.6	94.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	5.6	94.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	5.6	94.4

Fractional Components

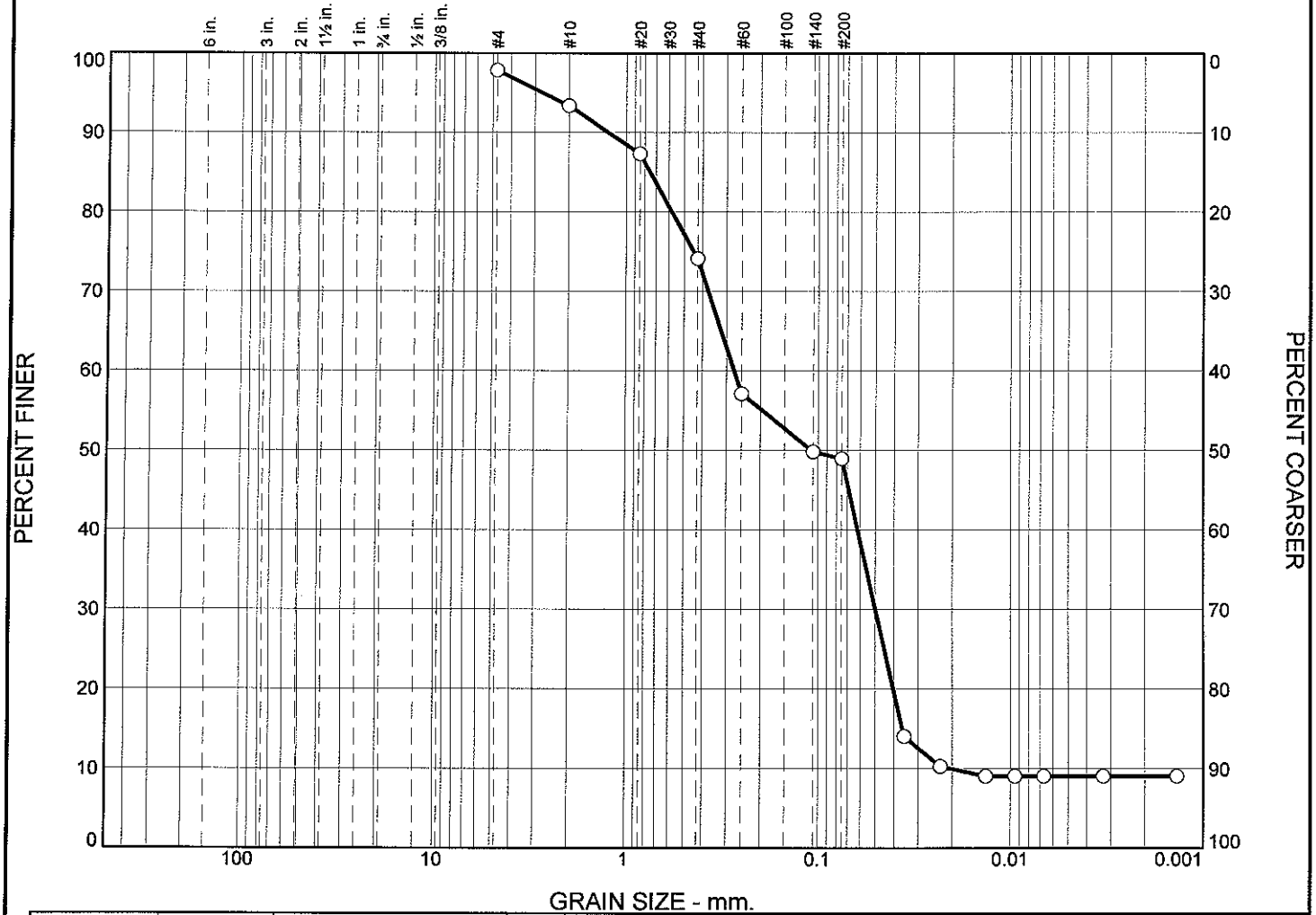
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.9	6.7	9.3	25.7	9.8	10.1	61.6	23.1	1.0	0.8	0.0	24.9	5.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0376	0.0426	0.0482	0.0618	0.2438	0.3113	0.6523	0.9544	1.6093	4.0132

Fineness Modulus	C_u	C_c
1.44	8.27	0.33

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.6	4.9	11.3	20.1	5.9	10.7	27.6	3.5	0.4		9.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7520	0.2737	0.1083	0.0499	0.0362	0.0204	0.45	13.39

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507113 **Sample Number:** L0912920-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507113
Sample Number: L0912920-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 36.40
Tare Wt. = 3.97
Minus #200 from wash = 48.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.83	0.00	#4	522.17	520.81	97.8	2.2
		#10	484.81	482.01	93.4	6.6
		#20	414.77	410.97	87.3	12.7
		#40	386.16	377.87	74.1	25.9
		#60	380.51	369.80	57.1	42.9
		#140	351.70	347.13	49.8	50.2
		#200	347.00	346.46	49.0	51.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 49.0
Weight of hydrometer sample =62.83
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	14.0	86.0
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	10.3	89.7
15.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0134	9.0	91.0
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	9.0	91.0
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	9.0	91.0
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	9.0	91.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	9.0	91.0

Fractional Components

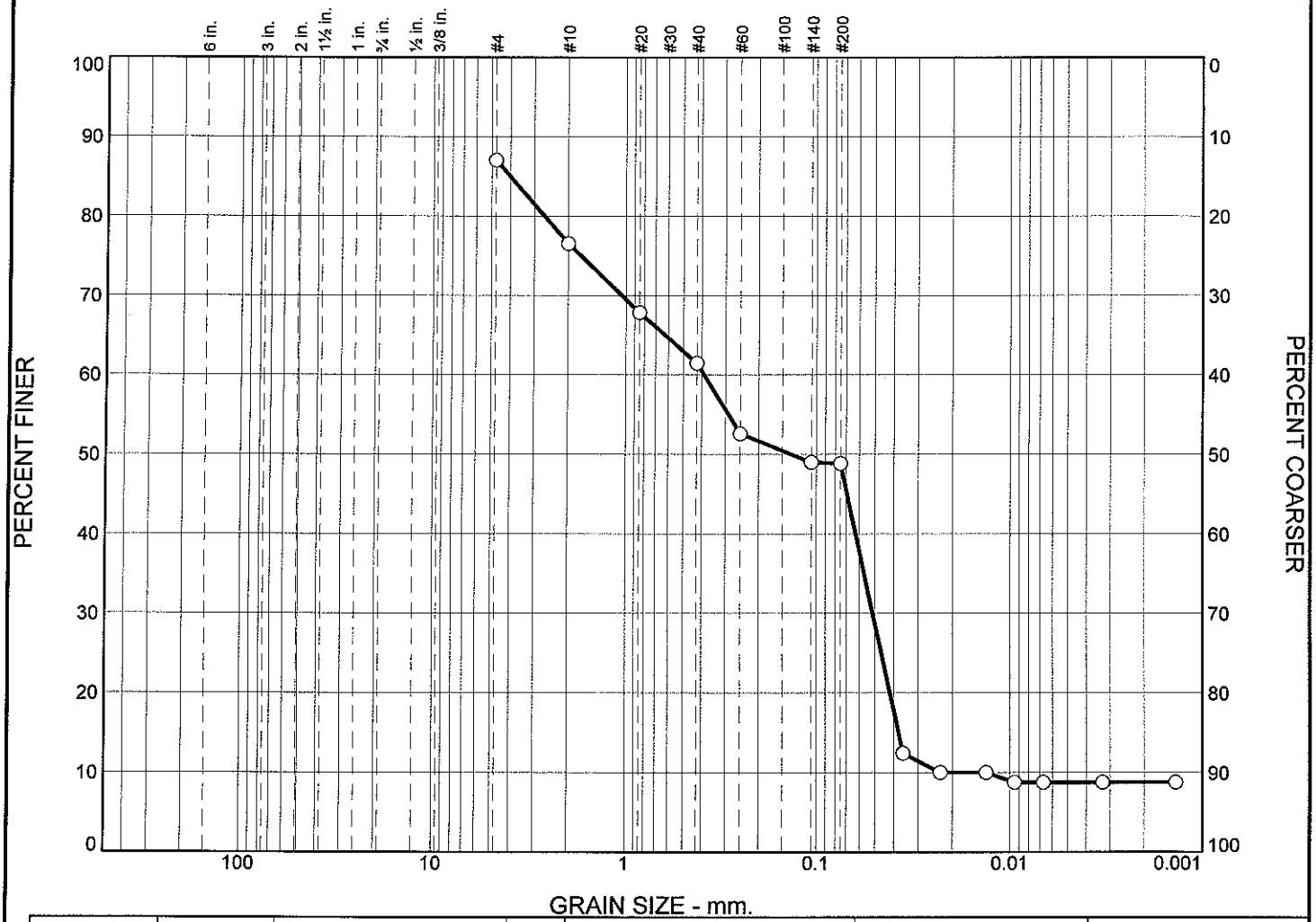
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.6	4.9	11.3	20.1	5.9	10.7	52.9	27.6	3.5	0.4		31.5	9.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0204	0.0362	0.0403	0.0499	0.1083	0.2737	0.5783	0.7520	1.2400	2.7395

Fineness Modulus	C_u	C_c
1.22	13.39	0.45

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				8.4	7.0	6.5	10.4	2.9	9.8	28.3	1.6	1.2	0.0	8.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.0197	0.3894	0.1351	0.0512	0.0377	0.0232	0.29	16.81

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507126 **Sample Number:** L0912920-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507126
Sample Number: L0912920-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 38.68
Tare Wt. = 4.03
Minus #200 from wash = 46.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
64.59	0.00	#4	530.04	521.66	87.0	13.0
		#10	491.46	484.68	76.5	23.5
		#20	410.98	405.36	67.8	32.2
		#40	367.10	362.99	61.5	38.5
		#60	371.87	366.13	52.6	47.4
		#140	345.10	342.78	49.0	51.0
		#200	345.28	345.18	48.8	51.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 48.8
Weight of hydrometer sample =64.59
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	12.4	87.6
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	10.0	90.0
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	10.0	90.0
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	8.8	91.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	8.8	91.2
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	8.8	91.2
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	8.8	91.2

Fractional Components

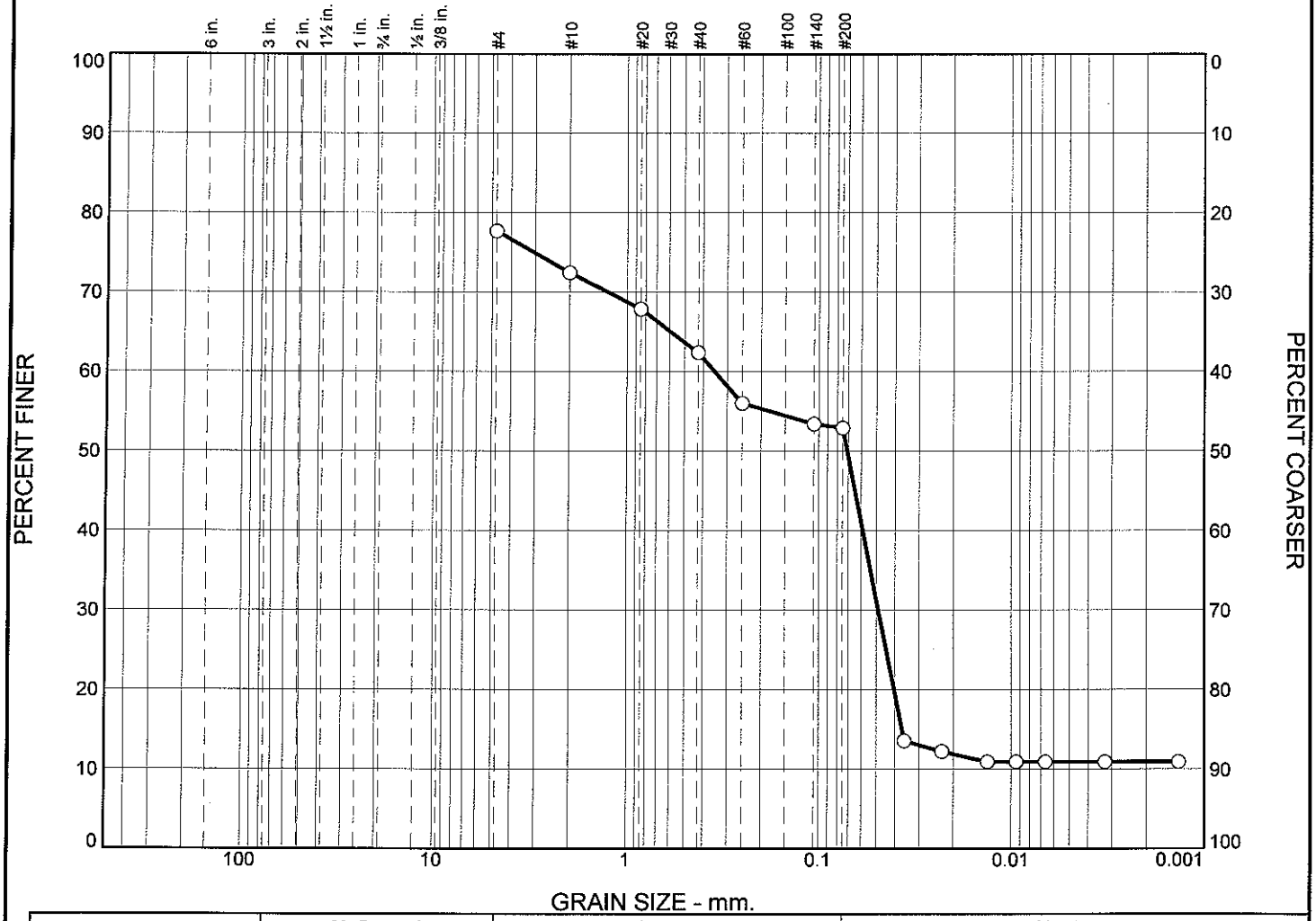
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			8.4	7.0	6.5	10.4	2.9	9.8	36.6	28.3	1.6	1.2	0.0	31.1	8.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0232	0.0377	0.0418	0.0512	0.1351	0.3894	2.6623	4.0197		

Fineness Modulus	C_u	C_c
1.93	16.81	0.29

Alpha Analytical

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				5.3	10.0	9.5	42.0	10.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.3494	0.0711	0.0488	0.0368			

	Material Description	USCS	AASHTO
○			

Project No. L0912920 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507126 **Sample Number:** WG382312-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912920
Location: 507126
Sample Number: WG382312-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 34.65
Tare Wt. = 4.03
Minus #200 from wash = 52.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
64.10	0.00	#4	535.12	520.81	77.7	22.3
		#10	485.38	482.01	72.4	27.6
		#20	413.89	410.97	67.9	32.1
		#40	381.40	377.87	62.4	37.6
		#60	373.89	369.80	56.0	44.0
		#140	348.80	347.13	53.4	46.6
		#200	346.78	346.46	52.9	47.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 52.9
Weight of hydrometer sample =64.10
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	13.5	86.5
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	12.2	87.8
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	10.9	89.1
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	10.9	89.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	10.9	89.1
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	10.9	89.1
1440.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0014	10.9	89.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
				5.3	10.0	9.5	24.8	42.0	10.9	52.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0368	0.0404	0.0488	0.0711	0.3494				

Fineness Modulus
2.02

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

CHAIN OF CUSTODY

PAGE 1 OF 1

02051016:32

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L09/2920

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	506811	9/24/09	14:52	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	506812	9/24/09	15:28	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	506813	9/24/09	15:32	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	506825	9/24/09	15:12	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
4	506826	9/24/09	15:12	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	506827	9/24/09	15:12	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bash	9/24/09 1910	Kathryn McCarthy	9/24/09
Kathryn McCarthy	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35		9/25/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912920

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
5	506911	9/24/09	13:38	SE	JB	☐	☐	☒	☐									ben gs	1
6	506912	9/24/09	14:00	SE	JB	☐	☐	☒	☐									ben gs	1
7	506913	9/24/09	14:15	SE	JB	☐	☐	☒	☐									ben gs	1
	506925	9/24/09	13:50	SE	JB	☒	☒	☐	☐									sed chem	1
8	506926	9/24/09	13:50	SE	JB	☐	☐	☒	☐									sed gs	1
	506927	9/24/09	13:50	SE	JB	☐	☐	☐	☒									sed arch	1
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
						☐	☐	☐	☐										
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/24/09 19:11	Kathryn McCarthy	9/24/09
Kathryn McCarthy	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

PAGE 3 OF 4

02051016:32

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: 20912920

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
9	507011	9/24/09	12:11	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
10	507012	9/24/09	12:20	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
11	507013	9/24/09	11:35	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507025	9/24/09	11:45	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
12	507026	9/24/09	11:45	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	507027	9/24/09	11:45	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	G	G	G	-	-	-	-	-	-	-	-	-		
Preservative	A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/24/09	Kaitlyn McCann	9/24/09
Kaitlyn McCann	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

CHAIN OF CUSTODY

02051016:32

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912920

Report Information — Data Deliverables

- ☐ FAX
- ☒ EMAIL
- ☒ ADEx
- ☐ Add'l Deliverables

Billing Information

- ☒ Same as Client info
- PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive
E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
13	507111	9/24/09	09:06	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
14	507112	9/24/09	09:30	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
15	507113	9/24/09	10:40	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507125	9/24/09	09:15	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
16	507126	9/24/09	09:15	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	507127	9/24/09	09:15	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
	507145	9/24/09	09:15	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem QC	1
	507146	9/24/09	09:15	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs QC	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	A	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bayer	9/24/09 1916	Kathryn McCarthy	9/24/09
Kathryn McCarthy	9/25/09 9:15	Paul Gilbert	9/25/09 9:15
Paul Gilbert	9/25/09 10:35		9/25/09 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912921
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/03/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912921
Report Date: 02/03/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912921-01	507211	NEW BEDFORD, MA	09/23/09 16:00
L0912921-02	507212	NEW BEDFORD, MA	09/23/09 16:35
L0912921-03	507213	NEW BEDFORD, MA	09/23/09 16:45
L0912921-04	507226	NEW BEDFORD, MA	09/23/09 16:25
L0912921-05	507311	NEW BEDFORD, MA	09/23/09 17:20
L0912921-06	507312	NEW BEDFORD, MA	09/23/09 17:41
L0912921-07	507313	NEW BEDFORD, MA	09/23/09 17:50
L0912921-08	507326	NEW BEDFORD, MA	09/23/09 17:30
L0912921-09	507411	NEW BEDFORD, MA	09/23/09 13:55
L0912921-10	507412	NEW BEDFORD, MA	09/23/09 14:35
L0912921-11	507413	NEW BEDFORD, MA	09/23/09 14:45
L0912921-12	507426	NEW BEDFORD, MA	09/23/09 14:23
L0912921-13	507511	NEW BEDFORD, MA	09/23/09 11:40
L0912921-14	507512	NEW BEDFORD, MA	09/23/09 12:00
L0912921-15	507513	NEW BEDFORD, MA	09/23/09 12:12
L0912921-16	507526	NEW BEDFORD, MA	09/23/09 11:50
L0912921-17	507611	NEW BEDFORD, MA	09/23/09 09:45
L0912921-18	507612	NEW BEDFORD, MA	09/23/09 10:20
L0912921-19	507613	NEW BEDFORD, MA	09/23/09 10:41
L0912921-20	507626	NEW BEDFORD, MA	09/23/09 10:05

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912921
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 21, 2009. The report was ammended to include revised Grain Size data.

Grain Size

The WG382313-1 Laboratory Duplicate RPD is outside the acceptance criteria for % very coarse sand (40%). The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912921
Project Number:	TO-0018	**Report Date:**	02/03/10

Case Narrative (continued)

duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newl

Title: Technical Director/Representative Date: 02/03/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-01
Client ID: 507211
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 16:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	56.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-02
Client ID: 507212
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 16:35
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.800		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	53.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-03
Client ID: 507213
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 16:45
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	25.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-04
Client ID: 507226
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 16:25
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	5.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-05
Client ID: 507311
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:20
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.600		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	48.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	34.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-06
Client ID: 507312
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:41
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.600		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	55.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-07
Client ID: 507313
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 17:50
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	26.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-08
Client ID: 507326
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 17:30
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	6.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	21.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	15.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-09
Client ID: 507411
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 13:55
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	9.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	41.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	44.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-10
Client ID: 507412
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:35
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	2.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	51.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	31.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-11
Client ID: 507413
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:45
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.800		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	2.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	3.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	50.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-12
Client ID: 507426
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 14:23
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	1.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	13.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	53.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	29.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-13
Client ID: 507511
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 11:40
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	4.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	18.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	22.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	3.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-14
Client ID: 507512
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 12:00
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	17.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	25.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	20.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	15.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	4.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-15
Client ID: 507513
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 12:12
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.900		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	18.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	22.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	21.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	11.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	14.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-16
Client ID: 507526
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 11:50
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	2.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	15.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	28.5		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	27.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	12.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-17
Client ID: 507611
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 09:45
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.700		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.600		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	54.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	28.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-18
Client ID: 507612
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 10:20
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.700		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	57.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	27.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-19
Client ID: 507613
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/23/09 10:41
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.100		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	0.600		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	52.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	31.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912921
Report Date: 02/03/10

SAMPLE RESULTS

Lab ID: L0912921-20
Client ID: 507626
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/23/09 10:05
Date Received: 09/24/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	ND		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	0.500		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	16.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	59.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	21.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912921
Report Date: 02/03/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG382313-1 QC Sample: L0912921-12 Client ID: 507426						
Gravel (>2.00mm)	0.2	0.200	%	0		20
Very Coarse Sand (1.00-2.00 mm)	0.3	0.200	%	**40**	Q	20
Coarse Sand (0.50-1.00 mm)	0.5	0.600	%	18		20
Medium Sand (0.25-0.50 mm)	1.1	1.10	%	0		20
Fine Sand (0.125-0.25 mm)	1.8	2.00	%	11		20
Very Fine Sand (0.063-0.125 mm)	13.0	13.7	%	5		20
Silt - (1.95-62.5 um)	53.6	51.8	%	3		20
Clay - (<1.95 um)	29.5	30.4	%	3		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912921
Report Date: 02/03/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912921-01A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-02A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-03A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-04A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-05A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-06A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-07A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-08A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912921
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912921-09A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-10A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-11A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-12A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-13A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-14A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-15A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-16A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-17A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-18A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912921
Report Date: 02/03/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912921-19A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912921-20A	Glass 250ml unpreserved	A	N/A	2	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912921
Project Number:	TO-0018	**Report Date:**	02/03/10

GLOSSARY

Acronyms

EPA	· Environmental Protection Agency.
LCS	· Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	· Laboratory Control Sample Duplicate: Refer to LCS.
MS	· Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	· Matrix Spike Sample Duplicate: Refer to MS.
NA	· Not Applicable.
NC	· Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	· Not detected at the reported detection limit for the sample.
NI	· Not Ignitable.
RDL	· Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	· Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	· Spectra identified as "Aldol Condensation Product".
B	· The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	· Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	· Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	· The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	· The RPD between the results for the two columns exceeds the method-specified criteria.
Q	· The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	· Analytical results are from sample re-analysis.
RE	· Analytical results are from sample re-extraction.
J	· Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

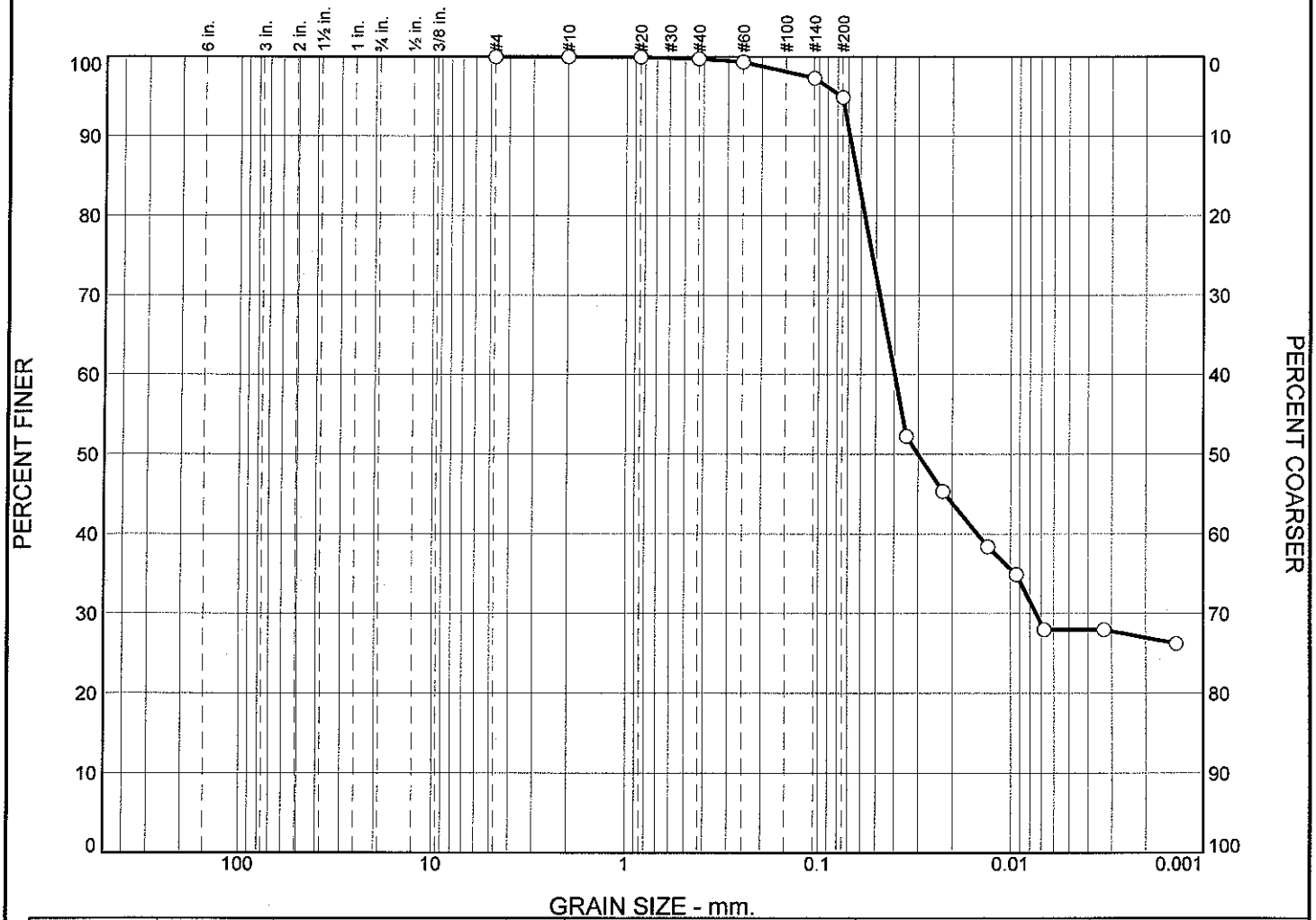
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.1	0.1	0.5	1.6	12.9	34.3	9.8	9.6	3.1	28.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0627	0.0398	0.0300	0.0074				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507211 **Sample Number:** L0912921-01

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507211
Sample Number: L0912921-01
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 6.68
Tare Wt. = 4.07
Minus #200 from wash = 94.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.94	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.00	403.97	99.9	0.1
		#40	376.73	376.65	99.7	0.3
		#60	368.92	368.73	99.3	0.7
		#140	343.51	342.63	97.3	2.7
		#200	329.08	328.00	94.9	5.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.9
Weight of hydrometer sample =43.94
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0345	52.2	47.8
5.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0223	45.3	54.7
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	38.4	61.6
30.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0094	34.9	65.1
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	28.0	72.0
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	28.0	72.0
1440.00	21.0	1.0075	1.0076	0.0135	4.5	15.1	0.0014	26.2	73.8

Fractional Components

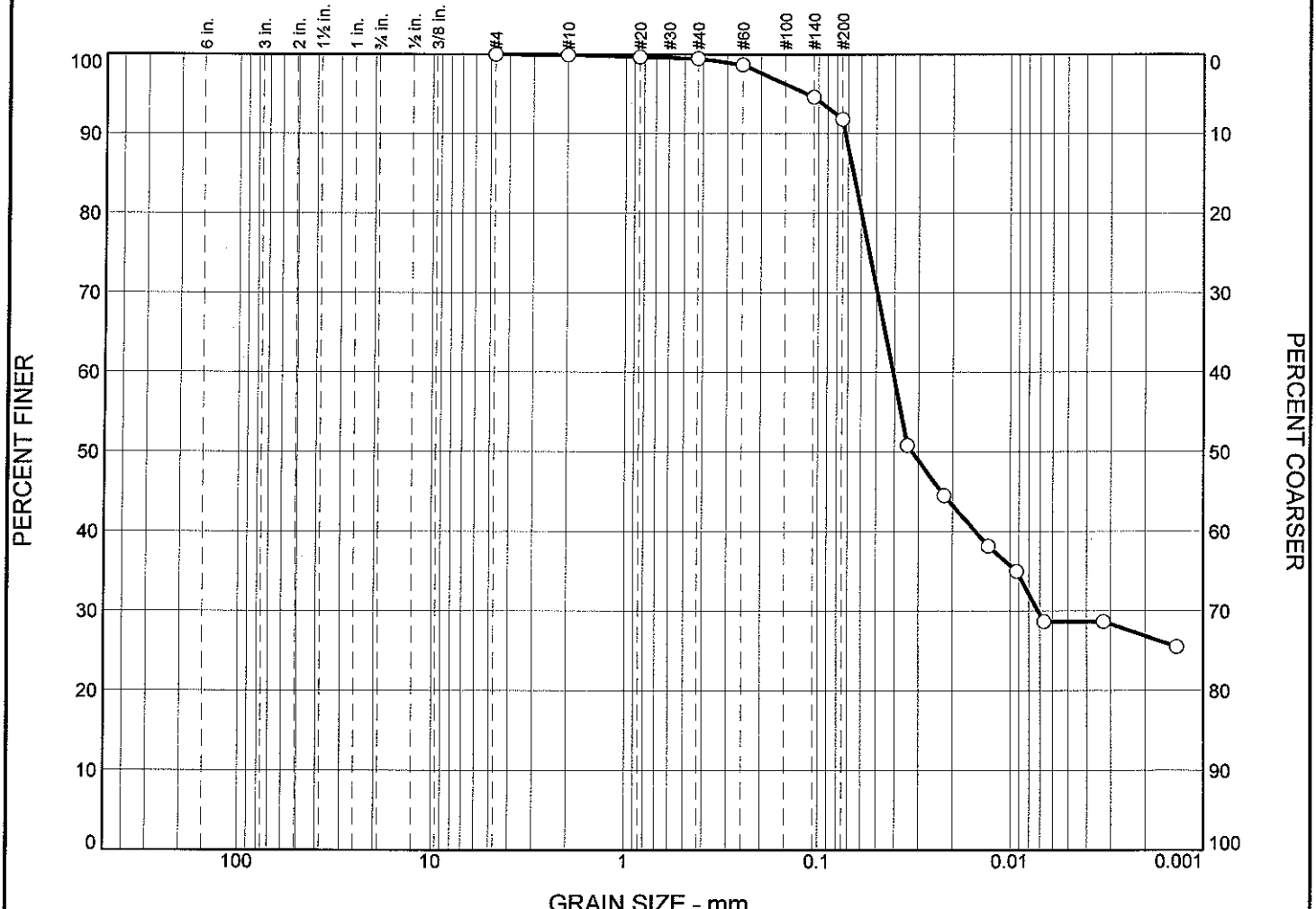
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.1	0.1	0.5	1.6	12.9	15.2	34.3	9.8	9.6	3.1	56.8	28.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0074	0.0300	0.0398	0.0572	0.0627	0.0687	0.0765

Fineness Modulus
0.03

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.1	0.2	0.2	0.8	3.3	13.1	32.9	9.1	8.6	3.0	28.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0658	0.0408	0.0323	0.0072				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507212 **Sample Number:** L0912921-02

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507212
Sample Number: L0912921-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 8.22
Tare Wt. = 4.10
Minus #200 from wash = 91.2%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
46.66	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.64	481.60	99.9	0.1
		#20	407.25	407.13	99.7	0.3
		#40	375.76	375.68	99.5	0.5
		#60	372.80	372.42	98.7	1.3
		#140	351.10	349.21	94.6	5.4
		#200	316.01	314.71	91.8	8.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 91.8
Weight of hydrometer sample =46.66
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0160	1.0161	0.0135	13.0	12.9	0.0342	50.8	49.2
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	44.5	55.5
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	38.1	61.9
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	35.0	65.0
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	28.7	71.3
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	28.7	71.3
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	25.5	74.5

Fractional Components

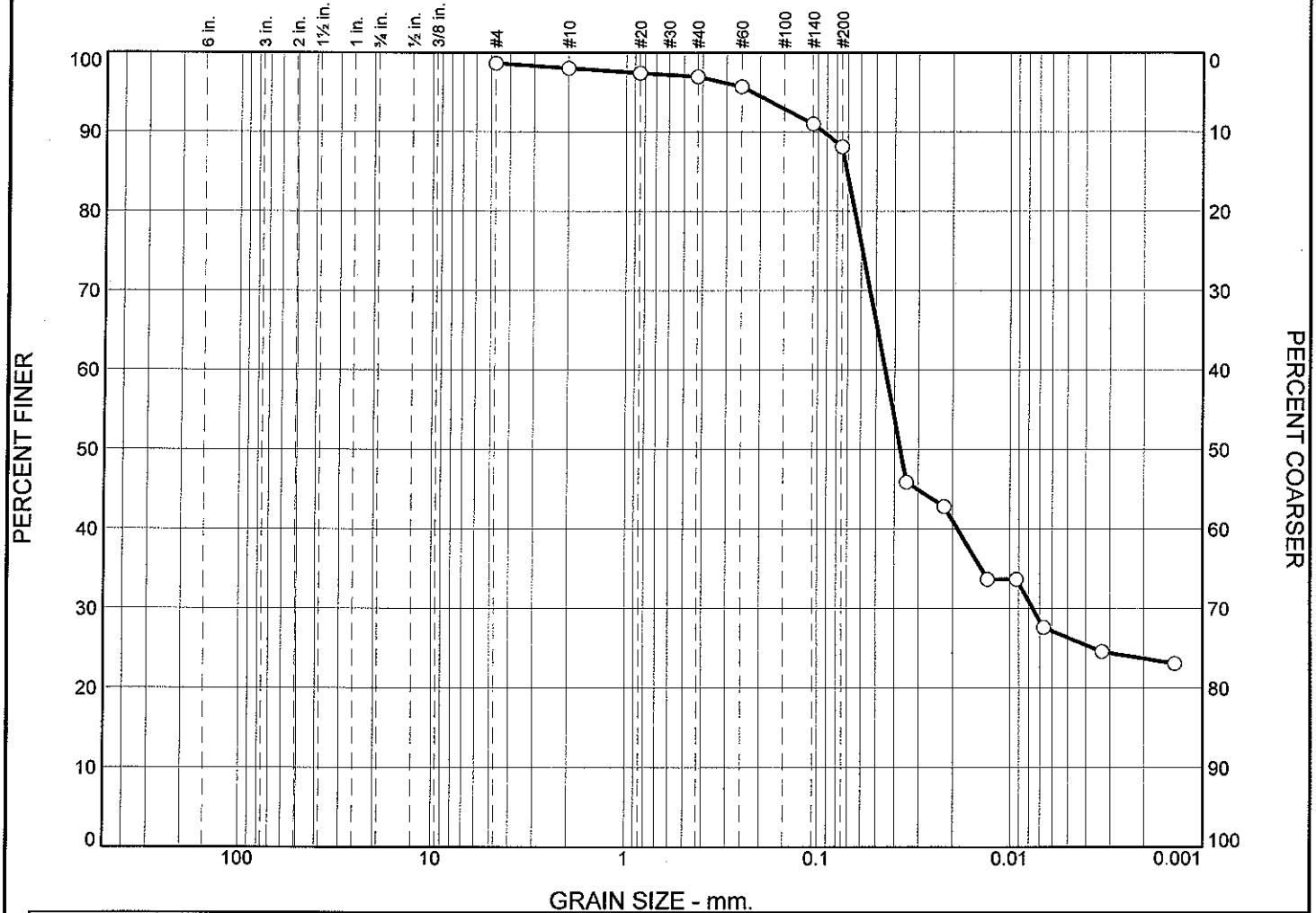
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.1	0.2	0.2	0.8	3.3	13.1	17.6	32.9	9.1	8.6	3.0	53.6	28.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0072	0.0323	0.0408	0.0598	0.0658	0.0724	0.1149

Fineness Modulus
0.06

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.5	0.5	0.4	1.4	3.8	13.7	33.1	8.4	6.2	5.2	25.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0708	0.0447	0.0372	0.0076				

Material Description	USCS	AASHTO
○		

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507213 **Sample Number:** L0912921-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507213
Sample Number: L0912921-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 10.19
Tare Wt. = 4.06
Minus #200 from wash = 86.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
46.50	0.00	#4	514.83	514.20	98.6	1.4
		#10	483.10	482.82	98.0	2.0
		#20	404.26	403.97	97.4	2.6
		#40	376.86	376.65	97.0	3.0
		#60	369.32	368.73	95.7	4.3
		#140	344.80	342.63	91.0	9.0
		#200	329.35	328.00	88.1	11.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 88.1
Weight of hydrometer sample =46.50
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0345	45.9	54.1
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	42.8	57.2
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	33.7	66.3
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	33.7	66.3
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	27.6	72.4
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	24.6	75.4
1440.00	21.0	1.0075	1.0076	0.0135	4.5	15.1	0.0014	23.0	77.0

Fractional Components

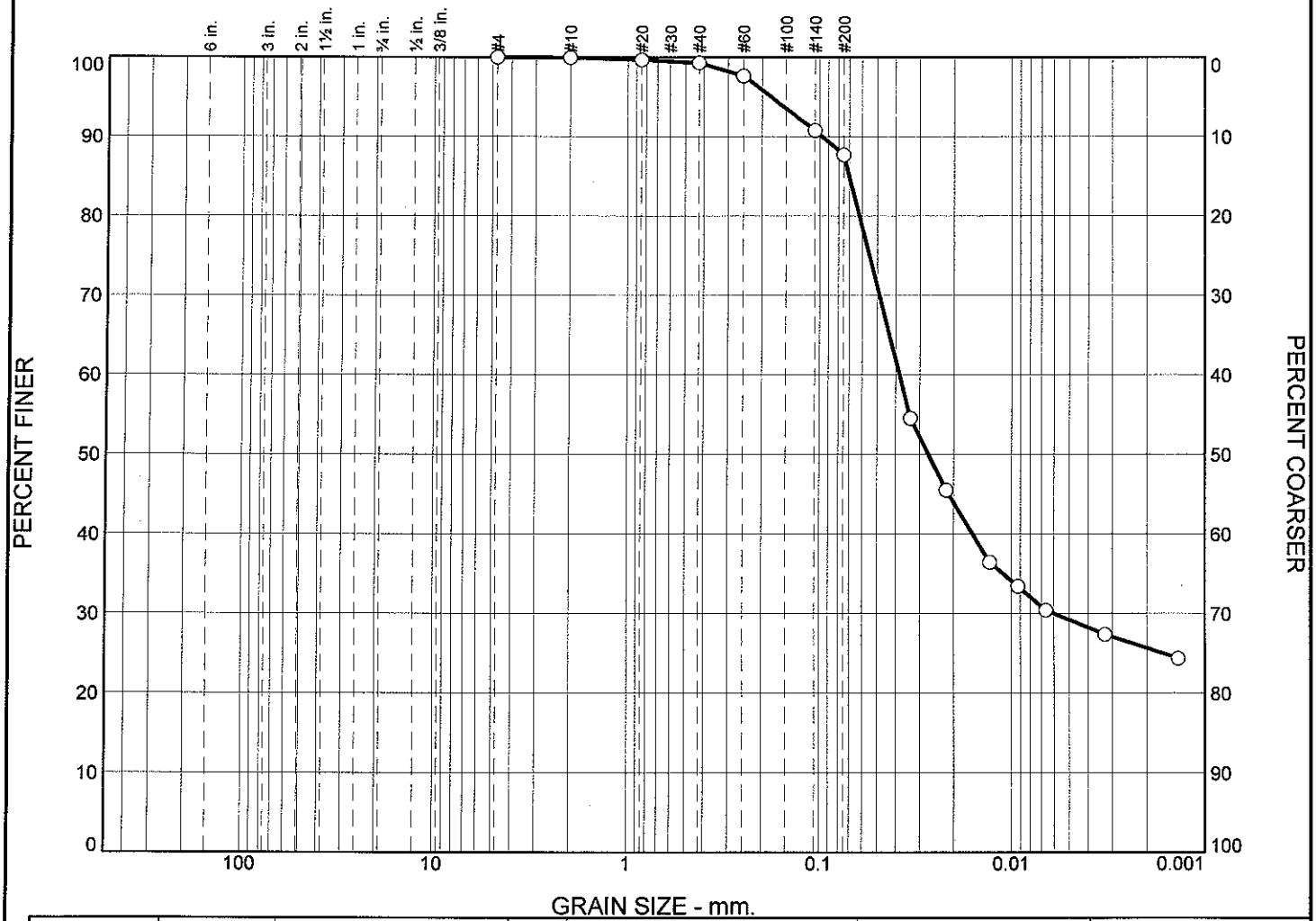
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.5	0.5	0.4	1.4	3.8	13.7	19.8	33.1	8.4	6.2	5.2	52.9	25.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0076	0.0372	0.0447	0.0646	0.0708	0.0937	0.2199

Fineness Modulus
0.19

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.3	0.3	1.8	5.5	11.9	27.3	13.3	7.7	3.8	28.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0702	0.0382	0.0270	0.0060				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507226 **Sample Number:** L0912921-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507226
Sample Number: L0912921-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 12.89
Tare Wt. = 4.08
Minus #200 from wash = 86.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
65.38	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.63	481.60	100.0	0.0
		#20	407.32	407.13	99.7	0.3
		#40	375.93	375.68	99.3	0.7
		#60	373.49	372.42	97.6	2.4
		#140	353.71	349.21	90.8	9.2
		#200	316.77	314.77	87.7	12.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 87.7
Weight of hydrometer sample =46.66
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0180	1.0181	0.0135	15.0	12.3	0.0335	54.5	45.5
5.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0218	45.5	54.5
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	36.4	63.6
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	33.4	66.6
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	30.4	69.6
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	27.4	72.6
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	24.4	75.6

Fractional Components

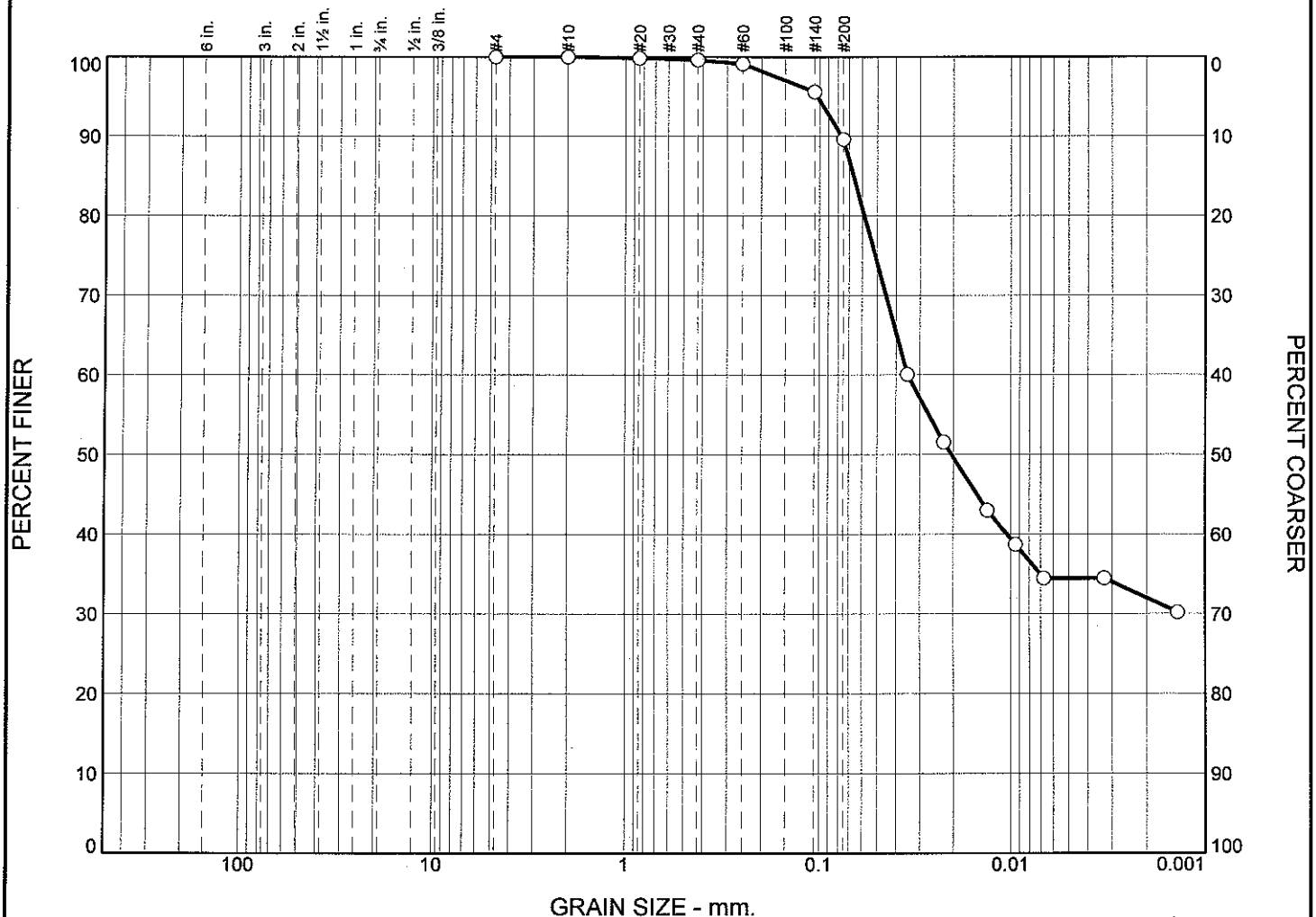
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.3	0.3	1.8	5.5	11.9	19.8	27.3	13.3	7.7	3.8	52.1	28.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0060	0.0270	0.0382	0.0622	0.0702	0.0973	0.1798

Fineness Modulus
0.09

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.1	0.2	0.6	2.8	13.7	24.8	12.1	9.4	1.8	34.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0665	0.0347	0.0204					

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507311 **Sample Number:** L0912921-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507311
Sample Number: L0912921-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 8.12
Tare Wt. = 3.99
Minus #200 from wash = 87.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
33.70	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.02	403.97	99.9	0.1
		#40	376.73	376.65	99.6	0.4
		#60	368.90	368.73	99.1	0.9
		#140	343.81	342.63	95.6	4.4
		#200	330.02	328.00	89.6	10.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 89.6
Weight of hydrometer sample =33.70
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	60.1	39.9
5.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0225	51.5	48.5
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	43.0	57.0
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	38.7	61.3
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	34.5	65.5
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	34.5	65.5
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	30.2	69.8

Fractional Components

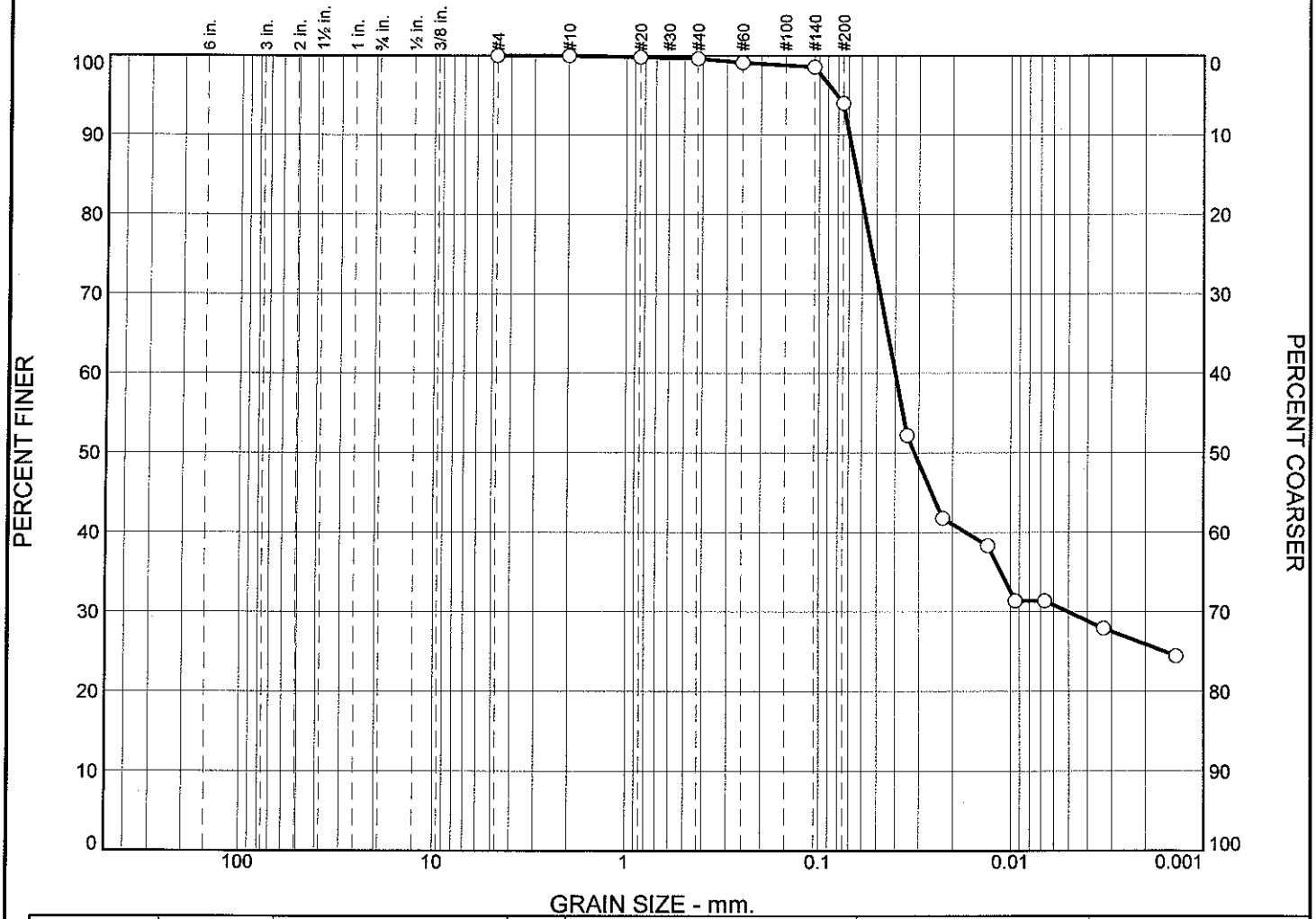
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.1	0.2	0.6	2.8	13.7	17.4	24.8	12.1	9.4	1.8	48.1	34.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0204	0.0347	0.0584	0.0665	0.0767	0.1023

Fineness Modulus
0.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.1	0.2	0.6	0.4	14.5	34.6	10.2	8.0	2.6	28.8

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0635	0.0399	0.0316	0.0050				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507312 **Sample Number:** L0912921-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507312
Sample Number: L0912921-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 10.02
Tare Wt. = 4.07
Minus #200 from wash = 86.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.61	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.60	481.60	100.0	0.0
		#20	407.21	407.13	99.8	0.2
		#40	375.76	375.68	99.6	0.4
		#60	372.65	372.42	99.1	0.9
		#140	372.65	372.42	98.6	1.4
		#200	351.21	349.21	94.0	6.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.0
Weight of hydrometer sample =43.61
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0345	52.2	47.8
5.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0225	41.8	58.2
15.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0131	38.3	61.7
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	31.4	68.6
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	31.4	68.6
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	27.9	72.1
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	24.5	75.5

Fractional Components

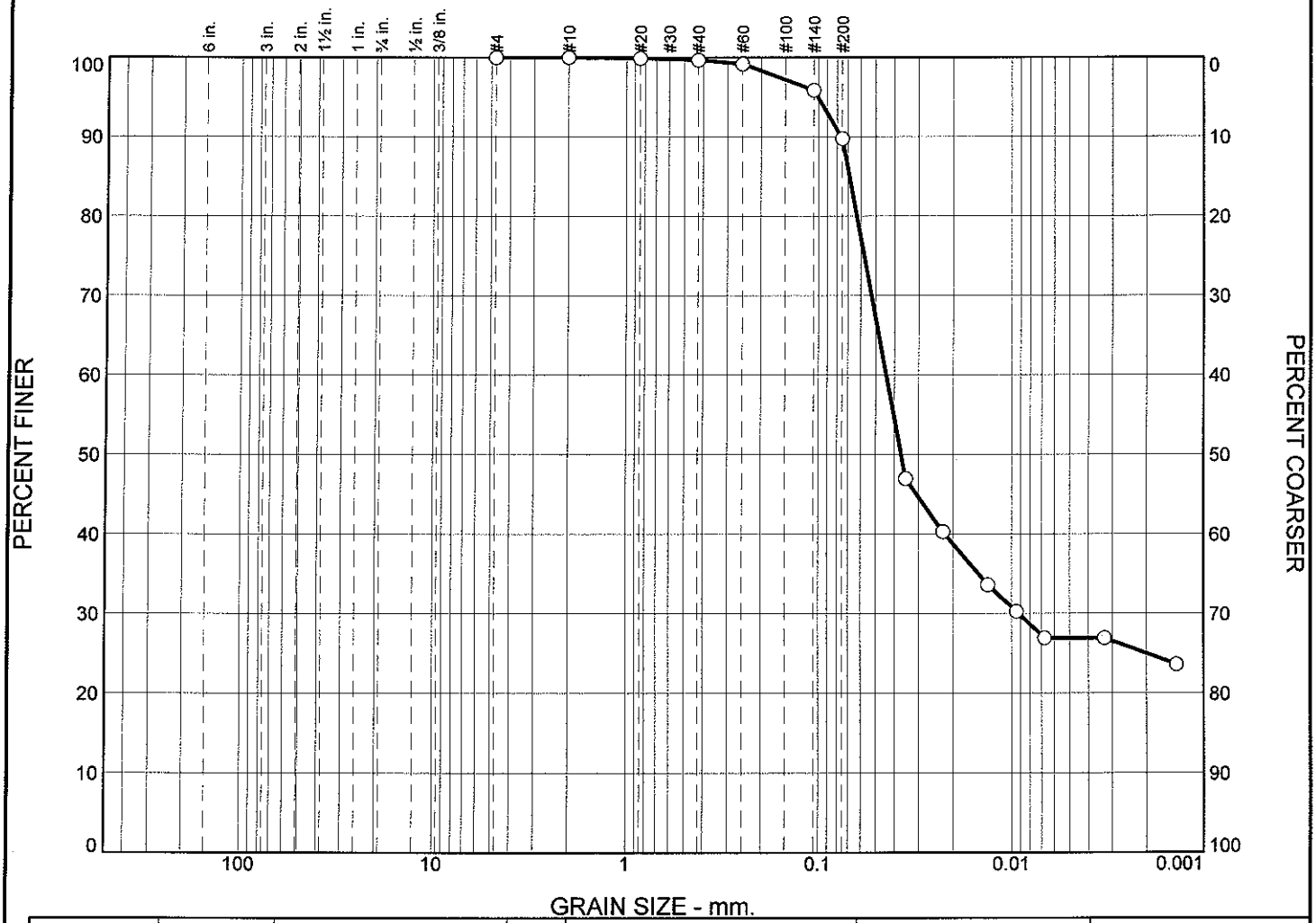
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.1	0.2	0.6	0.4	14.5	15.8	34.6	10.2	8.0	2.6	55.4	28.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0050	0.0316	0.0399	0.0579	0.0635	0.0696	0.0809

Fineness Modulus
0.02

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.1	0.2	0.5	2.7	16.9	34.5	9.4	7.3	1.5	26.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0689	0.0440	0.0368	0.0092				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507313 **Sample Number:** L0912921-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507313
Sample Number: L0912921-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 9.00
Tare Wt. = 4.03
Minus #200 from wash = 88.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.20	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.02	403.97	99.9	0.1
		#40	376.74	376.65	99.7	0.3
		#60	368.95	368.73	99.2	0.8
		#140	344.06	342.63	95.9	4.1
		#200	330.64	328.00	89.7	10.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 89.7
Weight of hydrometer sample =43.20
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	46.9	53.1
5.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0225	40.3	59.7
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	33.6	66.4
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	30.3	69.7
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	26.9	73.1
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	26.9	73.1
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	23.6	76.4

Fractional Components

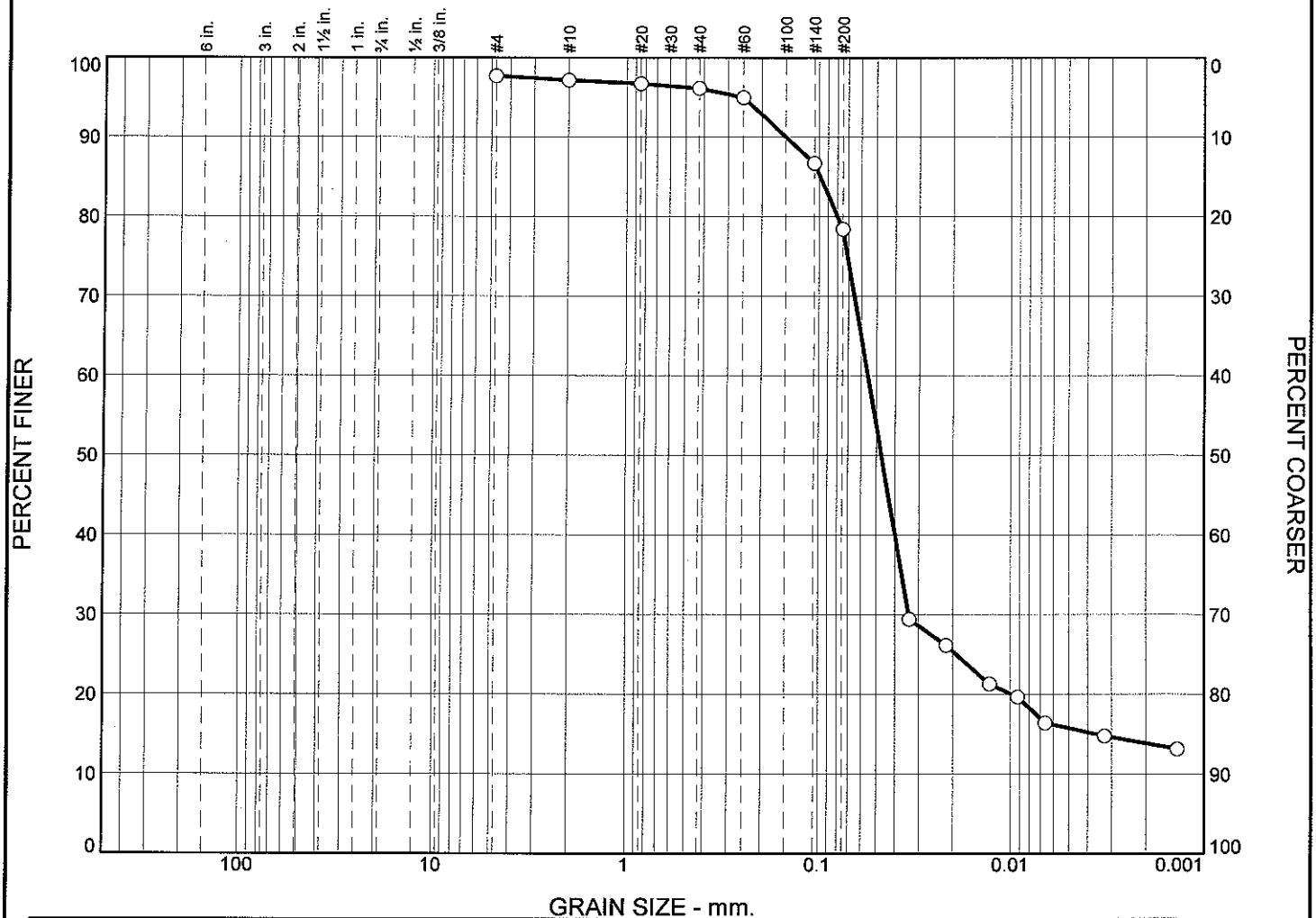
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.1	0.2	0.5	2.7	16.9	20.4	34.5	9.4	7.3	1.5	52.7	26.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0092	0.0368	0.0440	0.0630	0.0689	0.0761	0.1010

Fineness Modulus
0.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	0.4	0.5	1.3	6.7	21.0	38.5	5.7	5.1	2.8	15.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0987	0.0554	0.0470	0.0338	0.0036			

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507326 **Sample Number:** L0912921-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507326
Sample Number: L0912921-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 22.93
Tare Wt. = 4.14
Minus #200 from wash = 75.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
77.40	0.00	#4	513.42	511.64	97.7	2.3
		#10	482.01	481.60	97.2	2.8
		#20	407.47	407.13	96.7	3.3
		#40	376.14	375.68	96.1	3.9
		#60	373.31	372.42	95.0	5.0
		#140	355.62	349.21	86.7	13.3
		#200	321.21	314.77	78.4	21.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 78.4
Weight of hydrometer sample =77.40
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0180	1.0181	0.0135	15.0	12.3	0.0335	29.4	70.6
5.00	21.0	1.0160	1.0161	0.0135	13.0	12.9	0.0216	26.1	73.9
15.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0129	21.3	78.7
30.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0092	19.6	80.4
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	16.4	83.6
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	14.7	85.3
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	13.1	86.9

Fractional Components

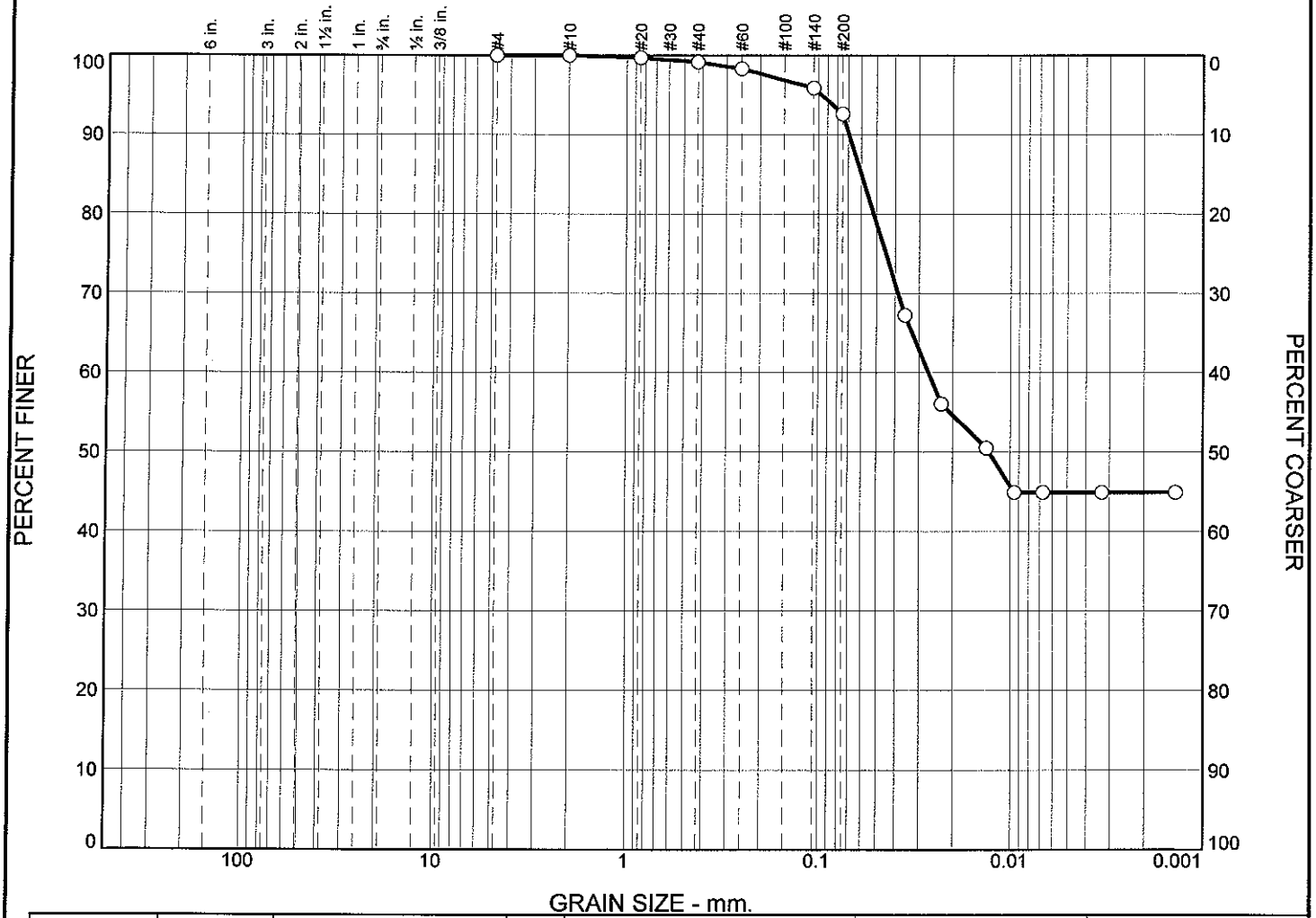
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	0.4	0.5	1.3	6.7	21.0	29.9	38.5	5.7	5.1	2.8	52.1	15.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0036	0.0099	0.0338	0.0470	0.0554	0.0802	0.0987	0.1491	0.2515

Fineness Modulus
0.26

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.2	0.5	1.0	2.0	9.9	22.7	11.6	7.2		44.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0599	0.0267	0.0129					

Material Description	USCS	AASHTO
○		

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507411 **Sample Number:** L0912921-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507411
Sample Number: L0912921-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 6.56
Tare Wt. = 4.10
Minus #200 from wash = 90.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
26.71	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.05	403.97	99.7	0.3
		#40	376.80	376.65	99.1	0.9
		#60	368.95	368.73	98.3	1.7
		#140	343.28	342.63	95.9	4.1
		#200	328.87	328.00	92.6	7.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 92.6
Weight of hydrometer sample =26.71
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0355	67.2	32.8
5.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0229	56.1	43.9
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	50.5	49.5
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	44.9	55.1
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	44.9	55.1
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	44.9	55.1
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	44.9	55.1

Fractional Components

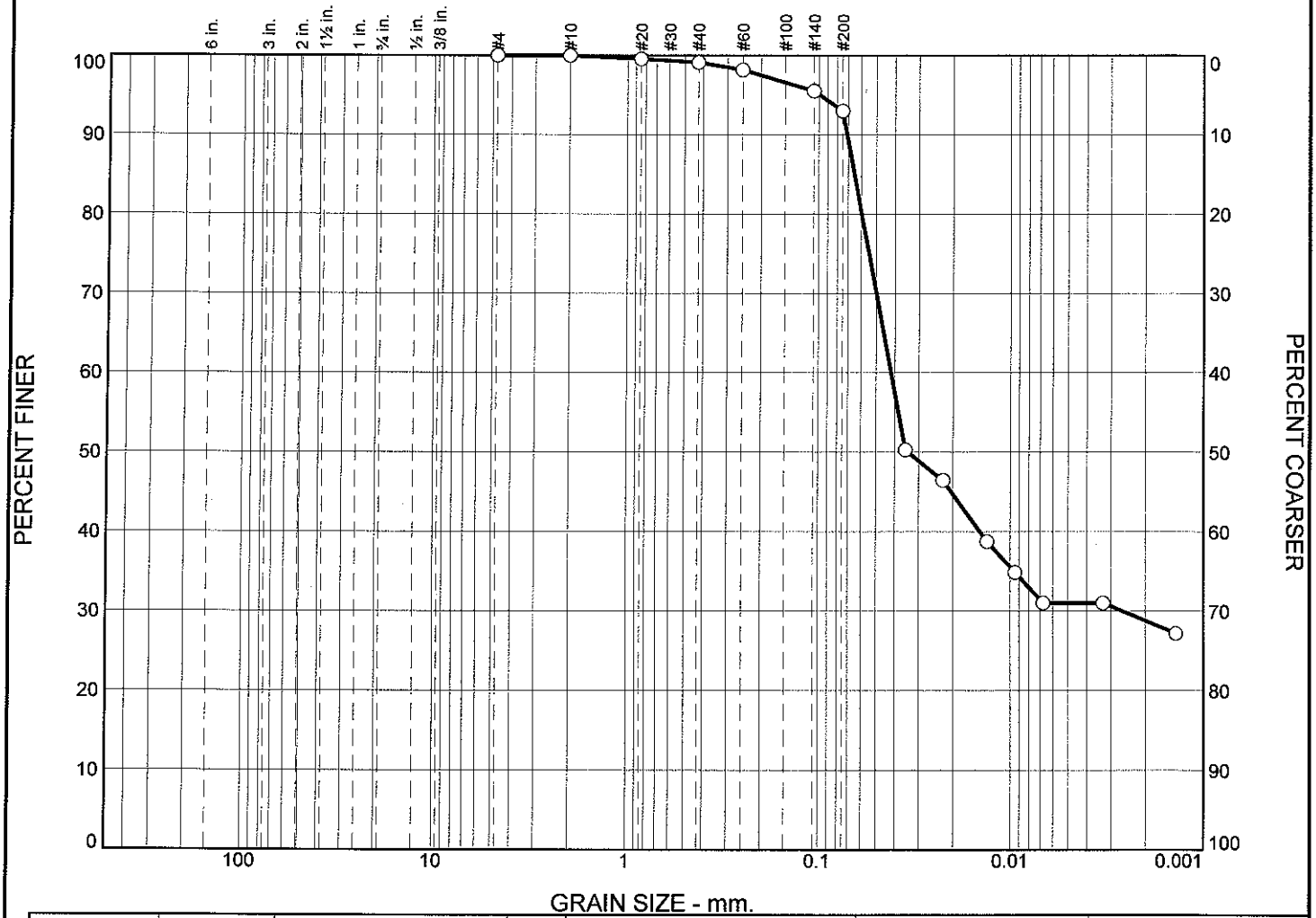
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.2	0.5	1.0	2.0	9.9	13.6	22.7	11.6	7.2		41.5	44.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0129	0.0267	0.0518	0.0599	0.0694	0.0965

Fineness Modulus
0.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.4	0.4	1.0	2.2	13.3	33.5	8.1	8.4	1.7	31.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0651	0.0418	0.0341	0.0026				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507412 **Sample Number:** L0912921-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507412
Sample Number: L0912921-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 7.30
Tare Wt. = 4.04
Minus #200 from wash = 91.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
38.82	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.60	481.60	100.0	0.0
		#20	407.30	407.13	99.6	0.4
		#40	375.85	375.68	99.1	0.9
		#60	372.79	372.42	98.2	1.8
		#140	350.24	349.21	95.5	4.5
		#200	315.75	314.77	93.0	7.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 93.0
Weight of hydrometer sample =38.82
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0352	50.3	49.7
5.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0225	46.4	53.6
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	38.7	61.3
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	34.9	65.1
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	31.0	69.0
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	31.0	69.0
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	27.2	72.8

Fractional Components

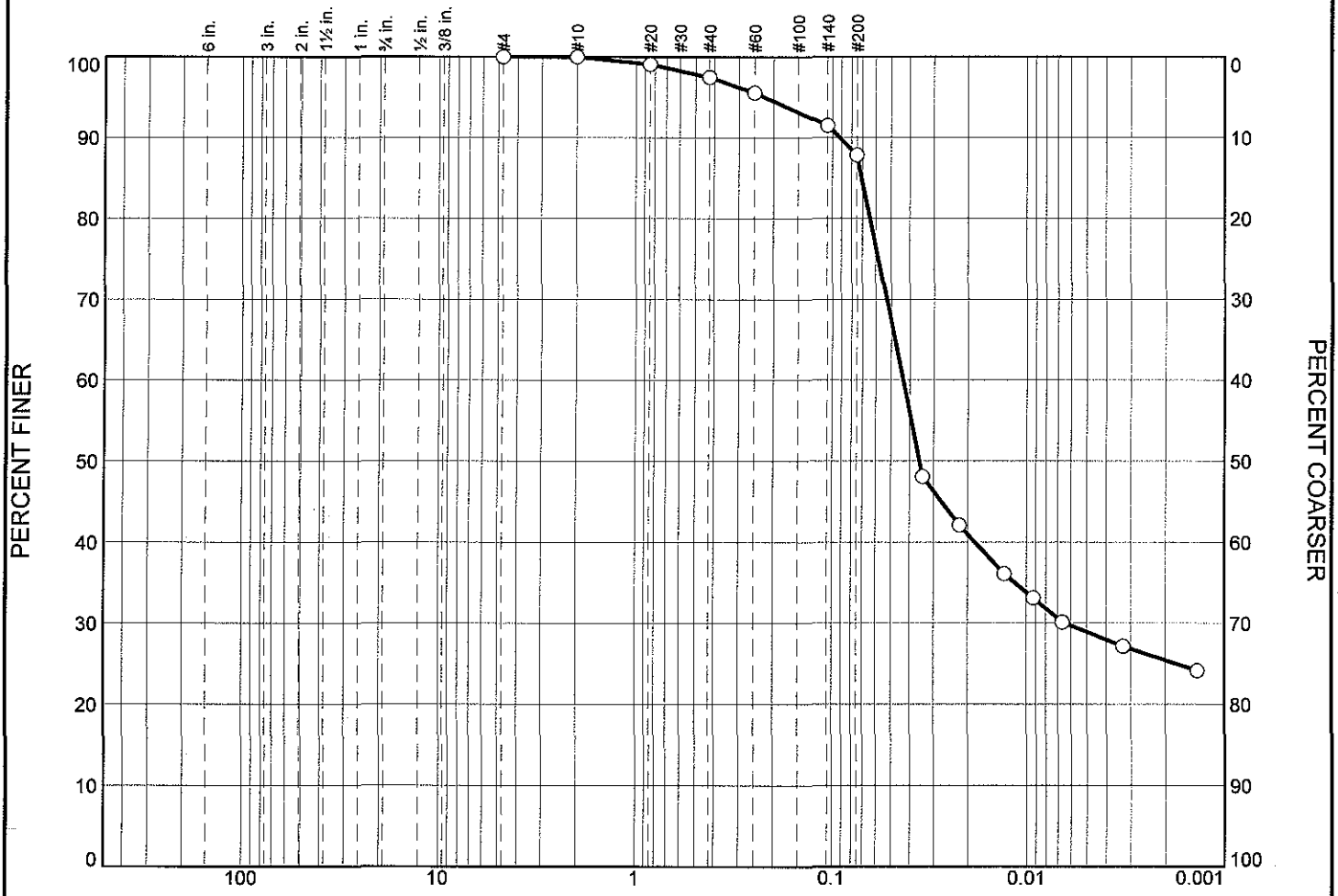
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.4	0.4	1.0	2.2	13.3	17.3	33.5	8.1	8.4	1.7	51.7	31.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0026	0.0341	0.0418	0.0596	0.0651	0.0711	0.0987

Fineness Modulus
0.06

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.8	1.4	2.2	3.3	13.7	31.9	8.5	6.6	3.7	27.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0709	0.0433	0.0355	0.0064				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507413 **Sample Number:** L0912921-11

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507413
Sample Number: L0912921-11
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 9.84
Tare Wt. = 4.10
Minus #200 from wash = 85.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
40.80	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.35	403.97	99.1	0.9
		#40	377.30	376.65	97.5	2.5
		#60	369.51	368.73	95.6	4.4
		#140	344.29	342.63	91.5	8.5
		#200	329.50	328.00	87.8	12.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 87.8
Weight of hydrometer sample =47.14
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0160	1.0161	0.0135	13.0	12.9	0.0342	48.1	51.9
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	42.1	57.9
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	36.1	63.9
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	33.1	66.9
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	30.1	69.9
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	27.1	72.9
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	24.1	75.9

Fractional Components

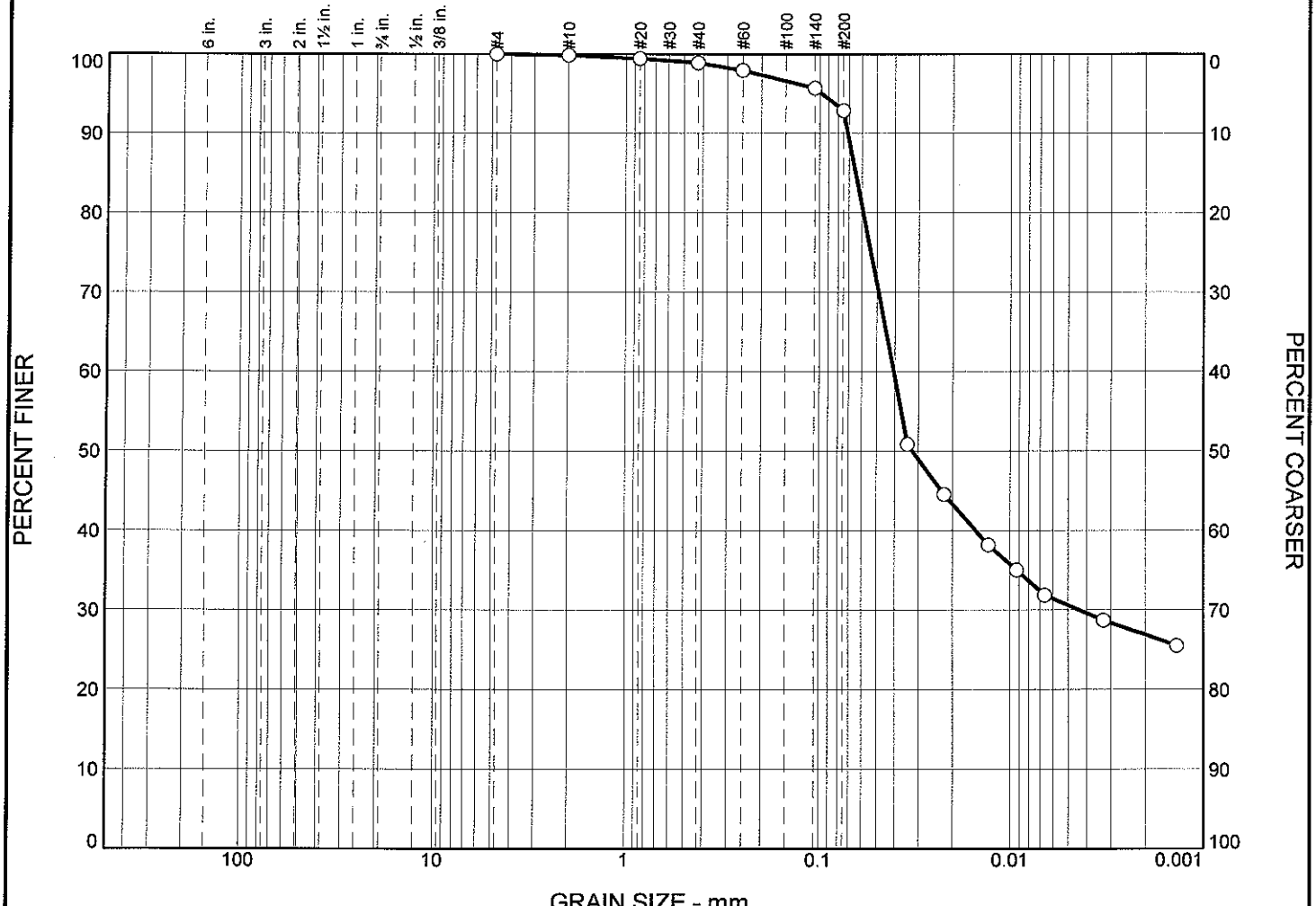
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.8	1.4	2.2	3.3	13.7	21.4	31.9	8.5	6.6	3.7	50.7	27.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0064	0.0355	0.0433	0.0643	0.0709	0.0921	0.2220

Fineness Modulus
0.13

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.2	0.3	0.5	1.1	1.8	13.0	33.7	9.0	7.0	3.9	29.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0647	0.0406	0.0322	0.0044				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507426 **Sample Number:** L0912921-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507426
Sample Number: L0912921-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 8.30
Tare Wt. = 4.11
Minus #200 from wash = 91.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
47.14	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.68	481.60	99.8	0.2
		#20	407.32	407.13	99.4	0.6
		#40	375.93	375.68	98.9	1.1
		#60	372.87	372.42	97.9	2.1
		#140	350.27	349.21	95.7	4.3
		#200	316.10	314.77	92.9	7.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 92.9
Weight of hydrometer sample =47.14
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0160	1.0161	0.0135	13.0	12.9	0.0342	50.8	49.2
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	44.5	55.5
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	38.2	61.8
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	35.0	65.0
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	31.9	68.1
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	28.7	71.3
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	25.5	74.5

Fractional Components

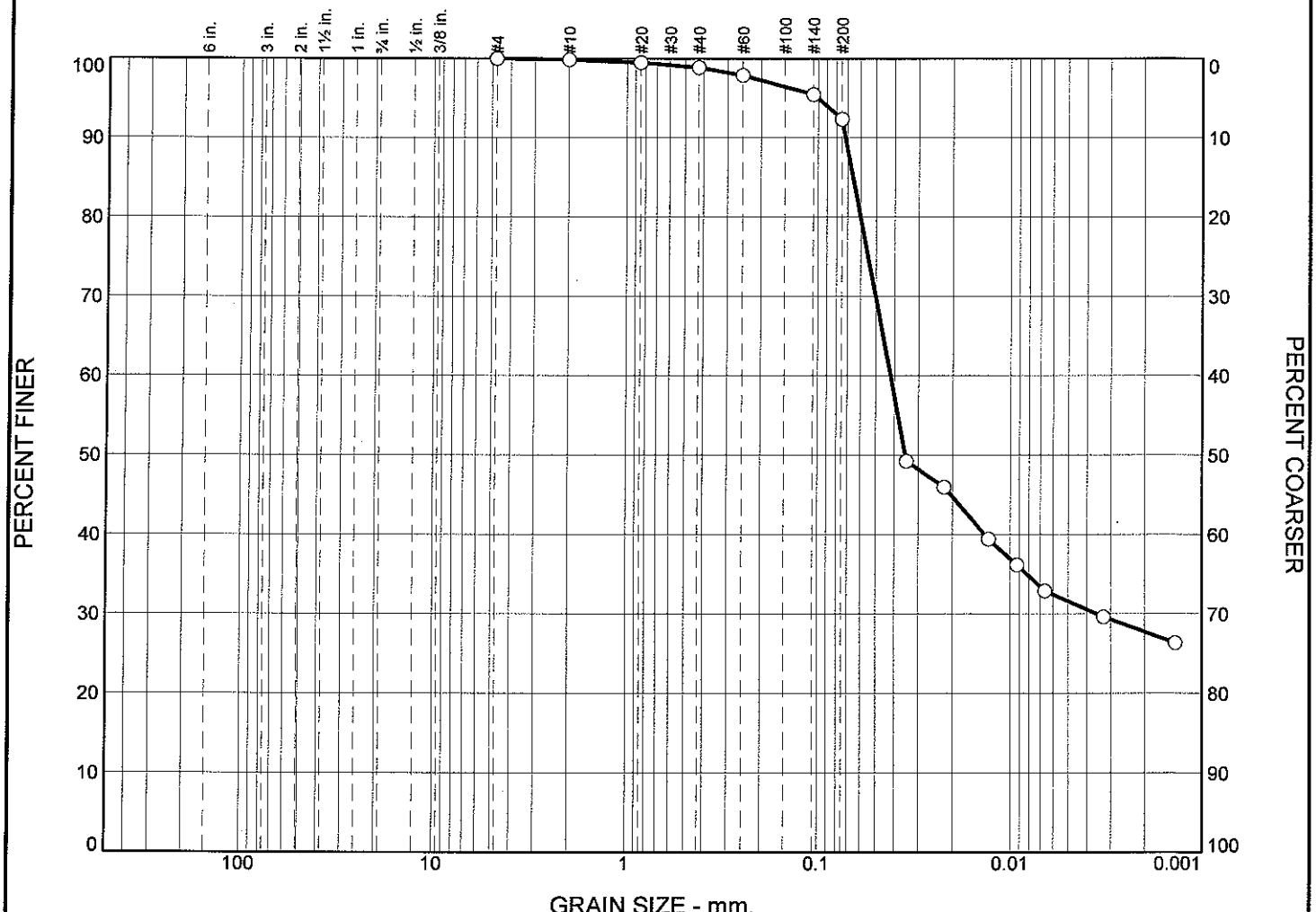
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.2	0.3	0.5	1.1	1.8	13.0	16.7	33.7	9.0	7.0	3.9	53.6	29.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0044	0.0322	0.0406	0.0590	0.0647	0.0711	0.0974

Fineness Modulus
0.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.2	0.2	0.6	1.1	2.0	13.7	33.8	6.7	7.2	4.1	30.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0657	0.0419	0.0350	0.0036				

Material Description	USCS	AASHTO
○		

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507426 **Sample Number:** WG382313-1

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507426
Sample Number: WG382313-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 7.94
Tare Wt. = 4.10
Minus #200 from wash = 91.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
45.41	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.89	482.82	99.8	0.2
		#20	404.13	403.97	99.5	0.5
		#40	376.94	376.65	98.9	1.1
		#60	369.18	368.73	97.9	2.1
		#140	343.72	342.63	95.5	4.5
		#200	329.42	328.00	92.3	7.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 92.3
Weight of hydrometer sample =45.41
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0345	49.2	50.8
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	45.9	54.1
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	39.4	60.6
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	36.1	63.9
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	32.9	67.1
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	29.6	70.4
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	26.3	73.7

Fractional Components

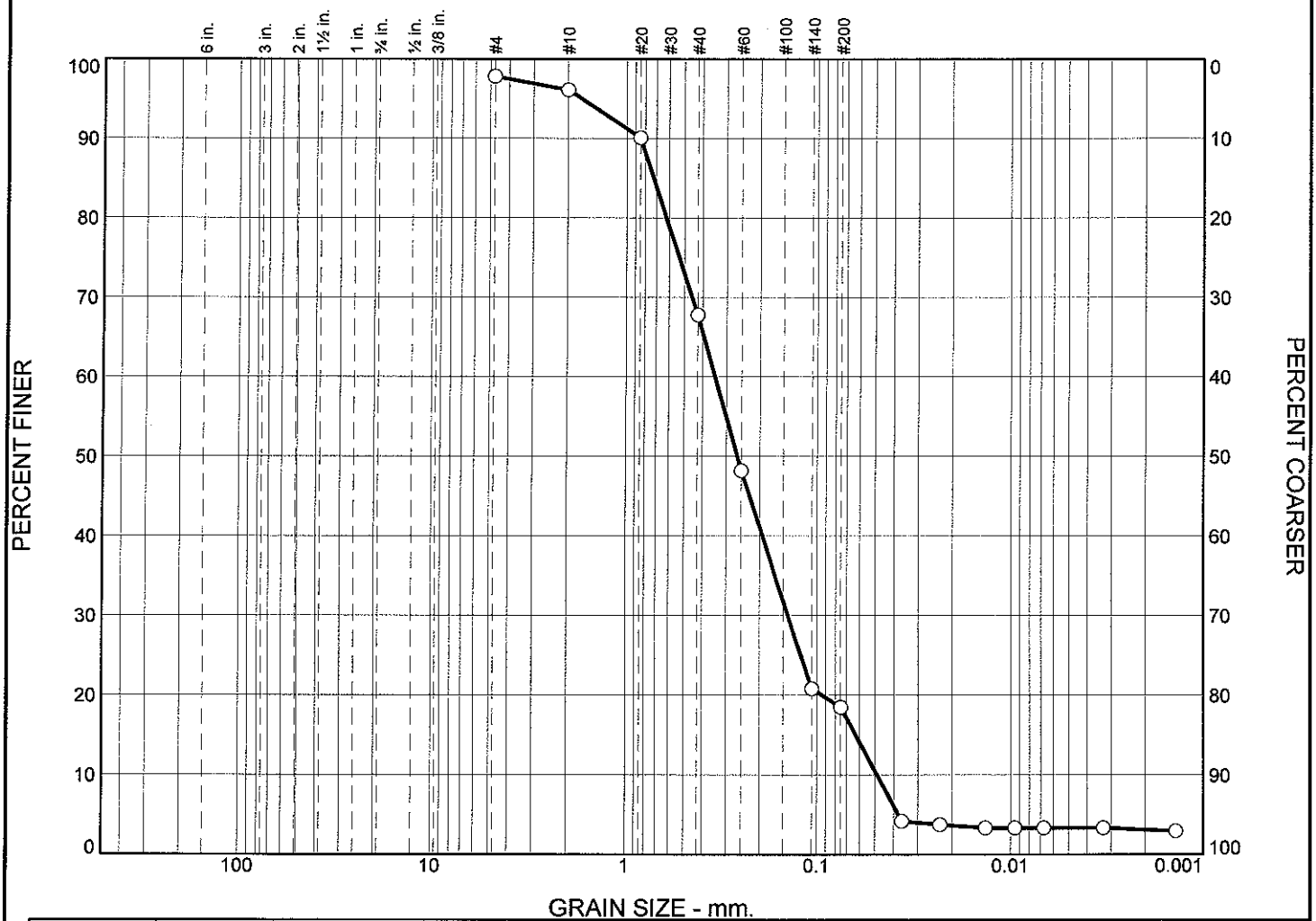
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.2	0.2	0.6	1.1	2.0	13.7	17.6	33.8	6.7	7.2	4.1	51.8	30.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0036	0.0350	0.0419	0.0601	0.0657	0.0719	0.1007

Fineness Modulus
0.07

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.4	4.9	18.2	24.8	22.1	11.2	10.9	0.5	0.2	0.0	3.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7256	0.3443	0.2625	0.1414	0.0628	0.0487	1.19	7.07

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507511 **Sample Number:** L0912921-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507511
Sample Number: L0912921-13
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 62.78
Tare Wt. = 4.16
Minus #200 from wash = 18.1%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
71.60	0.00	#4	513.22	511.64	97.8	2.2
		#10	482.81	481.60	96.1	3.9
		#20	411.43	407.13	90.1	9.9
		#40	391.67	375.68	67.8	32.2
		#60	386.43	372.42	48.2	51.8
		#140	368.83	349.21	20.8	79.2
		#200	316.43	314.77	18.5	81.5

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 18.5
Weight of hydrometer sample =71.60
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0362	4.2	95.8
5.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0231	3.8	96.2
15.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0135	3.3	96.7
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	3.3	96.7
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	3.3	96.7
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	3.3	96.7
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	2.9	97.1

Fractional Components

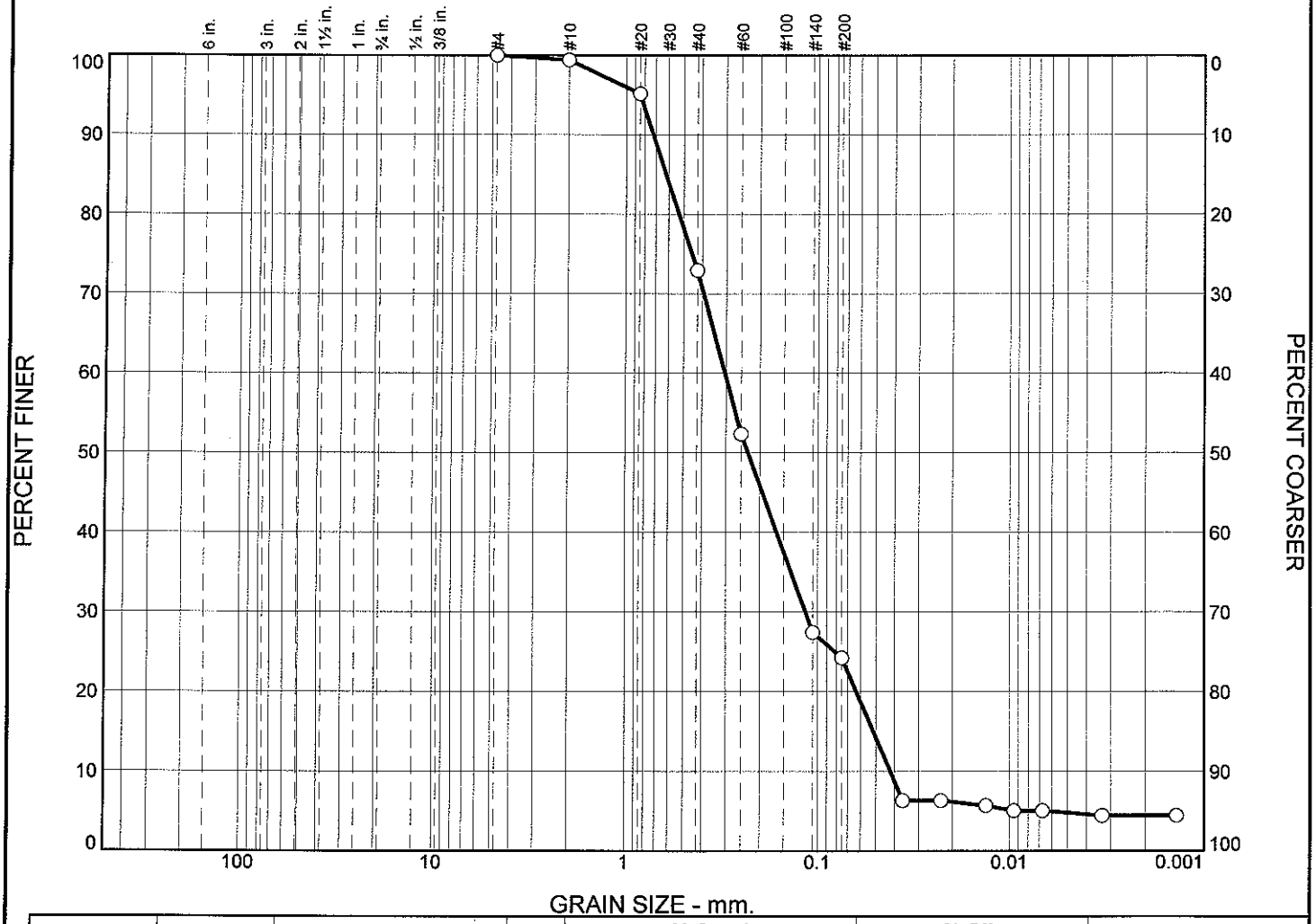
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.4	4.9	18.2	24.8	22.1	11.2	81.2	10.9	0.5	0.2	0.0	11.6	3.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0487	0.0628	0.0941	0.1414	0.2625	0.3443	0.6213	0.7256	0.8474	1.7091

Fineness Modulus	C_u	C_c
1.48	7.07	1.19

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.5	3.4	17.9	25.7	20.2	12.5	13.4	0.4	0.8	0.5	4.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.6193	0.3045	0.2305	0.1157	0.0515	0.0421	1.05	7.24

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507512 **Sample Number:** L0912921-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507512
Sample Number: L0912921-14
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 51.17
Tare Wt. = 4.01
Minus #200 from wash = 23.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
62.00	0.00	#4	514.20	514.20	100.0	0.0
		#10	483.19	482.82	99.4	0.6
		#20	406.61	403.97	95.1	4.9
		#40	390.42	376.65	72.9	27.1
		#60	381.49	368.73	52.4	47.6
		#140	358.07	342.63	27.5	72.5
		#200	330.00	328.00	24.2	75.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 24.2
Weight of hydrometer sample =62.00
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0362	6.3	93.7
5.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0229	6.3	93.7
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	5.7	94.3
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	5.1	94.9
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	5.1	94.9
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	4.4	95.6
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	4.4	95.6

Fractional Components

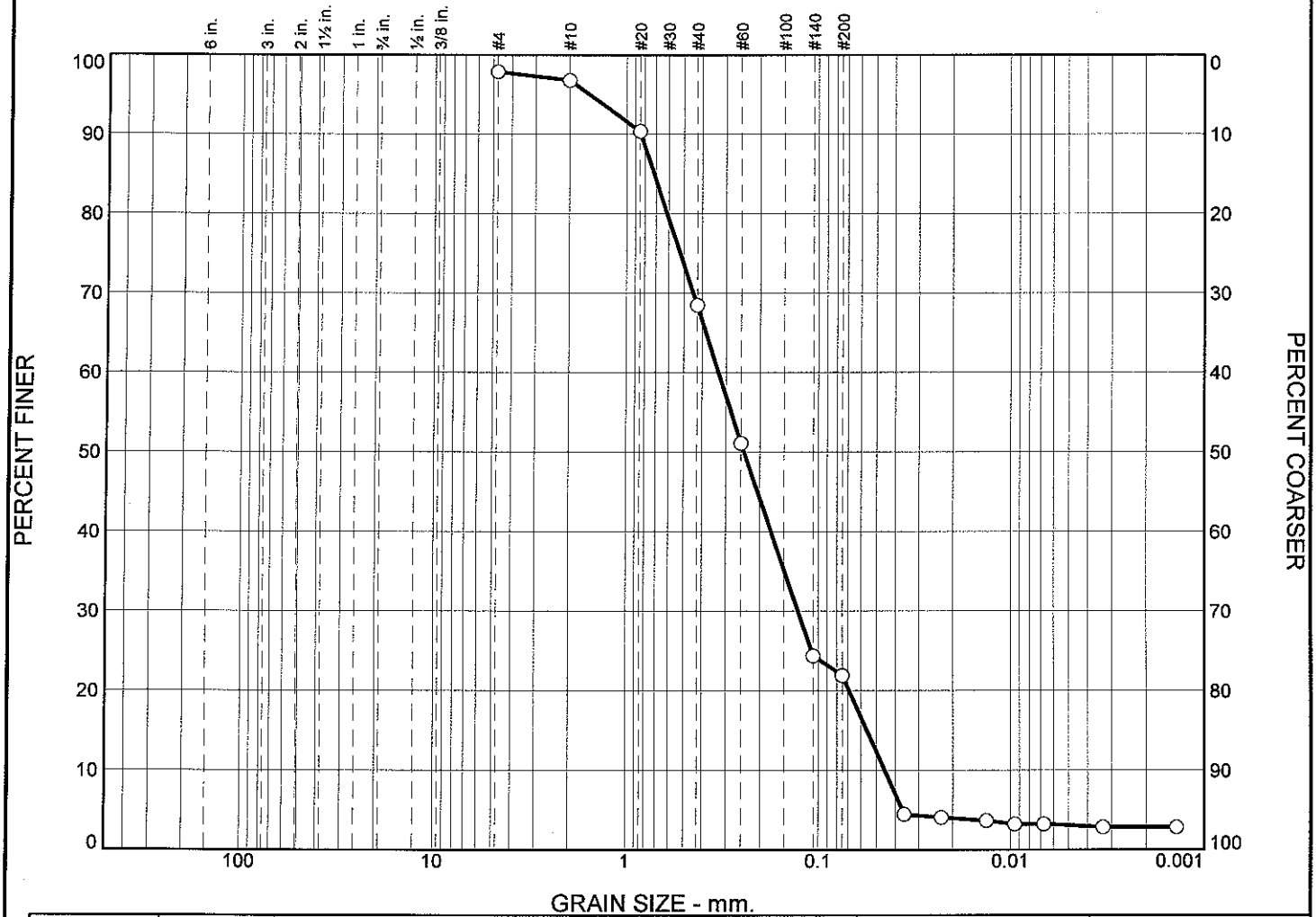
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.5	3.4	17.9	25.7	20.2	12.5	79.7	13.4	0.4	0.8	0.5	15.1	4.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0421	0.0515	0.0632	0.1157	0.2305	0.3045	0.5298	0.6193	0.7239	0.8462

Fineness Modulus	C_u	C_c
1.23	7.24	1.05

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.9	5.2	18.0	22.5	21.6	11.9	13.3	0.5	0.5	0.4	2.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7171	0.3283	0.2415	0.1270	0.0560	0.0454	1.08	7.24

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507513 **Sample Number:** L0912921-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507513
Sample Number: L0912921-15
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 72.68
Tare Wt. = 4.09
Minus #200 from wash = 21.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
87.26	0.00	#4	513.49	511.64	97.9	2.1
		#10	482.54	481.60	96.8	3.2
		#20	412.74	407.13	90.4	9.6
		#40	394.80	375.68	68.5	31.5
		#60	387.59	372.42	51.1	48.9
		#140	372.52	349.21	24.4	75.6
		#200	316.92	314.77	21.9	78.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 21.9
Weight of hydrometer sample =87.26
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0359	4.5	95.5
5.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0229	4.1	95.9
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	3.7	96.3
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	3.3	96.7
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	3.3	96.7
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	2.8	97.2
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	2.8	97.2

Fractional Components

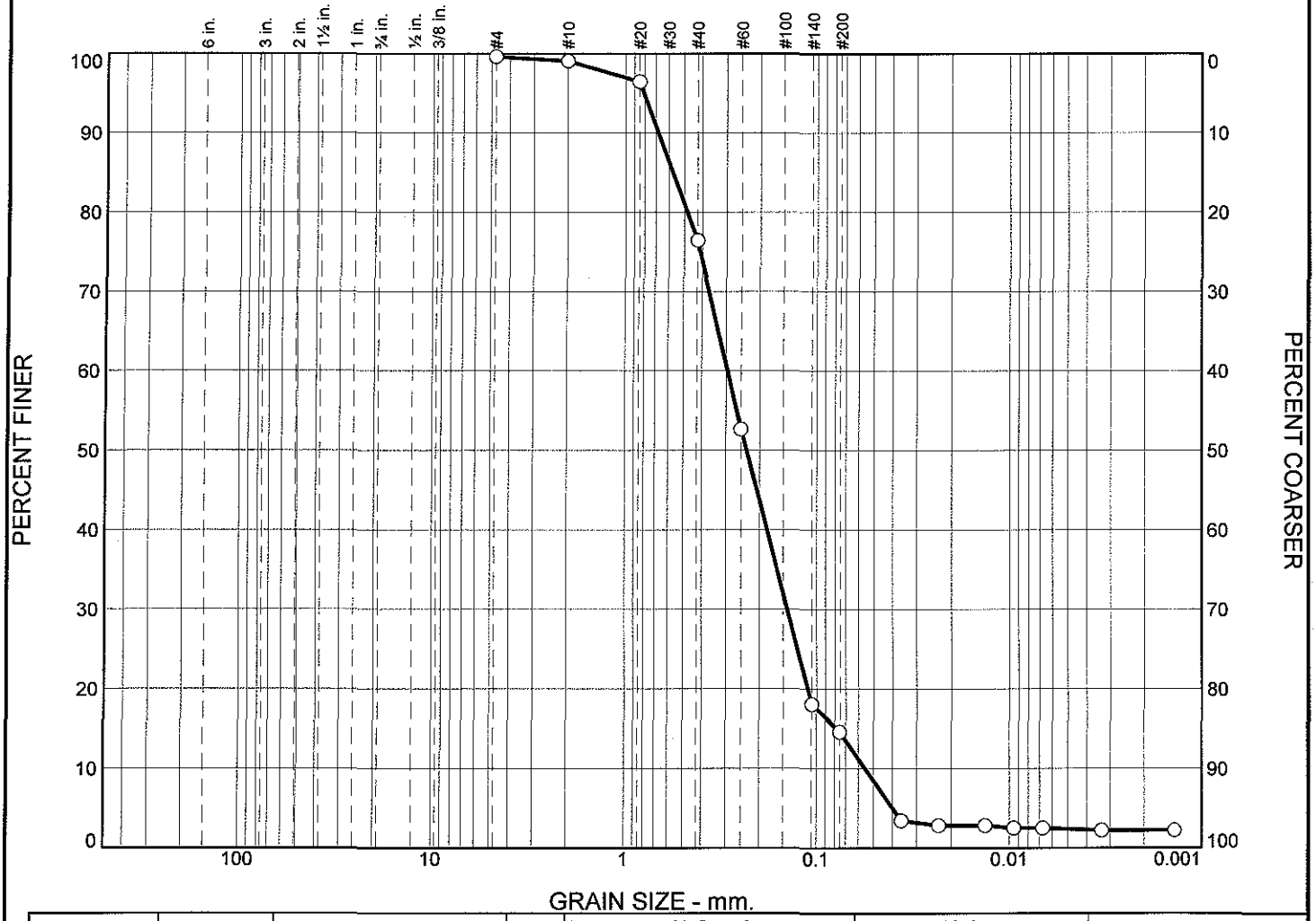
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.9	5.2	18.0	22.5	21.6	11.9	79.2	13.3	0.5	0.5	0.4	14.7	2.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0454	0.0560	0.0692	0.1270	0.2415	0.3283	0.6122	0.7171	0.8400	1.5734

Fineness Modulus	C_u	C_c
1.41	7.24	1.08

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	2.1	15.9	28.5	27.9	12.9	8.5	0.5	0.3	0.2	2.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5715	0.2946	0.2342	0.1425	0.0782	0.0554	1.24	5.32

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507526 **Sample Number:** L0912921-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507526
Sample Number: L0912921-16
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 68.44
Tare Wt. = 4.04
Minus #200 from wash = 14.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
74.91	0.00	#4	514.49	514.20	99.6	0.4
		#10	483.23	482.82	99.1	0.9
		#20	405.92	403.97	96.5	3.5
		#40	391.64	376.65	76.5	23.5
		#60	386.57	368.73	52.6	47.4
		#140	368.51	342.63	18.1	81.9
		#200	330.63	328.00	14.6	85.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 14.6
Weight of hydrometer sample =74.91
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0359	3.5	96.5
5.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0231	2.8	97.2
15.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0133	2.8	97.2
30.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0095	2.5	97.5
60.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0067	2.5	97.5
250.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0033	2.2	97.8
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	2.2	97.8

Fractional Components

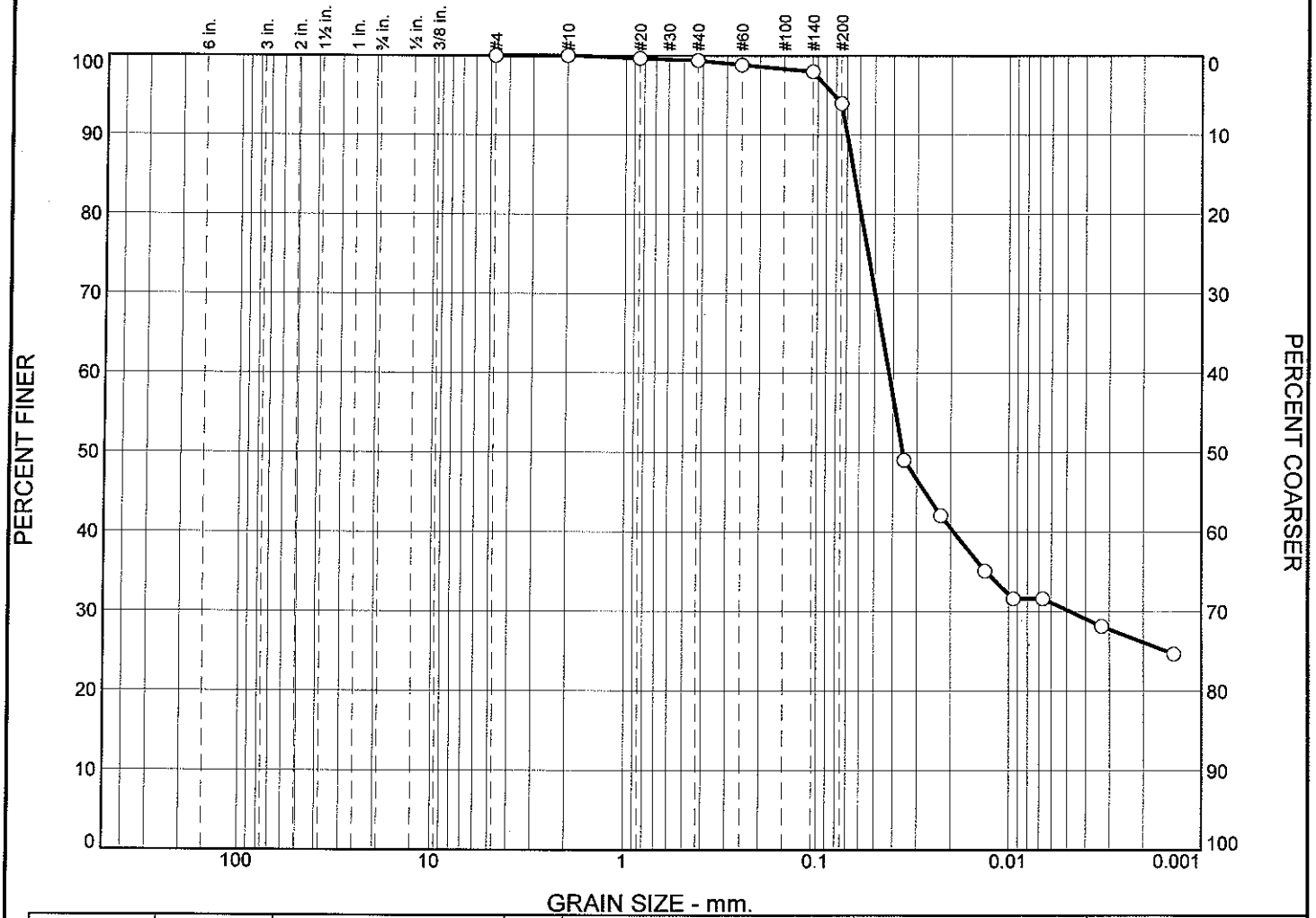
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	2.1	15.9	28.5	27.9	12.9	87.3	8.5	0.5	0.3	0.2	9.5	2.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0554	0.0782	0.1112	0.1425	0.2342	0.2946	0.4806	0.5715	0.6795	0.8080

Fineness Modulus	C_u	C_c
1.24	5.32	1.24

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.3	0.2	0.7	0.6	14.9	36.1	9.9	5.7	2.7	28.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0644	0.0420	0.0354	0.0048				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507611 **Sample Number:** L0912921-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507611
Sample Number: L0912921-17
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 7.18
Tare Wt. = 3.94
Minus #200 from wash = 92.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
43.30	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.60	481.60	100.0	0.0
		#20	407.28	407.13	99.7	0.3
		#40	375.79	375.68	99.4	0.6
		#60	372.67	372.42	98.8	1.2
		#140	349.57	349.21	98.0	2.0
		#200	316.51	314.77	94.0	6.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.0
Weight of hydrometer sample =43.30
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0349	49.0	51.0
5.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0225	42.1	57.9
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	35.1	64.9
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	31.6	68.4
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	31.6	68.4
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	28.1	71.9
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	24.6	75.4

Fractional Components

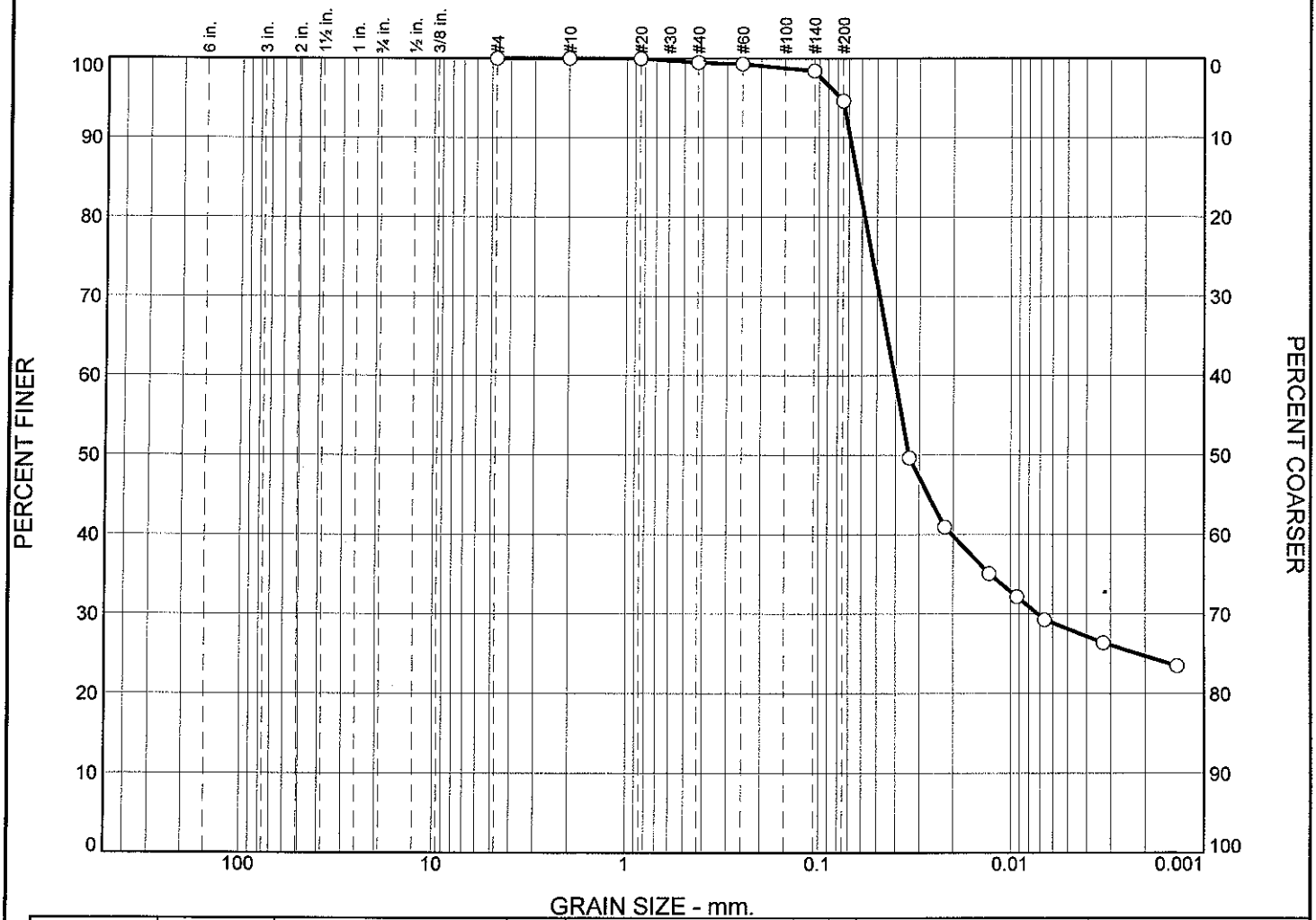
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.3	0.2	0.7	0.6	14.9	16.7	36.1	9.9	5.7	2.7	54.4	28.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0048	0.0354	0.0420	0.0591	0.0644	0.0701	0.0819

Fineness Modulus
0.03

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.7	14.3	36.4	10.8	6.4	3.6	27.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0632	0.0406	0.0340	0.0072				

Material Description	USCS	AASHTO
○		

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507612 **Sample Number:** L0912921-18

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507612
Sample Number: L0912921-18
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 7.53
Tare Wt. = 4.01
Minus #200 from wash = 93.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
52.24	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.00	403.97	99.9	0.1
		#40	376.90	376.65	99.5	0.5
		#60	368.82	368.73	99.3	0.7
		#140	343.09	342.63	98.4	1.6
		#200	329.98	328.00	94.6	5.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 94.6
Weight of hydrometer sample =52.24
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0170	1.0171	0.0135	14.0	12.6	0.0338	49.7	50.3
5.00	21.0	1.0140	1.0141	0.0135	11.0	13.4	0.0221	40.9	59.1
15.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0130	35.1	64.9
30.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0093	32.2	67.8
60.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0066	29.3	70.7
250.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0033	26.4	73.6
1440.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0014	23.5	76.5

Fractional Components

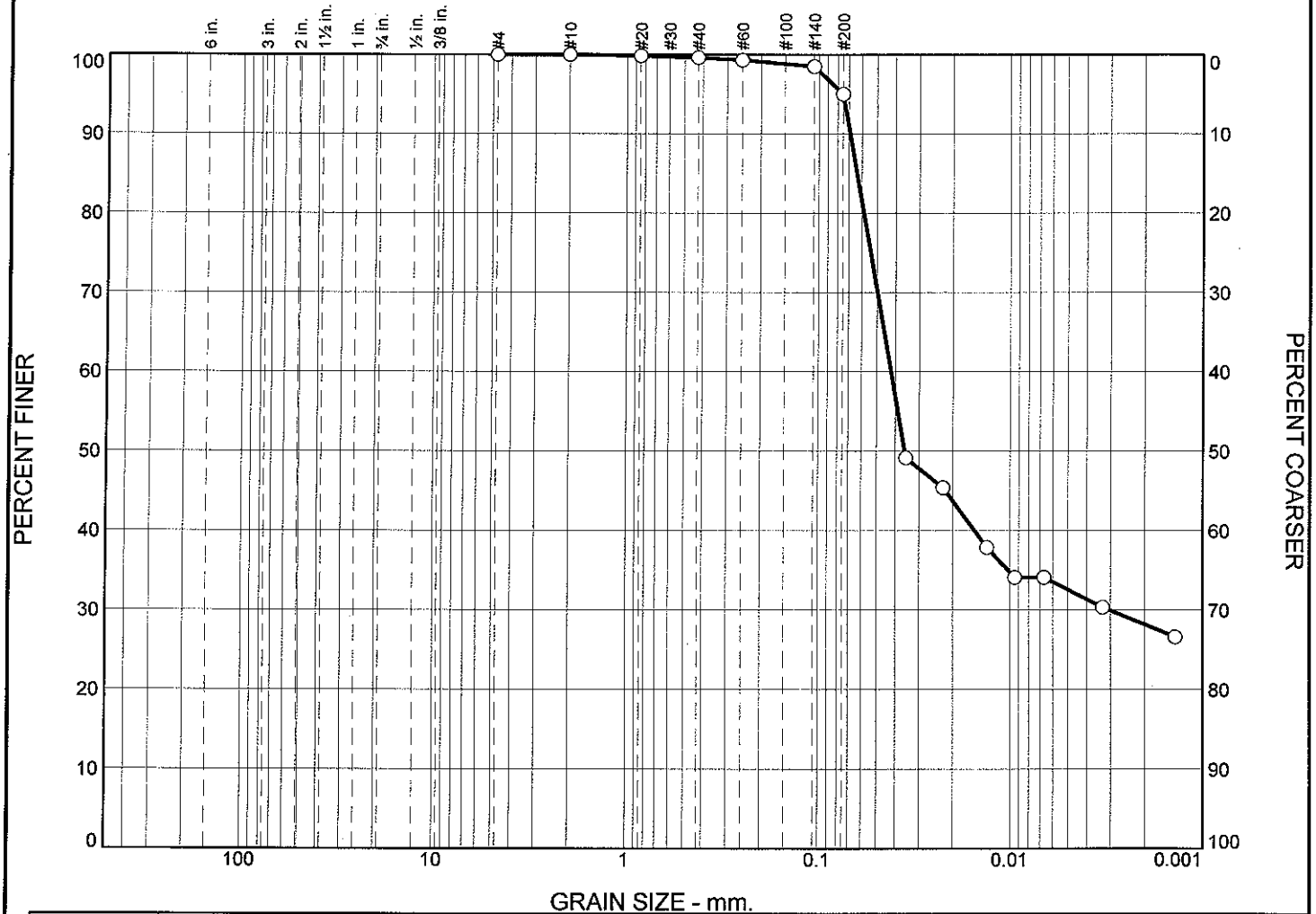
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.7	14.3	15.7	36.4	10.8	6.4	3.6	57.2	27.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0072	0.0340	0.0406	0.0579	0.0632	0.0691	0.0776

Fineness Modulus
0.02

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	14.7	35.9	7.9	6.1	2.9	31.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0636	0.0421	0.0357	0.0030				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507613 **Sample Number:** L0912921-19

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507613
Sample Number: L0912921-19
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 6.63
Tare Wt. = 3.95
Minus #200 from wash = 93.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
40.57	0.00	#4	511.64	511.64	100.0	0.0
		#10	481.60	481.60	100.0	0.0
		#20	407.20	407.13	99.8	0.2
		#40	375.77	375.68	99.6	0.4
		#60	372.54	372.42	99.3	0.7
		#140	349.54	349.21	98.5	1.5
		#200	316.18	314.77	95.0	5.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 95.0
Weight of hydrometer sample =40.57
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0352	49.2	50.8
5.00	21.0	1.0120	1.0121	0.0135	9.0	13.9	0.0225	45.4	54.6
15.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0132	37.9	62.1
30.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0094	34.1	65.9
60.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0067	34.1	65.9
250.00	21.0	1.0080	1.0081	0.0135	5.0	15.0	0.0033	30.3	69.7
1440.00	21.0	1.0070	1.0071	0.0135	4.0	15.2	0.0014	26.6	73.4

Fractional Components

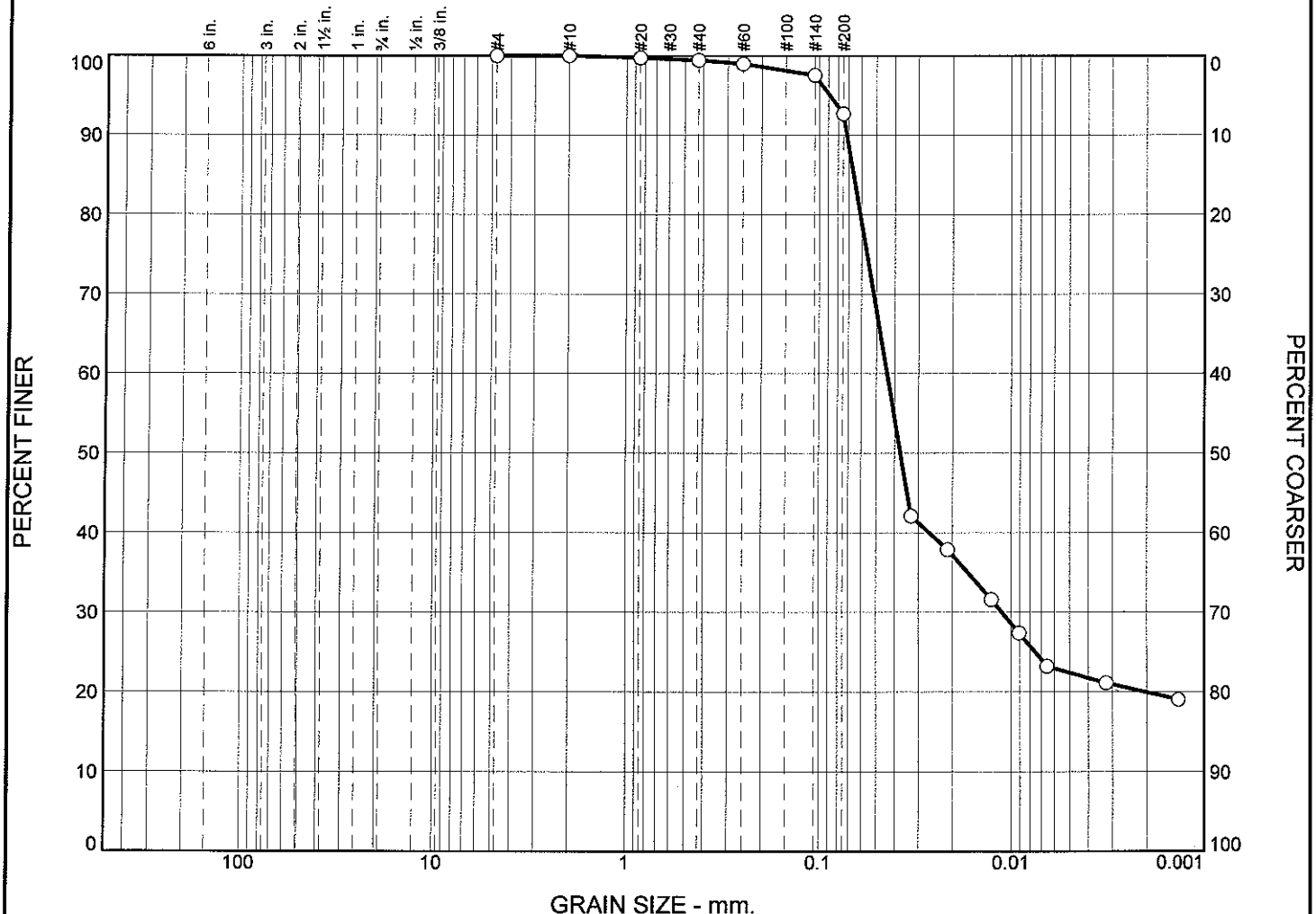
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	14.7	16.0	35.9	7.9	6.1	2.9	52.8	31.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0030	0.0357	0.0421	0.0585	0.0636	0.0690	0.0750

Fineness Modulus
0.02

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.0	0.0	0.2	0.3	0.5	1.2	16.2	40.0	7.4	8.8	3.7	21.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0661	0.0439	0.0373	0.0111				

	Material Description	USCS	AASHTO
○			

Project No. L0912921 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507626 **Sample Number:** L0912921-20

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912921
Location: 507626
Sample Number: L0912921-20
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 10.69
Tare Wt. = 4.01
Minus #200 from wash = 90.6%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
70.98	0.00	#4	514.20	514.20	100.0	0.0
		#10	482.82	482.82	100.0	0.0
		#20	404.15	403.97	99.7	0.3
		#40	376.87	376.65	99.4	0.6
		#60	369.05	368.73	99.0	1.0
		#140	343.65	342.63	97.5	2.5
		#200	331.44	328.00	92.7	7.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 92.7
Weight of hydrometer sample =70.98
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	21.0	1.0200	1.0201	0.0135	17.0	11.8	0.0327	42.1	57.9
5.00	21.0	1.0180	1.0181	0.0135	15.0	12.3	0.0212	37.9	62.1
15.00	21.0	1.0150	1.0151	0.0135	12.0	13.1	0.0126	31.6	68.4
30.00	21.0	1.0130	1.0131	0.0135	10.0	13.6	0.0091	27.4	72.6
60.00	21.0	1.0110	1.0111	0.0135	8.0	14.2	0.0066	23.2	76.8
250.00	21.0	1.0100	1.0101	0.0135	7.0	14.4	0.0032	21.1	78.9
1440.00	21.0	1.0090	1.0091	0.0135	6.0	14.7	0.0014	19.0	81.0

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.0	0.0	0.2	0.3	0.5	1.2	16.2	18.4	40.0	7.4	8.8	3.7	59.9	21.7

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0020	0.0111	0.0373	0.0439	0.0609	0.0661	0.0718	0.0884

Fineness Modulus
0.03

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

Station 338

CHAIN OF CUSTODY

PAGE 9 OF 12

Date Rec'd in Lab:

ALPHA Job #: L0912921

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

1015:40

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info

PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
1	507211	9/23/09	16:00	SE	JB	☐	☐	☒	☐	ben gs	1
2	507212	9/23/09	16:35	SE	JB	☐	☐	☒	☐	ben gs	1
3	507213	9/23/09	16:45	SE	JB	☐	☐	☒	☐	ben gs	1
	507225	9/23/09	16:25	SE	JB	☒	☒	☐	☐	sed chem	1
4	507226	9/23/09	16:25	SE	JB	☐	☐	☒	☐	sed gs	1
	507227	9/23/09	16:25	SE	JB	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/23/09 [illegible]	Kathe McCaw	9/23/09
Kathe McCaw	9/24/09 9:00	Paul Gilbert	9/24/09 9:20
Paul Gilbert	9/24/09 11:00	[illegible]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

Station 339

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912921

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
5	507311	9-23-09	17:20	SE	JB	☐	☐	☒	☐	ben gs	1
6	507312	9/23/09	17:41	SE	JB	☐	☐	☒	☐	ben gs	1
7	507313	9/23/09	17:50	SE	JB	☐	☐	☒	☐	ben gs	1
	507325	9/23/09	17:30	SE	JB	☒	☒	☐	☐	sed chem	1
8	507326	9/23/09	17:30	SE	JB	☐	☐	☒	☐	sed gs	1
	507327	9/23/09	17:30	SE	JB	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyle	9/23/09	Ralph McCann	9/23/09 19:37
Ralph McCann	9/24/09 9:00	Paul Gilbert	9/24/09 9:30
Paul Gilbert	9/24/09 11:00	[illegible]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 340

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912921

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
9	507411	9/23/09	13:55	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
10	507412	9/23/09	14:35	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
11	507413	9/23/09	14:45	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507425	9/23/09	14:23	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
12	507426	9/23/09	14:23	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	507427	9/23/09	14:23	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	G	G	G	-	-	-	-	-	-	-	-	-
Preservative	A	A	A	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyd	9/23/09 1937	Kathy McCann	9/23/09
Kathy McCann	9/24/09 9:30	Paul Gilbert	9/24/09 9:30
Paul Gilbert	9/24/09 11:00	[illegible]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

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CHAIN OF CUSTODY

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Date Rec'd in Lab:

ALPHA Job #: L0912921

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed

Criteria:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
13	507511	9/23/09	11:40	SE	JB	☐	☐	☒	☐	ben gs	1
14	507512	9/23/09	12:00	SE	JB	☐	☐	☒	☐	ben gs	1
15	507513	9/23/09	12:12	SE	JB	☐	☐	☒	☐	ben gs	1
	507525	9/23/09	11:50	SE	JB	☒	☒	☐	☐	sed chem	1
16	507526	9/23/09	11:50	SE	JB	☐	☐	☒	☐	sed gs	1
	507527	9/23/09	11:50	SE	JB	☐	☐	☐	☒	sed arch	1

	total PCB congeners NOAA 18	TOC	grain size	archive
Container Type	G	G	G	-
Preservative	A	A	A	-

Relinquished By:	Date/Time	Received By:	Date/Time
James Bergh	9/23/09 9:3?	Kellyn McCain	9/23/09
Kellyn McCain	9/24/09 9:00	Paul Gilbert	9/24/09 9:30
Paul Gilbert	9/24/09 11:00	[illegible]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

Station 345

CHAIN OF CHSTODY

PAGE 2 OF 12

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L0912921

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:

Level III data report and project specific EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive	Sample Specific Comments	TOTAL # BOTTLES
17	507611	9/23/09	9:45	SE	JB	☐	☐	☒	☐	ben gs	1
18	507612	9/23/09	10:20	SE	JB	☐	☐	☒	☐	ben gs	1
19	507613	9/23/09	10:41	SE	JB	☐	☐	☒	☐	ben gs	1
	507625	9/23/09	10:05	SE	JB	☒	☒	☐	☐	sed chem	1
20	507626	9/23/09	10:05	SE	JB	☐	☐	☒	☐	sed gs	1
	507627	9/23/09	10:05	SE	JB	☐	☐	☐	☒	sed arch	1
Container Type						G	G	G	-		
Preservative						A	A	A	-		

Relinquished By:	Date/Time	Received By:	Date/Time
Johannes Boyd	9/23/09 23?	Kaitlyn McCann	9/23/09
Kaitlyn McCann	9/24/09 9:20	Paul Gilbert	9/24/09 9:20
Paul Gilbert	9/24/09 11:00	[illegible]	9/24/09 1100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 29-APR-09)

ANALYTICAL REPORT

Lab Number:	L0912922
Client:	Woods Hole Group 81 Technology Park Drive East Falmouth, MA 02536
ATTN:	Lee Weishar
Project Name:	NBH LONG TERM MONITORING
Project Number:	TO-0018
Report Date:	02/02/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912922
Report Date: 02/02/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912922-01	507711	NEW BEDFORD, MA	09/22/09 15:50
L0912922-02	507712	NEW BEDFORD, MA	09/22/09 16:20
L0912922-03	507713	NEW BEDFORD, MA	09/22/09 16:28
L0912922-04	507726	NEW BEDFORD, MA	09/22/09 16:05
L0912922-05	507811	NEW BEDFORD, MA	09/22/09 13:18
L0912922-06	507812	NEW BEDFORD, MA	09/22/09 13:56
L0912922-07	507813	NEW BEDFORD, MA	09/22/09 14:25
L0912922-08	507826	NEW BEDFORD, MA	09/22/09 13:40
L0912922-09	507911	NEW BEDFORD, MA	09/22/09 09:50
L0912922-10	507912	NEW BEDFORD, MA	09/22/09 10:59
L0912922-12	507926	NEW BEDFORD, MA	09/22/09 10:10

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912922
Project Number:	TO-0018	**Report Date:**	02/02/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This report replaces the original report issued on October 15, 2009. The report was ammended to include revised Grain Size data.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Peter Newell

Title: Technical Director/Representative Date: 02/02/10

INORGANICS
&
MISCELLANEOUS

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-01
Client ID: 507711
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 15:50
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.300		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	48.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	7.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-02
Client ID: 507712
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 16:20
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	4.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	17.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	1.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	62.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-03
Client ID: 507713
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 16:28
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.600		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	0.800		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	27.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	45.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	14.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-04
Client ID: 507726
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 16:05
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	1.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	24.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	51.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	15.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	4.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-05
Client ID: 507811
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 13:18
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	1.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	6.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	10.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	12.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	27.8		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	27.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	6.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-06
Client ID: 507812
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 13:56
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.400		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	3.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	5.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	6.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	9.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	31.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	34.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	8.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-07
Client ID: 507813
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 14:25
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	3.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	5.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	8.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	10.7		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	30.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	26.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-08
Client ID: 507826
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 13:40
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	0.200		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	1.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	6.10		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	30.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	30.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	7.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-09
Client ID: 507911
Sample Location: NEW BEDFORD, MA
Matrix: Sediment

Date Collected: 09/22/09 09:50
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	5.20		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	9.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	14.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	25.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	11.3		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-10
Client ID: 507912
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 10:59
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	2.40		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	23.6		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	23.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	23.4		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	7.70		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	6.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	6.00		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	1.30		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018
Lab Number: L0912922
Report Date: 02/02/10

SAMPLE RESULTS

Lab ID: L0912922-12
Client ID: 507926
Sample Location: NEW BEDFORD, MA
Matrix: Sediment
Date Collected: 09/22/09 10:10
Date Received: 09/23/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size (Wentworth Method) - Mansfield Lab									
Gravel (>2.00mm)	10.9		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Coarse Sand (1.00-2.00 mm)	15.2		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Coarse Sand (0.50-1.00 mm)	20.0		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Medium Sand (0.25-0.50 mm)	16.1		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Fine Sand (0.125-0.25 mm)	4.90		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Very Fine Sand (0.063-0.125 mm)	5.60		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Silt - (1.95-62.5 um)	9.80		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE
Clay - (<1.95 um)	2.50		%	0.100	1	-	09/30/09 00:00	12,D422(M)	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912922
Report Date: 02/02/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size (Wentworth Method) - Mansfield Lab Associated sample(s): 01-10,12 QC Batch ID: WG382314-1 QC Sample: L0912922-08 Client ID: 507826						
Gravel (>2.00mm)	0.2	1.30	%	**147**	Q	20
Very Coarse Sand (1.00-2.00 mm)	1.8	2.20	%	20		20
Coarse Sand (0.50-1.00 mm)	6.1	3.80	%	**46**	Q	20
Medium Sand (0.25-0.50 mm)	16.2	7.90	%	**69**	Q	20
Fine Sand (0.125-0.25 mm)	7.7	13.5	%	**55**	Q	20
Very Fine Sand (0.063-0.125 mm)	30.0	37.5	%	**22**	Q	20
Silt - (1.95-62.5 um)	30.9	26.7	%	15		20
Clay - (<1.95 um)	7.0	6.60	%	6		20

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912922
Report Date: 02/02/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912922-01A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-02A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-03A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-04A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-05A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-06A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-07A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-08A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-08B	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-DUP()

*Hold days indicated by values in parentheses

Project Name: NBH LONG TERM MONITORING
Project Number: TO-0018

Lab Number: L0912922
Report Date: 02/02/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912922-09A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-10A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)
L0912922-12A	Glass 250ml unpreserved	A	N/A	3.1	Y	Absent	A2-HYDROMETER(),A2-SIEVE_#10(7),A2-SIEVE_#140(7),A2-SIEVE_#60(7),A2-SIEVE_#4(7),A2-SIEVE_#40(7),A2-SIEVE_#20(7),A2-SIEVE_#200(7)

*Hold days indicated by values in parentheses

Project Name:	NBH LONG TERM MONITORING	**Lab Number:**	L0912922
Project Number:	TO-0018	**Report Date:**	02/02/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

ND · Not detected at the reported detection limit for the sample.

NI · Not Ignitable.

RDL · Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A · Spectra identified as "Aldol Condensation Product".

B · The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D · Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E · Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H · The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

P · The RPD between the results for the two columns exceeds the method-specified criteria.

Q · The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)

R · Analytical results are from sample re-analysis.

RE · Analytical results are from sample re-extraction.

J · Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. American Society for Testing and Materials.

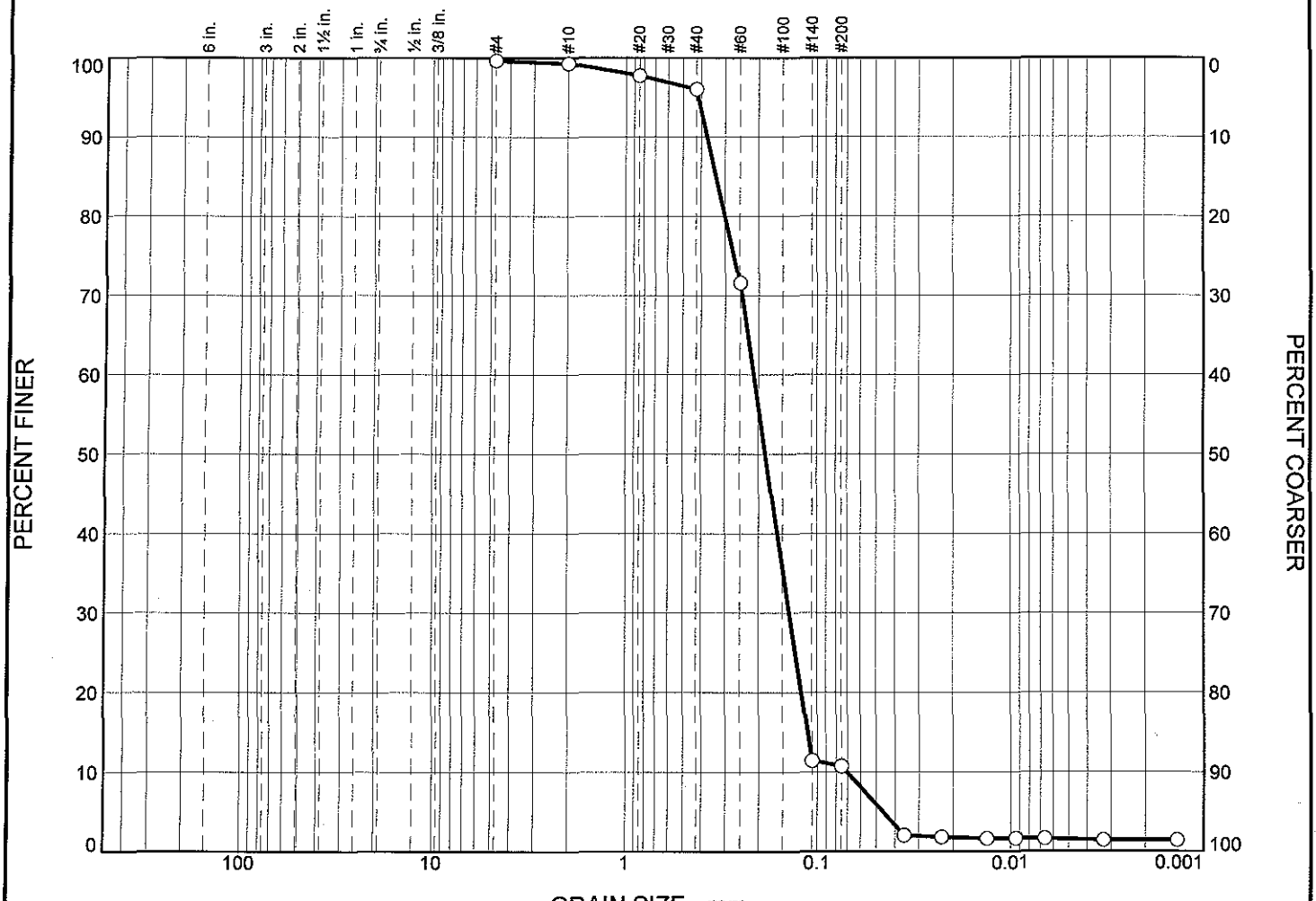
LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Wet Sieve Hydrometer
ASTM D422

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.3	1.3	1.6	24.8	48.6	14.4	6.6	0.3	0.1	0.1	1.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3345	0.2120	0.1838	0.1382	0.1116	0.0706	1.28	3.00

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507711 **Sample Number:** L0912922-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

2/1/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507711
Sample Number: L0912922-01

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 82.94
Tare Wt. = 4.37
Minus #200 from wash = 9.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
86.36	0.00	#4	522.09	521.80	99.7	0.3
		#10	485.12	484.81	99.3	0.7
		#20	406.76	405.42	97.8	2.2
		#40	367.05	365.57	96.0	4.0
		#60	387.29	366.16	71.6	28.4
		#140	394.82	342.86	11.4	88.6
		#200	345.92	345.32	10.7	89.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 10.7
Weight of hydrometer sample =86.36
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	2.0	98.0
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	1.8	98.2
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.6	98.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.6	98.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	1.6	98.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	1.4	98.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.4	98.6

Fractional Components

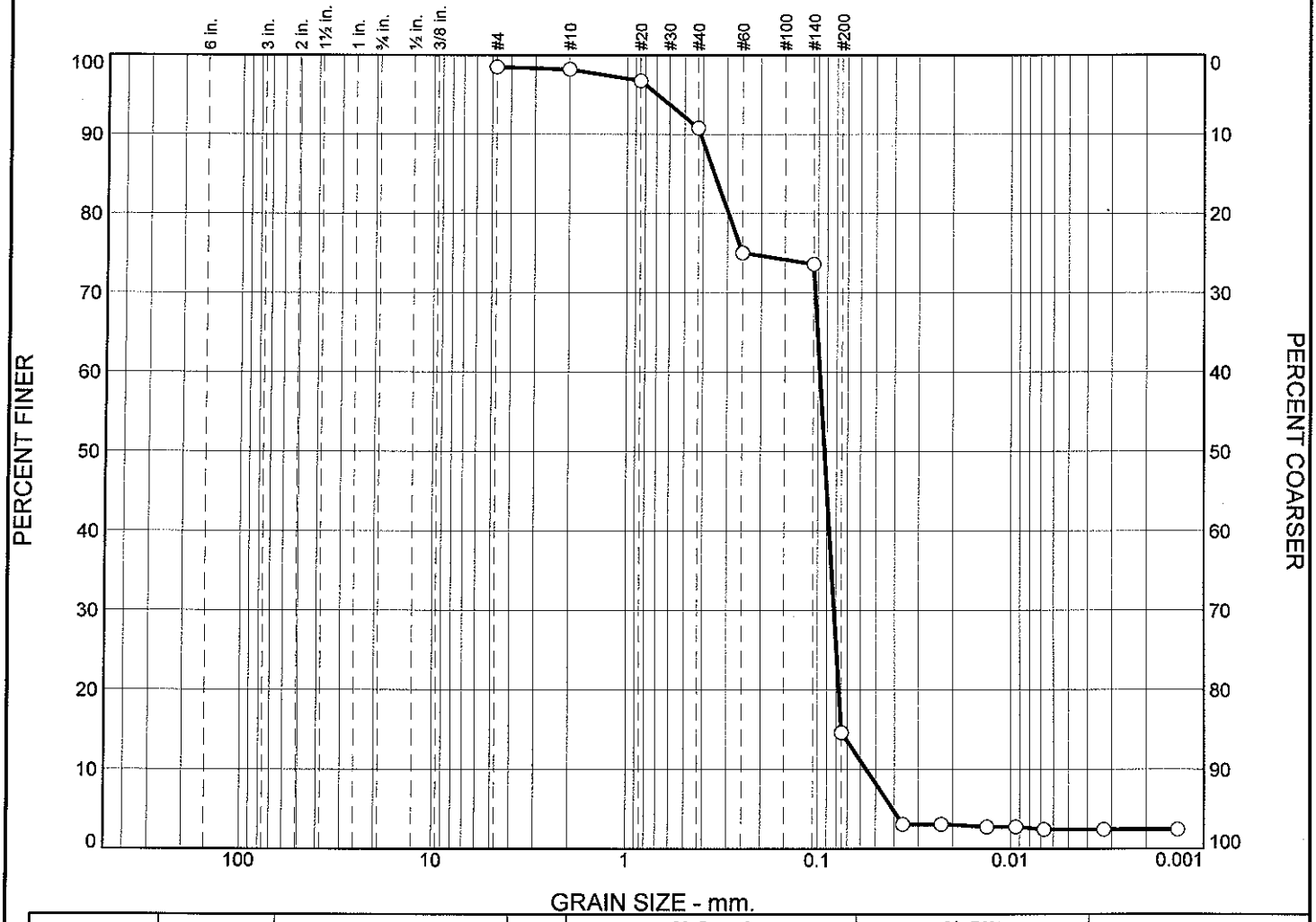
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.3	1.3	1.6	24.8	48.6	14.4	90.7	6.6	0.3	0.1	0.1	7.1	1.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0706	0.1116	0.1198	0.1382	0.1838	0.2120	0.3001	0.3345	0.3728	0.4155

Fineness Modulus	C_u	C_c
0.90	3.00	1.28

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	1.2	4.8	17.2	1.1	62.1	8.7	0.2	0.3	0.2	2.4

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3496	0.0979	0.0923	0.0821	0.0752	0.0559	1.23	1.75

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507712 **Sample Number:** L0912922-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507712
Sample Number: L0912922-02
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 66.53
Tare Wt. = 4.33
Minus #200 from wash = 10.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
69.75	0.00	#4	521.99	520.94	98.5	1.5
		#10	482.36	482.15	98.2	1.8
		#20	412.08	411.08	96.8	3.2
		#40	382.40	378.24	90.8	9.2
		#60	380.85	369.86	75.0	25.0
		#140	348.21	347.22	73.6	26.4
		#200	387.70	346.56	14.6	85.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 14.6
Weight of hydrometer sample =69.75
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	3.1	96.9
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	3.1	96.9
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	2.8	97.2
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	2.8	97.2
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	2.4	97.6
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.4	97.6
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.4	97.6

Fractional Components

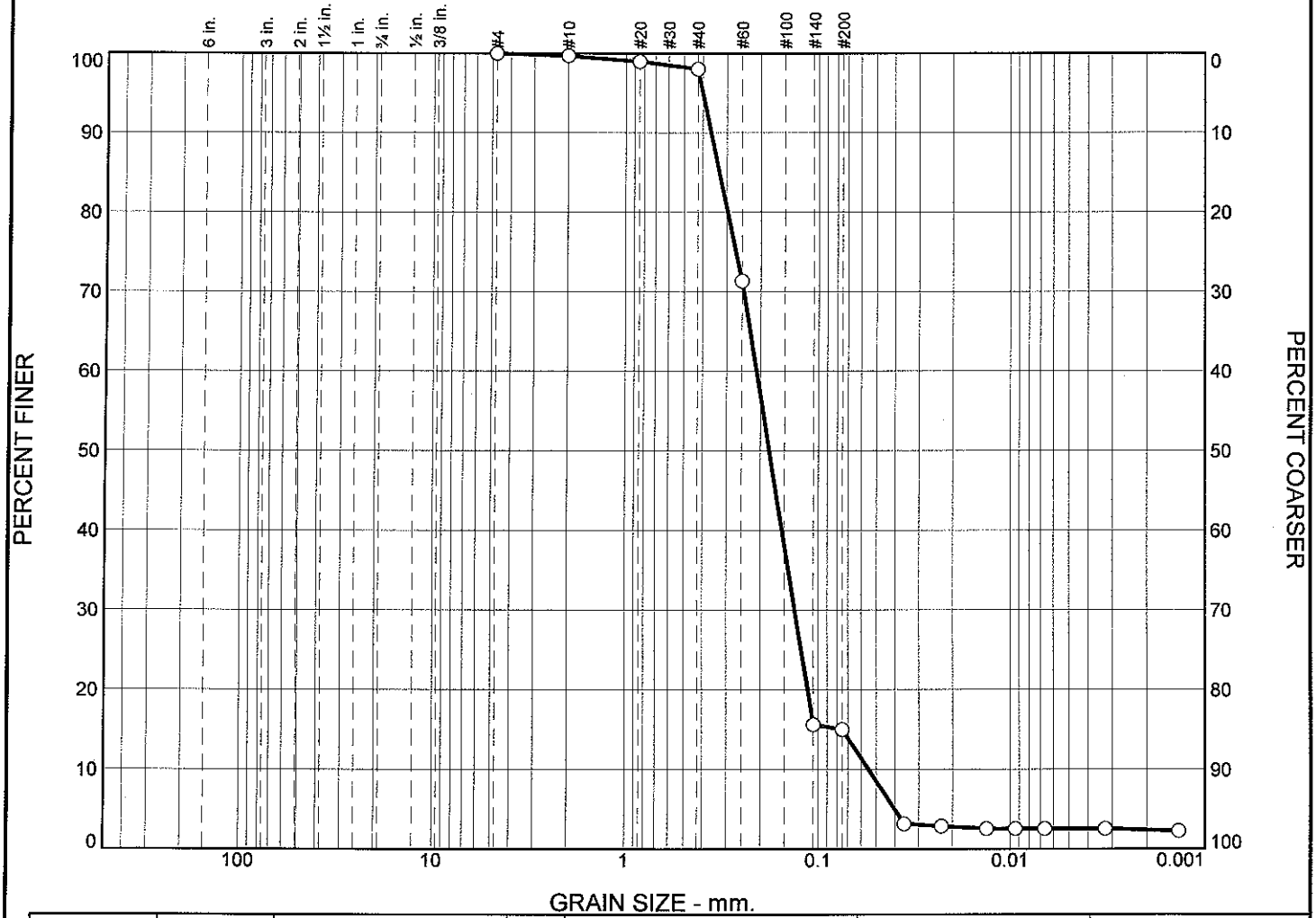
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	1.2	4.8	17.2	1.1	62.1	86.4	8.7	0.2	0.3	0.2	9.4	2.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0559	0.0752	0.0774	0.0821	0.0923	0.0979	0.2955	0.3496	0.4138	0.6928

Fineness Modulus	C_u	C_c
0.58	1.75	1.23

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.2	0.6	0.8	27.0	45.0	14.2	9.0	0.4	0.1		2.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3281	0.2100	0.1800	0.1323	0.0757	0.0549	1.52	3.83

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507713 **Sample Number:** L0912922-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507713
Sample Number: L0912922-03
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 76.46
Tare Wt. = 4.40
Minus #200 from wash = 6.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
77.22	0.00	#4	521.81	521.80	100.0	0.0
		#10	485.07	484.84	99.7	0.3
		#20	405.97	405.42	99.0	1.0
		#40	366.34	365.61	98.0	2.0
		#60	386.79	366.16	71.3	28.7
		#140	385.87	342.86	15.6	84.4
		#200	345.86	345.37	15.0	85.0

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 15.0
Weight of hydrometer sample =77.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0358	3.2	96.8
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	2.9	97.1
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	2.6	97.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	2.6	97.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	2.6	97.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	2.6	97.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.2	97.8

Fractional Components

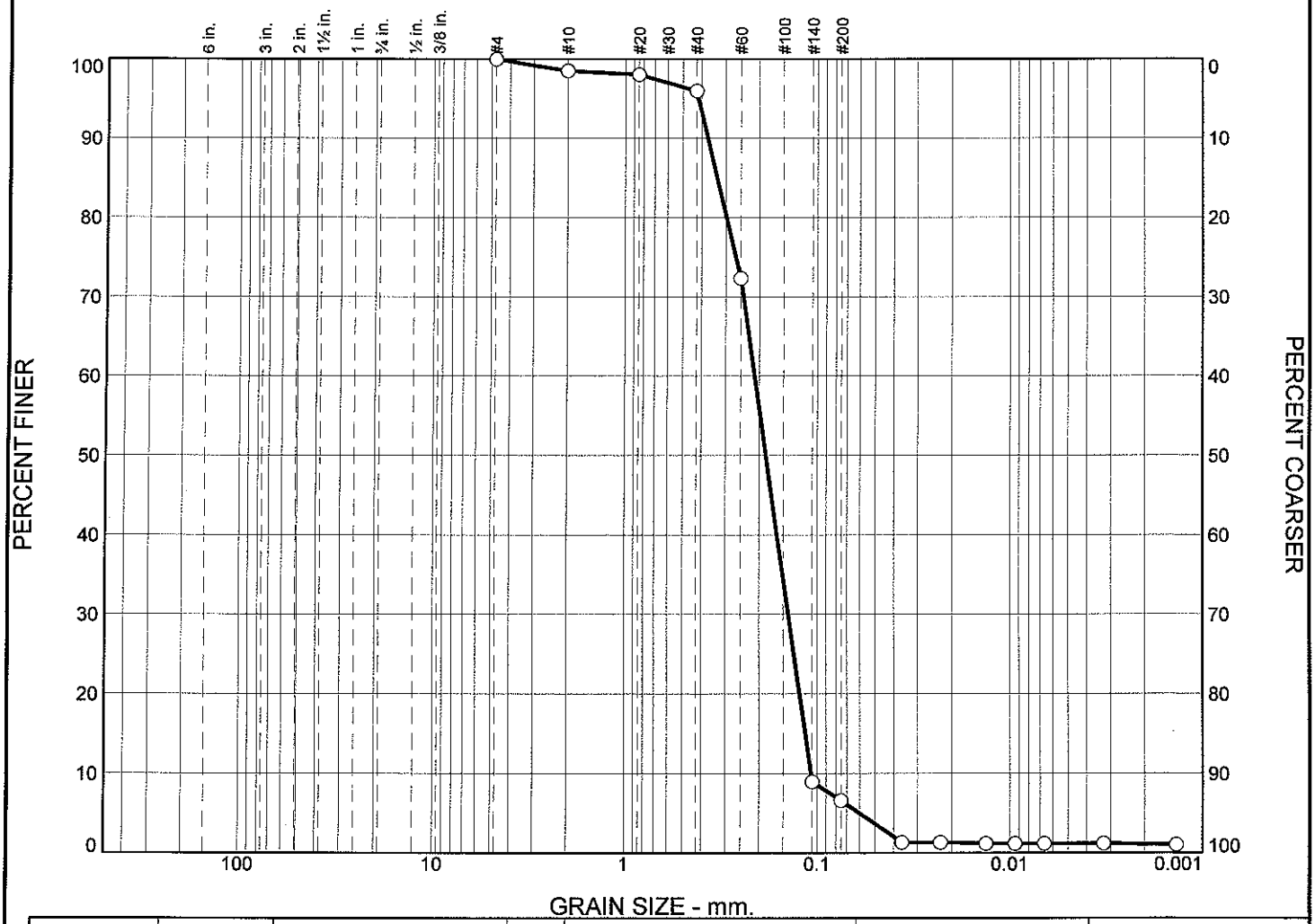
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.2	0.6	0.8	27.0	45.0	14.2	87.6	9.0	0.4	0.1		9.5	2.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0549	0.0757	0.1134	0.1323	0.1800	0.2100	0.2971	0.3281	0.3623	0.4002

Fineness Modulus	C_u	C_c
0.84	3.83	1.52

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.2	0.4	1.7	24.1	51.2	15.8	4.0	0.1	0.0	0.0	1.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3324	0.2116	0.1848	0.1410	0.1151	0.1075	0.87	1.97

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507726 **Sample Number:** L0912922-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507726
Sample Number: L0912922-04
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 71.23
Tare Wt. = 4.40
Minus #200 from wash = 8.8%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
73.24	0.00	#4	521.01	520.98	100.0	0.0
		#10	483.26	482.19	98.5	1.5
		#20	411.42	411.08	98.0	2.0
		#40	379.71	378.19	96.0	4.0
		#60	387.18	369.86	72.3	27.7
		#140	393.64	347.22	8.9	91.1
		#200	347.32	345.59	6.6	93.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 6.6
Weight of hydrometer sample =73.24
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	1.3	98.7
5.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0228	1.3	98.7
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	1.2	98.8
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.2	98.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	1.2	98.8
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	1.2	98.8
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.0	99.0

Fractional Components

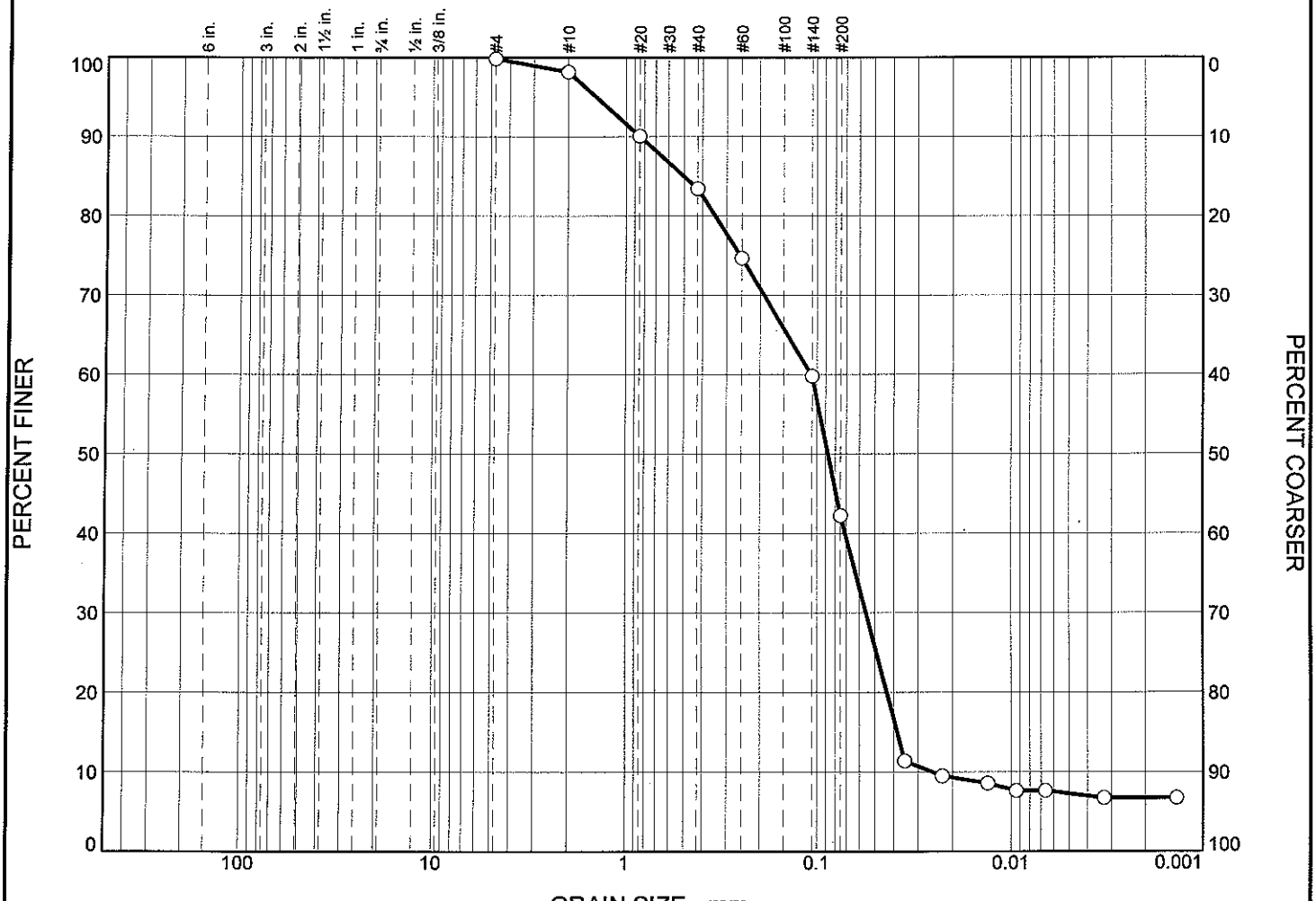
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.2	0.4	1.7	24.1	51.2	15.8	93.2	4.0	0.1	0.0	0.0	4.1	1.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.1075	0.1151	0.1231	0.1410	0.1848	0.2116	0.2971	0.3324	0.3718	0.4160

Fineness Modulus	C_u	C_c
0.91	1.97	0.87

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.3	6.6	6.6	10.3	12.1	27.8	24.0	1.9	1.3	0.7	6.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4996	0.1074	0.0874	0.0555	0.0384	0.0255	1.13	4.21

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507811 **Sample Number:** L0912922-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507811
Sample Number: L0912922-05
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 56.90
Tare Wt. = 4.60
Minus #200 from wash = 28.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
72.97	0.00	#4	521.92	521.81	99.8	0.2
		#10	486.06	484.84	98.2	1.8
		#20	411.34	405.42	90.1	9.9
		#40	370.04	365.22	83.5	16.5
		#60	372.58	366.16	74.7	25.3
		#140	353.72	342.86	59.8	40.2
		#200	358.24	345.44	42.2	57.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 42.2
Weight of hydrometer sample =72.97
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	11.4	88.6
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	9.5	90.5
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	8.6	91.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	7.6	92.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	7.6	92.4
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.7	93.3
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.7	93.3

Fractional Components

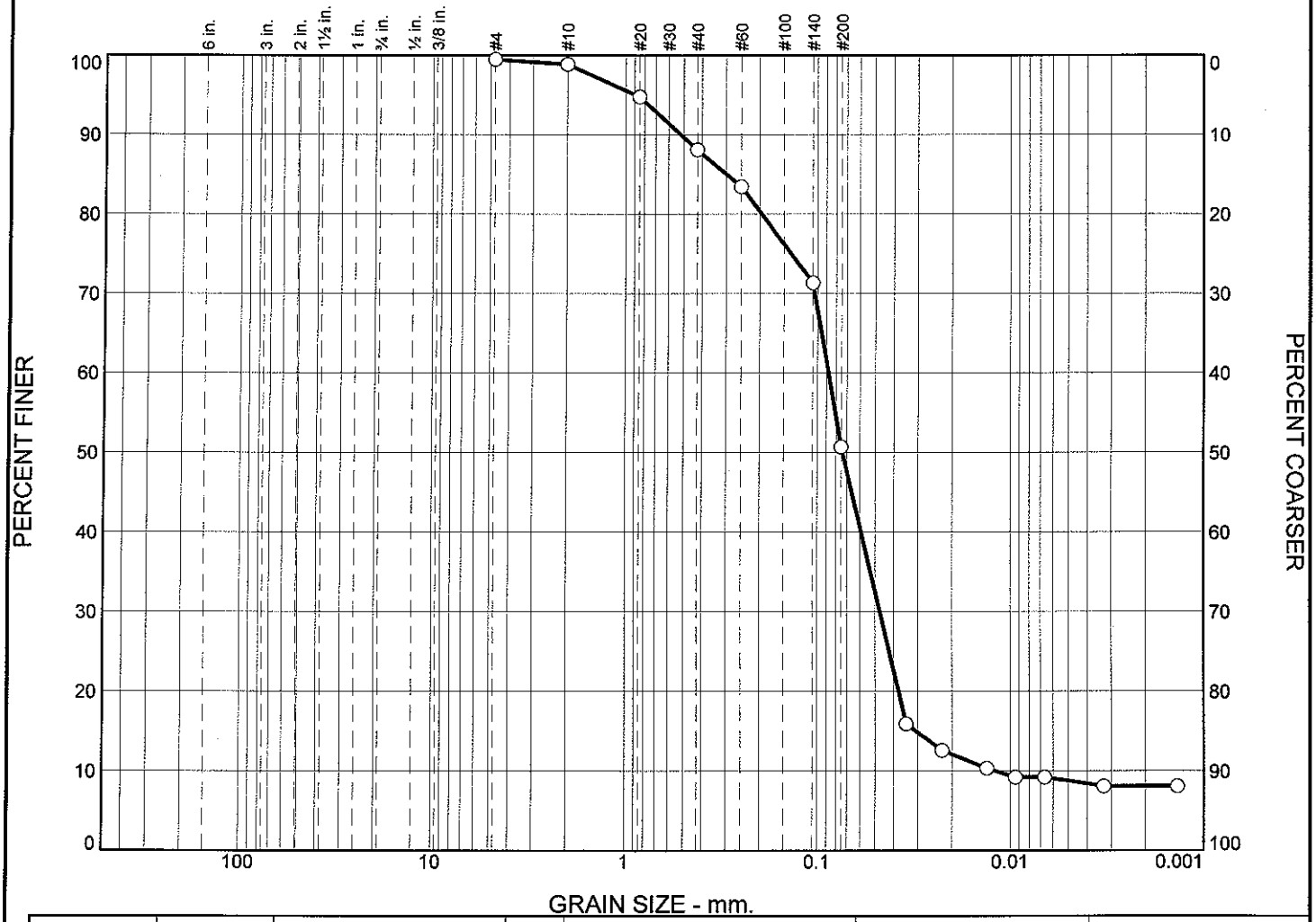
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.3	6.6	6.6	10.3	12.1	27.8	63.4	24.0	1.9	1.3	0.7	27.9	6.9

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0255	0.0384	0.0434	0.0555	0.0874	0.1074	0.3450	0.4996	0.8443	1.4305

Fineness Modulus	C_u	C_c
0.78	4.21	1.13

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				0.4	3.4	5.9	6.1	9.8	31.2	27.4	4.1	1.8	0.9	8.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2984	0.0877	0.0739	0.0472	0.0306	0.0120	2.12	7.31

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507812 **Sample Number:** L0912922-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507812
Sample Number: L0912922-06
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare** = 44.28
Tare Wt. = 4.50
Minus #200 from wash = 45.5%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
72.98	0.00	#4	521.26	520.87	99.5	0.5
		#10	482.56	482.12	98.9	1.1
		#20	414.08	411.08	94.8	5.2
		#40	382.92	378.05	88.1	11.9
		#60	373.23	369.86	83.5	16.5
		#140	356.08	347.22	71.3	28.7
		#200	361.64	346.57	50.7	49.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 50.7
Weight of hydrometer sample =72.68
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x** Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0140	1.0142	0.0133	11.0	13.4	0.0344	15.9	84.1
5.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0224	12.6	87.4
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	10.3	89.7
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	9.2	90.8
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	9.2	90.8
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	8.1	91.9
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	8.1	91.9

Fractional Components

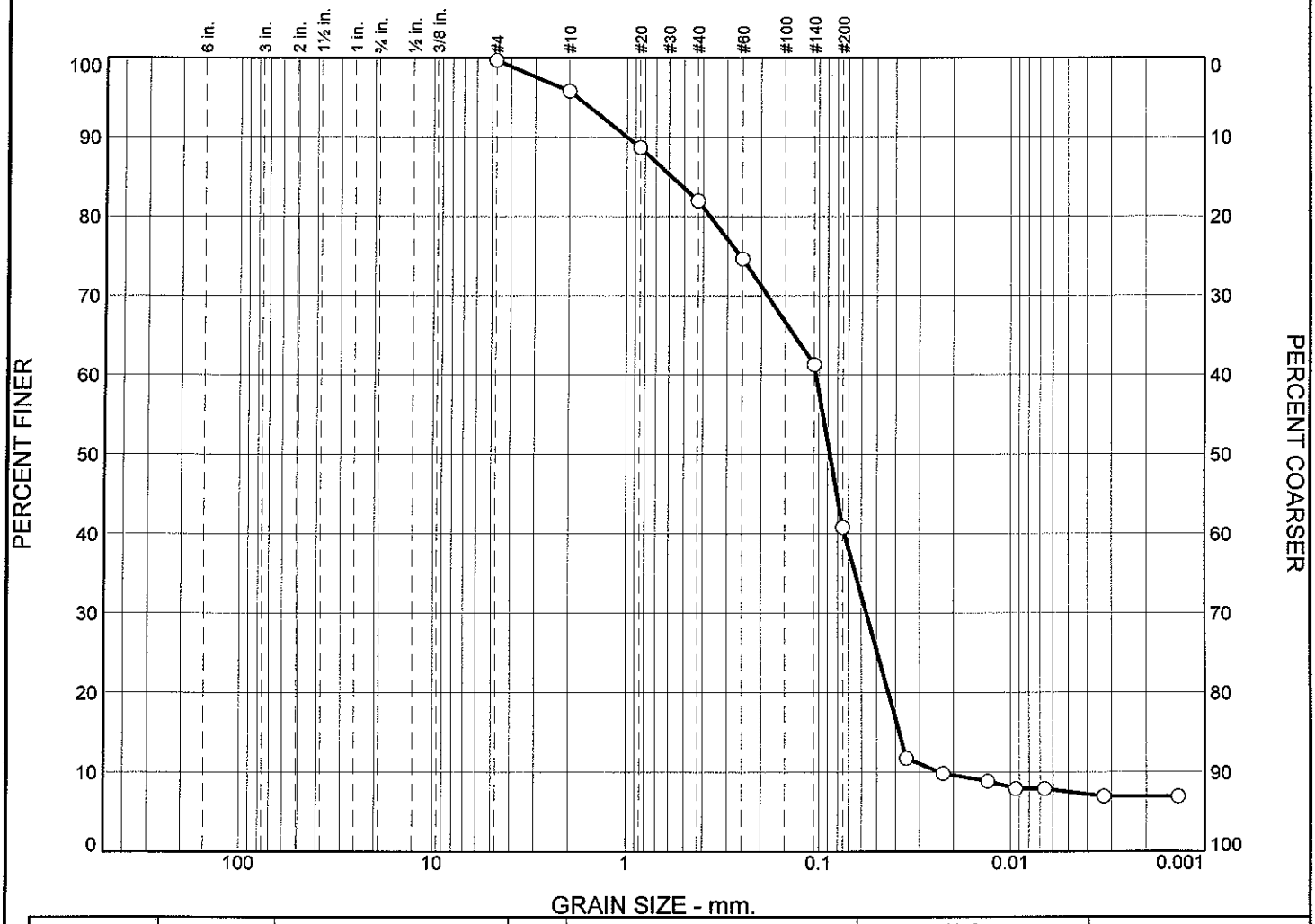
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			0.4	3.4	5.9	6.1	9.8	31.2	56.4	27.4	4.1	1.8	0.9	34.2	8.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0120	0.0306	0.0377	0.0472	0.0739	0.0877	0.1957	0.2984	0.5189	0.8950

Fineness Modulus	C_u	C_c
0.53	7.31	2.12

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				3.1	5.8	6.5	8.9	10.7	30.1	22.6	2.1	1.2	0.7	7.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5822	0.1037	0.0876	0.0566	0.0383	0.0237	1.30	4.38

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507813 **Sample Number:** L0912922-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507813
Sample Number: L0912922-07
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 46.43
Tare Wt. = 4.30
Minus #200 from wash = 38.3%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
68.23	0.00	#4	521.97	521.76	99.7	0.3
		#10	486.10	483.42	95.8	4.2
		#20	410.27	405.42	88.7	11.3
		#40	368.08	363.51	82.0	18.0
		#60	371.17	366.16	74.6	25.4
		#140	351.95	342.86	61.3	38.7
		#200	358.31	344.31	40.8	59.2

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 40.8
Weight of hydrometer sample =68.23
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	11.7	88.3
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	9.8	90.2
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	8.8	91.2
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	7.9	92.1
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	7.9	92.1
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	6.9	93.1
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.9	93.1

Fractional Components

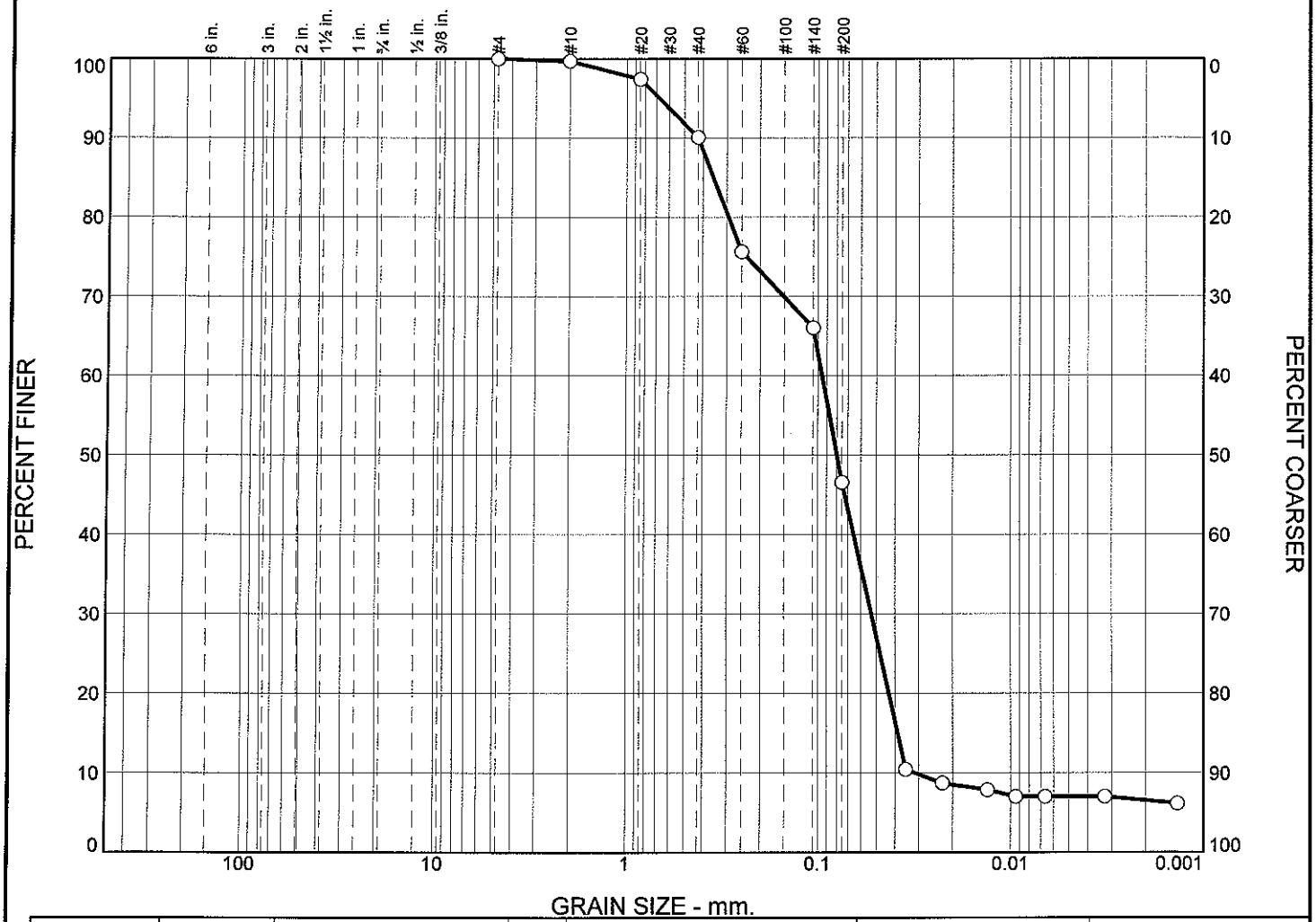
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			3.1	5.8	6.5	8.9	10.7	30.1	62.0	22.6	2.1	1.2	0.7	26.6	7.2

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0237	0.0383	0.0436	0.0566	0.0876	0.1037	0.3689	0.5822	0.9993	1.8242

Fineness Modulus	C_u	C_c
0.83	4.38	1.30

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○	0.0	0.0	0.1	0.2	1.8	6.1	16.2	7.7	30.0	28.0	1.8	1.1		7.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3526	0.0952	0.0797	0.0530	0.0387	0.0316	0.93	3.01

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507826 **Sample Number:** L0912922-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507826
Sample Number: L0912922-08
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 67.15
Tare Wt. = 4.56
Minus #200 from wash = 28.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
87.75	0.00	#4	520.89	520.89	100.0	0.0
		#10	482.40	482.12	99.7	0.3
		#20	413.06	411.08	97.4	2.6
		#40	384.42	377.97	90.1	9.9
		#60	382.52	369.86	75.6	24.4
		#140	355.65	347.22	66.0	34.0
		#200	363.62	346.52	46.6	53.4

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 46.6
Weight of hydrometer sample =87.75
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	10.4	89.6
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	8.7	91.3
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	7.8	92.2
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	7.0	93.0
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	7.0	93.0
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	7.0	93.0
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	6.1	93.9

Fractional Components

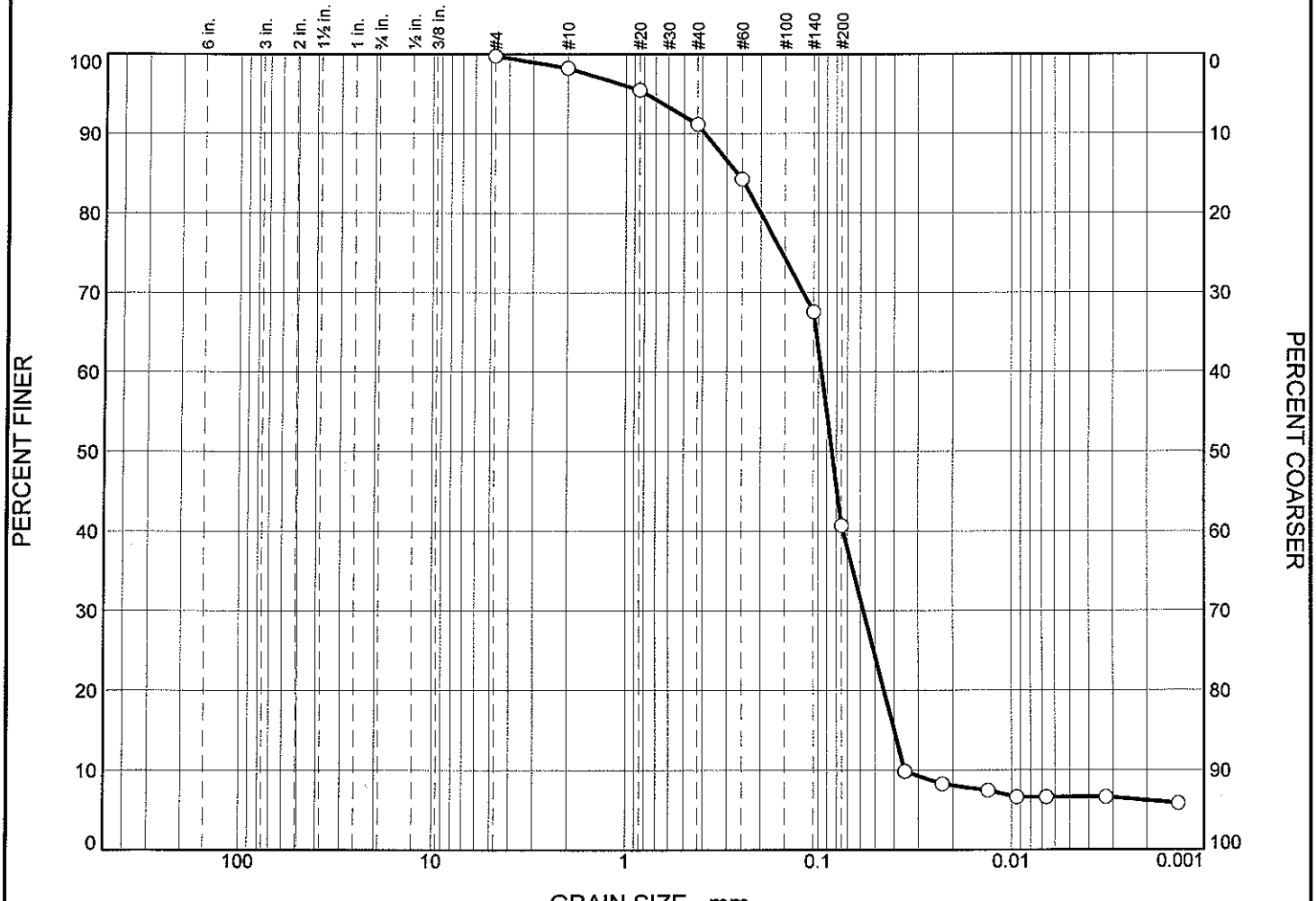
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
0.0	0.0	0.1	0.2	1.8	6.1	16.2	7.7	30.0	61.8	28.0	1.8	1.1		30.9	7.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0316	0.0387	0.0430	0.0530	0.0797	0.0952	0.2934	0.3526	0.4238	0.6763

Fineness Modulus	C_u	C_c
0.58	3.01	0.93

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				1.3	2.2	3.8	7.9	13.5	37.5	23.9	1.7	1.1	0.0	6.6

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2645	0.0962	0.0845	0.0576	0.0399	0.0352	0.98	2.73

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507826 **Sample Number:** WG382314-1

Alpha Analytical

Mansfield, MA

Remarks:

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507826
Sample Number: WG382314-1
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 61.88
Tare Wt. = 4.30
Minus #200 from wash = 29.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
81.11	0.00	#4	521.21	521.02	99.8	0.2
		#10	485.50	484.26	98.2	1.8
		#20	407.66	405.42	95.5	4.5
		#40	367.53	364.03	91.2	8.8
		#60	371.75	366.16	84.3	15.7
		#140	356.43	342.86	67.5	32.5
		#200	367.52	345.77	40.7	59.3

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 40.7
Weight of hydrometer sample =81.11
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0120	1.0122	0.0133	9.0	13.9	0.0351	9.8	90.2
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	8.2	91.8
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	7.4	92.6
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	6.6	93.4
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	6.6	93.4
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	6.6	93.4
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	5.8	94.2

Fractional Components

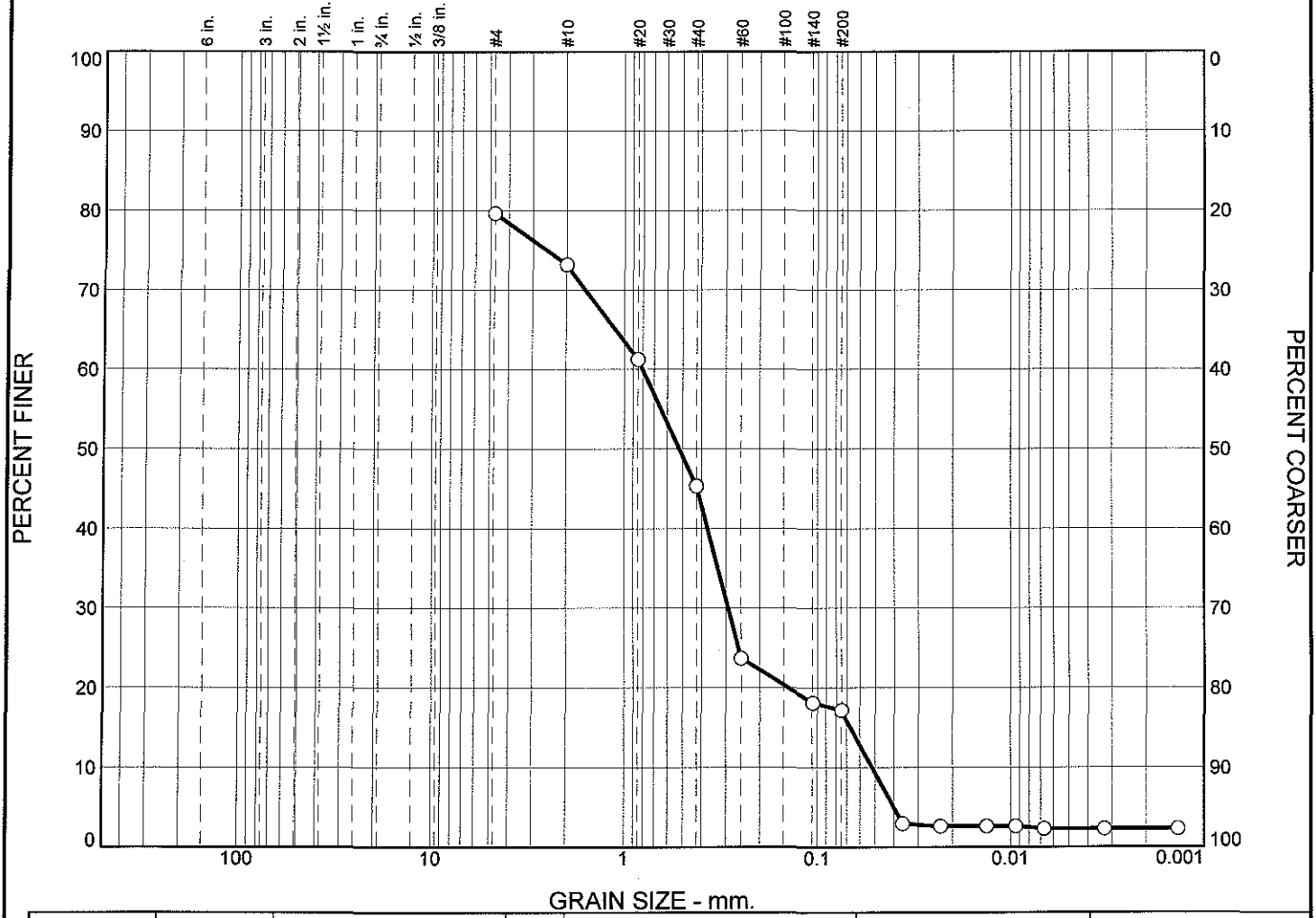
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			1.3	2.2	3.8	7.9	13.5	37.5	64.9	23.9	1.7	1.1	0.0	26.7	6.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0352	0.0399	0.0451	0.0576	0.0845	0.0962	0.2009	0.2645	0.3887	0.7875

Fineness Modulus	C_u	C_c
0.51	2.73	0.98

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				5.2	9.7	14.4	25.4	4.5	5.6	10.8	0.2	0.2	0.1	2.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.8048	0.5208	0.2919	0.0671	0.0519	2.04	15.51

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507911 **Sample Number:** L0912922-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507911
Sample Number: L0912922-09
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 79.65
Tare Wt. = 3.98
Minus #200 from wash = 12.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
86.72	0.00	#4	539.46	521.80	79.6	20.4
		#10	500.09	494.50	73.2	26.8
		#20	415.77	405.42	61.3	38.7
		#40	377.60	363.79	45.3	54.7
		#60	384.94	366.16	23.7	76.3
		#140	347.71	342.86	18.1	81.9
		#200	346.05	345.26	17.2	82.8

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 17.2
Weight of hydrometer sample =86.72
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	2.9	97.1
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	2.6	97.4
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	2.6	97.4
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	2.6	97.4
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	2.3	97.7
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.3	97.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.3	97.7

Fractional Components

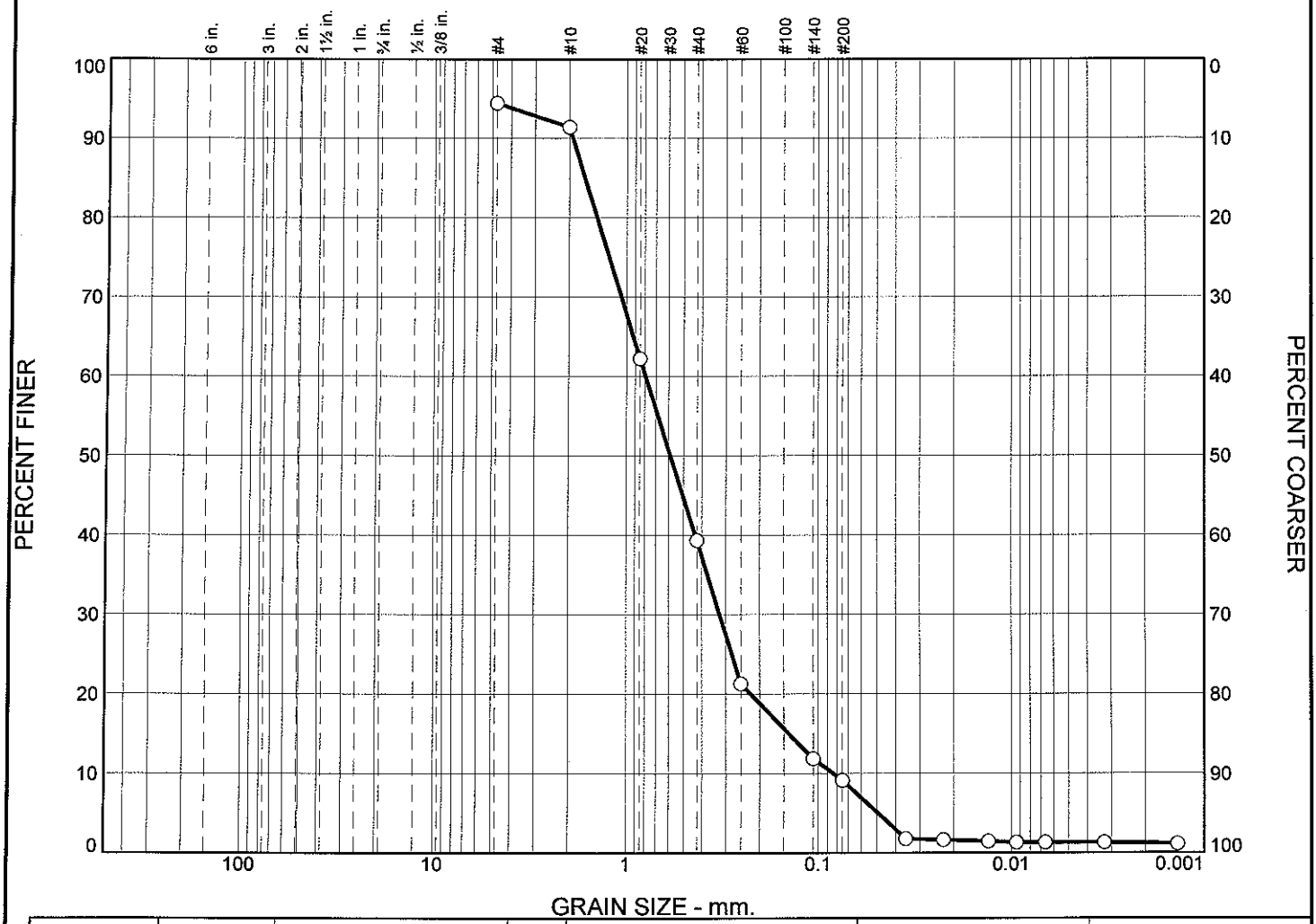
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			5.2	9.7	14.4	25.4	4.5	5.6	59.6	10.8	0.2	0.2	0.1	11.3	2.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0519	0.0671	0.1423	0.2919	0.5208	0.8048				

Fineness Modulus	C_u	C_c
2.75	15.51	2.04

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				2.4	23.6	23.1	23.4	7.7	6.3	5.6	0.2	0.2	0.0	1.3

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.6573	0.7948	0.5871	0.3232	0.1415	0.0841	1.56	9.45

	Material Description	USCS	AASHTO
○			

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507912 **Sample Number:** L0912922-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507912
Sample Number: L0912922-10
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 80.39
Tare Wt. = 4.16
Minus #200 from wash = 16.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
91.55	0.00	#4	526.00	520.91	94.4	5.6
		#10	484.71	481.94	91.4	8.6
		#20	437.81	411.08	62.2	37.8
		#40	399.01	378.06	39.3	60.7
		#60	386.41	369.86	21.3	78.7
		#140	355.85	347.22	11.8	88.2
		#200	348.57	346.07	9.1	90.9

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 9.1
Weight of hydrometer sample =91.55
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -0.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0110	1.0112	0.0133	8.0	14.2	0.0354	1.8	98.2
5.00	22.0	1.0100	1.0102	0.0133	7.0	14.4	0.0226	1.6	98.4
15.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0132	1.5	98.5
30.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0094	1.3	98.7
60.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0067	1.3	98.7
250.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0033	1.3	98.7
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	1.2	98.8

Fractional Components

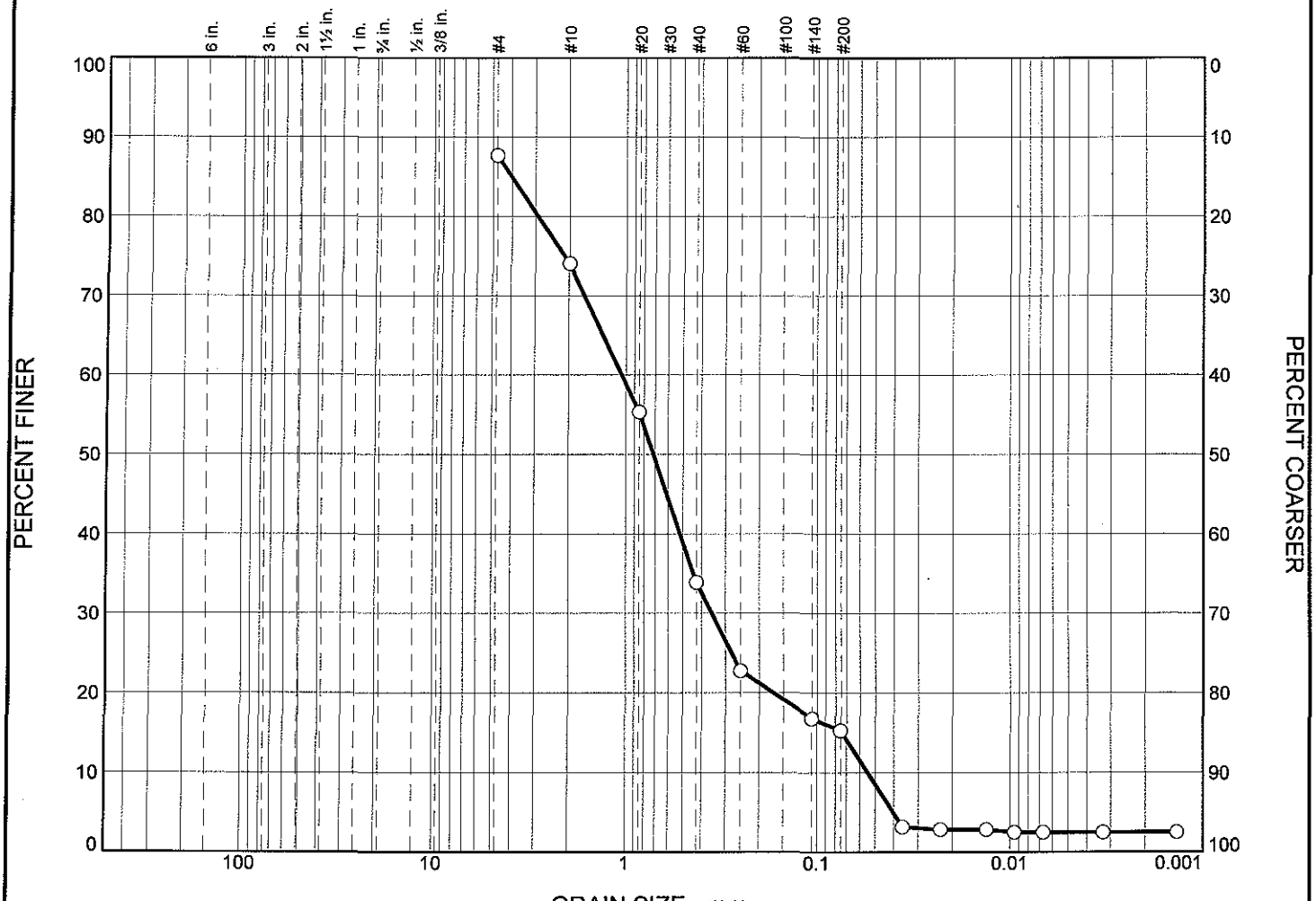
Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			2.4	23.6	23.1	23.4	7.7	6.3	84.1	5.6	0.2	0.2	0.0	6.0	1.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0841	0.1415	0.2230	0.3232	0.5871	0.7948	1.4314	1.6573	1.9188	

Fineness Modulus	C_u	C_c
2.46	9.45	1.56

Alpha Analytical

Particle Size Distribution Report



	% Boulders	% Cobbles	% Pebbles	% Granules	% Sand					% Silt				% Clay
					V. Crs.	Crs.	Med.	Fine	V. Fine	Crs.	Med.	Fine	V. Fine	
○				10.9	15.2	20.0	16.1	4.9	5.6	9.2	0.3	0.3	0.0	2.5

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.0070	1.0521	0.7155	0.3531	0.0737	0.0545	2.17	19.30

Material Description	USCS	AASHTO
○		

Project No. L0912922 **Client:** Woods Hole Group

Project: New Bedford Long Term Monitoring

○ **Source of Sample:** 507926 **Sample Number:** L0912922-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

1/28/2010

Client: Woods Hole Group
Project: New Bedford Long Term Monitoring
Project Number: L0912922
Location: 507926
Sample Number: L0912922-12
Sieve opening list: BS Bulk Sieve

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 65.62
Tare Wt. = 3.98
Minus #200 from wash = 13.7%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Percent Retained
71.41	0.00	#4	530.59	521.79	87.7	12.3
		#10	494.50	484.78	74.1	25.9
		#20	418.80	405.42	55.3	44.7
		#40	379.10	363.79	33.9	66.1
		#60	374.11	366.16	22.8	77.2
		#140	347.13	342.86	16.8	83.2
		#200	346.20	345.14	15.3	84.7

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 15.3
Weight of hydrometer sample =71.41
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -.04
Meniscus correction only = -3.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer	Percent Retained
2.00	22.0	1.0090	1.0092	0.0133	6.0	14.7	0.0361	3.2	96.8
5.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0230	2.8	97.2
15.00	22.0	1.0080	1.0082	0.0133	5.0	15.0	0.0133	2.8	97.2
30.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0095	2.5	97.5
60.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0067	2.5	97.5
250.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0033	2.5	97.5
1440.00	22.0	1.0070	1.0072	0.0133	4.0	15.2	0.0014	2.5	97.5

Fractional Components

Boulders	Cobbles	Pebbles	Granules	Sand						Silt					Clay
				V. Crs.	Crs.	Med.	Fine	V. Fine	Total	Crs.	Med.	Fine	V. Fine	Total	
			10.9	15.2	20.0	16.1	4.9	5.6	61.8	9.2	0.3	0.3	0.0	9.8	2.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0545	0.0737	0.1683	0.3531	0.7155	1.0521	2.9162	4.0070		

Fineness Modulus	C_u	C_c
2.83	19.30	2.17

Alpha Analytical

Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. ***NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A,3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D,9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312,3051, 6020, 747A, 7474, 9045C,9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl.

02021014:44

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab:

ALPHA Job #: L0912922

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: NBH LTM V 2009

Project Location: New Bedford Harbor

Project #: TO-0018

Project Manager: Lee Weishar

ALPHA Quote #:

Client Information

Client: Woods Hole Group

Address: 81 Technology Park Drive

E. Falmouth, MA 02536

Phone: 508-540-8080

Fax: 508-540-1001

Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
fed	

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
1	507711	9/22/09	15:50	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
2	507712	9/22/09	16:20	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
3	507713	9/22/09	16:28	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507725	9/22/09	16:05	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
-4	507726	9/22/09	16:05	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	507727	9/22/09	16:05	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	-	-	-	-	-	-	-	-	-		
Preservative						A	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
James Bajek	9/22/09 1943	[signature]	9.22.09 19:43
[signature]	9/23/09 0911	Paul Gilbert	9/23/09 9:15
Paul Gilbert	9/23/09 10:25	[signature]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

CHAIN OF CUSTODY

PAGE OF

02021014:44

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L09/2922

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
-9	507911	9/22/09	9:50	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
-10	507912	9/22/09	10:59	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507913	9/22/09	15:10	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507925	9/22/09	10:10	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
-12	507926	9/22/09	10:10	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	507927	9/22/09	10:10	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type		G	G	G	-	-	-	-	-	-	-	-	-						
Preservative		A	A	A	-	-	-	-	-	-	-	-	-						

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Boyle	9/22/09 19:43		9-22-09 19:43
	9-23-09 09:15		9/23/09 9:15
Paul Gilbert	9/23/09 10:25		9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

CHAIN OF CUSTODY

PAGE OF

02021014:44

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information

Client: Woods Hole Group
Address: 81 Technology Park Drive
E. Falmouth, MA 02536
Phone: 508-540-8080
Fax: 508-540-1001
Email: lweishar@whgrp.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NBH LTM V 2009
Project Location: New Bedford Harbor
Project #: TO-0018
Project Manager: Lee Weishar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: fed
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Level III data report and project specific EDD

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	total PCB congeners NOAA 18	TOC	grain size	archive									Sample Specific Comments	TOTAL # BOTTLES
-5	507811	9/22/09	13:18	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
-6	507812	9/22/09	13:56	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
-7	507813	9/22/09	14:25	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	ben gs	1
	507825	9/22/09	13:40	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem	1
-8	507826	9/22/09	13:40	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs	1
	507827	9/22/09	13:40	SE	JB	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	sed arch	1
	507845	9/22/09	13:40	SE	JB	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed chem QC	1
-8	507846	9/22/09	13:40	SE	JB	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	sed gs QC	1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	G	G	-	-	-	-	-	-	-	-		
Preservative						A	A	A	A	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
James Bayek	9/22/09 1943	[illegible]	922-09 19:43
[illegible]	9-23-09 0912	Paul Gilbert	9/23/09 9:15
Paul Gilbert	9/23/09 10:25	[illegible]	9/23/09 1025

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 29-APR-09)

APPENDIX J. BENTHIC INFAUNAL REPORT FROM THE 2009 NBH LTM V SURVEY

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NEW BEDFORD HARBOR LONG TERM MONITORING PROGRAM MACROBENTHIC COMMUNITY ASSESSMENT LABORATORY METHODS (2009)

JANUARY 2009

NEW BEDFORD HARBOR LONG TERM MONITORING PROGRAM MACROBENTHIC COMMUNITY ASSESSMENT LABORATORY METHODS (2009)

Prepared for
WOODS HOLE GROUP
81 Technology Park Drive
East Falmouth, MA 02536

Prepared by
NORMANDEAU ASSOCIATES, INC.
25 Nashua Road
Bedford, NH 03110

R-21814.001

January 2010

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3.0 SAMPLE SORTING 1

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7.0 LITERATURE CITED 3

APPENDICES

APPENDIX A — LOGS, DATA AND QUALITY CONTROL FORMS

APPENDIX B — SPECIES NOT FOUND IN NEW BEDFORD HARBOR LOOK UP TABLE

APPENDIX C — LIST OF VOUCHER COLLECTION SPECIMENS

ATTACHMENT — EXCEL DATA FILE

1.0 INTRODUCTION

Normandeau Associates, under contract with the Woods Hole Group of E. Falmouth, MA, has completed the macroinvertebrate community assessment monitoring for the 2009 New Bedford Harbor Long-Term Monitoring Program. The purpose of this report is to present the methods for the laboratory phase of the program. The actual monitoring results were presented in an Excel data file to Woods Hole Group.

Laboratory procedures were carried out according to protocols established for the Environmental Monitoring and Assessment Program (EMAP) for estuaries. A complete description of those procedures is presented in Environmental Monitoring and Assessment Program (EMAP) Laboratory Methods Manual – Estuaries Volume 1 – *Biological and Physical Analyses,* Strobel (August 1995) Section 3.

2.0 SAMPLE TRACKING AND HANDLING

Samples were retrieved ready for transport to our laboratory; field sieved through a 0.5 mm mesh screen, stained with Rose Bengal and preserved in 6% buffered formalin.

Upon receipt, samples were examined for damage and checked against the Chain-of-Custody form and then inventoried in the Sort Log (Appendix A). All samples listed on the Chain-of-Custody forms were received in good condition.

3.0 SAMPLE SORTING

Samples were washed through a 0.5mm mesh screen. To facilitate sorting efficiency, samples that had heterogeneously-sized residue and /or organisms were washed through a series of graduated sieves, with the finest sieve being 0.5mm mesh and then elutriated to separate heavy and light fractions of the sample. Macrofauna was sorted from the debris and separated into major taxonomic groups using a dissecting microscope; specimens were preserved in 70% ethanol. Heavy sample material greater than 2.0mm was pan sorted with overhead magnification. Sample processing information was recorded in the Sort Log (Appendix A).

Sorters were instructed and supervised on the proper project procedure for sample wash down and sorting. Each sorter's samples were listed in order of completion on the QC Sample Batch Listing form (Appendix A). At least the first three samples undertaken by each sorter were rechecked by the Quality Control Supervisor. A minimum of 10% (one out of each batch of ten samples) of each sorter's subsequent samples were resorted with results recorded on the QC Sample Resort sheet (Appendix A). Any work found to be of insufficient quality resulted in rechecking the samples and retraining the sorter; as specified in Strobel et al. (1995).

A total of 158 samples were sorted. To meet the program turn around time, a large number of sorters were involved, resulting in a greater than usual number of training QC's. Following training, 12 samples were resorted as a quality control check and results are as follows:

Sorting Efficiency	# Samples
100 - 95% range	11
96 – 90% range	0
<90% range	1

Sorting efficiency resulted in one sample requiring corrective action; retraining in the recognition of one specific organism and a recheck for the species in all samples conducted in the batch of ten as well as any applicable samples sorted prior to the batch of ten. All specimens were included for subsequent identification.

4.0 TAXONOMY

Taxonomists specializing in specific macroinvertebrate phyla had samples distributed to them for identification, enumeration and recording on the Data Sheets (Appendix A). Data sheets were developed based on the species list from the previous phases of the Long-Term Monitoring program to facilitate recording. Level of identification, generally Lowest Practical Taxon but in some cases stipulated to a higher classification per Strobel et al. (1995) was adhered to, with the exceptions noted below. The exceptions listed in the Results: 2009 Data Listing represents the level of identification found in this year's Data File.

Group	Request: Strobel et al.(1995)	Results: 2009 Data Listing
Nematodes	ignore	Nematodes – noted as Present (P)
Copepods (benthic)*	Ignore	LPT
Ostracods	Ignore	Class Ostracoda
Nemertinea	Phylum	LPT
Sipuncula	Phylum	LPT
Anthozoa	Class	LPT

*harpacticoid and cyclopoid

Maintaining taxonomic consistency across the New Bedford Harbor Program years was accomplished through examination of voucher specimens, referencing taxonomic keys and current hardcopy and electronic literature and through verbal communication among taxonomists. Species on the List of 2009 Species Not Found in New Bedford Harbor Look-up Table (Appendix B) were new to the New Bedford Harbor program this year; any discrepancies between the 2009 species list and previous years are specifically noted.

Quality control was performed on 10% (one out of each batch of ten samples) of the taxonomists samples. A total of 158 samples were identified by the taxonomists with a total of 16 being re-identified. Three taxonomists were involved in the identification of different phyla of each sample, resulting in a total of 48 (16 samples x 3 taxonomists) by-phyla re-identification checks. Each of these 48 re-identified samples was treated separately. Taxonomist's samples were listed in order of completion on the QC Sample Batch Listing form (Appendix A) and results were entered on the QC Sample Re-identification sheet (Appendix A). Any work found to be of insufficient quality resulted in the retraining of the taxonomist and possibly the checking of additional samples from a batch of ten samples; as specified in Strobel et al. (1995).

Results for the 48 by-phyla sample re-identifications are as follows:

Taxonomy Efficiency	# Samples
100 - 95% range	38
96 – 90% range	6
<90% range	4

Taxonomic accuracy results were reviewed by the laboratory Quality Control Supervisor and resulted in four samples requiring corrective action. Three of the failures at the <90% accuracy level resulted from samples where very low numbers of specimens or where the specimens were lost in transfer; resulting in a high error percentage. A review of proper data transcription procedures between the taxonomist and the Quality Control Supervisor was conducted. The fourth failure was a species specific identification error and required a recheck of all samples conducted in the batch of ten as well as any applicable samples identified prior to the batch of ten. Program protocol, Strobel et al. (1995), required adjustments to the data for any identification errors.

A voucher collection of 60 additional taxa was established for this project. A listing of these additional species, by station/replicate, is noted on the Voucher Collection-2009 list (Appendix C).

5.0 DATA MANAGEMENT

Normandeau's Technical Information Services group has conducted marine benthic macrofaunal identification for Long Term Monitoring programs in the past and our programmers are familiar with the EMAP database requirements.

Original data sheets were checked for completeness and legibility before being submitted for data entry. Formats designed to comply with the project-specific dataset specifications were used to constrain data entry, and data verification was provided through double data entry. This feature ensured that entry errors were caught and corrected as the operators keyed the data.

Following entry into the database, quality control error checks, including project-specific checking routines based on logical checks and random sampling of records for comparison between database records and laboratory datasheets, were completed. QC/QA was conducted followed ANSI ASQC Z1.4 (1993) standards. For the 4224 records a total of 200 randomly selected Data Points were checked; one error (two allowed), was detected and corrected.

6.0 SAMPLE HANDLING

Normandeau will retain processed and archived samples for one year following report acceptance at which time, with authorization, disposal of samples will occur. The Program Voucher Specimen Collection, including the new specimens from 2009, will be retrieved by the EPA.

7.0 LITERATURE CITED

US EPA. 1995. Environmental Monitoring and Assessment Program (EMAP): Laboratory Methods Manual – Estuaries, Volume I: *Biological and Physical Analyses*, Office of Research and Development, Narragansett, RI. EPA/620/R-95/008.

APPENDIX A

Logs, Data and Quality Control Forms

New Bedford Harbor 2009 Sort Log: Area ______

Qty: 1/4 1/2 3/4 F
Jar: Q (quart) or G (gallon)
Mat: sand, gravel,shell hash detritus

Station	Sample #	Date	# Jars	Qty.	Mat.	Int'l.	Date	Hrs.	Polychaeta 1	Polychaeta 2	Amphipoda	Arthropoda	Misc.	Echinodermata	Bivalvia	Gastropoda	Ident Eggs	Chironomidae					Nematoda (+/-)		Pan Sort 2.0+mm

NBHSortLog.ai 9/09

Page ____

NBHIdLog.ai10/09

New Bedford Harbor 2009 ID Log: Area ______

			Polychaeta 1		Polychaeta 2	Amphipoda		Arthropoda		Misc.		Echinodermata	Bivalvia	Gastropoda	Chironomidae		
Station	Sample #	Date	DF			BH		BH		BH		BH	KP	KP			

Data Form - QC SAMPLE BATCH LISTING FORM

Sorter/Taxonomist _____

Batch For _____
Sample Month

1	11	21	31
2	12	22	32
3	13	23	33
4	14	24	34
5	15	25	35
6	16	26	36
7	17	27	37
8	18	28	38
9	19	29	39
10	20	30	40

Necessary Remedial Action:

_____

_____

_____

Comments:

_____

_____

_____

Data Form - QC SAMPLE RESORT SHEET

Project _____ **Station/Rep** _____

Collection Date _____ **Original Sorter** _____

Additional Organisms Found			
Taxa	**Number**	**Taxa**	**Number**

Total organisms originally sorted _____

Total additional organisms found _____

% error _____

Resorted by _____

QC OK'd by _____

Any remedial action necessary:

_____

_____

_____

Comments:

_____

_____

_____

Data Form - QC SAMPLE REIDENTIFICATION SHEET

Project _____ **Collection Date** _____

Station _____ **Original Processor** _____

Taxon	QC Recount	Original count	Taxon	QC Recount	Original Recount
			Total Counts		

No. of Miscounts (- I Recount - original countl) _____

No. of Misidentifications _____

Total No. of Errors _____

$$\% \text{ Error} = \frac{\text{Total No. Original Inds.} - \text{Total No. Errors}}{\text{Total No. Inds.}}$$

QC'd by _____ **Date** _____

Other problems with Sample:

Individual placed in wrong vial _____

Counts records on wrong line _____

Inadequate labels _____

Other _____

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ____-__ **Bcard:** _____ **Date:** 11/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
NEMATODA	2040								
ARCHIANNELIDA	19								
OLIGOCHAETA	466								
POLYCHAETA	1281								
POLYNOIDAE	2077								
Harmothoe imbricata	61								
Lepidonotus squamatus	60								
Lepidonotus sublevis	637								
Lagisca extenuata	444								
Eucrantia villosa	4848								
PHOLOIDAE									
Pholoe minuta	63								
SIGALIONIDAE									
Sthenelais boa	640								
PHYLLODOCIDAE	2069								
Anaitides arenae	642								
Anaitides sp.	410								
Paranaitis speciosa	4562								
Eulalia viridis	555								
Eteone sp.	452								
Eteone heteropoda	393								
Eumida sanguinea	57								

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ____-__ **Bcard:** _____ **Date:** 11/___/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
HESIONIDAE									
Gyptis vittata	4609								
Microphthalmus sczelkowii	1199								
Microphthalmus aberrans	644								
Microphthalmus sp. A	3952								
Podarke obscura	1118								
SYLLIDAE	2064								
Autolytus prolifera	1028								
Syllis comuta	647								
Typosyllis regulate	4022								
Typosyllis alternate	4622								
Typosyllis sp.	4667								
Exogone dispar	4998								
Exogone sp.	1645								
Sphaerosyllis longicaudata	1846								
Sphaerosyllis taylori	4618								
Brania clavata	1153								
Brania wellfleetensis	3920								
Odontosyllis fulgurans	1934								
Syllides cf. verrilli	4503								
Parapionosyllis longicirrata	3535								
Ancistrosyllis hartmanae	4837								
Ancistrosyllis groenlandica	4627								
NEREIDAE	2071								
Neanthes arenaceodonta	650								
Neanthes succinea	651								
Neanthes virens	76								
Platynereis dumerilii	649								
Nereis grayi	747								

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ___-__ **Board:** _____ **Date:** 11/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
NEPHTYIDAE	2070								
Nephtys incisa	69								
Nephtys picta	652								
Aglaophamus neotenus	4909								
SPHAERODORIDAE									
Sphaerodoropsis minuta	508								
GLYCERIDAE	9112720								
Glycera Americana	450								
Glycera dibranchiata	368								
Glycera sp.	460								
Glycera sp. 1	4844								
GONIADIDAE	1856								
Glycinde solitaria	4519								
ONUPHIDAE	4674								
Diopatra cuprea	654								
LUMBRINERIDAE	2065								
Ninoe nigripes	399								
Scoletoma tenuis	98								
Scoletoma acicularum	3503								
Scoletoma hebes	3493								
Scoletoma sp.	3887								

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ___-__ **Bcard:** _____ **Date:** 11/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
OENONIDAE	3960								
Drilonereis longa	4665								
Arabella iricolor	4626								
Notocirrus spiniferus	4613								
DORVILLEIDAE	4673								
Dorvillea (Schistomeringos) annulata	3497								
Protodorvillea gaspeensis	1825								
Parougia caeca	1828								
ORBINIIDAE	2072								
Scoloplos rubra	3959								
Orbinia swani	100								
Leitoscoloplos fragilis	102								
Leitoscoloplos robustus	381								
Leitoscoloplos sp.	411								
PARAONIDAE	2062								
Aricidea (Acmira) catherinae	95								
Aricidea (Acmira) cerruti	4623								
Aricidea quadrilobata	657								
Aricidea sp.	428								
Cirrophorus lyriformis	4617								
Levinsenia gracilis	93								
Paraonis fulgens	94								
Cirrophorus furcatus	4617								
CHAETOPTERIDAE	4620								
Spiochaetopterus costarum	4887								
Spiochaetopterus oculatus	3585								

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ____-__ **Bcard:** _____ **Date:** 11/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
SPIONIDAE	2068								
Caraziella hobsonae	4835								
Dipolydora socialis	1893								
Dipolydora caulleryi	1898								
Polydora websteri	464								
Polydora comuta	91								
Prionospio (Minuspio) perkinsii	4834								
Prionospio steenstrupi	1392								
Prionospio heterobranchia	4615								
Prionospio sp.	493								
Pygospio elegans	392								
Spiophanes bombyx	92								
Streblospio benedicti	88								
Scolelepis bousfieldi	4836								
Scolelepis texana	4544								
Scolelepis sp.	774								
Spio setosa	506								
Spio sp.	558								
Marenzelleria viridis	87								
Marenzelleria sp.	3640								
Minuspio cirrifera	4612								
CIRRATULIDAE	2066								
Caulleriella cf. killariensis	3944								
Caulleriella sp.	3525								
Tharyx acutus	4624								
Chaetozone sp.	1058								
Dodecaceria sp.	1033								
Aphelochaeta marioni	3661								
Monticellina dorsobranchialis	1907								
Monticellina baptisteae	3981								

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ____-__ **Beard:** _____ **Date:** 11/___/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
CAPITELLIDAE	2078								
Capitella jonesi	4833								
Capitella capitata	78								
Heteromastus filiformis	391								
Notomastus latericeus	663								
Mediomastus ambiseta	1779								
Mediomastus californiensis	3492								
OWENIIDAE	3888								
Owenia fusiformis	107								
MALDANIDAE	2075								
Maldane sarsi	84								
Asychis elongata	664								
Clymenella torquata	82								
Clymenella zonalis	3916								
Euclymene collaris	83								
SABELLARIIDAE									
Sabellaria vulgans	3586								
PECTINARIIDAE	2063								
Pectinaria gouldii	770								
FLABELLIGERIDAE	1123								
Pherusa affinis	434								
SCALIBREGMIDAE	9113590								
Scalibregma inflatum	80								
Travisia forbesii	1909								

Project: New Bedford Harbor **POLYCHAETA** **Code:** 21814.002

Station: ____-__ **Bcard:** _____ **Date:** 11/___/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
AMPHARETIDAE	2076								
Ampharete finmarchica	745								
Melinna cristata	665								
TEREBELLIDAE	1338								
Pista maculata	114								
Pista palmata	1793								
Polycirrus eximius	1786								
Polycirrus medusa	1903								
Polycirrus phosphoreus	3646								
Polycirrus sp.	1826								
SABELLIDAE	2079								
Potamilla reniformis	118								
Sabella microphthalma	668								
SERPULIDAE	2067								
Hydroides dianthus	1948								
PILARGIIDAE									
Cabira incerta	4838								
MAGELONIDAE									
Magelona sp.	4694								
EUNICIDAE	1248								

Project: New Bedford Harbor **AMPHIPODA** **Code:** 21814.000

Station: ____-__ **Bcard:** _____ **Date:** 09/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
AMPHIPODA	2379								
Ampithoe longimana	9563720								
Ampelisca abdita	252								
Ampelisca vadorum	253								
Ampelisca verrilli	1190								
Ampelisca sp.	385								
Byblis serrata	451								
Cymadusa compta	697								
Lembos smithi	3598								
Microdeutopus gryllotalpa	257								
Leptocheirus pinguis	280								
Leptocheirus plumulosus	9563820								
Rudilemboides naglei	3597								
Batea catharinensis	4547								
Crassicorophium acherusicum	260								
Crassicorophium bonellii	569								
Monocorophium insidiosum	522								
Monocorphium tuberculatum	696								
Apocorophium acutum	695								
Erichthonius brasiliensis	699								
Erichthonius sp.	3579								
Unciola irrorata	264								
Unciola serrata	4610								
Elasmopus levis	698								
Gammarus daiberi	9564490								
Gammarus mucronatus	389								
Gammarus sp.	367								
Ischyrocerus anguipes	271								
Jassa marmorata	272								
Listriella barnardi	4642								
Lysianopsis alba	3954								
Oedicerotidae	731								
Ameroculodes edwardsi	278								
Phoxocephalus holbolli	282								
Eobrolgus spinosus	714								
Stenothoe minuta	720								
Rhepoxynus hudsoni	283								
Parametopella sp.	3956								
Crangonyx pseudogracilis	3955								
Crangonyx sp.	4157								
Microprotopus raneyi	709								

Project: New Bedford Harbor **ARTHROPODA** **Code:** 21814.000

Station: ____-__ **Beard:** ____ **Date:** 09/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
CAPRELLIDAE	1133								
Caprella penantis	1655								
Paracaprella tenuis	685								
Luconacia incerta	4646								
CRUSTACEA	1074								
Hutchinsoniella macracantha	4637								
OSTRACODA	1079								
COPEPODA	1075								
Harpacticoida	2111								
CIRRIPEDIA	1263								
Balanus crenatus	222								
Balanus eburneus	3619								
Balanus venustus	4539								
Balanus sp.	219								
MYSIDAECEA	1056								
Heteromysis formosa	768								
Neomysis americana	577								
CUMACEA	226								
Leucon americanus	678								
Oxyurostylis smithi	235								

Project: New Bedford Harbor **ARTHROPODA** **Code:** 21814.000

Station: ____-__ **Bcard:** ____ ____ ____ **Date:** 09/__ __/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
TANAIDACEA	1081								
Leptochelia savignyi	4023								
Leptochelia sp.	1388								
ISOPODA									
Ptilanthura tricarina	1320								
Idotea phosporea	245								
Edotia triloba	247								
Jaera marina	376								
DECAPODA									
Upogebia affinis	4538								
Palaemonetes vulgaris	4671								
Hippolyte zostericola	4025								
Pagurus longicarpus	1619								
Pagurus sp.	303								
Polyonyx gibbesi	3943								
Hyas araneus	446								
Libinia emarginata	1884								
Crangon septemspinosa	301								
Xanthidae	1200								
Eutypanopeus depressus	8579190								
Hexapanopeus angustifrons	8579180								
Dyspanopeus sayi	769								
Pinnixa chaetopterana	673								
Pinnixa sayana	3584								
Pinnixa sp.	8379353								
Zaops ostreum	4836								

Project: New Bedford Harbor **BIVALVIA** **Code:** 21814.000

Station: ___-__ **Bcard:** _____ **Date:** 09/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
BIVALVIA	1202								
Nucula proxima	178								
Nucula annulata	4814								
Nucula delphinodonta	179								
Nucula sp.	177								
Nuculana sp.	4020								
Yoldia limatula	3581								
Yoldia sp.	516								
Solemya velum	176								
Anadara transversa	616								
Anadara sp.	3942								
Mytilidae	182								
Anomia simplex	194								
Anomia sp.	1007								
Thyasira flexuosa	379								
Mysella planulata	1232								
Crassinella lunulata	1507								
Cerastoderma pinnulatum	199								
Spisula solidissima	200								
Mulinia lateralis	1321								
Siliqua costata	210								
Geukensia demissa	190								
Crassostrea virginica	1326								
Gemma gemma	387								
Macoma tenta									
Macoma sp.	1194								
Mya arenaria	205								
Laevicardium mortonii	8123202								
Pythinella cuneata	4626								
Tellinidae	202								
Tellina agilis	203								
Cumingia tellinoides	3937								
Mercenaria mercenaria	1116								
Pitar morrhuana	1295								
Petricola pholadiformis	1317								
Corbula contracta	1977								
Hiatella sp.	207								
Pandora glacialis	1869								
Pandora sp.	3559								
Lyonsia hyalina	208								

Project: New Bedford Harbor **GASTROPODA** **Code:** 21814.000

Station: ____-__ **Beard:** _____ **Date:** 09/__/09

SPECIES NAME	SPECIES CODE	COND.	DF	HP	SA	BH	KP		
GASTROPODA	2097								
Littorina littorea	140								
Littorina saxatilis	373								
Spurwinkia salsa	3522								
Hydrobia totteni	372								
Hydrobia sp.	142								
Caecum pulchellum	4019								
Caecum cooperi	4017								
Caecum sp.	4018								
Bittium alternatum	148								
Selia adamsi	3941								
Crepidula fornicata	149								
Crepidula convexa	4502								
Crepidula plana	150								
Crepidula sp.	4514								
Tectonatica pusilla	4631								
Polinices duplicatus	4630								
Eupleura caudata	4579								
Mitrella lunata	157								
Anachis lafresnayi	4595								
Ilyanasa obsoletus	377								
Ilyanassa trivittata	162								
Kurtziella cerina	3933								
Boonea seminuda	610								
Fargoa bartschi	1240								
Odostomia bisuturalis	1324								
Odostomia dealbata	1240								
Odostomia seminuda	610								
Odostomia sp.	173								
Turbonilla elegantula	4842								
Turbonilla interrupta	4520								
Turbonilla aequalis	4024								
Turbonilla sumneri	3930								
Turbonilla sp.	613								
Rictaxis punctostriatus	3580								
Acteocina canaliculata	600								
Haminoea solitaria	1983								
Chaetopleura apiculata	1160								
Cylichna oryza	4528								

Project: New Bedford Harbor **MISCELLANEOUS** **Code:** 21814.000

Station: ___-__ **Beard:** _____ **Date:** 09/__/09

SPECIES NAME	SPECIES CODE	COND	DF	HP	SA	BH	KP		
TURBELLARIA	1279								
NEMERTEA	462								
Tubulanus sp.	5048								
ENTERPNEUSTA	1277								
Saccoglossus kowalewskii	4389								
SIPUNCULA	1187								
Phascolion strombi	1381								
PHORONIDA	1926								
Phoronis muelleri	4920								
PORIFERA									
Cliona celata	750								
Cliona vastifica	751								
HYDROZOA	11								
Campanulariidae	1630								
Clytia gracilis	1766								
Obelia dichotoma	519								
Obelia geniculata	20								
Obelia sp.	388								
Sertularia cupressina	424								
Dynamena pumila	32								
Halecium flexile	3957								
Halecium diminutivum	1134								
Tubularia sp.	591								

Project: New Bedford Harbor **MISCELLANEOUS** **Code:** 21814.000

Station: ____-__ **Beard:** ____ **Date:** 09/__/09

SPECIES NAME	SPECIES CODE	COND	DF	HP	SA	BH	KP		
BRYOZOA									
Amathia dichtoma	3928								
Bowerbankia gracilis	595								
Aevernilla armata	4525								
Crisia eburnea	315								
Tubulipora sp.	539								
Membranipora membranacea	3858								
Electra crustulenta	4021								
Callopora aurita	325								
Bugula turrita	596								
Cribrilina punctata	332								
Hippothoa hyalina	335								
Schizoporella unicornis	1228								
Microporella ciliata	337								
Parasmittina nitida	340								
Cryptosula pallasiana	344								
CHORDATA	358								
Polycarpa fibrosa	4597								
Molgula sp.	366								
HOLOTHUROIDEA	2393								
ANTHOZOA	1065								
Ceriantheopsis americanus	1191								
OPHIUROIDEA	357								
Amphioplus abdita	737								

APPENDIX B

Species Not Found in New Bedford Harbor Look-up Table

2009 Species Not Found in New Bedford Harbor Look-up Table

Species 2009	Look-Up Table	Found in I.T.I.S.
Porifera		
Haliclona loosanoffi		Y
Hydrozoa		
Bougainvilliidae		Y
Obelia dichotoma		Y
Clytia hemisphaerica		Y
Halecium halecinum		Y
Lovenella gracilis		Y
Turbellaria		
Stylochus ellipticus		Y
Euplana gracilis		Y
Nemertinea		
Procephalothrix spiralis		Y
Lineus ruber		Y
Micrura sp.	*Micrura* spp.	N
Amphiporus sp.		N
Zygonemertes virescens		Y
Tetrastemma candidum		Y
Nematoda		
Nematoda	N/A	Y
Annelida		
Harmothoe lunulata		Y
Pilargidae		Y
Autolytus sp.		N
Pionosyllis sp.		N
Syllis gracilis		Y
Syllides convoluta		Y
Aglaophamus neotenus		Y
Oenonidae		Y
Dipolydora sp.		N
Cirratulus grandis		Y
Dodecaceria coralii		Y
Oweniidae		Y
Asabellides oculata		Y
Terebella lapidaria		Y
Potamilla reniformis		Y
Demonax microphthalmus	*Sabella microphthalma*	Y
Polygordius sp.	*Archiannelida*	N
Mollusca		
Cerithiopsis emersonii		Y
Epitonium multistriatum		Y
Epitonium dallianum		Y
Epitonium angulatum		Y
Melanella oleacea		N
Melanella sarsi		Y

Species 2009	Look-Up Table	Found in I.T.I.S.
Boreotrophon clathratus		Y
Busycon canaliculatum		Y
Odostomia striata		Y
Sacoglossa		Y
Ancula gibbosa		Y
Doto coronata		Y
Coryphella sp.		N
Anadara ovalis		Y
Clinocardium ciliatum		Y
Tagelus divisus		Y
Pandora glacialis		Y
Pandora inflata		Y
Periploma leanum		Y
Arthropoda		
Callipallene brevirostris		Y
Anoplodactylus petiolatus		Y
Cyclopoida		Y
Hemicyclops sp.		N
Leptinogaster major		Y
Edotia sp.		N
Batea catharinensis	*Batea catherinensis*	Y
Cerapus sp. A		N
Hippolyte sp.	*Hippolyte* spp.	N
Gilvossius setimanus	*Callianassa atlantica*	Y
Sipunculida		
Golfingia sp.		N
Ectoprocta		
Bowerbankia sp.		N
Aeverrillia setigera		Y
Aetea sica		Y
Conopeum truitti		Y
Electra pilosa		Y
Bugula stolonifera		Y
Entoprocta		
Barentsia gracilis		Y
Holothuroidea		
Sclerodactyla briareus		Y
Pentamera calcigera		Y
Chordata		
Ascidiacea		Y

APPENDIX C

List of Voucher Specimens

Voucher Collection 2009

Specimens added to the New Bedford Harbor Voucher Collection

Species	Sta/Rep
Porifera	
Haliclona loosanoffi	323-2
Hydrozoa	
Clytia hemisphaerica	202-1
Halecium sp.	241-2
Lovenella gracilis	230-2
Obelia dichotoma	202-1
Turbellaria	
Stylochus ellipticus	339-2
Nemertinea	
Amphiporus cruentatus	335-1
Carinoma tremaphorus	352-2
Procephalothrix spiralis	352-1
Tetrastemma candidum	352-1
Zygonemertes virescens	250-2
Annelida	
Autolytus prolifer	202-1
Dipolydora giardi	335-1
Dipolydora sp.	352-1
Harmothoe lunulata	352-1
Paranaitis speciosa	242-1
Pionosyllis sp.	335-2
Poldora sp.	154-1, 236-1
Syllides convoluta	151-2
Syllis gracilis	250-1
Terebella lapidaria	250-1
Mollusca	
Anachis lafresnayi	304-1
Anadara ovalis	332-1
Anadara transversa	146-2
Anomia simplex	250-1
Boreotrophon clathratus	236-1, 236-2
Busycon canaliculatum	236-2
Busycon carica	306-2
Cerithiopsis emersonii	250-2
Chaetopleura apiculata	333-2
Corbula contracta	352-1
Coryphella sp.	338-2
Cumingia tellinoides	333-2, 304-1
Cylichna oryza	331-1
Epitonium multistriatum	352-2, 341-2
Epitonium dallianum	331-1
Epitonium angulatum	311-1
Eupleura caudata	325-1

Species	Sta/Rep
Haminoe solitaria	331-1
Laevicardium mortoni	333-1
Melanella conoidea	306-2
Melanella sarsi	339-2
Odostomia striata	352-1
Periploma leanum	253-2
Petricola pholadiformis	146-2
Rictaxis punctostiatus	311-2
Sacoglossa	
Seila adamsi	250-2
Solemya velum	306-2
Tagelus divisus	241-1
Urosalpinx cinerea	204-2
Arthropoda	
Hemicyclops sp.	152-1
Ianiropsis sp. 1	250-2
Leptinogaster major	241-1
Pinnixa chaetopterana	349-2
Sipunculida	
Golfingia sp.	352-2
Ectoprocta	
Aetea sica	349-1
Aeverrillia setegera	241-2
Bugula stolonifera	204-2
Electra pilosa	318-2
Holothuroidea	
Pentamera calcigera	225-1

ATTACHMENT

Excel Data File

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	105_09LTM	1	Capitella Capitata	15
Upper	2009	105_09LTM	2	Capitella Capitata	9
Upper	2009	105_09LTM	1	Capitella Jonesi	5
Upper	2009	105_09LTM	2	Capitella Jonesi	1
Upper	2009	105_09LTM	1	Eteone Heteropoda	7
Upper	2009	105_09LTM	2	Eteone Heteropoda	8
Upper	2009	105_09LTM	1	Nematoda	P
Upper	2009	105_09LTM	2	Nematoda	P
Upper	2009	105_09LTM	1	Oligochaeta	3
Upper	2009	105_09LTM	2	Oligochaeta	2
Upper	2009	105_09LTM	2	Phyllodoce Arenae	1
Upper	2009	105_09LTM	1	Polycirrus Sp.	1
Upper	2009	105_09LTM	1	Polydora Cornuta	8
Upper	2009	105_09LTM	2	Polydora Cornuta	5
Upper	2009	105_09LTM	2	Spurwinkia Salsa	1
Upper	2009	105_09LTM	1	Streblospio Benedicti	538
Upper	2009	105_09LTM	2	Streblospio Benedicti	638
Upper	2009	105_09LTM	1	Tharyx Acutus	2
Upper	2009	108_09LTM	1	Capitella Capitata	119
Upper	2009	108_09LTM	2	Capitella Capitata	89
Upper	2009	108_09LTM	1	Capitella Jonesi	5
Upper	2009	108_09LTM	2	Capitella Jonesi	15
Upper	2009	108_09LTM	2	Cirratulidae	1
Upper	2009	108_09LTM	1	Eteone Heteropoda	66
Upper	2009	108_09LTM	2	Eteone Heteropoda	62
Upper	2009	108_09LTM	1	Gemma Gemma	1
Upper	2009	108_09LTM	1	Gyptis Vittata	4
Upper	2009	108_09LTM	2	Gyptis Vittata	1
Upper	2009	108_09LTM	1	Leitoscoloplos Fragilis	2
Upper	2009	108_09LTM	2	Leitoscoloplos Sp.	1
Upper	2009	108_09LTM	2	Microphthalmus Aberrans	3
Upper	2009	108_09LTM	1	Microphthalmus Sczelkowii	4
Upper	2009	108_09LTM	1	Microphthalmus Sp.	5
Upper	2009	108_09LTM	1	Mulinia Lateralis	2
Upper	2009	108_09LTM	2	Mulinia Lateralis	10
Upper	2009	108_09LTM	1	Neanthes Succinea	2
Upper	2009	108_09LTM	2	Neanthes Succinea	2
Upper	2009	108_09LTM	1	Nematoda	P
Upper	2009	108_09LTM	2	Nematoda	P
Upper	2009	108_09LTM	1	Oligochaeta	13
Upper	2009	108_09LTM	2	Oligochaeta	5
Upper	2009	108_09LTM	1	Podarke Obscura	3
Upper	2009	108_09LTM	1	Polydora Cornuta	18
Upper	2009	108_09LTM	2	Polydora Cornuta	14
Upper	2009	108_09LTM	2	Spiophanes Bombyx	1
Upper	2009	108_09LTM	1	Streblospio Benedicti	3889
Upper	2009	108_09LTM	2	Streblospio Benedicti	3343
Upper	2009	108_09LTM	1	Tharyx Acutus	3
Upper	2009	108_09LTM	1	Turbellaria	1
Upper	2009	109_09LTM	2	Cabira Incerta	1
Upper	2009	109_09LTM	2	Callinectes Sapidus	1
Upper	2009	109_09LTM	2	Capitella Capitata	3
Upper	2009	109_09LTM	1	Eteone Heteropoda	13
Upper	2009	109_09LTM	2	Eteone Heteropoda	14
Upper	2009	109_09LTM	1	Gemma Gemma	1
Upper	2009	109_09LTM	1	Leitoscoloplos Sp.	2
Upper	2009	109_09LTM	1	Mulinia Lateralis	5
Upper	2009	109_09LTM	2	Mulinia Lateralis	4
Upper	2009	109_09LTM	1	Nematoda	P

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	109_09LTM	2	Nematoda	P
Upper	2009	109_09LTM	1	Oligochaeta	45
Upper	2009	109_09LTM	2	Oligochaeta	37
Upper	2009	109_09LTM	1	Polydora Cornuta	2
Upper	2009	109_09LTM	1	Streblospio Benedicti	1520
Upper	2009	109_09LTM	2	Streblospio Benedicti	1232
Upper	2009	111_09LTM	1	Capitella Capitata	5
Upper	2009	111_09LTM	2	Capitella Capitata	6
Upper	2009	111_09LTM	1	Cirratulidae	2
Upper	2009	111_09LTM	1	Crepidula Plana	1
Upper	2009	111_09LTM	2	Cylichna Oryza	3
Upper	2009	111_09LTM	1	Eteone Heteropoda	21
Upper	2009	111_09LTM	2	Eteone Heteropoda	39
Upper	2009	111_09LTM	1	Leitoscoloplos Fragilis	1
Upper	2009	111_09LTM	2	Leitoscoloplos Fragilis	5
Upper	2009	111_09LTM	1	Leitoscoloplos Sp.	5
Upper	2009	111_09LTM	2	Leitoscoloplos Sp.	42
Upper	2009	111_09LTM	1	Mediomastus Ambiseta	1
Upper	2009	111_09LTM	2	Mulinia Lateralis	3
Upper	2009	111_09LTM	1	Neanthes Succinea	1
Upper	2009	111_09LTM	1	Nematoda	P
Upper	2009	111_09LTM	2	Nematoda	P
Upper	2009	111_09LTM	1	Neomysis Americana	1
Upper	2009	111_09LTM	1	Oligochaeta	163
Upper	2009	111_09LTM	2	Oligochaeta	171
Upper	2009	111_09LTM	1	Polydora Cornuta	1
Upper	2009	111_09LTM	2	Polydora Cornuta	4
Upper	2009	111_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Upper	2009	111_09LTM	2	Rictaxis Punctostriatus	1
Upper	2009	111_09LTM	1	Streblospio Benedicti	284
Upper	2009	111_09LTM	2	Streblospio Benedicti	673
Upper	2009	111_09LTM	1	Tharyx Acutus	6
Upper	2009	111_09LTM	2	Tharyx Acutus	12
Upper	2009	114_09LTM	1	Capitella Capitata	12
Upper	2009	114_09LTM	2	Capitella Capitata	3
Upper	2009	114_09LTM	1	Cirratulidae	1
Upper	2009	114_09LTM	1	Eteone Heteropoda	17
Upper	2009	114_09LTM	2	Eteone Heteropoda	11
Upper	2009	114_09LTM	1	Eumida Sanguinea	1
Upper	2009	114_09LTM	2	Gyptis Vittata	3
Upper	2009	114_09LTM	2	Haminoea Solitaria	1
Upper	2009	114_09LTM	1	Ilyanassa Obsoleta	1
Upper	2009	114_09LTM	2	Ilyanassa Obsoleta	2
Upper	2009	114_09LTM	1	Leitoscoloplos Fragilis	1
Upper	2009	114_09LTM	2	Leitoscoloplos Fragilis	2
Upper	2009	114_09LTM	1	Leitoscoloplos Sp.	32
Upper	2009	114_09LTM	2	Leitoscoloplos Sp.	20
Upper	2009	114_09LTM	2	Mediomastus Ambiseta	1
Upper	2009	114_09LTM	1	Mulinia Lateralis	18
Upper	2009	114_09LTM	1	Nematoda	P
Upper	2009	114_09LTM	2	Nematoda	P
Upper	2009	114_09LTM	1	Neomysis Americana	1
Upper	2009	114_09LTM	1	Oligochaeta	240
Upper	2009	114_09LTM	2	Oligochaeta	233
Upper	2009	114_09LTM	1	Pectinaria Gouldi	2
Upper	2009	114_09LTM	1	Polydora Cornuta	7
Upper	2009	114_09LTM	2	Polydora Cornuta	2
Upper	2009	114_09LTM	1	Rictaxis Punctostriatus	3
Upper	2009	114_09LTM	1	Spurwinkia Salsa	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	114_09LTM	1	Streblospio Benedicti	949
Upper	2009	114_09LTM	2	Streblospio Benedicti	747
Upper	2009	114_09LTM	1	Tharyx Acutus	10
Upper	2009	114_09LTM	2	Tharyx Acutus	15
Upper	2009	115_09LTM	1	Capitella Capitata	4
Upper	2009	115_09LTM	2	Capitella Capitata	7
Upper	2009	115_09LTM	1	Edotia Sp.	1
Upper	2009	115_09LTM	1	Eteone Heteropoda	5
Upper	2009	115_09LTM	2	Eteone Heteropoda	3
Upper	2009	115_09LTM	1	Gammarus Mucronatus	4
Upper	2009	115_09LTM	2	Gammarus Mucronatus	7
Upper	2009	115_09LTM	2	Leitoscoloplos Sp.	1
Upper	2009	115_09LTM	2	Mulinia Lateralis	1
Upper	2009	115_09LTM	1	Nematoda	P
Upper	2009	115_09LTM	2	Nematoda	P
Upper	2009	115_09LTM	1	Oligochaeta	14
Upper	2009	115_09LTM	2	Oligochaeta	12
Upper	2009	115_09LTM	1	Polydora Cornuta	1
Upper	2009	115_09LTM	2	Polydora Cornuta	6
Upper	2009	115_09LTM	2	Prionospio Steenstrupi	284
Upper	2009	115_09LTM	1	Streblospio Benedicti	359
Upper	2009	117_09LTM	1	Balanus Venustus	1
Upper	2009	117_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	117_09LTM	1	Bowerbankia Imbricata	P
Upper	2009	117_09LTM	1	Capitella Capitata	9
Upper	2009	117_09LTM	2	Capitella Capitata	9
Upper	2009	117_09LTM	1	Capitella Jonesi	1
Upper	2009	117_09LTM	1	Cirratulidae	56
Upper	2009	117_09LTM	2	Cirratulidae	347
Upper	2009	117_09LTM	1	Crepidula Fornicata	1
Upper	2009	117_09LTM	2	Edotia Sp.	2
Upper	2009	117_09LTM	1	Eteone Heteropoda	20
Upper	2009	117_09LTM	2	Eteone Heteropoda	35
Upper	2009	117_09LTM	1	Leitoscoloplos Sp.	2
Upper	2009	117_09LTM	2	Leitoscoloplos Sp.	10
Upper	2009	117_09LTM	2	Mediomastus Ambiseta	5
Upper	2009	117_09LTM	1	Mulinia Lateralis	6
Upper	2009	117_09LTM	1	Neanthes Arenaceodentata	2
Upper	2009	117_09LTM	2	Neanthes Succinea	1
Upper	2009	117_09LTM	1	Nematoda	P
Upper	2009	117_09LTM	1	Oligochaeta	140
Upper	2009	117_09LTM	2	Oligochaeta	196
Upper	2009	117_09LTM	1	Podarke Obscura	1
Upper	2009	117_09LTM	1	Polydora Cornuta	40
Upper	2009	117_09LTM	2	Polydora Cornuta	6
Upper	2009	117_09LTM	1	Streblospio Benedicti	1914
Upper	2009	117_09LTM	2	Streblospio Benedicti	2776
Upper	2009	117_09LTM	1	Tharyx Acutus	293
Upper	2009	117_09LTM	2	Tharyx Acutus	1187
Upper	2009	120_09LTM	1	Anthozoa	2
Upper	2009	120_09LTM	1	Capitella Capitata	810
Upper	2009	120_09LTM	2	Capitella Capitata	287
Upper	2009	120_09LTM	1	Capitella Jonesi	71
Upper	2009	120_09LTM	2	Capitella Jonesi	36
Upper	2009	120_09LTM	1	Eteone Heteropoda	12
Upper	2009	120_09LTM	2	Eteone Heteropoda	5
Upper	2009	120_09LTM	1	Gastropoda	1
Upper	2009	120_09LTM	1	Ilyanassa Obsoleta	18
Upper	2009	120_09LTM	2	Ilyanassa Obsoleta	2

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	120_09LTM	1	Leitoscoloplos Sp.	1
Upper	2009	120_09LTM	2	Leitoscoloplos Sp.	1
Upper	2009	120_09LTM	1	Mediomastus Ambiseta	2
Upper	2009	120_09LTM	2	Microphthalmus Sczelkowii	1
Upper	2009	120_09LTM	1	Microphthalmus Sp.	2
Upper	2009	120_09LTM	1	Nematoda	P
Upper	2009	120_09LTM	1	Oligochaeta	63
Upper	2009	120_09LTM	2	Oligochaeta	5
Upper	2009	120_09LTM	2	Podarke Obscura	1
Upper	2009	120_09LTM	1	Polydora Cornuta	5
Upper	2009	120_09LTM	1	Streblospio Benedicti	131
Upper	2009	120_09LTM	2	Streblospio Benedicti	6
Upper	2009	120_09LTM	1	Tharyx Acutus	38
Upper	2009	120_09LTM	2	Tharyx Acutus	1
Upper	2009	121_09LTM	2	Anadara Transversa	1
Upper	2009	121_09LTM	2	Callinectes Sapidus	1
Upper	2009	121_09LTM	1	Capitella Capitata	3
Upper	2009	121_09LTM	2	Capitella Capitata	2
Upper	2009	121_09LTM	1	Capitella Jonesi	1
Upper	2009	121_09LTM	1	Eteone Heteropoda	10
Upper	2009	121_09LTM	2	Eteone Heteropoda	10
Upper	2009	121_09LTM	2	Ilyanassa Obsoleta	2
Upper	2009	121_09LTM	2	Leitoscoloplos Fragilis	1
Upper	2009	121_09LTM	1	Leitoscoloplos Sp.	46
Upper	2009	121_09LTM	2	Leitoscoloplos Sp.	79
Upper	2009	121_09LTM	2	Mediomastus Ambiseta	6
Upper	2009	121_09LTM	1	Mercenaria Mercenaria	1
Upper	2009	121_09LTM	2	Microphthalmus Sczelkowii	1
Upper	2009	121_09LTM	2	Monticellina Dorsobranchialis	1
Upper	2009	121_09LTM	1	Nematoda	P
Upper	2009	121_09LTM	2	Nematoda	P
Upper	2009	121_09LTM	2	Nucula Proxima	1
Upper	2009	121_09LTM	1	Oligochaeta	32
Upper	2009	121_09LTM	2	Oligochaeta	380
Upper	2009	121_09LTM	1	Streblospio Benedicti	498
Upper	2009	121_09LTM	2	Streblospio Benedicti	957
Upper	2009	121_09LTM	1	Tharyx Acutus	3
Upper	2009	121_09LTM	2	Tharyx Acutus	4
Upper	2009	123_09LTM	1	Capitella Capitata	10
Upper	2009	123_09LTM	2	Capitella Capitata	3
Upper	2009	123_09LTM	1	Cirratulidae	1
Upper	2009	123_09LTM	1	Eteone Heteropoda	6
Upper	2009	123_09LTM	2	Eteone Heteropoda	8
Upper	2009	123_09LTM	1	Ilyanassa Obsoleta	7
Upper	2009	123_09LTM	2	Ilyanassa Obsoleta	2
Upper	2009	123_09LTM	1	Leitoscoloplos Fragilis	1
Upper	2009	123_09LTM	2	Leitoscoloplos Fragilis	2
Upper	2009	123_09LTM	1	Leitoscoloplos Sp.	8
Upper	2009	123_09LTM	2	Leitoscoloplos Sp.	7
Upper	2009	123_09LTM	2	Microciona Prolifera	1
Upper	2009	123_09LTM	1	Mulinia Lateralis	6
Upper	2009	123_09LTM	2	Mulinia Lateralis	34
Upper	2009	123_09LTM	1	Nematoda	P
Upper	2009	123_09LTM	2	Nematoda	P
Upper	2009	123_09LTM	1	Oligochaeta	83
Upper	2009	123_09LTM	2	Oligochaeta	35
Upper	2009	123_09LTM	1	Pectinaria Gouldi	1
Upper	2009	123_09LTM	2	Pectinaria Gouldi	1
Upper	2009	123_09LTM	1	Podarke Obscura	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	123_09LTM	1	Polydora Cornuta	3
Upper	2009	123_09LTM	2	Polydora Cornuta	3
Upper	2009	123_09LTM	2	Rictaxis Punctostriatus	3
Upper	2009	123_09LTM	1	Streblospio Benedicti	717
Upper	2009	123_09LTM	2	Streblospio Benedicti	434
Upper	2009	123_09LTM	1	Tharyx Acutus	28
Upper	2009	123_09LTM	2	Tharyx Acutus	11
Upper	2009	125_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	125_09LTM	1	Capitella Capitata	1
Upper	2009	125_09LTM	2	Capitella Capitata	6
Upper	2009	125_09LTM	2	Capitella Jonesi	2
Upper	2009	125_09LTM	1	Cirratulidae	10
Upper	2009	125_09LTM	1	Conopeum Truitti	P
Upper	2009	125_09LTM	1	Eteone Heteropoda	1
Upper	2009	125_09LTM	2	Eteone Heteropoda	4
Upper	2009	125_09LTM	1	Leitoscoloplos Sp.	4
Upper	2009	125_09LTM	1	Mediomastus Ambiseta	1
Upper	2009	125_09LTM	1	Microphthalmus Sp.	1
Upper	2009	125_09LTM	1	Monticellina Dorsobranchialis	1
Upper	2009	125_09LTM	1	Nematoda	P
Upper	2009	125_09LTM	2	Nematoda	P
Upper	2009	125_09LTM	2	Neomysis Americana	1
Upper	2009	125_09LTM	1	Nudibranchia	1
Upper	2009	125_09LTM	1	Obelia Bidentata	P
Upper	2009	125_09LTM	1	Oligochaeta	47
Upper	2009	125_09LTM	2	Oligochaeta	34
Upper	2009	125_09LTM	1	Streblospio Benedicti	154
Upper	2009	125_09LTM	2	Streblospio Benedicti	112
Upper	2009	125_09LTM	1	Tharyx Acutus	11
Upper	2009	125_09LTM	2	Tharyx Acutus	4
Upper	2009	126_09LTM	1	Capitella Capitata	1
Upper	2009	126_09LTM	2	Capitella Capitata	10
Upper	2009	126_09LTM	1	Capitella Jonesi	1
Upper	2009	126_09LTM	1	Edotia Sp.	1
Upper	2009	126_09LTM	2	Edotia Sp.	1
Upper	2009	126_09LTM	1	Eteone Heteropoda	4
Upper	2009	126_09LTM	2	Eteone Heteropoda	3
Upper	2009	126_09LTM	1	Hediste Diversicolor	9
Upper	2009	126_09LTM	2	Hediste Diversicolor	11
Upper	2009	126_09LTM	2	Ilyanassa Obsoleta	2
Upper	2009	126_09LTM	1	Leitoscoloplos Sp.	1
Upper	2009	126_09LTM	1	Marenzelleria Viridis	1
Upper	2009	126_09LTM	1	Oligochaeta	29
Upper	2009	126_09LTM	2	Oligochaeta	6
Upper	2009	126_09LTM	1	Polydora Cornuta	2
Upper	2009	126_09LTM	2	Polydora Cornuta	3
Upper	2009	126_09LTM	1	Pygospio Elegans	1
Upper	2009	126_09LTM	1	Spio Setosa	3
Upper	2009	126_09LTM	2	Spio Setosa	5
Upper	2009	126_09LTM	1	Streblospio Benedicti	279
Upper	2009	126_09LTM	2	Streblospio Benedicti	283
Upper	2009	128_09LTM	1	Capitella Capitata	1
Upper	2009	128_09LTM	2	Capitella Capitata	2
Upper	2009	128_09LTM	2	Capitella Jonesi	1
Upper	2009	128_09LTM	1	Eteone Heteropoda	3
Upper	2009	128_09LTM	1	Gemma Gemma	1
Upper	2009	128_09LTM	2	Gemma Gemma	1
Upper	2009	128_09LTM	2	Leitoscoloplos Fragilis	1
Upper	2009	128_09LTM	1	Leitoscoloplos Sp.	31

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	128_09LTM	2	Leitoscoloplos Sp.	8
Upper	2009	128_09LTM	1	Mediomastus Ambiseta	4
Upper	2009	128_09LTM	2	Mediomastus Ambiseta	2
Upper	2009	128_09LTM	1	Mulinia Lateralis	239
Upper	2009	128_09LTM	2	Mulinia Lateralis	245
Upper	2009	128_09LTM	2	Neanthes Succinea	1
Upper	2009	128_09LTM	1	Nematoda	P
Upper	2009	128_09LTM	2	Nematoda	P
Upper	2009	128_09LTM	1	Neomysis Americana	7
Upper	2009	128_09LTM	2	Neomysis Americana	2
Upper	2009	128_09LTM	1	Oligochaeta	106
Upper	2009	128_09LTM	2	Oligochaeta	135
Upper	2009	128_09LTM	1	Pectinaria Gouldi	3
Upper	2009	128_09LTM	2	Pectinaria Gouldi	7
Upper	2009	128_09LTM	2	Podarke Obscura	1
Upper	2009	128_09LTM	1	Polydora Cornuta	5
Upper	2009	128_09LTM	2	Polydora Cornuta	6
Upper	2009	128_09LTM	1	Rictaxis Punctostriatus	20
Upper	2009	128_09LTM	2	Rictaxis Punctostriatus	20
Upper	2009	128_09LTM	1	Streblospio Benedicti	415
Upper	2009	128_09LTM	2	Streblospio Benedicti	408
Upper	2009	128_09LTM	1	Tharyx Acutus	5
Upper	2009	128_09LTM	2	Tharyx Acutus	9
Upper	2009	130_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	130_09LTM	2	Bowerbankia Gracilis	P
Upper	2009	130_09LTM	1	Capitella Capitata	4
Upper	2009	130_09LTM	2	Capitella Capitata	7
Upper	2009	130_09LTM	1	Leitoscoloplos Sp.	1
Upper	2009	130_09LTM	2	Leitoscoloplos Sp.	1
Upper	2009	130_09LTM	1	Oligochaeta	2
Upper	2009	130_09LTM	2	Oligochaeta	5
Upper	2009	130_09LTM	1	Streblospio Benedicti	11
Upper	2009	130_09LTM	2	Streblospio Benedicti	17
Upper	2009	131_09LTM	1	Capitella Capitata	1
Upper	2009	131_09LTM	1	Crangon Septemspinosa	2
Upper	2009	131_09LTM	2	Gemma Gemma	1
Upper	2009	131_09LTM	1	Heteromastus Filiformis	1
Upper	2009	131_09LTM	1	Ilyanassa Obsoleta	10
Upper	2009	131_09LTM	2	Ilyanassa Obsoleta	39
Upper	2009	131_09LTM	1	Leitoscoloplos Fragilis	1
Upper	2009	131_09LTM	1	Leitoscoloplos Sp.	1
Upper	2009	131_09LTM	2	Leitoscoloplos Sp.	3
Upper	2009	131_09LTM	1	Mulinia Lateralis	5
Upper	2009	131_09LTM	2	Mulinia Lateralis	5
Upper	2009	131_09LTM	1	Nematoda	P
Upper	2009	131_09LTM	2	Nematoda	P
Upper	2009	131_09LTM	1	Oligochaeta	65
Upper	2009	131_09LTM	2	Oligochaeta	66
Upper	2009	131_09LTM	2	Polydora Cornuta	1
Upper	2009	131_09LTM	1	Spio Setosa	1
Upper	2009	131_09LTM	1	Streblospio Benedicti	76
Upper	2009	131_09LTM	2	Streblospio Benedicti	88
Upper	2009	131_09LTM	1	Tharyx Acutus	5
Upper	2009	131_09LTM	2	Tharyx Acutus	1
Upper	2009	134_09LTM	2	Aeverrillia Armata	P
Upper	2009	134_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	134_09LTM	2	Bowerbankia Gracilis	P
Upper	2009	134_09LTM	1	Capitella Capitata	2
Upper	2009	134_09LTM	2	Cirratulidae	9

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	134_09LTM	1	Crangon Septemspinosa	2
Upper	2009	134_09LTM	2	Edotia Sp.	1
Upper	2009	134_09LTM	1	Eteone Heteropoda	1
Upper	2009	134_09LTM	2	Eteone Heteropoda	5
Upper	2009	134_09LTM	1	Ilyanassa Obsoleta	1
Upper	2009	134_09LTM	2	Ilyanassa Obsoleta	3
Upper	2009	134_09LTM	2	Leitoscoloplos Fragilis	1
Upper	2009	134_09LTM	1	Leitoscoloplos Sp.	3
Upper	2009	134_09LTM	2	Leitoscoloplos Sp.	7
Upper	2009	134_09LTM	2	Molgula Manhattensis	6
Upper	2009	134_09LTM	1	Mulinia Lateralis	102
Upper	2009	134_09LTM	2	Mulinia Lateralis	214
Upper	2009	134_09LTM	2	Neanthes Succinea	4
Upper	2009	134_09LTM	2	Nematoda	P
Upper	2009	134_09LTM	1	Neomysis Americana	6
Upper	2009	134_09LTM	1	Obelia Bidentata	P
Upper	2009	134_09LTM	2	Obelia Bidentata	P
Upper	2009	134_09LTM	1	Oligochaeta	108
Upper	2009	134_09LTM	2	Oligochaeta	81
Upper	2009	134_09LTM	1	Pectinaria Gouldi	1
Upper	2009	134_09LTM	2	Pectinaria Gouldi	4
Upper	2009	134_09LTM	2	Podarke Obscura	1
Upper	2009	134_09LTM	1	Polydora Cornuta	10
Upper	2009	134_09LTM	2	Polydora Cornuta	183
Upper	2009	134_09LTM	2	Rictaxis Punctostriatus	4
Upper	2009	134_09LTM	1	Streblospio Benedicti	306
Upper	2009	134_09LTM	2	Streblospio Benedicti	487
Upper	2009	134_09LTM	2	Tellina Agilis	1
Upper	2009	134_09LTM	1	Tharyx Acutus	7
Upper	2009	134_09LTM	2	Tharyx Acutus	7
Upper	2009	134_09LTM	2	Turbellaria	1
Upper	2009	135_09LTM	1	Actiniaria	1
Upper	2009	135_09LTM	1	Capitella Capitata	1
Upper	2009	135_09LTM	2	Capitella Capitata	2
Upper	2009	135_09LTM	1	Cirratulidae	1
Upper	2009	135_09LTM	1	Gammarus Mucronatus	1
Upper	2009	135_09LTM	1	Heteromastus Filiformis	2
Upper	2009	135_09LTM	2	Heteromastus Filiformis	2
Upper	2009	135_09LTM	1	Ilyanassa Obsoleta	10
Upper	2009	135_09LTM	2	Ilyanassa Obsoleta	9
Upper	2009	135_09LTM	1	Leitoscoloplos Sp.	6
Upper	2009	135_09LTM	1	Microphthalmus Sczelkowii	2
Upper	2009	135_09LTM	1	Mulinia Lateralis	1
Upper	2009	135_09LTM	1	Nematoda	P
Upper	2009	135_09LTM	2	Nematoda	P
Upper	2009	135_09LTM	1	Oligochaeta	104
Upper	2009	135_09LTM	2	Oligochaeta	70
Upper	2009	135_09LTM	1	Polydora Cornuta	2
Upper	2009	135_09LTM	2	Polydora Cornuta	1
Upper	2009	135_09LTM	1	Sphaerosyllis Longicauda	1
Upper	2009	135_09LTM	1	Streblospio Benedicti	15
Upper	2009	135_09LTM	2	Streblospio Benedicti	2
Upper	2009	138_09LTM	2	Actiniaria	1
Upper	2009	138_09LTM	2	Capitella Capitata	3
Upper	2009	138_09LTM	1	Capitella Jonesi	5
Upper	2009	138_09LTM	2	Capitella Jonesi	59
Upper	2009	138_09LTM	2	Cirratulidae	2
Upper	2009	138_09LTM	1	Ilyanassa Obsoleta	31
Upper	2009	138_09LTM	2	Ilyanassa Obsoleta	60

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	138_09LTM	2	Leitoscoloplos Sp.	1
Upper	2009	138_09LTM	1	Microphthalmus Sp.	1
Upper	2009	138_09LTM	1	Mulinia Lateralis	1
Upper	2009	138_09LTM	2	Mulinia Lateralis	1
Upper	2009	138_09LTM	1	Nematoda	P
Upper	2009	138_09LTM	2	Nematoda	P
Upper	2009	138_09LTM	1	Nudibranchia	1
Upper	2009	138_09LTM	1	Oligochaeta	18
Upper	2009	138_09LTM	2	Oligochaeta	11
Upper	2009	138_09LTM	2	Pectinaria Gouldi	1
Upper	2009	138_09LTM	2	Podarke Obscura	1
Upper	2009	138_09LTM	1	Polydora Cornuta	2
Upper	2009	138_09LTM	2	Polydora Cornuta	28
Upper	2009	138_09LTM	1	Streblospio Benedicti	269
Upper	2009	138_09LTM	2	Streblospio Benedicti	63
Upper	2009	138_09LTM	2	Tharyx Acutus	1
Upper	2009	139_09LTM	2	Capitella Capitata	1
Upper	2009	139_09LTM	1	Ilyanassa Obsoleta	2
Upper	2009	139_09LTM	2	Ilyanassa Obsoleta	2
Upper	2009	139_09LTM	1	Leitoscoloplos Sp.	3
Upper	2009	139_09LTM	2	Leitoscoloplos Sp.	6
Upper	2009	139_09LTM	2	Mercenaria Mercenaria	2
Upper	2009	139_09LTM	2	Mulinia Lateralis	2
Upper	2009	139_09LTM	1	Nematoda	P
Upper	2009	139_09LTM	2	Nematoda	P
Upper	2009	139_09LTM	2	Neomysis Americana	1
Upper	2009	139_09LTM	1	Oligochaeta	127
Upper	2009	139_09LTM	2	Oligochaeta	75
Upper	2009	139_09LTM	1	Pectinaria Gouldi	1
Upper	2009	139_09LTM	1	Streblospio Benedicti	154
Upper	2009	139_09LTM	2	Streblospio Benedicti	114
Upper	2009	139_09LTM	1	Tharyx Acutus	2
Upper	2009	140_09LTM	1	Capitella Capitata	1
Upper	2009	140_09LTM	2	Capitella Capitata	1
Upper	2009	140_09LTM	1	Cirratulidae	1
Upper	2009	140_09LTM	2	Cirratulidae	7
Upper	2009	140_09LTM	2	Gyptis Vittata	1
Upper	2009	140_09LTM	1	Ilyanassa Obsoleta	3
Upper	2009	140_09LTM	2	Ilyanassa Obsoleta	3
Upper	2009	140_09LTM	1	Leitoscoloplos Fragilis	4
Upper	2009	140_09LTM	1	Leitoscoloplos Sp.	13
Upper	2009	140_09LTM	2	Leitoscoloplos Sp.	27
Upper	2009	140_09LTM	1	Mulinia Lateralis	35
Upper	2009	140_09LTM	2	Mulinia Lateralis	71
Upper	2009	140_09LTM	2	Neanthes Succinea	1
Upper	2009	140_09LTM	1	Nematoda	P
Upper	2009	140_09LTM	2	Nematoda	P
Upper	2009	140_09LTM	2	Neomysis Americana	2
Upper	2009	140_09LTM	1	Oligochaeta	29
Upper	2009	140_09LTM	2	Oligochaeta	56
Upper	2009	140_09LTM	1	Pectinaria Gouldi	1
Upper	2009	140_09LTM	2	Pectinaria Gouldi	7
Upper	2009	140_09LTM	1	Polydora Cornuta	7
Upper	2009	140_09LTM	2	Polydora Cornuta	12
Upper	2009	140_09LTM	1	Rictaxis Punctostriatus	4
Upper	2009	140_09LTM	2	Rictaxis Punctostriatus	5
Upper	2009	140_09LTM	1	Spio Setosa	1
Upper	2009	140_09LTM	1	Streblospio Benedicti	141
Upper	2009	140_09LTM	2	Streblospio Benedicti	183

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	140_09LTM	1	Tharyx Acutus	5
Upper	2009	140_09LTM	2	Tharyx Acutus	11
Upper	2009	146_09LTM	2	Aeverrillia Armata	P
Upper	2009	146_09LTM	1	Anadara Transversa	1
Upper	2009	146_09LTM	2	Anadara Transversa	1
Upper	2009	146_09LTM	1	Anomia Simplex	1
Upper	2009	146_09LTM	2	Apocorophium Acutum	1
Upper	2009	146_09LTM	2	Bowerbankia Gracilis	P
Upper	2009	146_09LTM	1	Capitella Capitata	2
Upper	2009	146_09LTM	1	Cirratulidae	7
Upper	2009	146_09LTM	2	Cirratulidae	9
Upper	2009	146_09LTM	2	Cliona Celata	1
Upper	2009	146_09LTM	2	Cliona Vastifica	1
Upper	2009	146_09LTM	2	Clytia Hemisphaerica	P
Upper	2009	146_09LTM	1	Crepidula Fornicata	1
Upper	2009	146_09LTM	2	Dipolydora Socialis	2
Upper	2009	146_09LTM	2	Dyspanopeus Sayi	1
Upper	2009	146_09LTM	1	Edotia Sp.	1
Upper	2009	146_09LTM	1	Eteone Heteropoda	12
Upper	2009	146_09LTM	2	Eteone Heteropoda	4
Upper	2009	146_09LTM	1	Eumida Sanguinea	1
Upper	2009	146_09LTM	2	Eunicidae	1
Upper	2009	146_09LTM	1	Glycera Americana	1
Upper	2009	146_09LTM	1	Gyptis Vittata	2
Upper	2009	146_09LTM	2	Gyptis Vittata	2
Upper	2009	146_09LTM	2	Halecium Sp.	P
Upper	2009	146_09LTM	2	Hemicyclops Sp.	1
Upper	2009	146_09LTM	2	Hydroides Dianthus	1
Upper	2009	146_09LTM	1	Ilyanassa Obsoleta	1
Upper	2009	146_09LTM	1	Leitoscoloplos Fragilis	4
Upper	2009	146_09LTM	2	Leitoscoloplos Fragilis	2
Upper	2009	146_09LTM	1	Leitoscoloplos Sp.	25
Upper	2009	146_09LTM	2	Leitoscoloplos Sp.	14
Upper	2009	146_09LTM	1	Mediomastus Ambiseta	2
Upper	2009	146_09LTM	2	Mitrella Lunata	1
Upper	2009	146_09LTM	2	Monocorophium Acherusicum	7
Upper	2009	146_09LTM	1	Mulinia Lateralis	36
Upper	2009	146_09LTM	2	Mulinia Lateralis	35
Upper	2009	146_09LTM	1	Neanthes Succinea	1
Upper	2009	146_09LTM	2	Neanthes Succinea	4
Upper	2009	146_09LTM	1	Nematoda	P
Upper	2009	146_09LTM	2	Nematoda	P
Upper	2009	146_09LTM	1	Ninoe Nigripes	1
Upper	2009	146_09LTM	2	Nudibranchia	4
Upper	2009	146_09LTM	2	Obelia Dichotoma	P
Upper	2009	146_09LTM	1	Oligochaeta	43
Upper	2009	146_09LTM	2	Oligochaeta	22
Upper	2009	146_09LTM	2	Paracaprella Tenuis	4
Upper	2009	146_09LTM	1	Pectinaria Gouldi	18
Upper	2009	146_09LTM	2	Pectinaria Gouldi	14
Upper	2009	146_09LTM	1	Podarke Obscura	1
Upper	2009	146_09LTM	2	Podarke Obscura	6
Upper	2009	146_09LTM	1	Polydora Cornuta	123
Upper	2009	146_09LTM	2	Polydora Cornuta	189
Upper	2009	146_09LTM	2	Polydora Websteri	1
Upper	2009	146_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Upper	2009	146_09LTM	1	Rictaxis Punctostriatus	5
Upper	2009	146_09LTM	2	Rictaxis Punctostriatus	7
Upper	2009	146_09LTM	1	Spio Setosa	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	146_09LTM	1	Streblospio Benedicti	241
Upper	2009	146_09LTM	2	Streblospio Benedicti	180
Upper	2009	146_09LTM	1	Tharyx Acutus	4
Upper	2009	146_09LTM	2	Tharyx Acutus	6
Upper	2009	147_09LTM	2	Actiniaria	1
Upper	2009	147_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	147_09LTM	1	Capitella Jonesi	1
Upper	2009	147_09LTM	2	Cirratulidae	4
Upper	2009	147_09LTM	1	Eteone Heteropoda	1
Upper	2009	147_09LTM	2	Glycera Americana	1
Upper	2009	147_09LTM	1	Halecium Sp.	P
Upper	2009	147_09LTM	1	Heteromastus Filiformis	1
Upper	2009	147_09LTM	2	Heteromastus Filiformis	1
Upper	2009	147_09LTM	1	Ilyanassa Obsoleta	8
Upper	2009	147_09LTM	2	Ilyanassa Obsoleta	22
Upper	2009	147_09LTM	1	Leitoscoloplos Fragilis	2
Upper	2009	147_09LTM	2	Leitoscoloplos Fragilis	1
Upper	2009	147_09LTM	1	Leitoscoloplos Sp.	14
Upper	2009	147_09LTM	2	Leitoscoloplos Sp.	10
Upper	2009	147_09LTM	2	Mediomastus Ambiseta	9
Upper	2009	147_09LTM	1	Monocorophium Acherusicum	1
Upper	2009	147_09LTM	1	Mulinia Lateralis	3
Upper	2009	147_09LTM	2	Mulinia Lateralis	14
Upper	2009	147_09LTM	1	Nematoda	P
Upper	2009	147_09LTM	2	Nematoda	P
Upper	2009	147_09LTM	1	Obelia Bidentata	P
Upper	2009	147_09LTM	1	Oligochaeta	68
Upper	2009	147_09LTM	2	Oligochaeta	91
Upper	2009	147_09LTM	1	Pectinaria Gouldi	1
Upper	2009	147_09LTM	1	Polydora Cornuta	3
Upper	2009	147_09LTM	2	Polydora Cornuta	5
Upper	2009	147_09LTM	1	Streblospio Benedicti	2
Upper	2009	147_09LTM	2	Streblospio Benedicti	444
Upper	2009	147_09LTM	2	Tellina Agilis	1
Upper	2009	147_09LTM	1	Tharyx Acutus	10
Upper	2009	147_09LTM	2	Tharyx Acutus	7
Upper	2009	150_09LTM	2	Anomia Simplex	1
Upper	2009	150_09LTM	2	Balanus Venustus	1
Upper	2009	150_09LTM	1	Capitella Capitata	2
Upper	2009	150_09LTM	2	Capitella Capitata	1
Upper	2009	150_09LTM	1	Capitella Jonesi	1
Upper	2009	150_09LTM	2	Capitella Jonesi	2
Upper	2009	150_09LTM	1	Cirratulidae	7
Upper	2009	150_09LTM	2	Cirratulidae	4
Upper	2009	150_09LTM	1	Edwardsia Elegans	1
Upper	2009	150_09LTM	2	Eteone Heteropoda	3
Upper	2009	150_09LTM	1	Gemma Gemma	2
Upper	2009	150_09LTM	1	Gyptis Vittata	1
Upper	2009	150_09LTM	2	Gyptis Vittata	1
Upper	2009	150_09LTM	1	Halecium Sp.	P
Upper	2009	150_09LTM	1	Leitoscoloplos Fragilis	1
Upper	2009	150_09LTM	2	Leitoscoloplos Fragilis	5
Upper	2009	150_09LTM	1	Leitoscoloplos Sp.	32
Upper	2009	150_09LTM	2	Leitoscoloplos Sp.	54
Upper	2009	150_09LTM	1	Macoma Tenta	2
Upper	2009	150_09LTM	2	Macoma Tenta	2
Upper	2009	150_09LTM	1	Mulinia Lateralis	22
Upper	2009	150_09LTM	2	Mulinia Lateralis	49
Upper	2009	150_09LTM	1	Nematoda	P

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	150_09LTM	2	Nematoda	P
Upper	2009	150_09LTM	1	Nucula Annulata	1
Upper	2009	150_09LTM	1	Oligochaeta	13
Upper	2009	150_09LTM	2	Oligochaeta	6
Upper	2009	150_09LTM	1	Pectinaria Gouldi	1
Upper	2009	150_09LTM	2	Pectinaria Gouldi	5
Upper	2009	150_09LTM	1	Podarke Obscura	2
Upper	2009	150_09LTM	1	Polydora Cornuta	15
Upper	2009	150_09LTM	2	Polydora Cornuta	29
Upper	2009	150_09LTM	2	Rictaxis Punctostriatus	1
Upper	2009	150_09LTM	1	Streblospio Benedicti	86
Upper	2009	150_09LTM	2	Streblospio Benedicti	80
Upper	2009	150_09LTM	1	Tharyx Acutus	1
Upper	2009	150_09LTM	2	Tharyx Acutus	3
Upper	2009	151_09LTM	1	Ampelisca Abdita	1
Upper	2009	151_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	151_09LTM	2	Bowerbankia Gracilis	P
Upper	2009	151_09LTM	2	Capitella Capitata	2
Upper	2009	151_09LTM	1	Cirratulidae	13
Upper	2009	151_09LTM	2	Cirratulidae	5
Upper	2009	151_09LTM	2	Dipolydora Socialis	1
Upper	2009	151_09LTM	1	Eteone Heteropoda	1
Upper	2009	151_09LTM	2	Eteone Heteropoda	1
Upper	2009	151_09LTM	2	Eumida Sanguinea	2
Upper	2009	151_09LTM	1	Glycera Americana	1
Upper	2009	151_09LTM	2	Gyptis Vittata	3
Upper	2009	151_09LTM	2	Heteromastus Filiformis	1
Upper	2009	151_09LTM	1	Leitoscoloplos Fragilis	2
Upper	2009	151_09LTM	2	Leitoscoloplos Fragilis	2
Upper	2009	151_09LTM	1	Leitoscoloplos Sp.	21
Upper	2009	151_09LTM	2	Leitoscoloplos Sp.	64
Upper	2009	151_09LTM	1	Mediomastus Ambiseta	10
Upper	2009	151_09LTM	2	Mediomastus Ambiseta	32
Upper	2009	151_09LTM	2	Mercenaria Mercenaria	1
Upper	2009	151_09LTM	1	Mulinia Lateralis	5
Upper	2009	151_09LTM	2	Mulinia Lateralis	9
Upper	2009	151_09LTM	2	Neanthes Succinea	1
Upper	2009	151_09LTM	1	Nematoda	P
Upper	2009	151_09LTM	2	Nematoda	P
Upper	2009	151_09LTM	2	Obelia Bidentata	P
Upper	2009	151_09LTM	2	Obelia Dichotoma	P
Upper	2009	151_09LTM	1	Oligochaeta	5
Upper	2009	151_09LTM	2	Oligochaeta	17
Upper	2009	151_09LTM	2	Pectinaria Gouldi	3
Upper	2009	151_09LTM	1	Polydora Cornuta	38
Upper	2009	151_09LTM	2	Polydora Cornuta	248
Upper	2009	151_09LTM	1	Spurwinkia Salsa	1
Upper	2009	151_09LTM	1	Streblospio Benedicti	2
Upper	2009	151_09LTM	2	Streblospio Benedicti	12
Upper	2009	151_09LTM	2	Syllides Convoluta	1
Upper	2009	151_09LTM	2	Tellinidae	1
Upper	2009	151_09LTM	1	Tharyx Acutus	31
Upper	2009	151_09LTM	2	Tharyx Acutus	17
Upper	2009	152_09LTM	1	Ampelisca Abdita	5
Upper	2009	152_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	152_09LTM	2	Bowerbankia Gracilis	P
Upper	2009	152_09LTM	1	Capitella Capitata	2
Upper	2009	152_09LTM	2	Capitella Capitata	3
Upper	2009	152_09LTM	1	Cirratulidae	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	152_09LTM	2	Cirratulidae	1
Upper	2009	152_09LTM	1	Clytia Hemisphaerica	P
Upper	2009	152_09LTM	2	Eteone Heteropoda	1
Upper	2009	152_09LTM	1	Hemicyclops Sp.	2
Upper	2009	152_09LTM	2	Ilyanassa Obsoleta	3
Upper	2009	152_09LTM	2	Leitoscoloplos Sp.	2
Upper	2009	152_09LTM	1	Mediomastus Ambiseta	1
Upper	2009	152_09LTM	1	Microprotopus Raneyi	1
Upper	2009	152_09LTM	1	Nematoda	P
Upper	2009	152_09LTM	2	Nematoda	P
Upper	2009	152_09LTM	2	Oligochaeta	2
Upper	2009	152_09LTM	2	Palaemonetes Vulgaris	2
Upper	2009	152_09LTM	1	Polydora Cornuta	4
Upper	2009	152_09LTM	2	Polydora Cornuta	2
Upper	2009	152_09LTM	2	Streblospio Benedicti	3
Upper	2009	152_09LTM	1	Tharyx Acutus	1
Upper	2009	152_09LTM	2	Tharyx Acutus	1
Upper	2009	154_09LTM	1	Anadara Transversa	1
Upper	2009	154_09LTM	1	Ancistrosyllis Hartmanae	1
Upper	2009	154_09LTM	1	Ancula Gibbosa	1
Upper	2009	154_09LTM	1	Apocorophium Acutum	1
Upper	2009	154_09LTM	2	Apocorophium Acutum	1
Upper	2009	154_09LTM	1	Autolytus Prolifer	1
Upper	2009	154_09LTM	2	Boccardiella Hamata	1
Upper	2009	154_09LTM	1	Bowerbankia Gracilis	P
Upper	2009	154_09LTM	2	Bowerbankia Gracilis	P
Upper	2009	154_09LTM	1	Capitella Capitata	2
Upper	2009	154_09LTM	2	Capitella Capitata	5
Upper	2009	154_09LTM	1	Capitella Jonesi	1
Upper	2009	154_09LTM	2	Capitella Jonesi	5
Upper	2009	154_09LTM	1	Carazziella Hobsonae	1
Upper	2009	154_09LTM	1	Cirratulidae	5
Upper	2009	154_09LTM	2	Cirratulidae	2
Upper	2009	154_09LTM	1	Clytia Gracilis	P
Upper	2009	154_09LTM	1	Clytia Hemisphaerica	P
Upper	2009	154_09LTM	2	Clytia Hemisphaerica	P
Upper	2009	154_09LTM	1	Crepidula Convexa	1
Upper	2009	154_09LTM	1	Dipolydora Socialis	50
Upper	2009	154_09LTM	2	Dipolydora Socialis	21
Upper	2009	154_09LTM	2	Dodecaceria Sp.	1
Upper	2009	154_09LTM	1	Elasmopus Laevis	1
Upper	2009	154_09LTM	1	Eteone Heteropoda	10
Upper	2009	154_09LTM	2	Eteone Heteropoda	2
Upper	2009	154_09LTM	1	Eumida Sanguinea	14
Upper	2009	154_09LTM	2	Eumida Sanguinea	13
Upper	2009	154_09LTM	1	Gyptis Vittata	1
Upper	2009	154_09LTM	2	Gyptis Vittata	3
Upper	2009	154_09LTM	1	Heteromastus Filiformis	2
Upper	2009	154_09LTM	2	Ilyanassa Obsoleta	1
Upper	2009	154_09LTM	1	Leitoscoloplos Sp.	5
Upper	2009	154_09LTM	2	Leitoscoloplos Sp.	5
Upper	2009	154_09LTM	2	Lepidonotus Squamatus	1
Upper	2009	154_09LTM	1	Lyonsia Hyalina	1
Upper	2009	154_09LTM	1	Mediomastus Ambiseta	14
Upper	2009	154_09LTM	2	Mediomastus Ambiseta	8
Upper	2009	154_09LTM	1	Mercenaria Mercenaria	5
Upper	2009	154_09LTM	2	Mercenaria Mercenaria	3
Upper	2009	154_09LTM	1	Monocorophium Acherusicum	4
Upper	2009	154_09LTM	2	Monocorophium Acherusicum	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	154_09LTM	1	Mulinia Lateralis	7
Upper	2009	154_09LTM	2	Mulinia Lateralis	1
Upper	2009	154_09LTM	1	Neanthes Succinea	1
Upper	2009	154_09LTM	1	Nematoda	P
Upper	2009	154_09LTM	2	Nematoda	P
Upper	2009	154_09LTM	2	Nereidae	1
Upper	2009	154_09LTM	1	Obelia Bidentata	P
Upper	2009	154_09LTM	1	Obelia Dichotoma	P
Upper	2009	154_09LTM	2	Obelia Dichotoma	P
Upper	2009	154_09LTM	1	Odontosyllis Fulgurans	3
Upper	2009	154_09LTM	2	Odontosyllis Fulgurans	4
Upper	2009	154_09LTM	1	Oligochaeta	8
Upper	2009	154_09LTM	2	Oligochaeta	18
Upper	2009	154_09LTM	1	Pectinaria Gouldi	1
Upper	2009	154_09LTM	2	Pectinaria Gouldi	1
Upper	2009	154_09LTM	1	Podarke Obscura	1
Upper	2009	154_09LTM	2	Podarke Obscura	9
Upper	2009	154_09LTM	1	Polydora Cornuta	1207
Upper	2009	154_09LTM	2	Polydora Cornuta	461
Upper	2009	154_09LTM	1	Polydora Sp.	1
Upper	2009	154_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Upper	2009	154_09LTM	1	Prionospio Steenstrupi	1
Upper	2009	154_09LTM	1	Spurwinkia Salsa	1
Upper	2009	154_09LTM	1	Streblospio Benedicti	6
Upper	2009	154_09LTM	2	Streblospio Benedicti	9
Upper	2009	154_09LTM	1	Tharyx Acutus	29
Upper	2009	154_09LTM	2	Tharyx Acutus	9
Upper	2009	154_09LTM	2	Urosalpinx Cinerea	1
Upper	2009	155_09LTM	2	Anachis Lafresnayi	1
Upper	2009	155_09LTM	2	Anadara Transversa	1
Upper	2009	155_09LTM	2	Anomia Simplex	1
Upper	2009	155_09LTM	2	Balanus Venustus	5
Upper	2009	155_09LTM	1	Capitella Capitata	2
Upper	2009	155_09LTM	2	Capitella Capitata	7
Upper	2009	155_09LTM	2	Cirratulidae	1
Upper	2009	155_09LTM	2	Cliona Celata	2
Upper	2009	155_09LTM	2	Cliona Vastifica	4
Upper	2009	155_09LTM	2	Clytia Gracilis	P
Upper	2009	155_09LTM	2	Crepidula Fornicata	9
Upper	2009	155_09LTM	2	Dipolydora Socialis	1
Upper	2009	155_09LTM	1	Elasmopus Laevis	1
Upper	2009	155_09LTM	1	Gammarus Mucronatus	1
Upper	2009	155_09LTM	2	Gammarus Mucronatus	1
Upper	2009	155_09LTM	2	Halecium Sp.	P
Upper	2009	155_09LTM	1	Hemicyclops Sp.	1
Upper	2009	155_09LTM	1	Heteromastus Filiformis	1
Upper	2009	155_09LTM	1	Ilyanassa Obsoleta	12
Upper	2009	155_09LTM	2	Ilyanassa Obsoleta	34
Upper	2009	155_09LTM	1	Leitoscoloplos Sp.	6
Upper	2009	155_09LTM	1	Mediomastus Ambiseta	2
Upper	2009	155_09LTM	1	Melita Nitida	2
Upper	2009	155_09LTM	2	Melita Nitida	7
Upper	2009	155_09LTM	2	Mercenaria Mercenaria	1
Upper	2009	155_09LTM	1	Microdeutopus Gryllotalpa	1
Upper	2009	155_09LTM	2	Microporella Ciliata	P
Upper	2009	155_09LTM	1	Neanthes Succinea	1
Upper	2009	155_09LTM	2	Neanthes Succinea	1
Upper	2009	155_09LTM	1	Nematoda	P
Upper	2009	155_09LTM	2	Nematoda	P

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Upper	2009	155_09LTM	2	Nucula Proxima	1
Upper	2009	155_09LTM	2	Oligochaeta	2
Upper	2009	155_09LTM	1	Polydora Cornuta	1
Upper	2009	155_09LTM	2	Polydora Cornuta	5
Upper	2009	155_09LTM	2	Schizoporella Cornuta	P
Upper	2009	155_09LTM	2	Schizoporella Unicornis	P
Upper	2009	155_09LTM	1	Streblospio Benedicti	4
Upper	2009	155_09LTM	2	Streblospio Benedicti	2
Upper	2009	155_09LTM	2	Tagelus Divisus	1
Upper	2009	155_09LTM	1	Tharyx Acutus	3
Lower	2009	202_09LTM	1	Anomia Simplex	2
Lower	2009	202_09LTM	1	Apocorophium Acutum	3
Lower	2009	202_09LTM	1	Autolytus Prolifer	4
Lower	2009	202_09LTM	1	Bivalvia	1
Lower	2009	202_09LTM	1	Boccardiella Hamata	3
Lower	2009	202_09LTM	2	Boccardiella Hamata	3
Lower	2009	202_09LTM	2	Bowerbankia Gracilis	P
Lower	2009	202_09LTM	1	Capitella Capitata	8
Lower	2009	202_09LTM	2	Capitella Capitata	25
Lower	2009	202_09LTM	2	Capitella Jonesi	6
Lower	2009	202_09LTM	1	Cirratulidae	16
Lower	2009	202_09LTM	2	Cirratulidae	49
Lower	2009	202_09LTM	1	Cliona Celata	1
Lower	2009	202_09LTM	2	Cliona Celata	2
Lower	2009	202_09LTM	1	Cliona Vastifica	2
Lower	2009	202_09LTM	2	Cliona Vastifica	11
Lower	2009	202_09LTM	1	Clytia Hemisphaerica	P
Lower	2009	202_09LTM	2	Clytia Hemisphaerica	P
Lower	2009	202_09LTM	2	Crepidula Convexa	1
Lower	2009	202_09LTM	1	Crepidula Fornicata	2
Lower	2009	202_09LTM	2	Crepidula Fornicata	1
Lower	2009	202_09LTM	1	Cryptosula Pallasiana	P
Lower	2009	202_09LTM	2	Cryptosula Pallasiana	P
Lower	2009	202_09LTM	1	Dipolydora Socialis	4
Lower	2009	202_09LTM	2	Dipolydora Socialis	27
Lower	2009	202_09LTM	2	Dorvillea (Schistomeringos) Annulata	4
Lower	2009	202_09LTM	1	Dyspanopeus Sayi	1
Lower	2009	202_09LTM	2	Dyspanopeus Sayi	11
Lower	2009	202_09LTM	1	Elasmopus Laevis	2
Lower	2009	202_09LTM	2	Elasmopus Laevis	5
Lower	2009	202_09LTM	1	Eteone Heteropoda	1
Lower	2009	202_09LTM	2	Eteone Heteropoda	2
Lower	2009	202_09LTM	1	Eumida Sanguinea	6
Lower	2009	202_09LTM	2	Eumida Sanguinea	9
Lower	2009	202_09LTM	1	Eupleura Caudata	1
Lower	2009	202_09LTM	2	Eupleura Caudata	2
Lower	2009	202_09LTM	2	Gemma Gemma	1
Lower	2009	202_09LTM	2	Glycera Dibranchiata	1
Lower	2009	202_09LTM	2	Halecium Halecinum	P
Lower	2009	202_09LTM	2	Heteromastus Filiformis	6
Lower	2009	202_09LTM	1	Heteromysis Formosa	1
Lower	2009	202_09LTM	2	Heteromysis Formosa	2
Lower	2009	202_09LTM	1	Hydroides Dianthus	1
Lower	2009	202_09LTM	2	Hydroides Dianthus	1
Lower	2009	202_09LTM	1	Ianiropsis Sp. 1	3
Lower	2009	202_09LTM	1	Leitoscoloplos Sp.	2
Lower	2009	202_09LTM	2	Leitoscoloplos Sp.	6
Lower	2009	202_09LTM	1	Mediomastus Ambiseta	4
Lower	2009	202_09LTM	2	Mediomastus Ambiseta	14

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	202_09LTM	1	Mercenaria Mercenaria	1
Lower	2009	202_09LTM	2	Mercenaria Mercenaria	10
Lower	2009	202_09LTM	1	Microdeutopus Gryllotalpa	8
Lower	2009	202_09LTM	2	Microdeutopus Gryllotalpa	3
Lower	2009	202_09LTM	1	Microporella Ciliata	P
Lower	2009	202_09LTM	2	Microporella Ciliata	P
Lower	2009	202_09LTM	1	Monocorophium Acherusicum	5
Lower	2009	202_09LTM	2	Monocorophium Acherusicum	5
Lower	2009	202_09LTM	1	Monocorophium Insidiosum	1
Lower	2009	202_09LTM	1	Neanthes Arenaceodentata	8
Lower	2009	202_09LTM	2	Neanthes Arenaceodentata	24
Lower	2009	202_09LTM	1	Neanthes Succinea	1
Lower	2009	202_09LTM	2	Neanthes Succinea	1
Lower	2009	202_09LTM	1	Nematoda	P
Lower	2009	202_09LTM	2	Nematoda	P
Lower	2009	202_09LTM	1	Obelia Bidentata	P
Lower	2009	202_09LTM	1	Obelia Dichotoma	P
Lower	2009	202_09LTM	2	Obelia Dichotoma	P
Lower	2009	202_09LTM	1	Odontosyllis Fulgurans	3
Lower	2009	202_09LTM	2	Odontosyllis Fulgurans	7
Lower	2009	202_09LTM	1	Oligochaeta	159
Lower	2009	202_09LTM	2	Oligochaeta	183
Lower	2009	202_09LTM	1	Paracaprella Tenuis	1
Lower	2009	202_09LTM	2	Paracaprella Tenuis	1
Lower	2009	202_09LTM	2	Pectinaria Gouldi	1
Lower	2009	202_09LTM	1	Podarke Obscura	36
Lower	2009	202_09LTM	2	Podarke Obscura	53
Lower	2009	202_09LTM	1	Polydora Cornuta	93
Lower	2009	202_09LTM	2	Polydora Cornuta	227
Lower	2009	202_09LTM	2	Polydora Websteri	1
Lower	2009	202_09LTM	1	Prionospio Heterobranchia	1
Lower	2009	202_09LTM	2	Sabellaria Vulgaris	1
Lower	2009	202_09LTM	1	Schizoporella Unicornis	P
Lower	2009	202_09LTM	2	Schizoporella Unicornis	P
Lower	2009	202_09LTM	2	Spio Setosa	2
Lower	2009	202_09LTM	1	Streblospio Benedicti	36
Lower	2009	202_09LTM	2	Streblospio Benedicti	32
Lower	2009	202_09LTM	1	Stylochus Ellipticus	1
Lower	2009	202_09LTM	2	Stylochus Ellipticus	1
Lower	2009	202_09LTM	2	Syllis Gracilis	2
Lower	2009	202_09LTM	1	Tharyx Acutus	114
Lower	2009	202_09LTM	2	Tharyx Acutus	105
Lower	2009	204_09LTM	2	Anadara Transversa	2
Lower	2009	204_09LTM	2	Anomia Sp.	1
Lower	2009	204_09LTM	2	Balanus Venustus	11
Lower	2009	204_09LTM	1	Bittium Alternatum	1
Lower	2009	204_09LTM	2	Bivalvia	1
Lower	2009	204_09LTM	2	Bowerbankia Gracilis	P
Lower	2009	204_09LTM	2	Bugula Stolonifera	P
Lower	2009	204_09LTM	1	Capitella Capitata	1
Lower	2009	204_09LTM	2	Capitella Capitata	1
Lower	2009	204_09LTM	2	Capitella Jonesi	1
Lower	2009	204_09LTM	2	Cirratulidae	5
Lower	2009	204_09LTM	1	Eteone Heteropoda	3
Lower	2009	204_09LTM	2	Eteone Heteropoda	1
Lower	2009	204_09LTM	2	Eumida Sanguinea	3
Lower	2009	204_09LTM	2	Halecium Sp.	P
Lower	2009	204_09LTM	1	Leitoscoloplos Fragilis	5
Lower	2009	204_09LTM	2	Leitoscoloplos Fragilis	2

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	204_09LTM	1	Leitoscoloplos Sp.	49
Lower	2009	204_09LTM	2	Leitoscoloplos Sp.	109
Lower	2009	204_09LTM	1	Leptinogaster Major	1
Lower	2009	204_09LTM	2	Leptinogaster Major	1
Lower	2009	204_09LTM	2	Lyonsia Hyalina	1
Lower	2009	204_09LTM	2	Macoma Tenta	2
Lower	2009	204_09LTM	2	Mediomastus Ambiseta	3
Lower	2009	204_09LTM	1	Mercenaria Mercenaria	2
Lower	2009	204_09LTM	2	Mercenaria Mercenaria	11
Lower	2009	204_09LTM	2	Microdeutopus Gryllotalpa	1
Lower	2009	204_09LTM	2	Molgula Sp.	1
Lower	2009	204_09LTM	2	Mulinia Lateralis	125
Lower	2009	204_09LTM	1	Mya Arenaria	1
Lower	2009	204_09LTM	1	Nephtys Incisa	1
Lower	2009	204_09LTM	2	Obelia Dichotoma	P
Lower	2009	204_09LTM	1	Oligochaeta	12
Lower	2009	204_09LTM	2	Oligochaeta	17
Lower	2009	204_09LTM	1	Pectinaria Gouldi	16
Lower	2009	204_09LTM	2	Pectinaria Gouldi	94
Lower	2009	204_09LTM	2	Pectinaria Gouldi	1
Lower	2009	204_09LTM	1	Podarke Obscura	2
Lower	2009	204_09LTM	2	Podarke Obscura	1
Lower	2009	204_09LTM	1	Polydora Cornuta	2
Lower	2009	204_09LTM	2	Polydora Cornuta	6
Lower	2009	204_09LTM	2	Rictaxis Punctostriatus	1
Lower	2009	204_09LTM	2	Sabellaria Vulgaris	1
Lower	2009	204_09LTM	1	Streblospio Benedicti	18
Lower	2009	204_09LTM	2	Streblospio Benedicti	45
Lower	2009	204_09LTM	2	Tellinidae	3
Lower	2009	204_09LTM	1	Tharyx Acutus	18
Lower	2009	204_09LTM	2	Tharyx Acutus	9
Lower	2009	207_09LTM	1	Callinectes Sapidus	1
Lower	2009	207_09LTM	1	Capitella Capitata	1
Lower	2009	207_09LTM	1	Cirratulidae	3
Lower	2009	207_09LTM	2	Cirratulidae	3
Lower	2009	207_09LTM	1	Clytia Hemisphaerica	P
Lower	2009	207_09LTM	2	Clytia Hemisphaerica	P
Lower	2009	207_09LTM	2	Dyspanopeus Sayi	1
Lower	2009	207_09LTM	1	Eteone Heteropoda	4
Lower	2009	207_09LTM	2	Eteone Heteropoda	5
Lower	2009	207_09LTM	2	Gyptis Vittata	1
Lower	2009	207_09LTM	1	Leitoscoloplos Fragilis	49
Lower	2009	207_09LTM	2	Leitoscoloplos Fragilis	41
Lower	2009	207_09LTM	1	Leitoscoloplos Sp.	57
Lower	2009	207_09LTM	2	Leitoscoloplos Sp.	101
Lower	2009	207_09LTM	2	Mediomastus Ambiseta	1
Lower	2009	207_09LTM	1	Microphthalmus Aberrans	3
Lower	2009	207_09LTM	1	Nematoda	P
Lower	2009	207_09LTM	2	Nematoda	P
Lower	2009	207_09LTM	1	Oligochaeta	104
Lower	2009	207_09LTM	2	Oligochaeta	36
Lower	2009	207_09LTM	2	Pectinaria Gouldi	6
Lower	2009	207_09LTM	1	Polydora Cornuta	1
Lower	2009	207_09LTM	2	Polydora Cornuta	2
Lower	2009	207_09LTM	1	Streblospio Benedicti	139
Lower	2009	207_09LTM	2	Streblospio Benedicti	393
Lower	2009	207_09LTM	1	Tharyx Acutus	17
Lower	2009	207_09LTM	2	Tharyx Acutus	24
Lower	2009	208_09LTM	1	Capitella Capitata	234

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	208_09LTM	2	Capitella Capitata	172
Lower	2009	208_09LTM	1	Capitella Jonesi	6
Lower	2009	208_09LTM	2	Capitella Jonesi	5
Lower	2009	208_09LTM	1	Cirratulidae	39
Lower	2009	208_09LTM	2	Cirratulidae	54
Lower	2009	208_09LTM	1	Crepidula Convexa	5
Lower	2009	208_09LTM	2	Crepidula Convexa	1
Lower	2009	208_09LTM	2	Crepidula Fornicata	1
Lower	2009	208_09LTM	1	Cymadusa Compta	1
Lower	2009	208_09LTM	2	Dorvillea (Schistomeringos) Annulata	1
Lower	2009	208_09LTM	1	Dyspanopeus Sayi	3
Lower	2009	208_09LTM	2	Dyspanopeus Sayi	1
Lower	2009	208_09LTM	1	Eteone Heteropoda	1
Lower	2009	208_09LTM	2	Eteone Heteropoda	6
Lower	2009	208_09LTM	1	Heteromastus Filiformis	5
Lower	2009	208_09LTM	2	Heteromastus Filiformis	10
Lower	2009	208_09LTM	1	Ilyanassa Obsoleta	5
Lower	2009	208_09LTM	2	Ilyanassa Obsoleta	11
Lower	2009	208_09LTM	1	Leitoscoloplos Fragilis	2
Lower	2009	208_09LTM	1	Leitoscoloplos Sp.	2
Lower	2009	208_09LTM	2	Leitoscoloplos Sp.	2
Lower	2009	208_09LTM	1	Mediomastus Ambiseta	1
Lower	2009	208_09LTM	1	Mercenaria Mercenaria	1
Lower	2009	208_09LTM	2	Mitrella Lunata	2
Lower	2009	208_09LTM	2	Mulinia Lateralis	2
Lower	2009	208_09LTM	1	Neanthes Arenaceodentata	1
Lower	2009	208_09LTM	1	Nematoda	P
Lower	2009	208_09LTM	2	Nematoda	P
Lower	2009	208_09LTM	2	Notomastus Latericeus	1
Lower	2009	208_09LTM	1	Oligochaeta	28
Lower	2009	208_09LTM	2	Oligochaeta	27
Lower	2009	208_09LTM	1	Palaemonetes Pugio	1
Lower	2009	208_09LTM	1	Pectinaria Gouldi	1
Lower	2009	208_09LTM	2	Pectinaria Gouldi	1
Lower	2009	208_09LTM	1	Polydora Cornuta	33
Lower	2009	208_09LTM	2	Polydora Cornuta	59
Lower	2009	208_09LTM	2	Spio Setosa	48
Lower	2009	208_09LTM	1	Streblospio Benedicti	212
Lower	2009	208_09LTM	2	Streblospio Benedicti	225
Lower	2009	208_09LTM	1	Tharyx Acutus	245
Lower	2009	208_09LTM	2	Tharyx Acutus	202
Lower	2009	211_09LTM	1	Anachis Lafresnayi	1
Lower	2009	211_09LTM	1	Capitella Capitata	1
Lower	2009	211_09LTM	2	Capitella Capitata	3
Lower	2009	211_09LTM	2	Capitella Jonesi	3
Lower	2009	211_09LTM	1	Cirratulidae	88
Lower	2009	211_09LTM	2	Cirratulidae	463
Lower	2009	211_09LTM	2	Dyspanopeus Sayi	4
Lower	2009	211_09LTM	1	Eteone Heteropoda	6
Lower	2009	211_09LTM	2	Eteone Heteropoda	2
Lower	2009	211_09LTM	1	Gyptis Vittata	1
Lower	2009	211_09LTM	1	Leitoscoloplos Fragilis	5
Lower	2009	211_09LTM	1	Leitoscoloplos Sp.	17
Lower	2009	211_09LTM	2	Leitoscoloplos Sp.	4
Lower	2009	211_09LTM	1	Mediomastus Ambiseta	3
Lower	2009	211_09LTM	1	Mercenaria Mercenaria	1
Lower	2009	211_09LTM	2	Mercenaria Mercenaria	20
Lower	2009	211_09LTM	1	Mulinia Lateralis	5
Lower	2009	211_09LTM	2	Mulinia Lateralis	145

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	211_09LTM	2	Neanthes Succinea	1
Lower	2009	211_09LTM	1	Nematoda	P
Lower	2009	211_09LTM	2	Nematoda	P
Lower	2009	211_09LTM	2	Notomastus Latericeus	3
Lower	2009	211_09LTM	1	Oligochaeta	23
Lower	2009	211_09LTM	2	Oligochaeta	44
Lower	2009	211_09LTM	2	Pagurus Longicarpus	1
Lower	2009	211_09LTM	1	Pectinaria Gouldi	14
Lower	2009	211_09LTM	2	Pectinaria Gouldi	1
Lower	2009	211_09LTM	2	Podarke Obscura	3
Lower	2009	211_09LTM	1	Polydora Cornuta	5
Lower	2009	211_09LTM	2	Polydora Cornuta	25
Lower	2009	211_09LTM	1	Rictaxis Punctostriatus	3
Lower	2009	211_09LTM	1	Streblospio Benedicti	253
Lower	2009	211_09LTM	2	Streblospio Benedicti	82
Lower	2009	211_09LTM	1	Tharyx Acutus	77
Lower	2009	211_09LTM	2	Tharyx Acutus	226
Lower	2009	212_09LTM	1	Ampelisca Abdita	1
Lower	2009	212_09LTM	1	Capitella Capitata	7
Lower	2009	212_09LTM	2	Capitella Capitata	15
Lower	2009	212_09LTM	2	Capitella Jonesi	1
Lower	2009	212_09LTM	2	Eteone Heteropoda	1
Lower	2009	212_09LTM	1	Gemma Gemma	22
Lower	2009	212_09LTM	2	Gemma Gemma	9
Lower	2009	212_09LTM	1	Heteromastus Filiformis	1
Lower	2009	212_09LTM	1	Hutchinsoniella Macracantha	1
Lower	2009	212_09LTM	1	Ilyanassa Obsoleta	36
Lower	2009	212_09LTM	2	Ilyanassa Obsoleta	4
Lower	2009	212_09LTM	1	Leitoscoloplos Fragilis	23
Lower	2009	212_09LTM	2	Leitoscoloplos Fragilis	10
Lower	2009	212_09LTM	1	Leitoscoloplos Sp.	73
Lower	2009	212_09LTM	2	Leitoscoloplos Sp.	62
Lower	2009	212_09LTM	2	Macoma Tenta	3
Lower	2009	212_09LTM	1	Mediomastus Ambiseta	8
Lower	2009	212_09LTM	2	Mediomastus Ambiseta	9
Lower	2009	212_09LTM	1	Mercenaria Mercenaria	2
Lower	2009	212_09LTM	2	Mercenaria Mercenaria	5
Lower	2009	212_09LTM	2	Mitrella Lunata	2
Lower	2009	212_09LTM	1	Mulinia Lateralis	30
Lower	2009	212_09LTM	2	Mulinia Lateralis	39
Lower	2009	212_09LTM	2	Neanthes Succinea	1
Lower	2009	212_09LTM	1	Nematoda	P
Lower	2009	212_09LTM	2	Nematoda	P
Lower	2009	212_09LTM	1	Oligochaeta	89
Lower	2009	212_09LTM	2	Oligochaeta	121
Lower	2009	212_09LTM	2	Palaemonetes Vulgaris	2
Lower	2009	212_09LTM	1	Pectinaria Gouldi	1
Lower	2009	212_09LTM	1	Polydora Cornuta	12
Lower	2009	212_09LTM	2	Polydora Cornuta	26
Lower	2009	212_09LTM	1	Prionospio Heterobranchia	1
Lower	2009	212_09LTM	1	Rictaxis Punctostriatus	2
Lower	2009	212_09LTM	1	Streblospio Benedicti	157
Lower	2009	212_09LTM	2	Streblospio Benedicti	118
Lower	2009	212_09LTM	1	Tellina Agilis	1
Lower	2009	212_09LTM	1	Tharyx Acutus	7
Lower	2009	212_09LTM	2	Tharyx Acutus	1
Lower	2009	216_09LTM	2	Amphiporus Bioculatus	1
Lower	2009	216_09LTM	2	Bugula Turrita	P
Lower	2009	216_09LTM	1	Capitella Capitata	16

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	216_09LTM	2	Capitella Capitata	9
Lower	2009	216_09LTM	1	Capitella Jonesi	2
Lower	2009	216_09LTM	2	Capitella Jonesi	1
Lower	2009	216_09LTM	1	Cirratulidae	53
Lower	2009	216_09LTM	2	Cirratulidae	40
Lower	2009	216_09LTM	1	Cylichna Oryza	3
Lower	2009	216_09LTM	2	Cylichna Oryza	2
Lower	2009	216_09LTM	2	Dyspanopeus Sayi	1
Lower	2009	216_09LTM	1	Edwardsia Elegans	1
Lower	2009	216_09LTM	1	Eteone Heteropoda	4
Lower	2009	216_09LTM	2	Eteone Heteropoda	4
Lower	2009	216_09LTM	1	Eumida Sanguinea	1
Lower	2009	216_09LTM	2	Eumida Sanguinea	3
Lower	2009	216_09LTM	1	Glycera Americana	1
Lower	2009	216_09LTM	1	Glycera Sp.	1
Lower	2009	216_09LTM	2	Glycinde Solitaria	1
Lower	2009	216_09LTM	1	Gyptis Vittata	11
Lower	2009	216_09LTM	2	Gyptis Vittata	3
Lower	2009	216_09LTM	1	Haminoea Solitaria	1
Lower	2009	216_09LTM	2	Haminoea Solitaria	2
Lower	2009	216_09LTM	1	Leitoscoloplos Fragilis	53
Lower	2009	216_09LTM	2	Leitoscoloplos Fragilis	29
Lower	2009	216_09LTM	1	Leitoscoloplos Sp.	289
Lower	2009	216_09LTM	2	Leitoscoloplos Sp.	179
Lower	2009	216_09LTM	1	Macoma Tenta	26
Lower	2009	216_09LTM	2	Macoma Tenta	25
Lower	2009	216_09LTM	1	Mediomastus Ambiseta	33
Lower	2009	216_09LTM	2	Mediomastus Ambiseta	35
Lower	2009	216_09LTM	1	Mulinia Lateralis	77
Lower	2009	216_09LTM	2	Mulinia Lateralis	83
Lower	2009	216_09LTM	1	Mya Arenaria	1
Lower	2009	216_09LTM	2	Neanthes Succinea	2
Lower	2009	216_09LTM	1	Nematoda	P
Lower	2009	216_09LTM	2	Nematoda	P
Lower	2009	216_09LTM	2	Obelia Dichotoma	P
Lower	2009	216_09LTM	1	Oligochaeta	29
Lower	2009	216_09LTM	2	Oligochaeta	32
Lower	2009	216_09LTM	1	Pectinaria Gouldi	9
Lower	2009	216_09LTM	2	Pectinaria Gouldi	4
Lower	2009	216_09LTM	1	Podarke Obscura	1
Lower	2009	216_09LTM	2	Podarke Obscura	3
Lower	2009	216_09LTM	1	Polydora Cornuta	26
Lower	2009	216_09LTM	2	Polydora Cornuta	42
Lower	2009	216_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Lower	2009	216_09LTM	1	Rictaxis Punctostriatus	16
Lower	2009	216_09LTM	2	Rictaxis Punctostriatus	7
Lower	2009	216_09LTM	1	Streblospio Benedicti	118
Lower	2009	216_09LTM	2	Streblospio Benedicti	93
Lower	2009	216_09LTM	1	Tellinidae	1
Lower	2009	216_09LTM	1	Tharyx Acutus	36
Lower	2009	216_09LTM	2	Tharyx Acutus	9
Lower	2009	217_09LTM	2	Acteocina Canaliculata	2
Lower	2009	217_09LTM	2	Ampelisca Abdita	1
Lower	2009	217_09LTM	1	Capitella Capitata	1
Lower	2009	217_09LTM	2	Capitella Capitata	8
Lower	2009	217_09LTM	1	Capitella Jonesi	1
Lower	2009	217_09LTM	2	Capitella Jonesi	2
Lower	2009	217_09LTM	1	Cirratulidae	4
Lower	2009	217_09LTM	2	Cirratulidae	15

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	217_09LTM	1	Cliona Celata	1
Lower	2009	217_09LTM	1	Cylichna Oryza	1
Lower	2009	217_09LTM	2	Cylichna Oryza	2
Lower	2009	217_09LTM	1	Dipolydora Socialis	1
Lower	2009	217_09LTM	1	Eteone Heteropoda	5
Lower	2009	217_09LTM	2	Eteone Heteropoda	4
Lower	2009	217_09LTM	1	Gemma Gemma	1
Lower	2009	217_09LTM	2	Gemma Gemma	2
Lower	2009	217_09LTM	1	Gyptis Vittata	3
Lower	2009	217_09LTM	2	Gyptis Vittata	4
Lower	2009	217_09LTM	2	Haminoea Solitaria	1
Lower	2009	217_09LTM	1	Heteromastus Filiformis	1
Lower	2009	217_09LTM	2	Heteromastus Filiformis	3
Lower	2009	217_09LTM	1	Leitoscoloplos Fragilis	358
Lower	2009	217_09LTM	2	Leitoscoloplos Fragilis	226
Lower	2009	217_09LTM	1	Leitoscoloplos Sp.	166
Lower	2009	217_09LTM	2	Leitoscoloplos Sp.	234
Lower	2009	217_09LTM	2	Macoma Tenta	8
Lower	2009	217_09LTM	1	Mediomastus Ambiseta	55
Lower	2009	217_09LTM	2	Mediomastus Ambiseta	52
Lower	2009	217_09LTM	1	Mercenaria Mercenaria	4
Lower	2009	217_09LTM	2	Mercenaria Mercenaria	6
Lower	2009	217_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	217_09LTM	1	Molgula Manhattensis	3
Lower	2009	217_09LTM	1	Mulinia Lateralis	155
Lower	2009	217_09LTM	2	Mulinia Lateralis	107
Lower	2009	217_09LTM	2	Neanthes Arenaceodentata	1
Lower	2009	217_09LTM	1	Neanthes Succinea	2
Lower	2009	217_09LTM	2	Neanthes Succinea	1
Lower	2009	217_09LTM	1	Nematoda	P
Lower	2009	217_09LTM	1	Oligochaeta	94
Lower	2009	217_09LTM	2	Oligochaeta	89
Lower	2009	217_09LTM	1	Pectinaria Gouldi	5
Lower	2009	217_09LTM	2	Pectinaria Gouldi	8
Lower	2009	217_09LTM	1	Podarke Obscura	35
Lower	2009	217_09LTM	2	Podarke Obscura	27
Lower	2009	217_09LTM	1	Polydora Cornuta	18
Lower	2009	217_09LTM	2	Polydora Cornuta	29
Lower	2009	217_09LTM	1	Prionospio Heterobranchia	2
Lower	2009	217_09LTM	2	Prionospio Heterobranchia	1
Lower	2009	217_09LTM	1	Rictaxis Punctostriatus	1
Lower	2009	217_09LTM	2	Rictaxis Punctostriatus	5
Lower	2009	217_09LTM	2	Spurwinkia Salsa	2
Lower	2009	217_09LTM	1	Streblospio Benedicti	154
Lower	2009	217_09LTM	2	Streblospio Benedicti	280
Lower	2009	217_09LTM	2	Tellina Agilis	1
Lower	2009	217_09LTM	2	Tellinidae	3
Lower	2009	217_09LTM	1	Tharyx Acutus	51
Lower	2009	217_09LTM	2	Tharyx Acutus	80
Lower	2009	218_09LTM	1	Anomia Simplex	1
Lower	2009	218_09LTM	1	Boccardiella Hamata	1
Lower	2009	218_09LTM	1	Capitella Capitata	93
Lower	2009	218_09LTM	2	Capitella Capitata	44
Lower	2009	218_09LTM	1	Capitella Jonesi	5
Lower	2009	218_09LTM	2	Capitella Jonesi	1
Lower	2009	218_09LTM	1	Cirratulidae	213
Lower	2009	218_09LTM	2	Cirratulidae	96
Lower	2009	218_09LTM	1	Cliona Vastifica	1
Lower	2009	218_09LTM	1	Crepidula Convexa	7

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	218_09LTM	2	Crepidula Convexa	6
Lower	2009	218_09LTM	1	Dyspanopeus Sayi	7
Lower	2009	218_09LTM	2	Dyspanopeus Sayi	4
Lower	2009	218_09LTM	1	Eteone Heteropoda	4
Lower	2009	218_09LTM	2	Eteone Heteropoda	1
Lower	2009	218_09LTM	2	Glycera Dibranchiata	2
Lower	2009	218_09LTM	1	Gyptis Vittata	4
Lower	2009	218_09LTM	2	Gyptis Vittata	1
Lower	2009	218_09LTM	1	Heteromastus Filiformis	20
Lower	2009	218_09LTM	2	Heteromastus Filiformis	15
Lower	2009	218_09LTM	1	Hydroides Dianthus	4
Lower	2009	218_09LTM	1	Leitoscoloplos Fragilis	1
Lower	2009	218_09LTM	2	Leitoscoloplos Fragilis	1
Lower	2009	218_09LTM	1	Leitoscoloplos Sp.	5
Lower	2009	218_09LTM	2	Leitoscoloplos Sp.	2
Lower	2009	218_09LTM	1	Mediomastus Ambiseta	1
Lower	2009	218_09LTM	2	Mediomastus Ambiseta	2
Lower	2009	218_09LTM	1	Microphthalmus Sczelkowii	2
Lower	2009	218_09LTM	2	Microphthalmus Sczelkowii	1
Lower	2009	218_09LTM	1	Monocorophium Insidiosum	1
Lower	2009	218_09LTM	1	Mulinia Lateralis	1
Lower	2009	218_09LTM	2	Neanthes Arenaceodentata	3
Lower	2009	218_09LTM	1	Neanthes Succinea	1
Lower	2009	218_09LTM	1	Neanthes Virens	1
Lower	2009	218_09LTM	1	Nematoda	P
Lower	2009	218_09LTM	1	Nereidae	4
Lower	2009	218_09LTM	1	Oligochaeta	176
Lower	2009	218_09LTM	2	Oligochaeta	76
Lower	2009	218_09LTM	1	Pectinaria Gouldi	3
Lower	2009	218_09LTM	1	Podarke Obscura	1
Lower	2009	218_09LTM	1	Polydora Cornuta	45
Lower	2009	218_09LTM	2	Polydora Cornuta	36
Lower	2009	218_09LTM	1	Polydora Sp.	2
Lower	2009	218_09LTM	1	Prionospio Heterobranchia	14
Lower	2009	218_09LTM	2	Prionospio Heterobranchia	8
Lower	2009	218_09LTM	1	Spio Setosa	22
Lower	2009	218_09LTM	2	Spio Setosa	18
Lower	2009	218_09LTM	1	Streblospio Benedicti	166
Lower	2009	218_09LTM	2	Streblospio Benedicti	149
Lower	2009	218_09LTM	1	Tellina Agilis	1
Lower	2009	218_09LTM	1	Tharyx Acutus	228
Lower	2009	218_09LTM	2	Tharyx Acutus	230
Lower	2009	218_09LTM	2	Turbellaria	1
Lower	2009	220_09LTM	1	Ampelisca Abdita	2
Lower	2009	220_09LTM	2	Ampelisca Abdita	1
Lower	2009	220_09LTM	1	Amphiporus Bioculatus	2
Lower	2009	220_09LTM	2	Anadara Transversa	2
Lower	2009	220_09LTM	1	Anomia Simplex	1
Lower	2009	220_09LTM	1	Boonea Seminuda	1
Lower	2009	220_09LTM	2	Boonea Seminuda	1
Lower	2009	220_09LTM	1	Cirratulidae	57
Lower	2009	220_09LTM	2	Cirratulidae	116
Lower	2009	220_09LTM	1	Crepidula Fornicata	2
Lower	2009	220_09LTM	1	Crepidula Plana	1
Lower	2009	220_09LTM	1	Dipolydora Socialis	2
Lower	2009	220_09LTM	1	Doto Coronata	1
Lower	2009	220_09LTM	1	Eteone Heteropoda	4
Lower	2009	220_09LTM	2	Eteone Heteropoda	4
Lower	2009	220_09LTM	1	Eumida Sanguinea	2

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	220_09LTM	2	Gemma Gemma	2
Lower	2009	220_09LTM	2	Glycera Sp.	2
Lower	2009	220_09LTM	1	Gyptis Vittata	2
Lower	2009	220_09LTM	2	Gyptis Vittata	1
Lower	2009	220_09LTM	2	Leitoscoloplos Fragilis	4
Lower	2009	220_09LTM	1	Leitoscoloplos Sp.	23
Lower	2009	220_09LTM	2	Leitoscoloplos Sp.	14
Lower	2009	220_09LTM	2	Leucon Americanus	1
Lower	2009	220_09LTM	1	Macoma Tenta	10
Lower	2009	220_09LTM	2	Macoma Tenta	10
Lower	2009	220_09LTM	1	Mediomastus Ambiseta	47
Lower	2009	220_09LTM	2	Mediomastus Ambiseta	26
Lower	2009	220_09LTM	1	Mercenaria Mercenaria	3
Lower	2009	220_09LTM	2	Mercenaria Mercenaria	3
Lower	2009	220_09LTM	1	Mitrella Lunata	1
Lower	2009	220_09LTM	1	Mulinia Lateralis	8
Lower	2009	220_09LTM	2	Mulinia Lateralis	32
Lower	2009	220_09LTM	1	Neanthes Arenaceodentata	1
Lower	2009	220_09LTM	2	Neanthes Succinea	2
Lower	2009	220_09LTM	1	Nematoda	P
Lower	2009	220_09LTM	2	Nematoda	P
Lower	2009	220_09LTM	1	Odontosyllis Fulgurans	1
Lower	2009	220_09LTM	1	Oligochaeta	20
Lower	2009	220_09LTM	2	Oligochaeta	20
Lower	2009	220_09LTM	1	Pectinaria Gouldi	24
Lower	2009	220_09LTM	2	Pectinaria Gouldi	69
Lower	2009	220_09LTM	1	Phyllodoce Arenae	2
Lower	2009	220_09LTM	1	Podarke Obscura	28
Lower	2009	220_09LTM	2	Podarke Obscura	32
Lower	2009	220_09LTM	1	Polydora Cornuta	7
Lower	2009	220_09LTM	2	Polydora Cornuta	4
Lower	2009	220_09LTM	1	Potamilla Reniformis	2
Lower	2009	220_09LTM	1	Prionospio (Minuspio) Perkinsi	6
Lower	2009	220_09LTM	2	Prionospio (Minuspio) Perkinsi	2
Lower	2009	220_09LTM	1	Rictaxis Punctostriatus	2
Lower	2009	220_09LTM	2	Rictaxis Punctostriatus	1
Lower	2009	220_09LTM	1	Sabellaria Vulgaris	4
Lower	2009	220_09LTM	1	Sacoglossa	1
Lower	2009	220_09LTM	2	Spurwinkia Salsa	2
Lower	2009	220_09LTM	1	Streblospio Benedicti	72
Lower	2009	220_09LTM	2	Streblospio Benedicti	76
Lower	2009	220_09LTM	2	Tellina Agilis	4
Lower	2009	220_09LTM	2	Tellinidae	2
Lower	2009	220_09LTM	1	Tharyx Acutus	101
Lower	2009	220_09LTM	2	Tharyx Acutus	55
Lower	2009	221_09LTM	1	Capitella Capitata	1
Lower	2009	221_09LTM	2	Capitella Capitata	6
Lower	2009	221_09LTM	1	Cirratulidae	1
Lower	2009	221_09LTM	2	Crepidula Convexa	1
Lower	2009	221_09LTM	1	Cymadusa Compta	4
Lower	2009	221_09LTM	2	Cymadusa Compta	4
Lower	2009	221_09LTM	1	Dyspanopeus Sayi	3
Lower	2009	221_09LTM	2	Dyspanopeus Sayi	5
Lower	2009	221_09LTM	2	Glycera Americana	1
Lower	2009	221_09LTM	1	Hippolyte Zostericola	1
Lower	2009	221_09LTM	2	Hippolyte Zostericola	4
Lower	2009	221_09LTM	1	Leitoscoloplos Fragilis	3
Lower	2009	221_09LTM	2	Leitoscoloplos Fragilis	2
Lower	2009	221_09LTM	1	Leitoscoloplos Sp.	5

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	221_09LTM	2	Leitoscoloplos Sp.	2
Lower	2009	221_09LTM	1	Mediomastus Ambiseta	3
Lower	2009	221_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	221_09LTM	1	Mitrella Lunata	1
Lower	2009	221_09LTM	1	Nematoda	P
Lower	2009	221_09LTM	2	Nematoda	P
Lower	2009	221_09LTM	1	Oligochaeta	4
Lower	2009	221_09LTM	2	Oligochaeta	23
Lower	2009	221_09LTM	1	Palaemonetes Vulgaris	3
Lower	2009	221_09LTM	2	Palaemonetes Vulgaris	1
Lower	2009	221_09LTM	1	Pectinaria Gouldi	1
Lower	2009	221_09LTM	2	Polydora Cornuta	11
Lower	2009	221_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Lower	2009	221_09LTM	1	Streblospio Benedicti	6
Lower	2009	221_09LTM	2	Streblospio Benedicti	50
Lower	2009	221_09LTM	1	Tellinidae	1
Lower	2009	221_09LTM	1	Tharyx Acutus	6
Lower	2009	221_09LTM	2	Tharyx Acutus	1
Lower	2009	222_09LTM	1	Aeverrillia Setigera	P
Lower	2009	222_09LTM	2	Ampelisca Abdita	1
Lower	2009	222_09LTM	1	Capitella Capitata	12
Lower	2009	222_09LTM	2	Capitella Capitata	16
Lower	2009	222_09LTM	1	Cirratulidae	1
Lower	2009	222_09LTM	2	Cirratulidae	4
Lower	2009	222_09LTM	1	Cliona Celata	1
Lower	2009	222_09LTM	2	Eteone Heteropoda	3
Lower	2009	222_09LTM	1	Glycera Americana	1
Lower	2009	222_09LTM	2	Ilyanassa Obsoleta	1
Lower	2009	222_09LTM	1	Leitoscoloplos Fragilis	55
Lower	2009	222_09LTM	2	Leitoscoloplos Fragilis	140
Lower	2009	222_09LTM	1	Leitoscoloplos Sp.	104
Lower	2009	222_09LTM	2	Leitoscoloplos Sp.	167
Lower	2009	222_09LTM	1	Mediomastus Ambiseta	2
Lower	2009	222_09LTM	2	Mediomastus Ambiseta	12
Lower	2009	222_09LTM	1	Mercenaria Mercenaria	4
Lower	2009	222_09LTM	2	Mercenaria Mercenaria	9
Lower	2009	222_09LTM	2	Mitrella Lunata	1
Lower	2009	222_09LTM	1	Mulinia Lateralis	3
Lower	2009	222_09LTM	2	Mulinia Lateralis	3
Lower	2009	222_09LTM	1	Nematoda	P
Lower	2009	222_09LTM	2	Nematoda	P
Lower	2009	222_09LTM	1	Oligochaeta	45
Lower	2009	222_09LTM	2	Oligochaeta	57
Lower	2009	222_09LTM	1	Pectinaria Gouldi	2
Lower	2009	222_09LTM	1	Podarke Obscura	4
Lower	2009	222_09LTM	2	Podarke Obscura	5
Lower	2009	222_09LTM	1	Polydora Cornuta	40
Lower	2009	222_09LTM	2	Polydora Cornuta	48
Lower	2009	222_09LTM	1	Streblospio Benedicti	27
Lower	2009	222_09LTM	2	Streblospio Benedicti	78
Lower	2009	222_09LTM	1	Tharyx Acutus	4
Lower	2009	222_09LTM	2	Tharyx Acutus	10
Lower	2009	224_09LTM	1	Ampelisca Abdita	1
Lower	2009	224_09LTM	2	Capitella Capitata	2
Lower	2009	224_09LTM	2	Cirratulidae	4
Lower	2009	224_09LTM	2	Dodecaceria Coralii	1
Lower	2009	224_09LTM	2	Dorvillea (Schistomeringos) Annulata	1
Lower	2009	224_09LTM	2	Gyptis Vittata	1
Lower	2009	224_09LTM	2	Halecium Sp.	P

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	224_09LTM	1	Leitoscoloplos Fragilis	1
Lower	2009	224_09LTM	2	Leitoscoloplos Fragilis	1
Lower	2009	224_09LTM	1	Leitoscoloplos Sp.	2
Lower	2009	224_09LTM	2	Leitoscoloplos Sp.	1
Lower	2009	224_09LTM	2	Littorina Littorea	1
Lower	2009	224_09LTM	2	Mediomastus Ambiseta	3
Lower	2009	224_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	224_09LTM	2	Molgula Sp.	1
Lower	2009	224_09LTM	2	Neanthes Arenaceodentata	1
Lower	2009	224_09LTM	2	Neanthes Succinea	2
Lower	2009	224_09LTM	1	Nematoda	P
Lower	2009	224_09LTM	2	Nematoda	P
Lower	2009	224_09LTM	1	Oligochaeta	10
Lower	2009	224_09LTM	2	Oligochaeta	21
Lower	2009	224_09LTM	2	Pectinaria Gouldi	2
Lower	2009	224_09LTM	1	Petricola Pholadiformis	1
Lower	2009	224_09LTM	2	Podarke Obscura	6
Lower	2009	224_09LTM	2	Polydora Cornuta	2
Lower	2009	224_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Lower	2009	224_09LTM	2	Schizoporella Unicornis	P
Lower	2009	224_09LTM	1	Streblospio Benedicti	20
Lower	2009	224_09LTM	2	Streblospio Benedicti	25
Lower	2009	224_09LTM	1	Tharyx Acutus	3
Lower	2009	224_09LTM	2	Tharyx Acutus	1
Lower	2009	225_09LTM	1	Ampelisca Abdita	5
Lower	2009	225_09LTM	2	Ampelisca Abdita	1
Lower	2009	225_09LTM	1	Anomia Simplex	10
Lower	2009	225_09LTM	2	Anomia Simplex	3
Lower	2009	225_09LTM	2	Anomia Sp.	1
Lower	2009	225_09LTM	1	Ascidiacea	1
Lower	2009	225_09LTM	1	Boccardiella Hamata	2
Lower	2009	225_09LTM	1	Bowerbankia Sp.	P
Lower	2009	225_09LTM	2	Capitella Capitata	1
Lower	2009	225_09LTM	1	Cirratulidae	5
Lower	2009	225_09LTM	2	Cirratulidae	1
Lower	2009	225_09LTM	1	Crepidula Fornicata	2
Lower	2009	225_09LTM	1	Dipolydora Socialis	31
Lower	2009	225_09LTM	1	Dorvillea (Schistomeringos) Annulata	4
Lower	2009	225_09LTM	1	Dyspanopeus Sayi	1
Lower	2009	225_09LTM	2	Edwardsia Elegans	1
Lower	2009	225_09LTM	1	Eteone Heteropoda	3
Lower	2009	225_09LTM	2	Eteone Heteropoda	2
Lower	2009	225_09LTM	1	Eumida Sanguinea	2
Lower	2009	225_09LTM	2	Eumida Sanguinea	1
Lower	2009	225_09LTM	2	Glycera Americana	1
Lower	2009	225_09LTM	1	Glycinde Solitaria	2
Lower	2009	225_09LTM	1	Gyptis Vittata	1
Lower	2009	225_09LTM	2	Gyptis Vittata	6
Lower	2009	225_09LTM	1	Halecium Sp.	P
Lower	2009	225_09LTM	2	Halecium Sp.	P
Lower	2009	225_09LTM	1	Harpacticoida	1
Lower	2009	225_09LTM	1	Heteromastus Filiformis	3
Lower	2009	225_09LTM	1	Ilyanassa Trivittata	1
Lower	2009	225_09LTM	1	Leitoscoloplos Sp.	2
Lower	2009	225_09LTM	2	Leitoscoloplos Sp.	3
Lower	2009	225_09LTM	1	Luconacia Incerta	1
Lower	2009	225_09LTM	1	Macoma Tenta	32
Lower	2009	225_09LTM	2	Macoma Tenta	62
Lower	2009	225_09LTM	1	Mediomastus Ambiseta	138

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	225_09LTM	2	Mediomastus Ambiseta	34
Lower	2009	225_09LTM	2	Mercenaria Mercenaria	1
Lower	2009	225_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	225_09LTM	1	Mitrella Lunata	1
Lower	2009	225_09LTM	2	Mitrella Lunata	9
Lower	2009	225_09LTM	1	Mulinia Lateralis	12
Lower	2009	225_09LTM	2	Mulinia Lateralis	40
Lower	2009	225_09LTM	1	Neanthes Succinea	6
Lower	2009	225_09LTM	2	Neanthes Succinea	1
Lower	2009	225_09LTM	1	Nematoda	P
Lower	2009	225_09LTM	2	Nematoda	P
Lower	2009	225_09LTM	1	Odontosyllis Fulgurans	3
Lower	2009	225_09LTM	1	Oligochaeta	19
Lower	2009	225_09LTM	2	Oligochaeta	11
Lower	2009	225_09LTM	1	Oxyurostylis Smithi	1
Lower	2009	225_09LTM	1	Paracaprella Tenuis	7
Lower	2009	225_09LTM	1	Pectinaria Gouldi	13
Lower	2009	225_09LTM	2	Pectinaria Gouldi	13
Lower	2009	225_09LTM	1	Pentamera Calcigera	1
Lower	2009	225_09LTM	2	Petricola Pholadiformis	1
Lower	2009	225_09LTM	1	Phyllodoce Arenae	1
Lower	2009	225_09LTM	2	Pinnixa Chaetopterana	1
Lower	2009	225_09LTM	1	Podarke Obscura	29
Lower	2009	225_09LTM	2	Podarke Obscura	23
Lower	2009	225_09LTM	1	Polydora Cornuta	9
Lower	2009	225_09LTM	2	Polydora Cornuta	2
Lower	2009	225_09LTM	2	Potamilla Reniformis	1
Lower	2009	225_09LTM	2	Prionospio (Minuspio) Perkinsi	6
Lower	2009	225_09LTM	2	Rictaxis Punctostriatus	1
Lower	2009	225_09LTM	1	Sabellaria Vulgaris	1
Lower	2009	225_09LTM	1	Seila Adamsi	1
Lower	2009	225_09LTM	1	Streblospio Benedicti	40
Lower	2009	225_09LTM	2	Streblospio Benedicti	17
Lower	2009	225_09LTM	2	Stylochus Ellipticus	1
Lower	2009	225_09LTM	1	Tellina Agilis	1
Lower	2009	225_09LTM	1	Tellinidae	6
Lower	2009	225_09LTM	2	Tellinidae	7
Lower	2009	225_09LTM	1	Tharyx Acutus	33
Lower	2009	225_09LTM	2	Tharyx Acutus	32
Lower	2009	225_09LTM	1	Zygonemertes Virescens	1
Lower	2009	226_09LTM	1	Capitella Capitata	2
Lower	2009	226_09LTM	2	Capitella Capitata	1
Lower	2009	226_09LTM	1	Mediomastus Ambiseta	8
Lower	2009	226_09LTM	2	Mediomastus Ambiseta	1
Lower	2009	226_09LTM	2	Microdeutopus Gryllotalpa	1
Lower	2009	226_09LTM	1	Nematoda	P
Lower	2009	226_09LTM	2	Nematoda	P
Lower	2009	226_09LTM	1	Oligochaeta	2
Lower	2009	226_09LTM	2	Oligochaeta	1
Lower	2009	226_09LTM	1	Streblospio Benedicti	3
Lower	2009	226_09LTM	2	Streblospio Benedicti	2
Lower	2009	226_09LTM	1	Tharyx Acutus	2
Lower	2009	227_09LTM	1	Ampelisca Abdita	1
Lower	2009	227_09LTM	2	Ampelisca Abdita	1
Lower	2009	227_09LTM	1	Anomia Simplex	2
Lower	2009	227_09LTM	2	Anomia Simplex	1
Lower	2009	227_09LTM	1	Capitella Capitata	197
Lower	2009	227_09LTM	2	Capitella Capitata	231
Lower	2009	227_09LTM	1	Capitella Jonesi	6

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	227_09LTM	2	Capitella Jonesi	9
Lower	2009	227_09LTM	1	Crepidula Fornicata	1
Lower	2009	227_09LTM	1	Dyspanopeus Sayi	3
Lower	2009	227_09LTM	2	Eteone Heteropoda	1
Lower	2009	227_09LTM	2	Gyptis Vittata	2
Lower	2009	227_09LTM	1	Heteromastus Filiformis	8
Lower	2009	227_09LTM	2	Heteromastus Filiformis	2
Lower	2009	227_09LTM	2	Leitoscoloplos Fragilis	1
Lower	2009	227_09LTM	1	Leitoscoloplos Sp.	5
Lower	2009	227_09LTM	2	Leitoscoloplos Sp.	2
Lower	2009	227_09LTM	1	Mediomastus Ambiseta	2
Lower	2009	227_09LTM	2	Mediomastus Ambiseta	15
Lower	2009	227_09LTM	1	Mercenaria Mercenaria	2
Lower	2009	227_09LTM	2	Mercenaria Mercenaria	2
Lower	2009	227_09LTM	1	Microdeutopus Gryllotalpa	5
Lower	2009	227_09LTM	2	Microdeutopus Gryllotalpa	3
Lower	2009	227_09LTM	1	Mitrella Lunata	1
Lower	2009	227_09LTM	1	Mulinia Lateralis	1
Lower	2009	227_09LTM	2	Mulinia Lateralis	5
Lower	2009	227_09LTM	1	Neanthes Succinea	3
Lower	2009	227_09LTM	2	Neanthes Succinea	3
Lower	2009	227_09LTM	1	Nematoda	P
Lower	2009	227_09LTM	2	Nematoda	P
Lower	2009	227_09LTM	1	Oligochaeta	23
Lower	2009	227_09LTM	2	Oligochaeta	15
Lower	2009	227_09LTM	1	Pectinaria Gouldi	3
Lower	2009	227_09LTM	2	Pectinaria Gouldi	3
Lower	2009	227_09LTM	2	Platynereis Dumerilii	1
Lower	2009	227_09LTM	1	Podarke Obscura	2
Lower	2009	227_09LTM	2	Podarke Obscura	1
Lower	2009	227_09LTM	1	Polydora Cornuta	38
Lower	2009	227_09LTM	2	Polydora Cornuta	43
Lower	2009	227_09LTM	2	Prionospio Heterobranchia	1
Lower	2009	227_09LTM	1	Streblospio Benedicti	27
Lower	2009	227_09LTM	2	Streblospio Benedicti	21
Lower	2009	227_09LTM	1	Tharyx Acutus	1
Lower	2009	230_09LTM	1	Acteocina Canaliculata	1
Lower	2009	230_09LTM	1	Ampelisca Abdita	2
Lower	2009	230_09LTM	2	Ampelisca Abdita	2
Lower	2009	230_09LTM	1	Anomia Simplex	5
Lower	2009	230_09LTM	2	Anomia Simplex	1
Lower	2009	230_09LTM	2	Callinectes Sapidus	3
Lower	2009	230_09LTM	1	Capitella Capitata	1
Lower	2009	230_09LTM	2	Capitella Capitata	1
Lower	2009	230_09LTM	1	Caulleriella Sp.	5
Lower	2009	230_09LTM	1	Cirratulidae	65
Lower	2009	230_09LTM	2	Cirratulidae	142
Lower	2009	230_09LTM	2	Dipolydora Socialis	1
Lower	2009	230_09LTM	1	Dorvillea (Schistomeringos) Annulata	1
Lower	2009	230_09LTM	1	Dyspanopeus Sayi	1
Lower	2009	230_09LTM	1	Edwardsia Elegans	1
Lower	2009	230_09LTM	2	Edwardsia Elegans	1
Lower	2009	230_09LTM	1	Eteone Heteropoda	4
Lower	2009	230_09LTM	2	Eteone Heteropoda	6
Lower	2009	230_09LTM	2	Eumida Sanguinea	3
Lower	2009	230_09LTM	1	Glycera Americana	1
Lower	2009	230_09LTM	2	Glycinde Solitaria	1
Lower	2009	230_09LTM	1	Gyptis Vittata	2
Lower	2009	230_09LTM	2	Gyptis Vittata	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	230_09LTM	2	Leitoscoloplos Sp.	1
Lower	2009	230_09LTM	2	Lovenella Gracilis	P
Lower	2009	230_09LTM	1	Macoma Tenta	20
Lower	2009	230_09LTM	2	Macoma Tenta	8
Lower	2009	230_09LTM	1	Mediomastus Ambiseta	129
Lower	2009	230_09LTM	2	Mediomastus Ambiseta	247
Lower	2009	230_09LTM	2	Melinna Cristata	1
Lower	2009	230_09LTM	1	Mercenaria Mercenaria	3
Lower	2009	230_09LTM	2	Mercenaria Mercenaria	2
Lower	2009	230_09LTM	2	Microdeutopus Gryllotalpa	1
Lower	2009	230_09LTM	1	Mulinia Lateralis	4
Lower	2009	230_09LTM	2	Mulinia Lateralis	1
Lower	2009	230_09LTM	2	Neanthes Succinea	1
Lower	2009	230_09LTM	1	Nematoda	P
Lower	2009	230_09LTM	2	Nematoda	P
Lower	2009	230_09LTM	1	Odontosyllis Fulgurans	1
Lower	2009	230_09LTM	1	Oligochaeta	5
Lower	2009	230_09LTM	2	Oligochaeta	6
Lower	2009	230_09LTM	2	Paracaprella Tenuis	1
Lower	2009	230_09LTM	1	Pectinaria Gouldi	17
Lower	2009	230_09LTM	2	Pectinaria Gouldi	4
Lower	2009	230_09LTM	1	Petricola Pholadiformis	1
Lower	2009	230_09LTM	1	Phyllodoce Arenae	4
Lower	2009	230_09LTM	2	Phyllodoce Arenae	1
Lower	2009	230_09LTM	2	Pinnixa Chaetopterana	1
Lower	2009	230_09LTM	1	Podarke Obscura	7
Lower	2009	230_09LTM	2	Podarke Obscura	2
Lower	2009	230_09LTM	1	Polydora Cornuta	5
Lower	2009	230_09LTM	2	Polydora Cornuta	11
Lower	2009	230_09LTM	1	Prionospio (Minuspio) Perkinsi	10
Lower	2009	230_09LTM	2	Prionospio (Minuspio) Perkinsi	2
Lower	2009	230_09LTM	1	Rictaxis Punctostriatus	4
Lower	2009	230_09LTM	1	Streblospio Benedicti	76
Lower	2009	230_09LTM	2	Streblospio Benedicti	152
Lower	2009	230_09LTM	1	Tellina Agilis	2
Lower	2009	230_09LTM	1	Tharyx Acutus	105
Lower	2009	230_09LTM	2	Tharyx Acutus	139
Lower	2009	231_09LTM	2	Leitoscoloplos Sp.	1
Lower	2009	231_09LTM	1	Mediomastus Ambiseta	4
Lower	2009	231_09LTM	2	Mulinia Lateralis	1
Lower	2009	231_09LTM	2	Nematoda	P
Lower	2009	231_09LTM	1	Oligochaeta	1
Lower	2009	231_09LTM	1	Streblospio Benedicti	3
Lower	2009	231_09LTM	2	Streblospio Benedicti	4
Lower	2009	231_09LTM	2	Tellina Agilis	1
Lower	2009	231_09LTM	1	Tharyx Acutus	3
Lower	2009	231_09LTM	2	Tharyx Acutus	5
Lower	2009	235_09LTM	1	Acteocina Canaliculata	4
Lower	2009	235_09LTM	2	Cerebratulus Lacteus	1
Lower	2009	235_09LTM	1	Crepidula Fornicata	1
Lower	2009	235_09LTM	2	Gyptis Vittata	9
Lower	2009	235_09LTM	1	Hemicyclops Sp.	1
Lower	2009	235_09LTM	1	Leitoscoloplos Fragilis	1
Lower	2009	235_09LTM	2	Leitoscoloplos Fragilis	1
Lower	2009	235_09LTM	1	Leitoscoloplos Sp.	8
Lower	2009	235_09LTM	2	Leitoscoloplos Sp.	9
Lower	2009	235_09LTM	2	Macoma Tenta	4
Lower	2009	235_09LTM	1	Mediomastus Ambiseta	3
Lower	2009	235_09LTM	2	Mediomastus Ambiseta	2

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	235_09LTM	1	Mulinia Lateralis	4
Lower	2009	235_09LTM	2	Mulinia Lateralis	10
Lower	2009	235_09LTM	2	Neanthes Succinea	1
Lower	2009	235_09LTM	1	Nematoda	P
Lower	2009	235_09LTM	2	Nematoda	P
Lower	2009	235_09LTM	1	Oligochaeta	2
Lower	2009	235_09LTM	2	Podarke Obscura	2
Lower	2009	235_09LTM	2	Prionospio (Minuspio) Perkinsi	4
Lower	2009	235_09LTM	1	Streblospio Benedicti	4
Lower	2009	235_09LTM	2	Streblospio Benedicti	1
Lower	2009	235_09LTM	1	Tellina Agilis	1
Lower	2009	235_09LTM	1	Tharyx Acutus	1
Lower	2009	236_09LTM	1	Ampelisca Abdita	12
Lower	2009	236_09LTM	2	Ampelisca Abdita	1
Lower	2009	236_09LTM	1	Ampharete Finmarchica	1
Lower	2009	236_09LTM	1	Anadara Transversa	1
Lower	2009	236_09LTM	1	Boccardiella Hamata	1
Lower	2009	236_09LTM	1	Boreotrophon Clathratus	1
Lower	2009	236_09LTM	2	Boreotrophon Clathratus	1
Lower	2009	236_09LTM	1	Busycon Canaliculatum	1
Lower	2009	236_09LTM	1	Cliona Celata	1
Lower	2009	236_09LTM	1	Dipolydora Socialis	8
Lower	2009	236_09LTM	1	Dorvillea (Schistomeringos) Annulata	1
Lower	2009	236_09LTM	1	Dyspanopeus Sayi	1
Lower	2009	236_09LTM	1	Eteone Heteropoda	1
Lower	2009	236_09LTM	1	Eumida Sanguinea	4
Lower	2009	236_09LTM	1	Glycera Americana	1
Lower	2009	236_09LTM	1	Glycinde Solitaria	1
Lower	2009	236_09LTM	1	Harpacticoida	3
Lower	2009	236_09LTM	1	Leitoscoloplos Sp.	1
Lower	2009	236_09LTM	1	Leptinogaster Major	2
Lower	2009	236_09LTM	1	Leucon Americanus	3
Lower	2009	236_09LTM	1	Macoma Tenta	45
Lower	2009	236_09LTM	2	Macoma Tenta	1
Lower	2009	236_09LTM	1	Mediomastus Ambiseta	194
Lower	2009	236_09LTM	1	Mercenaria Mercenaria	11
Lower	2009	236_09LTM	2	Mercenaria Mercenaria	1
Lower	2009	236_09LTM	1	Mulinia Lateralis	11
Lower	2009	236_09LTM	2	Mulinia Lateralis	1
Lower	2009	236_09LTM	1	Nematoda	P
Lower	2009	236_09LTM	1	Nereidae	1
Lower	2009	236_09LTM	1	Nucula Proxima	1
Lower	2009	236_09LTM	1	Oligochaeta	18
Lower	2009	236_09LTM	2	Oligochaeta	2
Lower	2009	236_09LTM	1	Pectinaria Gouldi	27
Lower	2009	236_09LTM	1	Petricola Pholadiformis	1
Lower	2009	236_09LTM	1	Pitar Morrhuanus	1
Lower	2009	236_09LTM	1	Podarke Obscura	7
Lower	2009	236_09LTM	1	Polydora Cornuta	2
Lower	2009	236_09LTM	1	Polydora Sp.	1
Lower	2009	236_09LTM	1	Prionospio (Minuspio) Perkinsi	4
Lower	2009	236_09LTM	1	Sabellaria Vulgaris	1
Lower	2009	236_09LTM	1	Streblospio Benedicti	68
Lower	2009	236_09LTM	2	Streblospio Benedicti	1
Lower	2009	236_09LTM	1	Tellina Agilis	3
Lower	2009	236_09LTM	1	Tellinidae	4
Lower	2009	236_09LTM	1	Tharyx Acutus	13
Lower	2009	236_09LTM	2	Tharyx Acutus	1
Lower	2009	236_09LTM	1	Turbellaria	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	237_09LTM	1	Anomia Simplex	8
Lower	2009	237_09LTM	1	Anomia Simplex	1
Lower	2009	237_09LTM	1	Balanus Venustus	3
Lower	2009	237_09LTM	1	Boccardiella Hamata	1
Lower	2009	237_09LTM	2	Boccardiella Hamata	1
Lower	2009	237_09LTM	1	Capitella Capitata	6
Lower	2009	237_09LTM	2	Capitella Capitata	1
Lower	2009	237_09LTM	1	Cirratulidae	64
Lower	2009	237_09LTM	2	Cirratulidae	292
Lower	2009	237_09LTM	1	Crepidula Fornicata	1
Lower	2009	237_09LTM	1	Crepidula Plana	1
Lower	2009	237_09LTM	1	Dorvillea (Schistomeringos) Annulata	1
Lower	2009	237_09LTM	2	Dorvillea (Schistomeringos) Annulata	1
Lower	2009	237_09LTM	2	Drilonereis Longa	1
Lower	2009	237_09LTM	1	Edwardsia Elegans	3
Lower	2009	237_09LTM	1	Eteone Heteropoda	3
Lower	2009	237_09LTM	2	Eteone Heteropoda	4
Lower	2009	237_09LTM	2	Eumida Sanguinea	4
Lower	2009	237_09LTM	2	Glycera Americana	4
Lower	2009	237_09LTM	2	Glycera Dibranchiata	1
Lower	2009	237_09LTM	2	Glycera Sp.	2
Lower	2009	237_09LTM	1	Heteromastus Filiformis	1
Lower	2009	237_09LTM	1	Leitoscoloplos Fragilis	1
Lower	2009	237_09LTM	1	Leitoscoloplos Sp.	1
Lower	2009	237_09LTM	2	Macoma Tenta	2
Lower	2009	237_09LTM	1	Mediomastus Ambiseta	7
Lower	2009	237_09LTM	2	Mediomastus Ambiseta	15
Lower	2009	237_09LTM	1	Mercenaria Mercenaria	2
Lower	2009	237_09LTM	2	Mercenaria Mercenaria	3
Lower	2009	237_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	237_09LTM	2	Microdeutopus Gryllotalpa	1
Lower	2009	237_09LTM	1	Mulinia Lateralis	1
Lower	2009	237_09LTM	2	Mulinia Lateralis	1
Lower	2009	237_09LTM	1	Nematoda	P
Lower	2009	237_09LTM	2	Nematoda	P
Lower	2009	237_09LTM	1	Nucula Annulata	2
Lower	2009	237_09LTM	1	Oligochaeta	17
Lower	2009	237_09LTM	2	Oligochaeta	7
Lower	2009	237_09LTM	1	Ophiuroidea	3
Lower	2009	237_09LTM	1	Pectinaria Gouldi	11
Lower	2009	237_09LTM	2	Pectinaria Gouldi	2
Lower	2009	237_09LTM	1	Podarke Obscura	3
Lower	2009	237_09LTM	2	Podarke Obscura	3
Lower	2009	237_09LTM	1	Polydora Cornuta	20
Lower	2009	237_09LTM	1	Prionospio Heterobranchia	15
Lower	2009	237_09LTM	2	Prionospio Heterobranchia	20
Lower	2009	237_09LTM	1	Streblospio Benedicti	93
Lower	2009	237_09LTM	2	Streblospio Benedicti	137
Lower	2009	237_09LTM	2	Streblospio Benedicti	1
Lower	2009	237_09LTM	1	Tharyx Acutus	17
Lower	2009	237_09LTM	2	Tharyx Acutus	44
Lower	2009	240_09LTM	1	Cirratulidae	1
Lower	2009	240_09LTM	1	Mediomastus Ambiseta	1
Lower	2009	240_09LTM	2	Nematoda	P
Lower	2009	240_09LTM	1	Streblospio Benedicti	6
Lower	2009	240_09LTM	2	Streblospio Benedicti	1
Lower	2009	240_09LTM	1	Tharyx Acutus	2
Lower	2009	241_09LTM	2	Aeverrillia Setigera	P
Lower	2009	241_09LTM	1	Ampelisca Abdita	21

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Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	241_09LTM	2	Ampelisca Abdita	46
Lower	2009	241_09LTM	2	Ampelisca Vadorum	1
Lower	2009	241_09LTM	1	Cirratulidae	1
Lower	2009	241_09LTM	2	Drilonereis Longa	1
Lower	2009	241_09LTM	1	Eteone Heteropoda	1
Lower	2009	241_09LTM	2	Eteone Heteropoda	3
Lower	2009	241_09LTM	1	Gyptis Vittata	1
Lower	2009	241_09LTM	2	Gyptis Vittata	1
Lower	2009	241_09LTM	2	Halecium Sp.	P
Lower	2009	241_09LTM	2	Harpacticoida	3
Lower	2009	241_09LTM	1	Ianiropsis Sp. 1	1
Lower	2009	241_09LTM	1	Leucon Americanus	2
Lower	2009	241_09LTM	2	Leucon Americanus	8
Lower	2009	241_09LTM	1	Macoma Tenta	18
Lower	2009	241_09LTM	2	Macoma Tenta	39
Lower	2009	241_09LTM	1	Mediomastus Ambiseta	81
Lower	2009	241_09LTM	2	Mediomastus Ambiseta	98
Lower	2009	241_09LTM	1	Mulinia Lateralis	1
Lower	2009	241_09LTM	2	Mulinia Lateralis	17
Lower	2009	241_09LTM	2	Neanthes Succinea	2
Lower	2009	241_09LTM	1	Nematoda	P
Lower	2009	241_09LTM	2	Nematoda	P
Lower	2009	241_09LTM	2	Nephtys Incisa	1
Lower	2009	241_09LTM	1	Oligochaeta	3
Lower	2009	241_09LTM	2	Oligochaeta	1
Lower	2009	241_09LTM	1	Pectinaria Gouldi	2
Lower	2009	241_09LTM	2	Pectinaria Gouldi	14
Lower	2009	241_09LTM	2	Podarke Obscura	1
Lower	2009	241_09LTM	1	Polydora Cornuta	2
Lower	2009	241_09LTM	1	Prionospio (Minuspio) Perkinsi	9
Lower	2009	241_09LTM	2	Prionospio (Minuspio) Perkinsi	6
Lower	2009	241_09LTM	2	Spiochaetopterus Oculatus	3
Lower	2009	241_09LTM	1	Streblospio Benedicti	49
Lower	2009	241_09LTM	2	Streblospio Benedicti	69
Lower	2009	241_09LTM	1	Stylochus Ellipticus	4
Lower	2009	241_09LTM	1	Tagelus Divisus	1
Lower	2009	241_09LTM	2	Tellina Agilis	7
Lower	2009	241_09LTM	2	Tubulanus Sp.	1
Lower	2009	241_09LTM	2	Turbonilla Elegantula	1
Lower	2009	242_09LTM	1	Ampelisca Abdita	88
Lower	2009	242_09LTM	2	Ampelisca Abdita	89
Lower	2009	242_09LTM	1	Anadara Transversa	1
Lower	2009	242_09LTM	1	Anomia Simplex	2
Lower	2009	242_09LTM	1	Capitella Capitata	5
Lower	2009	242_09LTM	2	Capitella Capitata	4
Lower	2009	242_09LTM	1	Cirratulidae	4
Lower	2009	242_09LTM	2	Cirratulidae	1
Lower	2009	242_09LTM	1	Crepidula Fornicata	1
Lower	2009	242_09LTM	1	Dipolydora Socialis	1
Lower	2009	242_09LTM	2	Eteone Heteropoda	1
Lower	2009	242_09LTM	2	Eumida Sanguinea	1
Lower	2009	242_09LTM	1	Glycera Americana	1
Lower	2009	242_09LTM	2	Glycinde Solitaria	1
Lower	2009	242_09LTM	1	Harpacticoida	1
Lower	2009	242_09LTM	2	Heteromastus Filiformis	1
Lower	2009	242_09LTM	1	Leptinogaster Major	1
Lower	2009	242_09LTM	1	Leucon Americanus	2
Lower	2009	242_09LTM	1	Macoma Tenta	1
Lower	2009	242_09LTM	1	Mediomastus Ambiseta	21

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	242_09LTM	2	Mediomastus Ambiseta	7
Lower	2009	242_09LTM	1	Mercenaria Mercenaria	2
Lower	2009	242_09LTM	2	Mercenaria Mercenaria	3
Lower	2009	242_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	242_09LTM	2	Microdeutopus Gryllotalpa	1
Lower	2009	242_09LTM	1	Microprotopus Raneyi	12
Lower	2009	242_09LTM	2	Microprotopus Raneyi	3
Lower	2009	242_09LTM	1	Mitrella Lunata	2
Lower	2009	242_09LTM	1	Monocorophium Acherusicum	1
Lower	2009	242_09LTM	1	Mulinia Lateralis	35
Lower	2009	242_09LTM	2	Mulinia Lateralis	160
Lower	2009	242_09LTM	1	Neanthes Succinea	1
Lower	2009	242_09LTM	1	Nematoda	P
Lower	2009	242_09LTM	2	Nematoda	P
Lower	2009	242_09LTM	1	Oligochaeta	7
Lower	2009	242_09LTM	2	Oligochaeta	1
Lower	2009	242_09LTM	1	Paranaitis Speciosa	2
Lower	2009	242_09LTM	1	Pectinaria Gouldi	4
Lower	2009	242_09LTM	2	Pectinaria Gouldi	10
Lower	2009	242_09LTM	1	Phyllodoce Arenae	1
Lower	2009	242_09LTM	1	Podarke Obscura	2
Lower	2009	242_09LTM	1	Polydora Cornuta	3
Lower	2009	242_09LTM	1	Prionospio Heterobranchia	1
Lower	2009	242_09LTM	1	Streblospio Benedicti	38
Lower	2009	242_09LTM	2	Streblospio Benedicti	7
Lower	2009	242_09LTM	1	Tellina Agilis	3
Lower	2009	242_09LTM	1	Tellinidae	1
Lower	2009	242_09LTM	1	Tharyx Acutus	19
Lower	2009	245_09LTM	1	Ampelisca Abdita	1
Lower	2009	245_09LTM	2	Ampelisca Abdita	7
Lower	2009	245_09LTM	2	Anomia Simplex	1
Lower	2009	245_09LTM	2	Balanus Venustus	1
Lower	2009	245_09LTM	1	Capitella Capitata	8
Lower	2009	245_09LTM	2	Capitella Capitata	51
Lower	2009	245_09LTM	2	Capitella Jonesi	1
Lower	2009	245_09LTM	2	Crepidula Fornicata	7
Lower	2009	245_09LTM	2	Dyspanopeus Sayi	2
Lower	2009	245_09LTM	2	Eumida Sanguinea	1
Lower	2009	245_09LTM	1	Gemma Gemma	1
Lower	2009	245_09LTM	1	Leitoscoloplos Sp.	1
Lower	2009	245_09LTM	1	Mediomastus Ambiseta	10
Lower	2009	245_09LTM	2	Mercenaria Mercenaria	2
Lower	2009	245_09LTM	1	Microdeutopus Gryllotalpa	1
Lower	2009	245_09LTM	2	Microdeutopus Gryllotalpa	17
Lower	2009	245_09LTM	2	Mitrella Lunata	1
Lower	2009	245_09LTM	2	Monocorophium Acherusicum	4
Lower	2009	245_09LTM	2	Mulinia Lateralis	3
Lower	2009	245_09LTM	2	Neanthes Succinea	2
Lower	2009	245_09LTM	2	Nematoda	P
Lower	2009	245_09LTM	1	Nematoda	P
Lower	2009	245_09LTM	2	Pectinaria Gouldi	1
Lower	2009	245_09LTM	1	Polydora Cornuta	1
Lower	2009	245_09LTM	2	Polydora Cornuta	8
Lower	2009	245_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Lower	2009	245_09LTM	1	Streblospio Benedicti	3
Lower	2009	245_09LTM	2	Streblospio Benedicti	2
Lower	2009	247_09LTM	1	Ampelisca Abdita	2
Lower	2009	247_09LTM	2	Ampelisca Abdita	9
Lower	2009	247_09LTM	2	Ampithoe Longimana	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	247_09LTM	2	Capitella Capitata	225
Lower	2009	247_09LTM	1	Capitella Capitata	85
Lower	2009	247_09LTM	2	Capitella Jonesi	1
Lower	2009	247_09LTM	1	Capitella Jonesi	5
Lower	2009	247_09LTM	2	Caprella Penantis	1
Lower	2009	247_09LTM	2	Crepidula Plana	1
Lower	2009	247_09LTM	1	Eteone Heteropoda	1
Lower	2009	247_09LTM	2	Eumida Sanguinea	2
Lower	2009	247_09LTM	2	Heteromastus Filiformis	2
Lower	2009	247_09LTM	2	Ianiropsis Sp. 1	1
Lower	2009	247_09LTM	2	Microdeutopus Anomalus	1
Lower	2009	247_09LTM	1	Microdeutopus Gryllotalpa	5
Lower	2009	247_09LTM	2	Microdeutopus Gryllotalpa	47
Lower	2009	247_09LTM	1	Microprotopus Raneyi	2
Lower	2009	247_09LTM	2	Mitrella Lunata	8
Lower	2009	247_09LTM	2	Monocorophium Acherusicum	2
Lower	2009	247_09LTM	2	Neanthes Succinea	2
Lower	2009	247_09LTM	2	Nematoda	P
Lower	2009	247_09LTM	1	Nematoda	P
Lower	2009	247_09LTM	2	Notomastus Latericeus	1
Lower	2009	247_09LTM	2	Oligochaeta	13
Lower	2009	247_09LTM	1	Oligochaeta	2
Lower	2009	247_09LTM	2	Ostracoda	1
Lower	2009	247_09LTM	2	Polydora Cornuta	6
Lower	2009	247_09LTM	1	Polydora Cornuta	4
Lower	2009	247_09LTM	2	Streblospio Benedicti	2
Lower	2009	249_09LTM	1	Capitella Capitata	7
Lower	2009	249_09LTM	2	Capitella Capitata	11
Lower	2009	249_09LTM	1	Capitella Jonesi	3
Lower	2009	249_09LTM	1	Crepidula Fornicata	3
Lower	2009	249_09LTM	1	Dyspanopeus Sayi	1
Lower	2009	249_09LTM	2	Dyspanopeus Sayi	1
Lower	2009	249_09LTM	2	Leitoscoloplos Sp.	1
Lower	2009	249_09LTM	1	Mediomastus Ambiseta	2
Lower	2009	249_09LTM	2	Mediomastus Ambiseta	8
Lower	2009	249_09LTM	2	Mercenaria Mercenaria	1
Lower	2009	249_09LTM	2	Microdeutopus Gryllotalpa	1
Lower	2009	249_09LTM	2	Mitrella Lunata	6
Lower	2009	249_09LTM	2	Mulinia Lateralis	2
Lower	2009	249_09LTM	1	Nematoda	P
Lower	2009	249_09LTM	2	Nematoda	P
Lower	2009	249_09LTM	1	Oligochaeta	11
Lower	2009	249_09LTM	2	Oligochaeta	3
Lower	2009	249_09LTM	1	Palaemonetes Vulgaris	1
Lower	2009	249_09LTM	1	Platynereis Dumerilii	3
Lower	2009	249_09LTM	2	Platynereis Dumerilii	3
Lower	2009	249_09LTM	1	Polydora Cornuta	1
Lower	2009	249_09LTM	2	Streblospio Benedicti	6
Lower	2009	250_09LTM	2	Ampharete Finmarchica	1
Lower	2009	250_09LTM	2	Amphiporus Bioculatus	1
Lower	2009	250_09LTM	1	Anachis Lafresnayi	17
Lower	2009	250_09LTM	2	Anachis Lafresnayi	1
Lower	2009	250_09LTM	1	Anadara Transversa	18
Lower	2009	250_09LTM	2	Anadara Transversa	11
Lower	2009	250_09LTM	2	Ancistrosyllis Hartmanae	1
Lower	2009	250_09LTM	1	Anomia Simplex	17
Lower	2009	250_09LTM	2	Anomia Simplex	7
Lower	2009	250_09LTM	1	Apocorophium Acutum	2
Lower	2009	250_09LTM	1	Autolytus Sp.	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	250_09LTM	2	Autolytus Sp.	1
Lower	2009	250_09LTM	1	Balanus Sp.	12
Lower	2009	250_09LTM	2	Balanus Venustus	2
Lower	2009	250_09LTM	2	Barentsia Gracilis	P
Lower	2009	250_09LTM	2	Bittium Alternatum	1
Lower	2009	250_09LTM	2	Bivalvia	1
Lower	2009	250_09LTM	1	Boccardiella Hamata	13
Lower	2009	250_09LTM	2	Boccardiella Hamata	13
Lower	2009	250_09LTM	2	Boonea Seminuda	3
Lower	2009	250_09LTM	2	Bowerbankia Gracilis	P
Lower	2009	250_09LTM	1	Brania Clavata	1
Lower	2009	250_09LTM	2	Brania Clavata	2
Lower	2009	250_09LTM	2	Cerithiopsis Emersonii	3
Lower	2009	250_09LTM	1	Cirratulidae	146
Lower	2009	250_09LTM	2	Cirratulidae	359
Lower	2009	250_09LTM	2	Cirratulus Grandis	2
Lower	2009	250_09LTM	1	Cliona Celata	3
Lower	2009	250_09LTM	2	Cliona Celata	1
Lower	2009	250_09LTM	1	Cliona Vastifica	6
Lower	2009	250_09LTM	2	Cliona Vastifica	10
Lower	2009	250_09LTM	1	Clytia Gracilis	P
Lower	2009	250_09LTM	2	Clytia Gracilis	P
Lower	2009	250_09LTM	2	Clytia Hemisphaerica	P
Lower	2009	250_09LTM	1	Crepidula Fornicata	60
Lower	2009	250_09LTM	2	Crepidula Fornicata	24
Lower	2009	250_09LTM	1	Crepidula Plana	49
Lower	2009	250_09LTM	2	Crepidula Plana	33
Lower	2009	250_09LTM	1	Cryptosula Pallasiana	P
Lower	2009	250_09LTM	2	Cryptosula Pallasiana	P
Lower	2009	250_09LTM	1	Cumingia Tellinoides	1
Lower	2009	250_09LTM	2	Cumingia Tellinoides	2
Lower	2009	250_09LTM	2	Cyclopoida	1
Lower	2009	250_09LTM	1	Dipolydora Socialis	6
Lower	2009	250_09LTM	2	Dipolydora Socialis	2
Lower	2009	250_09LTM	2	Dodecaceria Sp.	1
Lower	2009	250_09LTM	1	Dorvillea (Schistomeringos) Annulata	6
Lower	2009	250_09LTM	2	Dorvillea (Schistomeringos) Annulata	4
Lower	2009	250_09LTM	2	Drilonereis Longa	1
Lower	2009	250_09LTM	1	Dyspanopeus Sayi	37
Lower	2009	250_09LTM	2	Dyspanopeus Sayi	14
Lower	2009	250_09LTM	1	Eulalia Bilineata	1
Lower	2009	250_09LTM	1	Eumida Sanguinea	4
Lower	2009	250_09LTM	2	Eumida Sanguinea	5
Lower	2009	250_09LTM	1	Eunicidae	1
Lower	2009	250_09LTM	1	Exogone Dispar	12
Lower	2009	250_09LTM	2	Exogone Dispar	9
Lower	2009	250_09LTM	1	Gyptis Vittata	2
Lower	2009	250_09LTM	2	Gyptis Vittata	3
Lower	2009	250_09LTM	2	Halecium Halecinum	P
Lower	2009	250_09LTM	1	Halecium Sp.	P
Lower	2009	250_09LTM	1	Harmothoe Extenuata	12
Lower	2009	250_09LTM	2	Harmothoe Extenuata	3
Lower	2009	250_09LTM	1	Heteromastus Filiformis	3
Lower	2009	250_09LTM	2	Heteromastus Filiformis	2
Lower	2009	250_09LTM	1	Heteromysis Formosa	23
Lower	2009	250_09LTM	2	Heteromysis Formosa	4
Lower	2009	250_09LTM	1	Hexapanopeus Angustifrons	1
Lower	2009	250_09LTM	1	Ianiropsis Sp. 1	3
Lower	2009	250_09LTM	2	Ianiropsis Sp. 1	15

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	250_09LTM	1	Lembos Smithi	85
Lower	2009	250_09LTM	2	Lembos Smithi	116
Lower	2009	250_09LTM	1	Lepidonotus Squamatus	16
Lower	2009	250_09LTM	2	Lepidonotus Squamatus	3
Lower	2009	250_09LTM	1	Marphysa Sanguinea	1
Lower	2009	250_09LTM	1	Mediomastus Ambiseta	15
Lower	2009	250_09LTM	2	Mediomastus Ambiseta	26
Lower	2009	250_09LTM	1	Mercenaria Mercenaria	3
Lower	2009	250_09LTM	2	Mercenaria Mercenaria	1
Lower	2009	250_09LTM	2	Microciona Prolifera	1
Lower	2009	250_09LTM	1	Microdeutopus Anomalus	1
Lower	2009	250_09LTM	2	Microdeutopus Anomalus	2
Lower	2009	250_09LTM	1	Microdeutopus Gryllotalpa	2
Lower	2009	250_09LTM	1	Microporella Ciliata	P
Lower	2009	250_09LTM	2	Microporella Ciliata	P
Lower	2009	250_09LTM	1	Monocorophium Acherusicum	38
Lower	2009	250_09LTM	2	Monocorophium Acherusicum	28
Lower	2009	250_09LTM	1	Mulinia Lateralis	1
Lower	2009	250_09LTM	1	Neanthes Succinea	1
Lower	2009	250_09LTM	1	Nematoda	P
Lower	2009	250_09LTM	2	Nematoda	P
Lower	2009	250_09LTM	1	Nucula Proxima	17
Lower	2009	250_09LTM	2	Nucula Proxima	26
Lower	2009	250_09LTM	2	Obelia Dichotoma	P
Lower	2009	250_09LTM	1	Odontosyllis Fulgurans	24
Lower	2009	250_09LTM	2	Odontosyllis Fulgurans	25
Lower	2009	250_09LTM	1	Oligochaeta	27
Lower	2009	250_09LTM	2	Oligochaeta	98
Lower	2009	250_09LTM	2	Pagurus Annulipes	1
Lower	2009	250_09LTM	1	Paracaprella Tenuis	2
Lower	2009	250_09LTM	2	Parapionosyllis Longicirrata	1
Lower	2009	250_09LTM	1	Pectinaria Gouldi	1
Lower	2009	250_09LTM	1	Podarke Obscura	68
Lower	2009	250_09LTM	2	Podarke Obscura	21
Lower	2009	250_09LTM	1	Polycirrus Eximius	1
Lower	2009	250_09LTM	2	Polycirrus Eximius	4
Lower	2009	250_09LTM	1	Polycirrus Sp.	9
Lower	2009	250_09LTM	2	Polycirrus Sp.	3
Lower	2009	250_09LTM	2	Polydora Cornuta	3
Lower	2009	250_09LTM	1	Potamilla Reniformis	1
Lower	2009	250_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Lower	2009	250_09LTM	1	Schizoporella Cornuta	P
Lower	2009	250_09LTM	2	Schizoporella Cornuta	P
Lower	2009	250_09LTM	1	Schizoporella Unicornis	P
Lower	2009	250_09LTM	2	Schizoporella Unicornis	P
Lower	2009	250_09LTM	1	Seila Adamsi	4
Lower	2009	250_09LTM	2	Seila Adamsi	11
Lower	2009	250_09LTM	2	Streblospio Benedicti	2
Lower	2009	250_09LTM	1	Syllidae	1
Lower	2009	250_09LTM	1	Syllis Gracilis	4
Lower	2009	250_09LTM	2	Syllis Gracilis	2
Lower	2009	250_09LTM	1	Terebella Lapidaria	1
Lower	2009	250_09LTM	1	Tharyx Acutus	63
Lower	2009	250_09LTM	2	Tharyx Acutus	326
Lower	2009	250_09LTM	2	Turbonilla Interrupta	4
Lower	2009	250_09LTM	2	Zygonemertes Virescens	1
Lower	2009	253_09LTM	1	Ampelisca Abdita	3
Lower	2009	253_09LTM	2	Ampelisca Abdita	4
Lower	2009	253_09LTM	1	Capitella Capitata	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Lower	2009	253_09LTM	2	Capitella Capitata	1
Lower	2009	253_09LTM	2	Cirratulidae	1
Lower	2009	253_09LTM	1	Eteone Heteropoda	2
Lower	2009	253_09LTM	2	Eteone Heteropoda	5
Lower	2009	253_09LTM	1	Gemma Gemma	8
Lower	2009	253_09LTM	2	Gemma Gemma	7
Lower	2009	253_09LTM	1	Glycinde Solitaria	1
Lower	2009	253_09LTM	1	Harpacticoida	1
Lower	2009	253_09LTM	1	Heteromastus Filiformis	1
Lower	2009	253_09LTM	2	Heteromastus Filiformis	1
Lower	2009	253_09LTM	1	Leitoscoloplos Fragilis	9
Lower	2009	253_09LTM	2	Leitoscoloplos Fragilis	11
Lower	2009	253_09LTM	1	Leitoscoloplos Sp.	70
Lower	2009	253_09LTM	2	Leitoscoloplos Sp.	51
Lower	2009	253_09LTM	1	Leucon Americanus	1
Lower	2009	253_09LTM	2	Macoma Tenta	2
Lower	2009	253_09LTM	1	Mediomastus Ambiseta	44
Lower	2009	253_09LTM	2	Mediomastus Ambiseta	24
Lower	2009	253_09LTM	1	Mercenaria Mercenaria	2
Lower	2009	253_09LTM	2	Mercenaria Mercenaria	1
Lower	2009	253_09LTM	1	Mulinia Lateralis	360
Lower	2009	253_09LTM	2	Mulinia Lateralis	353
Lower	2009	253_09LTM	2	Neanthes Succinea	1
Lower	2009	253_09LTM	1	Nematoda	P
Lower	2009	253_09LTM	2	Nematoda	P
Lower	2009	253_09LTM	2	Oligochaeta	2
Lower	2009	253_09LTM	1	Pectinaria Gouldi	1
Lower	2009	253_09LTM	2	Petricola Pholadiformis	1
Lower	2009	253_09LTM	2	Podarke Obscura	1
Lower	2009	253_09LTM	1	Polydora Cornuta	1
Lower	2009	253_09LTM	1	Streblospio Benedicti	70
Lower	2009	253_09LTM	2	Streblospio Benedicti	44
Lower	2009	253_09LTM	1	Tellina Agilis	10
Lower	2009	253_09LTM	2	Tellina Agilis	4
Lower	2009	253_09LTM	1	Tellinidae	1
Lower	2009	253_09LTM	2	Tharyx Acutus	5
Outer	2009	304_09LTM	1	Ampithoe Longimana	2
Outer	2009	304_09LTM	2	Ampithoe Longimana	1
Outer	2009	304_09LTM	1	Anachis Lafresnayi	1
Outer	2009	304_09LTM	2	Anachis Lafresnayi	1
Outer	2009	304_09LTM	1	Anadara Transversa	1
Outer	2009	304_09LTM	1	Anomia Simplex	1
Outer	2009	304_09LTM	2	Anomia Simplex	1
Outer	2009	304_09LTM	1	Apocorophium Acutum	1
Outer	2009	304_09LTM	2	Apocorophium Acutum	1
Outer	2009	304_09LTM	2	Bittium Alternatum	5
Outer	2009	304_09LTM	1	Boccardiella Hamata	1
Outer	2009	304_09LTM	2	Boccardiella Hamata	3
Outer	2009	304_09LTM	1	Boonea Seminuda	14
Outer	2009	304_09LTM	1	Brania Clavata	2
Outer	2009	304_09LTM	1	Capitella Capitata	1
Outer	2009	304_09LTM	2	Capitella Capitata	6
Outer	2009	304_09LTM	1	Carazziella Hobsonae	69
Outer	2009	304_09LTM	2	Carazziella Hobsonae	8
Outer	2009	304_09LTM	2	Cirratulidae	33
Outer	2009	304_09LTM	1	Cirratulus Grandis	1
Outer	2009	304_09LTM	2	Cirrophorus Furcatus	1
Outer	2009	304_09LTM	1	Crepidula Fornicata	45
Outer	2009	304_09LTM	2	Crepidula Fornicata	15

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	304_09LTM	1	Crepidula Plana	4
Outer	2009	304_09LTM	2	Crepidula Plana	1
Outer	2009	304_09LTM	1	Cumingia Tellinoides	1
Outer	2009	304_09LTM	1	Dipolydora Socialis	1
Outer	2009	304_09LTM	1	Dorvillea (Schistomeringos) Annulata	1
Outer	2009	304_09LTM	1	Dyspanopeus Sayi	10
Outer	2009	304_09LTM	2	Dyspanopeus Sayi	2
Outer	2009	304_09LTM	1	Euclymene Collaris	1
Outer	2009	304_09LTM	1	Eumida Sanguinea	8
Outer	2009	304_09LTM	2	Eumida Sanguinea	3
Outer	2009	304_09LTM	1	Exogone Dispar	3
Outer	2009	304_09LTM	2	Exogone Dispar	1
Outer	2009	304_09LTM	2	Glycera Americana	1
Outer	2009	304_09LTM	2	Gyptis Vittata	1
Outer	2009	304_09LTM	1	Heteromastus Filiformis	40
Outer	2009	304_09LTM	2	Heteromastus Filiformis	41
Outer	2009	304_09LTM	1	Heteromysis Formosa	1
Outer	2009	304_09LTM	1	Jassa Marmorata	1
Outer	2009	304_09LTM	1	Lembos Smithi	7
Outer	2009	304_09LTM	2	Lembos Smithi	2
Outer	2009	304_09LTM	1	Lepidonotus Squamatus	1
Outer	2009	304_09LTM	1	Listriella Barnardi	1
Outer	2009	304_09LTM	2	Listriella Barnardi	1
Outer	2009	304_09LTM	1	Mediomastus Ambiseta	40
Outer	2009	304_09LTM	2	Mediomastus Ambiseta	8
Outer	2009	304_09LTM	1	Microdeutopus Anomalus	1
Outer	2009	304_09LTM	1	Microprotopus Raneyi	1
Outer	2009	304_09LTM	2	Microprotopus Raneyi	2
Outer	2009	304_09LTM	1	Mitrella Lunata	18
Outer	2009	304_09LTM	2	Mitrella Lunata	6
Outer	2009	304_09LTM	1	Mulinia Lateralis	1
Outer	2009	304_09LTM	2	Mulinia Lateralis	1
Outer	2009	304_09LTM	1	Nematoda	P
Outer	2009	304_09LTM	2	Nematoda	P
Outer	2009	304_09LTM	1	Nucula Proxima	18
Outer	2009	304_09LTM	2	Nucula Proxima	2
Outer	2009	304_09LTM	1	Oligochaeta	152
Outer	2009	304_09LTM	2	Oligochaeta	62
Outer	2009	304_09LTM	1	Ostracoda	3
Outer	2009	304_09LTM	1	Platynereis Dumerilii	4
Outer	2009	304_09LTM	2	Platynereis Dumerilii	1
Outer	2009	304_09LTM	1	Podarke Obscura	17
Outer	2009	304_09LTM	2	Podarke Obscura	8
Outer	2009	304_09LTM	1	Polycirrus Eximius	1
Outer	2009	304_09LTM	2	Polycirrus Eximius	2
Outer	2009	304_09LTM	2	Polydora Cornuta	2
Outer	2009	304_09LTM	1	Prionospio (Minuspio) Perkinsi	2
Outer	2009	304_09LTM	1	Prionospio Heterobranchia	19
Outer	2009	304_09LTM	2	Prionospio Heterobranchia	3
Outer	2009	304_09LTM	1	Scoletoma Hebes	1
Outer	2009	304_09LTM	1	Seila Adamsi	10
Outer	2009	304_09LTM	2	Seila Adamsi	7
Outer	2009	304_09LTM	1	Sphaerosyllis Taylori	1
Outer	2009	304_09LTM	1	Sthenelais Boa	3
Outer	2009	304_09LTM	2	Streblospio Benedicti	1
Outer	2009	304_09LTM	2	Tellina Agilis	3
Outer	2009	304_09LTM	1	Tharyx Acutus	8
Outer	2009	304_09LTM	2	Tharyx Acutus	188
Outer	2009	304_09LTM	1	Tubulanus Sp.	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	304_09LTM	2	Turbellaria	1
Outer	2009	304_09LTM	1	Turbonilla Interrupta	1
Outer	2009	306_09LTM	2	Ampelisca Vadorum	4
Outer	2009	306_09LTM	1	Ampelisca Verrilli	5
Outer	2009	306_09LTM	1	Amphiporus Bioculatus	2
Outer	2009	306_09LTM	2	Amphiporus Bioculatus	3
Outer	2009	306_09LTM	2	Amphiporus Cruentatus	1
Outer	2009	306_09LTM	2	Anachis Lafresnayi	4
Outer	2009	306_09LTM	2	Anadara Transversa	3
Outer	2009	306_09LTM	1	Anomia Simplex	2
Outer	2009	306_09LTM	2	Arabella Iricolor	1
Outer	2009	306_09LTM	1	Aricidea (Acmira) Catherinae	11
Outer	2009	306_09LTM	2	Aricidea (Acmira) Catherinae	3
Outer	2009	306_09LTM	2	Bittium Alternatum	1
Outer	2009	306_09LTM	2	Boonea Seminuda	15
Outer	2009	306_09LTM	2	Brania Clavata	9
Outer	2009	306_09LTM	1	Brania Wellfleetensis	23
Outer	2009	306_09LTM	2	Brania Wellfleetensis	12
Outer	2009	306_09LTM	2	Bugula Turrita	P
Outer	2009	306_09LTM	2	Busycon Carica	1
Outer	2009	306_09LTM	1	Capitella Capitata	1
Outer	2009	306_09LTM	1	Capitella Jonesi	5
Outer	2009	306_09LTM	2	Capitella Jonesi	4
Outer	2009	306_09LTM	2	Caprella Penantis	1
Outer	2009	306_09LTM	1	Cirratulus Grandis	1
Outer	2009	306_09LTM	2	Cliona Vastifica	1
Outer	2009	306_09LTM	2	Crepidula Convexa	1
Outer	2009	306_09LTM	2	Crepidula Fornicata	31
Outer	2009	306_09LTM	2	Crepidula Plana	5
Outer	2009	306_09LTM	2	Cyclopoida	2
Outer	2009	306_09LTM	1	Dipolydora Socialis	1
Outer	2009	306_09LTM	2	Dyspanopeus Sayi	2
Outer	2009	306_09LTM	2	Elasmopus Laevis	4
Outer	2009	306_09LTM	2	Eobrolgus Spinosus	5
Outer	2009	306_09LTM	2	Epitomapta Roseola	1
Outer	2009	306_09LTM	2	Eteone Heteropoda	1
Outer	2009	306_09LTM	2	Euclymene Collaris	1
Outer	2009	306_09LTM	2	Eumida Sanguinea	1
Outer	2009	306_09LTM	2	Exogone Dispar	1
Outer	2009	306_09LTM	2	Exogone Verugera	1
Outer	2009	306_09LTM	1	Glycera Dibranchiata	1
Outer	2009	306_09LTM	2	Glycera Dibranchiata	1
Outer	2009	306_09LTM	2	Gyptis Vittata	1
Outer	2009	306_09LTM	1	Harpacticoida	1
Outer	2009	306_09LTM	2	Harpacticoida	1
Outer	2009	306_09LTM	1	Hemicyclops Sp.	2
Outer	2009	306_09LTM	1	Heteromastus Filiformis	1
Outer	2009	306_09LTM	2	Heteromastus Filiformis	4
Outer	2009	306_09LTM	2	Ilyanassa Obsoleta	1
Outer	2009	306_09LTM	1	Laevicardium Mortoni	2
Outer	2009	306_09LTM	2	Laevicardium Mortoni	5
Outer	2009	306_09LTM	1	Leitoscoloplos Sp.	3
Outer	2009	306_09LTM	2	Leitoscoloplos Sp.	8
Outer	2009	306_09LTM	2	Lembos Smithi	11
Outer	2009	306_09LTM	2	Leptochelia Dubia	4
Outer	2009	306_09LTM	2	Lysianopsis Alba	2
Outer	2009	306_09LTM	2	Maldanidae	3
Outer	2009	306_09LTM	1	Mediomastus Ambiseta	7
Outer	2009	306_09LTM	2	Mediomastus Ambiseta	2

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	306_09LTM	2	Melanella Sarsi	1
Outer	2009	306_09LTM	2	Microdeutopus Anomalus	5
Outer	2009	306_09LTM	2	Microphthalmus Sp.	2
Outer	2009	306_09LTM	1	Microphthalmus Sp. A	1
Outer	2009	306_09LTM	2	Microphthalmus Sp. A	3
Outer	2009	306_09LTM	2	Microprotopus Raneyi	1
Outer	2009	306_09LTM	1	Mitrella Lunata	1
Outer	2009	306_09LTM	2	Mitrella Lunata	8
Outer	2009	306_09LTM	1	Monocorophium Acherusicum	1
Outer	2009	306_09LTM	1	Neanthes Arenaceodentata	1
Outer	2009	306_09LTM	1	Nematoda	P
Outer	2009	306_09LTM	2	Nematoda	P
Outer	2009	306_09LTM	1	Nephtys Incisa	1
Outer	2009	306_09LTM	1	Nephtys Picta	1
Outer	2009	306_09LTM	1	Oligochaeta	55
Outer	2009	306_09LTM	2	Oligochaeta	105
Outer	2009	306_09LTM	1	Ostracoda	1
Outer	2009	306_09LTM	2	Pagurus Annulipes	1
Outer	2009	306_09LTM	2	Paracaprella Tenuis	2
Outer	2009	306_09LTM	1	Parapionosyllis Longicirrata	14
Outer	2009	306_09LTM	2	Parapionosyllis Longicirrata	8
Outer	2009	306_09LTM	1	Parougia Caeca	1
Outer	2009	306_09LTM	2	Parougia Caeca	2
Outer	2009	306_09LTM	1	Phyllodoce Arenae	1
Outer	2009	306_09LTM	2	Phyllodoce Arenae	1
Outer	2009	306_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	306_09LTM	2	Platynereis Dumerilii	5
Outer	2009	306_09LTM	2	Podarke Obscura	10
Outer	2009	306_09LTM	1	Polycirrus Eximius	3
Outer	2009	306_09LTM	1	Polygordius Sp.	15
Outer	2009	306_09LTM	2	Polygordius Sp.	20
Outer	2009	306_09LTM	2	Potamilla Reniformis	1
Outer	2009	306_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Outer	2009	306_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Outer	2009	306_09LTM	1	Prionospio Heterobranchia	12
Outer	2009	306_09LTM	2	Prionospio Heterobranchia	9
Outer	2009	306_09LTM	1	Protodorvillea Gaspeensis	3
Outer	2009	306_09LTM	2	Protodorvillea Gaspeensis	1
Outer	2009	306_09LTM	2	Rhepoxynius Hudsoni	2
Outer	2009	306_09LTM	1	Rudilemboides Naglei	3
Outer	2009	306_09LTM	2	Rudilemboides Naglei	9
Outer	2009	306_09LTM	2	Schizoporella Unicornis	P
Outer	2009	306_09LTM	1	Scolelepis Texana	2
Outer	2009	306_09LTM	2	Scolelepis Texana	1
Outer	2009	306_09LTM	2	Solemya Velum	1
Outer	2009	306_09LTM	1	Spiophanes Bombyx	10
Outer	2009	306_09LTM	2	Spiophanes Bombyx	8
Outer	2009	306_09LTM	1	Syllides Cf. Verrilli	1
Outer	2009	306_09LTM	2	Syllides Cf. Verrilli	2
Outer	2009	306_09LTM	2	Tagelus Divisus	1
Outer	2009	306_09LTM	1	Tectonatica Pusilla	2
Outer	2009	306_09LTM	2	Tellina Agilis	3
Outer	2009	306_09LTM	2	Tharyx Acutus	5
Outer	2009	309_09LTM	2	Ampelisca Vadorum	1
Outer	2009	309_09LTM	1	Ampithoe Longimana	1
Outer	2009	309_09LTM	1	Anachis Lafresnayi	12
Outer	2009	309_09LTM	2	Anachis Lafresnayi	6
Outer	2009	309_09LTM	1	Anomia Simplex	1
Outer	2009	309_09LTM	2	Apocorophium Acutum	4

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	309_09LTM	1	Balanus Venustus	46
Outer	2009	309_09LTM	2	Balanus Venustus	10
Outer	2009	309_09LTM	1	Boccardiella Hamata	1
Outer	2009	309_09LTM	1	Boonea Seminuda	20
Outer	2009	309_09LTM	2	Boonea Seminuda	33
Outer	2009	309_09LTM	2	Brania Clavata	4
Outer	2009	309_09LTM	1	Capitella Capitata	36
Outer	2009	309_09LTM	2	Capitella Capitata	16
Outer	2009	309_09LTM	1	Cerebratulus Lacteus	1
Outer	2009	309_09LTM	2	Clymenella Torquata	1
Outer	2009	309_09LTM	1	Crepidula Fornicata	82
Outer	2009	309_09LTM	2	Crepidula Fornicata	26
Outer	2009	309_09LTM	1	Crepidula Plana	11
Outer	2009	309_09LTM	2	Crepidula Plana	4
Outer	2009	309_09LTM	1	Dipolydora Giardi	2
Outer	2009	309_09LTM	1	Dipolydora Socialis	1
Outer	2009	309_09LTM	1	Dyspanopeus Sayi	7
Outer	2009	309_09LTM	2	Dyspanopeus Sayi	2
Outer	2009	309_09LTM	2	Eteone Sp.	1
Outer	2009	309_09LTM	1	Eumida Sanguinea	5
Outer	2009	309_09LTM	1	Exogone Dispar	21
Outer	2009	309_09LTM	2	Exogone Dispar	5
Outer	2009	309_09LTM	2	Exogone Verugera	1
Outer	2009	309_09LTM	2	Fargoa Bartschi	1
Outer	2009	309_09LTM	1	Gyptis Vittata	1
Outer	2009	309_09LTM	2	Harpacticoida	1
Outer	2009	309_09LTM	1	Heteromastus Filiformis	8
Outer	2009	309_09LTM	2	Heteromastus Filiformis	4
Outer	2009	309_09LTM	1	Lembos Smithi	13
Outer	2009	309_09LTM	2	Lembos Smithi	12
Outer	2009	309_09LTM	1	Leptochelia Dubia	3
Outer	2009	309_09LTM	2	Leptochelia Dubia	2
Outer	2009	309_09LTM	1	Leucon Americanus	1
Outer	2009	309_09LTM	2	Maldanidae	1
Outer	2009	309_09LTM	1	Microdeutopus Anomalus	36
Outer	2009	309_09LTM	2	Microdeutopus Anomalus	7
Outer	2009	309_09LTM	1	Microdeutopus Gryllotalpa	11
Outer	2009	309_09LTM	2	Microdeutopus Gryllotalpa	21
Outer	2009	309_09LTM	1	Microprotopus Raneyi	1
Outer	2009	309_09LTM	2	Microprotopus Raneyi	4
Outer	2009	309_09LTM	2	Mitrella Lunata	3
Outer	2009	309_09LTM	1	Neanthes Succinea	19
Outer	2009	309_09LTM	2	Neanthes Succinea	7
Outer	2009	309_09LTM	1	Nematoda	P
Outer	2009	309_09LTM	2	Nematoda	P
Outer	2009	309_09LTM	2	Nucula Proxima	1
Outer	2009	309_09LTM	1	Oligochaeta	3
Outer	2009	309_09LTM	2	Oligochaeta	2
Outer	2009	309_09LTM	1	Ostracoda	1
Outer	2009	309_09LTM	2	Ostracoda	38
Outer	2009	309_09LTM	1	Platynereis Dumerilii	9
Outer	2009	309_09LTM	1	Podarke Obscura	3
Outer	2009	309_09LTM	2	Podarke Obscura	1
Outer	2009	309_09LTM	1	Polydora Cornuta	5
Outer	2009	309_09LTM	2	Polydora Cornuta	1
Outer	2009	309_09LTM	1	Polygordius Sp.	3
Outer	2009	309_09LTM	2	Polygordius Sp.	2
Outer	2009	309_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Outer	2009	309_09LTM	1	Prionospio Heterobranchia	3

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	309_09LTM	2	Prionospio Heterobranchia	1
Outer	2009	309_09LTM	2	Scoletoma Hebes	1
Outer	2009	309_09LTM	1	Seila Adamsi	1
Outer	2009	309_09LTM	2	Tellina Agilis	1
Outer	2009	309_09LTM	1	Tharyx Acutus	1
Outer	2009	309_09LTM	2	Tharyx Acutus	1
Outer	2009	309_09LTM	2	Turbellaria	1
Outer	2009	309_09LTM	1	Urosalpinx Cinerea	1
Outer	2009	310_09LTM	2	Ampelisca Abdita	1
Outer	2009	310_09LTM	1	Ampelisca Vadorum	1
Outer	2009	310_09LTM	1	Anadara Transversa	1
Outer	2009	310_09LTM	1	Anomia Simplex	1
Outer	2009	310_09LTM	1	Balanus Venustus	2
Outer	2009	310_09LTM	2	Bittium Alternatum	1
Outer	2009	310_09LTM	1	Brania Clavata	1
Outer	2009	310_09LTM	2	Brania Clavata	5
Outer	2009	310_09LTM	2	Callipallene Brevirostris	1
Outer	2009	310_09LTM	1	Capitella Capitata	2
Outer	2009	310_09LTM	2	Caprella Penantis	1
Outer	2009	310_09LTM	1	Clymenella Torquata	1
Outer	2009	310_09LTM	2	Clymenella Torquata	5
Outer	2009	310_09LTM	1	Crepidula Fornicata	34
Outer	2009	310_09LTM	2	Crepidula Fornicata	6
Outer	2009	310_09LTM	1	Crepidula Plana	4
Outer	2009	310_09LTM	2	Crepidula Plana	2
Outer	2009	310_09LTM	2	Dipolydora Socialis	3
Outer	2009	310_09LTM	2	Erichsonella Filiformis	1
Outer	2009	310_09LTM	1	Euclymene Collaris	4
Outer	2009	310_09LTM	2	Euclymene Collaris	1
Outer	2009	310_09LTM	1	Eumida Sanguinea	1
Outer	2009	310_09LTM	2	Eumida Sanguinea	2
Outer	2009	310_09LTM	2	Exogone Dispar	2
Outer	2009	310_09LTM	2	Glycera Americana	2
Outer	2009	310_09LTM	1	Harpacticoida	1
Outer	2009	310_09LTM	1	Heteromastus Filiformis	1
Outer	2009	310_09LTM	2	Heteromastus Filiformis	2
Outer	2009	310_09LTM	2	Ilyanassa Trivittata	1
Outer	2009	310_09LTM	1	Lembos Smithi	1
Outer	2009	310_09LTM	2	Lembos Smithi	2
Outer	2009	310_09LTM	1	Lepidonotus Squamatus	2
Outer	2009	310_09LTM	1	Mediomastus Ambiseta	3
Outer	2009	310_09LTM	2	Mediomastus Ambiseta	31
Outer	2009	310_09LTM	1	Microciona Prolifera	1
Outer	2009	310_09LTM	1	Microdeutopus Anomalus	1
Outer	2009	310_09LTM	2	Microdeutopus Anomalus	3
Outer	2009	310_09LTM	2	Microphthalmus Sp.	1
Outer	2009	310_09LTM	2	Microprotopus Raneyi	1
Outer	2009	310_09LTM	1	Mitrella Lunata	4
Outer	2009	310_09LTM	2	Mitrella Lunata	2
Outer	2009	310_09LTM	2	Neanthes Succinea	1
Outer	2009	310_09LTM	1	Nematoda	P
Outer	2009	310_09LTM	2	Nematoda	P
Outer	2009	310_09LTM	2	Nicolea Zostericola	4
Outer	2009	310_09LTM	1	Oligochaeta	2
Outer	2009	310_09LTM	2	Oligochaeta	21
Outer	2009	310_09LTM	2	Paracaprella Tenuis	3
Outer	2009	310_09LTM	2	Phyllodoce Arenae	1
Outer	2009	310_09LTM	2	Platynereis Dumerilii	3
Outer	2009	310_09LTM	2	Polycirrus Eximius	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	310_09LTM	2	Polycirrus Sp.	1
Outer	2009	310_09LTM	1	Prionospio Heterobranchia	1
Outer	2009	310_09LTM	2	Sthenelais Boa	1
Outer	2009	310_09LTM	1	Stylochus Ellipticus	1
Outer	2009	310_09LTM	2	Tellina Agilis	6
Outer	2009	310_09LTM	2	Turbonilla Aequalis	1
Outer	2009	311_09LTM	1	Ampelisca Vadorum	14
Outer	2009	311_09LTM	2	Ampelisca Vadorum	5
Outer	2009	311_09LTM	1	Ampelisca Verrilli	2
Outer	2009	311_09LTM	2	Ampelisca Verrilli	5
Outer	2009	311_09LTM	2	Ampharete Finmarchica	1
Outer	2009	311_09LTM	2	Amphiporus Bioculatus	1
Outer	2009	311_09LTM	1	Amphiporus Cruentatus	1
Outer	2009	311_09LTM	1	Ampithoe Longimana	13
Outer	2009	311_09LTM	1	Anachis Lafresnayi	2
Outer	2009	311_09LTM	2	Anachis Lafresnayi	3
Outer	2009	311_09LTM	2	Anomia Simplex	1
Outer	2009	311_09LTM	1	Apocorophium Acutum	1
Outer	2009	311_09LTM	1	Aricidea (Acmira) Catherinae	9
Outer	2009	311_09LTM	2	Aricidea (Acmira) Catherinae	5
Outer	2009	311_09LTM	1	Batea Catharinensis	1
Outer	2009	311_09LTM	2	Batea Catharinensis	1
Outer	2009	311_09LTM	1	Bittium Alternatum	13
Outer	2009	311_09LTM	2	Bittium Alternatum	2
Outer	2009	311_09LTM	1	Boccardiella Hamata	1
Outer	2009	311_09LTM	1	Brania Clavata	5
Outer	2009	311_09LTM	2	Brania Clavata	1
Outer	2009	311_09LTM	1	Brania Wellfleetensis	8
Outer	2009	311_09LTM	2	Brania Wellfleetensis	10
Outer	2009	311_09LTM	1	Bugula Turrita	P
Outer	2009	311_09LTM	1	Campanulariidae	P
Outer	2009	311_09LTM	1	Caprella Penantis	4
Outer	2009	311_09LTM	1	Caulleriella Cf. Killariensis	14
Outer	2009	311_09LTM	2	Caulleriella Cf. Killariensis	37
Outer	2009	311_09LTM	1	Chaetopleura Apiculata	3
Outer	2009	311_09LTM	2	Chaetopleura Apiculata	4
Outer	2009	311_09LTM	2	Crassinella Lunulata	2
Outer	2009	311_09LTM	1	Crepidula Fornicata	19
Outer	2009	311_09LTM	2	Crepidula Fornicata	38
Outer	2009	311_09LTM	2	Crepidula Plana	3
Outer	2009	311_09LTM	2	Dipolydora Socialis	1
Outer	2009	311_09LTM	1	Dyspanopeus Sayi	6
Outer	2009	311_09LTM	2	Dyspanopeus Sayi	2
Outer	2009	311_09LTM	1	Elasmopus Laevis	14
Outer	2009	311_09LTM	2	Elasmopus Laevis	3
Outer	2009	311_09LTM	1	Ensis Directus	1
Outer	2009	311_09LTM	1	Eobrolgus Spinosus	7
Outer	2009	311_09LTM	2	Eobrolgus Spinosus	4
Outer	2009	311_09LTM	1	Epitonium Angulatum	1
Outer	2009	311_09LTM	1	Erichsonella Filiformis	3
Outer	2009	311_09LTM	1	Eumida Sanguinea	3
Outer	2009	311_09LTM	2	Eumida Sanguinea	10
Outer	2009	311_09LTM	1	Exogone Dispar	14
Outer	2009	311_09LTM	2	Exogone Dispar	14
Outer	2009	311_09LTM	1	Glycera Americana	2
Outer	2009	311_09LTM	2	Glycera Americana	1
Outer	2009	311_09LTM	1	Gyptis Vittata	2
Outer	2009	311_09LTM	1	Harmothoe Extenuata	1
Outer	2009	311_09LTM	2	Harmothoe Extenuata	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	311_09LTM	1	Harpacticoida	1
Outer	2009	311_09LTM	2	Harpacticoida	1
Outer	2009	311_09LTM	1	Heteromastus Filiformis	3
Outer	2009	311_09LTM	2	Heteromastus Filiformis	4
Outer	2009	311_09LTM	1	Hippolyte Sp.	1
Outer	2009	311_09LTM	1	Laevicardium Mortoni	2
Outer	2009	311_09LTM	2	Laevicardium Mortoni	3
Outer	2009	311_09LTM	1	Leitoscoloplos Acutus	1
Outer	2009	311_09LTM	1	Leitoscoloplos Fragilis	1
Outer	2009	311_09LTM	2	Leitoscoloplos Fragilis	1
Outer	2009	311_09LTM	1	Leitoscoloplos Sp.	5
Outer	2009	311_09LTM	2	Leitoscoloplos Sp.	1
Outer	2009	311_09LTM	1	Lembos Smithi	91
Outer	2009	311_09LTM	2	Lembos Smithi	35
Outer	2009	311_09LTM	1	Lepidonotus Squamatus	1
Outer	2009	311_09LTM	2	Leptochelia Dubia	1
Outer	2009	311_09LTM	1	Lysianopsis Alba	1
Outer	2009	311_09LTM	1	Mediomastus Ambiseta	6
Outer	2009	311_09LTM	2	Mediomastus Ambiseta	5
Outer	2009	311_09LTM	1	Microphthalmus Sp.	1
Outer	2009	311_09LTM	2	Micrura Sp.	1
Outer	2009	311_09LTM	1	Mitrella Lunata	15
Outer	2009	311_09LTM	2	Mitrella Lunata	1
Outer	2009	311_09LTM	1	Monocorophium Acherusicum	2
Outer	2009	311_09LTM	1	Nematoda	P
Outer	2009	311_09LTM	2	Nematoda	P
Outer	2009	311_09LTM	1	Nephtys Picta	2
Outer	2009	311_09LTM	1	Nucula Annulata	7
Outer	2009	311_09LTM	2	Nucula Annulata	2
Outer	2009	311_09LTM	1	Odontosyllis Fulgurans	1
Outer	2009	311_09LTM	2	Odontosyllis Fulgurans	1
Outer	2009	311_09LTM	1	Oligochaeta	10
Outer	2009	311_09LTM	2	Oligochaeta	9
Outer	2009	311_09LTM	2	Ostracoda	5
Outer	2009	311_09LTM	2	Oxyurostylis Smithi	1
Outer	2009	311_09LTM	2	Pagurus Annulipes	1
Outer	2009	311_09LTM	1	Paracaprella Tenuis	2
Outer	2009	311_09LTM	2	Parapionosyllis Longicirrata	2
Outer	2009	311_09LTM	1	Phyllodoce Arenae	1
Outer	2009	311_09LTM	2	Phyllodoce Arenae	1
Outer	2009	311_09LTM	2	Pista Cristata	1
Outer	2009	311_09LTM	1	Pista Palmata	1
Outer	2009	311_09LTM	2	Pista Palmata	2
Outer	2009	311_09LTM	1	Platynereis Dumerilii	37
Outer	2009	311_09LTM	2	Platynereis Dumerilii	3
Outer	2009	311_09LTM	1	Podarke Obscura	18
Outer	2009	311_09LTM	2	Podarke Obscura	20
Outer	2009	311_09LTM	1	Polycirrus Eximius	18
Outer	2009	311_09LTM	2	Polycirrus Eximius	16
Outer	2009	311_09LTM	1	Polycirrus Sp.	15
Outer	2009	311_09LTM	2	Polycirrus Sp.	33
Outer	2009	311_09LTM	1	Polygordius Sp.	69
Outer	2009	311_09LTM	2	Polygordius Sp.	77
Outer	2009	311_09LTM	1	Prionospio Heterobranchia	30
Outer	2009	311_09LTM	2	Prionospio Heterobranchia	51
Outer	2009	311_09LTM	1	Protodorvillea Gaspeensis	2
Outer	2009	311_09LTM	2	Protodorvillea Gaspeensis	3
Outer	2009	311_09LTM	2	Rhepoxynius Hudsoni	1
Outer	2009	311_09LTM	1	Rudilemboides Naglei	7

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	311_09LTM	2	Rudilemboides Naglei	16
Outer	2009	311_09LTM	2	Saccoglossus Kowalevskii	1
Outer	2009	311_09LTM	1	Sacoglossa	1
Outer	2009	311_09LTM	1	Sacoglossa	5
Outer	2009	311_09LTM	2	Sclerodactyla Briareus	1
Outer	2009	311_09LTM	2	Seila Adamsi	1
Outer	2009	311_09LTM	1	Solemya Velum	1
Outer	2009	311_09LTM	1	Sphaerosyllis Taylori	2
Outer	2009	311_09LTM	2	Sphaerosyllis Taylori	1
Outer	2009	311_09LTM	1	Spiophanes Bombyx	6
Outer	2009	311_09LTM	2	Spiophanes Bombyx	6
Outer	2009	311_09LTM	1	Sthenelais Boa	2
Outer	2009	311_09LTM	1	Syllides Cf. Verrilli	3
Outer	2009	311_09LTM	2	Syllides Cf. Verrilli	2
Outer	2009	311_09LTM	1	Tagelus Divisus	2
Outer	2009	311_09LTM	1	Tellina Agilis	2
Outer	2009	311_09LTM	1	Tharyx Acutus	2
Outer	2009	311_09LTM	1	Turbellaria	1
Outer	2009	317_09LTM	1	Acteocina Canaliculata	28
Outer	2009	317_09LTM	2	Acteocina Canaliculata	26
Outer	2009	317_09LTM	1	Cylichna Oryza	29
Outer	2009	317_09LTM	2	Cylichna Oryza	7
Outer	2009	317_09LTM	1	Haminoea Solitaria	2
Outer	2009	317_09LTM	2	Haminoea Solitaria	1
Outer	2009	317_09LTM	1	Lembos Smithi	1
Outer	2009	317_09LTM	2	Lembos Smithi	1
Outer	2009	317_09LTM	1	Macoma Tenta	12
Outer	2009	317_09LTM	2	Macoma Tenta	2
Outer	2009	317_09LTM	1	Mediomastus Ambiseta	56
Outer	2009	317_09LTM	2	Mediomastus Ambiseta	6
Outer	2009	317_09LTM	2	Melinna Cristata	1
Outer	2009	317_09LTM	1	Nematoda	P
Outer	2009	317_09LTM	1	Nephtys Incisa	32
Outer	2009	317_09LTM	2	Nephtys Incisa	18
Outer	2009	317_09LTM	2	Ninoe Nigripes	1
Outer	2009	317_09LTM	1	Nucula Annulata	1
Outer	2009	317_09LTM	1	Oligochaeta	14
Outer	2009	317_09LTM	2	Oligochaeta	2
Outer	2009	317_09LTM	1	Ostracoda	1
Outer	2009	317_09LTM	2	Ostracoda	2
Outer	2009	317_09LTM	2	Podarke Obscura	1
Outer	2009	317_09LTM	1	Polygordius Sp.	3
Outer	2009	317_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Outer	2009	317_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Outer	2009	317_09LTM	1	Rictaxis Punctostriatus	3
Outer	2009	317_09LTM	2	Scolelepis Bousfieldi	1
Outer	2009	317_09LTM	1	Scolelepis Sp.	1
Outer	2009	317_09LTM	1	Spiochaetopterus Oculatus	2
Outer	2009	317_09LTM	2	Spiochaetopterus Oculatus	2
Outer	2009	317_09LTM	1	Spisula Solidissima	1
Outer	2009	317_09LTM	1	Tellina Agilis	2
Outer	2009	317_09LTM	2	Tharyx Acutus	1
Outer	2009	317_09LTM	1	Tubulanus Sp.	2
Outer	2009	317_09LTM	2	Tubulanus Sp.	1
Outer	2009	318_09LTM	1	Ampelisca Vadorum	2
Outer	2009	318_09LTM	2	Ampelisca Vadorum	3
Outer	2009	318_09LTM	1	Ampelisca Verrilli	5
Outer	2009	318_09LTM	2	Ampelisca Verrilli	2
Outer	2009	318_09LTM	2	Ampharete Finmarchica	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	318_09LTM	1	Amphiporus Bioculatus	1
Outer	2009	318_09LTM	1	Amphiporus Cruentatus	1
Outer	2009	318_09LTM	1	Ampithoe Longimana	3
Outer	2009	318_09LTM	1	Aricidea (Acmira) Catherinae	27
Outer	2009	318_09LTM	2	Aricidea (Acmira) Catherinae	1
Outer	2009	318_09LTM	1	Balanus Venustus	2
Outer	2009	318_09LTM	2	Bittium Alternatum	1
Outer	2009	318_09LTM	1	Boonea Seminuda	1
Outer	2009	318_09LTM	1	Brania Clavata	6
Outer	2009	318_09LTM	1	Brania Wellfleetensis	19
Outer	2009	318_09LTM	2	Brania Wellfleetensis	3
Outer	2009	318_09LTM	2	Cabira Incerta	3
Outer	2009	318_09LTM	1	Capitella Jonesi	1
Outer	2009	318_09LTM	1	Caprella Penantis	3
Outer	2009	318_09LTM	1	Caulleriella Cf. Killariensis	13
Outer	2009	318_09LTM	2	Cerastoderma Pinnulatum	1
Outer	2009	318_09LTM	1	Chaetopleura Apiculata	4
Outer	2009	318_09LTM	1	Cirratulus Grandis	1
Outer	2009	318_09LTM	1	Clymenella Torquata	1
Outer	2009	318_09LTM	2	Crassinella Lunulata	1
Outer	2009	318_09LTM	1	Crepidula Fornicata	9
Outer	2009	318_09LTM	1	Crepidula Plana	3
Outer	2009	318_09LTM	2	Crepidula Plana	2
Outer	2009	318_09LTM	1	Diopatra Cuprea	1
Outer	2009	318_09LTM	1	Dipolydora Socialis	1
Outer	2009	318_09LTM	1	Dyspanopeus Sayi	1
Outer	2009	318_09LTM	2	Dyspanopeus Sayi	2
Outer	2009	318_09LTM	1	Elasmopus Laevis	1
Outer	2009	318_09LTM	2	Elasmopus Laevis	1
Outer	2009	318_09LTM	2	Electra Pilosa	P
Outer	2009	318_09LTM	1	Eobrolgus Spinosus	3
Outer	2009	318_09LTM	2	Eobrolgus Spinosus	1
Outer	2009	318_09LTM	1	Eumida Sanguinea	3
Outer	2009	318_09LTM	2	Eumida Sanguinea	4
Outer	2009	318_09LTM	1	Exogone Dispar	4
Outer	2009	318_09LTM	1	Glycera Sp.	1
Outer	2009	318_09LTM	1	Harpacticoida	2
Outer	2009	318_09LTM	2	Lacuna Vincta	1
Outer	2009	318_09LTM	1	Lembos Smithi	22
Outer	2009	318_09LTM	2	Lembos Smithi	20
Outer	2009	318_09LTM	1	Leptochelia Dubia	4
Outer	2009	318_09LTM	2	Leptochelia Dubia	1
Outer	2009	318_09LTM	1	Listriella Barnardi	1
Outer	2009	318_09LTM	1	Mediomastus Ambiseta	2
Outer	2009	318_09LTM	1	Microphthalmus Sp.	1
Outer	2009	318_09LTM	2	Mitrella Lunata	2
Outer	2009	318_09LTM	2	Mytilus Edulis	3
Outer	2009	318_09LTM	1	Nematoda	P
Outer	2009	318_09LTM	2	Nematoda	P
Outer	2009	318_09LTM	1	Nephtys Picta	1
Outer	2009	318_09LTM	2	Nephtys Picta	1
Outer	2009	318_09LTM	1	Nicolea Zostericola	1
Outer	2009	318_09LTM	1	Odontosyllis Fulgurans	1
Outer	2009	318_09LTM	1	Oligochaeta	39
Outer	2009	318_09LTM	2	Oligochaeta	2
Outer	2009	318_09LTM	1	Oxyurostylis Smithi	1
Outer	2009	318_09LTM	2	Pagurus Annulipes	7
Outer	2009	318_09LTM	1	Paracaprella Tenuis	1
Outer	2009	318_09LTM	2	Paraonidae	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	318_09LTM	1	Parapionosyllis Longicirrata	2
Outer	2009	318_09LTM	2	Parapionosyllis Longicirrata	1
Outer	2009	318_09LTM	1	Parougia Caeca	2
Outer	2009	318_09LTM	2	Parougia Caeca	1
Outer	2009	318_09LTM	1	Phyllodoce Arenae	3
Outer	2009	318_09LTM	2	Phyllodoce Arenae	4
Outer	2009	318_09LTM	1	Pinnixa Chaetopterana	2
Outer	2009	318_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	318_09LTM	2	Pista Palmata	1
Outer	2009	318_09LTM	1	Platynereis Dumerilii	5
Outer	2009	318_09LTM	2	Platynereis Dumerilii	1
Outer	2009	318_09LTM	1	Podarke Obscura	6
Outer	2009	318_09LTM	2	Podarke Obscura	3
Outer	2009	318_09LTM	1	Polycirrus Eximius	22
Outer	2009	318_09LTM	2	Polycirrus Eximius	6
Outer	2009	318_09LTM	1	Polycirrus Sp.	28
Outer	2009	318_09LTM	2	Polycirrus Sp.	23
Outer	2009	318_09LTM	1	Polygordius Sp.	158
Outer	2009	318_09LTM	2	Polygordius Sp.	3
Outer	2009	318_09LTM	1	Prionospio Heterobranchia	3
Outer	2009	318_09LTM	2	Prionospio Heterobranchia	2
Outer	2009	318_09LTM	1	Protodorvillea Gaspeensis	5
Outer	2009	318_09LTM	1	Rhepoxynius Hudsoni	1
Outer	2009	318_09LTM	1	Rudilemboides Naglei	19
Outer	2009	318_09LTM	2	Rudilemboides Naglei	12
Outer	2009	318_09LTM	1	Sacoglossa	1
Outer	2009	318_09LTM	1	Sphaerodoropsis Minuta	4
Outer	2009	318_09LTM	2	Sphaerodoropsis Minuta	1
Outer	2009	318_09LTM	1	Sphaerosyllis Taylori	1
Outer	2009	318_09LTM	1	Spiophanes Bombyx	10
Outer	2009	318_09LTM	2	Spiophanes Bombyx	1
Outer	2009	318_09LTM	1	Sthenelais Boa	1
Outer	2009	318_09LTM	2	Sthenelais Boa	1
Outer	2009	318_09LTM	2	Tagelus Divisus	1
Outer	2009	318_09LTM	1	Tectonatica Pusilla	3
Outer	2009	318_09LTM	2	Tectonatica Pusilla	2
Outer	2009	318_09LTM	1	Tharyx Acutus	5
Outer	2009	318_09LTM	1	Unciola Irrorata	1
Outer	2009	323_09LTM	2	Ampelisca Abdita	5
Outer	2009	323_09LTM	2	Ampelisca Vadorum	9
Outer	2009	323_09LTM	1	Ampharete Finmarchica	1
Outer	2009	323_09LTM	1	Anachis Lafresnayi	1
Outer	2009	323_09LTM	2	Anachis Lafresnayi	2
Outer	2009	323_09LTM	1	Anadara Transversa	2
Outer	2009	323_09LTM	2	Anadara Transversa	1
Outer	2009	323_09LTM	2	Batea Catharinensis	4
Outer	2009	323_09LTM	2	Bittium Alternatum	1
Outer	2009	323_09LTM	2	Bivalvia	1
Outer	2009	323_09LTM	1	Capitella Capitata	4
Outer	2009	323_09LTM	2	Capitella Capitata	137
Outer	2009	323_09LTM	2	Capitella Jonesi	6
Outer	2009	323_09LTM	1	Clinocardium Ciliatum	1
Outer	2009	323_09LTM	2	Crangon Septemspinosa	1
Outer	2009	323_09LTM	1	Crepidula Fornicata	6
Outer	2009	323_09LTM	1	Dorvillea (Schistomeringos) Annulata	12
Outer	2009	323_09LTM	2	Dorvillea (Schistomeringos) Annulata	3
Outer	2009	323_09LTM	1	Dyspanopeus Sayi	7
Outer	2009	323_09LTM	2	Dyspanopeus Sayi	1
Outer	2009	323_09LTM	2	Ericthonius Brasiliensis	2

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	323_09LTM	1	Eteone Heteropoda	1
Outer	2009	323_09LTM	1	Euclymene Collaris	6
Outer	2009	323_09LTM	2	Euclymene Collaris	3
Outer	2009	323_09LTM	2	Exogone Dispar	7
Outer	2009	323_09LTM	1	Glycera Americana	1
Outer	2009	323_09LTM	2	Glycinde Solitaria	1
Outer	2009	323_09LTM	1	Gyptis Vittata	1
Outer	2009	323_09LTM	2	Gyptis Vittata	2
Outer	2009	323_09LTM	2	Haliclona Loosanoffi	1
Outer	2009	323_09LTM	1	Harmothoe Sp.	1
Outer	2009	323_09LTM	2	Heteromastus Filiformis	2
Outer	2009	323_09LTM	1	Heteromysis Formosa	4
Outer	2009	323_09LTM	2	Lysianopsis Alba	1
Outer	2009	323_09LTM	2	Maldane Sarsi	1
Outer	2009	323_09LTM	1	Mediomastus Ambiseta	1
Outer	2009	323_09LTM	2	Mediomastus Ambiseta	5
Outer	2009	323_09LTM	1	Microdeutopus Anomalus	1
Outer	2009	323_09LTM	2	Microdeutopus Anomalus	7
Outer	2009	323_09LTM	2	Microprotopus Raneyi	3
Outer	2009	323_09LTM	1	Mitrella Lunata	3
Outer	2009	323_09LTM	2	Mitrella Lunata	11
Outer	2009	323_09LTM	2	Neanthes Succinea	17
Outer	2009	323_09LTM	1	Nematoda	P
Outer	2009	323_09LTM	2	Nematoda	P
Outer	2009	323_09LTM	2	Nucula Annulata	1
Outer	2009	323_09LTM	2	Ostracoda	3
Outer	2009	323_09LTM	2	Oxyurostylis Smithi	1
Outer	2009	323_09LTM	2	Paracaprella Tenuis	2
Outer	2009	323_09LTM	2	Parougia Caeca	2
Outer	2009	323_09LTM	1	Pectinaria Gouldi	3
Outer	2009	323_09LTM	2	Pectinaria Gouldi	1
Outer	2009	323_09LTM	1	Phyllodoce Arenae	1
Outer	2009	323_09LTM	2	Phyllodoce Arenae	2
Outer	2009	323_09LTM	1	Pinnixa Chaetopterana	4
Outer	2009	323_09LTM	2	Pinnixa Chaetopterana	6
Outer	2009	323_09LTM	2	Pinnixa Sayana	1
Outer	2009	323_09LTM	1	Pista Palmata	1
Outer	2009	323_09LTM	1	Platynereis Dumerilii	1
Outer	2009	323_09LTM	2	Platynereis Dumerilii	1
Outer	2009	323_09LTM	1	Podarke Obscura	2
Outer	2009	323_09LTM	2	Podarke Obscura	8
Outer	2009	323_09LTM	2	Polydora Cornuta	2
Outer	2009	323_09LTM	2	Polygordius Sp.	1
Outer	2009	323_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Outer	2009	323_09LTM	2	Prionospio (Minuspio) Perkinsi	6
Outer	2009	323_09LTM	1	Prionospio Heterobranchia	1
Outer	2009	323_09LTM	2	Prionospio Heterobranchia	1
Outer	2009	323_09LTM	2	Solemya Velum	1
Outer	2009	323_09LTM	2	Sphaerosyllis Taylori	2
Outer	2009	323_09LTM	1	Tagelus Divisus	1
Outer	2009	323_09LTM	1	Tellina Agilis	4
Outer	2009	323_09LTM	2	Tellina Agilis	4
Outer	2009	323_09LTM	2	Zaops Ostreum	1
Outer	2009	324_09LTM	2	Acteocina Canaliculata	1
Outer	2009	324_09LTM	1	Ampelisca Abdita	1
Outer	2009	324_09LTM	2	Ampelisca Abdita	5
Outer	2009	324_09LTM	2	Ampelisca Vadorum	2
Outer	2009	324_09LTM	2	Ampharete Finmarchica	3
Outer	2009	324_09LTM	1	Amphiporus Bioculatus	5

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	324_09LTM	1	Ampithoe Longimana	1
Outer	2009	324_09LTM	1	Batea Catharinensis	1
Outer	2009	324_09LTM	2	Bivalvia	6
Outer	2009	324_09LTM	2	Capitella Capitata	4
Outer	2009	324_09LTM	1	Caprella Penantis	1
Outer	2009	324_09LTM	2	Cirratulidae	1
Outer	2009	324_09LTM	2	Clymenella Torquata	1
Outer	2009	324_09LTM	1	Crepidula Fornicata	11
Outer	2009	324_09LTM	1	Crepidula Plana	5
Outer	2009	324_09LTM	2	Crepidula Plana	1
Outer	2009	324_09LTM	2	Cylichna Oryza	3
Outer	2009	324_09LTM	2	Dipolydora Socialis	2
Outer	2009	324_09LTM	1	Dyspanopeus Sayi	3
Outer	2009	324_09LTM	1	Euclymene Collaris	1
Outer	2009	324_09LTM	2	Euclymene Collaris	6
Outer	2009	324_09LTM	2	Eumida Sanguinea	1
Outer	2009	324_09LTM	1	Glycera Sp.	1
Outer	2009	324_09LTM	2	Heteromysis Formosa	1
Outer	2009	324_09LTM	2	Hexapanopeus Angustifrons	1
Outer	2009	324_09LTM	1	Hippolyte Sp.	2
Outer	2009	324_09LTM	1	Hippolyte Zostericola	5
Outer	2009	324_09LTM	2	Ilyanassa Obsoleta	1
Outer	2009	324_09LTM	1	Leptochelia Dubia	1
Outer	2009	324_09LTM	1	Macoma Tenta	25
Outer	2009	324_09LTM	2	Macoma Tenta	27
Outer	2009	324_09LTM	1	Mediomastus Ambiseta	12
Outer	2009	324_09LTM	2	Mediomastus Ambiseta	8
Outer	2009	324_09LTM	1	Microdeutopus Anomalus	1
Outer	2009	324_09LTM	1	Microprotopus Raneyi	1
Outer	2009	324_09LTM	2	Microprotopus Raneyi	1
Outer	2009	324_09LTM	1	Mitrella Lunata	4
Outer	2009	324_09LTM	2	Mitrella Lunata	2
Outer	2009	324_09LTM	2	Monticellina Dorsobranchialis	1
Outer	2009	324_09LTM	1	Nematoda	P
Outer	2009	324_09LTM	2	Nematoda	P
Outer	2009	324_09LTM	1	Nephtys Incisa	27
Outer	2009	324_09LTM	2	Nephtys Incisa	42
Outer	2009	324_09LTM	1	Nicolea Zostericola	1
Outer	2009	324_09LTM	1	Ninoe Nigripes	2
Outer	2009	324_09LTM	1	Nucula Annulata	2
Outer	2009	324_09LTM	2	Nucula Annulata	13
Outer	2009	324_09LTM	1	Oligochaeta	2
Outer	2009	324_09LTM	2	Oligochaeta	1
Outer	2009	324_09LTM	1	Ostracoda	1
Outer	2009	324_09LTM	2	Ostracoda	3
Outer	2009	324_09LTM	1	Pagurus Annulipes	1
Outer	2009	324_09LTM	2	Pandora Glacialis	1
Outer	2009	324_09LTM	1	Paracaprella Tenuis	1
Outer	2009	324_09LTM	1	Parapionosyllis Longicirrata	1
Outer	2009	324_09LTM	2	Pectinaria Gouldi	1
Outer	2009	324_09LTM	1	Platynereis Dumerilii	2
Outer	2009	324_09LTM	2	Polycirrus Eximius	1
Outer	2009	324_09LTM	2	Polygordius Sp.	1
Outer	2009	324_09LTM	1	Prionospio (Minuspio) Perkinsi	5
Outer	2009	324_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Outer	2009	324_09LTM	1	Sphaerosyllis Taylori	1
Outer	2009	324_09LTM	2	Spiochaetopterus Oculatus	2
Outer	2009	324_09LTM	1	Tellina Agilis	2
Outer	2009	324_09LTM	2	Tellina Agilis	3

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	324_09LTM	1	Tellinidae	22
Outer	2009	324_09LTM	2	Tellinidae	18
Outer	2009	324_09LTM	1	Tharyx Acutus	1
Outer	2009	324_09LTM	2	Tharyx Acutus	3
Outer	2009	324_09LTM	1	Tubulanus Sp.	3
Outer	2009	324_09LTM	2	Typosyllis Alternata	2
Outer	2009	325_09LTM	1	Acteocina Canaliculata	32
Outer	2009	325_09LTM	2	Acteocina Canaliculata	1
Outer	2009	325_09LTM	1	Ampharete Finmarchica	1
Outer	2009	325_09LTM	2	Amphiporus Bioculatus	2
Outer	2009	325_09LTM	1	Bivalvia	1
Outer	2009	325_09LTM	1	Carazziella Hobsonae	2
Outer	2009	325_09LTM	1	Cirrophorus Furcatus	1
Outer	2009	325_09LTM	2	Cirrophorus Furcatus	1
Outer	2009	325_09LTM	1	Cylichna Oryza	169
Outer	2009	325_09LTM	2	Cylichna Oryza	80
Outer	2009	325_09LTM	1	Diopatra Cuprea	1
Outer	2009	325_09LTM	1	Dipolydora Socialis	1
Outer	2009	325_09LTM	2	Euclymene Collaris	2
Outer	2009	325_09LTM	2	Euplana Gracilis	1
Outer	2009	325_09LTM	2	Haminoea Solitaria	1
Outer	2009	325_09LTM	2	Hutchinsoniella Macracantha	2
Outer	2009	325_09LTM	2	Ilyanassa Trivittata	1
Outer	2009	325_09LTM	1	Kurtziella Cerina	1
Outer	2009	325_09LTM	2	Lyonsia Hyalina	1
Outer	2009	325_09LTM	1	Macoma Tenta	97
Outer	2009	325_09LTM	2	Macoma Tenta	66
Outer	2009	325_09LTM	1	Maldane Sarsi	1
Outer	2009	325_09LTM	1	Mediomastus Ambiseta	2
Outer	2009	325_09LTM	2	Mediomastus Ambiseta	3
Outer	2009	325_09LTM	1	Melinna Cristata	1
Outer	2009	325_09LTM	2	Melinna Cristata	1
Outer	2009	325_09LTM	1	Mitrella Lunata	1
Outer	2009	325_09LTM	1	Mulinia Lateralis	9
Outer	2009	325_09LTM	2	Mulinia Lateralis	1
Outer	2009	325_09LTM	2	Nematoda	P
Outer	2009	325_09LTM	1	Nephtys Incisa	39
Outer	2009	325_09LTM	2	Nephtys Incisa	62
Outer	2009	325_09LTM	1	Ninoe Nigripes	3
Outer	2009	325_09LTM	1	Nucula Annulata	2
Outer	2009	325_09LTM	2	Oligochaeta	1
Outer	2009	325_09LTM	1	Ostracoda	24
Outer	2009	325_09LTM	2	Ostracoda	5
Outer	2009	325_09LTM	1	Parougia Caeca	1
Outer	2009	325_09LTM	1	Pectinaria Gouldi	4
Outer	2009	325_09LTM	2	Pectinaria Gouldi	1
Outer	2009	325_09LTM	1	Pinnixa Sayana	1
Outer	2009	325_09LTM	1	Pitar Morrhuanus	3
Outer	2009	325_09LTM	2	Pitar Morrhuanus	3
Outer	2009	325_09LTM	2	Podarke Obscura	1
Outer	2009	325_09LTM	1	Polycirrus Sp.	2
Outer	2009	325_09LTM	1	Prionospio (Minuspio) Perkinsi	7
Outer	2009	325_09LTM	2	Prionospio (Minuspio) Perkinsi	7
Outer	2009	325_09LTM	2	Protodorvillea Gaspeensis	1
Outer	2009	325_09LTM	1	Saccoglossus Kowalevskii	3
Outer	2009	325_09LTM	2	Saccoglossus Kowalevskii	4
Outer	2009	325_09LTM	1	Spiochaetopterus Oculatus	2
Outer	2009	325_09LTM	1	Stylochus Ellipticus	1
Outer	2009	325_09LTM	2	Stylochus Ellipticus	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	325_09LTM	2	Tellina Agilis	2
Outer	2009	325_09LTM	1	Tellinidae	18
Outer	2009	325_09LTM	2	Tellinidae	18
Outer	2009	325_09LTM	1	Tubulanus Sp.	1
Outer	2009	325_09LTM	2	Tubulanus Sp.	1
Outer	2009	325_09LTM	1	Turbonilla Aequalis	4
Outer	2009	325_09LTM	1	Turbonilla Interrupta	1
Outer	2009	325_09LTM	1	Yoldia Sp.	3
Outer	2009	325_09LTM	2	Yoldia Sp.	1
Outer	2009	331_09LTM	1	Acteocina Canaliculata	39
Outer	2009	331_09LTM	2	Acteocina Canaliculata	41
Outer	2009	331_09LTM	1	Ampharete Finmarchica	1
Outer	2009	331_09LTM	1	Amphiporus Bioculatus	1
Outer	2009	331_09LTM	2	Amphiporus Bioculatus	1
Outer	2009	331_09LTM	1	Aricidea (Acmira) Catherinae	20
Outer	2009	331_09LTM	2	Aricidea (Acmira) Catherinae	22
Outer	2009	331_09LTM	1	Bivalvia	4
Outer	2009	331_09LTM	1	Carazziella Hobsonae	1
Outer	2009	331_09LTM	1	Cerastoderma Pinnulatum	2
Outer	2009	331_09LTM	2	Ceriantharia	1
Outer	2009	331_09LTM	1	Cirrophorus Furcatus	2
Outer	2009	331_09LTM	2	Cirrophorus Furcatus	1
Outer	2009	331_09LTM	1	Cylichna Oryza	77
Outer	2009	331_09LTM	2	Cylichna Oryza	88
Outer	2009	331_09LTM	2	Diopatra Cuprea	1
Outer	2009	331_09LTM	2	Dipolydora Socialis	1
Outer	2009	331_09LTM	1	Edwardsia Elegans	1
Outer	2009	331_09LTM	2	Edwardsia Elegans	2
Outer	2009	331_09LTM	1	Epitonium Dallianum	1
Outer	2009	331_09LTM	2	Euclymene Collaris	2
Outer	2009	331_09LTM	1	Gastropoda	1
Outer	2009	331_09LTM	2	Golfingia Sp.	1
Outer	2009	331_09LTM	1	Haminoea Solitaria	2
Outer	2009	331_09LTM	1	Hutchinsoniella Macracantha	1
Outer	2009	331_09LTM	2	Ilyanassa Trivittata	1
Outer	2009	331_09LTM	1	Kurtziella Cerina	1
Outer	2009	331_09LTM	2	Lyonsia Hyalina	1
Outer	2009	331_09LTM	1	Macoma Tenta	190
Outer	2009	331_09LTM	2	Macoma Tenta	155
Outer	2009	331_09LTM	1	Maldane Sarsi	2
Outer	2009	331_09LTM	2	Maldane Sarsi	3
Outer	2009	331_09LTM	1	Mediomastus Ambiseta	9
Outer	2009	331_09LTM	2	Mediomastus Ambiseta	23
Outer	2009	331_09LTM	1	Melinna Cristata	2
Outer	2009	331_09LTM	2	Melinna Cristata	1
Outer	2009	331_09LTM	1	Mitrella Lunata	8
Outer	2009	331_09LTM	2	Mitrella Lunata	4
Outer	2009	331_09LTM	1	Mulinia Lateralis	1
Outer	2009	331_09LTM	2	Mulinia Lateralis	4
Outer	2009	331_09LTM	2	Nematoda	P
Outer	2009	331_09LTM	1	Nephtys Incisa	26
Outer	2009	331_09LTM	2	Nephtys Incisa	23
Outer	2009	331_09LTM	1	Ninoe Nigripes	3
Outer	2009	331_09LTM	2	Notomastus Latericeus	1
Outer	2009	331_09LTM	1	Nucula Annulata	13
Outer	2009	331_09LTM	2	Nucula Annulata	9
Outer	2009	331_09LTM	1	Oligochaeta	8
Outer	2009	331_09LTM	2	Oligochaeta	14
Outer	2009	331_09LTM	1	Ostracoda	62

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	331_09LTM	2	Ostracoda	10
Outer	2009	331_09LTM	2	Ostracoda	6
Outer	2009	331_09LTM	1	Parougia Caeca	2
Outer	2009	331_09LTM	2	Parougia Caeca	7
Outer	2009	331_09LTM	1	Pectinaria Gouldi	5
Outer	2009	331_09LTM	2	Pectinaria Gouldi	1
Outer	2009	331_09LTM	2	Phyllodoce Arenae	1
Outer	2009	331_09LTM	1	Pilargidae	1
Outer	2009	331_09LTM	1	Pinnixa Chaetopterana	3
Outer	2009	331_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	331_09LTM	2	Polygordius Sp.	1
Outer	2009	331_09LTM	2	Polyonyx Gibbesi	1
Outer	2009	331_09LTM	1	Prionospio (Minuspio) Perkinsi	19
Outer	2009	331_09LTM	2	Prionospio (Minuspio) Perkinsi	15
Outer	2009	331_09LTM	1	Protodorvillea Gaspeensis	4
Outer	2009	331_09LTM	2	Protodorvillea Gaspeensis	4
Outer	2009	331_09LTM	1	Saccoglossus Kowalevskii	8
Outer	2009	331_09LTM	2	Saccoglossus Kowalevskii	9
Outer	2009	331_09LTM	1	Sacoglossa	1
Outer	2009	331_09LTM	1	Scolelepis Bousfieldi	5
Outer	2009	331_09LTM	2	Scolelepis Bousfieldi	5
Outer	2009	331_09LTM	1	Sphaerosyllis Taylori	1
Outer	2009	331_09LTM	1	Spiochaetopterus Oculatus	5
Outer	2009	331_09LTM	1	Syllides Cf. Verrilli	1
Outer	2009	331_09LTM	2	Syllides Cf. Verrilli	2
Outer	2009	331_09LTM	1	Tectonatica Pusilla	1
Outer	2009	331_09LTM	2	Tectonatica Pusilla	1
Outer	2009	331_09LTM	2	Tellina Agilis	2
Outer	2009	331_09LTM	1	Tellinidae	17
Outer	2009	331_09LTM	2	Tellinidae	32
Outer	2009	331_09LTM	1	Tharyx Acutus	3
Outer	2009	331_09LTM	2	Tharyx Acutus	3
Outer	2009	331_09LTM	1	Tubulanus Sp.	7
Outer	2009	331_09LTM	2	Tubulanus Sp.	7
Outer	2009	331_09LTM	1	Turbonilla Aequalis	2
Outer	2009	331_09LTM	1	Turbonilla Elegantula	1
Outer	2009	331_09LTM	2	Turbonilla Elegantula	1
Outer	2009	331_09LTM	1	Yoldia Limatula	3
Outer	2009	331_09LTM	2	Yoldia Sp.	1
Outer	2009	332_09LTM	1	Acteocina Canaliculata	1
Outer	2009	332_09LTM	2	Acteocina Canaliculata	1
Outer	2009	332_09LTM	1	Aglaophamus Neotenus	1
Outer	2009	332_09LTM	1	Ampelisca Abdita	6
Outer	2009	332_09LTM	1	Ampelisca Vadorum	34
Outer	2009	332_09LTM	2	Ampelisca Vadorum	36
Outer	2009	332_09LTM	1	Ampelisca Verrilli	35
Outer	2009	332_09LTM	2	Ampelisca Verrilli	1
Outer	2009	332_09LTM	2	Ampharete Finmarchica	4
Outer	2009	332_09LTM	1	Ampharetidae	1
Outer	2009	332_09LTM	1	Amphiporus Bioculatus	18
Outer	2009	332_09LTM	2	Amphiporus Bioculatus	3
Outer	2009	332_09LTM	1	Anadara Ovalis	1
Outer	2009	332_09LTM	1	Anadara Transversa	2
Outer	2009	332_09LTM	2	Anadara Transversa	6
Outer	2009	332_09LTM	1	Ancistrosyllis Hartmanae	2
Outer	2009	332_09LTM	2	Anomia Simplex	1
Outer	2009	332_09LTM	1	Arabella Iricolor	2
Outer	2009	332_09LTM	1	Aricidea (Acmira) Catherinae	2
Outer	2009	332_09LTM	2	Aricidea (Acmira) Catherinae	3

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	332_09LTM	1	Balanus Venustus	19
Outer	2009	332_09LTM	2	Balanus Venustus	8
Outer	2009	332_09LTM	1	Bivalvia	2
Outer	2009	332_09LTM	1	Boonea Seminuda	1
Outer	2009	332_09LTM	2	Boonea Seminuda	6
Outer	2009	332_09LTM	1	Brania Clavata	1
Outer	2009	332_09LTM	1	Brania Wellfleetensis	10
Outer	2009	332_09LTM	2	Brania Wellfleetensis	4
Outer	2009	332_09LTM	1	Capitella Jonesi	2
Outer	2009	332_09LTM	2	Capitella Jonesi	4
Outer	2009	332_09LTM	1	Carazziella Hobsonae	2
Outer	2009	332_09LTM	2	Carazziella Hobsonae	1
Outer	2009	332_09LTM	1	Cerastoderma Pinnulatum	1
Outer	2009	332_09LTM	2	Cirratulidae	1
Outer	2009	332_09LTM	1	Cirrophorus Furcatus	5
Outer	2009	332_09LTM	2	Cirrophorus Furcatus	3
Outer	2009	332_09LTM	1	Clymenella Torquata	2
Outer	2009	332_09LTM	1	Crepidula Fornicata	5
Outer	2009	332_09LTM	2	Crepidula Fornicata	18
Outer	2009	332_09LTM	1	Crepidula Plana	2
Outer	2009	332_09LTM	2	Crepidula Plana	4
Outer	2009	332_09LTM	1	Crepidula Sp.	1
Outer	2009	332_09LTM	1	Cylichna Oryza	17
Outer	2009	332_09LTM	2	Cylichna Oryza	6
Outer	2009	332_09LTM	1	Dipolydora Socialis	4
Outer	2009	332_09LTM	2	Dipolydora Socialis	1
Outer	2009	332_09LTM	1	Dyspanopeus Sayi	1
Outer	2009	332_09LTM	2	Dyspanopeus Sayi	3
Outer	2009	332_09LTM	2	Ericthonius Brasiliensis	5
Outer	2009	332_09LTM	1	Euclymene Collaris	11
Outer	2009	332_09LTM	2	Euclymene Collaris	8
Outer	2009	332_09LTM	1	Eumida Sanguinea	5
Outer	2009	332_09LTM	2	Eumida Sanguinea	1
Outer	2009	332_09LTM	1	Exogone Dispar	6
Outer	2009	332_09LTM	2	Exogone Dispar	8
Outer	2009	332_09LTM	1	Exogone Sp.	1
Outer	2009	332_09LTM	1	Gastropoda	2
Outer	2009	332_09LTM	1	Glycera Dibranchiata	1
Outer	2009	332_09LTM	1	Glycera Sp.	1
Outer	2009	332_09LTM	1	Haloclava Producta	1
Outer	2009	332_09LTM	2	Harpacticoida	1
Outer	2009	332_09LTM	1	Heteromysis Formosa	1
Outer	2009	332_09LTM	2	Hippolyte Sp.	2
Outer	2009	332_09LTM	1	Leitoscoloplos Fragilis	1
Outer	2009	332_09LTM	1	Leptocheirus Pinguis	1
Outer	2009	332_09LTM	2	Macoma Tenta	6
Outer	2009	332_09LTM	2	Margarites Sp.	1
Outer	2009	332_09LTM	1	Mediomastus Ambiseta	30
Outer	2009	332_09LTM	2	Mediomastus Ambiseta	34
Outer	2009	332_09LTM	1	Melinna Cristata	4
Outer	2009	332_09LTM	2	Melinna Cristata	1
Outer	2009	332_09LTM	2	Microphthalmus Sp.	1
Outer	2009	332_09LTM	1	Mitrella Lunata	7
Outer	2009	332_09LTM	2	Mitrella Lunata	16
Outer	2009	332_09LTM	1	Nematoda	P
Outer	2009	332_09LTM	2	Nematoda	P
Outer	2009	332_09LTM	1	Nephtys Incisa	5
Outer	2009	332_09LTM	2	Nephtys Incisa	4
Outer	2009	332_09LTM	1	Ninoe Nigripes	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	332_09LTM	2	Ninoe Nigripes	3
Outer	2009	332_09LTM	1	Notomastus Latericeus	8
Outer	2009	332_09LTM	2	Notomastus Latericeus	2
Outer	2009	332_09LTM	2	Nucula Proxima	1
Outer	2009	332_09LTM	1	Oligochaeta	80
Outer	2009	332_09LTM	2	Oligochaeta	53
Outer	2009	332_09LTM	2	Ophiuroidea	1
Outer	2009	332_09LTM	1	Ostracoda	2
Outer	2009	332_09LTM	2	Ostracoda	2
Outer	2009	332_09LTM	1	Oxyurostylis Smithi	1
Outer	2009	332_09LTM	1	Pagurus Annulipes	1
Outer	2009	332_09LTM	1	Paracaprella Tenuis	3
Outer	2009	332_09LTM	2	Paracaprella Tenuis	1
Outer	2009	332_09LTM	1	Parapionosyllis Longicirrata	7
Outer	2009	332_09LTM	2	Parapionosyllis Longicirrata	1
Outer	2009	332_09LTM	1	Parougia Caeca	1
Outer	2009	332_09LTM	2	Parougia Caeca	1
Outer	2009	332_09LTM	1	Pectinaria Gouldi	1
Outer	2009	332_09LTM	2	Pectinaria Gouldi	1
Outer	2009	332_09LTM	2	Pholoe Minuta	1
Outer	2009	332_09LTM	1	Phyllodoce Arenae	4
Outer	2009	332_09LTM	2	Phyllodoce Arenae	2
Outer	2009	332_09LTM	1	Pinnixa Chaetopterana	2
Outer	2009	332_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	332_09LTM	2	Platynereis Dumerilii	1
Outer	2009	332_09LTM	2	Polycirrus Eximius	1
Outer	2009	332_09LTM	1	Polycirrus Sp.	4
Outer	2009	332_09LTM	2	Polycirrus Sp.	3
Outer	2009	332_09LTM	1	Polygordius Sp.	4
Outer	2009	332_09LTM	2	Polygordius Sp.	1
Outer	2009	332_09LTM	1	Prionospio (Minuspio) Perkinsi	2
Outer	2009	332_09LTM	2	Prionospio (Minuspio) Perkinsi	8
Outer	2009	332_09LTM	1	Protodorvillea Gaspeensis	8
Outer	2009	332_09LTM	2	Protodorvillea Gaspeensis	3
Outer	2009	332_09LTM	1	Scalibregma Inflatum	2
Outer	2009	332_09LTM	2	Seila Adamsi	1
Outer	2009	332_09LTM	1	Sphaerosyllis Longicauda	2
Outer	2009	332_09LTM	2	Sphaerosyllis Longicauda	4
Outer	2009	332_09LTM	1	Sphaerosyllis Taylori	4
Outer	2009	332_09LTM	1	Spiochaetopterus Oculatus	4
Outer	2009	332_09LTM	2	Spiochaetopterus Oculatus	4
Outer	2009	332_09LTM	1	Spiophanes Bombyx	5
Outer	2009	332_09LTM	2	Spiophanes Bombyx	8
Outer	2009	332_09LTM	2	Sthenelais Boa	2
Outer	2009	332_09LTM	1	Stylochus Ellipticus	1
Outer	2009	332_09LTM	1	Tagelus Divisus	1
Outer	2009	332_09LTM	2	Tagelus Divisus	3
Outer	2009	332_09LTM	1	Tectonatica Pusilla	1
Outer	2009	332_09LTM	1	Tellina Agilis	6
Outer	2009	332_09LTM	2	Tellina Agilis	17
Outer	2009	332_09LTM	2	Tellinidae	13
Outer	2009	332_09LTM	1	Tharyx Acutus	14
Outer	2009	332_09LTM	2	Tharyx Acutus	53
Outer	2009	332_09LTM	1	Thyasira Gouldii	1
Outer	2009	332_09LTM	1	Tubulanus Sp.	2
Outer	2009	332_09LTM	2	Tubulanus Sp.	4
Outer	2009	332_09LTM	1	Turbonilla Elegantula	4
Outer	2009	332_09LTM	2	Turbonilla Elegantula	1
Outer	2009	332_09LTM	2	Turbonilla Interrupta	9

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	332_09LTM	1	Unciola Irrorata	1
Outer	2009	332_09LTM	2	Zaops Ostreum	1
Outer	2009	333_09LTM	1	Acteocina Canaliculata	1
Outer	2009	333_09LTM	1	Amphiporus Cruentatus	1
Outer	2009	333_09LTM	2	Amphiporus Sp.	1
Outer	2009	333_09LTM	1	Ampithoe Longimana	2
Outer	2009	333_09LTM	1	Anachis Lafresnayi	21
Outer	2009	333_09LTM	2	Anachis Lafresnayi	18
Outer	2009	333_09LTM	1	Anadara Transversa	10
Outer	2009	333_09LTM	2	Anadara Transversa	5
Outer	2009	333_09LTM	1	Ancistrosyllis Hartmanae	1
Outer	2009	333_09LTM	1	Anomia Simplex	1
Outer	2009	333_09LTM	2	Anomia Simplex	2
Outer	2009	333_09LTM	1	Arabella Iricolor	1
Outer	2009	333_09LTM	2	Aricidea (Acmira) Catherinae	1
Outer	2009	333_09LTM	1	Balanus Venustus	16
Outer	2009	333_09LTM	2	Balanus Venustus	6
Outer	2009	333_09LTM	1	Batea Catharinensis	11
Outer	2009	333_09LTM	2	Batea Catharinensis	2
Outer	2009	333_09LTM	1	Bittium Alternatum	5
Outer	2009	333_09LTM	2	Bittium Alternatum	19
Outer	2009	333_09LTM	1	Boonea Seminuda	4
Outer	2009	333_09LTM	2	Boonea Seminuda	5
Outer	2009	333_09LTM	1	Brania Clavata	11
Outer	2009	333_09LTM	2	Brania Clavata	1
Outer	2009	333_09LTM	1	Caprella Penantis	1
Outer	2009	333_09LTM	1	Carazziella Hobsonae	1
Outer	2009	333_09LTM	2	Carazziella Hobsonae	1
Outer	2009	333_09LTM	1	Chaetopleura Apiculata	5
Outer	2009	333_09LTM	2	Chaetopleura Apiculata	2
Outer	2009	333_09LTM	1	Cirratulidae	180
Outer	2009	333_09LTM	2	Cirratulidae	411
Outer	2009	333_09LTM	2	Cliona Vastifica	1
Outer	2009	333_09LTM	2	Crassinella Lunulata	1
Outer	2009	333_09LTM	1	Crepidula Fornicata	161
Outer	2009	333_09LTM	2	Crepidula Fornicata	80
Outer	2009	333_09LTM	1	Crepidula Plana	39
Outer	2009	333_09LTM	2	Crepidula Plana	54
Outer	2009	333_09LTM	2	Cumingia Tellinoides	2
Outer	2009	333_09LTM	1	Dipolydora Socialis	2
Outer	2009	333_09LTM	2	Dorvillea (Schistomeringos) Annulata	1
Outer	2009	333_09LTM	1	Drilonereis Longa	1
Outer	2009	333_09LTM	1	Dyspanopeus Sayi	36
Outer	2009	333_09LTM	2	Dyspanopeus Sayi	41
Outer	2009	333_09LTM	1	Eumida Sanguinea	5
Outer	2009	333_09LTM	2	Eumida Sanguinea	1
Outer	2009	333_09LTM	1	Eunicidae	3
Outer	2009	333_09LTM	2	Eunicidae	1
Outer	2009	333_09LTM	1	Exogone Dispar	1
Outer	2009	333_09LTM	2	Exogone Dispar	2
Outer	2009	333_09LTM	1	Gastropoda	1
Outer	2009	333_09LTM	1	Glycera Americana	1
Outer	2009	333_09LTM	2	Glycera Americana	1
Outer	2009	333_09LTM	1	Gyptis Vittata	1
Outer	2009	333_09LTM	1	Harmothoe Extenuata	9
Outer	2009	333_09LTM	2	Harmothoe Extenuata	10
Outer	2009	333_09LTM	1	Harmothoe Imbricata	1
Outer	2009	333_09LTM	1	Heteromastus Filiformis	1
Outer	2009	333_09LTM	2	Heteromastus Filiformis	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	333_09LTM	1	Heteromysis Formosa	100
Outer	2009	333_09LTM	2	Heteromysis Formosa	45
Outer	2009	333_09LTM	1	Hexapanopeus Angustifrons	2
Outer	2009	333_09LTM	2	Hexapanopeus Angustifrons	2
Outer	2009	333_09LTM	1	Ianiropsis Sp. 1	2
Outer	2009	333_09LTM	2	Ianiropsis Sp. 1	1
Outer	2009	333_09LTM	1	Lembos Smithi	32
Outer	2009	333_09LTM	2	Lembos Smithi	65
Outer	2009	333_09LTM	1	Lepidonotus Squamatus	2
Outer	2009	333_09LTM	2	Lepidonotus Squamatus	3
Outer	2009	333_09LTM	2	Leptochelia Dubia	1
Outer	2009	333_09LTM	1	Marphysa Sanguinea	1
Outer	2009	333_09LTM	1	Mediomastus Ambiseta	6
Outer	2009	333_09LTM	1	Melanella Conoidea	4
Outer	2009	333_09LTM	1	Melanella Oleacea	5
Outer	2009	333_09LTM	2	Microdeutopus Anomalus	3
Outer	2009	333_09LTM	1	Mitrella Lunata	13
Outer	2009	333_09LTM	2	Mitrella Lunata	25
Outer	2009	333_09LTM	1	Monocorophium Acherusicum	1
Outer	2009	333_09LTM	2	Monocorophium Acherusicum	1
Outer	2009	333_09LTM	1	Monticellina Dorsobranchialis	1
Outer	2009	333_09LTM	2	Monticellina Dorsobranchialis	1
Outer	2009	333_09LTM	1	Nematoda	P
Outer	2009	333_09LTM	2	Nematoda	P
Outer	2009	333_09LTM	1	Nephtys Incisa	1
Outer	2009	333_09LTM	1	Nucula Annulata	4
Outer	2009	333_09LTM	2	Nucula Annulata	4
Outer	2009	333_09LTM	2	Nucula Proxima	4
Outer	2009	333_09LTM	1	Odontosyllis Fulgurans	2
Outer	2009	333_09LTM	2	Odontosyllis Fulgurans	2
Outer	2009	333_09LTM	1	Oligochaeta	91
Outer	2009	333_09LTM	2	Oligochaeta	85
Outer	2009	333_09LTM	2	Ophiuroidea	1
Outer	2009	333_09LTM	1	Pagurus Annulipes	1
Outer	2009	333_09LTM	2	Pagurus Annulipes	3
Outer	2009	333_09LTM	2	Pilargidae	1
Outer	2009	333_09LTM	1	Pinnixa Chaetopterana	1
Outer	2009	333_09LTM	1	Podarke Obscura	9
Outer	2009	333_09LTM	2	Podarke Obscura	9
Outer	2009	333_09LTM	1	Polycirrus Eximius	1
Outer	2009	333_09LTM	2	Polycirrus Sp.	1
Outer	2009	333_09LTM	1	Prionospio (Minuspio) Perkinsi	10
Outer	2009	333_09LTM	2	Prionospio (Minuspio) Perkinsi	3
Outer	2009	333_09LTM	1	Sclerodactyla Briareus	1
Outer	2009	333_09LTM	1	Seila Adamsi	2
Outer	2009	333_09LTM	2	Seila Adamsi	4
Outer	2009	333_09LTM	1	Sphaerosyllis Longicauda	2
Outer	2009	333_09LTM	2	Sphaerosyllis Longicauda	3
Outer	2009	333_09LTM	1	Sphaerosyllis Taylori	1
Outer	2009	333_09LTM	1	Spiophanes Bombyx	1
Outer	2009	333_09LTM	1	Tharyx Acutus	656
Outer	2009	333_09LTM	2	Tharyx Acutus	619
Outer	2009	333_09LTM	2	Tubulanus Sp.	4
Outer	2009	333_09LTM	1	Turbonilla Aequalis	1
Outer	2009	333_09LTM	2	Turbonilla Aequalis	1
Outer	2009	333_09LTM	2	Turbonilla Interrupta	2
Outer	2009	333_09LTM	2	Urosalpinx Cinerea	1
Outer	2009	333_09LTM	1	Zygonemertes Virescens	1
Outer	2009	333_09LTM	2	Zygonemertes Virescens	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	334_09LTM	1	Acteocina Canaliculata	11
Outer	2009	334_09LTM	2	Acteocina Canaliculata	14
Outer	2009	334_09LTM	2	Ampelisca Verrilli	2
Outer	2009	334_09LTM	1	Aricidea (Acmira) Catherinae	3
Outer	2009	334_09LTM	2	Aricidea (Acmira) Catherinae	1
Outer	2009	334_09LTM	2	Aricidea (Acmira) Cerruti	2
Outer	2009	334_09LTM	1	Bivalvia	6
Outer	2009	334_09LTM	2	Bivalvia	20
Outer	2009	334_09LTM	1	Cerastoderma Pinnulatum	2
Outer	2009	334_09LTM	2	Cerastoderma Pinnulatum	3
Outer	2009	334_09LTM	2	Chaetozone Sp.	1
Outer	2009	334_09LTM	2	Cirrophorus Furcatus	2
Outer	2009	334_09LTM	2	Clymenella Torquata	1
Outer	2009	334_09LTM	1	Cylichna Oryza	35
Outer	2009	334_09LTM	2	Cylichna Oryza	94
Outer	2009	334_09LTM	2	Dipolydora Socialis	2
Outer	2009	334_09LTM	1	Dorvillea (Schistomeringos) Annulata	1
Outer	2009	334_09LTM	1	Edwardsia Elegans	3
Outer	2009	334_09LTM	2	Edwardsia Elegans	2
Outer	2009	334_09LTM	1	Euclymene Collaris	1
Outer	2009	334_09LTM	2	Euclymene Collaris	3
Outer	2009	334_09LTM	1	Eupleura Caudata	1
Outer	2009	334_09LTM	1	Gyptis Vittata	1
Outer	2009	334_09LTM	1	Hutchinsoniella Macracantha	2
Outer	2009	334_09LTM	1	Ilyanassa Trivittata	3
Outer	2009	334_09LTM	2	Ilyanassa Trivittata	5
Outer	2009	334_09LTM	1	Kurtziella Cerina	1
Outer	2009	334_09LTM	1	Lumbrineridae	1
Outer	2009	334_09LTM	1	Lyonsia Hyalina	1
Outer	2009	334_09LTM	2	Lyonsia Hyalina	1
Outer	2009	334_09LTM	1	Macoma Tenta	73
Outer	2009	334_09LTM	2	Macoma Tenta	149
Outer	2009	334_09LTM	1	Maldane Sarsi	2
Outer	2009	334_09LTM	2	Maldane Sarsi	1
Outer	2009	334_09LTM	1	Mediomastus Ambiseta	1
Outer	2009	334_09LTM	2	Mediomastus Ambiseta	9
Outer	2009	334_09LTM	1	Melinna Cristata	3
Outer	2009	334_09LTM	2	Melinna Cristata	1
Outer	2009	334_09LTM	1	Mitrella Lunata	2
Outer	2009	334_09LTM	2	Mitrella Lunata	9
Outer	2009	334_09LTM	1	Monticellina Dorsobranchialis	2
Outer	2009	334_09LTM	2	Monticellina Dorsobranchialis	1
Outer	2009	334_09LTM	1	Mulinia Lateralis	2
Outer	2009	334_09LTM	2	Mulinia Lateralis	6
Outer	2009	334_09LTM	1	Nematoda	P
Outer	2009	334_09LTM	2	Nematoda	P
Outer	2009	334_09LTM	1	Nephtys Incisa	47
Outer	2009	334_09LTM	2	Nephtys Incisa	51
Outer	2009	334_09LTM	1	Ninoe Nigripes	5
Outer	2009	334_09LTM	2	Ninoe Nigripes	14
Outer	2009	334_09LTM	1	Nucula Annulata	11
Outer	2009	334_09LTM	2	Nucula Annulata	9
Outer	2009	334_09LTM	2	Oligochaeta	5
Outer	2009	334_09LTM	1	Ophiuroidea	1
Outer	2009	334_09LTM	1	Ostracoda	14
Outer	2009	334_09LTM	2	Ostracoda	8
Outer	2009	334_09LTM	1	Parougia Caeca	2
Outer	2009	334_09LTM	2	Parougia Caeca	2
Outer	2009	334_09LTM	1	Pectinaria Gouldi	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	334_09LTM	2	Pectinaria Gouldi	3
Outer	2009	334_09LTM	1	Pholoe Minuta	2
Outer	2009	334_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	334_09LTM	1	Pinnixa Sayana	1
Outer	2009	334_09LTM	1	Pitar Morrhuanus	1
Outer	2009	334_09LTM	2	Pitar Morrhuanus	1
Outer	2009	334_09LTM	1	Polycirrus Eximius	1
Outer	2009	334_09LTM	1	Polycirrus Sp.	6
Outer	2009	334_09LTM	2	Polycirrus Sp.	1
Outer	2009	334_09LTM	2	Polygordius Sp.	1
Outer	2009	334_09LTM	2	Polyonyx Gibbesi	2
Outer	2009	334_09LTM	1	Prionospio (Minuspio) Perkinsi	6
Outer	2009	334_09LTM	2	Prionospio (Minuspio) Perkinsi	4
Outer	2009	334_09LTM	2	Saccoglossus Kowalevskii	9
Outer	2009	334_09LTM	2	Saccoglossus Kowalevskii	6
Outer	2009	334_09LTM	2	Scolelepis Bousfieldi	1
Outer	2009	334_09LTM	1	Scolelepis Sp.	3
Outer	2009	334_09LTM	1	Scolelepis Texana	1
Outer	2009	334_09LTM	1	Spiochaetopterus Oculatus	3
Outer	2009	334_09LTM	2	Spiochaetopterus Oculatus	2
Outer	2009	334_09LTM	2	Tectonatica Pusilla	3
Outer	2009	334_09LTM	1	Tellina Agilis	9
Outer	2009	334_09LTM	2	Tellina Agilis	3
Outer	2009	334_09LTM	1	Tellinidae	37
Outer	2009	334_09LTM	2	Tellinidae	42
Outer	2009	334_09LTM	2	Tharyx Acutus	1
Outer	2009	334_09LTM	2	Tubulanus Sp.	2
Outer	2009	334_09LTM	2	Tubulanus Sp.	1
Outer	2009	334_09LTM	1	Turbonilla Interrupta	3
Outer	2009	334_09LTM	1	Turbonilla Interrupta	3
Outer	2009	334_09LTM	2	Turbonilla Interrupta	2
Outer	2009	334_09LTM	1	Yoldia Sp.	2
Outer	2009	334_09LTM	2	Yoldia Sp.	1
Outer	2009	335_09LTM	1	Amphiporus Bioculatus	1
Outer	2009	335_09LTM	1	Amphiporus Cruentatus	2
Outer	2009	335_09LTM	2	Amphiporus Cruentatus	2
Outer	2009	335_09LTM	1	Anachis Lafresnayi	5
Outer	2009	335_09LTM	2	Anachis Lafresnayi	10
Outer	2009	335_09LTM	2	Anadara Transversa	3
Outer	2009	335_09LTM	1	Ancistrosyllis Hartmanae	1
Outer	2009	335_09LTM	1	Anomia Simplex	4
Outer	2009	335_09LTM	2	Anomia Simplex	3
Outer	2009	335_09LTM	1	Anomia Sp.	1
Outer	2009	335_09LTM	1	Arabella Iricolor	1
Outer	2009	335_09LTM	1	Balanus Venustus	28
Outer	2009	335_09LTM	2	Balanus Venustus	47
Outer	2009	335_09LTM	1	Batea Catharinensis	1
Outer	2009	335_09LTM	2	Batea Catharinensis	34
Outer	2009	335_09LTM	1	Boccardiella Hamata	2
Outer	2009	335_09LTM	2	Boccardiella Hamata	1
Outer	2009	335_09LTM	1	Boonea Seminuda	47
Outer	2009	335_09LTM	2	Boonea Seminuda	32
Outer	2009	335_09LTM	1	Brania Clavata	3
Outer	2009	335_09LTM	1	Chaetopleura Apiculata	3
Outer	2009	335_09LTM	1	Cirratulidae	229
Outer	2009	335_09LTM	2	Cirratulidae	284
Outer	2009	335_09LTM	2	Cirrophorus Furcatus	1
Outer	2009	335_09LTM	1	Cliona Celata	1
Outer	2009	335_09LTM	1	Cliona Vastifica	10
Outer	2009	335_09LTM	2	Cliona Vastifica	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	335_09LTM	1	Crepidula Fornicata	132
Outer	2009	335_09LTM	2	Crepidula Fornicata	127
Outer	2009	335_09LTM	1	Crepidula Plana	8
Outer	2009	335_09LTM	2	Crepidula Plana	11
Outer	2009	335_09LTM	1	Cylichna Oryza	1
Outer	2009	335_09LTM	1	Dipolydora Giardi	1
Outer	2009	335_09LTM	1	Dipolydora Socialis	3
Outer	2009	335_09LTM	1	Dorvillea (Schistomeringos) Annulata	3
Outer	2009	335_09LTM	1	Dyspanopeus Sayi	19
Outer	2009	335_09LTM	2	Dyspanopeus Sayi	25
Outer	2009	335_09LTM	2	Ericthonius Brasiliensis	2
Outer	2009	335_09LTM	1	Eumida Sanguinea	12
Outer	2009	335_09LTM	2	Eumida Sanguinea	9
Outer	2009	335_09LTM	1	Exogone Dispar	16
Outer	2009	335_09LTM	2	Exogone Dispar	8
Outer	2009	335_09LTM	2	Glycera Americana	1
Outer	2009	335_09LTM	1	Glycinde Solitaria	1
Outer	2009	335_09LTM	1	Harmothoe Extenuata	5
Outer	2009	335_09LTM	2	Harmothoe Extenuata	2
Outer	2009	335_09LTM	1	Harmothoe Imbricata	1
Outer	2009	335_09LTM	2	Harmothoe Imbricata	1
Outer	2009	335_09LTM	1	Heteromastus Filiformis	1
Outer	2009	335_09LTM	2	Heteromastus Filiformis	2
Outer	2009	335_09LTM	1	Heteromysis Formosa	30
Outer	2009	335_09LTM	2	Heteromysis Formosa	56
Outer	2009	335_09LTM	2	Ianiropsis Sp. 1	3
Outer	2009	335_09LTM	1	Lembos Smithi	26
Outer	2009	335_09LTM	2	Lembos Smithi	17
Outer	2009	335_09LTM	1	Lepidonotus Squamatus	3
Outer	2009	335_09LTM	2	Lepidonotus Squamatus	1
Outer	2009	335_09LTM	1	Mediomastus Ambiseta	10
Outer	2009	335_09LTM	2	Mediomastus Ambiseta	11
Outer	2009	335_09LTM	2	Microdeutopus Anomalus	3
Outer	2009	335_09LTM	1	Mitrella Lunata	9
Outer	2009	335_09LTM	2	Mitrella Lunata	12
Outer	2009	335_09LTM	1	Monocorophium Acherusicum	2
Outer	2009	335_09LTM	2	Monocorophium Acherusicum	3
Outer	2009	335_09LTM	1	Nematoda	P
Outer	2009	335_09LTM	2	Nematoda	P
Outer	2009	335_09LTM	2	Nephtys Incisa	2
Outer	2009	335_09LTM	1	Nucula Annulata	6
Outer	2009	335_09LTM	2	Nucula Proxima	1
Outer	2009	335_09LTM	1	Oligochaeta	45
Outer	2009	335_09LTM	2	Oligochaeta	39
Outer	2009	335_09LTM	2	Ostracoda	4
Outer	2009	335_09LTM	2	Pagurus Annulipes	2
Outer	2009	335_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	335_09LTM	2	Pionosyllis Sp.	1
Outer	2009	335_09LTM	1	Podarke Obscura	3
Outer	2009	335_09LTM	2	Podarke Obscura	3
Outer	2009	335_09LTM	2	Polygordius Sp.	1
Outer	2009	335_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Outer	2009	335_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Outer	2009	335_09LTM	1	Seila Adamsi	7
Outer	2009	335_09LTM	2	Seila Adamsi	3
Outer	2009	335_09LTM	1	Sphaerosyllis Longicauda	1
Outer	2009	335_09LTM	2	Sphaerosyllis Longicauda	1
Outer	2009	335_09LTM	1	Tharyx Acutus	387
Outer	2009	335_09LTM	2	Tharyx Acutus	561

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	335_09LTM	2	Turbonilla Aequalis	1
Outer	2009	335_09LTM	1	Turbonilla Interrupta	12
Outer	2009	335_09LTM	2	Turbonilla Interrupta	2
Outer	2009	338_09LTM	1	Acteocina Canaliculata	41
Outer	2009	338_09LTM	2	Acteocina Canaliculata	120
Outer	2009	338_09LTM	1	Ampelisca Abdita	1
Outer	2009	338_09LTM	2	Ampelisca Abdita	5
Outer	2009	338_09LTM	2	Amphiporus Bioculatus	1
Outer	2009	338_09LTM	1	Anachis Lafresnayi	1
Outer	2009	338_09LTM	1	Arabella Iricolor	1
Outer	2009	338_09LTM	2	Aricidea (Acmira) Catherinae	5
Outer	2009	338_09LTM	2	Bivalvia	2
Outer	2009	338_09LTM	1	Cerastoderma Pinnulatum	1
Outer	2009	338_09LTM	2	Cerastoderma Pinnulatum	2
Outer	2009	338_09LTM	2	Ceriantharia	1
Outer	2009	338_09LTM	1	Cirrophorus Furcatus	1
Outer	2009	338_09LTM	2	Coryphella Sp.	2
Outer	2009	338_09LTM	1	Cylichna Oryza	117
Outer	2009	338_09LTM	2	Cylichna Oryza	275
Outer	2009	338_09LTM	1	Dipolydora Socialis	1
Outer	2009	338_09LTM	1	Edwardsia Elegans	2
Outer	2009	338_09LTM	2	Edwardsia Elegans	1
Outer	2009	338_09LTM	1	Epitomapta Roseola	2
Outer	2009	338_09LTM	2	Euclymene Collaris	1
Outer	2009	338_09LTM	1	Eupleura Caudata	1
Outer	2009	338_09LTM	1	Gyptis Vittata	1
Outer	2009	338_09LTM	2	Gyptis Vittata	1
Outer	2009	338_09LTM	2	Haminoea Solitaria	1
Outer	2009	338_09LTM	2	Ilyanassa Trivittata	3
Outer	2009	338_09LTM	1	Kurtziella Cerina	1
Outer	2009	338_09LTM	2	Kurtziella Cerina	1
Outer	2009	338_09LTM	1	Macoma Tenta	32
Outer	2009	338_09LTM	2	Macoma Tenta	140
Outer	2009	338_09LTM	2	Maldane Sarsi	3
Outer	2009	338_09LTM	1	Mediomastus Ambiseta	1
Outer	2009	338_09LTM	2	Mediomastus Ambiseta	10
Outer	2009	338_09LTM	2	Melinna Cristata	9
Outer	2009	338_09LTM	1	Monticellina Dorsobranchialis	1
Outer	2009	338_09LTM	1	Mulinia Lateralis	5
Outer	2009	338_09LTM	2	Mulinia Lateralis	13
Outer	2009	338_09LTM	1	Nematoda	P
Outer	2009	338_09LTM	2	Nematoda	P
Outer	2009	338_09LTM	1	Nephtys Incisa	32
Outer	2009	338_09LTM	2	Nephtys Incisa	41
Outer	2009	338_09LTM	1	Ninoe Nigripes	3
Outer	2009	338_09LTM	2	Ninoe Nigripes	3
Outer	2009	338_09LTM	1	Nucula Annulata	11
Outer	2009	338_09LTM	2	Nucula Annulata	17
Outer	2009	338_09LTM	2	Odostomia Eburnea	3
Outer	2009	338_09LTM	2	Oligochaeta	1
Outer	2009	338_09LTM	1	Ostracoda	99
Outer	2009	338_09LTM	2	Ostracoda	89
Outer	2009	338_09LTM	2	Ostracoda	151
Outer	2009	338_09LTM	2	Oxyurostylis Smithi	2
Outer	2009	338_09LTM	1	Parougia Caeca	1
Outer	2009	338_09LTM	1	Pectinaria Gouldi	3
Outer	2009	338_09LTM	2	Pectinaria Gouldi	10
Outer	2009	338_09LTM	1	Phyllodoce Arenae	2
Outer	2009	338_09LTM	2	Phyllodoce Arenae	1

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	338_09LTM	1	Pinnixa Chaetopterana	1
Outer	2009	338_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	338_09LTM	2	Pitar Morrhuanus	3
Outer	2009	338_09LTM	1	Polycirrus Eximius	2
Outer	2009	338_09LTM	1	Polycirrus Sp.	2
Outer	2009	338_09LTM	2	Polycirrus Sp.	2
Outer	2009	338_09LTM	2	Polygordius Sp.	1
Outer	2009	338_09LTM	1	Prionospio (Minuspio) Perkinsi	2
Outer	2009	338_09LTM	2	Prionospio (Minuspio) Perkinsi	13
Outer	2009	338_09LTM	1	Rictaxis Punctostriatus	1
Outer	2009	338_09LTM	2	Rictaxis Punctostriatus	5
Outer	2009	338_09LTM	1	Saccoglossus Kowalevskii	10
Outer	2009	338_09LTM	2	Saccoglossus Kowalevskii	9
Outer	2009	338_09LTM	1	Spiochaetopterus Oculatus	3
Outer	2009	338_09LTM	2	Spiochaetopterus Oculatus	1
Outer	2009	338_09LTM	1	Stylochus Ellipticus	2
Outer	2009	338_09LTM	2	Stylochus Ellipticus	1
Outer	2009	338_09LTM	2	Tellina Agilis	3
Outer	2009	338_09LTM	1	Tellinidae	14
Outer	2009	338_09LTM	2	Tellinidae	61
Outer	2009	338_09LTM	1	Tharyx Acutus	1
Outer	2009	338_09LTM	2	Tharyx Acutus	5
Outer	2009	338_09LTM	1	Tubulanus Sp.	2
Outer	2009	338_09LTM	2	Tubulanus Sp.	1
Outer	2009	338_09LTM	1	Turbonilla Aequalis	1
Outer	2009	338_09LTM	2	Turbonilla Elegantula	16
Outer	2009	338_09LTM	1	Turbonilla Interrupta	8
Outer	2009	338_09LTM	2	Turbonilla Interrupta	8
Outer	2009	338_09LTM	1	Yoldia Limatula	1
Outer	2009	338_09LTM	1	Yoldia Sp.	1
Outer	2009	338_09LTM	2	Yoldia Sp.	1
Outer	2009	339_09LTM	1	Acteocina Canaliculata	16
Outer	2009	339_09LTM	2	Acteocina Canaliculata	21
Outer	2009	339_09LTM	1	Ampelisca Abdita	6
Outer	2009	339_09LTM	1	Ampelisca Vadorum	3
Outer	2009	339_09LTM	2	Anadara Transversa	2
Outer	2009	339_09LTM	2	Aricidea (Acmira) Catherinae	1
Outer	2009	339_09LTM	1	Batea Catharinensis	1
Outer	2009	339_09LTM	1	Cerastoderma Pinnulatum	1
Outer	2009	339_09LTM	1	Cylichna Oryza	132
Outer	2009	339_09LTM	2	Cylichna Oryza	214
Outer	2009	339_09LTM	2	Diopatra Cuprea	1
Outer	2009	339_09LTM	2	Dyspanopeus Sayi	1
Outer	2009	339_09LTM	1	Edwardsia Elegans	3
Outer	2009	339_09LTM	1	Ericthonius Brasiliensis	7
Outer	2009	339_09LTM	2	Ericthonius Brasiliensis	3
Outer	2009	339_09LTM	2	Eumida Sanguinea	1
Outer	2009	339_09LTM	1	Gyptis Vittata	1
Outer	2009	339_09LTM	2	Hippolyte Sp.	1
Outer	2009	339_09LTM	1	Hutchinsoniella Macracantha	5
Outer	2009	339_09LTM	2	Ilyanassa Trivittata	1
Outer	2009	339_09LTM	2	Kurtziella Cerina	2
Outer	2009	339_09LTM	1	Lyonsia Hyalina	1
Outer	2009	339_09LTM	2	Lyonsia Hyalina	1
Outer	2009	339_09LTM	1	Macoma Tenta	134
Outer	2009	339_09LTM	2	Macoma Tenta	187
Outer	2009	339_09LTM	1	Maldane Sarsi	1
Outer	2009	339_09LTM	2	Maldane Sarsi	2
Outer	2009	339_09LTM	1	Mediomastus Ambiseta	4

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	339_09LTM	2	Mediomastus Ambiseta	15
Outer	2009	339_09LTM	1	Melinna Cristata	3
Outer	2009	339_09LTM	2	Melinna Cristata	2
Outer	2009	339_09LTM	1	Mitrella Lunata	2
Outer	2009	339_09LTM	2	Mitrella Lunata	16
Outer	2009	339_09LTM	1	Monticellina Dorsobranchialis	1
Outer	2009	339_09LTM	1	Mulinia Lateralis	1
Outer	2009	339_09LTM	1	Nematoda	P
Outer	2009	339_09LTM	2	Nematoda	P
Outer	2009	339_09LTM	1	Nephtys Incisa	57
Outer	2009	339_09LTM	2	Nephtys Incisa	59
Outer	2009	339_09LTM	2	Ninoe Nigripes	2
Outer	2009	339_09LTM	1	Nucula Annulata	30
Outer	2009	339_09LTM	1	Nucula Annulata	29
Outer	2009	339_09LTM	2	Odostomia Striata	1
Outer	2009	339_09LTM	2	Oligochaeta	2
Outer	2009	339_09LTM	1	Ostracoda	5
Outer	2009	339_09LTM	2	Ostracoda	13
Outer	2009	339_09LTM	2	Oweniidae	1
Outer	2009	339_09LTM	2	Pagurus Annulipes	1
Outer	2009	339_09LTM	2	Parougia Caeca	1
Outer	2009	339_09LTM	2	Pectinaria Gouldi	2
Outer	2009	339_09LTM	2	Pholoe Minuta	1
Outer	2009	339_09LTM	2	Phyllodoce Arenae	1
Outer	2009	339_09LTM	1	Pitar Morrhuanus	2
Outer	2009	339_09LTM	2	Pitar Morrhuanus	3
Outer	2009	339_09LTM	1	Prionospio (Minuspio) Perkinsi	5
Outer	2009	339_09LTM	2	Prionospio (Minuspio) Perkinsi	7
Outer	2009	339_09LTM	1	Rictaxis Punctostriatus	1
Outer	2009	339_09LTM	2	Rictaxis Punctostriatus	3
Outer	2009	339_09LTM	2	Sabellaria Vulgaris	2
Outer	2009	339_09LTM	1	Saccoglossus Kowalevskii	12
Outer	2009	339_09LTM	2	Saccoglossus Kowalevskii	21
Outer	2009	339_09LTM	1	Scolelepis Bousfieldi	4
Outer	2009	339_09LTM	2	Scolelepis Bousfieldi	1
Outer	2009	339_09LTM	1	Spiochaetopterus Oculatus	1
Outer	2009	339_09LTM	2	Spiochaetopterus Oculatus	4
Outer	2009	339_09LTM	2	Stylochus Ellipticus	4
Outer	2009	339_09LTM	1	Tectonatica Pusilla	1
Outer	2009	339_09LTM	2	Tectonatica Pusilla	1
Outer	2009	339_09LTM	1	Tellina Agilis	3
Outer	2009	339_09LTM	2	Tellina Agilis	1
Outer	2009	339_09LTM	1	Tellinidae	34
Outer	2009	339_09LTM	2	Tellinidae	44
Outer	2009	339_09LTM	1	Tharyx Acutus	1
Outer	2009	339_09LTM	2	Tharyx Acutus	1
Outer	2009	339_09LTM	1	Tubulanus Sp.	3
Outer	2009	339_09LTM	2	Tubulanus Sp.	3
Outer	2009	339_09LTM	2	Turbonilla Interrupta	7
Outer	2009	339_09LTM	1	Yoldia Limatula	1
Outer	2009	339_09LTM	2	Yoldia Limatula	1
Outer	2009	339_09LTM	1	Yoldia Sp.	2
Outer	2009	339_09LTM	2	Yoldia Sp.	5
Outer	2009	340_09LTM	1	Acteocina Canaliculata	9
Outer	2009	340_09LTM	2	Acteocina Canaliculata	12
Outer	2009	340_09LTM	1	Ampelisca Abdita	1
Outer	2009	340_09LTM	2	Ampelisca Abdita	2
Outer	2009	340_09LTM	2	Ampelisca Verrilli	1
Outer	2009	340_09LTM	1	Amphiporus Bioculatus	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	340_09LTM	2	Amphiporus Bioculatus	2
Outer	2009	340_09LTM	1	Aricidea (Acmira) Catherinae	2
Outer	2009	340_09LTM	2	Aricidea (Acmira) Catherinae	9
Outer	2009	340_09LTM	1	Bivalvia	1
Outer	2009	340_09LTM	2	Cirratulidae	1
Outer	2009	340_09LTM	1	Cirrophorus Furcatus	2
Outer	2009	340_09LTM	1	Cylichna Oryza	65
Outer	2009	340_09LTM	2	Cylichna Oryza	119
Outer	2009	340_09LTM	2	Diopatra Cuprea	2
Outer	2009	340_09LTM	2	Edwardsia Elegans	4
Outer	2009	340_09LTM	2	Ericthonius Brasiliensis	1
Outer	2009	340_09LTM	2	Haloclava Producta	1
Outer	2009	340_09LTM	1	Hutchinsoniella Macracantha	1
Outer	2009	340_09LTM	2	Hutchinsoniella Macracantha	2
Outer	2009	340_09LTM	2	Levinsenia Gracilis	1
Outer	2009	340_09LTM	1	Lineus Ruber	1
Outer	2009	340_09LTM	1	Lyonsia Hyalina	1
Outer	2009	340_09LTM	2	Lyonsia Hyalina	2
Outer	2009	340_09LTM	1	Macoma Tenta	360
Outer	2009	340_09LTM	2	Macoma Tenta	313
Outer	2009	340_09LTM	1	Maldane Sarsi	1
Outer	2009	340_09LTM	2	Maldane Sarsi	1
Outer	2009	340_09LTM	1	Mediomastus Ambiseta	3
Outer	2009	340_09LTM	2	Mediomastus Ambiseta	18
Outer	2009	340_09LTM	1	Melinna Cristata	5
Outer	2009	340_09LTM	2	Melinna Cristata	2
Outer	2009	340_09LTM	2	Mitrella Lunata	1
Outer	2009	340_09LTM	1	Mulinia Lateralis	1
Outer	2009	340_09LTM	2	Mulinia Lateralis	3
Outer	2009	340_09LTM	1	Nematoda	P
Outer	2009	340_09LTM	1	Nephtys Incisa	26
Outer	2009	340_09LTM	2	Nephtys Incisa	44
Outer	2009	340_09LTM	2	Nereis Grayi	2
Outer	2009	340_09LTM	1	Ninoe Nigripes	2
Outer	2009	340_09LTM	2	Ninoe Nigripes	4
Outer	2009	340_09LTM	2	Notomastus Latericeus	1
Outer	2009	340_09LTM	1	Nucula Annulata	42
Outer	2009	340_09LTM	2	Nucula Annulata	37
Outer	2009	340_09LTM	1	Oligochaeta	5
Outer	2009	340_09LTM	2	Oligochaeta	3
Outer	2009	340_09LTM	1	Ostracoda	17
Outer	2009	340_09LTM	2	Ostracoda	2
Outer	2009	340_09LTM	1	Parougia Caeca	1
Outer	2009	340_09LTM	2	Parougia Caeca	2
Outer	2009	340_09LTM	1	Pectinaria Gouldi	3
Outer	2009	340_09LTM	2	Pectinaria Gouldi	1
Outer	2009	340_09LTM	2	Phyllodoce Arenae	1
Outer	2009	340_09LTM	1	Pinnixa Chaetopterana	2
Outer	2009	340_09LTM	1	Pinnixa Sayana	2
Outer	2009	340_09LTM	2	Pitar Morrhuanus	1
Outer	2009	340_09LTM	1	Prionospio (Minuspio) Perkinsi	3
Outer	2009	340_09LTM	2	Prionospio (Minuspio) Perkinsi	18
Outer	2009	340_09LTM	1	Saccoglossus Kowalevskii	5
Outer	2009	340_09LTM	2	Saccoglossus Kowalevskii	20
Outer	2009	340_09LTM	2	Scolelepis Bousfieldi	3
Outer	2009	340_09LTM	2	Spiophanes Bombyx	1
Outer	2009	340_09LTM	2	Stylochus Ellipticus	4
Outer	2009	340_09LTM	1	Tectonatica Pusilla	1
Outer	2009	340_09LTM	1	Tellina Agilis	2

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	340_09LTM	1	Tellinidae	25
Outer	2009	340_09LTM	2	Tellinidae	21
Outer	2009	340_09LTM	1	Tharyx Acutus	2
Outer	2009	340_09LTM	2	Tharyx Acutus	8
Outer	2009	340_09LTM	2	Tubulanus Sp.	5
Outer	2009	340_09LTM	1	Turbonilla Elegantula	1
Outer	2009	340_09LTM	2	Turbonilla Elegantula	2
Outer	2009	340_09LTM	2	Turbonilla Interrupta	1
Outer	2009	340_09LTM	2	Yoldia Limatula	1
Outer	2009	340_09LTM	2	Yoldia Sp.	1
Outer	2009	341_09LTM	1	Acteocina Canaliculata	1
Outer	2009	341_09LTM	1	Ampelisca Abdita	4
Outer	2009	341_09LTM	2	Ampelisca Abdita	4
Outer	2009	341_09LTM	1	Ampelisca Vadorum	5
Outer	2009	341_09LTM	2	Ampelisca Vadorum	11
Outer	2009	341_09LTM	1	Ampelisca Verrilli	18
Outer	2009	341_09LTM	2	Ampelisca Verrilli	10
Outer	2009	341_09LTM	1	Amphiporus Bioculatus	6
Outer	2009	341_09LTM	2	Amphiporus Bioculatus	6
Outer	2009	341_09LTM	2	Anachis Lafresnayi	1
Outer	2009	341_09LTM	1	Anadara Transversa	1
Outer	2009	341_09LTM	2	Anadara Transversa	2
Outer	2009	341_09LTM	1	Aricidea (Acmira) Catherinae	23
Outer	2009	341_09LTM	2	Aricidea (Acmira) Catherinae	6
Outer	2009	341_09LTM	2	Barentsia Gracilis	P
Outer	2009	341_09LTM	2	Bowerbankia Imbricata	P
Outer	2009	341_09LTM	2	Brania Clavata	1
Outer	2009	341_09LTM	1	Cabira Incerta	1
Outer	2009	341_09LTM	2	Cerastoderma Pinnulatum	8
Outer	2009	341_09LTM	1	Cirratulidae	2
Outer	2009	341_09LTM	2	Cirratulidae	1
Outer	2009	341_09LTM	1	Cirrophorus Furcatus	9
Outer	2009	341_09LTM	2	Cirrophorus Furcatus	7
Outer	2009	341_09LTM	2	Cliona Celata	1
Outer	2009	341_09LTM	2	Crepidula Plana	1
Outer	2009	341_09LTM	1	Cylichna Oryza	5
Outer	2009	341_09LTM	2	Cylichna Oryza	8
Outer	2009	341_09LTM	1	Diopatra Cuprea	1
Outer	2009	341_09LTM	2	Diopatra Cuprea	1
Outer	2009	341_09LTM	1	Edwardsia Elegans	1
Outer	2009	341_09LTM	2	Epitonium Multistriatum	1
Outer	2009	341_09LTM	2	Ericthonius Brasiliensis	1
Outer	2009	341_09LTM	1	Euclymene Collaris	7
Outer	2009	341_09LTM	2	Euclymene Collaris	17
Outer	2009	341_09LTM	1	Exogone Dispar	1
Outer	2009	341_09LTM	1	Glycera Americana	1
Outer	2009	341_09LTM	2	Glycera Americana	2
Outer	2009	341_09LTM	1	Glycera Sp.	3
Outer	2009	341_09LTM	2	Glycera Sp.	2
Outer	2009	341_09LTM	2	Hutchinsoniella Macracantha	14
Outer	2009	341_09LTM	1	Lyonsia Hyalina	1
Outer	2009	341_09LTM	2	Lyonsia Hyalina	4
Outer	2009	341_09LTM	1	Macoma Tenta	15
Outer	2009	341_09LTM	2	Macoma Tenta	15
Outer	2009	341_09LTM	2	Maldane Sarsi	1
Outer	2009	341_09LTM	1	Mediomastus Ambiseta	18
Outer	2009	341_09LTM	2	Mediomastus Ambiseta	13
Outer	2009	341_09LTM	2	Micrura Sp.	1
Outer	2009	341_09LTM	1	Mitrella Lunata	3

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	341_09LTM	2	Mitrella Lunata	8
Outer	2009	341_09LTM	2	Monticellina Baptisteae	6
Outer	2009	341_09LTM	1	Monticellina Dorsobranchialis	5
Outer	2009	341_09LTM	2	Monticellina Dorsobranchialis	2
Outer	2009	341_09LTM	1	Nematoda	P
Outer	2009	341_09LTM	2	Nematoda	P
Outer	2009	341_09LTM	2	Nephtys Incisa	3
Outer	2009	341_09LTM	2	Nereis Grayi	2
Outer	2009	341_09LTM	1	Ninoe Nigripes	6
Outer	2009	341_09LTM	2	Ninoe Nigripes	8
Outer	2009	341_09LTM	1	Notomastus Latericeus	2
Outer	2009	341_09LTM	2	Notomastus Latericeus	3
Outer	2009	341_09LTM	1	Oligochaeta	10
Outer	2009	341_09LTM	2	Oligochaeta	6
Outer	2009	341_09LTM	1	Ophiuroidea	1
Outer	2009	341_09LTM	2	Ostracoda	2
Outer	2009	341_09LTM	2	Oxyurostylis Smithi	1
Outer	2009	341_09LTM	1	Parougia Caeca	1
Outer	2009	341_09LTM	2	Pectinaria Gouldi	1
Outer	2009	341_09LTM	1	Phyllodoce Arenae	2
Outer	2009	341_09LTM	2	Phyllodoce Arenae	3
Outer	2009	341_09LTM	1	Pinnixa Chaetopterana	2
Outer	2009	341_09LTM	2	Pinnixa Chaetopterana	1
Outer	2009	341_09LTM	1	Pinnixa Sayana	2
Outer	2009	341_09LTM	1	Pitar Morrhuanus	2
Outer	2009	341_09LTM	2	Pitar Morrhuanus	3
Outer	2009	341_09LTM	1	Polycirrus Eximius	1
Outer	2009	341_09LTM	2	Polygordius Sp.	1
Outer	2009	341_09LTM	1	Prionospio (Minuspio) Perkinsi	1
Outer	2009	341_09LTM	2	Prionospio (Minuspio) Perkinsi	5
Outer	2009	341_09LTM	2	Ptilanthura Tenuis	1
Outer	2009	341_09LTM	2	Saccoglossus Kowalevskii	2
Outer	2009	341_09LTM	1	Sphaerosyllis Longicauda	1
Outer	2009	341_09LTM	1	Sphaerosyllis Taylori	2
Outer	2009	341_09LTM	1	Spiochaetopterus Oculatus	1
Outer	2009	341_09LTM	2	Spiochaetopterus Oculatus	4
Outer	2009	341_09LTM	2	Spiophanes Bombyx	2
Outer	2009	341_09LTM	1	Sthenelais Boa	1
Outer	2009	341_09LTM	2	Sthenelais Boa	2
Outer	2009	341_09LTM	2	Tagelus Divisus	1
Outer	2009	341_09LTM	2	Tectonatica Pusilla	2
Outer	2009	341_09LTM	2	Tellina Agilis	6
Outer	2009	341_09LTM	1	Tellinidae	1
Outer	2009	341_09LTM	2	Tellinidae	4
Outer	2009	341_09LTM	1	Tharyx Acutus	1
Outer	2009	341_09LTM	2	Tubulanus Sp.	3
Outer	2009	341_09LTM	1	Turbonilla Elegantula	1
Outer	2009	341_09LTM	2	Turbonilla Elegantula	1
Outer	2009	341_09LTM	1	Upogebia Affinis	1
Outer	2009	341_09LTM	2	Yoldia Limatula	1
Outer	2009	341_09LTM	2	Zaops Ostreum	1
Outer	2009	345_09LTM	1	Acteocina Canaliculata	21
Outer	2009	345_09LTM	2	Acteocina Canaliculata	31
Outer	2009	345_09LTM	1	Ampelisca Abdita	5
Outer	2009	345_09LTM	2	Ampelisca Abdita	2
Outer	2009	345_09LTM	1	Ampharete Finmarchica	1
Outer	2009	345_09LTM	1	Amphiporus Bioculatus	1
Outer	2009	345_09LTM	1	Anadara Transversa	3
Outer	2009	345_09LTM	1	Anoplodactylus Petiolatus	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	345_09LTM	1	Aricidea (Acmira) Catherinae	21
Outer	2009	345_09LTM	2	Aricidea (Acmira) Catherinae	9
Outer	2009	345_09LTM	1	Aricidea (Acmira) Cerruti	1
Outer	2009	345_09LTM	1	Asabellides Oculata	1
Outer	2009	345_09LTM	1	Bougainvilliidae	P
Outer	2009	345_09LTM	2	Capitella Jonesi	1
Outer	2009	345_09LTM	1	Cerastoderma Pinnulatum	1
Outer	2009	345_09LTM	2	Cerastoderma Pinnulatum	3
Outer	2009	345_09LTM	1	Cirratulidae	1
Outer	2009	345_09LTM	2	Cirratulidae	2
Outer	2009	345_09LTM	1	Cylichna Oryza	219
Outer	2009	345_09LTM	2	Cylichna Oryza	319
Outer	2009	345_09LTM	1	Edotia Sp.	1
Outer	2009	345_09LTM	1	Edwardsia Elegans	1
Outer	2009	345_09LTM	2	Fargoa Bartschi	1
Outer	2009	345_09LTM	1	Ilyanassa Trivittata	9
Outer	2009	345_09LTM	2	Kurtziella Cerina	1
Outer	2009	345_09LTM	1	Lovenella Gracilis	P
Outer	2009	345_09LTM	1	Lyonsia Hyalina	2
Outer	2009	345_09LTM	2	Lyonsia Hyalina	4
Outer	2009	345_09LTM	1	Macoma Tenta	186
Outer	2009	345_09LTM	2	Macoma Tenta	177
Outer	2009	345_09LTM	1	Maldane Sarsi	4
Outer	2009	345_09LTM	2	Maldane Sarsi	4
Outer	2009	345_09LTM	1	Mediomastus Ambiseta	6
Outer	2009	345_09LTM	2	Mediomastus Ambiseta	5
Outer	2009	345_09LTM	1	Melinna Cristata	4
Outer	2009	345_09LTM	2	Melinna Cristata	5
Outer	2009	345_09LTM	1	Mitrella Lunata	7
Outer	2009	345_09LTM	1	Mulinia Lateralis	1
Outer	2009	345_09LTM	2	Mulinia Lateralis	3
Outer	2009	345_09LTM	1	Nematoda	P
Outer	2009	345_09LTM	2	Nematoda	P
Outer	2009	345_09LTM	1	Nephtys Incisa	41
Outer	2009	345_09LTM	2	Nephtys Incisa	46
Outer	2009	345_09LTM	1	Ninoe Nigripes	4
Outer	2009	345_09LTM	2	Ninoe Nigripes	4
Outer	2009	345_09LTM	1	Nucula Annulata	27
Outer	2009	345_09LTM	2	Nucula Annulata	17
Outer	2009	345_09LTM	1	Odostomia Eburnea	1
Outer	2009	345_09LTM	1	Oligochaeta	1
Outer	2009	345_09LTM	2	Oligochaeta	1
Outer	2009	345_09LTM	1	Ostracoda	55
Outer	2009	345_09LTM	2	Ostracoda	39
Outer	2009	345_09LTM	1	Oxyurostylis Smithi	3
Outer	2009	345_09LTM	1	Pectinaria Gouldi	7
Outer	2009	345_09LTM	2	Pectinaria Gouldi	3
Outer	2009	345_09LTM	1	Phyllodoce Arenae	1
Outer	2009	345_09LTM	1	Pitar Morrhuanus	4
Outer	2009	345_09LTM	2	Pitar Morrhuanus	7
Outer	2009	345_09LTM	2	Polygordius Sp.	1
Outer	2009	345_09LTM	1	Prionospio (Minuspio) Perkinsi	2
Outer	2009	345_09LTM	2	Prionospio (Minuspio) Perkinsi	2
Outer	2009	345_09LTM	1	Saccoglossus Kowalevskii	17
Outer	2009	345_09LTM	2	Saccoglossus Kowalevskii	4
Outer	2009	345_09LTM	1	Scolelepis Bousfieldi	2
Outer	2009	345_09LTM	2	Scolelepis Bousfieldi	4
Outer	2009	345_09LTM	2	Spiochaetopterus Oculatus	1
Outer	2009	345_09LTM	1	Tectonatica Pusilla	3

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	345_09LTM	2	Tectonatica Pusilla	1
Outer	2009	345_09LTM	1	Tellina Agilis	4
Outer	2009	345_09LTM	2	Tellina Agilis	3
Outer	2009	345_09LTM	1	Tellinidae	37
Outer	2009	345_09LTM	2	Tellinidae	29
Outer	2009	345_09LTM	1	Tharyx Acutus	14
Outer	2009	345_09LTM	2	Tharyx Acutus	5
Outer	2009	345_09LTM	1	Tubulanus Sp.	10
Outer	2009	345_09LTM	2	Tubulanus Sp.	1
Outer	2009	345_09LTM	1	Turbonilla Elegantula	47
Outer	2009	345_09LTM	2	Turbonilla Elegantula	2
Outer	2009	345_09LTM	2	Turbonilla Interrupta	1
Outer	2009	345_09LTM	1	Yoldia Limatula	2
Outer	2009	345_09LTM	2	Yoldia Limatula	1
Outer	2009	345_09LTM	1	Yoldia Sp.	1
Outer	2009	346_09LTM	1	Aetea Sica	P
Outer	2009	346_09LTM	1	Ampelisca Abdita	5
Outer	2009	346_09LTM	1	Ampelisca Vadorum	30
Outer	2009	346_09LTM	2	Ampelisca Vadorum	61
Outer	2009	346_09LTM	1	Ampelisca Verrilli	74
Outer	2009	346_09LTM	2	Ampelisca Verrilli	55
Outer	2009	346_09LTM	1	Ampharete Finmarchica	1
Outer	2009	346_09LTM	1	Amphiporus Bioculatus	1
Outer	2009	346_09LTM	2	Amphiporus Bioculatus	1
Outer	2009	346_09LTM	1	Ampithoe Valida	1
Outer	2009	346_09LTM	1	Anachis Lafresnayi	2
Outer	2009	346_09LTM	2	Anachis Lafresnayi	2
Outer	2009	346_09LTM	1	Anadara Transversa	5
Outer	2009	346_09LTM	2	Anadara Transversa	10
Outer	2009	346_09LTM	2	Arabella Iricolor	1
Outer	2009	346_09LTM	1	Aricidea (Acmira) Catherinae	6
Outer	2009	346_09LTM	2	Aricidea (Acmira) Catherinae	14
Outer	2009	346_09LTM	1	Batea Catharinensis	3
Outer	2009	346_09LTM	2	Batea Catharinensis	3
Outer	2009	346_09LTM	1	Bittium Alternatum	1
Outer	2009	346_09LTM	2	Bowerbankia Imbricata	P
Outer	2009	346_09LTM	2	Brania Wellfleetensis	5
Outer	2009	346_09LTM	1	Byblis Serrata	20
Outer	2009	346_09LTM	2	Byblis Serrata	7
Outer	2009	346_09LTM	2	Capitella Capitata	1
Outer	2009	346_09LTM	1	Capitella Jonesi	1
Outer	2009	346_09LTM	2	Capitella Jonesi	1
Outer	2009	346_09LTM	1	Caulleriella Cf. Killariensis	1
Outer	2009	346_09LTM	1	Cerastoderma Pinnulatum	6
Outer	2009	346_09LTM	2	Cerastoderma Pinnulatum	14
Outer	2009	346_09LTM	2	Chaetozone Sp.	5
Outer	2009	346_09LTM	1	Cirratulidae	2
Outer	2009	346_09LTM	2	Cirratulidae	1
Outer	2009	346_09LTM	2	Cirrophorus Furcatus	13
Outer	2009	346_09LTM	2	Cliona Celata	1
Outer	2009	346_09LTM	1	Clymenella Torquata	1
Outer	2009	346_09LTM	1	Crepidula Plana	1
Outer	2009	346_09LTM	2	Crepidula Plana	1
Outer	2009	346_09LTM	1	Cylichna Oryza	8
Outer	2009	346_09LTM	2	Cylichna Oryza	1
Outer	2009	346_09LTM	2	Demonax Microphthalmus	1
Outer	2009	346_09LTM	2	Dipolydora Socialis	1
Outer	2009	346_09LTM	1	Edotia Sp.	1
Outer	2009	346_09LTM	2	Ensis Directus	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	346_09LTM	1	Eobrolgus Spinosus	2
Outer	2009	346_09LTM	2	Eobrolgus Spinosus	1
Outer	2009	346_09LTM	1	Ericthonius Brasiliensis	2
Outer	2009	346_09LTM	2	Ericthonius Brasiliensis	1
Outer	2009	346_09LTM	1	Euclymene Collaris	4
Outer	2009	346_09LTM	2	Euclymene Collaris	11
Outer	2009	346_09LTM	2	Eunicidae	1
Outer	2009	346_09LTM	2	Exogone Dispar	4
Outer	2009	346_09LTM	2	Gilvossius Setimanus	1
Outer	2009	346_09LTM	1	Glycera Americana	1
Outer	2009	346_09LTM	1	Glycera Sp.	3
Outer	2009	346_09LTM	2	Glycera Sp.	6
Outer	2009	346_09LTM	2	Harmothoe Extenuata	1
Outer	2009	346_09LTM	2	Hemicyclops Sp.	1
Outer	2009	346_09LTM	2	Heteromysis Formosa	14
Outer	2009	346_09LTM	2	Hexapanopeus Angustifrons	1
Outer	2009	346_09LTM	1	Laevicardium Mortoni	3
Outer	2009	346_09LTM	2	Laevicardium Mortoni	2
Outer	2009	346_09LTM	1	Leitoscoloplos Fragilis	1
Outer	2009	346_09LTM	1	Listriella Barnardi	2
Outer	2009	346_09LTM	1	Lovenella Gracilis	P
Outer	2009	346_09LTM	1	Lyonsia Hyalina	4
Outer	2009	346_09LTM	2	Lyonsia Hyalina	2
Outer	2009	346_09LTM	1	Macoma Tenta	2
Outer	2009	346_09LTM	2	Macoma Tenta	4
Outer	2009	346_09LTM	1	Mediomastus Ambiseta	2
Outer	2009	346_09LTM	2	Mediomastus Ambiseta	3
Outer	2009	346_09LTM	1	Microdeutopus Anomalus	3
Outer	2009	346_09LTM	2	Microdeutopus Anomalus	2
Outer	2009	346_09LTM	1	Mitrella Lunata	13
Outer	2009	346_09LTM	2	Mitrella Lunata	2
Outer	2009	346_09LTM	1	Monticellina Dorsobranchialis	2
Outer	2009	346_09LTM	2	Monticellina Dorsobranchialis	2
Outer	2009	346_09LTM	1	Nematoda	P
Outer	2009	346_09LTM	2	Nematoda	P
Outer	2009	346_09LTM	1	Nephtys Incisa	1
Outer	2009	346_09LTM	1	Nephtys Picta	2
Outer	2009	346_09LTM	2	Nicolea Zostericola	1
Outer	2009	346_09LTM	1	Ninoe Nigripes	3
Outer	2009	346_09LTM	2	Ninoe Nigripes	4
Outer	2009	346_09LTM	1	Notomastus Latericeus	4
Outer	2009	346_09LTM	2	Notomastus Latericeus	3
Outer	2009	346_09LTM	2	Odontosyllis Fulgurans	2
Outer	2009	346_09LTM	1	Oligochaeta	6
Outer	2009	346_09LTM	2	Oligochaeta	9
Outer	2009	346_09LTM	1	Ophiuroidea	2
Outer	2009	346_09LTM	2	Ophiuroidea	1
Outer	2009	346_09LTM	1	Ostracoda	8
Outer	2009	346_09LTM	2	Ostracoda	8
Outer	2009	346_09LTM	2	Oxyurostylis Smithi	1
Outer	2009	346_09LTM	1	Pagurus Annulipes	1
Outer	2009	346_09LTM	1	Pandora Inflata	1
Outer	2009	346_09LTM	2	Parapionosyllis Longicirrata	3
Outer	2009	346_09LTM	2	Parougia Caeca	1
Outer	2009	346_09LTM	1	Phyllodoce Arenae	6
Outer	2009	346_09LTM	2	Phyllodoce Arenae	6
Outer	2009	346_09LTM	1	Pinnixa Chaetopterana	2
Outer	2009	346_09LTM	2	Pinnixa Chaetopterana	9
Outer	2009	346_09LTM	1	Pinnixa Sayana	1

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	346_09LTM	2	Pista Palmata	1
Outer	2009	346_09LTM	2	Pitar Morrhuanus	2
Outer	2009	346_09LTM	1	Polycirrus Eximius	1
Outer	2009	346_09LTM	2	Polycirrus Eximius	2
Outer	2009	346_09LTM	1	Polycirrus Sp.	3
Outer	2009	346_09LTM	2	Polycirrus Sp.	1
Outer	2009	346_09LTM	1	Polygordius Sp.	1
Outer	2009	346_09LTM	2	Prionospio (Minuspio) Perkinsi	3
Outer	2009	346_09LTM	2	Protodorvillea Gaspeensis	2
Outer	2009	346_09LTM	1	Sabellaria Vulgaris	1
Outer	2009	346_09LTM	2	Sabellaria Vulgaris	2
Outer	2009	346_09LTM	1	Scalibregma Inflatum	2
Outer	2009	346_09LTM	2	Scalibregma Inflatum	2
Outer	2009	346_09LTM	1	Spiochaetopterus Oculatus	1
Outer	2009	346_09LTM	2	Spiochaetopterus Oculatus	2
Outer	2009	346_09LTM	1	Spiophanes Bombyx	2
Outer	2009	346_09LTM	2	Spiophanes Bombyx	1
Outer	2009	346_09LTM	2	Spisula Solidissima	1
Outer	2009	346_09LTM	1	Sthenelais Boa	1
Outer	2009	346_09LTM	2	Sthenelais Boa	2
Outer	2009	346_09LTM	1	Syllides Cf. Verrilli	1
Outer	2009	346_09LTM	2	Tagelus Divisus	1
Outer	2009	346_09LTM	1	Tectonatica Pusilla	5
Outer	2009	346_09LTM	2	Tectonatica Pusilla	2
Outer	2009	346_09LTM	1	Tellina Agilis	5
Outer	2009	346_09LTM	2	Tellina Agilis	10
Outer	2009	346_09LTM	1	Tellinidae	2
Outer	2009	346_09LTM	1	Tharyx Acutus	19
Outer	2009	346_09LTM	2	Tharyx Acutus	20
Outer	2009	346_09LTM	2	Tubulanus Sp.	1
Outer	2009	346_09LTM	2	Turbellaria	1
Outer	2009	346_09LTM	2	Turbonilla Elegantula	6
Outer	2009	346_09LTM	1	Turbonilla Interrupta	2
Outer	2009	346_09LTM	2	Turbonilla Interrupta	1
Outer	2009	346_09LTM	1	Unciola Irrorata	1
Outer	2009	346_09LTM	2	Upogebia Affinis	1
Outer	2009	349_09LTM	1	Acteocina Canaliculata	2
Outer	2009	349_09LTM	1	Aetea Sica	P
Outer	2009	349_09LTM	1	Ampelisca Abdita	56
Outer	2009	349_09LTM	2	Ampelisca Abdita	53
Outer	2009	349_09LTM	1	Ampelisca Vadorum	36
Outer	2009	349_09LTM	2	Ampelisca Vadorum	24
Outer	2009	349_09LTM	1	Ampelisca Verrilli	30
Outer	2009	349_09LTM	2	Ampelisca Verrilli	19
Outer	2009	349_09LTM	1	Amphiporus Bioculatus	1
Outer	2009	349_09LTM	2	Anadara Ovalis	1
Outer	2009	349_09LTM	1	Anadara Transversa	21
Outer	2009	349_09LTM	2	Anadara Transversa	3
Outer	2009	349_09LTM	2	Ancistrosyllis Hartmanae	1
Outer	2009	349_09LTM	2	Anomia Simplex	2
Outer	2009	349_09LTM	1	Arabella Iricolor	1
Outer	2009	349_09LTM	1	Aricidea (Acmira) Catherinae	6
Outer	2009	349_09LTM	2	Aricidea (Acmira) Catherinae	9
Outer	2009	349_09LTM	2	Balanus Sp.	4
Outer	2009	349_09LTM	1	Balanus Venustus	37
Outer	2009	349_09LTM	2	Barentsia Gracilis	P
Outer	2009	349_09LTM	1	Batea Catharinensis	16
Outer	2009	349_09LTM	2	Batea Catharinensis	1
Outer	2009	349_09LTM	1	Bittium Alternatum	3

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	349_09LTM	1	Boonea Seminuda	1
Outer	2009	349_09LTM	2	Boonea Seminuda	25
Outer	2009	349_09LTM	1	Capitella Jonesi	2
Outer	2009	349_09LTM	1	Cerapus Sp. A	2
Outer	2009	349_09LTM	1	Cirratulidae	4
Outer	2009	349_09LTM	2	Cirratulidae	2
Outer	2009	349_09LTM	1	Cirrophorus Furcatus	5
Outer	2009	349_09LTM	2	Cirrophorus Furcatus	2
Outer	2009	349_09LTM	2	Cliona Celata	1
Outer	2009	349_09LTM	1	Clymenella Torquata	12
Outer	2009	349_09LTM	2	Clymenella Torquata	18
Outer	2009	349_09LTM	1	Clytia Gracilis	P
Outer	2009	349_09LTM	1	Crepidula Fornicata	1
Outer	2009	349_09LTM	2	Crepidula Fornicata	78
Outer	2009	349_09LTM	2	Crepidula Plana	34
Outer	2009	349_09LTM	2	Crepidula Sp.	2
Outer	2009	349_09LTM	1	Cylichna Oryza	28
Outer	2009	349_09LTM	2	Cylichna Oryza	3
Outer	2009	349_09LTM	1	Cymadusa Compta	1
Outer	2009	349_09LTM	1	Dipolydora Socialis	4
Outer	2009	349_09LTM	1	Dyspanopeus Sayi	8
Outer	2009	349_09LTM	2	Dyspanopeus Sayi	3
Outer	2009	349_09LTM	2	Edwardsia Elegans	1
Outer	2009	349_09LTM	1	Elasmopus Laevis	1
Outer	2009	349_09LTM	2	Ensis Directus	1
Outer	2009	349_09LTM	1	Ericthonius Brasiliensis	10
Outer	2009	349_09LTM	1	Euclymene Collaris	11
Outer	2009	349_09LTM	2	Euclymene Collaris	11
Outer	2009	349_09LTM	1	Eumida Sanguinea	2
Outer	2009	349_09LTM	2	Eumida Sanguinea	1
Outer	2009	349_09LTM	1	Exogone Dispar	3
Outer	2009	349_09LTM	1	Glycera Americana	2
Outer	2009	349_09LTM	2	Glycera Americana	1
Outer	2009	349_09LTM	1	Glycera Sp.	6
Outer	2009	349_09LTM	2	Glycera Sp.	2
Outer	2009	349_09LTM	2	Harmothoe Sp.	1
Outer	2009	349_09LTM	1	Heteromysis Formosa	1
Outer	2009	349_09LTM	1	Hippolyte Sp.	3
Outer	2009	349_09LTM	1	Hutchinsoniella Macracantha	2
Outer	2009	349_09LTM	2	Hutchinsoniella Macracantha	3
Outer	2009	349_09LTM	1	Laevicardium Mortoni	1
Outer	2009	349_09LTM	1	Leitoscoloplos Fragilis	1
Outer	2009	349_09LTM	1	Levinsenia Gracilis	1
Outer	2009	349_09LTM	1	Luconacia Incerta	1
Outer	2009	349_09LTM	1	Lyonsia Hyalina	5
Outer	2009	349_09LTM	2	Lyonsia Hyalina	2
Outer	2009	349_09LTM	2	Macoma Tenta	1
Outer	2009	349_09LTM	1	Maldane Sarsi	3
Outer	2009	349_09LTM	1	Mediomastus Ambiseta	6
Outer	2009	349_09LTM	2	Mediomastus Ambiseta	4
Outer	2009	349_09LTM	2	Microdeutopus Anomalus	1
Outer	2009	349_09LTM	1	Microphthalmus Sczelkowii	2
Outer	2009	349_09LTM	2	Microprotopus Raneyi	1
Outer	2009	349_09LTM	1	Mitrella Lunata	54
Outer	2009	349_09LTM	2	Mitrella Lunata	14
Outer	2009	349_09LTM	1	Monticellina Dorsobranchialis	2
Outer	2009	349_09LTM	2	Monticellina Dorsobranchialis	1
Outer	2009	349_09LTM	1	Nematoda	P
Outer	2009	349_09LTM	2	Nematoda	P

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Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	349_09LTM	1	Ninoe Nigripes	3
Outer	2009	349_09LTM	2	Ninoe Nigripes	3
Outer	2009	349_09LTM	1	Notomastus Latericeus	5
Outer	2009	349_09LTM	2	Notomastus Latericeus	8
Outer	2009	349_09LTM	2	Nucula Annulata	6
Outer	2009	349_09LTM	1	Oligochaeta	8
Outer	2009	349_09LTM	2	Oligochaeta	6
Outer	2009	349_09LTM	1	Ophiuroidea	2
Outer	2009	349_09LTM	1	Ostracoda	7
Outer	2009	349_09LTM	1	Oxyurostylis Smithi	1
Outer	2009	349_09LTM	1	Pagurus Annulipes	1
Outer	2009	349_09LTM	2	Pagurus Annulipes	1
Outer	2009	349_09LTM	1	Paracaprella Tenuis	2
Outer	2009	349_09LTM	1	Pectinaria Gouldi	2
Outer	2009	349_09LTM	1	Phyllodoce Arenae	5
Outer	2009	349_09LTM	2	Phyllodoce Arenae	4
Outer	2009	349_09LTM	1	Pinnixa Chaetopterana	1
Outer	2009	349_09LTM	2	Pinnixa Chaetopterana	3
Outer	2009	349_09LTM	1	Pitar Morrhuanus	2
Outer	2009	349_09LTM	2	Polydora Cornuta	1
Outer	2009	349_09LTM	1	Polygordius Sp.	1
Outer	2009	349_09LTM	1	Prionospio (Minuspio) Perkinsi	2
Outer	2009	349_09LTM	2	Prionospio (Minuspio) Perkinsi	1
Outer	2009	349_09LTM	1	Prionospio Heterobranchia	1
Outer	2009	349_09LTM	1	Protodorvillea Gaspeensis	2
Outer	2009	349_09LTM	2	Sabellaria Vulgaris	1
Outer	2009	349_09LTM	2	Seila Adamsi	1
Outer	2009	349_09LTM	1	Sphaerosyllis Taylori	1
Outer	2009	349_09LTM	1	Spiochaetopterus Oculatus	4
Outer	2009	349_09LTM	2	Spiochaetopterus Oculatus	8
Outer	2009	349_09LTM	1	Spionidae	1
Outer	2009	349_09LTM	1	Spiophanes Bombyx	11
Outer	2009	349_09LTM	2	Spiophanes Bombyx	3
Outer	2009	349_09LTM	1	Sthenelais Boa	1
Outer	2009	349_09LTM	2	Sthenelais Boa	2
Outer	2009	349_09LTM	1	Stylochus Ellipticus	2
Outer	2009	349_09LTM	2	Tagelus Divisus	1
Outer	2009	349_09LTM	2	Tellina Agilis	13
Outer	2009	349_09LTM	1	Tellinidae	1
Outer	2009	349_09LTM	2	Tellinidae	3
Outer	2009	349_09LTM	1	Tharyx Acutus	8
Outer	2009	349_09LTM	2	Tharyx Acutus	2
Outer	2009	349_09LTM	1	Tubulanus Sp.	5
Outer	2009	349_09LTM	2	Tubulanus Sp.	3
Outer	2009	349_09LTM	1	Turbonilla Elegantula	2
Outer	2009	349_09LTM	2	Turbonilla Elegantula	3
Outer	2009	349_09LTM	1	Turbonilla Interrupta	8
Outer	2009	349_09LTM	2	Turbonilla Interrupta	7
Outer	2009	349_09LTM	2	Turbonilla Sp.	1
Outer	2009	349_09LTM	1	Unciola Irrorata	4
Outer	2009	349_09LTM	1	Yoldia Limatula	1
Outer	2009	349_09LTM	1	Yoldia Sp.	1
Outer	2009	352_09LTM	1	Ampelisca Vadorum	23
Outer	2009	352_09LTM	2	Ampelisca Vadorum	19
Outer	2009	352_09LTM	1	Ampharete Finmarchica	3
Outer	2009	352_09LTM	2	Ampharete Finmarchica	2
Outer	2009	352_09LTM	1	Amphioplus Abdita	2
Outer	2009	352_09LTM	2	Amphioplus Abdita	3
Outer	2009	352_09LTM	1	Amphiporus Bioculatus	3

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	352_09LTM	2	Amphiporus Cruentatus	1
Outer	2009	352_09LTM	1	Anachis Lafresnayi	4
Outer	2009	352_09LTM	2	Anachis Lafresnayi	2
Outer	2009	352_09LTM	1	Ancistrosyllis Hartmanae	2
Outer	2009	352_09LTM	2	Ancistrosyllis Hartmanae	5
Outer	2009	352_09LTM	2	Anomia Simplex	2
Outer	2009	352_09LTM	2	Anomia Sp.	2
Outer	2009	352_09LTM	2	Aphelochaeta Marioni	3
Outer	2009	352_09LTM	1	Apocorophium Acutum	1
Outer	2009	352_09LTM	1	Aricidea (Acmira) Catherinae	19
Outer	2009	352_09LTM	2	Aricidea (Acmira) Catherinae	20
Outer	2009	352_09LTM	1	Aricidea Sp.	1
Outer	2009	352_09LTM	1	Autolytus Fasciatus	1
Outer	2009	352_09LTM	2	Balanus Venustus	6
Outer	2009	352_09LTM	1	Batea Catharinensis	2
Outer	2009	352_09LTM	2	Boonea Seminuda	1
Outer	2009	352_09LTM	1	Brania Clavata	2
Outer	2009	352_09LTM	2	Brania Clavata	2
Outer	2009	352_09LTM	2	Brania Wellfleetensis	2
Outer	2009	352_09LTM	1	Cabira Incerta	4
Outer	2009	352_09LTM	2	Cabira Incerta	3
Outer	2009	352_09LTM	1	Carazziella Hobsonae	7
Outer	2009	352_09LTM	2	Carazziella Hobsonae	8
Outer	2009	352_09LTM	2	Carinoma Tremaphoros	1
Outer	2009	352_09LTM	1	Cerastoderma Pinnulatum	5
Outer	2009	352_09LTM	1	Ceriantharia	3
Outer	2009	352_09LTM	1	Chaetopleura Apiculata	2
Outer	2009	352_09LTM	2	Chaetozone Sp.	1
Outer	2009	352_09LTM	1	Cirratulidae	2
Outer	2009	352_09LTM	2	Cirratulidae	4
Outer	2009	352_09LTM	1	Cirrophorus Furcatus	1
Outer	2009	352_09LTM	2	Cirrophorus Furcatus	1
Outer	2009	352_09LTM	1	Corbula Contracta	1
Outer	2009	352_09LTM	1	Crassinella Lunulata	6
Outer	2009	352_09LTM	2	Crassinella Lunulata	3
Outer	2009	352_09LTM	1	Crepidula Fornicata	20
Outer	2009	352_09LTM	2	Crepidula Fornicata	35
Outer	2009	352_09LTM	1	Crepidula Plana	3
Outer	2009	352_09LTM	2	Crepidula Plana	11
Outer	2009	352_09LTM	1	Crepidula Sp.	2
Outer	2009	352_09LTM	2	Crepidula Sp.	1
Outer	2009	352_09LTM	2	Cylichna Oryza	1
Outer	2009	352_09LTM	1	Dipolydora Socialis	2
Outer	2009	352_09LTM	1	Dipolydora Sp	1
Outer	2009	352_09LTM	1	Drilonereis Longa	1
Outer	2009	352_09LTM	1	Dyspanopeus Sayi	7
Outer	2009	352_09LTM	2	Dyspanopeus Sayi	14
Outer	2009	352_09LTM	1	Edwardsia Elegans	34
Outer	2009	352_09LTM	2	Edwardsia Elegans	20
Outer	2009	352_09LTM	1	Eobrolgus Spinosus	5
Outer	2009	352_09LTM	2	Eobrolgus Spinosus	1
Outer	2009	352_09LTM	1	Epitomapta Roseola	1
Outer	2009	352_09LTM	2	Epitomapta Roseola	2
Outer	2009	352_09LTM	2	Epitonium Multistriatum	1
Outer	2009	352_09LTM	2	Ericthonius Brasiliensis	1
Outer	2009	352_09LTM	1	Euclymene Collaris	1
Outer	2009	352_09LTM	2	Euclymene Collaris	4
Outer	2009	352_09LTM	1	Eumida Sanguinea	31
Outer	2009	352_09LTM	2	Eumida Sanguinea	14

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	352_09LTM	1	Exogone Dispar	9
Outer	2009	352_09LTM	2	Exogone Dispar	17
Outer	2009	352_09LTM	1	Glycera Sp.	1
Outer	2009	352_09LTM	2	Glycera Sp.	8
Outer	2009	352_09LTM	2	Golfingia Sp.	2
Outer	2009	352_09LTM	1	Harmothoe Extenuata	3
Outer	2009	352_09LTM	2	Harmothoe Extenuata	1
Outer	2009	352_09LTM	1	Harmothoe Lunulata	1
Outer	2009	352_09LTM	2	Harmothoe Lunulata	2
Outer	2009	352_09LTM	1	Heteromastus Filiformis	3
Outer	2009	352_09LTM	2	Heteromastus Filiformis	2
Outer	2009	352_09LTM	1	Heteromysis Formosa	1
Outer	2009	352_09LTM	2	Heteromysis Formosa	2
Outer	2009	352_09LTM	1	Hexapanopeus Angustifrons	1
Outer	2009	352_09LTM	1	Ianiropsis Sp. 1	9
Outer	2009	352_09LTM	1	Laevicardium Mortoni	1
Outer	2009	352_09LTM	1	Leitoscoloplos Fragilis	1
Outer	2009	352_09LTM	2	Leitoscoloplos Fragilis	2
Outer	2009	352_09LTM	2	Leitoscoloplos Sp.	1
Outer	2009	352_09LTM	1	Lembos Smithi	3
Outer	2009	352_09LTM	2	Lembos Smithi	1
Outer	2009	352_09LTM	2	Lepidonotus Squamatus	1
Outer	2009	352_09LTM	2	Lepidonotus Sublevis	1
Outer	2009	352_09LTM	2	Maldane Sarsi	1
Outer	2009	352_09LTM	1	Maldanidae	1
Outer	2009	352_09LTM	2	Margarites Sp.	1
Outer	2009	352_09LTM	1	Mediomastus Ambiseta	6
Outer	2009	352_09LTM	2	Mediomastus Ambiseta	3
Outer	2009	352_09LTM	1	Melanella Sarsi	1
Outer	2009	352_09LTM	2	Microdeutopus Anomalus	2
Outer	2009	352_09LTM	1	Mitrella Lunata	1
Outer	2009	352_09LTM	1	Monticellina Dorsobranchialis	5
Outer	2009	352_09LTM	2	Monticellina Dorsobranchialis	16
Outer	2009	352_09LTM	2	Neanthes Arenaceodentata	1
Outer	2009	352_09LTM	1	Nematoda	P
Outer	2009	352_09LTM	2	Nematoda	P
Outer	2009	352_09LTM	1	Nicolea Zostericola	1
Outer	2009	352_09LTM	1	Nucula Proxima	17
Outer	2009	352_09LTM	1	Nucula Proxima	29
Outer	2009	352_09LTM	1	Odontosyllis Fulgurans	6
Outer	2009	352_09LTM	2	Odontosyllis Fulgurans	7
Outer	2009	352_09LTM	1	Oligochaeta	27
Outer	2009	352_09LTM	2	Oligochaeta	90
Outer	2009	352_09LTM	1	Oxyurostylis Smithi	2
Outer	2009	352_09LTM	1	Pagurus Annulipes	2
Outer	2009	352_09LTM	2	Pagurus Annulipes	1
Outer	2009	352_09LTM	1	Paracaprella Tenuis	1
Outer	2009	352_09LTM	1	Parapionosyllis Longicirrata	3
Outer	2009	352_09LTM	2	Parapionosyllis Longicirrata	23
Outer	2009	352_09LTM	1	Parougia Caeca	1
Outer	2009	352_09LTM	2	Parougia Caeca	2
Outer	2009	352_09LTM	2	Pectinaria Gouldi	2
Outer	2009	352_09LTM	2	Pentamera Calcigera	2
Outer	2009	352_09LTM	1	Periploma Leanum	2
Outer	2009	352_09LTM	2	Periploma Leanum	3
Outer	2009	352_09LTM	2	Pherusa Affinis	1
Outer	2009	352_09LTM	1	Phyllodoce Arenae	1
Outer	2009	352_09LTM	2	Pisione Remota	1
Outer	2009	352_09LTM	1	Pista Palmata	2

2009 New Bedford Harbor Phase I

Location	Year	Station	Rep	Scientific_Name	Abundance
Outer	2009	352_09LTM	2	Pista Palmata	5
Outer	2009	352_09LTM	1	Podarke Obscura	6
Outer	2009	352_09LTM	2	Podarke Obscura	7
Outer	2009	352_09LTM	1	Polycirrus Eximius	33
Outer	2009	352_09LTM	2	Polycirrus Eximius	21
Outer	2009	352_09LTM	1	Polycirrus Sp.	32
Outer	2009	352_09LTM	2	Polycirrus Sp.	21
Outer	2009	352_09LTM	1	Polygordius Sp.	4
Outer	2009	352_09LTM	2	Polygordius Sp.	16
Outer	2009	352_09LTM	1	Prionospio (Minuspio) Perkinsi	2
Outer	2009	352_09LTM	2	Prionospio (Minuspio) Perkinsi	4
Outer	2009	352_09LTM	1	Procephalothrix Spiralis	9
Outer	2009	352_09LTM	2	Procephalothrix Spiralis	3
Outer	2009	352_09LTM	1	Protodorvillea Gaspeensis	6
Outer	2009	352_09LTM	2	Protodorvillea Gaspeensis	11
Outer	2009	352_09LTM	1	Rudilemboides Naglei	13
Outer	2009	352_09LTM	2	Rudilemboides Naglei	2
Outer	2009	352_09LTM	1	Sacoglossa	3
Outer	2009	352_09LTM	1	Scoletoma Hebes	41
Outer	2009	352_09LTM	2	Scoletoma Hebes	34
Outer	2009	352_09LTM	1	Sphaerosyllis Longicauda	2
Outer	2009	352_09LTM	1	Spiochaetopterus Oculatus	5
Outer	2009	352_09LTM	2	Spiochaetopterus Oculatus	10
Outer	2009	352_09LTM	1	Tagelus Divisus	2
Outer	2009	352_09LTM	2	Tagelus Divisus	1
Outer	2009	352_09LTM	1	Tectonatica Pusilla	1
Outer	2009	352_09LTM	2	Tectonatica Pusilla	3
Outer	2009	352_09LTM	1	Tellina Agilis	1
Outer	2009	352_09LTM	1	Tellinidae	1
Outer	2009	352_09LTM	2	Tellinidae	3
Outer	2009	352_09LTM	1	Tetrastemma Candidum	2
Outer	2009	352_09LTM	1	Tharyx Acutus	5
Outer	2009	352_09LTM	2	Tharyx Acutus	27
Outer	2009	352_09LTM	2	Upogebia Affinis	1
Outer	2009	352_09LTM	1	Zygonemertes Virescens	2

APPENDIX K. BENTHIC INFAUNAL SPECIES LISTS FROM THE 2009 NBH LTM V SURVEY

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NBH Name	ITIS Best Name	Species	Genus	Family	Order	Class	Phylum	1993	1995	1999	2004	2009
Acteocina canaliculata	Acteocina canaliculata	canaliculata	Acteocina	Cylichnidae	Cephalaspidea	Gastropoda	Mollusca	X	X	X	X	X
Actiniaria	Actiniaria				Actiniaria	Anthozoa	Cnidaria					X
Actiniaria spp.	Actiniaria				Actiniaria	Anthozoa	Cnidaria			X		
Actinothoe sp. 1	Actinothoe		Actinothoe	Sagartiidae	Actiniaria	Anthozoa	Cnidaria			X		
Aeginina longicornis	Aeginina longicornis	longicornis	Aeginina	Caprellidae	Amphipoda	Malacostraca	Arthropoda				X	
Aetea sica	Aetea sica	sica	Aetea	Aeteidae	Cheilostomata	Gymnolaemata	Ectoprocta					X
Aeverrillia armata	Aeverrillia armata	armata	Aeverrillia	Walkeriidae	Ctenostomata	Gymnolaemata	Ectoprocta				X	X
Aeverrillia setigera	Aeverrillia setigera	setigera	Aeverrillia	Walkeriidae	Ctenostomata	Gymnolaemata	Ectoprocta					X
Aglaophamus neotenus	Aglaophamus neotenus	neotenus	Aglaophamus	Nephtyidae	Aciculata	Polychaeta	Annelida					X
Amathia vidovici	Amathia vidovici	vidovici	Amathia	Vesiculariidae	Ctenostomata	Gymnolaemata	Ectoprocta				X	
Ameroculodes sp.	Ameroculodes		Ameroculodes	Oedicerotidae	Amphipoda	Malacostraca	Arthropoda				X	
Ameroculodes sp. 1	Ameroculodes		Ameroculodes	Oedicerotidae	Amphipoda	Malacostraca	Arthropoda			X		
Ampelisca abdita	Ampelisca abdita	abdita	Ampelisca	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Ampelisca macrocephala	Ampelisca macrocephala	macrocephala	Ampelisca	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda			X		
Ampelisca sp.	Ampelisca		Ampelisca	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda		X			
Ampelisca spp.	Ampelisca		Ampelisca	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda	X		X		
Ampelisca vadorum	Ampelisca vadorum	vadorum	Ampelisca	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Ampelisca verrilli	Ampelisca verrilli	verrilli	Ampelisca	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Ampharete arctica	Ampharete arctica	arctica	Ampharete	Ampharetidae	Canalipalpata	Polychaeta	Annelida	X	X			
Ampharete finmarchica	Ampharete finmarchica	finmarchica	Ampharete	Ampharetidae	Canalipalpata	Polychaeta	Annelida			X	X	X
Ampharetidae	Ampharetidae			Ampharetidae	Canalipalpata	Polychaeta	Annelida	X			X	X
Ampharetidae spp.	Ampharetidae			Ampharetidae	Canalipalpata	Polychaeta	Annelida			X		
Amphioplus abdita	Amphioplus abdita	abdita	Amphioplus	Amphiuridae	Ophiurida	Ophiuroidea	Echinodermata		X		X	X
Amphipoda	Amphipoda				Amphipoda	Malacostraca	Arthropoda		X			
Amphipoda spp.	Amphipoda				Amphipoda	Malacostraca	Arthropoda			X		
Amphipoda: other	Amphipoda				Amphipoda	Malacostraca	Arthropoda	X				
Amphiporus angulatus	Amphiporus angulatus	angulatus	Amphiporus	Amphiporidae	Hoplonemertea	Enopla	Nemertea			X		
Amphiporus bioculatus	Amphiporus bioculatus	bioculatus	Amphiporus	Amphiporidae	Hoplonemertea	Enopla	Nemertea			X	X	X
Amphiporus cruentatus	Amphiporus cruentatus	cruentatus	Amphiporus	Amphiporidae	Hoplonemertea	Enopla	Nemertea			X		X
Amphiporus groenlandicus	Amphiporus groenlandicus	groenlandicus	Amphiporus	Amphiporidae	Hoplonemertea	Enopla	Nemertea			X		
Amphiporus ochraceus	Amphiporus ochraceus	ochraceus	Amphiporus	Amphiporidae	Hoplonemertea	Enopla	Nemertea				X	
Amphiporus sp.	Amphiporus		Amphiporus	Amphiporidae	Hoplonemertea	Enopla	Nemertea					X
Amphitrite affinis	Neoamphitrite affinis	affinis	Neoamphitrite	Terebellidae	Canalipalpata	Polychaeta	Annelida				X	
Amphitrite johnstoni	Amphitrite johnstoni	johnstoni	Amphitrite	Terebellidae	Canalipalpata	Polychaeta	Annelida			X		
Ampithoe longimana	Ampithoe longimana	longimana	Ampithoe	Ampithoidae	Amphipoda	Malacostraca	Arthropoda				X	X
Ampithoe rubricata	Ampithoe rubricata	rubricata	Ampithoe	Ampithoidae	Amphipoda	Malacostraca	Arthropoda				X	
Ampithoe spp.	Ampithoe		Ampithoe	Ampithoidae	Amphipoda	Malacostraca	Arthropoda			X		
Ampithoe valida	Ampithoe valida	valida	Ampithoe	Ampithoidae	Amphipoda	Malacostraca	Arthropoda			X		X
Ampithoidae	Ampithoidae			Ampithoidae	Amphipoda	Malacostraca	Arthropoda	X				
Anachis lafresnayi	Anachis lafresnayi	lafresnayi	Anachis	Columbellidae	Neogastropoda	Gastropoda	Mollusca	X	X	X	X	X
Anadara ovalis	Anadara ovalis	ovalis	Anadara	Arcidae	Arcoida	Bivalvia	Mollusca					X
Anadara sp.	Anadara		Anadara	Arcidae	Arcoida	Bivalvia	Mollusca		X			
Anadara transversa	Anadara transversa	transversa	Anadara	Arcidae	Arcoida	Bivalvia	Mollusca	X	X	X	X	X
Anaitides arenae	Anaitides		Anaitides	Phyllodocidae	Aciculata	Polychaeta	Annelida		X			
Ancistrosyllis groenlandica	Ancistrosyllis groenlandica	groenlandica	Ancistrosyllis	Pilargidae	Aciculata	Polychaeta	Annelida	X				
Ancistrosyllis hartmanae	Ancistrosyllis hartmanae	hartmanae	Ancistrosyllis	Pilargidae	Aciculata	Polychaeta	Annelida			X	X	X
Ancula gibbosa	Ancula gibbosa	gibbosa	Ancula	Goniodorididae	Nudibranchia	Gastropoda	Mollusca					X
Anomia simplex	Anomia simplex	simplex	Anomia	Anomiidae	Ostreoida	Bivalvia	Mollusca	X	X	X	X	X
Anomia sp.	Anomia		Anomia	Anomiidae	Ostreoida	Bivalvia	Mollusca		X		X	X
Anomia spp.	Anomia		Anomia	Anomiidae	Ostreoida	Bivalvia	Mollusca	X				
Anoplodactylus petiolatus	Anoplodactylus petiolatus	petiolatus	Anoplodactylus	Phoxichilidiidae	Pantopoda	Pycnogonida	Arthropoda					X
Anthomedusae	Anthomedusae				Hydroida	Hydrozoa	Cnidaria				X	
Anthozoa	Anthozoa					Anthozoa	Cnidaria	X	X			X
Aphelochaeta marioni	Aphelochaeta marioni	marioni	Aphelochaeta	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X

NBH Name	ITIS Best Name	Species	Genus	Family	Order	Class	Phylum	1993	1995	1999	2004	2009
Aphelochaeta monilaris	Aphelochaeta		Aphelochaeta	Cirratulidae	Canalipalpata	Polychaeta	Annelida			X		
Apocorophium acutum	Apocorophium acutum	acutum	Apocorophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Arabella iricolor	Arabella iricolor	iricolor	Arabella	Oenonidae	Aciculata	Polychaeta	Annelida		X	X	X	X
Arbacia punctulata	Arbacia punctulata	punctulata	Arbacia	Arbaciidae	Arbacioida	Echinoidea	Echinodermata				X	
Archiannelida	Aciculata				Aciculata	Polychaeta	Annelida	X	X		X	
Arctica islandica	Arctica islandica	islandica	Arctica	Arcticidae	Veneroida	Bivalvia	Mollusca				X	
Aricidea (acmira) catherinae	Acmira catherinae	catherinae	Acmira	Paraonidae		Polychaeta	Annelida		X		X	X
Aricidea (acmira) cerruti	Acmira cerruti	cerruti	Acmira	Paraonidae		Polychaeta	Annelida		X		X	X
Aricidea catherinae	Acmira catherinae	catherinae	Acmira	Paraonidae		Polychaeta	Annelida	X		X		
Aricidea cerrutii	Aricidea cerrutii	cerrutii	Aricidea	Paraonidae		Polychaeta	Annelida	X				
Aricidea quadrilobata	Aricidea quadrilobata	quadrilobata	Aricidea	Paraonidae		Polychaeta	Annelida		X			
Aricidea sp.	Aricidea		Aricidea	Paraonidae		Polychaeta	Annelida		X		X	X
Aricidea spp.	Aricidea		Aricidea	Paraonidae		Polychaeta	Annelida	X		X		
Asabellides oculata	Asabellides oculata	oculata	Asabellides	Ampharetidae	Canalipalpata	Polychaeta	Annelida					X
Ascidiacea	Ascidiacea					Ascidiacea	Chordata					X
Ascophora	Ascophora		Ascophora	Typhloplanidae	Neorhabdocoela	Turbellaria	Platyhelminthes				X	
Assiminea succinea	Assiminea succinea	succinea	Assiminea	Assimineidae	Neotaenioglossa	Gastropoda	Mollusca				X	
Astarte castanea	Astarte castanea	castanea	Astarte	Astartidae	Veneroida	Bivalvia	Mollusca			X		
Asychis elongata	Asychis elongata	elongata	Asychis	Maldanidae		Polychaeta	Annelida		X	X		
Autolytus fasciatus	Autolytus fasciatus	fasciatus	Autolytus	Syllidae	Aciculata	Polychaeta	Annelida				X	X
Autolytus prolifer	Autolytus prolifera	prolifera	Autolytus	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X		X
Autolytus sp.	Autolytus		Autolytus	Syllidae	Aciculata	Polychaeta	Annelida					X
Axiognathus squamatus	Amphipholis squamata	squamata	Amphipholis	Amphiuridae	Ophiurida	Ophiuroidea	Echinodermata	X		X		
Balanus crenatus	Balanus crenatus	crenatus	Balanus	Balanidae	Sessilia	Maxillopoda	Arthropoda	X	X		X	
Balanus eburneus	Balanus eburneus	eburneus	Balanus	Balanidae	Sessilia	Maxillopoda	Arthropoda		X			
Balanus improvisus	Balanus improvisus	improvisus	Balanus	Balanidae	Sessilia	Maxillopoda	Arthropoda	X				
Balanus sp.	Balanus		Balanus	Balanidae	Sessilia	Maxillopoda	Arthropoda		X			X
Balanus venustus	Balanus venustus	venustus	Balanus	Balanidae	Sessilia	Maxillopoda	Arthropoda	X	X	X	X	X
Barentsia gracilis	Barentsia gracilis	gracilis	Barentsia	Pedicellinidae	Pedicellinida	Pedicellinida_xx	Entoprocta					X
Batea catharinensis	Batea catharinensis	catharinensis	Batea	Bateidae	Amphipoda	Malacostraca	Arthropoda					X
Batea catherinensis	Batea catharinensis	catharinensis	Batea	Bateidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	
Bittium alternatum	Bittium alternatum	alternatum	Bittium	Cerithiidae	Neotaenioglossa	Gastropoda	Mollusca	X	X	X	X	X
Bivalvia	Bivalvia					Bivalvia	Mollusca		X		X	X
Bivalvia spp.	Bivalvia					Bivalvia	Mollusca			X		
Bivalvia: other - unidentified	Bivalvia					Bivalvia	Mollusca	X				
Boccardiella hamata	Boccardiella hamata	hamata	Boccardiella	Spionidae	Canalipalpata	Polychaeta	Annelida			X	X	X
Boonea seminuda	Boonea seminuda	seminuda	Boonea	Pyramidellidae	Heterostropha	Gastropoda	Mollusca	X	X	X	X	X
Boreotrophon clathratus	Boreotrophon clathratus	clathratus	Boreotrophon	Muricidae	Neogastropoda	Gastropoda	Mollusca					X
Bougainvilliidae	Bougainvilliidae			Bougainvilliidae	Hydroida	Hydrozoa	Cnidaria					X
Bowerbankia gracilis	Bowerbankia gracilis	gracilis	Bowerbankia	Vesicularriidae	Ctenostomata	Gymnolaemata	Ectoprocta				X	X
Bowerbankia imbricata	Bowerbankia imbricata	imbricata	Bowerbankia	Vesicularriidae	Ctenostomata	Gymnolaemata	Ectoprocta				X	X
Bowerbankia sp.	Bowerbankia		Bowerbankia	Vesicularriidae	Ctenostomata	Gymnolaemata	Ectoprocta					X
Brania clavata	Brania clavata	clavata	Brania	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Brania wellfleetensis	Brania wellfleetensis	wellfleetensis	Brania	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Bugula stolonifera	Bugula stolonifera	stolonifera	Bugula	Bugulidae	Cheilostomata	Gymnolaemata	Ectoprocta					X
Bugula turrita	Bugula turrita	turrita	Bugula	Bugulidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	X
Busycon canaliculatum	Busycotypus canaliculatus	canaliculatus	Busycotypus	Melongenidae	Neogastropoda	Gastropoda	Mollusca					X
Busycon carica	Busycon carica	carica	Busycon	Melongenidae	Neogastropoda	Gastropoda	Mollusca			X		X
Byblis serrata	Byblis serrata	serrata	Byblis	Ampeliscidae	Amphipoda	Malacostraca	Arthropoda	X	X		X	X
Cabira incerta	Cabira incerta	incerta	Cabira	Pilargidae	Aciculata	Polychaeta	Annelida			X	X	X
Caecum cooperi	Caecum cooperi	cooperi	Caecum	Caecidae	Neotaenioglossa	Gastropoda	Mollusca		X			
Caecum pulchellum	Caecum pulchellum	pulchellum	Caecum	Caecidae	Neotaenioglossa	Gastropoda	Mollusca		X		X	
Caecum sp.	Caecum		Caecum	Caecidae	Neotaenioglossa	Gastropoda	Mollusca		X			
Callinectes sapidus	Callinectes sapidus	sapidus	Callinectes	Portunidae	Decapoda	Malacostraca	Arthropoda			X		X

NBH Name	ITIS Best Name	Species	Genus	Family	Order	Class	Phylum	1993	1995	1999	2004	2009
Calliopius laeviusculus	Calliopius laeviusculus	laeviusculus	Calliopius	Calliopidae	Amphipoda	Malacostraca	Arthropoda				X	
Callipallene brevirostris	Callipallene brevirostris	brevirostris	Callipallene	Callipallenidae	Pantopoda	Pycnogonida	Arthropoda					X
Campanulariidae	Campanulariidae			Campanulariidae	Hydroida	Hydrozoa	Cnidaria				X	X
Cancer irroratus	Cancer irroratus	irroratus	Cancer	Cancridae	Decapoda	Malacostraca	Arthropoda			X	X	
Cancer spp.	Cancer		Cancer	Cancridae	Decapoda	Malacostraca	Arthropoda			X		
Capitella capitata	Capitella capitata	capitata	Capitella	Capitellidae		Polychaeta	Annelida					X
Capitella capitata complex	Capitella capitata	capitata	Capitella	Capitellidae		Polychaeta	Annelida	X	X	X	X	
Capitella jonesi	Capitellides jonesi	jonesi	Capitellides	Capitellidae		Polychaeta	Annelida			X	X	X
Capitellidae	Capitellidae			Capitellidae		Polychaeta	Annelida	X	X			
Capitellidae spp.	Capitellidae			Capitellidae		Polychaeta	Annelida			X		
Caprella penantis	Caprella penantis	penantis	Caprella	Caprellidae	Amphipoda	Malacostraca	Arthropoda		X		X	X
Caprellidae	Caprellidae			Caprellidae	Amphipoda	Malacostraca	Arthropoda		X			
Carazziella hobsonae	Carazziella hobsonae	hobsonae	Carazziella	Spionidae	Canalipalpata	Polychaeta	Annelida			X	X	X
Carinoma tremaphoros	Carinoma tremaphoros	tremaphoros	Carinoma	Carinomidae	Paleonemertea	Anopla	Nemertea			X		X
Carinomella lactea	Carinomella lactea	lactea	Carinomella	Tubulanidae	Paleonemertea	Anopla	Nemertea			X		
Caulleriella cf. killariensis	Caulleriella killariensis	killariensis	Caulleriella	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X		X	X
Caulleriella sp.	Caulleriella		Caulleriella	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X		X	X
Caulleriella sp. a	Caulleriella		Caulleriella	Cirratulidae	Canalipalpata	Polychaeta	Annelida			X		
Cerapus sp. a	Cerapus		Cerapus	Corophiidae	Amphipoda	Malacostraca	Arthropoda					X
Cerapus tubularis	Cerapus tubularis	tubularis	Cerapus	Corophiidae	Amphipoda	Malacostraca	Arthropoda				X	
Cerastoderma pinnulatum	Cerastoderma pinnulatum	pinnulatum	Cerastoderma	Cardiidae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Cerebratulus lacteus	Cerebratulus lacteus	lacteus	Cerebratulus	Lineidae	Heteronemertea	Anopla	Nemertea			X	X	X
Cerebratulus sp.	Cerebratulus		Cerebratulus	Lineidae	Heteronemertea	Anopla	Nemertea				X	
Cerebratulus spp.	Cerebratulus		Cerebratulus	Lineidae	Heteronemertea	Anopla	Nemertea			X		
Ceriantharia	Ceriantharia				Ceriantharia	Anthozoa	Cnidaria				X	X
Ceriantheopsis americanus	Ceriantheopsis americana	americana	Ceriantheopsis	Cerianthidae	Ceriantharia	Anthozoa	Cnidaria		X	X		
Cerithiopsis emersonii	Cerithiopsis emersonii	emersonii	Cerithiopsis	Cerithiopsidae	Neotaenioglossa	Gastropoda	Mollusca					X
Chaetopleura apiculata	Chaetopleura apiculata	apiculata	Chaetopleura	Ischnochitonidae	Neoloricata	Polyplacophora	Mollusca	X	X	X	X	X
Chaetozone sp.	Chaetozone		Chaetozone	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X		X	X
Chaetozone spp.	Chaetozone		Chaetozone	Cirratulidae	Canalipalpata	Polychaeta	Annelida			X		
Chordata	Chordata						Chordata		X			
Cirratulidae	Cirratulidae			Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X		X	X
Cirratulidae spp.	Cirratulidae			Cirratulidae	Canalipalpata	Polychaeta	Annelida			X		
Cirratulus grandis	Cirratulus grandis	grandis	Cirratulus	Cirratulidae	Canalipalpata	Polychaeta	Annelida					X
Cirratulus sp.	Cirratulus		Cirratulus	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X			
Cirratulus sp.1	Cirratulus		Cirratulus	Cirratulidae	Canalipalpata	Polychaeta	Annelida			X		
Cirriformia grandis	Cirratulus grandis	grandis	Cirratulus	Cirratulidae	Canalipalpata	Polychaeta	Annelida			X	X	
Cirrophorus furcatus	Cirrophorus furcatus	furcatus	Cirrophorus	Paraonidae		Polychaeta	Annelida			X	X	X
Cirrophorus lyriformis	Cirrophorus lyriformis	lyriformis	Cirrophorus	Paraonidae		Polychaeta	Annelida	X	X			
Clinocardium ciliatum	Clinocardium ciliatum	ciliatum	Clinocardium	Cardiidae	Veneroida	Bivalvia	Mollusca					X
Cliona celata	Cliona celata	celata	Cliona	Clionidae	Hadromerida	Demospongiae	Porifera				X	X
Cliona lobata	Cliona lobata	lobata	Cliona	Clionidae	Hadromerida	Demospongiae	Porifera				X	
Cliona vastifica	Cliona vastifica	vastifica	Cliona	Clionidae	Hadromerida	Demospongiae	Porifera				X	X
Clymenella torquata	Clymenella torquata	torquata	Clymenella	Maldanidae		Polychaeta	Annelida	X	X	X	X	X
Clytia gracilis	Clytia gracilis	gracilis	Clytia	Campanulariidae	Hydroida	Hydrozoa	Cnidaria				X	X
Clytia hemisphaerica	Clytia hemisphaerica	hemisphaerica	Clytia	Campanulariidae	Hydroida	Hydrozoa	Cnidaria					X
Conopeum truitti	Conopeum truitti	truitti	Conopeum	Membraniporidae	Cheilostomata	Gymnolaemata	Ectoprocta					X
Corbula contracta	Corbula contracta	contracta	Corbula	Corbulidae	Myoida	Bivalvia	Mollusca		X	X	X	X
Corophiidae spp.	Corophiidae			Corophiidae	Amphipoda	Malacostraca	Arthropoda			X		
Corophium sp.	Corophium		Corophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda		X			
Corophium spp.	Corophium		Corophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda	X				
Coryphella pellucida	Flabellina pellucida	pellucida	Flabellina	Flabellinidae	Nudibranchia	Gastropoda	Mollusca			X		
Coryphella rufibranchialis	Flabellina verrucosa	verrucosa	Flabellina	Flabellinidae	Nudibranchia	Gastropoda	Mollusca			X		
Coryphella sp.	Coryphella		Coryphella	Flabellinidae	Nudibranchia	Gastropoda	Mollusca					X

NBH Name	ITIS Best Name	Species	Genus	Family	Order	Class	Phylum	1993	1995	1999	2004	2009
Crangon septemspinosa	Crangon septemspinosa	septemspinosa	Crangon	Crangonidae	Decapoda	Malacostraca	Arthropoda	X		X	X	X
Crangonyx pseudogracilis	Crangonyx pseudogracilis	pseudogracilis	Crangonyx	Crangonyctidae	Amphipoda	Malacostraca	Arthropoda			X		
Crassicorophium bonellii	Crassicorophium bonelli	bonelli	Crassicorophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda		X			
Crassinella lunulata	Crassinella lunulata	lunulata	Crassinella	Crassatellidae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Crassostrea virginica	Crassostrea virginica	virginica	Crassostrea	Ostreidae	Ostreoida	Bivalvia	Mollusca	X	X	X	X	
Crepidula convexa	Crepidula convexa	convexa	Crepidula	Calyptraeidae	Neotaenioglossa	Gastropoda	Mollusca	X	X	X	X	X
Crepidula fornicata	Crepidula fornicata	fornicata	Crepidula	Calyptraeidae	Neotaenioglossa	Gastropoda	Mollusca	X	X	X	X	X
Crepidula plana	Crepidula plana	plana	Crepidula	Calyptraeidae	Neotaenioglossa	Gastropoda	Mollusca	X	X	X	X	X
Crepidula sp.	Crepidula		Crepidula	Calyptraeidae	Neotaenioglossa	Gastropoda	Mollusca		X		X	X
Crepidula spp.	Crepidula		Crepidula	Calyptraeidae	Neotaenioglossa	Gastropoda	Mollusca	X		X		
Cryptosula pallasiana	Cryptosula pallasiana	pallasiana	Cryptosula	Cryptosulidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	X
Cumingia tellinoides	Cumingia tellinoides	tellinoides	Cumingia	Semelidae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Cyclaspis varians	Cyclaspis varians	varians	Cyclaspis	Bodotriidae	Cumacea	Malacostraca	Arthropoda				X	
Cyclopoida	Cyclopoida				Cyclopoida	Maxillopoda	Arthropoda					X
Cylichna oryza	Cylichna oryza	oryza	Cylichna	Cylichnidae	Cephalaspidea	Gastropoda	Mollusca			X	X	X
Cymadusa compta	Cymadusa compta	compta	Cymadusa	Ampithoidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Decapoda	Decapoda				Decapoda	Malacostraca	Arthropoda	X				
Decapoda spp.	Decapoda				Decapoda	Malacostraca	Arthropoda			X		
Demonax microphthalmus	Demonax microphthalmus	microphthalmus	Demonax	Sabellidae	Canalipalpata	Polychaeta	Annelida					X
Diaphana minuta	Diaphana minuta	minuta	Diaphana	Diaphanidae	Cephalaspidea	Gastropoda	Mollusca			X		
Diastylis polita	Diastylis polita	polita	Diastylis	Diastylidae	Cumacea	Malacostraca	Arthropoda				X	
Diopatra cuprea	Diopatra cuprea	cuprea	Diopatra	Onuphidae	Aciculata	Polychaeta	Annelida	X	X	X		X
Dipolydora caulleryi	Polydora caulleryi	caulleryi	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X			
Dipolydora commensalis	Polydora commensalis	commensalis	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida			X		
Dipolydora concharum	Polydora concharum	concharum	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida			X		
Dipolydora giardi	Polydora giardi	giardi	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida			X		X
Dipolydora socialis	Polydora socialis	socialis	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Dipolydora sp	Polydora		Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida					X
Dodecaceria coralii	Dodecaceria coralii	coralii	Dodecaceria	Cirratulidae	Canalipalpata	Polychaeta	Annelida					X
Dodecaceria sp.	Dodecaceria		Dodecaceria	Cirratulidae	Canalipalpata	Polychaeta	Annelida		X		X	X
Dodecaceria spp.	Dodecaceria		Dodecaceria	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X		X		
Dolichopodidae	Dolichopodidae			Dolichopodidae	Diptera	Insecta	Arthropoda	X				
Dorvillea (schistomeringos) annulata	Schistomeringos annulata	annulata	Schistomeringos	Dorvilleidae	Aciculata	Polychaeta	Annelida				X	X
Dorvillea (schistomeringos) rudolphii	Schistomeringos rudolphi	rudolphi	Schistomeringos	Dorvilleidae	Aciculata	Polychaeta	Annelida	X	X	X		
Doto coronata	Doto coronata	coronata	Doto	Dotoidae	Nudibranchia	Gastropoda	Mollusca					X
Drilonereis longa	Drilonereis longa	longa	Drilonereis	Oenonidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Dynamena pumila	Dynamena pumila	pumila	Dynamena	Sertulariidae	Hydroida	Hydrozoa	Cnidaria				X	
Dyspanopeus sayi	Dyspanopeus sayi	sayi	Dyspanopeus	Panopeidae	Decapoda	Malacostraca	Arthropoda	X	X	X	X	X
Echinoidea	Echinoidea					Echinoidea	Echinodermata				X	
Edotia sp.	Edotia		Edotia	Idoteidae	Isopoda	Malacostraca	Arthropoda					X
Edotia triloba	Edotia triloba	triloba	Edotia	Idoteidae	Isopoda	Malacostraca	Arthropoda	X	X	X	X	
Edwardsia elegans	Edwardsia elegans	elegans	Edwardsia	Edwardsiidae	Actiniaria	Anthozoa	Cnidaria			X	X	X
Elasmopus laevis	Elasmopus laevis	laevis	Elasmopus	Melitidae	Amphipoda	Malacostraca	Arthropoda	X		X	X	X
Elasmopus levis	Elasmopus levis	levis	Elasmopus	Melitidae	Amphipoda	Malacostraca	Arthropoda		X			
Electra pilosa	Electra pilosa	pilosa	Electra	Electridae	Cheilostomata	Gymnolaemata	Ectoprocta					X
Ensis directus	Ensis directus	directus	Ensis	Pharidae	Veneroida	Bivalvia	Mollusca	X		X		X
Enteropneusta	Enteropneusta					Enteropneusta	Hemichordata	X	X			
Eobrolgus spinosus	Eobrolgus spinosus	spinosus	Eobrolgus	Phoxocephalidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Epitomapta roseola	Leptosynapta roseola	roseola	Leptosynapta	Synaptidae	Apodida	Holothuroidea	Echinodermata			X	X	X
Epitonium angulatum	Epitonium angulatum	angulatum	Epitonium	Epitoniidae	Neotaenioglossa	Gastropoda	Mollusca					X
Epitonium dallianum	Epitonium dallianum	dallianum	Epitonium	Epitoniidae	Neotaenioglossa	Gastropoda	Mollusca					X
Epitonium multistriatum	Epitonium multistriatum	multistriatum	Epitonium	Epitoniidae	Neotaenioglossa	Gastropoda	Mollusca					X
Epizoanthus sp.	Epizoanthus		Epizoanthus	Epizoanthidae	Zoanthidea	Anthozoa	Cnidaria				X	
Erichsonella filiformis	Erichsonella filiformis	filiformis	Erichsonella	Idoteidae	Isopoda	Malacostraca	Arthropoda				X	X

NBH Name	ITIS Best Name	Species	Genus	Family	Order	Class	Phylum	1993	1995	1999	2004	2009
Erichthonius brasiliensis	Ericthonius brasiliensis	brasiliensis	Ericthonius	Corophiidae	Amphipoda	Malacostraca	Arthropoda		X			
Erichthonius sp.	Ericthonius		Ericthonius	Corophiidae	Amphipoda	Malacostraca	Arthropoda		X			
Erichthonius spp.	Ericthonius		Ericthonius	Corophiidae	Amphipoda	Malacostraca	Arthropoda	X				
Ericthonius brasiliensis	Ericthonius brasiliensis	brasiliensis	Ericthonius	Corophiidae	Amphipoda	Malacostraca	Arthropoda			X	X	X
Ericthonius fasciatus	Ericthonius fasciatus	fasciatus	Ericthonius	Corophiidae	Amphipoda	Malacostraca	Arthropoda				X	
Ericthonius sp.	Ericthonius		Ericthonius	Corophiidae	Amphipoda	Malacostraca	Arthropoda				X	
Eteone heteropoda	Eteone heteropoda	heteropoda	Eteone	Phyllodocidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Eteone longa	Eteone longa	longa	Eteone	Phyllodocidae	Aciculata	Polychaeta	Annelida				X	
Eteone sp.	Eteone		Eteone	Phyllodocidae	Aciculata	Polychaeta	Annelida		X			X
Eteone spp.	Eteone		Eteone	Phyllodocidae	Aciculata	Polychaeta	Annelida			X		
Eteone trilineata	Eteone trilineata	trilineata	Eteone	Phyllodocidae	Aciculata	Polychaeta	Annelida			X		
Euclymene collaris	Euclymene collaris	collaris	Euclymene	Maldanidae		Polychaeta	Annelida		X	X	X	X
Euclymene zonalis	Euclymene zonalis	zonalis	Euclymene	Maldanidae		Polychaeta	Annelida	X				
Eulalia bilineata	Eulalia bilineata	bilineata	Eulalia	Phyllodocidae	Aciculata	Polychaeta	Annelida	X		X	X	X
Eulalia viridis	Eulalia viridis	viridis	Eulalia	Phyllodocidae	Aciculata	Polychaeta	Annelida		X		X	
Eumida sanguinea	Eumida sanguinea	sanguinea	Eumida	Phyllodocidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Eunicidae	Eunicidae			Eunicidae	Aciculata	Polychaeta	Annelida	X			X	X
Euplana gracilis	Euplana gracilis	gracilis	Euplana	Leptoplanidae	Polycladida	Turbellaria	Platyhelminthes					X
Eupleura caudata	Eupleura caudata	caudata	Eupleura	Muricidae	Neogastropoda	Gastropoda	Mollusca	X	X			X
Euprognatha rastellifera	Euprognatha rastellifera	rastellifera	Euprognatha	Inachoididae	Decapoda	Malacostraca	Arthropoda				X	
Eurypanopeus depressus	Eurypanopeus depressus	depressus	Eurypanopeus	Panopeidae	Decapoda	Malacostraca	Arthropoda	X	X	X		
Eusyllis lamelligera	Eusyllis lamelligera	lamelligera	Eusyllis	Syllidae	Aciculata	Polychaeta	Annelida			X		
Exogone dispar	Exogone dispar	dispar	Exogone	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Exogone hebes	Exogone hebes	hebes	Exogone	Syllidae	Aciculata	Polychaeta	Annelida	X				
Exogone sp.	Exogone		Exogone	Syllidae	Aciculata	Polychaeta	Annelida		X			X
Exogone spp.	Exogone		Exogone	Syllidae	Aciculata	Polychaeta	Annelida	X		X		
Exogone verugera	Exogone verugera	verugera	Exogone	Syllidae	Aciculata	Polychaeta	Annelida	X				X
Fabricia sabella	Fabricia sabella	sabella	Fabricia	Sabellidae	Canalipalpata	Polychaeta	Annelida	X				
Fargoa bartschi	Fargoa bartschi	bartschi	Fargoa	Pyramidellidae	Heterostropha	Gastropoda	Mollusca			X	X	X
Gammarus daiberi	Gammarus daiberi	daiberi	Gammarus	Gammaridae	Amphipoda	Malacostraca	Arthropoda		X			
Gammarus mucronatus	Gammarus mucronatus	mucronatus	Gammarus	Gammaridae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Gammarus oceanicus	Gammarus oceanicus	oceanicus	Gammarus	Gammaridae	Amphipoda	Malacostraca	Arthropoda			X		
Gammarus sp.	Gammarus		Gammarus	Gammaridae	Amphipoda	Malacostraca	Arthropoda		X			
Gammarus spp.	Gammarus		Gammarus	Gammaridae	Amphipoda	Malacostraca	Arthropoda	X		X		
Gastropoda	Gastropoda					Gastropoda	Mollusca		X		X	X
Gastropoda spp.	Gastropoda					Gastropoda	Mollusca			X		
Gastropoda: other	Gastropoda					Gastropoda	Mollusca	X				
Gemma gemma	Gemma gemma	gemma	Gemma	Veneridae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Geukensia demissa	Geukensia demissa	demissa	Geukensia	Mytilidae	Mytiloida	Bivalvia	Mollusca		X			
Gilvossius setimanus	Gilvossius setimanus	setimanus	Gilvossius	Callianassidae	Decapoda	Malacostraca	Arthropoda					X
Glycera americana	Glycera americana	americana	Glycera	Glyceridae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Glycera dibranchiata	Glycera dibranchiata	dibranchiata	Glycera	Glyceridae	Aciculata	Polychaeta	Annelida	X	X		X	X
Glycera sp.	Glycera		Glycera	Glyceridae	Aciculata	Polychaeta	Annelida		X		X	X
Glycera sp. 1	Glycera		Glycera	Glyceridae	Aciculata	Polychaeta	Annelida			X		
Glycera spp.	Glycera		Glycera	Glyceridae	Aciculata	Polychaeta	Annelida	X				
Glyceridae spp.	Glyceridae			Glyceridae	Aciculata	Polychaeta	Annelida			X		
Glycinde solitaria	Glycinde solitaria	solitaria	Glycinde	Goniadidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Golfingia sp.	Golfingia		Golfingia	Golfingiidae	Golfingiidae_xx	Golfingiidae_xx_xx	Sipuncula					X
Goniadidae	Goniadidae			Goniadidae	Aciculata	Polychaeta	Annelida	X	X			
Goniadidae spp.	Goniadidae			Goniadidae	Aciculata	Polychaeta	Annelida			X		
Gyptis cf. vittata	Gyptis vittata	vittata	Gyptis	Hesionidae	Aciculata	Polychaeta	Annelida		X	X	X	
Gyptis crypta	Gyptis		Gyptis	Hesionidae	Aciculata	Polychaeta	Annelida	X				
Gyptis vittata	Gyptis vittata	vittata	Gyptis	Hesionidae	Aciculata	Polychaeta	Annelida					X
Halecium halecinum	Halecium halecinum	halecinum	Halecium	Haleciidae	Leptothecatae	Hydrozoa	Cnidaria					X

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Halecium sp.	Halecium		Halecium	Haleciidae	Hydroida	Hydrozoa	Cnidaria				X	X
Halichondria bowerbanki	Halichondria bowerbanki	bowerbanki	Halichondria	Halichondriidae	Halichondrida	Demospongiae	Porifera				X	
Haliclona loosanoffi	Haliclona loosanoffi	loosanoffi	Haliclona	Haliclonidae	Haplosclerida	Demospongiae	Porifera					X
Haloclava producta	Haloclava producta	producta	Haloclava	Haloclavidae	Actiniaria	Anthozoa	Cnidaria				X	X
Haminoea solitaria	Haminoea solitaria	solitaria	Haminoea	Haminoeidae	Cephalaspidea	Gastropoda	Mollusca	X	X	X	X	X
Harmothoe ? nodosa	Harmothoe nodosa	nodosa	Harmothoe	Polynoidae	Aciculata	Polychaeta	Annelida			X		
Harmothoe extenuata	Harmothoe extenuata	extenuata	Harmothoe	Polynoidae	Aciculata	Polychaeta	Annelida	X		X	X	X
Harmothoe imbricata	Harmothoe imbricata	imbricata	Harmothoe	Polynoidae	Aciculata	Polychaeta	Annelida		X		X	X
Harmothoe lunulata	Malmgreniella lunulata	lunulata	Malmgreniella	Polynoidae	Aciculata	Polychaeta	Annelida					X
Harmothoe macginitei	Harmothoe macginitiei	macginitiei	Harmothoe	Polynoidae	Aciculata	Polychaeta	Annelida				X	
Harmothoe sp.	Harmothoe		Harmothoe	Polynoidae	Aciculata	Polychaeta	Annelida				X	X
Harpacticoida	Harpacticoida				Harpacticoida	Maxillopoda	Arthropoda	X	X			X
Hediste diversicolor	Hediste diversicolor	diversicolor	Hediste	Nereididae	Aciculata	Polychaeta	Annelida				X	X
Hemicyclops sp.	Hemicyclops		Hemicyclops	Clausidiidae	Poecilostomatoida	Maxillopoda	Arthropoda					X
Hesionidae	Hesionidae			Hesionidae	Aciculata	Polychaeta	Annelida		X			
Heterocrypta granulata	Heterocrypta granulata	granulata	Heterocrypta	Parthenopidae	Decapoda	Malacostraca	Arthropoda			X	X	
Heteromastus filiformis	Heteromastus filiformis	filiformis	Heteromastus	Capitellidae		Polychaeta	Annelida	X	X	X	X	X
Heteromysis formosa	Heteromysis formosa	formosa	Heteromysis	Mysidae	Mysida	Malacostraca	Arthropoda	X	X	X	X	X
Hexapanopeus angustifrons	Hexapanopeus angustifrons	angustifrons	Hexapanopeus	Panopeidae	Decapoda	Malacostraca	Arthropoda		X	X		X
Hiatella sp.	Hiatella		Hiatella	Hiatellidae	Myoida	Bivalvia	Mollusca		X			
Hippolyte pleuracanthus	Hippolyte pleuracanthus	pleuracanthus	Hippolyte	Hippolytidae	Decapoda	Malacostraca	Arthropoda				X	
Hippolyte sp.	Hippolyte		Hippolyte	Hippolytidae	Decapoda	Malacostraca	Arthropoda					X
Hippolyte spp.	Hippolyte		Hippolyte	Hippolytidae	Decapoda	Malacostraca	Arthropoda			X		
Hippolyte zostericola	Hippolyte zostericola	zostericola	Hippolyte	Hippolytidae	Decapoda	Malacostraca	Arthropoda		X	X	X	X
Hippolytidae	Hippolytidae			Hippolytidae	Decapoda	Malacostraca	Arthropoda	X				
Hippolytidae spp.	Hippolytidae			Hippolytidae	Decapoda	Malacostraca	Arthropoda			X		
Holothuroidea	Holothuroidea					Holothuroidea	Echinodermata	X	X			
Hutchinsoniella macracantha	Hutchinsoniella macracantha	macracantha	Hutchinsoniella	Hutchinsoniellidae	Brachypoda	Cephalocarida	Arthropoda	X	X	X	X	X
Hyas araneus	Hyas araneus	araneus	Hyas	Oregoniidae	Decapoda	Malacostraca	Arthropoda		X	X		
Hyas coarctatus	Hyas coarctatus	coarctatus	Hyas	Oregoniidae	Decapoda	Malacostraca	Arthropoda			X		
Hydrachnida	Hydrachna		Hydrachna	Hydrachnidae	Trombidiformes	Arachnida	Arthropoda				X	
Hydractinia echinata	Hydractinia echinata	echinata	Hydractinia	Hydractiniidae	Filifera	Hydrozoa	Cnidaria				X	
Hydrobia salsa	Hydrobia		Hydrobia	Hydrobiidae	Neotaenioglossa	Gastropoda	Mollusca	X	X			
Hydrobia sp.	Hydrobia		Hydrobia	Hydrobiidae	Neotaenioglossa	Gastropoda	Mollusca		X		X	
Hydrobia totteni	Hydrobia totteni	totteni	Hydrobia	Hydrobiidae	Neotaenioglossa	Gastropoda	Mollusca	X	X			
Hydrobia truncata	Hydrobia truncata	truncata	Hydrobia	Hydrobiidae	Neotaenioglossa	Gastropoda	Mollusca			X		
Hydrobiidae spp.	Hydrobiidae			Hydrobiidae	Neotaenioglossa	Gastropoda	Mollusca			X		
Hydroides dianthus	Hydroides dianthus	dianthus	Hydroides	Serpulidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Hypereteone spp.	Eteone		Eteone	Phyllodocidae	Aciculata	Polychaeta	Annelida	X				
Ianiropsis sp. 1	Ianiropsis		Ianiropsis	Janiridae	Isopoda	Malacostraca	Arthropoda			X		X
Idotea phosphorea	Idotea phosphorea	phosphorea	Idotea	Idoteidae	Isopoda	Malacostraca	Arthropoda		X		X	
Ilyanassa obsoleta	Nassarius obsoletus	obsoletus	Nassarius	Nassariidae	Neogastropoda	Gastropoda	Mollusca	X		X	X	X
Ilyanassa obsoletus	Nassarius obsoletus	obsoletus	Nassarius	Nassariidae	Neogastropoda	Gastropoda	Mollusca		X			
Ilyanassa trivittata	Nassarius trivittatus	trivittatus	Nassarius	Nassariidae	Neogastropoda	Gastropoda	Mollusca			X	X	X
Ischyrocerus anguipes	Ischyrocerus anguipes	anguipes	Ischyrocerus	Ischyroceridae	Amphipoda	Malacostraca	Arthropoda		X		X	
Jaera marina	Jaera marina	marina	Jaera	Janiridae	Isopoda	Malacostraca	Arthropoda		X			
Jassa marmorata	Jassa marmorata	marmorata	Jassa	Ischyroceridae	Amphipoda	Malacostraca	Arthropoda	X	X	X		X
Kurtziella cerina	Kurtziella cerina	cerina	Kurtziella	Conidae	Neogastropoda	Gastropoda	Mollusca	X	X	X	X	X
Lacuna vincta	Lacuna vincta	vincta	Lacuna	Littorinidae	Neotaenioglossa	Gastropoda	Mollusca			X	X	X
Laevicardium mortoni	Laevicardium mortoni	mortoni	Laevicardium	Cardiidae	Veneroida	Bivalvia	Mollusca		X	X		X
Lagisca extenuata	Lagisca extenuata	extenuata	Lagisca	Polynoidae	Aciculata	Polychaeta	Annelida		X			
Lamprops quadriplicata	Lamprops quadriplicata	quadriplicata	Lamprops	Lampropidae	Cumacea	Malacostraca	Arthropoda				X	
Leitoscoloplos acutus	Scoloplos acutus	acutus	Scoloplos	Orbiniidae		Polychaeta	Annelida			X	X	X
Leitoscoloplos fragilis	Leitoscoloplos fragilis	fragilis	Leitoscoloplos	Orbiniidae		Polychaeta	Annelida		X		X	X

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Leitoscoloplos robustus	Scoloplos robustus	robustus	Scoloplos	Orbiniidae		Polychaeta	Annelida	X	X	X	X	
Leitoscoloplos sp.	Leitoscoloplos		Leitoscoloplos	Orbiniidae		Polychaeta	Annelida		X		X	X
Leitoscoloplos spp.	Leitoscoloplos		Leitoscoloplos	Orbiniidae		Polychaeta	Annelida	X				
Lembos smithi	Lembos smithi	smithi	Lembos	Aoridae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Lepidonotus squamatus	Lepidonotus squamatus	squamatus	Lepidonotus	Polynoidae	Aciculata	Polychaeta	Annelida	X	X		X	X
Lepidonotus sublevis	Lepidonotus sublevis	sublevis	Lepidonotus	Polynoidae	Aciculata	Polychaeta	Annelida			X	X	X
Leptinogaster major	Leptinogaster major	major	Leptinogaster	Lichomolgidae	Poecilostomatoida	Maxillopoda	Arthropoda					X
Leptocheirus pinguis	Leptocheirus pinguis	pinguis	Leptocheirus	Aoridae	Amphipoda	Malacostraca	Arthropoda	X			X	X
Leptocheirus plumulosus	Leptocheirus plumulosus	plumulosus	Leptocheirus	Aoridae	Amphipoda	Malacostraca	Arthropoda		X			
Leptochelia dubia	Leptochelia dubia	dubia	Leptochelia	Leptocheliidae	Tanaidacea	Malacostraca	Arthropoda		X	X	X	X
Leptochelia sp.	Leptochelia		Leptochelia	Leptocheliidae	Tanaidacea	Malacostraca	Arthropoda		X			
Leucon americanus	Leucon americanus	americanus	Leucon	Leuconidae	Cumacea	Malacostraca	Arthropoda	X	X	X	X	X
Levinsenia gracilis	Levinsenia gracilis	gracilis	Levinsenia	Paraonidae		Polychaeta	Annelida	X	X	X	X	X
Libinia dubia	Libinia dubia	dubia	Libinia	Pisidae	Decapoda	Malacostraca	Arthropoda			X	X	
Libinia emarginata	Libinia emarginata	emarginata	Libinia	Pisidae	Decapoda	Malacostraca	Arthropoda		X			
Limulus polyphemus	Limulus polyphemus	polyphemus	Limulus	Limulidae	Xiphosura	Merostomata	Arthropoda		X			
Lineus ruber	Lineus ruber	ruber	Lineus	Lineidae	Heteronemertea	Anopla	Nemertea					X
Lissodendoryx carolinensis	Lissodendoryx carolinensis	carolinensis	Lissodendoryx	Myxillidae	Poecilosclerida	Demospongiae	Porifera				X	
Listriella barnardi	Listriella barnardi	barnardi	Listriella	Liljeborgiidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Littorina littorea	Littorina littorea	littorea	Littorina	Littorinidae	Neotaenioglossa	Gastropoda	Mollusca		X		X	X
Littorina saxatilis	Littorina saxatilis	saxatilis	Littorina	Littorinidae	Neotaenioglossa	Gastropoda	Mollusca		X			
Lovenella gracilis	Lovenella gracilis	gracilis	Lovenella	Lovenellidae	Hydroida	Hydrozoa	Cnidaria					X
Luconacia incerta	Luconacia incerta	incerta	Luconacia	Pariambidae	Amphipoda	Malacostraca	Arthropoda		X	X	X	X
Lumbrineridae	Lumbrineridae			Lumbrineridae	Aciculata	Polychaeta	Annelida	X	X			X
Lumbrineridae spp.	Lumbrineridae			Lumbrineridae	Aciculata	Polychaeta	Annelida			X		
Lunatia triseriata	Euspira triseriata	triseriata	Euspira	Naticidae	Neotaenioglossa	Gastropoda	Mollusca				X	
Lyonsia hyalina	Lyonsia hyalina	hyalina	Lyonsia	Lyonsiidae	Pholadomyoida	Bivalvia	Mollusca	X	X	X	X	X
Lysianopsis alba	Lysianopsis alba	alba	Lysianopsis	Lysianassidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Macoma balthica	Macoma balthica	balthica	Macoma	Tellinidae	Veneroida	Bivalvia	Mollusca	X				
Macoma sp.	Macoma		Macoma	Tellinidae	Veneroida	Bivalvia	Mollusca	X	X			
Macoma tenta	Macoma tenta	tenta	Macoma	Tellinidae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Macrochaeta sp. 1	Macrochaeta		Macrochaeta	Acrocirridae	Canalipalpata	Polychaeta	Annelida			X		
Magelona sp.	Magelona		Magelona	Magelonidae	Canalipalpata	Polychaeta	Annelida		X			
Maldane sarsi	Maldane sarsi	sarsi	Maldane	Maldanidae		Polychaeta	Annelida				X	X
Maldanidae	Maldanidae			Maldanidae		Polychaeta	Annelida	X	X			X
Maldanidae spp.	Maldanidae			Maldanidae		Polychaeta	Annelida			X		
Marenzelleria sp.	Marenzelleria		Marenzelleria	Spionidae	Canalipalpata	Polychaeta	Annelida		X			
Marenzelleria viridis	Marenzelleria viridis	viridis	Marenzelleria	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X		X	X
Margarites helicinus	Margarites helicinus	helicinus	Margarites	Trochidae	Archaeogastropoda	Gastropoda	Mollusca				X	
Margarites sp.	Margarites		Margarites	Trochidae	Archaeogastropoda	Gastropoda	Mollusca	X			X	X
Marphysa sanguinea	Marphysa sanguinea	sanguinea	Marphysa	Eunicidae	Aciculata	Polychaeta	Annelida				X	X
Mediomastus ambiseta	Mediomastus ambiseta	ambiseta	Mediomastus	Capitellidae		Polychaeta	Annelida	X	X	X	X	X
Melanella conoidea	Melanella conoidea	conoidea	Melanella	Eulimidae	Neotaenioglossa	Gastropoda	Mollusca			X		X
Melanella oleacea	Melanella		Melanella	Eulimidae	Neotaenioglossa	Gastropoda	Mollusca					X
Melanella sarsi	Melanella sarsi	sarsi	Melanella	Eulimidae	Neotaenioglossa	Gastropoda	Mollusca					X
Melinna cristata	Melinna cristata	cristata	Melinna	Ampharetidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Melita nitida	Melita nitida	nitida	Melita	Melitidae	Amphipoda	Malacostraca	Arthropoda			X	X	X
Membranipora tenuis	Membranipora tenuis	tenuis	Membranipora	Membraniporidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	
Membraniporidae	Membraniporidae			Membraniporidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	
Mercenaria mercenaria	Mercenaria mercenaria	mercenaria	Mercenaria	Veneridae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Microciona prolifera	Microciona prolifera	prolifera	Microciona	Clathriidae	Poecilosclerida	Demospongiae	Porifera				X	X
Microdeutopus anomalus	Microdeutopus anomalus	anomalus	Microdeutopus	Aoridae	Amphipoda	Malacostraca	Arthropoda	X		X	X	X
Microdeutopus gryllotalpa	Microdeutopus gryllotalpa	gryllotalpa	Microdeutopus	Aoridae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Microphthalmus aberrans	Microphthalmus aberrans	aberrans	Microphthalmus	Hesionidae	Aciculata	Polychaeta	Annelida		X	X	X	X

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Microphthalmus sczelkowii	Microphthalmus sczelkowii	sczelkowii	Microphthalmus	Hesionidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Microphthalmus sp.	Microphthalmus		Microphthalmus	Hesionidae	Aciculata	Polychaeta	Annelida		X		X	X
Microphthalmus sp. a	Microphthalmus		Microphthalmus	Hesionidae	Aciculata	Polychaeta	Annelida	X	X			
Microphthalmus spp.	Microphthalmus		Microphthalmus	Hesionidae	Aciculata	Polychaeta	Annelida	X				
Microporella ciliata	Microporella ciliata	ciliata	Microporella	Microporellidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	X
Microprotopus raneyi	Microprotopus raneyi	raneyi	Microprotopus	Isaeidae	Amphipoda	Malacostraca	Arthropoda			X	X	X
Micrura sp.	Micrura		Micrura	Lineidae	Heteronemertea	Anopla	Nemertea					X
Micrura spp.	Micrura		Micrura	Lineidae	Heteronemertea	Anopla	Nemertea			X		
Minuspio cirrifera	Minuspio cirrifera	cirrifera	Minuspio	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X			
Mitrella lunata	Mitrella lunata	lunata	Mitrella	Columbellidae	Neogastropoda	Gastropoda	Mollusca	X	X	X	X	X
Molgula manhattensis	Molgula manhattensis	manhattensis	Molgula	Molgulidae	Pleurogona	Ascidiacea	Chordata				X	X
Molgula sp.	Molgula		Molgula	Molgulidae	Pleurogona	Ascidiacea	Chordata		X			X
Monocorophium acherusicum	Monocorophium acherusicum	acherusicum	Monocorophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Monocorophium insidiosum	Monocorophium insidiosum	insidiosum	Monocorophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda		X			X
Monocorophium tuberculatum	Monocorophium tuberculatum	tuberculatum	Monocorophium	Corophiidae	Amphipoda	Malacostraca	Arthropoda		X		X	
Monoculodes edwardsi	Monoculodes edwardsi	edwardsi	Monoculodes	Oedicerotidae	Amphipoda	Malacostraca	Arthropoda		X			
Montacuta percompressa	Montacuta percompressa	percompressa	Montacuta	Lasaeidae	Veneroida	Bivalvia	Mollusca			X		
Monticellina baptisteae	Tharyx		Tharyx	Cirratulidae	Canalipalpata	Polychaeta	Annelida			X	X	X
Monticellina dorsobranchialis	Tharyx dorsobranchialis	dorsobranchialis	Tharyx	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Mulinia lateralis	Mulinia lateralis	lateralis	Mulinia	Mactridae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Mya arenaria	Mya arenaria	arenaria	Mya	Myidae	Myoida	Bivalvia	Mollusca	X	X	X	X	X
Mysella planulata	Mysella planulata	planulata	Mysella	Lasaeidae	Veneroida	Bivalvia	Mollusca	X	X	X		
Mysidacea spp.	Lophogastrida				Lophogastrida	Malacostraca	Arthropoda			X		
Mytilidae	Mytilidae			Mytilidae	Mytiloida	Bivalvia	Mollusca	X	X			
Mytilidae spp.	Mytilidae			Mytilidae	Mytiloida	Bivalvia	Mollusca			X		
Mytilus edulis	Mytilus edulis	edulis	Mytilus	Mytilidae	Mytiloida	Bivalvia	Mollusca	X		X	X	X
Nassarius trivittatus	Nassarius trivittatus	trivittatus	Nassarius	Nassariidae	Neogastropoda	Gastropoda	Mollusca	X	X			
Natica pusilla	Natica pusilla	pusilla	Natica	Naticidae	Neotaenioglossa	Gastropoda	Mollusca	X	X			
Neanthes acuminata	Neanthes acuminata	acuminata	Neanthes	Nereididae	Aciculata	Polychaeta	Annelida	X	X			
Neanthes arenaceodentata	Neanthes arenaceodentata	arenaceodentata	Neanthes	Nereididae	Aciculata	Polychaeta	Annelida				X	X
Neanthes succinea	Neanthes succinea	succinea	Neanthes	Nereididae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Neanthes virens	Neanthes virens	virens	Neanthes	Nereididae	Aciculata	Polychaeta	Annelida				X	X
Nematoda	Nemata						Nemata					X
Nemertea spp.	Nemertea						Nemertea	X		X		
Nemertinea	Nemertea						Nemertea		X			
Neomysis americana	Neomysis americana	americana	Neomysis	Mysidae	Mysida	Malacostraca	Arthropoda		X	X		X
Nephtyidae	Nephtyidae			Nephtyidae	Aciculata	Polychaeta	Annelida	X	X			
Nephtys cornuta	Nephtys cornuta	cornuta	Nephtys	Nephtyidae	Aciculata	Polychaeta	Annelida			X		
Nephtys incisa	Nephtys incisa	incisa	Nephtys	Nephtyidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Nephtys picta	Nephtys picta	picta	Nephtys	Nephtyidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Nephtys spp.	Nephtys		Nephtys	Nephtyidae	Aciculata	Polychaeta	Annelida	X				
Nereidae	Nereididae			Nereididae	Aciculata	Polychaeta	Annelida	X	X		X	X
Nereididae spp.	Nereididae			Nereididae	Aciculata	Polychaeta	Annelida			X		
Nereis arenaceodonta	Nereis arenaceodonta	arenaceodonta	Nereis	Nereididae	Aciculata	Polychaeta	Annelida			X		
Nereis grayi	Nereis grayi	grayi	Nereis	Nereididae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Nereis spp.	Nereis		Nereis	Nereididae	Aciculata	Polychaeta	Annelida			X		
Neverita duplicata	Neverita duplicata	duplicata	Neverita	Naticidae	Neotaenioglossa	Gastropoda	Mollusca				X	
Nicolea zostericola	Nicolea zostericola	zostericola	Nicolea	Terebellidae	Canalipalpata	Polychaeta	Annelida				X	X
Ninoe nigripes	Ninoe nigripes	nigripes	Ninoe	Lumbrineridae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Notocirrus spiniferus	Notocirrus spiniferus	spiniferus	Notocirrus	Oenonidae	Aciculata	Polychaeta	Annelida	X	X	X		
Notodelphyidae	Notodelphyidae			Notodelphyidae	Cyclopoida	Maxillopoda	Arthropoda		X			
Notomastus latericeus	Notomastus latericeus	latericeus	Notomastus	Capitellidae		Polychaeta	Annelida		X	X	X	X
Nucula annulata	Nucula annulata	annulata	Nucula	Nuculidae	Nuculoida	Bivalvia	Mollusca			X	X	X
Nucula delphinodonta	Nucula delphinodonta	delphinodonta	Nucula	Nuculidae	Nuculoida	Bivalvia	Mollusca	X	X	X		

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Nucula proxima	Nucula proxima	proxima	Nucula	Nuculidae	Nuculoida	Bivalvia	Mollusca	X	X	X	X	X
Nucula sp.	Nucula		Nucula	Nuculidae	Nuculoida	Bivalvia	Mollusca		X			
Nucula spp.	Nucula		Nucula	Nuculidae	Nuculoida	Bivalvia	Mollusca	X		X		
Nuculana sp.	Nuculana		Nuculana	Nuculanidae	Nuculoida	Bivalvia	Mollusca		X			
Nudibranchia	Nudibranchia				Nudibranchia	Gastropoda	Mollusca					X
Nudibranchia spp.	Nudibranchia				Nudibranchia	Gastropoda	Mollusca			X		
Obelia bidentata	Obelia bidentata	bidentata	Obelia	Campanulariidae	Hydroida	Hydrozoa	Cnidaria				X	X
Obelia dichotoma	Obelia dichotoma	dichotoma	Obelia	Campanulariidae	Hydroida	Hydrozoa	Cnidaria					X
Odontosyllis fulgurans	Odontosyllis fulgurans	fulgurans	Odontosyllis	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Odostomia bisuturalis	Odostomia bisuturalis	bisuturalis	Boonea	Pyramidellidae	Heterostropha	Gastropoda	Mollusca		X		X	
Odostomia dealbata	Odostomia dealbata	dealbata	Odostomia	Pyramidellidae	Heterostropha	Gastropoda	Mollusca	X	X			
Odostomia eburnea	Odostomia eburnea	eburnea	Odostomia	Pyramidellidae	Heterostropha	Gastropoda	Mollusca	X		X	X	X
Odostomia sp.	Odostomia		Odostomia	Pyramidellidae	Heterostropha	Gastropoda	Mollusca		X			
Odostomia spp.	Odostomia		Odostomia	Pyramidellidae	Heterostropha	Gastropoda	Mollusca	X				
Odostomia striata	Odostomia striata	striata	Odostomia	Pyramidellidae	Heterostropha	Gastropoda	Mollusca					X
Oedicerotidae	Oedicerotidae			Oedicerotidae	Amphipoda	Malacostraca	Arthropoda		X			
Oenonidae	Oenonidae			Oenonidae	Aciculata	Polychaeta	Annelida					X
Oligochaeta	Oligochaeta					Clitellata	Annelida	X	X		X	X
Oligochaeta spp.	Oligochaeta					Clitellata	Annelida			X		
Onuphidae	Onuphidae			Onuphidae	Aciculata	Polychaeta	Annelida				X	
Onuphidae spp.	Onuphidae			Onuphidae	Aciculata	Polychaeta	Annelida			X		
Ophiura spp.	Ophiura		Ophiura	Ophiuridae	Ophiurida	Ophiuroidea	Echinodermata			X		
Ophiuroidea	Ophiuroidea					Ophiuroidea	Echinodermata	X	X		X	X
Ophiuroidea spp.	Ophiuroidea					Ophiuroidea	Echinodermata			X		
Orbinia swani	Orbinia swani	swani	Orbinia	Orbiniidae		Polychaeta	Annelida		X			
Ostracoda	Ostracoda					Ostracoda	Arthropoda	X	X			X
Ovalipes ocellatus	Ovalipes ocellatus	ocellatus	Ovalipes	Portunidae	Decapoda	Malacostraca	Arthropoda	X				
Owenia fusiformis	Owenia fusiformis	fusiformis	Owenia	Oweniidae	Canalipalpata	Polychaeta	Annelida		X	X	X	
Oweniidae	Oweniidae			Oweniidae	Canalipalpata	Polychaeta	Annelida					X
Oxyurostylis smithi	Oxyurostylis smithi	smithi	Oxyurostylis	Diastylidae	Cumacea	Malacostraca	Arthropoda	X	X	X	X	X
Pagurus annulipes	Pagurus annulipes	annulipes	Pagurus	Paguridae	Decapoda	Malacostraca	Arthropoda			X	X	X
Pagurus longicarpus	Pagurus longicarpus	longicarpus	Pagurus	Paguridae	Decapoda	Malacostraca	Arthropoda	X	X	X	X	X
Pagurus pollicaris	Pagurus pollicaris	pollicaris	Pagurus	Paguridae	Decapoda	Malacostraca	Arthropoda				X	
Pagurus sp.	Pagurus		Pagurus	Paguridae	Decapoda	Malacostraca	Arthropoda		X			
Pagurus spp.	Pagurus		Pagurus	Paguridae	Decapoda	Malacostraca	Arthropoda			X		
Palaemonetes pugio	Palaemonetes pugio	pugio	Palaemonetes	Palaemonidae	Decapoda	Malacostraca	Arthropoda	X				X
Palaemonetes vulgaris	Palaemonetes vulgaris	vulgaris	Palaemonetes	Palaemonidae	Decapoda	Malacostraca	Arthropoda		X	X	X	X
Pandora glacialis	Pandora glacialis	glacialis	Pandora	Pandoridae	Pholadomyoida	Bivalvia	Mollusca					X
Pandora gouldiana	Pandora gouldiana	gouldiana	Pandora	Pandoridae	Pholadomyoida	Bivalvia	Mollusca				X	
Pandora inflata	Pandora inflata	inflata	Pandora	Pandoridae	Pholadomyoida	Bivalvia	Mollusca					X
Pandora sp.	Pandora		Pandora	Pandoridae	Pholadomyoida	Bivalvia	Mollusca		X		X	
Panopeus herbstii	Panopeus herbstii	herbstii	Panopeus	Panopeidae	Decapoda	Malacostraca	Arthropoda			X		
Paracaprella tenuis	Paracaprella tenuis	tenuis	Paracaprella	Pariambidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Paradoneis lyra	Paradoneis lyra	lyra	Paradoneis	Paraonidae		Polychaeta	Annelida			X		
Parametopella sp.	Parametopella		Parametopella	Stenothoidae	Amphipoda	Malacostraca	Arthropoda	X	X			
Paranaitis speciosa	Paranaitis speciosa	speciosa	Paranaitis	Phyllodocidae	Aciculata	Polychaeta	Annelida	X	X	X		X
Paraninoe brevipes	Lumbrineris brevipes	brevipes	Lumbrineris	Lumbrineridae	Aciculata	Polychaeta	Annelida			X		
Paraonidae	Paraonidae			Paraonidae		Polychaeta	Annelida		X			X
Paraonis fulgens	Paraonis fulgens	fulgens	Paraonis	Paraonidae		Polychaeta	Annelida	X	X	X		
Parapionosyllis longicirrata	Parapionosyllis longicirrata	longicirrata	Parapionosyllis	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Parasmittina nitida	Parasmittina nitida	nitida	Parasmittina	Mucronellidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	
Parougia caeca	Parougia caeca	caeca	Parougia	Dorvilleidae	Aciculata	Polychaeta	Annelida	X		X	X	X
Pectinaria gouldi	Pectinaria gouldi	gouldi	Pectinaria	Pectinariidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Pectinaria spp.	Pectinaria		Pectinaria	Pectinariidae	Canalipalpata	Polychaeta	Annelida	X				

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Pectinariidae	Pectinariidae			Pectinariidae	Canalipalpata	Polychaeta	Annelida		X			
Pedicellina cernua	Pedicellina cernua	cernua	Pedicellina	Pedicellinidae	Pedicellinida		Entoprocta				X	
Pentamera calcigera	Pentamera calcigera	calcigera	Pentamera	Phyllophoridae	Dendrochirotida	Holothuroidea	Echinodermata					X
Perigonimus jonesi	Perigonimus jonesi	jonesi	Perigonimus	Bougainvilliidae	Hydroida	Hydrozoa	Cnidaria				X	
Periploma leanum	Periploma leanum	leanum	Periploma	Periplomatidae	Pholadomyoida	Bivalvia	Mollusca					X
Petricola pholadiformis	Petricola pholadiformis	pholadiformis	Petricola	Petricolidae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Phascolion strombi	Phascolion strombi	strombi	Phascolion	Golfingiidae			Sipuncula			X	X	
Phascolopsis gouldii	Phascolopsis gouldi	gouldi	Phascolopsis	Sipunculidae			Sipuncula			X		
Pherusa affinis	Pherusa affinis	affinis	Pherusa	Flabelligeridae	Canalipalpata	Polychaeta	Annelida		X	X		X
Pholoe minuta	Pholoe minuta	minuta	Pholoe	Pholoidae	Aciculata	Polychaeta	Annelida	X	X		X	X
Phoronis architecta	Phoronis architecta	architecta	Phoronis	Phoronidae			Phoronida	X				
Phoxocephalus holbolli	Phoxocephalus holbolli	holbolli	Phoxocephalus	Phoxocephalidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	
Phyllodoce arenae	Phyllodoce arenae	arenae	Phyllodoce	Phyllodocidae	Aciculata	Polychaeta	Annelida	X		X	X	X
Phyllodocidae	Phyllodocidae			Phyllodocidae	Aciculata	Polychaeta	Annelida	X	X			
Phyllodocidae spp.	Phyllodocidae			Phyllodocidae	Aciculata	Polychaeta	Annelida			X		
Pilargidae	Pilargidae			Pilargidae	Aciculata	Polychaeta	Annelida					X
Pinnixa chaetopterana	Pinnixa chaetopterana	chaetopterana	Pinnixa	Pinnotheridae	Decapoda	Malacostraca	Arthropoda		X	X		X
Pinnixa sayana	Pinnixa sayana	sayana	Pinnixa	Pinnotheridae	Decapoda	Malacostraca	Arthropoda	X	X	X	X	X
Pinnixa sp.	Pinnixa		Pinnixa	Pinnotheridae	Decapoda	Malacostraca	Arthropoda		X			
Pinnixa spp.	Pinnixa		Pinnixa	Pinnotheridae	Decapoda	Malacostraca	Arthropoda	X		X		
Pinnotheridae spp.	Pinnotheridae			Pinnotheridae	Decapoda	Malacostraca	Arthropoda			X		
Pionosyllis sp.	Pionosyllis		Pionosyllis	Syllidae	Aciculata	Polychaeta	Annelida					X
Pisione remota	Pisione remota	remota	Pisione	Pisionidae	Aciculata	Polychaeta	Annelida			X		X
Pista cristata	Pista cristata	cristata	Pista	Terebellidae	Canalipalpata	Polychaeta	Annelida	X		X		X
Pista maculata	Pista maculata	maculata	Pista	Terebellidae	Canalipalpata	Polychaeta	Annelida		X	X		
Pista palmata	Pista palmata	palmata	Pista	Terebellidae	Canalipalpata	Polychaeta	Annelida		X	X	X	X
Pista spp.	Pista		Pista	Terebellidae	Canalipalpata	Polychaeta	Annelida			X		
Pitar morrhuana	Pitar morrhuanus	morrhuanus	Pitar	Veneridae	Veneroida	Bivalvia	Mollusca		X			
Pitar morrhuanus	Pitar morrhuanus	morrhuanus	Pitar	Veneridae	Veneroida	Bivalvia	Mollusca	X		X	X	X
Platynereis dumerilii	Platynereis dumerilii	dumerilii	Platynereis	Nereididae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Podarke obscura	Podarke obscura	obscura	Podarke	Hesionidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Podocoryne carnea	Podocoryne carnea	carnea	Podocoryne	Hydractiniidae	Filifera	Hydrozoa	Cnidaria				X	
Polinices duplicatus	Polinices duplicatus	duplicatus	Polinices	Naticidae	Neotaenioglossa	Gastropoda	Mollusca		X	X		
Polinicinae	Naticidae			Naticidae	Neotaenioglossa	Gastropoda	Mollusca				X	
Polycarpa fibrosa	Polycarpa fibrosa	fibrosa	Polycarpa	Styelidae	Pleurogona	Ascidiacea	Chordata		X			
Polycirrus eximius	Polycirrus eximius	eximius	Polycirrus	Terebellidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Polycirrus medusa	Polycirrus medusa	medusa	Polycirrus	Terebellidae	Canalipalpata	Polychaeta	Annelida		X			
Polycirrus phosphoreus	Polycirrus phosphoreus	phosphoreus	Polycirrus	Terebellidae	Canalipalpata	Polychaeta	Annelida	X	X			
Polycirrus sp.	Polycirrus		Polycirrus	Terebellidae	Canalipalpata	Polychaeta	Annelida		X		X	X
Polycirrus spp.	Polycirrus		Polycirrus	Terebellidae	Canalipalpata	Polychaeta	Annelida	X		X		
Polydora cornuta	Polydora cornuta	cornuta	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Polydora neocaeca	Polydora		Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida			X		
Polydora sp.	Polydora		Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida		X		X	X
Polydora spp.	Polydora		Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida	X				
Polydora websteri	Polydora websteri	websteri	Polydora	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Polygordius sp.	Polygordius		Polygordius	Polygordiidae	Canalipalpata	Polychaeta	Annelida					X
Polygordius sp. a	Polygordius		Polygordius	Polygordiidae	Canalipalpata	Polychaeta	Annelida			X		
Polyonyx gibbesi	Polyonyx gibbesi	gibbesi	Polyonyx	Porcellanidae	Decapoda	Malacostraca	Arthropoda	X	X	X		X
Pontogeneia inermis	Pontogeneia inermis	inermis	Pontogeneia	Eusiridae	Amphipoda	Malacostraca	Arthropoda				X	
Porcellanidae spp.	Porcellanidae			Porcellanidae	Decapoda	Malacostraca	Arthropoda			X		
Potamilla reniformis	Potamilla reniformis	reniformis	Potamilla	Sabellidae	Canalipalpata	Polychaeta	Annelida					X
Pougia caeca	Pougia caeca	caeca							X			
Priapulus caudatus	Priapulus caudatus	caudatus	Priapulus	Priapulidae			Priapula			X		
Prionospio (minuspio) perkinsi	Prionospio perkinsi	perkinsi	Prionospio	Spionidae	Canalipalpata	Polychaeta	Annelida			X	X	X

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Prionospio heterobranchia	Prionospio heterobranchia	heterobranchia	Prionospio	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Prionospio sp.	Prionospio		Prionospio	Spionidae	Canalipalpata	Polychaeta	Annelida		X		X	
Prionospio steenstrupi	Prionospio steenstrupi	steenstrupi	Prionospio	Spionidae	Canalipalpata	Polychaeta	Annelida		X		X	X
Proboloides holmesi	Proboloides holmesi	holmesi	Proboloides	Stenothoidae	Amphipoda	Malacostraca	Arthropoda				X	
Procephalothrix spiralis	Procephalothrix spiralis	spiralis	Procephalothrix	Cephalothricidae	Paleonemertea	Anopla	Nemertea					X
Proceraea cornuta	Autolytus cornutus	cornutus	Autolytus	Syllidae	Aciculata	Polychaeta	Annelida				X	
Propebela turricula	Propebela turricula	turricula	Propebela	Conidae	Neogastropoda	Gastropoda	Mollusca			X		
Prosuberites sp.	Prosuberites		Prosuberites	Suberitidae	Hadromerida	Demospongiae	Porifera				X	
Protodorvillea gaspeensis	Protodorvillea gaspeensis	gaspeensis	Protodorvillea	Dorvilleidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Pseudopotamilla reniformis	Potamilla reniformis	reniformis	Potamilla	Sabellidae	Canalipalpata	Polychaeta	Annelida		X			
Ptilanthura tenuis	Ptilanthura tenuis	tenuis	Ptilanthura	Anthuridae	Isopoda	Malacostraca	Arthropoda			X	X	X
Ptilanthura tricarina	Ptilanthura tricarina	tricarina	Ptilanthura	Anthuridae	Isopoda	Malacostraca	Arthropoda		X			
Pygospio elegans	Pygospio elegans	elegans	Pygospio	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X		X	X
Pythinella cuneata	Pythinella cuneata	cuneata	Pythinella	Lasaeidae	Veneroida	Bivalvia	Mollusca			X		
Rhepoxynius epistomus	Rhepoxynius epistomus	epistomus	Rhepoxynius	Phoxocephalidae	Amphipoda	Malacostraca	Arthropoda	X				
Rhepoxynius hudsoni	Rhepoxynius hudsoni	hudsoni	Rhepoxynius	Phoxocephalidae	Amphipoda	Malacostraca	Arthropoda			X	X	X
Rhepoxynus epistomus	Rhepoxynius epistomus	epistomus	Rhepoxynius	Phoxocephalidae	Amphipoda	Malacostraca	Arthropoda		X			
Rictaxis punctostriatus	Rictaxis punctostriatus	punctostriatus	Rictaxis	Acteonidae	Heterostropha	Gastropoda	Mollusca	X	X	X	X	X
Rudilemboides naglei	Rudilemboides naglei	naglei	Rudilemboides	Aoridae	Amphipoda	Malacostraca	Arthropoda			X	X	X
Rudilemboides sp.	Rudilemboides		Rudilemboides	Aoridae	Amphipoda	Malacostraca	Arthropoda	X	X			
Sabaco elongatus	Asychis elongata	elongata	Asychis	Maldanidae		Polychaeta	Annelida	X				
Sabella microphthalma	Demonax microphthalmus	microphthalmus	Demonax	Sabellidae	Canalipalpata	Polychaeta	Annelida	X	X			
Sabellaria vulgaris	Sabellaria vulgaris	vulgaris	Sabellaria	Sabellariidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Saccoglossus kowalevskii	Saccoglossus kowalevskii	kowalevskii	Saccoglossus	Harrimaniidae		Enteropneusta	Hemichordata			X	X	X
Sacoglossa	Sacoglossa				Sacoglossa	Gastropoda	Mollusca					X
Scalibregma inflatum	Scalibregma inflatum	inflatum	Scalibregma	Scalibregmatidae		Polychaeta	Annelida	X	X		X	X
Schizoporella cornuta	Schizoporella cornuta	cornuta	Schizoporella	Schizoporellidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	X
Schizoporella unicornis	Schizoporella unicornis	unicornis	Schizoporella	Schizoporellidae	Cheilostomata	Gymnolaemata	Ectoprocta				X	X
Sclerodactyla briareus	Sclerodactyla briareus	briareus	Sclerodactyla	Cucumariidae	Dendrochirotida	Holothuroidea	Echinodermata					X
Scolelepis bousfieldi	Scolelepis bousfieldi	bousfieldi	Scolelepis	Spionidae	Canalipalpata	Polychaeta	Annelida			X	X	X
Scolelepis sp.	Scolelepis		Scolelepis	Spionidae	Canalipalpata	Polychaeta	Annelida		X		X	X
Scolelepis spp.	Scolelepis		Scolelepis	Spionidae	Canalipalpata	Polychaeta	Annelida			X		
Scolelepis texana	Scolelepis texana	texana	Scolelepis	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Scoletoma acicularum	Lumbrineris acicularum	acicularum	Lumbrineris	Lumbrineridae	Aciculata	Polychaeta	Annelida	X		X		
Scoletoma hebes	Lumbrineris hebes	hebes	Lumbrineris	Lumbrineridae	Aciculata	Polychaeta	Annelida		X	X	X	X
Scoletoma sp.	Lumbrineris		Lumbrineris	Lumbrineridae	Aciculata	Polychaeta	Annelida		X			
Scoletoma tenuis	Lumbrineris tenuis	tenuis	Lumbrineris	Lumbrineridae	Aciculata	Polychaeta	Annelida	X	X	X		
Scoloplos (leodamus) rubra	Scoloplos rubra	rubra	Scoloplos	Orbiniidae		Polychaeta	Annelida		X	X	X	
Scoloplos riseri	Orbinia riseri	riseri	Orbinia	Orbiniidae		Polychaeta	Annelida				X	
Scoloplos spp.	Scoloplos		Scoloplos	Orbiniidae		Polychaeta	Annelida			X		
Seila adamsi	Seila adamsi	adamsi	Seila	Cirrithiopsidae	Neotaenioglossa	Gastropoda	Mollusca		X	X	X	X
Serpulidae	Serpulidae			Serpulidae	Canalipalpata	Polychaeta	Annelida		X			
Sertularia cupressina	Sertularia cupressina	cupressina	Sertularia	Sertulariidae	Hydroida	Hydrozoa	Cnidaria				X	
Siliqua costata	Siliqua costata	costata	Siliqua	Pharidae	Veneroida	Bivalvia	Mollusca	X	X			
Sipuncula	Sipuncula						Sipuncula		X			
Solemya spp.	Solemya		Solemya	Solemyidae	Solemyoida	Bivalvia	Mollusca	X				
Solemya velum	Solemya velum	velum	Solemya	Solemyidae	Solemyoida	Bivalvia	Mollusca		X	X	X	X
Sphaerodoropsis minuta	Sphaerodoropsis minuta	minuta	Sphaerodoropsis	Sphaerodoridae	Aciculata	Polychaeta	Annelida		X	X		X
Sphaerosyllis erinaceus	Sphaerosyllis erinaceus	erinaceus	Sphaerosyllis	Syllidae	Aciculata	Polychaeta	Annelida	X				
Sphaerosyllis hystrix	Sphaerosyllis hystrix	hystrix	Sphaerosyllis	Syllidae	Aciculata	Polychaeta	Annelida	X				
Sphaerosyllis longicauda	Sphaerosyllis longicauda	longicauda	Sphaerosyllis	Syllidae	Aciculata	Polychaeta	Annelida		X	X	X	X
Sphaerosyllis taylori	Sphaerosyllis taylori	taylori	Sphaerosyllis	Syllidae	Aciculata	Polychaeta	Annelida		X	X		X
Spio setosa	Spio setosa	setosa	Spio	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Spio sp.	Spio		Spio	Spionidae	Canalipalpata	Polychaeta	Annelida		X			

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Spiochaetopterus oculatus	Spiochaetopterus oculatus	oculatus	Spiochaetopterus	Chaetopteridae	Canalipalpata	Polychaeta	Annelida	X	X	X		X
Spionidae	Spionidae			Spionidae	Canalipalpata	Polychaeta	Annelida	X	X			X
Spionidae spp.	Spionidae			Spionidae	Canalipalpata	Polychaeta	Annelida			X		
Spiophanes bombyx	Spiophanes bombyx	bombyx	Spiophanes	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Spisula solidissima	Spisula solidissima	solidissima	Spisula	Mactridae	Veneroida	Bivalvia	Mollusca	X	X			X
Spurwinkia salsa	Spurwinkia salsa	salsa	Spurwinkia	Hydrobiidae	Neotaenioglossa	Gastropoda	Mollusca			X	X	X
Squilla empusa	Squilla empusa	empusa	Squilla	Squillidae	Stomatopoda	Malacostraca	Arthropoda				X	
Stenothoe minuta	Stenothoe minuta	minuta	Stenothoe	Stenothoidae	Amphipoda	Malacostraca	Arthropoda		X	X	X	
Stenothoidae spp.	Stenothoidae			Stenothoidae	Amphipoda	Malacostraca	Arthropoda			X		
Sthenelais boa	Sthenelais boa	boa	Sthenelais	Sigalionidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Streblospio benedicti	Streblospio benedicti	benedicti	Streblospio	Spionidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Streptosyllis ? varians	Streptosyllis varians	varians	Streptosyllis	Syllidae	Aciculata	Polychaeta	Annelida			X		
Streptosyllis cf. websteri	Streptosyllis websteri	websteri	Streptosyllis	Syllidae	Aciculata	Polychaeta	Annelida				X	
Stylochus ellipticus	Stylochus ellipticus	ellipticus	Stylochus	Stylochidae	Polycladida	Turbellaria	Platyhelminthes					X
Syllidae	Syllidae			Syllidae	Aciculata	Polychaeta	Annelida		X		X	X
Syllidae spp.	Syllidae			Syllidae	Aciculata	Polychaeta	Annelida			X		
Syllides cf. verrilli	Syllides setosa	setosa	Syllides	Syllidae	Aciculata	Polychaeta	Annelida	X	X	X	X	X
Syllides convoluta	Syllides longocirrata	longocirrata	Syllides	Syllidae	Aciculata	Polychaeta	Annelida					X
Syllides japonica	Syllides japonica	japonica	Syllides	Syllidae	Aciculata	Polychaeta	Annelida				X	
Syllis (typosyllis) sp.	Syllidae			Syllidae	Aciculata	Polychaeta	Annelida	X				
Syllis cornuta	Syllis cornuta	cornuta	Syllis	Syllidae	Aciculata	Polychaeta	Annelida	X	X			
Syllis gracilis	Syllis gracilis	gracilis	Syllis	Syllidae	Aciculata	Polychaeta	Annelida					X
Tagelus divisus	Tagelus divisus	divisus	Tagelus	Solecurtidae	Veneroida	Bivalvia	Mollusca					X
Tectonatica pusilla	Tectonatica pusilla	pusilla	Tectonatica	Naticidae	Neotaenioglossa	Gastropoda	Mollusca			X	X	X
Tellina agilis	Tellina agilis	agilis	Tellina	Tellinidae	Veneroida	Bivalvia	Mollusca	X	X	X	X	X
Tellinidae	Tellinidae			Tellinidae	Veneroida	Bivalvia	Mollusca	X	X		X	X
Tellinidae spp.	Tellinidae			Tellinidae	Veneroida	Bivalvia	Mollusca			X		
Terebella lapidaria	Terebella lapidaria	lapidaria	Terebella	Terebellidae	Canalipalpata	Polychaeta	Annelida					X
Terebellidae	Terebellidae			Terebellidae	Canalipalpata	Polychaeta	Annelida	X	X		X	
Terebellidae spp.	Terebellidae			Terebellidae	Canalipalpata	Polychaeta	Annelida			X		
Tetrastemma candidum	Tetrastemma candidum	candidum	Tetrastemma	Tetrastemmatidae	Hoplonemertea	Enopla	Nemertea					X
Thalassinidea spp.	Thalassinidea				Decapoda	Malacostraca	Arthropoda			X		
Tharyx acutus	Tharyx acutus	acutus	Tharyx	Cirratulidae	Canalipalpata	Polychaeta	Annelida	X	X	X	X	X
Thyasira gouldi	Thyasira gouldii	gouldii	Thyasira	Thyasiridae	Veneroida	Bivalvia	Mollusca				X	
Thyasira gouldii	Thyasira gouldii	gouldii	Thyasira	Thyasiridae	Veneroida	Bivalvia	Mollusca	X	X	X		X
Travisia forbesii	Travisia forbesii	forbesii	Travisia	Opheliidae		Polychaeta	Annelida		X			
Tubulanus sp.	Tubulanus		Tubulanus	Tubulanidae	Paleonemertea	Anopla	Nemertea				X	X
Turbellaria	Turbellaria					Turbellaria	Platyhelminthes	X	X		X	X
Turbellaria spp.	Turbellaria					Turbellaria	Platyhelminthes			X		
Turbonilla aequalis	Turbonilla aequalis	aequalis	Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca		X	X	X	X
Turbonilla areolata	Turbonilla interrupta	interrupta	Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca			X		
Turbonilla elegantula	Turbonilla elegantula	elegantula	Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca			X	X	X
Turbonilla interrupta	Turbonilla interrupta	interrupta	Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca	X	X			X
Turbonilla sp.	Turbonilla		Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca		X		X	X
Turbonilla spp.	Turbonilla		Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca	X		X		
Turbonilla sumneri	Turbonilla sumneri	sumneri	Turbonilla	Pyramidellidae	Heterostropha	Gastropoda	Mollusca		X	X		
Turritellopsis acicula	Turritellopsis acicula	acicula	Turritellopsis	Mathildidae	Heterostropha	Gastropoda	Mollusca			X		
Typosyllis alternata	Typosyllis alternata	alternata	Typosyllis	Syllidae	Aciculata	Polychaeta	Annelida	X		X	X	X
Typosyllis regulata	Typosyllis regulata	regulata	Typosyllis	Syllidae	Aciculata	Polychaeta	Annelida			X		
Unciola dissimilis	Unciola dissimilis	dissimilis	Unciola	Corophiidae	Amphipoda	Malacostraca	Arthropoda			X	X	
Unciola irrorata	Unciola irrorata	irrorata	Unciola	Corophiidae	Amphipoda	Malacostraca	Arthropoda	X	X	X	X	X
Unciola serrata	Unciola serrata	serrata	Unciola	Corophiidae	Amphipoda	Malacostraca	Arthropoda	X	X		X	
Unciola spp.	Unciola		Unciola	Corophiidae	Amphipoda	Malacostraca	Arthropoda			X		
Upogebia affinis	Upogebia affinis	affinis	Upogebia	Upogebiidae	Decapoda	Malacostraca	Arthropoda	X	X	X	X	X

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Urosalpinx cinerea	Urosalpinx cinerea	cinerea	Urosalpinx	Muricidae	Neogastropoda	Gastropoda	Mollusca				X	X
Xanthidae	Xanthidae			Xanthidae	Decapoda	Malacostraca	Arthropoda		X			
Xanthidae spp.	Xanthidae			Xanthidae	Decapoda	Malacostraca	Arthropoda			X		
Yoldia limatula	Yoldia limatula	limatula	Yoldia	Yoldiidae	Nuculoida	Bivalvia	Mollusca	X	X	X	X	X
Yoldia sapotilla	Yoldia sapotilla	sapotilla	Yoldia	Yoldiidae	Nuculoida	Bivalvia	Mollusca			X		
Yoldia sp.	Yoldia		Yoldia	Yoldiidae	Nuculoida	Bivalvia	Mollusca		X		X	X
Yoldia spp.	Yoldia		Yoldia	Yoldiidae	Nuculoida	Bivalvia	Mollusca	X		X		
Zaops ostreum	Zaops ostreum	ostreum	Zaops	Pinnotheridae	Decapoda	Malacostraca	Arthropoda			X		X
Zygonemertes virescens	Zygonemertes virescens	virescens	Zygonemertes	Amphiporidae	Hoplonemertea	Enopla	Nemertea					X

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