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Soil Pre-Design Investigation Report

for

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Old Fire Fighting Training Area
Naval Station Newport
Newport, Rhode Island

Engineering Field Activity Northeast
Naval Facilities Engineering Command

Contract Number N62467-94-D-0888
Contract Task Order 0833

July 2004

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July 15, 2004

Project Number N4152

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Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order No. 0833

Subject: Transmittal of Draft Soil Pre-Design Investigation Report
Old Fire Fighting Training Area
Naval Station Newport, Newport, Rhode Island

Dear Mr. Frye:

Enclosed for your review are four copies of the Draft Soil Pre-Design Investigation Report for the Old Fire Fighting Training Area, Naval Station Newport, Newport, Rhode Island. In accordance with the scope of work, additional copies of this document have been provided to the recipients on the distribution list below for their review and comment.

If you have any questions regarding this material, please do not hesitate to contact me or Jim Forrelli.

Very truly yours,

James R. Forrelli/for
Stephen S. Parker, LSP
Project Manager

JRF/rp

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W5204308D

SOIL PRE-DESIGN INVESTIGATION REPORT

FOR

OLD FIRE FIGHTING TRAINING AREA
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION - NAVY (CLEAN) CONTRACT

Submitted to:
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Environmental Branch, (Code EV2)
Environmental Field Activity, Northeast
Naval Facilities Engineering Command
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Contract Task Order 0833

July 2004

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1.0 INTRODUCTION

This report presents the results of the pre-design investigation (PDI) for soils at the Old Fire Fighting Training Area (OFFTA Site or Site) conducted under Contract Task Order (CTO) 833, under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract No. N62467-94-D-0888. Pursuant to the CTO, Tetra Tech NUS, Inc. carried out a soil pre-design investigation at the OFFTA Site, at Naval Station Newport (NAVSTA Newport), in Newport, Rhode Island. The objective of the PDI was to acquire data to assess the horizontal and vertical extent of construction debris, and the extent of soil contamination to determine the volume of debris and soil that will be removed in each of two planned actions. The first action, addressed in the Mound Action Memorandum, will remove debris and soil contained in three mounds above the base grade elevation of the Site. The second action will remove soil and fill exceeding removal action goals located below the base grade elevation of the site (subsurface material). These subsurface materials are the subject of this Soil Pre-Design Investigation Report.

Removal action goals are to be established for the site in order to target contaminants for removal that pose risk to receptors under expected future use of the property. In the RI and the FS reports, Contaminants of Potential Concern (COPCs) were identified as those contaminants that provide risk at or above the target risk levels set by the EPA and RIDEM. In the Feasibility Study and supporting documents, Preliminary Remediation Goals (PRGs) were calculated for those COPCs using the exposure assumptions used for the risk assessment, but also with consideration to RIDEM regulatory guidelines, and chemical-specific ARARs. Removal action goals are typically derived from the PRGs and documented in the decision documents (ROD or Action Memo) for the site.

Because removal action goals have not yet been selected, contaminant concentrations measured at the site in this Soil Pre-Design Investigation were compared with selected PRGs published in the FS. Refer to Table 1-1 for OFFTA Site PRGs. However, the data collected during this Soil Pre-Design Investigation has been used to provide a basis for the recommendation of removal action goals. Recommended removal action goals and associated target excavation depths are provided in Section 5 of this report.

This report includes five sections and five appendices:

- Section 1.0 – Introduction (this section);
- Section 2.0 – Background Information provides an expanded site history discussion, a summary of previous studies and findings, and a description of the soil removal action goals;
- Section 3.0 – Site investigation Activities describes the PDI activities;

Section 4.0 – Investigation Findings presents the results of the RI and PDI specific to the subsurface soils; and

Section 5.0 – Subsurface Discussion provides an evaluation of the subsurface soil results, and recommendations of removal action goals and recommendations of target excavation depths.

This information is supported by the following appendices:

Appendix A – Site Photographs
Appendix B – Soil Boring Logs
Appendix C – Survey Data
Appendix D – Chemical Data
Appendix E – Calculations

2.0 BACKGROUND INFORMATION

This section presents background information for the OFFTA Site, including its location and description, its history, and a brief summary of previous investigations results.

2.1 SITE LOCATION AND DESCRIPTION

NAVSTA Newport is located approximately 60 miles southwest of Boston, Massachusetts, and 25 miles south of Providence, Rhode Island. It occupies approximately 1,063 acres, with portions of the facility located in the City of Newport and Towns of Middletown and Portsmouth, Rhode Island. The facility layout is long and narrow, following the western shoreline of Aquidneck Island for approximately 6 miles facing the east passage of Narragansett Bay.

2.1.1 Site Conditions

The OFFTA Site is located at the northern end of Coasters Harbor Island (see Figure 2-1). Site photographs are presented in Appendix A. The Site occupies approximately 5.5 acres and is bordered by Taylor Drive to the south and is surrounded by Coasters Harbor (part of Narragansett Bay) to the east, north, and west. With the exception of three mounds, which are the main Site topographic features, the OFFTA Site is generally flat, with base grade surface elevations ranging from 8 to 12 feet above MLW. The mounds are scheduled to be removed between June and October, 2004.

The shoreline has been partially eroded by wave action, particularly on the western side of the Site. Tide change over a six month period ranges between 2.6 and 4.5 vertical feet (Newport).

The Site is entirely vegetated with grass except for a gravel-surfaced temporary parking lot located in the center portion of the site. The temporary parking lot was occupied by a baseball field until 2002. A one-story concrete block building (Building 144), used for recruiting offices, is located along the southern side of the Site. Recreational equipment north of the building has been fenced off to restrict access. Access to the Site is restricted by a chain link fence along its eastern, southern, and western sides, except for the temporary parking lot, which has been cordoned off from the rest of the site.

2.1.2 Geology and Hydrogeology

The geology and hydrogeologic conditions at the OFFTA Site are summarized in the RI Report (TtNUS, 2001). The following paragraphs summarize the conclusions from the RI Report.

Geologic cross sections from the RI Report indicate the Site is underlain by sand and gravel fill containing construction debris; sand and gravel containing variable amounts of silt; peat; dense silt with fine to medium sand, gravel and rock fragments (glacial till); and bedrock. Construction debris consisted generally of rock fragments, asphalt, concrete, metal, wood and glass. The thickness of the overburden ranges from approximately 6 to 27 feet excluding the thickness of the three mounds, which reportedly consist of construction debris and other materials. Two borings advanced through the largest mound, located north of Building 144, indicated it is directly underlain by bedrock. Materials underlying the two remaining mounds, located west of the former baseball field, consist of glacial till or silty sand and gravel.

Bedrock encountered beneath the Site consists of weathered phyllite and conglomerate with quartz pebbles. The Rhode Island Formation mapped in the area consists of metaconglomerates, metasandstones, schist, graphite, and carbonaceous schist. In the central portion of the Site, bedrock was blasted during Site development. Bedrock surface elevation contours indicate a bedrock "high" in the southeastern portion of the Site (east of Building 144) that drops about 5 feet and extends as a "peninsula" northwest to beneath a mound located north of Building 144. From beneath this mound, the bedrock surface slopes north toward Coasters Harbor and west toward Narragansett Bay.

2.2 SITE HISTORY

The NAVSTA Newport facility has been in use by the Navy since the era of the Civil War. During World Wars I and II, military activities at the facility increased significantly and the base provided housing for many servicemen. In subsequent peacetime years, use of on-site facilities was slowly phased out until Newport became the headquarters of the Commander Cruiser-Destroyer Force Atlantic in 1962. In April 1973, the Shore Establishment Realignment Program (SER) resulted in the reorganization of naval forces, and activity at the base again declined. This reorganization resulted in the Navy excessing some 1,629 acres of its 2,420 acres. Portions of the facility are currently leased by the Navy to the State of Rhode Island Port Authority and Economic Development Corporation. Some of these areas are, in turn, subleased to private enterprises.

The entire NAVSTA Newport was listed on the U.S. Environmental Protection Agency (EPA) National Priorities List (NPL) of abandoned or uncontrolled hazardous waste Sites in November 1989. The NPL identifies those Sites that pose a significant threat to the public health and environment. The OFFTA Site was listed as one of the Sites requiring RI/FS activities. It is currently being studied by the Navy under the Department of Defense Installation Restoration Program (IRP). This program is similar to the EPA's Superfund Program authorized under CERCLA in 1980, as amended by SARA in 1986.

A Federal Facilities Interagency Agreement (FFA) for NAVSTA Newport (then NETC) was signed by the Navy, the State of Rhode Island, and the EPA on March 23, 1992. The FFA outlines response action requirements under the Department of Defense IRP at NAVSTA Newport. The FFA was developed, in part, to provide a framework to address environmental impacts associated with past and present activities at NAVSTA Newport. As part of the FFA, regulatory agencies must review all documents pertaining to cleanup of the OFFTA site.

The OFFTA Site was home to a Navy fire fighting training facility from World War II until 1972. During the training operations, fuel oils were ignited in various structures at the Site including burn pits, so-called Christmas Tree above-ground nozzle array, and small buildings that simulated shipboard compartments. Ignited fires were then extinguished by sailors. It was reported that the two "Carrier Compartment" buildings were injected with a water/oil mixture which was subsequently set on fire for fire fighting practice. Underground piping reportedly carried the water/oil mixture to the buildings and from the buildings to an oil-water separator. Drainage piping from historic photos and maps provided in the FS report (TtNUS September 2002) show pipes from the separator discharged to Coasters Harbor to the north.

The fire fighting training facility was closed in 1972. Upon closure, the training structures were reportedly demolished and buried and compacted into mounds on the Site, and then the entire area was covered with topsoil. The Site was then converted to a recreational area with a playground, a baseball field, and a picnic area with an open pavilion and barbecue grills. The field was dedicated on July 4, 1976, and used as a recreational area until its closure in October 1998.

In its 22 years as a recreational area, the Site was used for organized activities including youth day camps, picnic functions, and little league baseball (1 year only), as well as for general recreation. A child day care center operated out of Building 144 on the Site from approximately 1983 through January 1994 when it was relocated off-site to a larger facility on base.

Aerial photos and facility maps for the period from 1939 through 1988 were reviewed to better evaluate the Site history. Activity on the Site appears to date back to approximately 1943. A 1953 facility design map indicates the locations of structures and Site features associated with fire fighting training exercises. An aerial photo taken in May 1944 depicts the Site with structures in a similar layout to that shown on the 1953 facility design map. Based on the design map and subsequent facility condition maps, on-site structures included an administration building, hose house, two carrier compartments, smothering pit, separator pit, foam pit, simulated ship structures, suction pumps, and oil tanks.

The indexes that accompanied some of the facility conditions maps indicate that the on-Site structure that was used in recent years as a day care center was once used as "wash and dressing rooms." No significant visible Site changes are noted from 1944 until a 1975 aerial photo of the Site, when the structures and facilities associated with the fire fighting training area are no longer evident, with the exception of the "hose house" and Building 144. As of 1987, the Site appears similar to its current condition, with soil mounds visible in the central and western portions of the Site and a pavilion in the east-central portion of the Site.

2.3 PREVIOUS STUDIES RESULTS

This pre-design investigation is preceded by a Remedial Investigation and a Feasibility Study completed in 2001 and 2002, respectively. Data from all prior investigations conducted by TtNUS and TRC Environmental Corporation (TRC) were assimilated into these reports, including three phases of the RI, a source removal investigation, risk assessment reports, etc. The overall findings reported in these studies are summarized below:

- Semivolatile organic compounds (SVOCs) were detected in all media across the Site. The most prevalent SVOCs detected were polynuclear aromatic hydrocarbons (PAHs) with the highest concentrations detected in surface and subsurface soil and groundwater sampling locations near Coasters Harbor. PAH concentrations in surface soils, subsurface soils, groundwater, and storm water exceed RIDEM Residential Direct Exposure Criteria for soils.

- Metals were detected throughout the Site. Metals concentrations were generally higher in site soil and groundwater relative to the same metals in background soil and upgradient groundwater locations. Metals concentrations in both surface soils and subsurface soils exceeding RIDEM Residential Direct Exposure Criteria for soils were arsenic, beryllium, lead, and manganese.

- Total petroleum hydrocarbons (TPHs) were detected in the subsurface throughout the Site exceeding RIDEM Residential Direct Exposure Criteria at depths ranging from 3 to 11 feet below ground surface (bgs). Petroleum contamination was observed visually in the central portion of the Site in soils sampled immediately above the water table.

2.4 FEASIBILITY STUDY SUMMARY

A Feasibility Study (FS) was completed in 2002 to evaluate remedial alternatives for the site. The FS (TtNUS 2002) evaluated remedial alternatives for soil groundwater and marine sediment near the site. The FS did not recommend selection of any of the alternatives, it only provided a basis to compare the

alternatives against seven criteria identified in the national contingency plan. For soil, the FS screened out cleanup technologies that were not acceptable for use at the site, and focused on three possible alternatives to reduce risk: 1) No action, 2) removal and disposal, and 3) removal, treatment and backfill.

In July 2003, the Navy recommended conducting a soil removal action as described in the FS alternative 2 – removal and disposal. This recommendation was brought to the public in a Fact Sheet, and presented at a public meeting and open house.

The first portion of the soil removal action is to conduct a soil pre-design investigation. The soil pre-design investigation is conducted to further define the extent of debris and contamination in the subsurface soil. Using the information from the pre-design investigation in conjunction with the data already documented in the RI, a detailed cost estimate can be generated and the removal action can be scoped out. This soil pre-design investigation is the subject of this report.

3.0 SUBSURFACE SOIL PRE-DESIGN INVESTIGATION ACTIVITIES

This section discusses the procedures and methodologies employed during the implementation of the Soil Pre-Design Investigation (PDI) activities, including the field investigation activities, sample analysis and data review, and data evaluation and reduction.

The objective of the OFFTA Soil PDI is to provide data to assess the horizontal and vertical extent of construction debris, and the extent of soil which exceeds selected PRGs across the site. The resulting data will be evaluated to determine the volume of material in the subsurface below the base grade that will be considered for removal. This section presents a summary of the subsurface soil investigation activities, which were conducted as part of the OFFTA Soil PDI. The resulting data is presented in this report and will support the development of the subsurface soil remedial action plans.

The PDI included advancing 30 soil borings across the site to characterize the subsurface conditions and to collect soil samples; advancing an additional 5 soil borings along the shoreline to evaluate design parameters for shoreline erosion protection measures; and surveying to locate the soil borings, map the shoreline topography, and to locate the high tide line, which will be the horizontal extent of the removal action in the planned soil removal action.

3.1 SUBSURFACE SOIL FIELD INVESTIGATIONS

Subsurface field investigation tasks included soil boring advancement and soil sample collection; and a survey. A full description of the methodology used in conducting the field investigation is presented in the Work Plan for Soil Pre-Design Investigation (TtNUS, November 2003).

3.1.1 Subsurface Soil Boring Advancement and Soil Sampling

Soil borings were advanced to evaluate the existing subsurface conditions. A total of 35 soil borings were advanced across the site. Several of the borings were advanced through soil mounds on-site; characterization of the mounds is discussed separately in the Mound Summary Report (TtNUS, 2004). The soil mounds will be removed prior to any excavation of subsurface soils.

Continuous samples were collected from each of the 35 borings from 2-foot intervals, starting from 2 feet below the base grade elevation. Borings were advanced to the top of bedrock or a maximum depth of 20 feet below the base-grade elevation. Samples from every other interval below base grade (i.e. 2-4 feet, 6-8 feet, 10-12 feet, and 14-16 feet) were selected for laboratory analysis for gasoline-range organics (GRO), PAHs, TPH, and Target Analyte List (TAL) metals.

All soil samples were collected using a conventional hollow-stem auger rig and split-barrel samplers by TtNUS' drilling subcontractor, American Drilling, under the supervision of a TtNUS geologist. Samples were acquired by driving three-inch split barrel samplers ahead of 4-inch (inner diameter) hollow-stem augers. The split-barrel samplers were driven using a 300-lb slide hammer dropped 18 inches. Augers were advanced after collection of each split-barrel sampler. Upon sampler retrieval, soil samples were collected for volatile organic vapor jar headspace screening, using a flame ionization detector (FID) and a photoionization detector (PID). The sample was then inspected by the TtNUS geologist for visual evidence of construction debris and potential contamination and visually classified in accordance with the Unified Soil Classification System (USCS). A log of each boring was maintained by the field geologist. Any foreign materials (brick, asphalt, concrete, glass etc.) present was described and noted in the geologic log. Boring logs are presented in Appendix B of this report.

GRO samples were collected using EPA method 5035 (a soil preparation method), and En-Core samplers. GRO samples were collected directly from the soil core using the En-Core sampler prior to homogenization. En-Core samples were capped and bagged in accordance with the manufacturer's instructions, placed on ice, and then hand-delivered to the analytical laboratory within 24 hours of collection. The laboratory performed the sample extraction within 48 hours of collection.

For collection of other analytes, soil not containing debris as described above, was placed in a decontaminated stainless steel bowl, homogenized after gravel removal, and placed in appropriate sample containers. If insufficient sample was obtained from the soil core, the next interval was sampled in the same manner. If two consecutive intervals provided no recovery in the split barrel sampler, a second boring was advanced to acquire samples at the missed interval(s). Additional borings advanced due to refusal or insufficient recovery are noted on the boring logs (Appendix B). All samples were labeled after collection and placed on ice immediately. Samples were hand-delivered with a chain-of-custody to Mitkem Corporation, of Warwick, Rhode Island.

The drill rigs, augers, and other tools in contact with subsurface soils were decontaminated by steam cleaning before starting the drilling program and after completion of each boring. All non-disposable sampling equipment was decontaminated between each use in accordance with the procedures identified in the work plan (TtNUS, 2003).

3.1.2 Surveying

The horizontal location and vertical elevation of each new boring was surveyed to the RI State Plane Coordinate system NAD 1927 and NAVSTA Mean Low Water datum, respectively, by Louis Federici and Associates, Inc. Additional topographic survey along the shoreline between the top of slope to mean low

water was also performed by the land surveyor. This survey data was used to update the site base map provided in the Feasibility Study report (TtNUS, 2002). The soil boring location survey data is presented in Appendix C. The base map, revised with borings and shoreline topography, is provided as Figure 3-1.

3.2 SAMPLE ANALYSIS AND DATA REVIEW

A subcontracted laboratory (Mitkem Corp.) analyzed field samples and associated quality control samples using the analytical methods listed below:

Analytes	Method
PAHs	USEPA SW-846 GCMS Selected Ion Monitoring (SIM)
TAL Metals	USEPA SW-846 Method 6010B Trace
TPH	USEPA SW-846 Method 8015 Modified for C9-C36 Hydrocarbons
GRO	USEPA SW-846 Method 8015 Modified for Gasoline-Range Hydrocarbons includes compounds with a boiling point between 60° and 220°C, corresponds to and is inclusive of methyl t-butyl ether and naphthalene

Note that there is some overlap between TPH and GRO, however only TPH has a PRG at this site.

The analytical data was validated using a Tier 1 validation effort, which is limited to review of sample results and QC results for completeness of the analytical packages.

4.0 INVESTIGATION FINDINGS

This section presents a summary of the findings of the OFFTA subsurface soil investigations. Relevant data from the remedial investigations (TtNUS, 2001) were used in addition to data from the pre-design investigation to support the findings in this report. The following subsections summarize the physical, geological, and analytical results from subsurface soil testing. Soil characterization and samples from the mounds are discussed in the Mound Summary Report (TtNUS, 2004). Mound soil sample PRG exceedance tables are provided in Appendix D, along with the mound soil sample analytical data. Table 4-1 presents a summary of the subsurface samples collected and the analyses conducted for these efforts and for previous investigations. Table 4-2 presents jar headspace screening results. Complete RI and PDI analytical results from subsurface soil samples are provided in Appendix E. Figures 4-1 through 4-9 present site topography, boring locations, cross sections, fill bottom elevations, and analytical results described in this summary report.

For the purposes of this discussion, the Site has been divided into three sections based on lithologies encountered and contamination levels. For each section, the shoreline is discussed separately from the rest of the section. The western section has low levels of contamination and is underlain by phyllite. The central section has the deepest soil units on the Site and relatively high levels of contamination in the southern area. The eastern section has shallow bedrock made up of conglomerate and higher levels of contamination to the north. For the purpose of this report, all elevations are reported in feet above mean low water (MLW).

4.1 WESTERN SECTION FINDINGS

Areas 1 and 2 comprise the western portion of the Site. Area 1 includes the borings to the west of the temporary parking lot and directly north of Taylor Drive. Area 2 is comprised of the shoreline of the western section. The different areas of the site are presented in Figure 4-1. The western portion of the Site is covered with grass, with a few ornamental cedar trees in the vicinity of the mounds. Subsurface conditions at areas 1 and 2 are depicted by cross-sections B, C, and D (see Figures 4-2 and 4-4). Fill bottom elevations are shown on Figure 4-7.

4.1.1 Area 1 Findings

Area 1 is characterized from evaluation of five soil borings advanced during the PDI (SB415 through 418 and 433) and three borings (B-9 through B-11) advanced during previous investigations (TtNUS, 2001). These borings indicate that the material directly below the base grade elevation consists of fill overlying sandy and silty deposits, which in turn overlie glacial till. The fill consists of sand to silt with construction

debris (concrete, brick, and/or asphalt fragments) and occasional burn layers with ash and/or charcoal. The soil below the fill consists of silt and sand, with gravel present in some of the borings. The deeper borings (B-11 and SB416 through 418) indicate that the natural soil is above a layer of till, which was generally described as a dense gravelly silt with some sand. The elevation of the till ranges from -7 to 6 feet. The bedrock underlying Area 1 appears to be a phyllite, based on materials encountered in boring SB418.

No evidence of petroleum contamination was detected in borings B-9 through B-11, SB415 and SB416. In boring SB417, petroleum staining was noted at elevations of 1.5 to 2.5 feet and an odor was noted from 0.5 to 4.5 feet. In boring SB418, oil-saturated soils were noted from 0 to 2 feet and 4 to 6 feet, with a petroleum odor from -6 to 2 feet. However, samples from this boring did not exceed the PRG of 500 mg/kg. For jar headspace readings, refer to table 4-2A.

A total of 21 samples were collected below the base grade elevation from the 8 borings in Area 1. No samples below base grade elevation were collected from borings B-9 and B-10. The concentrations exceeding the PRGs and all TPH values are depicted in Figure 4-7 and on Table 4-3. A complete list of analytical results is presented in Appendix E. The table below provides a summary of the analyte detections exceeding PRGs. TPH was detected in 9 of 20 samples analyzed, with detections ranging from 13 to 310 mg/kg, all below the PRG of 500 mg/kg. GRO was detected in 3 of 20 samples analyzed for GRO, with detections ranging from 3,600 to 34,000 µg/kg /kg. There is not a PRG for GRO.

Area 1 PRG Exceedance Summary

Parameter	No. Samples above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)pyrene	1/21	820 µg/kg	400 µg/kg
Benzo(b)fluoranthene	1/21	1,100 µg/kg	900 µg/kg
Chrysene	1/21	890 µg/kg	400 µg/kg
Arsenic	12/21	7.8 – 25.9 mg/kg	7.0 mg/kg
Beryllium	11/21	0.41 – 0.56 mg/kg	0.4 mg/kg
Lead	4/21	182 – 321 mg/kg	150 mg/kg
Manganese	11/21	496 – 3,210 mg/kg	390 mg/kg

4.1.2 Area 2 Findings

Area 2 is characterized from evaluation of three soil borings advanced during the PDI (SB405 through 407) and two borings (B-7/MW-4 and B-8) advanced during previous investigations (TtNUS, 2001). The borings indicate that the material directly below the base grade elevation consists of fill overlying sand and silt with varied amounts of gravel, which in turn overlie glacial till. The fill consists of sand to silt with construction debris (mainly brick and asphalt fragments). The soil below the fill consists of

silt and sand, with gravel present in some of the borings. The boring logs indicate that the natural soil overlies a layer of till, which was generally described as a dense, gravelly silt with some sand. The thickness of the till appears to increase from west to east. The bedrock in Area 2 appears to be a phyllite, based on borings SB406 and SB407.

No evidence of petroleum contamination was detected in borings SB405 and SB406. Apparent oil saturation and a sheen was encountered from elevation -4 to 1 foot (12 to 17 feet bgs) in SB-407. Petroleum odors were noted in borings B-7 and B-8. For jar headspace readings, refer to table 4-2A.

Fifteen samples were collected below the base elevation from the eight borings in Area 2. The concentrations exceeding the PRGs and all TPH values are depicted in Figure 4-7 and on Table 4-3. A complete list of analytical results is presented in Appendix E. The table below provides a summary of the analyte detections exceeding PRGs. TPH was detected in 8 of 12 samples. GRO was detected in 2 of 12 samples analyzed for GRO, with detections of 4,600 and 31,000 µg/kg. GRO does not have a PRG.

Area 2 PRG Exceedance Summary

Parameter	No. Samples above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)anthracene	3/15	1,300 J – 2,200 µg/kg	900 µg/kg
Benzo(a)pyrene	7/15	560 – 1,700 µg/kg	400 µg/kg
Benzo(b)fluoranthene	3/15	1,200 – 2,800 µg/kg	900 µg/kg
Chrysene	7/15	520 – 2,100 µg/kg	400 µg/kg
Arsenic	4/15	7.3 – 25.4 mg/kg	7.0 mg/kg
Beryllium	4/15	0.45 – 0.58 mg/kg	0.4 mg/kg
Lead	2/15	189 – 846 mg/kg	150 mg/kg
Manganese	7/15	409 – 3,520 mg/kg	390 mg/kg
TPH	1/12	900 mg/kg	500 mg/kg

4.1.3 Cross-Section Results

Subsurface conditions in the western section of the Site are depicted by cross-sections B-B', C-C', and D-D', as well as the western portion of cross-section A-A'. Refer to Figure 4-3 and Figure 4-4 for cross-sections. Cross-section locations are provided in Figure 4-2.

The bottom of fill elevations for cross-section B-B' range from 2.5 to 4.4 feet, with an average elevation of 3.6 feet. The fill elevations for cross-section C-C' range from 0.5 to 1.4 feet, with an average elevation of 1.1 feet. The bottom of fill elevations for cross-section D-D' range from 4.7 to 6.9 feet, with an average elevation of 5.9 feet.

4.2 CENTRAL SECTION FINDINGS

Areas 3 and 4 comprise the central portion of the Site. Area 3 includes the current temporary parking lot. Area 4 includes the central portion of the shoreline north of the parking lot. Subsurface conditions at the central section are depicted by cross-sections E-E', F-F', and G-G'. Figure 4-1 depicts the boring and area locations, and Figure 4-5 depicts the cross-sections for this area. Fill bottom elevations are shown on Figure 4-8.

4.2.1 Area 3 Findings

Area 3 is roughly outlined by the temporary parking lot and the area west of Building 144. The parking lot consists of rubbleized asphalt and gravel, which is cordoned off from the surrounding grassy areas. All of Area 3 is considered to be at base grade elevation.

Area 3 is characterized from evaluation of eight borings advanced during the PDI (SB408 through 410, SB419 through 422, and SB432); and four borings (B-6, MW-3S, MW-7S, and MW-101) and seven test pits (TP1A through 1C, TP10 through 12, and TP17) advanced during previous investigations (TtNUS, 2001). The boring logs from Area 3 indicate that the material encountered consists of fill overlying natural soil, which covers a layer of glacial till. Fill consists of silt/sand mixtures with varied amounts of gravel. In several of the borings in the southeast portion of the area (SB421, SB422, SB432, B-6, MW-3, and MW-101), these materials are mixed with construction debris (asphalt, brick and concrete fragments). A geosynthetic liner, used to separate the temporary parking lot material from the existing soil, was encountered at 2 feet below the base grade elevation. The fill varies in thickness from nonexistent at MW-7S to 8 feet thick in SB410, and is generally 4 to 6 feet thick. Refer to Figure 4-3 for fill elevation details. Natural soils consist of silt and sand mixtures with some gravel.

Most of the borings in Area 3 (SB408, SB409, SB419-421, SB432, and MW-101) were advanced beyond the soils and into till. The till was characterized as a dense silt with a mixture of angular gravel pieces and sand and was encountered at elevations of 4.5 feet (MW-101) to -8.5 feet NGVD (SB432). The bedrock noted in Area 3 was generally highly weathered, but appeared to be a phyllite in the southern portion of the area (SB420) and a conglomerate to the north (SB419 and SB409). The bedrock in Area 3 is much deeper than the phyllite to the west (elevations of approximately -10 feet) and the conglomerate to the east (elevations of approximately 6 feet).

Area 3 was the most visibly contaminated with petroleum products, with oil-saturated soils noted in the boring and test pit logs from MW-3, SB409, SB410, SB420, SB421, and TP-11, located in the central and eastern portions of the area. The most contaminated soils were generally encountered at elevations of

2 to 6 feet. A sheen on water in the sample, staining, and/or odors were noted at B-6, MW-7S, TP-17, MW-101, SB419, and SB432. The other borings and test pits did not have visible contamination or odors. Jar headspace results are presented in Table 4-2B.

A total of 44 samples were collected at Area 3 from 17 borings and test pits. The concentrations exceeding the PRGs and all TPH values are depicted in Figure 4-8 and on Table 4-3. A complete list of analytical results is presented in Appendix E. No samples were collected from TP-10. The table below provides a summary of the analyte detections exceeding PRGs. TPH was detected in 29 of 36 samples analyzed for TPH. GRO was detected in 18 of 32 soil samples analyzed for GRO, with detections ranging from 2,100 to 2,300,000 µg/kg. The higher GRO concentrations indicate that a large proportion of the TPH in some samples may be composed of GRO, which are lighter and may be more mobile than other petroleum products. There is no PRG for GRO.

Area 3 PRG Exceedance Summary

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)anthracene	8/43	910 – 18,000 µg/kg	900 µg/kg
Benzo(a)pyrene	12/43	430 – 15,000 µg/kg	400 µg/kg
Benzo(b)fluoranthene	7/43	1,200 – 17,000 µg/kg	900 µg/kg
Benzo(g,h,i)perylene	3/43	1,600 – 10,000 J µg/kg	800 µg/kg
Benzo(k)fluoranthene	3/43	1,400-13,000 J µg/kg	900 µg/kg
Chrysene	13/43	460 – 15,000 µg/kg	400 µg/kg
Dibenzo(a,h)anthracene	2/43	1,900 – 4,000 J µg/kg	400 µg/kg
Ideno(1,2,3-cd)pyrene	3/43	1,500 – 8,900 J µg/kg	900 µg/kg
Antimony	6/43	10.5 – 17.3 mg/kg	10 mg/kg
Arsenic	23/43	7.2 – 69.2 mg/kg	7.0 mg/kg
Beryllium	18/43	0.41 – 1.0 mg/kg	0.4 mg/kg
Lead	7/43	158 – 563 mg/kg	150 mg/kg
Manganese	23/43	396 J – 3,000 mg/kg	390 mg/kg
TPH	13/32	600 – 8,400 mg/kg	500 mg/kg

4.2.2 Area 4 Findings

Area 4 is comprised of the central portion of the shoreline. Area 4 is flat and covered with grass, and is bounded by the edge of the temporary parking lot to the south, by SB400 to the west, and SB402 to the east. All of Area 4 is considered to be at base grade elevation.

Area 4 is characterized from evaluation of four borings advanced during the PDI (SB400 through 402 and SB427); and four borings (B-5, B-12, and MW-11S and 11R) advanced during previous investigations

(TtNUS 2001). The boring logs indicate that the material encountered consists of fill overlying natural soil, which covers a layer of glacial till. Fill consists of riprap (boulders and large cobbles) and silt/sand mixtures with some construction debris (brick and concrete fragments). The fill in this area was found to be at least 8 feet thick. Natural soils generally consist of silt and sand mixtures with some gravel; however, organic layers (peat and organic muck) were noted to the west (SB402 and B-5). Till was noted in one boring (SB402) and consisted of a sandy silt with angular gravel. The bedrock encountered in Area 4 appeared to be a conglomerate, based on the SB427 boring log. Bedrock material was not removed from the other borings.

Several borings at Area 4 contained evidence of petroleum contamination, including staining at SB427 and odors at SB427, B-12, and MW11R and MW11S. All of these borings were located in the central portion of Area 4. Odors and/or staining were noted at elevations of 2 to 4 feet at SB427 and B-12, and at elevations of -2 to 0 feet at MW-11S and MW-IIR. Jar headspace results are provided in Table 4-2B.

A total of 16 samples were collected at Area 4 from 7 borings. The concentrations exceeding the PRGs and all TPH values are depicted in Figure 4-8 and on Table 4-3. A complete list of analytical results is presented in Appendix E. No samples were collected from MW-11R. The table below provides a summary of the analyte detections exceeding PRGs. TPH was detected in 9 of 12 samples analyzed for TPH, at concentrations ranging from 15 to 400 mg/kg, below the PRG of 500 mg/kg. GRO was detected in 5 of 12 samples analyzed for GRO, with detections ranging from 4,700 to 63,000 µg/kg. There is no PRG for GRO.

Area 4 PRG Exceedance Summary

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)pyrene	1/16	480 µg/kg	400 µg/kg
Chrysene	2/16	430 – 520 µg/kg	400 µg/kg
Arsenic	3/16	8.0 – 8.6 mg/kg	7.0 mg/kg
Beryllium	1/16	0.44 mg/kg	0.4 mg/kg
Lead	2/16	554 – 1,300 mg/kg	150 mg/kg
Manganese	7/16	401 J – 1,140 mg/kg	390 mg/kg

4.2.3 Cross-Section Results

Subsurface conditions in the central section of the Site are depicted by cross-sections E-E', F-F' and G-G', as well as the central portion of cross-section A-A'. Refer to Figure 4-3 and Figure 4-5 for cross-sections.

The bottom of fill elevations for cross-section E-E' is 4 feet in the south and drops to 0.7 feet at SB400. The fill elevations for cross-section F-F' average 5.6 feet in the southern portions of the cross-section, then the fill pinches out to almost nonexistent (0.5 feet of topsoil) at B-12. North of B-12, fill elevations start at -4 feet and rise to 4.3 feet at SB427. The filled area at cross-section G-G' begins at SB421. From SB421 north, the bottom of fill drops from 5.8 feet to 2 feet.

4.3 EASTERN SECTION FINDINGS

Areas 5 and 6 comprise the eastern portion of the Site. Area 5 includes the borings east of the temporary parking lot. Area 6 includes the eastern portions of the shoreline. Locations at the most eastern portions of the Site (SB426, TP-05, and B-1) are included with Area 5 due to stratigraphic and chemical similarities with the former picnic area north and east of Building 144. Figure 4-1 depicts boring and area locations. Cross-sections H through K (see Figure 4-6) depict the eastern section subsurface conditions. Fill bottom elevations are shown on Figure 4-9.

4.3.1 Area 5 Findings

Area 5 includes the borings north and east of Building 144. Area 5 is vegetated with grass and several large ornamental cedar trees that range up to 20 feet in height. The area includes the large picnic area and former playground north of Building 144, which is presently used as a recruiting office for the Marines.

The subsurface soils of Area 5 were characterized from evaluation of soil samples from soil borings and test pits. The 14 soil borings consisted of B-1, B-2, B-4, and B-17, and MW-1R, 8R, and 9R, advanced during previous investigations (TtNUS, 2001); and SB411, 412, 423 through 426, and 434, advanced for the PDI. Thirteen test pits from previous investigations were located in Area 3, including TP2, TP3, TP-01 through 09, TP-13, and TP-16. The boring and test pit logs indicate that the material below base grade elevation generally consists of fill overlying bedrock. The fill material generally consists of fine to coarse sand and gravel mixed with construction debris (asphalt, concrete fragments, and brick pieces). Few man-made materials were encountered in the picnic area east of the Central Mound; the soils in the area were generally less than four feet thick and appear to be natural material. Remnant piping was encountered in test pits TP-01, TP-04, and TP-08, and concrete slabs/foundations were encountered in test pit TP-06.

Natural soils consist of sand with varied amounts of silt and gravel. The bedrock in Area 5 is generally conglomerate, with the exception of TP-08, which was characterized as a shale. For the purposes of this report, the shale/phyllite is considered to be a single unit. Data from the borings indicate that the contact between the conglomerate and shale/phyllite runs through the southwest portion of Area 5. Bedrock

elevations are highest in the central and eastern portions of the area, with elevations of approximately 7 feet. To the northwest and in the vicinity of Building 144, the bedrock is generally deeper and is covered with natural soil below the fill.

The boring and test pit logs at Area 5 that indicated potential petroleum contamination included B-4, which had a slight petroleum odor from elevations 1.5 to 7.5 feet; and B-2 and TP-16, which was stained and had potential free oil at an elevation of 5 feet. Table 4-2C presents a jar headspace summary for the area.

A total of 27 samples were collected at Area 5 from intervals below the base grade elevation. The concentrations exceeding the PRGs and all TPH values are depicted in Figure 4-9 and on Table 4-3. A complete list of analytical results is presented in Appendix E. No samples below base grade elevation were sent for laboratory analysis from borings B-14 and B-15. No analytes from the soil samples collected at B-4 and TP-02 exceeded the PRGs. The table below provides a summary of the analyte detections exceeding PRGs. TPH was detected in 13 of 17 soil samples analyzed for this parameter. GRO was detected in 4 of 20 samples, with detections ranging from 3,700 to 23,000 µg/kg; there is no PRG for GRO.

Area 5 PRG Exceedance Summary

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)anthracene	1/29	2,400 J µg/kg	900 µg/kg
Benzo(a)pyrene	4/29	460 J – 2,900 µg/kg	400 µg/kg
Benzo(b)fluoranthene	1/29	2,300 J µg/kg	900 µg/kg
Benzo(g,h,i)perylene	1/29	1,700 J µg/kg	800 µg/kg
Benzo(k)fluoranthene	2/29	850 J – 2,500J µg/kg	900 µg/kg
Chrysene	5/29	580 J – 2,500 J µg/kg	400 µg/kg
Dibenzo(a,h)anthracene	1/29	780 J µg/kg	400 µg/kg
Indeno(1,2,3-cd)pyrene	1/29	1,700 J µg/kg	900 µg/kg
Antimony	2/29	10.9 – 39.2 J mg/kg	10 mg/kg
Arsenic	10/29	8.0 – 74.4 J mg/kg	7.0 mg/kg
Beryllium	2/29	0.44 – 0.69 mg/kg	0.4 mg/kg
Lead	5/29	529 – 7,820 J mg/kg	150 mg/kg
Manganese	21/29	402 – 4,850 mg/kg	390 mg/kg
TPH	2/17	6,400 J – 7,400 J mg/kg	500 mg/kg

4.3.2 Area 6 Findings

Area 6 is comprised of the eastern portion of the shoreline. The area is vegetated with grass and several large trees. The entire area is considered to be at base grade elevation.

Area 6 was characterized from evaluation of soil samples from 14 soil borings and 12 test pits. Soil borings B-3, B-13, B-16, MW-2, MW-10, and MW-102 were advanced during previous investigations (TtNUS, 2001) and borings SB403, 404, 413, 414, and 428 through 431 were advanced during the PDI. Test pits TP-14 and TP-15 were also advanced during previous investigations. The borings and test pits indicate that the material below base grade elevation consists of fill overlying native soils, which overlie bedrock. The fill material consists of fine to coarse sand, silt and gravel mixed with construction debris (asphalt, concrete fragments, and brick pieces), as well as plastic, slag, glass, and ceramic fragments. Natural soils consist of sand with varied amounts of silt and gravel. Peat layers were noted in borings B-13, SB428, and SB429 at elevations ranging from -8 to 2 feet. Till was encountered in the northwest portion of Area 6, at borings MW-102, SB403, and SB429. The top of the till ranged from -10 to -7 feet in elevation. The bedrock in Area 6 is conglomerate, based on boring SB413. Other boring logs from Area 6 did not specify bedrock material. The elevation of the top of bedrock drops from about -5 feet at SB431 in the east to below -15 feet in the northwestern portion of the area.

Several boring and test pit logs from Area 6 indicated potential petroleum contamination. Petroleum saturated soils were noted in borings SB403, SB404, SB429, MW-102, and MW-2S, which are located directly north of the Central Mound. The heaviest contamination visible was generally found at elevations of -1 to 5 feet. Borings with staining, a sheen on water in samples collected below the water table, and/or odor included SB414, SB430, SB431, MW-10S, B-3, and B-13. The bottom of test pits TP-14 and TP-15 also had stained soils. Jar headspace results are provided in Table 4-2C.

A total of 42 samples were collected at Area 6 from intervals below the base grade elevation. The concentrations exceeding the PRGs and all TPH values are depicted in Figure 4-9 and on Table 4-3. A complete list of analytical results is presented in Appendix E. No analytes exceeded the PRGs below base grade elevation at B-13. The table below provides a summary of the analyte detections exceeding PRGs. TPH was detected in 25 of 34 soil samples analyzed for this parameter. GRO was detected in 21 of 31 samples, with detections ranging from 3,900 to 430,000 µg/kg; there is no PRG for GRO. The higher GRO concentrations indicate that a large proportion of the TPH in some samples may be composed of GRO, which are lighter and may be more mobile than other petroleum products.

Area 6 PRG Exceedance Summary

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)anthracene	13/42	935 – 14,000 µg/kg	900 µg/kg
Benzo(a)pyrene	16/42	470 – 11,600 µg/kg	400 µg/kg
Benzo(b)fluoranthene	11/42	1,100 – 13,500 µg/kg	900 µg/kg
Benzo(g,h,i)perylene	3/42	990 – 6,650 µg/kg	800 µg/kg

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(k)fluoranthene	5/42	830 – 5,850 µg/kg	900 µg/kg
Chrysene	16/42	410 – 9,900 µg/kg	400 µg/kg
Dibenzo(a,h)anthracene	2/42	820 J – 1,550 µg/kg	400 µg/kg
Ideno(1,2,3-cd)pyrene	2/42	2,300 J – 6,050 µg/kg	900 µg/kg
Antimony	6/41	10.7 – 62.7 mg/kg	10 mg/kg
Arsenic	18/41	7.3 – 53.6 J mg/kg	7.0 mg/kg
Beryllium	3/41	0.42 – 0.55 mg/kg	0.4 mg/kg
Lead	15/41	183 – 8,250 mg/kg	150 mg/kg
Manganese	14/41	397 – 1,080 mg/kg	390 mg/kg
TPH	14/34	780 – 21,000 J mg/kg	500 mg/kg

4.3.3 Cross-Section Results

Subsurface conditions in the eastern section of the Site are depicted by cross-sections H-H', I-I', J-J', and K-K', as well as the eastern portion of cross-section A-A'. Refer to Figure 4-3 and Figure 4-6 for cross-sections.

The bottom of fill elevations for cross-section H-H' average 9.2 feet for the southern portion of the cross section (through SB411), then drop to an average of 2.4 feet north of the Central Mound. In cross-section I-I', no fill is noted until SB412, under the Central Mound. After SB412, the fill elevation drops from 10.5 feet to -3.1 feet. In cross-section J-J', the fill is intermittent and the elevation of the bottom of fill averages 7 feet (or about 4 feet thick) where fill is present. In cross-section K-K', the fill elevation averages 7.7 feet and pinches out by SB425.

5.0 SUMMARY AND RECOMMENDATIONS

This section presents a summary of the results of the OFFTA subsurface soil investigations, including a basis for proposed excavation depths for the soil removal action. The analytical data at various depths were compared against fill, water table, and bedrock elevations. This analysis was conducted in order to determine trends in the data and provide support for proposed excavation depths. In general, metals exceeded the PRGs over the entire site and at all sample depths, while PAH and TPH concentrations varied widely.

5.1 ORGANICS SUMMARY

PAH and TPH concentrations varied over the site; however, the analytical data indicates that the majority of organics exceeding the PRGs were clustered in specific areas and depths. Exceedances for each section are depicted on Figure 4-7 through 4-9. All of the boring locations are presented on Figure 4-1.

5.1.1 Western Section

The lowest organic concentrations overall were located in the western section of the Site. Locations exceeding the site PRGs are depicted in Figure 4-7; refer to Appendix E for the complete analytical results, including exceedances.

At Area 1, PAHs exceeding the PRGs were limited to the fill at boring SB416, with a minimum elevation of 5.5 feet (3 feet below base grade elevation). Along the shoreline (Area 2), the deepest samples in each boring exceeding the organic PRGs were found from elevations of -1.5 to 3.4 feet. Two of the borings (MW-4S/SB-7 and SB407) had PAH exceedances of the PRGs below both the water table and the bottom of fill.

TPH did not exceed the Site PRGs at Area 1. At Area 2, only one sample from SB407 exceeded the PRG for TPH. The sample elevation of -1 to 1 foot was below the water table (3 feet) and the bottom of fill (7 feet).

5.1.2 Central Section

The highest concentrations of PAHs and TPH were encountered from Area 3, in the southern portion of the central section. The shoreline (Area 4) had much lower concentrations of organics. Locations exceeding the site PRGs are depicted in Figure 4-8; refer to Appendix E for complete analytical results, including exceedances.

PAH exceedances were found mainly in the southeast portion of Area 3, at elevations ranging from the base grade elevation to between 0 and 8 feet. The maximum exceedance depths were above or within two feet of the water table. The fill at Area 3 did not extend below the water table. At Area 4, the only PAH samples exceeding the PRGs were found at elevations of 4 to 6.5 feet and were located at or above the water table and bottom of fill.

TPH exceeded the PRG laterally throughout Area 3. The zone of TPH contamination is generally located at elevations of 1 to 6 feet, with deeper contamination (down to -2 feet) at SB420. The contamination is generally within two feet of the water table and at or below the bottom of fill. At Area 4, none of the samples collected exceeded the PRG for TPH.

5.1.3 Eastern Section

The eastern section of the Site had more contamination to the north (along the shoreline), where the fill depth and depth to bedrock was much deeper. Locations exceeding the site PRGs are depicted in Figure 4-9; complete analytical results and exceedances are provided in Appendix E.

Samples exceeding the PRGs were located close to the shoreline and in the western portion of the section; the only exceedances in Area 5 were located near the edge of Area 3 to the west and Area 6 to the north. The PAH exceedances in Area 5 were found at the water table (around 6 feet), which was generally at the same elevation as the bottom of fill. PAH detections were below the PRGs in the southern portion of Area 5, where the bedrock was generally within 6 feet of the ground surface. The PAH exceedances in Area 6 ranged in elevation from 0 to 6.5 feet, with the deepest exceedances within two feet of the water table.

TPH concentrations exceeding the PRG in the eastern section were located close to the shoreline. Two samples in Area 5 exceeded the TPH PRG, at elevations of 5 to 7 feet. At area 6, TPH was detected at concentrations above the PRG from elevations of -3 to 10 feet, in zones that were up to six feet thick. The bottom of the TPH exceedance zone tended to be below the water table in most borings.

5.2 METALS SUMMARY

Inorganic metals were detected throughout the Site in the fill, natural soil and till units. Almost every sample analyzed for metals exceeded at least one PRG, usually arsenic or manganese. Unlike the other contaminants, the metals exceedances did not decrease at depth. Although these deeper metal concentrations in the natural soil and till units exceed the PRGs it is likely that they represent background

conditions based on their distribution and the findings of the OFFTA Site background study. That study, conducted by the Navy to establish background levels for metals in soils at the OFFTA Site, concluded that elevated metals concentrations in the Coasters Harbor Island soils may be attributable to the composition of the local and regional bedrock formations and the shallow depth of bedrock and glacial till (TtNUS, 2000).

In the OFFTA background study surface and subsurface soil samples were collected from areas at the south end of Coasters Harbor Island determined to be unaffected by the Site or by other non-uniformly distributed anthropogenic sources. The background sampling areas all had the same USDA soil classification as those at the OFFTA Site (Udorthents-Urban Land Complex). Surface soil samples were collected from the 0 to 2-feet bgs interval and subsurface soil samples were usually collected from the 4 to 6-feet bgs interval. The subsurface samples were comprised mostly of the till that directly overlies bedrock in the area, with bedrock encountered less than 6 feet bgs at several locations. In general, the study showed that background metals concentrations are higher in the subsurface soils than in the surface soils. The calculated background values for two metals in surface soil (arsenic and beryllium) and three metals in subsurface soil (arsenic, beryllium, and manganese) exceed the RIDEM Direct Exposure Criteria. The calculated arsenic background [upper tolerance limit (UTL)] value for subsurface soil (42.8 mg/kg) is considerably higher than both the calculated surface soil background value (5.55 mg/kg) and the RIDEM soil criteria for arsenic (7 mg/kg). RIDEM performed a separate statistical evaluation of the background data and developed a combined surface and subsurface arsenic background level of 6.2 mg/kg.

The higher concentrations of arsenic and other metals in subsurface soil versus surface soil may be explained by the proximity of the subsurface soils to the bedrock and the presence of glacial till in most subsurface samples. The OFFTA background study findings indicate that the bedrock and glacial till are the predominant source of natural arsenic in area soils. Bedrock is relatively shallow across Coasters Harbor Island, with bedrock outcropping present in various locations.

The depth to bedrock varies across the Site ranging from 2 feet to 29 feet below the site base grade based on test pits and borings observations. Generally, the bedrock surface is encountered at shallow depths of 4 to 15 feet deep on the east-southeast portion of the Site and at 4 feet below the base grade under the central mound. The bedrock surface dips noticeably along the north and west sides of the central mound. Further west of the central mound, bedrock rises again, to a depth of 12 feet below base grade. Beneath the western mound overlooking Narragansett Bay, the bedrock surface dips again to a depth of 20 feet below base grade. Along the western portion the site bedrock depth rises to 10 feet below base grade. North of the central mound, adjacent to Coasters Harbor, the bedrock surface is found at depths greater than 20 feet.

The till at the Site is generally very dense, gravelly and/or sandy silt with occasional clay noted. As an ice-deposited material, the till may have incorporated local and foreign material. Examples of till that are over 4 feet thick include PDI samples from SB409, SB416, SB417, and SB433. The high density of the till is reflected in the blow counts for each of these borings, which range from 12 to 120 blows per 6 inches in the second and third 6-inch sections of each 2-foot interval sampled. As a high-density material, till is a confining layer on this site and significant penetration of contaminants in or out of the till is highly unlikely. Thus, the concentrations of metals detected in the till are most likely naturally occurring components of the till itself and not from another source.

Average metals concentrations found in the different units across the Site were compared with the background study results. The table below presents OFFTA background study calculated UTL concentrations and the average metals concentrations for fill, natural soils, and till samples collected during the PDI. In order to remove any ambiguity caused by reworked natural materials and clean fill, only samples with or above manmade materials were considered to be "fill" and only samples at or below soils with intact structures (varves or organic deposits) were considered to be "natural soil". Data used for this summary is presented in Appendix F. For this summary, only metals with a site PRG are listed.

OFFTA Site Soil Metals Exceedance Comparison

Metal	Background Soil UTL(1) (mg/kg)	Fill Average Conc. (mg/kg)	No. of detects/ No. of samples	Natural soil Average Conc. (mg/kg)	No. of detects /No. of samples	Till Average Conc. (mg/kg)	No. of detects/ No. of samples
Antimony	- (2)	5.0	27/41	4.4	7/8	4.3	14/17
Arsenic	6.2(3)/42.8	10.7	40/41	6.0	9/9	12.9	17/17
Beryllium	- (2)	0.30	31/41	0.28	8/8	0.37	16/17
Lead	15.4	888.1	41/41	160.1	9/9	12.6	17/17
Manganese	563	408.0	41/41	334.3	9/9	899.2	17/17

Notes:
UTL Upper Tolerance Limit
(1) Subsurface soil sample (2 to 6 feet bgs) background UTL unless otherwise noted.
(2) UTL could not be determined because distribution did not match normal or lognormal distributional shape.
(3) 6.2 mg/kg is RIDEM-developed combined surface and subsurface arsenic background concentration.

This summary shows that arsenic and manganese concentrations are higher in till than in natural soil or fill, indicating that these metals are naturally present in the till and/or the bedrock underlying the till. As shown, the average arsenic natural soil level at 6.0 mg/kg is consistent with the RIDEM developed background level. The average arsenic concentration measured in the till (12.9 mg/kg) is consistent with the background study conclusion that bedrock and glacial till are the predominant source of natural

background UTL value of 563 mg/kg and well below the average concentration measured in till samples (899.2 mg/kg).

An elevated lead concentration (888.1 mg/kg) is clearly associated with the fill with a lower average concentration found in the natural soil (160.1 mg/kg). The average lead concentration in till (12.9 mg/kg) is below the background UTL value (15.4 mg/kg). Beryllium and antimony concentrations are similar in all three units, indication little or no impact from historical Site activities.

The data indicates that lead is the only metal which is clearly associated with the Site fill and associated contamination. Therefore, of the metals for which PRGs were calculated, only lead should be used to consider soils actionable or to direct excavations as part of the soil removal actions.

5.3 RECOMMENDATIONS

5.3.1 Recommended Removal Action Goals

Removal action goals need to be established for the site in order to target contaminants for removal that pose risk to receptors under expected future use of the property. This section provides a basis for recommendation of the removal action goals, utilizing the data collected as part of the soil pre-design investigation, and other information published in the RI and the FS for the site.

In the RI and the FS reports, Contaminants of Potential Concern (COPCs) were identified as those contaminants that provide risk at or above the target risk levels considered actionable by the EPA and RIDEM. In the FS, Preliminary Remediation Goals (PRGs) were calculated for those COPCs using the exposure assumptions used for the risk assessment, but also with consideration to RIDEM regulatory guidelines, and chemical-specific ARARs. Candidate PRGs were developed for each of the COPCs with the following considerations:

Risk-Based PRGs: PRGs for carcinogens were based on a cancer risk of 1 x 10-6 for carcinogens and an HQ of 1.0 for non-carcinogens, with the more conservative of the two being chosen as the risk-based PRG.

RIDEM-Based PRGs: The lower of the Residential DEC and GB Leachability Criteria was considered as a possible PRG for each chemical.

Chemical-Specific ARARs/TBCs: Candidate PRGs for three chemicals were determined by guidance and TBCs. These chemicals are Aroclor-1254, lead, and 2,3,7,8-TCDD (dioxin) equivalents.

Detection Limits: Two semivolatile chemicals, benzo(a)pyrene and dibenz(a,h)anthracene, are controlled by quantitation limits, as footnoted in the RIDEM Method 1 Direct Exposure tables.

Background Concentrations: Metals are naturally present in soil, and therefore, the background concentration values were measured, calculated and negotiated with RIDEM, and considered in the PRG selection process.

The candidate PRGs identified for each contaminant using the methods described above were screened to select the PRG for that contaminant in the FS. Following selection of the PRGs, Contaminants of Concern (COCs) for the site were selected from the PRG list. COCs were defined as contaminants that would require removal for the purposes of the FS. All the contaminants from the PRG list were selected as COCs in the FS with the exception of Aroclor 1254 and dioxin (2,3,7,8 TCDD) equivalents. These were removed from the COC list because the highest concentrations of these contaminants detected at the site were still below the PRG concentration selected.

State regulatory standards for petroleum and petroleum contaminants that were not selected from the risk assessment were also selected as PRGs, and the contaminants were retained as COCs. These were chosen since they are likely to be associated with the petroleum released at the site, and because state regulations require criteria for petroleum be met if site use is not restricted.

Following the evaluation of the soil pre-design investigation data described in previous sections of this report, recommended removal action limits for soil have been selected. These recommended action limits have been selected based on the risk-based processes stated in the RI and the FS and supporting documents, and based on the conditions found at the site during this and other investigations.

Table 5-1 presents the chemicals retained as COCs from the Feasibility Study, and the PRGs suggested as removal action goals. The notes provide a basis of the recommendation to use or not use the removal action goal stated. The volume of fill and soil exceeding the PRGs is estimated at 94,808 cubic yards, while the volume of fill and soil exceeding the recommended removal action goals is approximately 50,347 cubic yards (Tables F-5 and F-6, Appendix F).

5.3.2 Recommended Excavation Depths

Utilizing the recommended removal action goals provided in Table 5-1, recommended excavation limits were developed for the soil removal action at the OFFTA site. The recommended excavation limits are based on the samples exceeding the recommended removal action goals, as well as physical findings of the pre-design investigation. Excavations below the water table may not be feasible due to site

conditions; the feasibility of excavation below the water table will be evaluated during the design phase for the soil removal. Possible excavation limits for each boring are provided in Table 5-2.

Area 1 – A high bedrock elevation at SB417 and SB433 precludes excavation at the center of Area 1, however the west portion could be excavated to a depth of more than 6 feet below base grade elevation (SB415), and the east portion could be excavated to a depth of approximately 4 feet below base grade elevation (SB418). Lead appears to be the contaminant that will drive excavation in this area.

Area 2 – Area 2 follows the shoreline in the western portion of the site. In this area PAH's were found in excess of the suggested removal action goals to a depth of approximately 8 feet. Excavation will be limited to a depth of 4 to 5 feet due to the shallow water table in this area, even with dewatering efforts. The higher bedrock elevation noted at area 1 also appears at SB406 in this area.

Area 3 – In the central portion of the site, PAHs and TPH were found in excess of the suggested removal action goals consistently to a depth of approximately 8 feet below base grade elevation. At one location (SB420) TPH exceeded criteria to a depth of 12 feet. Excavation will be limited to a depth of 4 to 6 feet due to the shallow water table in this area, even with dewatering efforts. At the eastern-most section (SB422) the target depth is shallower (4 feet).

Area 4 – Area 4 represents the shoreline of the central portion of the site. Target depth is generally, 4 feet below base grade elevation due to a combination of PAHs, TPH and lead. However, at SB402, lead was exceeded at 10 feet in depth indicating variability in this area. In addition, at SB400, no suggested removal action goals were exceeded, however it is anticipated this portion of area 4 will also have to be excavated with the surrounding areas to 4 feet below base grade elevation.

Area 5 – Data from area 5 indicates high variability of target depths, particularly when combining boring data and test pit data from previous investigations. There appears to be a high bedrock elevation in the areas of SB411 and SB412 (location of the Central Mound). This is also evident in the borings SB424, SB425, and SB426. However, formerly collected data south of these borings near Taylor Drive (TP05, TP06, and B-1) show elevated concentrations of lead and PAHs up to 8 feet below ground surface. This data, taken collectively, indicates a deeper target excavation close to the road, and a shallow target excavation (2 feet) on other areas, based on surface soil results reported in the RI (TtNUS 2001).

Area 6 – Area 6 shows consistently actionable exceedances of suggested removal action goals to a depth of 8 feet or more. Lead and TPH goals were exceeded to 12 feet at SB431, SB429, and SB414. However, excavation to this depth will be greatly hindered by the water table, particularly being so close

to the tidal area. Therefore, the excavation in this area should be limited to a depth of no more than 7 feet below base grade elevation.

Preliminary estimates of soil and debris volume to be excavated were developed for planning purposes based on this assessment. These volumes, based on the grid established in the work plan, are presented on Table F-7, in Appendix F. The water table at the site has a direct connection to the ocean, and has been observed to be tidally influenced (TtNUS, 2002A). No reasonable amount of de-watering can allow excavation to some of the depths indicated on Table 5-2. Therefore, depths and associated volumes provided in Table F-7 are adjusted for the limitations placed on the excavation by the presence of the water table. Groundwater level data collected in 1997 was used for Table F-7 as the data set was more complete than the 2001 groundwater level data set. Based on this evaluation the preliminary estimate for the volume of fill and soil to be excavated is 38,854 cubic yards. The proposed excavation depths will be determined during the proposed removal action design phase.

TABLES

TABLE 1-1
SOIL PRELIMINARY REMEDIATION GOALS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter		Soil PRG	units
SVOCs	Benzo(a)anthracene	900	µg/kg
	Benzo(a)pyrene	400	µg/kg
	Benzo(b)fluoranthene	900	µg/kg
	Benzo(g,h,i)perylene	800	µg/kg
	Benzo(k)fluoranthene	900	µg/kg
	Chrysene	400	µg/kg
	Dibenzo(a,h)anthracene	400	µg/kg
	Indeno(1,2,3-cd)pyrene	900	µg/kg
TPH	TPH	500	mg/kg
Metals	Antimony	10	mg/kg
	Arsenic	6.2	mg/kg
	Beryllium	0.4	mg/kg
	Lead	150	mg/kg
	Manganese	390	mg/kg

Notes:

Source: Table 2-9, Feasibility Study for OFFTA, NAVSTA Newport, RI; TtNUS, September 2002

µg/kg	microgram per kilogram
mg/kg	milligram per kilogram
PCBs	polychlorinated biphenyls
PRG	Preliminary Remediation Goal
SVOCs	semivolatile organic compounds
TCDD	tetrachlorodibenzo-p-dioxin
TPH	total petroleum hydrocarbons

TABLE 4-1
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 1																	
B-9	RI (Ph II)	11/23/1993	17.7	8.0	(no subsurface soil samples)					--	--	--	--	--	--	--	--
B-10	RI (Ph II)	11/23/1993	13.7	8.0	(no subsurface soil samples)					--	--	--	--	--	--	--	--
B-11	RI (Ph II)	11/24/1993	8.4	8.4	B112-112493	4.0	6.0	4.4	2.4	X	X	--	X	X	X	--	--
SB415	PDI	11/18/2003	13.3	8.0	SB-415-0608	6.0	8.0	7.3	5.3	--	--	X	--	X	--	X	X
					SB-415-1012	10.0	12.0	3.3	1.3	--	--	X	--	X	--	X	X
SB416	PDI	11/19/2003	11.5	8.5	SB-416-0406	4.0	6.0	7.5	5.5	--	--	X	--	X	--	X	X
					SB-416-0810	8.0	10.0	3.5	1.5	--	--	X	--	X	--	X	X
					SB-416-1214	12.0	14.0	-0.5	-2.5	--	--	X	--	X	--	X	X
					SB-416-1618	16.0	18.0	-4.5	-6.5	--	--	X	--	X	--	X	X
SB417	PDI	11/19/2003	8.5	8.5	SB-417-0406	4.0	6.0	4.5	2.5	--	--	X	--	X	--	X	X
					SB-417-0608	6.0	8.0	2.5	0.5	--	--	X	--	X	--	X	X
					SB-417-1012	10.0	12.0	-1.5	-3.5	--	--	X	--	X	--	X	X
					SB-417-1416	14.0	16.0	-5.5	-7.5	--	--	X	--	X	--	X	X
					SB-417-1820	18.0	20.0	-9.5	-11.5	--	--	X	--	X	--	X	X
SB418	PDI	12/3/2003	10.0	8.0	SB-418-0406	4.0	6.0	6.0	4.0	--	--	X	--	X	--	X	X
					SB-418-0810	8.0	10.0	2.0	0.0	--	--	X	--	X	--	X	X
					SB-418-1214	12.0	14.0	-2.0	-4.0	--	--	X	--	X	--	X	X
					SB-418-1618	16.0	18.0	-6.0	-8.0	--	--	X	--	X	--	X	X
SB433	PDI	11/26/2003	17.3	8.0	SB-433-1214	12.0	14.0	5.3	3.3	--	--	X	--	X	--	X	X
					SB-433-1618	16.0	18.0	1.3	-0.7	--	--	X	--	X	--	X	X
					SB-433-2022	20.0	22.0	-2.7	-4.7	--	--	X	--	X	--	X	X
					SB-433-2426	24.0	26.0	-6.7	-8.7	--	--	X	--	X	--	X	X
					SB-433-2830	28.0	30.0	-10.7	-12.7	--	--	X	--	X	--	X	X
Area 2																	
B-8	RI (Ph II)	11/22/1993	11.5	7.0	B82-112293	8.0	10.0	3.5	1.5	X	X	X	--	X	X	--	--
MW-4S(B-7)	RI (Ph I)	4/19/1990	8.1	8.1	B071-419	4.0	6.0	4.1	2.1	X	X	X	--	X	X	--	--
					B072-419	6.0	8.0	2.1	0.1	X	X	X	--	X	X	--	--

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 2 (cont.)																	
SB405	PDI	11/18/2003	7.0	7.0	SB-405-0204	2.0	4.0	5.0	3.0	--	--	X	--	X	--	X	X
					SB-405-0608	6.0	8.0	1.0	-1.0	--	--	X	--	X	--	X	X
					SB-405-1012	10.0	12.0	-3.0	-5.0	--	--	X	--	X	--	X	X
					SB-405-1416	14.0	16.0	-7.0	-9.0	--	--	X	--	X	--	X	X
SB406	PDI	12/3/2003	11.4	7.0	SB-406-0608	6.0	8.0	5.4	3.4	--	--	X	--	X	--	X	X
					SB-406-1012	10.0	12.0	1.4	-0.6	--	--	X	--	X	--	X	X
					SB-406-1416	14.0	16.0	-2.6	-4.6	--	--	X	--	X	--	X	X
					SB-406-1820	18.0	20.0	-6.6	-8.6	--	--	X	--	X	--	X	X
SB407	PDI	12/1/2003	12.9	7.0	SB-407-0810	8.0	10.0	4.9	2.9	--	--	X	--	X	--	X	X
					SB-407-1214	12.0	14.0	0.9	-1.1	--	--	X	--	X	--	X	X
					SB-407-1618	16.0	18.0	-3.1	-5.1	--	--	X	--	X	--	X	X
					SB-407-2022	20.0	22.0	-7.1	-9.1	--	--	X	--	X	--	X	X
Area 3																	
B-6	RI (Ph I)	4/19/1990	10.1	10.1	B061-419	4.0	6.0	6.1	4.1	X	X	X	--	--	--	--	--
					B062-419	10.0	12.0	0.1	-2.0	X	X	X	--	X	X	--	--
MW-3	RI (Ph I)	4/24/1990	9.8	9.8	MW31-424	6.0	8.0	3.8	1.8	X	X	X	--	X	X	--	--
					MW32-424	12.0	14.0	-2.2	-4.2	X	X	X	--	X	X	--	--
MW-7S	RI (Ph II)	11/29/1993	10.9	10.9	M72-112993	2.0	4.0	8.9	6.9	X	X	X	--	X	X	--	--
TP1A, B, C	RI (Ph II)	1/11/1994	10.5	10.5	TP11	(pipe)	4.0	6.0	6.5	X	X	X	--	X	X	--	--
					TP13	1.5	2.0	9.0	8.5	X	X	X	--	X	X	--	--
					TP12	3.5	4.0	7.0	6.5	X	X	X	--	X	X	--	--
TP-10	SRE	7/2/1997	10.5	10.5	(no subsurface soil samples)					--	--	--	--	--	--	--	--
TP-11	SRE	7/2/1997	10.0	10.0	TP-11-0506	5.0	6.0	5.0	4.0	X	X	--	X	X	--	X	--
TP-12	SRE	7/2/1997	9.0	9.0	TP-12-0405	4.0	5.0	5.0	4.0	X	X	--	X	X	--	X	--
TP-17	SRE	7/7/1997	10.0	10.0	TP-17-0809	8.0	9.0	2.0	1.0	X	X	--	X	X	--	X	--
MW-101	SRE	7/9/1997	9.4	9.4	SB-101-0608	6.0	8.0	3.4	1.4	X	X	--	X	X	--	X	--
SB408	PDI	11/17/2003	8.0	8.0	SB-408-0204	2.0	4.0	6.0	4.0	--	--	X	--	X	--	X	X
					SB-408-0608	6.0	8.0	2.0	0.0	--	--	X	--	X	--	X	X

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 3 (cont.)																	
SB409	PDI	11/20/2003	9.1	9.1	SB-409-0406	4.0	6.0	5.1	3.1	--	--	X	--	X	--	X	X
					SB-409-0608	6.0	8.0	3.1	1.1	--	--	X	--	X	--	X	X
					SB-409-1012	10.0	12.0	-0.9	-2.9	--	--	X	--	X	--	X	X
SB410	PDI	11/21/2003	9.4	9.4	SB-410-0204	2.0	4.0	7.4	5.4	--	--	X	--	X	--	X	X
					SB-410-0608	6.0	8.0	3.4	1.4	--	--	X	--	X	--	X	X
					SB-410-1012	10.0	12.0	-0.6	-2.6	--	--	X	--	X	--	X	X
					SB-410-1416	14.0	16.0	-4.6	-6.6	--	--	X	--	X	--	X	X
					SB-410-1820	18.0	20.0	-8.6	-10.6	--	--	X	--	X	--	X	X
SB419	PDI	11/18/2003	8.4	8.4	SB-419-0204	2.0	4.0	6.4	4.4	--	--	X	--	X	--	X	X
					SB-419-0608	6.0	8.0	2.4	0.4	--	--	X	--	X	--	X	X
					SB-419-1012	10.0	12.0	-1.6	-3.6	--	--	X	--	X	--	X	X
SB420	PDI	11/21/2003	10.0	10.0	SB-420-0204	2.0	4.0	8.0	6.0	--	--	X	--	X	--	X	X
					SB-420-0608	6.0	8.0	4.0	2.0	--	--	X	--	X	--	X	X
					SB-420-1012	10.0	12.0	0.0	-2.0	--	--	X	--	X	--	X	X
					SB-420-1416	14.0	16.0	-4.0	-6.0	--	--	X	--	X	--	X	X
					MW32-424	12.0	14.0	-12.0	-14.0	X	X	X	--	X	X	--	--
MW-7S	RI (Ph II)	11/29/1993	10.9	10.9	M72-112993	2.0	4.0	8.9	6.9	X	X	X	--	X	X	--	--
TP1A, B, C	RI (Ph II)	1/11/1994	10.5	10.5	TP11	(pipe)	4.0	6.0	6.5	X	X	X	--	X	X	--	--
					TP13	1.5	2.0	9.0	8.5	X	X	X	--	X	X	--	--
					TP12	3.5	4.0	7.0	6.5	X	X	X	--	X	X	--	--
TP-10	SRE	7/2/1997	10.5	10.5	(no subsurface soil samples)					--	--	--	--	--	--	--	--
TP-11	SRE	7/2/1997	10.0	10.0	TP-11-0506	5.0	6.0	5.0	4.0	X	X	--	X	X	--	X	--
TP-12	SRE	7/2/1997	9.0	9.0	TP-12-0405	4.0	5.0	5.0	4.0	X	X	--	X	X	--	X	--
TP-17	SRE	7/7/1997	10.0	10.0	TP-17-0809	8.0	9.0	2.0	1.0	X	X	--	X	X	--	X	--
MW-101	SRE	7/9/1997	9.4	9.4	SB-101-0608	6.0	8.0	3.4	1.4	X	X	--	X	X	--	X	--
SB408	PDI	11/17/2003	8.0	8.0	SB-408-0204	2.0	4.0	6.0	4.0	--	--	X	--	X	--	X	X
					SB-408-0608	6.0	8.0	2.0	0.0	--	--	X	--	X	--	X	X

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 3 (cont.)																	
SB409	PDI	11/20/2003	9.1	9.1	SB-409-0406	4.0	6.0	5.1	3.1	--	--	X	--	X	--	X	X
					SB-409-0608	6.0	8.0	3.1	1.1	--	--	X	--	X	--	X	X
					SB-409-1012	10.0	12.0	-0.9	-2.9	--	--	X	--	X	--	X	X
SB410	PDI	11/21/2003	9.4	9.4	SB-410-0204	2.0	4.0	7.4	5.4	--	--	X	--	X	--	X	X
					SB-410-0608	6.0	8.0	3.4	1.4	--	--	X	--	X	--	X	X
					SB-410-1012	10.0	12.0	-0.6	-2.6	--	--	X	--	X	--	X	X
					SB-410-1416	14.0	16.0	-4.6	-6.6	--	--	X	--	X	--	X	X
					SB-410-1820	18.0	20.0	-8.6	-10.6	--	--	X	--	X	--	X	X
SB419	PDI	11/18/2003	8.4	8.4	SB-419-0204	2.0	4.0	6.4	4.4	--	--	X	--	X	--	X	X
					SB-419-0608	6.0	8.0	2.4	0.4	--	--	X	--	X	--	X	X
					SB-419-1012	10.0	12.0	-1.6	-3.6	--	--	X	--	X	--	X	X
SB420	PDI	11/21/2003	10.0	10.0	SB-420-0204	2.0	4.0	8.0	6.0	--	--	X	--	X	--	X	X
					SB-420-0608	6.0	8.0	4.0	2.0	--	--	X	--	X	--	X	X
					SB-420-1012	10.0	12.0	0.0	-2.0	--	--	X	--	X	--	X	X
					SB-420-1416	14.0	16.0	-4.0	-6.0	--	--	X	--	X	--	X	X
SB421	PDI	11/21/2003	10.8	10.8	SB-421-0204	2.0	4.0	8.8	6.8	--	--	X	--	X	--	X	X
					SB-421-0608	6.0	8.0	4.8	2.8	--	--	X	--	X	--	X	X
					SB-421-1214	12.0	14.0	-1.2	-3.2	--	--	X	--	X	--	X	X
					SB-421-1416	14.0	16.0	-3.2	-5.2	--	--	X	--	X	--	X	X
					SB-421-1820	18.0	20.0	-7.2	-9.2	--	--	X	--	X	--	X	X
SB422	PDI	12/3/2003	11.8	11.8	SB-422-0204	2.0	4.0	9.8	7.8	--	--	X	--	X	--	X	X
					SB-422-0608	6.0	8.0	5.8	3.8	--	--	X	--	X	--	X	X
					SB-422-1012	10.0	12.0	1.8	-0.2	--	--	X	--	X	--	X	X
					SB-422-1416	14.0	16.0	-2.2	-4.2	--	--	X	--	X	--	X	X
					SB-422-1820	18.0	20.0	-6.2	-8.2	--	--	X	--	X	--	X	X
SB432	PDI	11/20/2003	9.8	9.8	SB-432-0204	2.0	4.0	7.8	5.8	--	--	X	--	X	--	X	X
					SB-432-0608	6.0	8.0	3.8	1.8	--	--	X	--	X	--	X	X
					SB-432-1012	10.0	12.0	-0.2	-2.2	--	--	X	--	X	--	X	X
					SB-432-1416	14.0	16.0	-4.2	-6.2	--	--	X	--	X	--	X	X
					SB-432-1820	18.0	20.0	-8.2	-10.2	--	--	X	--	X	--	X	X

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 4																	
B-5	RI (Ph I)	4/17/1990	7.8	7.8	B051-417	4.0	6.0	3.8	1.8	X	X	X	--	X	X	--	--
					B052-417	6.0	8.0	1.8	-0.2	X	X	X	--	X	X	--	--
B-12	RI (Ph II)	11/24/1993	7.9	7.9	B122-112493	2.0	4.0	5.9	3.9	X	X	X	--	X	X	--	--
MW-11S	RI (Ph II)	12/1/1993	7.9	7.9	M112-112993	2.0	4.0	5.9	3.9	X	X	X	--	X	X	--	--
MW-11R	RI (Ph II)	12/15/1993	7.6	7.6	(no subsurface soil samples)					--	--	--	--	--	--	--	--
SB400	PDI	12/1/2003	7.3	7.3	SB-400-0002	0.0	2.0	7.3	5.3	--	--	X	--	X	--	X	X
					SB-400-0608	6.0	8.0	1.3	-0.7	--	--	X	--	X	--	X	X
SB401	PDI	11/19/2003	7.9	7.9	SB-401-0204	2.0	4.0	5.9	3.9	--	--	X	--	X	--	X	X
					SB-401-0810	8.0	10.0	-0.1	-2.1	--	--	X	--	X	--	X	X
					SB-401-1012	10.0	12.0	-2.1	-4.1	--	--	X	--	X	--	X	X
SB402	PDI	11/18/2003	8.4	8.4	SB-402-0204	2.0	4.0	6.4	4.4	--	--	X	--	X	--	X	X
					SB-402-0810	8.0	10.0	0.4	-1.6	--	--	X	--	X	--	X	X
					SB-402-1214	12.0	14.0	-3.6	-5.6	--	--	X	--	X	--	X	X
					SB-402-1618	16.0	18.0	-7.6	-9.6	--	--	X	--	X	--	X	X
					SB-402-1820	18.0	20.0	-9.6	-11.6	--	--	X	--	X	--	X	X
SB427	PDI	11/24/2003	8.3	8.3	SB-427-0204	2.0	4.0	6.3	4.3	--	--	X	--	X	--	X	X
					SB-427-0608	6.0	8.0	2.3	0.3	--	--	X	--	X	--	X	X
Area 5																	
B-1	RI (Ph I)	4/18/1990	12.5	12.5	B011-418	6.0	8.0	6.5	4.5	X	X	X	--	X	X	--	--
B-2	RI (Ph I)	4/18/1990	12.9	12.9	B021-418	2.0	4.0	10.9	8.9	X	X	X	--	X	X	--	--
					B022-418	6.0	8.0	6.9	4.9	X	X	X	--	X	X	--	--
					B023-418	8.0	10.0	4.9	2.9	X	X	X	--	X	X	--	--
B-4	RI (Ph I)	4/20/1990	11.5	11.5	B041-420	4.0	6.0	7.5	5.5	X	X	X	--	X	X	--	--
					B042-420	10.0	12.0	1.5	-0.5	X	X	X	--	X	X	--	--
B-14	RI (Ph II)	12/13/1993	30.7	10.5	(no subsurface soil samples)					--	--	--	--	--	--	--	--
B-15	RI (Ph II)	12/13/1993	27.6	10.5	B152-121393	17.0	19.0	10.6	8.6	X	X	X	--	X	X	--	--
B-17	RI (Ph II)	11/24/1993	11.5	11.5	B132-112393	2.0	4.0	9.5	7.5	X	X	X	--	X	X	--	--
MW-1R	RI (Ph I)	4/23/1990	11.3	11.3	(no subsurface soil samples)					--	--	--	--	--	--	--	--
MW-8R	RI (Ph II)	12/13/1993	12.7	12.7	(no subsurface soil samples)					--	--	--	--	--	--	--	--
MW-9R	RI (Ph II)	12/13/1993	11.7	11.0	(VOC samples only)					X	--	--	--	--	--	--	--

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 5 (cont.)																	
TP2	RI (Ph II)	1/11/1994	13.0	10.0	TP22	4.5	4.5	8.5	8.5	X	X	--	X	X	X	--	--
					TP21	7.0	8.0	6.0	5.0	X	X	--	X	X	X	--	--
TP3	RI (Ph II)	1/11/1994	15.0	10.0	TP31	7.0	8.0	8.0	7.0	X	X	--	X	X	X	--	--
					TP32	7.0	7.0	8.0	8.0	X	X	--	X	X	X	--	--
TP-01	SRE	6/30/1997	12.0	12.0	(no subsurface soil samples)					--	--	--	--	--	--	--	--
TP-02	SRE	6/30/1997	12.0	12.0	TP02-0203	2.0	3.0	10.0	9.0	X	X	--	X	X	--	X	--
TP-03	SRE	6/30/1997	12.5	12.5	(no subsurface soil samples)					--	--	--	--	--	--	--	--
TP-04	SRE	7/1/1997	12.5	12.5	(no subsurface soil samples)					--	--	--	--	--	--	--	--
TP-05	SRE	7/1/1997	11.0	11.0	TP-05-0708	7.0	8.0	4.0	3.0	X	X	--	X	X	--	X	--
TP-06	SRE	7/1/1997	12.5	12.5	TP-06-0607	6.0	7.0	6.5	5.5	X	X	--	X	X	--	X	--
TP-07	SRE	7/2/1997	12.5	12.5	TP-07-0708	7.0	8.0	5.5	4.5	X	X	--	X	X	--	X	--
TP-08	SRE	7/2/1997	11.5	11.5	TP-08-0304	3.0	4.0	8.5	7.5	X	X	--	X	X	--	X	--
TP-09	SRE	7/2/1997	12.0	12.0	(no subsurface soil samples)					--	--	--	--	--	--	--	--
TP-13	SRE	7/3/1997	13.0	10.0	TP-13-0607	6.0	7.0	7.0	6.0	X	X	--	X	X	--	X	--
TP-16	SRE	7/7/1997	14.0	10.0	TP-16-1011	10.0	11.0	4.0	3.0	X	X	--	X	X	--	X	--
SB411	PDI	11/24/2003	31.0	10.5	SB-411-2022	20.0	22.0	11.0	9.0	--	--	X	--	X	--	X	X
					SB-411-2224	22.0	24.0	9.0	7.0	--	--	X	--	X	--	X	X
					SB-411-2628	26.0	28.0	5.0	3.0	--	--	X	--	X	--	X	X
SB412	PDI	11/25/2003	24.5	10.5	SB-412-1416	14.0	16.0	10.5	8.5	--	--	X	--	X	--	X	X
SB423	PDI	11/25/2003	11.9	11.9	SB-423-0204	2.0	4.0	9.9	7.9	--	--	X	--	X	--	X	X
SB424	PDI	11/26/2003	12.0	12.0	SB-424-0204	2.0	4.0	10.0	8.0	--	--	X	--	X	--	X	X
SB425	PDI	11/26/2003	12.1	12.1	SB-425-0204	2.0	4.0	10.1	8.1	--	--	X	--	X	--	X	X
SB426	PDI	11/25/2003	11.5	11.5	SB-426-0204	2.0	4.0	9.5	7.5	--	--	X	--	X	--	X	X
SB434	PDI	12/2/2003	11.5	11.5	SB-434-0204	2.0	4.0	9.5	7.5	--	--	X	--	X	--	X	X
					SB-434-0608	6.0	8.0	5.5	3.5	--	--	X	--	X	--	X	X
Area 6																	
B-3	RI (Ph I)	4/18/1990	10.1	10.1	B031-418	2.0	4.0	8.1	6.1	X	X	X	--	--	--	--	--
					B032-418	8.0	10.0	2.1	0.1	X	X	X	--	X	X	--	--
					B033-418	12.0	14.0	-1.9	-3.9	X	X	X	--	X	X	--	--
B-13	RI (Ph II)	11/23/1993	8.9	8.9	B132-112393	4.0	6.0	4.9	2.9	X	X	X	--	X	X	--	--

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 6 (cont.)																	
SB426	PDI	11/25/2003	11.5	11.5	SB-426-0204	2.0	4.0	9.5	7.5	--	--	X	--	X	--	X	X
SB434	PDI	12/2/2003	11.5	11.5	SB-434-0204	2.0	4.0	9.5	7.5	--	--	X	--	X	--	X	X
					SB-434-0608	6.0	8.0	5.5	3.5	--	--	X	--	X	--	X	X
B-3	RI (Ph I)	4/18/1990	10.1	10.1	B031-418	2.0	4.0	8.1	6.1	X	X	X	--	--	--	--	--
					B032-418	8.0	10.0	2.1	0.1	X	X	X	--	X	X	--	--
					B033-418	12.0	14.0	-1.9	-3.9	X	X	X	--	X	X	--	--
B-13	RI (Ph II)	11/23/1993	8.9	8.9	B132-112393	4.0	6.0	4.9	2.9	X	X	X	--	X	X	--	--
B-16	RI (Ph II)	11/23/1993	9.2	9.2	B162-112393	2.0	4.0	7.2	5.2	X	X	X	--	X	X	--	--
					B163-112393	6.0	7.0	3.2	2.2	X	--	--	--	--	--	--	--
MW-2S	RI (Ph I)	4/23/1990	9.1	9.1	MW21-423	6.0	8.0	3.1	1.1	X	X	X	--	X	X	--	--
					MW22-423	12.0	14.0	-2.9	-4.9	X	X	X	--	X	X	--	--
MW-2D	RI (Ph II)	11/29/1993	9.2	9.2	(no subsurface soil samples)					--	--	--	--	--	--	--	--
MW-10S	RI (Ph II)	11/29/1993	10.4	10.4	M102-112993	4.0	6.0	6.4	4.4	X	X	X	--	X	X	--	--
MW-102	SRE	7/7/1997	8.3	8.3	SB-102-0608	6.0	8.0	2.3	0.3	X	X	--	X	X	--	X	--
TP-14	SRE	7/3/1997	10.0	10.0	TP-14-0304	3.0	4.0	7.0	6.0	X	X	--	X	X	--	X	--
TP-15	SRE	7/3/1997	9.0	9.0	TP-15-0506	5.0	6.0	4.0	3.0	X	X	--	X	X	--	X	--
SB403	PDI	11/25/2003	9.4	9.4	SB-403-0204	2.0	4.0	7.4	5.4	--	--	X	--	X	--	X	X
					SB-403-0608	6.0	8.0	3.4	1.4	--	--	X	--	X	--	X	X
					SB-403-1012	10.0	12.0	-0.6	-2.6	--	--	X	--	X	--	X	X
					SB-403-1416	14.0	16.0	-4.6	-6.6	--	--	X	--	X	--	X	X
					SB-403-1820	18.0	20.0	-8.6	-10.6	--	--	X	--	X	--	X	X
SB404	PDI	11/25/2003	8.9	8.9	SB-404-0204	2.0	4.0	6.9	4.9	--	--	X	--	X	--	X	X
					SB-404-0608	6.0	8.0	2.9	0.9	--	--	X	--	X	--	X	X
					SB-404-1012	10.0	12.0	-1.1	-3.1	--	--	X	--	X	--	X	X
					SB-404-1618	16.0	18.0	-7.1	-9.1	--	--	X	--	X	--	X	X
					SB-404-1820	18.0	20.0	-9.1	-11.1	--	--	X	--	X	--	X	X
SB413	PDI	12/4/2003	10.6	10.6	SB-413-0204	2.0	4.0	8.6	6.6	--	--	X	--	X	--	X	X
SB414	PDI	12/2/2003	10.7	10.7	SB-414-0204	2.0	4.0	8.7	6.7	--	--	X	--	X	--	X	X
					SB-414-0608	6.0	8.0	4.7	2.7	--	--	X	--	X	--	X	X
					SB-414-1012	10.0	12.0	0.7	-1.3	--	--	X	--	X	--	X	X

TABLE 4-1 (cont.)
SUBSURFACE SOIL SAMPLE ANALYSIS SUMMARY
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Event	Date	Surface Elevation (1)	Base Grade Elevation (1)	Sample ID	Sample Depth (2)		Sample Elevation (1)		Analysis							
										VOC	SVOC	PAH	Pest/ PCBs	TAL Metals	Cyanide	TPH	GRO
Area 6 (cont.)																	
SB428	PDI	11/24/2003	8.0	8.0	SB-428-0204	2.0	4.0	6.0	4.0	--	--	X	--	X	--	X	X
					SB-428-0608	6.0	8.0	2.0	0.0	--	--	X	--	X	--	X	X
					SB-428-1012	10.0	12.0	-2.0	-4.0	--	--	X	--	X	--	X	X
					SB-428-1416	14.0	16.0	-6.0	-8.0	--	--	X	--	X	--	X	X
					SB-428-1820	18.0	20.0	-10.0	-12.0	--	--	X	--	X	--	X	X
SB429	PDI	11/25/2003	8.6	8.6	SB-429-0406	4.0	6.0	4.6	2.6	--	--	X	--	X	--	X	X
					SB-429-0608	6.0	8.0	2.6	0.6	--	--	X	--	X	--	X	X
					SB-429-1012	10.0	12.0	-1.4	-3.4	--	--	X	--	X	--	X	X
					SB-429-1416	14.0	16.0	-5.4	-7.4	--	--	X	--	X	--	X	X
					SB-429-1820	18.0	20.0	-9.4	-11.4	--	--	X	--	X	--	X	X
SB430	PDI	12/2/2003	9.8	9.8	SB-430-0204	4.0	6.0	5.8	3.8	--	--	X	--	X	--	X	X
					SB-430-0810	8.0	10.0	1.8	-0.2	--	--	X	--	X	--	X	X
					SB-430-1214	12.0	14.0	-2.2	-4.2	--	--	X	--	X	--	X	X
					SB-430-1416	14.0	16.0	-4.2	-6.2	--	--	X	--	X	--	X	X
SB431	PDI	11/26/2003	11.1	11.1	SB-431-0204	2.0	4.0	9.1	7.1	--	--	X	--	X	--	X	X
					SB-431-0810	8.0	10.0	3.1	1.1	--	--	X	--	X	--	X	X
					SB-431-1012	10.0	12.0	1.1	-0.9	--	--	X	--	X	--	X	X

Notes:

(1)	elevations presented in feet NGVD 1929 (MLW)
(2)	feet below ground surface (November 2003)
GRO	gasoline range organics
ID	identifier
Pest	pesticides
RI (Ph I)	Phase I Remedial Investigation
RI (Ph II)	Phase II Remedial Investigation
RI (Ph III)	Phase III Remedial Investigation
PCBs	polychlorinated biphenyls
PAH	polynuclear aromatic hydrocarbons
PDI	Pre-Design Investigation
SVOC	semivolatile organic compounds
TAL	Target Analyte List
TPH	total petroleum hydrocarbons
VOC	volatile organic compounds
X	sample was analyzed
--	sample was not analyzed

TABLE 4-2A
JAR HEADSPACE SUMMARY
WESTERN SECTION (AREA 1 AND 2)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
AREA 1										
B-9	17.7	9.0	11.0	8.7	6.7	ND	ND	na	--	--
		11.0	12.0	6.7	4.7	NR	NR	na	--	--
		12.0	14.0	5.7	3.7	ND	ND	na	--	--
B-10	13.7	**0.0**	**2.0**	13.7	12.7	ND	ND	na	--	--
		2.0	4.0	11.7	9.7	ND	ND	na	--	--
		4.0	6.0	9.7	7.7	NR	NR	na	--	--
		6.0	8.0	7.7	5.7	ND	ND	na	--	--
B-11	8.4	2.0	4.0	6.4	4.4	ND	ND	na	170	--
		4.0	**6.0**	4.4	2.4	ND	ND	na	--	--
		6.0	8.0	2.4	0.4	1.0	ND	na	ND	--
		8.0	10.0	0.4	-1.6	1.0	ND	na	--	--
		10.0	12.0	-1.6	-3.6	ND	ND	na	ND	--
		12.0	14.0	-3.6	-5.6	ND	ND	na	ND	--
		14.0	16.0	-5.6	-7.6	ND	ND	na	--	--
		16.0	18.0	-7.6	-9.6	ND	ND	na	13	--
		18.0	20.0	-9.6	-11.6	ND	ND	na	--	--
		20.0	22.0	-11.6	-13.6	ND	ND	na		--
		22.0	24.0	-13.6	-15.6	ND	ND	na		--
		25.0	27.0	-16.6	-18.6	ND	ND	na		--
SB415	13.3	4.0	6.0	9.3	7.3	na	ND	0.0	--	--
		6.0	**8.0**	7.3	5.3	na	NR	NR	ND	--
		8.0	10.0	5.3	3.3	na	ND	0.0	--	--
		10.0	**12.0**	3.3	1.3	na	NR	NR	39	--
SB416	11.5	**4.0**	**6.0**	7.5	5.5	na	0.9	0.0	170	--
		6.0	8.0	5.5	3.5	na	0.5	0.0	--	--
		8.0	**10.0**	3.5	1.5	na	1.3	0.0	ND	--
		10.0	12.0	1.5	-0.5	na	0.8	0.0	--	--
		12.0	**14.0**	-0.5	-2.5	na	1.8	0.5	ND	--
		14.0	**16.0**	-2.5	-4.5	na	0.9	0.0	ND	--
		16.0	18.0	-4.5	-6.5	na	1.5	3.0	--	--
		18.0	**20.0**	-6.5	-8.5	na	0.6	11.4	13	--
		20.0	22.0	-8.5	-10.5	na	na	na	--	--
SB417	8.5	2.0	4.0	6.5	4.5	na	na	na	--	--
		4.0	**6.0**	4.5	2.5	na	122.0	10.9	310	staining/petroleum odor
		6.0	**8.0**	2.5	0.5	na	7.0	0.0	175	staining
		8.0	10.0	0.5	-1.5	na	11.0	0.0	--	--
		10.0	**12.0**	-1.5	-3.5	na	1.0	0.0	ND	--
		12.0	14.0	-3.5	-5.5	na	0.3	0.0	--	--
		14.0	**16.0**	-5.5	-7.5	na	0.6	0.0	ND	--
		16.0	18.0	-7.5	-9.5	na	1.0	0.0	--	--
		18.0	**20.0**	-9.5	-11.5	na	2.2	0.0	ND	--
SB418	10.0	**4.0**	**6.0**	6.0	4.0	na	4.1	3.9	32	--
		6.0	8.0	4.0	2.0	na	151.0	23.5	--	--
		8.0	**10.0**	2.0	0.0	na	139.0	23.5	44	strong petroleum odor/potential saturation
		10.0	12.0	0.0	-2.0	na	38.5	38.5	--	strong petroleum odor
		12.0	**14.0**	-2.0	-4.0	na	25.0	25.0	ND	petroleum odor/potential saturation
		14.0	16.0	-4.0	-6.0	na	20.8	20.8	--	petroleum odor
		16.0	**18.0**	-6.0	-8.0	na	3.6	0.0	ND	--
		18.0	20.0	-8.0	-10.0	na	11.5	2.1	--	--
		20.0	22.0	-10.0	-12.0	na	na	na	--	--

TABLE 4-2A (cont.)
JAR HEADSPACE SUMMARY
WESTERN SECTION (AREA 1 AND 2)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
AREA 1 (cont.)										
SB433	17.3	**12.0**	**14.0**	5.3	3.3	na	24.6	47.3	190	--
		14.0	16.0	3.3	1.3	na	116.0	326.7	--	--
		16.0	**18.0**	1.3	-0.7	na	0.4	0.0	170	--
		18.0	20.0	-0.7	-2.7	na	1.7	0.8	--	--
		20.0	**22.0**	-2.7	-4.7	na	5.4	8.0	92	--
		22.0	24.0	-4.7	-6.7	na	0.0	0.0	--	--
		24.0	**26.0**	-6.7	-8.7	na	1.6	0.8	ND	--
		26.0	28.0	-8.7	-10.7	na	0.1	0.0	--	--
AREA 2										
B-7(MW-4)	8.1	0.0	2.0	8.1	6.1	na	2.5	na	--	--
		2.0	**4.0**	6.1	4.1	na	3.8	na	--	--
		4.0	6.0	4.1	2.1	na	23.0	na	--	slight odor
		6.0	**8.0**	2.1	0.1	na	37.0	na	--	slight odor
		8.0	10.0	0.1	-1.9	na	NR	na	--	slight odor
		10.0	**12.0**	-1.9	-3.9	na	6.0	na	--	--
B-8	11.5	4.0	6.0	7.5	5.5	NR	NR	na	--	--
		6.0	8.0	5.5	3.5	0.0	6.0	na	--	--
		8.0	10.0	3.5	1.5	0.0	7.0	na	--	--
		10.0	12.0	1.5	-0.5	NR	NR	na	--	--
		12.0	14.0	-0.5	-2.5	28.0	20.0	na	--	strong odor/staining
		14.0	16.0	-2.5	-4.5	0.0	6.0	na	--	odor
		16.0	18.0	-4.5	-6.5	NR	NR	na	--	slight odor
		18.0	20.0	-6.5	-8.5	1.0	8.0	na	--	slight odor
		20.0	22.0	-8.5	-10.5	1.0	2.0	na	--	slight odor
		22.0	23.0	-10.5	-12.5	ND	4.0	na	--	--
SB405	7.0	**2.0**	**4.0**	5.0	3.0	na	0.0	0.0	43	--
		4.0	6.0	3.0	1.0	na	0.0	0.0	--	--
		6.0	**8.0**	1.0	-1.0	na	0.0	0.0	92	--
		8.0	10.0	-1.0	-3.0	na	0.0	0.0	--	--
		10.0	**12.0**	-3.0	-5.0	na	0.0	0.0	ND	--
		12.0	14.0	-5.0	-7.0	na	0.0	0.0	--	--
		14.0	**16.0**	-7.0	-9.0	na	0.0	0.0	ND	--
SB406	11.4	4.0	6.0	7.4	5.4	na	1.8	0.0	--	--
		6.0	**8.0**	5.4	3.4	na	3.8	0.0	170	--
		8.0	10.0	3.4	1.4	na	3.7	1.3	--	--
		10.0	**12.0**	1.4	-0.6	na	2.7	5.2	69	--
		12.0	14.0	-0.6	-2.6	na	0.6	0.0	--	--
		14.0	**16.0**	-2.6	-4.6	na	3.5	0.8	15	--
		16.0	18.0	-4.6	-6.6	na	3.1	0.0	--	--
		18.0	**20.0**	-6.6	-8.6	na	2.6	0.0	ND	--
SB407	12.9	6.0	8.0	6.9	4.9	na	0.0	0.0	--	--
		8.0	**10.0**	4.9	2.9	na	0.0	0.0	48	--
		10.0	12.0	2.9	0.9	na	0.0	0.0	--	--
		12.0	**14.0**	0.9	-1.1	na	19.1	29.2	900	sheen/potential petroleum saturation
		14.0	16.0	-1.1	-3.1	na	0.1	1.1	--	sheen/potential petroleum saturation
		16.0	**18.0**	-3.1	-5.1	na	4.1	4.7	23	sheen/potential petroleum saturation
		18.0	20.0	-5.1	-7.1	na	3.8	6.9	--	--
		20.0	**22.0**	-7.1	-9.1	na	2.1	4.8	ND	--
		22.0	24.0	-9.1	-11.1	na	0.0	0.0	--	--
		24.0	26.0	-11.1	-13.1	na	0.0	0.6	--	--

TABLE 4-2A (cont.)
JAR HEADSPACE SUMMARY
WESTERN SECTION (AREA 1 AND 2)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Notes:
(1) elevations are presented as feet NGVD 1929 (MLW)
See boring logs for detailed description.
Bold number indicates the soil sample was collected from that depth interval.

FID	flame ionization detector
ft bgs	feet below ground surface
na	not applicable
NR	no reading
ND	not detected
OVA	organic vapor analyzer
PID	photoionization detector
ppm	parts per million (above background readings)
--	not analyzed for TPH/no evidence of TPH
	exceeds the TPH PRG of 500 mg/kg

TABLE 4-2B
JAR HEADSPACE SUMMARY
CENTRAL SECTION (AREA 3 AND 4)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 3										
B-6	10.1	2.0	4.0	8.1	6.1	na	4.3	na	--	--
		4.0	**6.0**	6.1	4.1	na	11.2	na	--	petroleum odor
		6.0	8.0	4.1	2.1	na	na	na	--	--
		8.0	10.0	2.1	0.1	na	10.2	na	--	slight odor
		10.0	**12.0**	0.1	-1.9	na	3.4	na	--	slight odor
		12.0	14.0	-1.9	-3.9	na	3.6	na	--	--
MW-3S	9.8	2.0	4.0	7.8	5.8	na	14.2	na	--	--
		4.0	6.0	5.8	3.8	na	10.0	na	--	oily staining/strong petroleum odor
		6.0	**8.0**	3.8	1.8	na	144.0	na	--	oily staining/strong petroleum odor
		8.0	10.0	1.8	-0.2	na	59.0	na	--	strong petroleum odor
		10.0	12.0	-0.2	-2.2	na	24.0	na	--	strong petroleum odor
		12.0	**14.0**	-2.2	-4.2	na	18.2	na	--	slight odor
MW-7S	10.9	**2.0**	**4.0**	8.9	6.9	ND	ND	na	--	--
		4.0	6.0	6.9	4.9	7.0	6.0	na	--	petroleum odor
		6.0	8.0	4.9	2.9	ND	ND	na	--	slight odor
		8.0	10.0	2.9	0.9	ND	ND	na	--	slight odor
		10.0	12.0	0.9	-1.1	ND	ND	na	--	--
		12.0	14.0	-1.1	-3.1	ND	ND	na	--	--
TP-1A,B,C	10.5	no samples collected for jar headspace							na	some contam. from broken pipe only
TP-10	10.5	no samples collected for jar headspace							na	--
TP-11	10.0	0.0	0.5	10.0	9.5	na	na	0.0	--	--
		5.0	**6.0**	5.0	4.0	na	na	3.5	7500	stained/saturated with oil
TP-12	9.0	0.0	5.0	9.0	4.0	na	na	0.0	4100 J	pipe containing oil found
TP-17	10.0	0.0	3.0	10.0	7.0	na	na	0.0	--	--
		3.0	**8.0**	7.0	2.0	na	na	9.0	200	oily water entering excavation
MW-101	10.9	2.0	4.0	8.9	6.9	na	na	0.0	--	--
		4.0	6.0	6.9	4.9	na	na	NR	--	odor/sheen
		6.0	**8.0**	4.9	2.9	na	na	NR	1900 J	slight odor/sheen
		8.0	10.0	2.9	0.9	na	na	NR	--	oil sheen/odor
		10.0	12.0	0.9	-1.1	na	na	NR	--	--
		12.0	14.0	-1.1	-3.1	na	na	NR	--	--
SB408	8.0	**2.0**	**4.0**	6.0	4.0	na	0.0	0.0	600	--
		4.0	6.0	4.0	2.0	na	0.0	0.0	--	--
		6.0	**8.0**	2.0	0.0	na	1.8	0.0	150	--
		8.0	10.0	0.0	-2.0	na	na	na	--	--
		10.0	12.0	-2.0	-4.0	na	na	na	--	--
		12.0	14.0	-4.0	-6.0	na	na	na	--	--
SB409	9.1	2.0	4.0	7.1	5.1	na	0.0	1.5	--	--
		4.0	**6.0**	5.1	3.1	na	130.0	70.0	4800	heavy staining, trace free oil
		6.0	**8.0**	3.1	1.1	na	193.0	240.7	4200	heavy staining, trace free oil
		8.0	10.0	1.1	-0.9	na	62.0	23.2	--	sheen
		10.0	**12.0**	-0.9	-2.9	na	44.0	24.0	38	slight odor
		12.0	14.0	-2.9	-4.9	na	69.0	26.5	--	slight odor
		14.0	16.0	-4.9	-6.9	na	37.0	8.3	--	--
SB410	9.4	**2.0**	**4.0**	7.4	5.4	na	0.0	1.5	52	--
		4.0	6.0	5.4	3.4	na	127.0	122.5	--	petroleum odor/staining
		6.0	**8.0**	3.4	1.4	na	52.0	1438	2900	very strong petroleum odor/free oil
		8.0	10.0	1.4	-0.6	na	88.7	107.6	--	sheen
		10.0	**12.0**	-0.6	-2.6	na	60.6	61.6	110	sheen
		12.0	14.0	-2.6	-4.6	na	5.3	0.0	--	slight odor
		14.0	**16.0**	-4.6	-6.6	na	NR	NR	25	odor/slight sheen
		16.0	18.0	-6.6	-8.6	na	4.5	4.0	--	--
		18.0	**20.0**	-8.6	-10.6	na	0.0	3.2	ND	--

TABLE 4-2B (cont.)
JAR HEADSPACE SUMMARY
CENTRAL SECTION (AREA 3 AND 4)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 3 (cont.)										
SB419	8.4	**2.0**	**4.0**	6.4	4.4	na	59.9	44.6	1600	petroleum odor/slight staining
		4.0	6.0	4.4	2.4	na	277.0	289.0	--	--
		6.0	**8.0**	2.4	0.4	na	294.0	174.0	2650	petroleum odor
		8.0	10.0	0.4	-1.6	na	23.3	34.9	--	sheen
		10.0	**12.0**	-1.6	-3.6	na	27.7	20.9	35	slight odor
		12.0	14.0	-3.6	-5.6	na	52.6	40.0	--	odor
SB420	10.0	**2.0**	**4.0**	8.0	6.0	na	2.5	4.6	46	--
		4.0	6.0	6.0	4.0	na	560.0	684.3	--	staining/petroleum odor
		6.0	**8.0**	4.0	2.0	na	280.0	1555	8400	oil squeezing out of pores in soil
		8.0	10.0	2.0	0.0	na	249.0	1298	--	oil squeezing out of pores in soil
		10.0	**12.0**	0.0	-2.0	na	158.0	480.0	710	petroleum odor
		12.0	14.0	-2.0	-4.0	na	37.3	23.0	--	--
		14.0	**16.0**	-4.0	-6.0	na	63.4	35.3	70	--
SB421	10.8	**2.0**	**4.0**	8.8	6.8	na	0.0	143.7	125	--
		4.0	6.0	6.8	4.8	na	270	832.7	--	stained/free product
		6.0	**8.0**	4.8	2.8	na	250	672.8	7300	free product - appears to be heavy oil
		8.0	10.0	2.8	0.8	na	22.4	232.9	--	sheen
		10.0	12.0	0.8	-1.2	na	na	na	--	--
		12.0	**14.0**	-1.2	-3.2	na	8.8	NR	ND	slight odor
		14.0	**16.0**	-3.2	-5.2	na	NR	NR	16	--
		16.0	18.0	-5.2	-7.2	na	3.9	NR	--	slight odor
		18.0	**20.0**	-7.2	-9.2	na	1.1	NR	18	--
SB422	11.8	**2.0**	**4.0**	9.8	7.8	na	0	0.0	360	--
		4.0	6.0	7.8	5.8	na	0	186.0	--	--
		6.0	**8.0**	5.8	3.8	na	0.4	334.1	37	--
		8.0	10.0	3.8	1.8	na	0	3.2	--	--
		10.0	**12.0**	1.8	-0.2	na	1.3	1.1	ND	--
		12.0	14.0	-0.2	-2.2	na	1	3.7	--	--
		14.0	**16.0**	-2.2	-4.2	na	0.5	0.0	ND	--
		16.0	18.0	-4.2	-6.2	na	0.0	0.0	--	--
		18.0	**20.0**	-6.2	-8.2	na	0.0	186.0	ND	--
SB432	9.8	**2.0**	**4.0**	7.8	5.8	na	2000	5425	1100	slight sweet odor
		4.0	6.0	5.8	3.8	na	2000	2929	--	--
		6.0	**8.0**	3.8	1.8	na	2000	5677	910	--
		8.0	10.0	1.8	-0.2	na	153.0	241.0	--	strong petroleum odor
		10.0	**12.0**	-0.2	-2.2	na	485.0	365.0	93	petroleum staining/odor
		12.0	14.0	-2.2	-4.2	na	28.3	12.6	--	--
		14.0	**16.0**	-4.2	-6.2	na	12.0	1.9	ND	--
		16.0	18.0	-6.2	-8.2	na	7.7	0.0	--	--
		18.0	**20.0**	-8.2	-10.2	na	0.0	0.0	ND	--
Area 4										
B-5	7.8	2.0	4.0	5.8	3.8	758.0	na	na	--	--
		4.0	**6.0**	3.8	1.8	100.0	na	na	--	strong petroleum odor/oily staining
		6.0	**8.0**	1.8	-0.2	>1000	na	na	--	swamp odor
		8.0	10.0	-0.2	-2.2	10.0	na	na	--	swamp odor
		10.0	12.0	-2.2	-4.2	200.0	na	na	--	organic odor
B-12	7.9	**2.0**	**4.0**	5.9	3.9	ND	ND	na	--	--
		4.0	6.0	3.9	1.9	1.0	ND	na	--	petroleum odor
		6.0	8.0	1.9	-0.1	ND	ND	na	--	--

TABLE 4-2B (cont.)
JAR HEADSPACE SUMMARY
CENTRAL SECTION (AREA 3 AND 4)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 4 (cont.)										
MW-11S	7.9	**2.0**	**4.0**	5.9	3.9	ND	ND	na	--	--
		4.0	6.0	3.9	1.9	15.0	5.0	na	--	--
		6.0	8.0	1.9	-0.1	1.0	ND	na	--	--
		8.0	10.0	-0.1	-2.1	2.0	ND	na	--	--
		10.0	12.0	-2.1	-4.1	NR	NR	na	--	--
MW-11R	7.6	2.0	4.0	5.6	3.6	ND	ND	na	--	--
		4.0	6.0	3.6	1.6	15.0	5.0	na	--	--
		6.0	8.0	1.6	-0.4	1.0	ND	na	--	--
		8.0	10.0	-0.4	-2.4	2.0	ND	na	--	--
		10.0	12.0	-2.4	-4.4	NR	NR	na	--	--
SB400	7.3	0.0	2.0	7.3	5.3	na	0.0	0.0	--	--
		2.0	**4.0**	5.3	3.3	na	0.0	0.0	16	--
		4.0	6.0	3.3	1.3	na	6.8	9.4	--	--
		6.0	**8.0**	1.3	-0.7	na	NR	NR	170	--
SB401	7.9	**2.0**	**4.0**	5.9	3.9	na	0.0	0.0	29	--
		4.0	6.0	3.9	1.9	na	5.3	32.4	--	--
		6.0	8.0	1.9	-0.1	na	na	na	--	--
		8.0	**10.0**	-0.1	-2.1	na	0.0	17.4	19	--
		10.0	**12.0**	-2.1	-4.1	na	0.0	5.7	15	--
		12.0	14.0	-4.1	-6.1	na	0.0	15.4	--	--
SB402	8.4	**2.0**	**4.0**	6.4	4.4	na	84.2	15.0	63	--
		4.0	6.0	4.4	2.4	na	81.0	23.6	--	faint sweet odor
		6.0	8.0	2.4	0.4	na	72.8	28.3	--	--
		8.0	**10.0**	0.4	-1.6	na	7.5	417.2	180	organic odor
		10.0	12.0	-1.6	-3.6	na	23.9	157.0	--	--
		12.0	**14.0**	-3.6	-5.6	na	6.1	452.3	ND	slight odor
		14.0	16.0	-5.6	-7.6	na	11.3	17.0	--	--
		16.0	**18.0**	-7.6	-9.6	na	1.6	17.9	ND	--
		18.0	**20.0**	-9.6	-11.6	na	0.0	0.0	ND	--
SB427	8.3	**2.0**	**4.0**	6.3	4.3	na	0.0	0.0	370	--
		4.0	6.0	4.3	2.3	na	123	90.5	--	oily sand/petroleum odor
		6.0	**8.0**	2.3	0.3	na	52.1	29.3	400	sulfur odor
		8.0	10.0	0.3	-1.7	na	26.3	13.6	--	--
		10.0	12.0	-1.7	-3.7	na	na	na	--	--

Notes:
(1) elevations are presented as feet NGVD 1929 (MLW)
See boring logs for detailed description.
Bold number indicates the soil sample was collected from that depth interval.
ft bgs feet below ground surface
FID flame ionization detector
NR no reading
ND not detected
na not applicable
-- not analyzed for TPH/no evidence of TPH
OVA organic vapor analyzer
ppm parts per million (above background readings)
PID photoionization detector

TABLE 4-2C
JAR HEADSPACE SUMMARY
EASTERN SECTION (AREA 5 AND 6)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location/ Date	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 5										
B-1	12.5	2.0	4.0	10.5	8.5	0.8	na	na	--	--
		4.0	6.0	8.5	6.5	0.5	na	na	--	--
		6.0	8.0	6.5	4.5	4.0	na	na	--	--
		8.0	10.0	4.5	2.5	1.2	na	na	--	--
B-2	12.9	2.0	4.0	10.9	8.9	3.7	na	na	--	--
		4.0	6.0	8.9	6.9	3.8	na	na	--	--
		6.0	8.0	6.9	4.9	6.0	na	na	--	oily staining/petroleum odor
		8.0	10.0	4.9	2.9	5.6	na	na	--	slight petroleum odor
		10.0	12.0	2.9	0.9	NR	na	na	--	--
B-4	11.5	2.0	4.0	9.5	7.5	0.3	na	na	--	--
		4.0	6.0	7.5	5.5	na	na	na	--	light hydrocarbons odor (ie diesel)
		6.0	8.0	5.5	3.5	1.2	na	na	--	light hydrocarbons odor
		8.0	10.0	3.5	1.5	0.8	na	na	--	light hydrocarbons odor
		10.0	12.0	1.5	-0.5	0.9	na	na	--	light hydrocarbons odor
		12.0	14.0	-0.5	-2.5	NR	na	na	--	--
B-15	27.6	17.0	19.0	10.6	8.6	NR	NR	na	--	--
B-17	11.5	2.0	4.0	9.5	7.5	ND	ND	na	--	--
		4.0	6.0	7.5	5.5	NR	NR	na	--	--
MW-1R	11.3	no samples collected for jar headspace							na	--
MW-8R	11.5	2.0	4.0	9.5	7.5	ND	ND	na	--	--
MW-9R	11.7	2.0	4.0	9.7	7.7	ND	ND	na	--	--
		4.0	6.0	7.7	5.7	ND	ND	na	--	--
		6.0	8.0	5.7	3.7	NR	NR	na	--	--
TP2	13.0	**2.0**	**2.0**	11.0	11.0	NR	NR	na	--	--
		4.0	**5.0**	9.0	8.0	NR	NR	na	--	--
		7.0	**8.0**	6.0	5.0	NR	1200.0	na	--	black staining/strong petroleum odor
TP-01	12.0	no subsurface samples collected							na	--
TP-02	12.0	0.5	2.5	11.5	9.5	na	na	30.0	--	--
		2.5	**3.5**	9.5	8.5	na	na	30.0	140 J	--
TP-03	12.5	0.5	2.5	12.0	10.0	na	na	0.0	--	--
TP-04	12.5	no samples collected for jar headspace							--	--
TP-05	11.0	0.5	5.0	10.5	6.0	na	na	0.0	--	--
		7.0	**8.0**	4.0	5.0	na	na	0.0	ND	--
TP-06	12.5	0.0	6.0	12.5	6.0	na	na	0.0	--	--
		6.0	**7.0**	6.5	5.0	na	na	0.0	130 J	--
TP-07	12.5	0.0	7.0	12.5	5.0	na	na	0.0	--	--
		7.0	**8.0**	5.5	4.0	na	na	0.0	ND	--
TP-08	11.5	0.0	7.0	11.5	5.0	na	na	0.0	--	--
		7.0	**8.0**	4.5	4.0	na	na	0.0	ND	--
TP-09	12.0	no subsurface samples collected							na	--
TP-13	13.0	0.5	7.0	12.5	4.0	na	na	0.0	--	--
		7.0	**7.0**	4.0	4.0	na	na	3.2	7400 J	oil-stained
TP-16	14.0	0.0	10.0	14.0	3.0	na	0.0	na	--	--
		10.0	**11.0**	3.0	2.0	na	4.0	na	6400 J	potentially oil-laden soil
SB411	31.0	18.0	20.0	13.0	11.0	na	NR	0.0	--	--
		20.0	**22.0**	11.0	9.0	na	NR	0.0	300	--
		22.0	**24.0**	9.0	7.0	na	NR	0.0	170	--
		24.0	26.0	7.0	5.0	na	NR	0.0	--	--
		26.0	**28.0**	5.0	3.0	na	na	na	380	--

TABLE 4-2C (cont.)
JAR HEADSPACE SUMMARY
EASTERN SECTION (AREA 5 AND 6)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location/ Date	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 5 (cont.)										
SB412	24.5	12.0	14.0	12.5	10.5	na	38.9	103.3	--	--
		14.0	**16.0**	10.5	8.5	na	50.3	137.3	100	--
		16.0	18.0	8.5	6.5	na	636.0	132.6	--	--
		18.0	20.0	6.5	4.5	na	na	na	--	--
SB423	11.9	**2.0**	**4.0**	9.9	7.9	na	0.0	0.0	78	--
		4.0	6.0	7.9	5.9	na	0.0	0.0	--	--
SB424	12.0	**2.0**	**4.0**	10.0	8.0	na	0.0	0.0	ND	--
		4.0	6.0	8.0	6.0	na	na	na	--	--
SB425	12.1	**2.0**	**4.0**	10.1	8.1	na	0.0	0.0	15	--
		4.0	6.0	8.1	6.1	na	0.0	0.0	--	--
SB426	11.5	**2.0**	**4.0**	9.5	7.5	na	0.0	0.0	38	--
SB434	11.5	**2.0**	**4.0**	9.5	7.5	na	0.0	5.1	41	--
		4.0	6.0	7.5	5.5	na	0.0	2.3	--	--
		6.0	**8.0**	5.5	3.5	na	7.7	101.0	38	--
		8.0	10.0	3.5	1.5	na	0.0	24.6	--	--
Area 6										
B-3	10.1	2.0	4.0	8.1	6.1	na	1.5	na	--	--
		4.0	6.0	6.1	4.1	na	5.0	na	--	--
		6.0	8.0	4.1	2.1	na	40.0	na	--	slight petroleum odor
		8.0	**10.0**	2.1	0.1	na	12.0	na	--	staining/some odor
		10.0	12.0	0.1	-1.9	na	9.0	na	--	petroleum odor
		12.0	**14.0**	-1.9	-3.9	na	17.0	na	--	petroleum odor
B-13	8.9	2.0	4.0	6.9	4.9	ND	3.0	na	--	--
		4.0	**6.0**	4.9	2.9	35.0	25.0	na	--	petroleum odor
		6.0	8.0	2.9	0.9	700.0	55.0	na	--	petroleum odor
		8.0	10.0	0.9	-1.1	NR	55.0	na	--	petroleum odor
		10.0	12.0	-1.1	-3.1	ND	3.0	na	--	petroleum odor
		12.0	14.0	-3.1	-5.1	>1000	28.0	na	--	petroleum odor
		14.0	16.0	-5.1	-7.1	200.0	20.0	na	--	petroleum odor
		16.0	18.0	-7.1	-9.1	250.0	15.0	na	--	petroleum odor
		18.0	20.0	-9.1	-11.1	ND	ND	na	--	--
		20.0	22.0	-11.1	-13.1	ND	ND	na	--	--
		22.0	24.0	-13.1	-15.1	ND	ND	na	--	--
		24.0	26.0	-15.1	-17.1	ND	ND	na	--	--
		26.0	28.0	-17.1	-19.1	ND	ND	na	--	--
		28.0	30.0	-19.1	-21.1	ND	ND	na	--	--
B-16	9.2	2.0	4.0	7.2	5.2	0.5	ND	na	--	--
		4.0	**6.0**	5.2	3.2	ND	ND	na	--	--
		6.0	8.0	3.2	1.2	5.0	1.0	na	--	petroleum odor
		8.0	10.0	1.2	-0.8	ND	ND	na	--	petroleum odor
		10.0	12.0	-0.8	-2.8	ND	ND	na	--	petroleum odor
		12.0	14.0	-2.8	-4.8	ND	ND	na	--	petroleum odor
		14.0	16.0	-4.8	-6.8	ND	ND	na	--	--
		16.0	18.0	-6.8	-8.8	ND	5.0	na	--	--
		18.0	20.0	-8.8	-10.8	ND	5.0	na	--	--
		20.0	22.0	-10.8	-12.8	ND	2.0	na	--	--
		22.0	22.5	-12.8	-12.3	0*	0*	na	--	--
MW-2	9.1	2.0	4.0	7.1	5.1	na	15.1	na	--	--
		4.0	6.0	5.1	3.1	na	68.0	na	--	oily staining
		6.0	**8.0**	3.1	1.1	na	76.0	na	--	oily staining/petroleum odor
		8.0	10.0	1.1	-0.9	na	80.0	na	--	strong odor
		10.0	12.0	-0.9	-2.9	na	67.0	na	--	strong odor
		12.0	**14.0**	-2.9	-4.9	na	82.0	na	--	strong odor

TABLE 4-2C (cont.)
JAR HEADSPACE SUMMARY
EASTERN SECTION (AREA 5 AND 6)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND
PAGE 3 OF 4

Location/ Date	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 6 (cont.)										
MW-10S	10.4	2.0	4.0	8.4	6.4	NR	NR	na	--	--
		4.0	**6.0**	6.4	4.4	ND	ND	na	--	--
		6.0	8.0	4.4	2.4	ND	ND	na	--	petroleum odor/staining
		8.0	10.0	2.4	0.4	ND	ND	na	--	petroleum odor
		10.0	**12.0**	0.4	-1.7	ND	ND	na	--	petroleum odor
		12.0	14.0	-1.7	-3.7	ND	ND	na	--	slight petroleum odor
MW-102	8.3	2.0	4.0	6.3	4.3	na	na	8.0	--	--
		4.0	**6.0**	4.3	2.3	na	na	120.0	8200 J	oily sand
		6.0	8.0	2.3	0.3	na	na	700.0	--	oily sand
		8.0	10.0	0.3	-1.7	na	na	28.0	--	oily sand
		10.0	12.0	-1.7	-3.7	na	na	10.0	--	--
		12.0	14.0	-3.7	-5.7	na	na	400.0	--	--
		14.0	16.0	-5.7	-7.7	na	na	50.0	--	--
		16.0	18.0	-7.7	-9.7	na	na	20.0	--	--
		18.0	20.0	-9.7	-11.7	na	na	8.0	--	--
		20.0	22.0	-11.7	-13.7	na	na	3.0	--	--
		22.0	24.0	-13.7	-15.7	na	na	5.0	--	--
		24.0	26.0	-15.7	-17.7	na	na	5.0	--	--
		26.0	28.0	-17.7	-19.7	na	na	5.0	--	--
		28.0	29.5	-19.7	-21.2	na	na	5.0	--	--
TP-14	10.0	0.5	4.0	9.5	6.0	na	na	0.0	--	--
		3.0	**4.0**	6.0	4.0	na	na	10.0	4800	stained/potentially oil-impacted
TP-15	9.0	0.0	4.5	9.0	5.5	na	na	0.0	--	--
		5.0	**6.0**	5.0	4.0	na	na	10.0	21,000 J	potentially oil-impacted
SB403	9.4	**2.0**	**4.0**	7.4	5.4	na	188.0	0.0	780	some staining
		4.0	6.0	5.4	3.4	na	101.0	79.1	--	--
		6.0	**8.0**	3.4	1.4	na	215.0	5400	4300	petroleum odor/sheen/oil-saturated soil
		8.0	10.0	1.4	-0.6	na	34.3	170.1	--	similar to above
		10.0	**12.0**	-0.6	-2.6	na	NR	NR	21	--
		12.0	14.0	-2.6	-4.6	na	35.6	158.0	--	--
		14.0	**16.0**	-4.6	-6.6	na	14.0	24.3	ND	--
		16.0	18.0	-6.6	-8.6	na	1.8	0.0	--	--
		18.0	**20.0**	-8.6	-10.6	na	7.3	0.0	ND	--
SB404	8.9	**2.0**	**4.0**	6.9	4.9	na	0.0	13.5	66	--
		4.0	6.0	4.9	2.9	na	9.8	22.4	--	--
		6.0	**8.0**	2.9	0.9	na	77.0	187.1	8800	petroleum odor/petroleum saturated
		8.0	10.0	0.9	-1.1	na	19.8	21.3	--	oil sheen/petroleum saturated
		10.0	**12.0**	-1.1	-3.1	na	NR	NR	2100	odor/petroleum saturated
		12.0	14.0	-3.1	-5.1	na	50.0	258.4	--	--
		14.0	16.0	-5.1	-7.1	na	14.1	60.2	--	--
		16.0	**18.0**	-7.1	-9.1	na	7.3	15.3	ND	--
		18.0	**20.0**	-9.1	-11.1	na	1.7	15.3	ND	--
SB413	10.6	**2.0**	**4.0**	8.6	6.6	na	0.0	0.8	945	staining, possible burn zone
		4.0	6.0	6.6	4.6	na	0.0	0.2	--	--
SB414	10.7	**2.0**	**4.0**	8.7	6.7	na	0.0	0.0	110	--
		4.0	6.0	6.7	4.7	na	0.0	0.0	--	--
		6.0	**8.0**	4.7	2.7	na	0.0	0.0	180	--
		8.0	10.0	2.7	0.7	na	0.0	0.8	--	sheen
		10.0	**12.0**	0.7	-1.3	na	0.0	2.7	1200	sheen
		12.0	14.0	-1.3	-3.3	na	0.0	3.5	--	sheen
		14.0	16.0	-3.3	-5.3	na	0.0	1.4	--	sheen

TABLE 4-2C (cont.)
JAR HEADSPACE SUMMARY
EASTERN SECTION (AREA 5 AND 6)
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location/ Date	Surface Elevation (1)	Sample Depth (ft bgs)		Sample Elevation (1)		OVA (ppm)	PID (ppm)	FID (ppm)	TPH (mg/kg)	Petroleum Evidence from Boring Log
Area 6 (cont.)										
SB428	8.0	**2.0**	**4.0**	6.0	4.0	na	15.5	0.0	1700	--
		4.0	6.0	4.0	2.0	na	0.5	21.8	--	--
		6.0	**8.0**	2.0	0.0	na	1.3	0.0	290	--
		8.0	10.0	0.0	-2.0	na	0.0	0.0	--	--
		10.0	**12.0**	-2.0	-4.0	na	0.0	301.0	56	organic odor
		12.0	14.0	-4.0	-6.0	na	0.0	26.0	--	--
		14.0	**16.0**	-6.0	-8.0	na	NR	NR	ND	--
		16.0	18.0	-8.0	-10.0	na	0.0	0.0	--	--
		18.0	**20.0**	-10.0	-12.0	na	0.0	0.0	ND	--
SB429	8.6	2.0	4.0	6.6	4.6	na	6.0	23.9	--	--
		4.0	**6.0**	4.6	2.6	na	0.0	7.1	2600	(black soil last 0.5 feet)
		6.0	**8.0**	2.6	0.6	na	51.8	28.7	8000	oil-saturated soil
		8.0	10.0	0.6	-1.4	na	48.1	395.0	--	oil-saturated soil
		10.0	**12.0**	-1.4	-3.4	na	26.2	126.0	250	--
		12.0	14.0	-3.4	-5.4	na	52.5	433.1	--	--
		14.0	**16.0**	-5.4	-7.4	na	6.4	10.9	ND	--
		16.0	18.0	-7.4	-9.4	na	2.1	10.9	--	--
		18.0	**20.0**	-9.4	-11.4	na	NR	NR	ND	--
SB430	9.8	**2.0**	**4.0**	7.8	5.8	na	0.0	0.4	330	--
		4.0	6.0	5.8	3.8	na	0.0	0.0	--	--
		6.0	8.0	3.8	1.8	na	na	na	--	--
		8.0	**10.0**	1.8	-0.2	na	0.0	0.0	2800	petroleum odor
		10.0	12.0	-0.2	-2.2	na	0.0	0.0	--	petroleum odor
		12.0	**14.0**	-2.2	-4.2	na	NR	NR	290	--
		14.0	16.0	-4.2	-6.2	na	0.0	0.0	--	--
		16.0	**18.0**	-6.2	-8.2	na	0.0	0.0	ND	--
SB431	11.1	**2.0**	**4.0**	9.1	7.1	na	4.0	2.0	50	--
		4.0	6.0	7.1	5.1	na	na	na	--	--
		6.0	8.0	5.1	3.1	na	na	na	--	--
		8.0	**10.0**	3.1	1.1	na	14.0	8.2	2300	oil-stained soil/petroleum odor
		10.0	**12.0**	1.1	-0.9	na	38.2	14.0	3200	oil-stained soil/slight petroleum odor
		12.0	14.0	-0.9	-2.9	na	26.1	12.3	--	--

Notes:
(1) elevations are presented as feet NGVD 1929 (MLW)
See boring logs for detailed description.
Bold number indicates the soil sample was collected from that depth interval.
ft bgs feet below ground surface
FID flame ionization detector
NR No reading
ND not detected
na not applicable
-- not analyzed for TPH/no evidence of TPH
OVA organic vapor analyzer
ppm parts per million (above background readings)
PID photoionization detector

TABLE 4-3A
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB400		SB401			SB402					SB403		
Sample Number		OFF-SB-400-0002	OFF-SB-400-0608	OFF-SB-401-0204	OFF-SB-401-0810	OFF-SB-401-1012	OFF-SB-402-0204	OFF-SB-402-0810	OFF-SB-402-1214	OFF-SB-402-1618	OFF-SB-402-1820	OFF-SB-403-0204	OFF-SB-403-0608	OFF-SB-403-1012
Depth BGS		0.0-2.0	6.0-8.0	2.0-4.0	8.0-10.0	10.0-12.0	2.0-4.0	8.0-10.0	12.0-14.0	16.0-18.0	18.0-20.0	2.0-4.0	6.0-8.0	10.0-12.0
Sample Elevation (1)		7.3 / 5.3	1.3 / -0.7	5.9 / 3.9	-0.1 / -2.1	-2.1 / -4.1	7.5 / 5.5	1.5 / -0.5	-2.5 / -4.5	-6.5 / -8.5	-8.5 / -10.5	7.4 / 5.4	3.4 / 1.4	-0.6 / -2.6
QC Identifier		None	None	None	None	None	None	None	None	None	None	None	None	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	140	110	520 *	75	36	170	11 U	3.7 U	3.7 U	3.5 U	240	1700	36
Benzo(a)pyrene	400	130	96	480 *	54	24	180	11 U	3.7 U	3.7 U	3.5 U	530 *	1400	36
Benzo(b)fluoranthene	900	170	120	610 *	61	27	180	11 U	3.7 U	3.7 U	3.5 U	590 *	1600	37
Benzo(g,h,i)perylene	900	84	87	240	29	13	77	11 U	3.7 U	3.7 U	3.5 U	430	580	24
Benzo(k)fluoranthene	800	59	39	220	29	18	89	11 U	3.7 U	3.7 U	3.5 U	210	840	15
Chrysene	400	130	110	520 *	74	37	170	11 U	3.7 U	3.7 U	3.5 U	250	1800	37
Dibenzo(a,h)anthracene	400	24	15	69	8.7	3.4 U	22	11 U	3.7 U	3.7 U	3.5 U	77	200	5.4
Indeno(1,2,3-cd)pyrene	900	74	38	220	24	10	70	11 U	3.7 U	3.7 U	3.5 U	360	550	18
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		2700 U	5300	3400 U	3200 U	2900 U	16000	44000	4700	3300 U	3500 U	51000	430000	4300 U
TAL Metal Analysis (MG/KG)														
Antimony	10	0.98 BN*	0.38 BN*	0.22 UN	9.3 N	8.2 N	0.79 BN	1.7 UN	0.70 BN	1.0 BN	0.89 BN	1.0 BN	3.9 N	0.77 BN
Arsenic	7.0	0.49 B*	4.3 *	6.5	5.4	2.2	4.0 B	4.4 B	3.3 B	8.0	8.6	6.7 *	9.4 *	3.2 *
Beryllium	0.4	0.011 U*	0.20 B*	0.27 B	0.27	0.25	0.24 B	0.19 B	0.23 B	0.44 B	0.34 B	0.22 B	0.30	0.16 B
Lead	150	8.9 *	33.2 *	56.1	20.2 E	15.1 E	147 N*	1300 N*	37.7 N*	17.4 N*	12.9 N*	22.3 NE*	1950 NE*	69.9 NE*
Manganese	390	313 *	516 *	547	1140 E	883 E	220 *	152 *	92.5 *	297 *	311 *	471 E	382 E	166 E
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	16	170	29	19	15	63	180	13 U	13 U	12 U	780	4300	21

Notes:

(1) - elevation = feet NGVD (MSL) 1929

UJ - Detection limit approximate

J - Quantitation approximate

R - Rejected

NA - Not Analyzed

* - From dilution analysis

E - Estimated due to interference

N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB403 (cont.)		SB404					SB405					SB406
Sample Number		OFF-SB-403-1416	OFF-SB-403-1820	OFF-SB-404-0204	OFF-SB-404-0608	OFF-SB-404-1012	OFF-SB-404-1618	OFF-SB-404-1820	OFF-SB-405-0204	OFF-SB-405-0608	OFF-SB-405-1012	OFF-SB-DUP02	OFF-SB-405-1416	OFF-SB-406-0608
Depth BGS		14.0-16.0	18.0-20.0	2.0-4.0	6.0-8.0	10.0-12.0	16.0-18.0	18.0-20.0	2.0-4.0	6.0-8.0	10.0-12.0	10.0-12.0	14.0-16.0	6.0-8.0
Sample Elevation (1)		-4.6 / -6.6	-8.6 / -10.6	6.9 / 4.9	2.9 / 0.9	-1.1 / -3.1	-7.1 / -9.1	-9.1 / -11.1	5.0 / 3.0	1.0 / -1.0	-3.0 / -5.0	-3.0 / -5.0	-7.0 / -9.0	5.4 / 3.4
QC Identifier		None	None	None	None	None	None	None	None	None	Field Dup.	Field Dup.	None	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	4.1 U	4.8	1100	480	210	3.8 U	4.7 U	390	640 *	64	15	3.5 U	680 *
Benzo(a)pyrene	400	4.1 U	3.9 U	990	330	190	3.8 U	4.7 U	370	560 *	62	14	3.5 U	650 *
Benzo(b)fluoranthene	900	4.1 U	3.9 U	1100	380	230	3.8 U	4.7 U	460	690 *	78	18	3.5 U	770 *
Benzo(g,h,i)perylene	900	4.1 U	3.9 U	530	140	110	3.8 U	4.7 U	210	180	29	3.5 U	3.5 U	330
Benzo(k)fluoranthene	800	4.1 U	3.9 U	570	170	78	3.8 U	4.7 U	150	260	26	8.1	3.5 U	280
Chrysene	400	4.1 U	4.0	1100	530	210	3.8 U	4.7 U	380	620 *	71	17	3.5 U	560 *
Dibenzo(a,h)anthracene	400	4.1 U	3.9 U	140	64 U	29	3.8 U	4.7 U	52	58	9.7	3.5 U	3.5 U	92
Indeno(1,2,3-cd)pyrene	900	4.1 U	3.9 U	470	130	92	3.8 U	4.7 U	180	180	25	3.5 U	3.5 U	300
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		3100 U	25000	25000	180000	110000	3900	3600 U	3200 U	2900 U	2300 U	3100 U	4000 U	4600
TAL Metal Analysis (MG/KG)														
Antimony	10	0.54 BN	0.71 BN	39.4 N	3.4 N	2.3 N	0.51 BN	1.2 BN	0.90 BN	0.84 BN	0.98 BN	1.1 BN	0.99 BN	8.7 N
Arsenic	7.0	6.2 *	4.6 *	27.8	9.3 *	8.6 *	2.6 *	7.3 *	10.7	3.8 B	7.7	9.3	25.4	2.9
Beryllium	0.4	0.22 B	0.30	0.42 B	0.55	0.23 B	0.35	0.28 B	0.26 B	0.21 B	0.32 B	0.34 B	0.45 B	0.50
Lead	150	12.3 NE*	11.5 NE*	8250	2490 NE*	729 NE*	8.1 NE*	11.4 NE*	846 N*	64.9 N*	15.9 N*	13.8 N*	10.1 N*	107 E
Manganese	390	180 E	860 E	806	185 E	351 E	268 E	444 E	543 *	279 *	245 *	284 *	3520 *	481 E
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	14 U	14 U	66	8800	2100	13 U	17 U	43	92	13 U	13 U	13 U	170

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB406 (cont.)				SB407					SB408		SB409	
Sample Number		OFF-SB-406-1012	OFF-SB-406-1416	OFF-SB-DUP14	OFF-SB-406-1820	OFF-SB-407-0810	OFF-SB-407-1214	OFF-SB-407-1618	OFF-SB-407-2022	OFF-SB-DUP11	OFF-SB-408-0204	OFF-SB-408-0608	OFF-SB-409-0406	OFF-SB-DUP05
Depth BGS		10.0-12.0	14.0-16.0	14.0-16.0	18.0-20.0	8.0-10.0	12.0-14.0	16.0-18.0	20.0-22.0	20.0-22.0	2.0-4.0	6.0-8.0	4.0-6.0	4.0-6.0
Sample Elevation (1)		1.4 / -0.6	-2.6 / -4.6	-2.6 / -4.6	-6.6 / -8.6	4.9 / 2.9	0.9 / -1.1	-3.1 / -5.1	-7.1 / -9.1	-7.1 / -9.1	6.0 / 4.0	2.0 0.0	5.1 / 3.1	5.1 / 3.1
QC Identifier		None	Field Dup.	Field Dup.	None	None	None	None	Field Dup.	Field Dup.	None	None	Field Dup.	Field Dup.
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	150	7.4	17	28	680 *	1400 *	80	6.5	12	3700 *	1800	120	110
Benzo(a)pyrene	400	140	5.6	11	23	610 *	1100 *	64	4.7	9.3	3600 *	1400	94 U	94 U
Benzo(b)fluoranthene	900	170	7.2	14	28	740 *	1200 *	72	5.8	11	4100 *	1600	94 U	94 U
Benzo(g,h,i)perylene	900	96	3.8 U	4.0	13	350	490 *	33	3.7 U	4.7	1600	830	94 U	94 U
Benzo(k)fluoranthene	800	69	3.8 U	5.6	12	250	640 *	31	3.7 U	4.2	1400	710	94 U	94 U
Chrysene	400	160	7.4	15	25	520 *	1100 *	70	5.6	10	3600 *	1700	140	140
Dibenzo(a,h)anthracene	400	24	3.8 U	3.7 U	3.8 U	93	120	8.9	3.7 U	3.8 U	120	230	94 U	94 U
Indeno(1,2,3-cd)pyrene	900	83	3.8 U	3.8	11	290	470 *	29	3.7 U	4.1	1500	710	94 U	94 U
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		3600 U	2600 U	2800 U	2700 U	2400 U	31000	2400 U	2200 U	2400 U	4300 U	4200 U	120000	120000
TAL Metal Analysis (MG/KG)														
Antimony	10	7.7 N	9.3 N	9.0 N	6.6 N	0.76 BN*	0.11 UN*	0.56 BN*	0.99 BN*	1.2 N*	0.54 BN	0.77 BN	0.48 UN	0.47 UN
Arsenic	7.0	0.75 B	3.8	4.5	3.1	7.3 *	2.5 *	4.0 *	2.1 *	4.7 *	4.3 B	5.8	15.1	13.8
Beryllium	0.4	0.58	0.51	0.52	0.22 B	0.17 B*	0.086 B*	0.30 *	0.34 *	0.38 *	0.20 B	0.35 B	0.73 B	0.69 B
Lead	150	36.1 E	12.1 E	10.8 E	10.9 E	57.5 *	79.4 *	13.1 *	6.9 *	12.7 *	71.2 N*	24.1 N*	30.6	26.6
Manganese	390	362 E	323 E	300 E	335 E	409 *	741 *	352 *	425 *	436 *	1010 *	1860 *	3200	2800
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	69	17	13 U	13 U	48	900	23	13 U	13 U	600	150	4400	5200

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB409 (cont.)		SB410	SB410 (cont.)				SB411			SB412	SB413	
Sample Number		OFF-SB-409-0608	OFF-SB-409-1012	OFF-SB-410-0204	OFF-SB-410-0608	OFF-SB-410-1012	OFF-SB-410-1416	OFF-SB-410-1820	OFF-SB-411-2022	OFF-SB-411-2224	OFF-SB-411-2628	OFF-SB-412-1416	OFF-SB-413-0204	OFF-SB-DUP12
Depth BGS		6.0-8.0	10.0-12.0	2.0-4.0	6.0-8.0	10.0-12.0	14.0-16.0	18.0-20.0	20.0-22.0	22.0-24.0	26.0-28.0	14.0-16.0	2.0-4.0	2.0-4.0
Sample Elevation (1)		3.1 / 1.1	-0.9 / -2.9	7.4 / 5.4	3.4 / 1.4	-0.6 / -2.6	-4.6 / -6.6	-8.6 / -10.6	11.0 / 9.0	9.0 / 7.0	5.0 / 3.0	10.5 / 8.5	8.6 / 6.6	8.6 / 6.6
QC Identifier		None	None	None	None	None	None	None	None	None	None	None	Field Dup.	Field Dup.
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	82	3.6 U	150	84	65	3.6 U	3.7 U	48	290	50	34	11000 *	17000 *
Benzo(a)pyrene	400	76 U	3.6 U	140	59	70	3.6 U	3.7 U	47	250	35	31	9200 *	14000 *
Benzo(b)fluoranthene	900	76 U	3.6 U	190	74	90	3.6 U	3.7 U	60	330	42	43	12000 *	15000 *
Benzo(g,h,i)perylene	900	76 U	3.6 U	71	32	52	3.6 U	3.7 U	30	120	24	21	5400 *	7900 *
Benzo(k)fluoranthene	800	76 U	3.6 U	68	25	36	3.6 U	3.7 U	25	110	21	13	3900 *	7800 *
Chrysene	400	110	3.6 U	150	98	75	3.6 U	3.7 U	72	270	42	35	7800 *	12000 *
Dibenzo(a,h)anthracene	400	76 U	3.6 U	20	7.9	13	3.6 U	3.7 U	24 U	33	6.3	6.1	1300	1800
Indeno(1,2,3-cd)pyrene	900	76 U	3.6 U	66	27	43	3.6 U	3.7 U	24 U	110	22	16	4900 *	7200 *
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		110000	2800 U	3500 U	110000	37000	2200 U	2100	2900 U	3200 U	22000	3000 U	4700	5800
TAL Metal Analysis (MG/KG)														
Antimony	10	0.47 UN	0.47 UN	0.54 UN	0.53 UN	0.20 UN	0.46 UN	0.52 UN	0.76 BN	0.82 BN	0.71 BN	0.67 BN	7.0 N	5.5 N
Arsenic	7.0	7.3	13.2	10.0	8.3	4.6	7.0	6.7	4.3 *	4.7 *	4.4 *	4.3 *	0.64 B	1.4
Beryllium	0.4	0.22 B	0.28 B	0.22 B	0.25 B	0.24 B	0.40 B	0.41 B	0.081 B	0.27 B	0.69	0.11 B	0.41	0.39
Lead	150	14.2	32.2	42.4	19.6	113	12.0	13.3	16.2 NE*	71.7 NE*	22.1 NE*	15.5 NE*	11.2 E	10.3 E
Manganese	390	1280	716	274	563	173	2120	316	409 E	775 E	4850 E	402 E	407 E	386 E
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	4200	38	52	2900	110	25	13 U	300	170	380	100	890	1000

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB414			SB415		SB416				SB417			
Sample Number		OFF-SB-414-0204	OFF-SB-414-0608	OFF-SB-414-1012	OFF-SB-415-0608	OFF-SB-415-1012	OFF-SB-416-0406	OFF-SB-416-0810	OFF-SB-416-1214	OFF-SB-416-1618	OFF-SB-417-0406	OFF-SB-417-0608	OFF-SB-DUP04	OFF-SB-417-1012
Depth BGS		2.0-4.0	6.0-8.0	10.0-12.0	6.0-8.0	10.0-12.0	4.0-6.0	8.0-10.0	12.0-14.0	16.0-18.0	4.0-6.0	6.0-8.0	6.0-8.0	10.0-12.0
Sample Elevation (1)		6.9 / 4.9	2.9 / 0.9	-1.1 / -3.1	7.3 / 5.3	3.3 / 1.3	7.5 / 5.5	3.5 / 1.5	-0.5 / -2.5	-4.5 / -6.5	4.5 / 2.5	2.5 / 0.5	2.5 / 0.5	-1.5 / -3.5
QC Identifier		None	None	None	None	None	None	None	None	None	None	Field Dup.	Field Dup.	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	1000 *	1400 *	94	19	270	880	12	3.5 U	62	56	170	170	22
Benzo(a)pyrene	400	1100 *	1000 *	71	18	280	820	11	3.5 U	55	56	130	150	21
Benzo(b)fluoranthene	900	1100 *	1200 *	83	22	340	1100	13	3.5 U	67	68	140	180	24
Benzo(g,h,i)perylene	900	550 *	440 *	46	11	180	450	3.8 U	3.5 U	32	36	58	80	12
Benzo(k)fluoranthene	800	350	400 *	30	7.9	150	470	3.8 U	3.5 U	25	25	72	64	9.8
Chrysene	400	1100 *	1100 *	93	21	340	890	11	3.5 U	60	55	160	150	20
Dibenzo(a,h)anthracene	400	110	110	11	3.6 U	44	120	3.8 U	3.5 U	7.8	8.4	16	18	3.7 U
Indeno(1,2,3-cd)pyrene	900	350	390 *	36	8.8	140	370	3.8 U	3.5 U	28	31	56	72	9.8
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		2500 U	2200 U	23000	2500 U	3300 U	3300 U	2000 U	2100 U	3500 U	34000	23000	3000 U	2600 U
TAL Metal Analysis (MG/KG)														
Antimony	10	0.38 BN*	0.56 BN*	0.37 BN*	7.5 N	8.5 N	6.2 N	7.1 N	9.1 N	8.9 N	5.5 N	4.4 N	5.4 N	4.2 N
Arsenic	7.0	5.2 *	8.5 *	4.3 *	23.6	17.6	11.8	12.4	15.6	25.9	7.8	8.2	8.6	5.8
Beryllium	0.4	0.15 B*	0.23 B*	0.21 B*	0.35	0.35	0.43	0.52	0.48	0.42	0.44	0.31	0.35	0.35
Lead	150	183 *	34.4 *	47.7 *	182	199	136	20.7	12.7	12.4	101	95.2	108	15.1
Manganese	390	1080 *	666 *	390 *	197	582	570	189	357	3210	129	194	191	114
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	110	180	1200	13 U	39	170	13 U	12 U	13	310	180	170	13 U

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB417 (cont.)		SB418					SB419				SB420	
Sample Number		OFF-SB-417-1416	OFF-SB-417-1820	OFF-SB-418-0406	OFF-SB-418-0810	OFF-SB-418-1214	OFF-SB-418-1618	OFF-SB-DUP13	OFF-SB-419-0204	OFF-SB-419-0608	OFF-SB-DUP01	OFF-SB-419-1012	OFF-SB-420-0204	OFF-SB-420-0608
Depth BGS		14.0-16.0	18.0-20.0	4.0-6.0	8.0-10.0	12.0-14.0	16.0-18.0	16.0-18.0	2.0-4.0	6.0-8.0	6.0-8.0	10.0-12.0	2.0-4.0	6.0-8.0
Sample Elevation		-5.5 / -7.5	-9.5 / -11.5	6.0 / 4.0	2.0 / 0.0	-2.0 / -4.0	-6.0 / -8.0	-6.0 / -8.0	6.4 / 4.4	2.4 / 0.4	2.4 / 0.4	-1.6 / -3.6	7.4 / 5.4	3.4 / 1.4
QC Identifier		None	None	None	None	None	Field Dup.	Field Dup.	None	Field Dup.	Field Dup.	None	None	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	3.8 U	3.8 U	150	15	3.8 U	3.7 U	4.9	71	33	32	3.7 U	510 *	96
Benzo(a)pyrene	400	3.8 U	3.8 U	150	11	3.8 U	3.7 U	3.8 U	70	15	14	3.7 U	430 *	55
Benzo(b)fluoranthene	900	3.8 U	3.8 U	200	13	3.8 U	3.7 U	4.2	70	18	17	3.7 U	530 *	65
Benzo(g,h,i)perylene	900	3.8 U	3.8 U	95	4.4	3.8 U	3.7 U	3.8 U	44	7.7	7.4	3.7 U	200	23
Benzo(k)fluoranthene	800	3.8 U	3.8 U	62	5.9	3.8 U	3.7 U	3.8 U	26	18	9.7	3.7 U	170	43
Chrysene	400	3.8 U	3.8 U	150	16	3.8 U	3.7 U	4.0	93	39	42	3.7 U	540 *	110
Dibenzo(a,h)anthracene	400	3.8 U	3.8 U	25	3.8 U	3.8 U	3.7 U	3.8 U	9.6	3.4 U	3.5 U	3.7 U	56	6.2
Indeno(1,2,3-cd)pyrene	900	3.8 U	3.8 U	81	4.2	3.8 U	3.7 U	3.8 U	34	6.0	6.0	3.7 U	180	22
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		2600 U	3000 U	2900 U	3600	2700 U	2700 U	2600 U	380000	680000	120000	33000	2900 U	210000
TAL Metal Analysis (MG/KG)														
Antimony	10	9.7 N	8.7 N	8.2 N	9.5 N	9.7 N	5.7 N	8.0 N	1.3 BN	0.76 BN	0.85 BN	0.87 BN	0.20 UN	13.0 N
Arsenic	7.0	14.3	14.1	3.7	1.1	3.8	3.1	7.3	34.7	19.7	24.3	69.2	9.1	14.2
Beryllium	0.4	0.41	0.45	0.56	0.48	0.44	0.28	0.50	0.60 B	0.45 B	0.47 B	0.66 B	0.73	0.59 B
Lead	150	14.8	12.2	321 E	14.5 E	12.7 E	8.4 E	12.2 E	14.3 N*	9.4 N*	11.5 N*	6.6 N*	77.7	14.3 *
Manganese	390	1540	219	496 E	333 E	759 E	1020 E	1700 E	209 *	451 *	439 *	737 *	448	543
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	13 U	13 U	32	44	13 U	13 U	13 U	1600	2700	2600	35	46	8400

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB420 (cont.)		SB421						SB422				
Sample Number		OFF-SB-420-1012	OFF-SB-420-1416	OFF-SB-421-0204	OFF-SB-DUP06	OFF-SB-421-0608	OFF-SB-421-1214	OFF-SB-421-1416	OFF-SB-421-1820	OFF-SB-422-0204	OFF-SB-422-0608	OFF-SB-422-1012	OFF-SB-422-1416	OFF-SB-422-1820
Depth BGS		10.0-12.0	14.0-16.0	2.0-4.0	2.0-4.0	6.0-8.0	12.0-14.0	14.0-16.0	18.0-20.0	2.0-4.0	6.0-8.0	10.0-12.0	14.0-16.0	18.0-20.0
Sample Elevation		-0.6 / -2.6	-4.6 / -6.6	8.8 / 6.8	8.8 / 6.8	4.8 / 2.8	-1.2 / -3.2	-3.2 / -5.2	-7.2 / -9.2	9.8 / 7.8	5.8 / 3.8	1.8 / -0.2	-2.2 / -4.2	-6.2 / -8.2
QC Identifier		None	None	Field Dup.	Field Dup.	None	None	None	None	None	None	None	None	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	24	3.4 U	820	590	1100	17	37	3.9 U	18000 *	79	3.6 U	3.8 U	3.6 U
Benzo(a)pyrene	400	11	3.4 U	810	570	1100	12	21	3.9 U	15000 *	84	3.6 U	3.8 U	3.6 U
Benzo(b)fluoranthene	900	14	3.4 U	870	670	1200	10	26	3.9 U	17000 *	110	3.6 U	3.8 U	3.6 U
Benzo(g,h,i)perylene	900	4.2	3.4 U	440	340	650	4.5 U	3.8 U	3.9 U	9000 *	55	3.6 U	3.8 U	3.6 U
Benzo(k)fluoranthene	800	5.7	3.4 U	440	260	460	4.5 U	13	3.9 U	7800 *	36	3.6 U	3.8 U	3.6 U
Chrysene	400	27	3.4 U	880	580	1000	17	39	3.9 U	15000 *	79	3.6 U	3.8 U	3.6 U
Dibenzo(a,h)anthracene	400	3.5 U	3.4 U	130	98	140	4.5 U	3.8 U	3.9 U	1900	17	3.6 U	3.8 U	3.6 U
Indeno(1,2,3-cd)pyrene	900	4.1	3.4 U	390	290	550	4.5 U	3.8 U	3.9 U	7500 *	50	3.6 U	3.8 U	3.6 U
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		56000	2500	4200 U	3600 U	150000	27500	11000	25000	3200 U	3600 U	3000 U	2700 U	2900 U
TAL Metal Analysis (MG/KG)														
Antimony	10	13.9 N	17.3 N	5.5 N	4.4 N	9.9 N	13.3 N	10.0 N	11.3 N	6.4 N	5.0 N	8.0 N	9.0 N	10.5 N
Arsenic	7.0	7.2	7.6	10.1	8.4	8.4	11.6	9.1	11.9	3.5	0.87 B	4.6	2.1	2.0
Beryllium	0.4	0.38 B	0.60 B	0.64	0.42	0.34 B	0.53 B	0.42 B	0.44 B	0.44	0.22 B	0.62	0.64	0.40
Lead	150	8.5 *	16.1 *	215 *	186 *	29.8 *	14.6 *	11.0 *	10.6 *	39.3 E	27.5 E	9.8 E	10.0 E	10.7 E
Manganese	390	428	2780	237	212	374	567	534	284	334 E	160 E	528 E	917 E	514 E
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	710	70	110	140	7300	16 U	16	18	360	37	13 U	13 U	13 U

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB423	SB424	SB425	SB426		SB427		SB428					SB429
Sample Number		OFF-SB-423-0204	OFF-SB-424-0204	OFF-SB-425-0204	OFF-SB-426-0204	OFF-SB-DUP08	OFF-SB-427-0204	OFF-SB-427-0608	OFF-SB-428-0204	OFF-SB-428-0608	OFF-SB-428-1012	OFF-SB-428-1416	OFF-SB-428-1820	OFF-SB-429-0406
Depth BGS		2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	6.0-8.0	2.0-4.0	6.0-8.0	10.0-12.0	14.0-16.0	18.0-20.0	4.0-6.0
Sample Elevation		9.9 / 7.9	10.0 / 8.0	10.1 / 8.1	9.5 / 7.5	9.5 / 7.5	6.3 / 4.3	2.3 / 0.3	6.0 / 4.0	2.0 / 0.0	-2.0 / -4.0	-6.0 / -8.0	-10.0 / -12.0	4.6 / 2.6
QC Identifier		None	None	None	Field Dup.	Field Dup.	None	None	None	None	None	None	None	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	290	30	26	94	89	460	52	1200	1900 *	200	3.6 U	3.4 U	2200 *
Benzo(a)pyrene	400	290	32	22	93	92	400	42	1100	1600 *	190	3.6 U	3.4 U	1800 *
Benzo(b)fluoranthene	900	380	33	26	110	100	530	50	1400	1900 *	220	3.6 U	3.4 U	2100 *
Benzo(g,h,i)perylene	900	120	19	15	52	51	180	28	770	890 *	89	3.6 U	3.4 U	990 *
Benzo(k)fluoranthene	800	130	17	12	37	34	200	18	580	830 *	120	3.6 U	3.4 U	780 *
Chrysene	400	280	33	28	100	100	430	52	1300	1700 *	210	3.6 U	3.4 U	1800 *
Dibenzo(a,h)anthracene	400	37	5.3	3.7	14	13	58	5.3	160	190	26	3.6 U	3.4 U	190
Indeno(1,2,3-cd)pyrene	900	110	16	12	43	42	160	22	610	770 *	87	3.6 U	3.4 U	850 *
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		23000	3600 U	3400 U	2600 U	3300 U	17000	63000	59000	100000	22000	12000	15000	92000
TAL Metal Analysis (MG/KG)														
Antimony	10	6.2 N	0.92 BN	1.1 N	12.1 N	9.6 N	6.0 N	2.9 N	19.3 N	7.5 N	3.6 N	8.6 N	10.7 N	2.1 N
Arsenic	7.0	5.5	5.1	9.8	11.0	8.3	8.3	5.0	17.3	9.1	4.4	8.0	7.6	6.9 *
Beryllium	0.4	0.26	0.35	0.27	0.42	0.34	0.39	0.35	0.32 B	0.38 B	0.18 B	0.38 B	0.34 B	0.29
Lead	150	14.3	16.1 E	36.7 E	42.0	31.2	47.1 *	13.4 *	760 *	72.6 *	25.8 *	8.0 *	7.6 *	2490 NE*
Manganese	390	506	1210 E	803 E	961	741	342	167	383	311	99.9	165	421	173 E
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	78	12 U	15	35	41	370	400	1700	290	56	13 U	12 U	2600

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB429 (cont.)							SB430												SB431								SB432	
Sample Number		OFF-SB-429-0608		OFF-SB-DUP06		OFF-SB-429-1012		OFF-SB-429-1416		OFF-SB-429-1820		OFF-SB-430-0204		OFF-SB-430-0810		OFF-SB-430-1214		OFF-SB-430-1416		OFF-SB-431-0204		OFF-SB-431-0810		OFF-SB-431-1012		OFF-SB-432-0204	
Depth BGS		6.0-8.0		6.0-8.0		10.0-12.0		14.0-16.0		18.0-20.0		2.0-4.0		8.0-10.0		12.0-14.0		14.0-16.0		2.0-4.0		8.0-10.0		10.0-12.0		2.0-4.0	
Sample Elevation		2.6 / 0.6		2.6 / 0.6		-1.4 / -3.4		-5.4 / -7.4		-9.4 / -11.4		5.5 / 3.5		1.5 / -0.5		-2.5 / -4.5		-4.5 / -6.5		9.1 / 7.1		3.1 / 1.1		1.1 / -0.9		7.5 / 5.5	
QC Identifier		Field Dup.		Field Dup.		None		None		None		None		None		None		None		None		None		None		None	
Criteria	PRG																												
Low Concentration PAH (SIM) Analysis (UG/KG)																													
Benzo(a)anthracene	900	1000		870		35		4.2	U	4.2	U	400	*	140		530	*	3.8	U	58		130		340		1400			
Benzo(a)pyrene	400	770		670		30		4.2	U	4.2	U	470	*	120		370	*	3.8	U	58		180		280		1200			
Benzo(b)fluoranthene	900	910		770		37		4.2	U	4.2	U	620	*	130		460	*	3.8	U	76		240		380		1600			
Benzo(g,h,i)perylene	900	400		330		21		4.2	U	4.2	U	640	*	84		220		3.8	U	36		120		190		430			
Benzo(k)fluoranthene	800	380		350		12		4.2	U	4.2	U	280		60		150		3.8	U	27		93		120		520			
Chrysene	400	1000		930		36		4.2	U	4.2	U	410	*	140		400	*	3.8	U	59		120		210		1400			
Dibenzo(a,h)anthracene	400	110		87		5.3		4.2	U	4.2	U	150		16		56		3.8	U	9.9		30		46		140			
Indeno(1,2,3-cd)pyrene	900	340		280		16		4.2	U	4.2	U	410	*	64		190		3.8	U	31		100		150		400			
Gasoline Range Organic Analysis (UG/KG)																													
Gasoline Range Organics		130000		310000		3000	U	3700	U	3000	U	4300		27000		11000		2800	U	2300	U	67000		73000		2300000			
TAL Metal Analysis (MG/KG)																													
Antimony	10	53.7	N	71.6	N	3.4	N	0.84	BN	0.59	BN	19.7	N	8.5	N	8.3	N	8.8	N	0.67	BN	1.1	N	0.57	BN	0.20	UN		
Arsenic	7.0	36.3	*	53.3	*	1.6	*	6.1	*	4.9	*	0.16	U	0.26	B	2.9		11.1		4.2		7.6		5.3		6.2			
Beryllium	0.4	0.094	B	0.075	B	0.16	B	0.24	B	0.25	B	0.33		0.34		0.29		0.54		0.14	B	0.20	B	0.24	B	0.35	B		
Lead	150	1890	NE*	1820	NE*	183	NE*	28.0	NE*	11.7	NE*	127	E	101	E	197	E	18.4	E	26.5	E	242	E	69.4	E	158			
Manganese	390	238	E	462	E	143	E	198	E	270	E	557	E	290	E	305	E	284	E	805	E	613	E	383	E	314			
Total Petroleum Hydrocarbon Analysis (MG/KG)																													
Total Petroleum Hydrocarbons	500	8200		7800		250		15	U	15	U	330		2800		290		13	U	50		2300		3200		1100			

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3A (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PDI BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		SB432 (cont.)				SB433							SB434	
Sample Number		OFF-SB-432-0608	OFF-SB-432-1012	OFF-SB-432-1416	OFF-SB-432-1820	OFF-SB-433-1214	OFF-SB-433-1618	OFF-SB-433-2022	OFF-SB-DUP09	OFF-SB-433-2426	OFF-SB-DUP10	OFF-SB-433-2830	OFF-SB-434-0204	OFF-SB-434-0608
Depth BGS		6.0-8.0	10.0-12.0	14.0-16.0	18.0-20.0	12.0-14.0	16.0-18.0	20.0-22.0	20.0-22.0	24.0-26.0	24.0-26.0	28.0-30.0	2.0-4.0	6.0-8.0
Sample Elevation		3.5 1.5	-0.5 / -2.5	-4.5 / -6.5	-8.5 / -10.5	5.3 / 3.3	1.3 / -0.7	-2.7 / -4.7	-2.7 / -4.7	-6.7 / -8.7	-6.7 / -8.7	-10.7 / -12.7	9.5 / 7.5	5.5 / 3.5
QC Identifier		None	None	None	None	None	None	Field Dup.	Field Dup.	Field Dup.	Field Dup.	None	None	None
Criteria	PRG													
Low Concentration PAH (SIM) Analysis (UG/KG)														
Benzo(a)anthracene	900	910	54	3.6 U	4.7	310	170	140	280	3.7 U	3.6 U	6.3	200	94
Benzo(a)pyrene	400	720	40	3.6 U	3.8 U	270	150	130	250	3.7 U	3.6 U	4.7	180	91
Benzo(b)fluoranthene	900	870	45	3.6 U	3.8 U	360	170	160	290	3.7 U	3.6 U	5.7	230	110
Benzo(g,h,i)perylene	900	370	20	3.6 U	3.8 U	310	78	72	140	3.7 U	3.6 U	3.7 U	120	62
Benzo(k)fluoranthene	800	370	17	3.6 U	3.8 U	110	85	73	140	3.7 U	3.6 U	3.7 U	74	49
Chrysene	400	920	54	3.6 U	4.4	310	160	140	300	3.7 U	3.6 U	5.2	180	80
Dibenzo(a,h)anthracene	400	91	3.7 U	3.6 U	3.8 U	52	21	17	33	3.7 U	3.6 U	3.7 U	32	15
Indeno(1,2,3-cd)pyrene	900	310	16	3.6 U	3.8 U	150	70	61	120	3.7 U	3.6 U	3.7 U	99	48
Gasoline Range Organic Analysis (UG/KG)														
Gasoline Range Organics		890000	91000	2100 U	2100 U	2400 U	3100 U	3200 U	2500 U	2400 U	2300 U	2400 U	5200	3700
TAL Metal Analysis (MG/KG)														
Antimony	10	0.21 UN	0.21 UN	0.54 UN	0.51 UN	1.5 N	0.55 BN	0.61 BN	0.67 BN	1.1 N	0.86 BN	0.78 BN	0.90 BN*	0.53 BN*
Arsenic	7.0	7.2	7.3	8.8	4.5 B	15.0	3.6	5.1	6.1	4.3	3.8	2.1	8.0 *	6.0 *
Beryllium	0.4	0.42 B	0.37 B	0.39 B	0.15 B	0.34	0.085 B	0.21 B	0.25 B	0.42	0.40	0.20 B	0.30 *	0.21 B*
Lead	150	188	26.0	15.8	8.8	55.0 E	101 E	71.8 E	55.0 E	13.5 E	16.0 E	8.4 E	24.4 *	21.5 *
Manganese	390	344	260	1000	181	582 E	171 E	249 E	308 E	2120 E	2290 E	511 E	1330 *	765 *
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	910	93	13 U	13 U	190	170	92	98	13 U	12 U	13 U	41	38

Notes:
(1) - elevation = feet NGVD (MSL) 1929
UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3B
SUBSURFACE SOIL ANALYTICAL RESULTS, PREVIOUS INVESTIGATION BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		B-1	B-2			B-3			B-4		B-5		B-6	
Sample Number		FF-B011-418	FF-B021-418	FF-B022-418	FF-B023-418	FF-B031-418	FF-B032-418	FF-B033-418	FF-B041-420	FF-B042-420	FF-B051-417	FF-B052-417	FF-B061-419	FF-B062-419
Depth BGS		6.0-8.0	2.0-4.0	6.0-8.0	8.0-10.0	6.0-8.0	8.0-10.0	12.0-14.0	4.0-6.0	10.0-12.0	4.0-6.0	6.0-8.0	4.0-6.0	10.0-12.0
Sample Elevation		6.5 / 4.5	10.9 / 8.9	6.9 / 4.9	4.9 / 2.9	8.1 / 6.1	2.1 / 0.1	-1.9 / -3.9	7.5 / 5.5	1.5 / -0.5	3.8 / 1.8	1.8 / -0.2	6.1 / 4.1	0.1 / -1.9
QC Identifier		None	None	None	None	None	None	None	None	None	None	None	None	None
Criteria	PRG													
Semivolatile Organic Analysis (UG/KG)														
Benzo(a)anthracene	900	330 J	89 J	NA	NA	670	NA	73 J	140 J	NA	110 J	NA	NA	NA
Benzo(a)pyrene	400	300 J	84 J	NA	NA	660	330 J	NA	100 J	NA	100 J	NA	NA	NA
Benzo(b)fluoranthene	900	330 J	85 J	NA	NA	580	300 J	NA	97 J	NA	83 J	NA	NA	NA
Benzo(g,h,i)perylene	900	210 J	84 J	NA	NA	740	310 J	NA	NA	NA	NA	NA	75 J	NA
Benzo(k)fluoranthene	800	240 J	62 J	NA	NA	510	210 J	NA	120 J	NA	89 J	NA	98 J	NA
Chrysene	400	330 J	92 J	NA	NA	770	NA	62 J	140 J	NA	76 J	NA	NA	NA
Dibenzo(a,h)anthracene	400	60 J	NA	NA	NA	140 J	93 J	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	900	180 J	71 J	NA	NA	620	280 J	NA	NA	NA	NA	NA	NA	NA
TAL Metal Analysis (MG/KG)														
Antimony	10	9.5 U*	NA	NA	NA	9.5 U*	NA	NA	NA	NA	NA	NA	NA	5.5
Arsenic	7.0	9.6 J*	3.1 J*	8.6	5.4 J*	4.1 J*	NA	13.5 J*	3.4 J*	5.3 J*	2.4	1.4	NA	1.3 J*
Beryllium	0.4	NA	NA	NA	NA	NA	NA	NA	0.26	0.20	NA	NA	NA	0.31
Lead	150	529	61.0	66.0	5.2	118	NA	67.6	NA	2.2 J*	104	7.0	NA	6.6 J*
Manganese	390	301 J*	492 J*	584 J*	646 J*	243 J*	NA	285 J*	215	72.4	960 J*	70.7	NA	780 J*
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
(1) - elevation = feet NGVD (MSL) 1929

UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3B (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PREVIOUS INVESTIGATION BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		B-7		B-8	B-11	B-12	B-13	B-15	B-16		B-17	MW-2		MW-3
Sample Number		FF-B071-419	FF-B072-419	OFF-B82-112293	OFF-B112-112493	OFF-B122-112493	OFF-B132-112393	OFF-B153-121393	OFF-B162-112393	OFF-B163-112393	OFF-B172-112493	FF-M21-423	FF-M22-423	FF-M31-424
Depth BGS		4.0-6.0	6.0-8.0	8.0-10.0	4.0-6.0	2.0-4.0	4.0-6.0	17.0-19.0	2.0-4.0	6.0-8.0	2.0-4.0	6.0-8.0	12.0-14.0	6.0-8.0
Sample Elevation		4.1 / 2.1	2.1 / 0.1	3.5 / 1.5	4.4 / 2.4	5.9 / 3.9	4.9 / 2.9	10.6 / 8.6	7.2 / 5.2	3.2 / 2.2	9.5 / 7.5	3.1 / 1.1	-2.9 / -4.9	3.8 / 1.8
QC Identifier		None	None	None	None	None	None	None	None	None	None	None	None	None
Criteria	PRG													
Semivolatile Organic Analysis (UG/KG)														
Benzo(a)anthracene	900	1300 J	550	2200	120 J	320 J	360 J	1300	1200	NA	360 U	1800 J	NA	52 J
Benzo(a)pyrene	400	1000 J	490	1700	110 J	280 J	280 J	760	1200	NA	360 U	1600 J	NA	NA
Benzo(b)fluoranthene	900	1300 J	400	2800	220 J	560	510	1400	1900	NA	47 J	1400 J	NA	NA
Benzo(g,h,i)perylene	900	NA	520	610	360 U	110 J	88 J	360 J	510 J	NA	360 U	NA	NA	NA
Benzo(k)fluoranthene	800	520 J	530	360 U	360 U	370 U	420 U	370 U	730 U	NA	360 U	1400 J	NA	NA
Chrysene	400	1000 J	540	2100	130 J	290 J	320 J	1100	1400	NA	360 U	1700 J	NA	51 J
Dibenzo(a,h)anthracene	400	NA	140 J	370	360 U	64 J	66 J	200 J	170 J	NA	360 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	900	420 J	380 J	860	48 J	160 J	120 J	380	500 J	NA	360 U	NA	NA	NA
TAL Metal Analysis (MG/KG)														
Antimony	10	5.3	NA	5.2 UJ	5.4 UJ	5.3 UJ	5.9 UJ	5.7 J	6.8 J	NA	5.3 UJ	4.7 U*	12.2 J*	NA
Arsenic	7.0	1.9 J*	3.0 J*	6.4 J	10.0 J	5.1 J	6.3 J	5.5	5.8 J	NA	3.2 J	6.3 J*	8.7 J*	4.4 J*
Beryllium	0.4	NA	NA	0.33 B	0.36 B	0.29 B	0.25 B	0.36 B	0.22 U	NA	0.44 B	0.28 B1	NA	0.24 B1
Lead	150	52.0 J*	67.0 J*	189	314	71.4	68.6	292	92.9	NA	14.6	777 J*	962 J*	24.0 J*
Manganese	390	138	167	540 J	627 J	551 J	309	419 J	303 J	NA	477 J	323 J*	464 J*	311 J*
Total Petroleum Hydrocarbon Analysis (MG/KG)														
Total Petroleum Hydrocarbons	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
(1) - elevation = feet NGVD (MSL) 1929

UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3B (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PREVIOUS INVESTIGATION BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		MW-3 (cont.)	MW-7	MW-10	MW-11	MW-101	MW-102	TP1		TP2		TP3	
Sample Number		FF-M32-424	OFF-M72-112993	OFF-M102-112993	OFF-M112-112993	OFF-S-MW101-0608	OFF-S-MW102-0608	OFF-TP12-011194	OFF-TP13-011194	OFF-TP21-011194	OFF-TP22-011194	OFF-TP31-011194	OFF-TP32-011194
Depth BGS		12.0-14.0	2.0-4.0	4.0-6.0	2.0-4.0	6.0-8.0	6.0-8.0	3.5-4.0	1.5-2.0	7.0-8.0	4.5-4.5	7.0-8.0	7.0-7.0
Sample Elevation		-2.2 / -4.2	8.9 / 6.9	3.9 / 1.9	5.9 / 3.9	3.4 / 1.4	2.3 / 0.3	6.5 / 6.0	9.0 / 8.5	6.0 / 5.0	8.5 / 8.5	8.0 / 7.0	8.0 / 8.0
QC Identifier		None	None	None	None	None	None	None	None	None	None	None	None
Criteria	PRG												
Semivolatile Organic Analysis (UG/KG)													
Benzo(a)anthracene	900	NA	1300	240 J	140 J	470	3400	660 J	370 J	7700 U	380 UJ	500 J	2400 J
Benzo(a)pyrene	400	NA	1000	220 J	77 J	380	4000	660 J	440 J	7700 U	380 UJ	6700 UJ	2900 J
Benzo(b)fluoranthene	900	NA	1800	400	180 J	260 J	2700 J	500 J	320 J	7700 U	380 UJ	430 J	2300 J
Benzo(g,h,i)perylene	900	NA	420	89 J	57 J	180 J	1900 J	440 J	230 J	7700 U	380 UJ	6700 UJ	1700 J
Benzo(k)fluoranthene	800	NA	380 U	370 U	440 U	310 J	2200 J	600 J	380 J	7700 U	380 UJ	850 J	2500 J
Chrysene	400	NA	1100	230 J	130 J	430	3200 J	730 J	410 J	7700 U	380 UJ	690 J	2500 J
Dibenzo(a,h)anthracene	400	NA	220 J	370 U	440 U	360 UJ	820 J	170 J	110 J	7700 U	380 UJ	6700 UJ	780 J
Indeno(1,2,3-cd)pyrene	900	NA	550	100 J	48 J	210 J	2300 J	390 J	230 J	7700 U	380 UJ	6700 UJ	1700 J
TAL Metal Analysis (MG/KG)													
Antimony	10	NA	5.5 UJ	5.3 UJ	5.4 UJ	0.35 UR	12.0 J	6.3 U	5.8 U	6.3 U	5.8 U	6.7	6.0 U
Arsenic	7.0	3.1 J*	6.2 S	7.0	3.9	9.3 J	53.6 J	4.1 J	2.6 J	3.7 J	4.3 J	16.3 J	2.9 J
Beryllium	0.4	0.48 B1	0.33 B	0.32 B	0.34 B	0.24 U	0.15 U	0.28 B	0.37 B	0.23 U	0.37 B	0.24 U	0.29 B
Lead	150	7.8 J*	19.5	42.3	554	12.7	5400	475 J	40.1 J	10.8 J	6.9 J	3090 J	67.6 J
Manganese	390	292 J*	396 J	588 J	401 J	144 J	562 J	255 J	186 J	243 J	139 J	299 J	413 J
Total Petroleum Hydrocarbon Analysis (MG/KG)													
Total Petroleum Hydrocarbons	500	NA	NA	NA	NA	1900 J	8200 J	NA	NA	NA	NA	NA	NA

Notes:
(1) - elevation = feet NGVD (MSL) 1929

UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 4-3B (cont.)
SUBSURFACE SOIL ANALYTICAL RESULTS, PREVIOUS INVESTIGATION BORINGS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Location		TP-02	TP-05	TP-06	TP-07	TP-08	TP-11	TP-12	TP-13	TP-14	TP-15	TP-16	TP-17
Sample Number		OFF-S-TP-02-0203	OFF-S-TP-05-0708	OFF-S-TP-06-0607	OFF-S-TP-07-0708	OFF-S-TP-08-0304	OFF-S-TP-11-0506-MAX	OFF-S-TP-12-0405	OFF-S-TP-13-0607	OFF-S-TP-14-0304-MAX	OFF-S-TP-15-0506	OFF-S-TP-16-1011	OFF-S-TP-17-0809-MAX
Depth BGS		2.0-3.0	7.0-8.0	6.0-7.0	7.0-8.0	3.0-4.0	5.0-6.0	4.0-5.0	6.0-7.0	3.0-4.0	5.0-6.0	10.0-11.0	8.0-9.0
Sample Elevation		10.0 / 9.0	4.0 / 3.0	6.5 / 5.5	5.5 / 4.5	8.5 / 7.5	5.0 / 4.0	5.0 / 4.0	7.0 / 6.0	7.0 / 6.0	4.0 - 3.0	4.0 - 3.0	2.0 / 1.0
QC Identifier		None	None	None	None	None	Field Dup.	None	None	Field Dup.	None	None	Field Dup.
Criteria	PRG												
Semivolatile Organic Analysis (UG/KG)													
Benzo(a)anthracene	900	360 U	840	610	350 J	170 J	580	360 U	230 J	430 U	1200 J	5000 U	400 U
Benzo(a)pyrene	400	360 U	690	500	360 J	400 U	350	360 U	200 J	430 U	970 J	5000 U	400 U
Benzo(b)fluoranthene	900	360 U	650	380 J	240 J	400 U	430	360 U	400 U	430 U	610 J	300 J	400 U
Benzo(g,h,i)perylene	900	360 U	360 U	400 U	400 U	400 U	430 U	360 U	400 U	430 U	460 UJ	5000 U	400 U
Benzo(k)fluoranthene	800	360 U	530	410	270 J	400 U	490	360 U	400 U	430 U	730 J	5000 U	400 U
Chrysene	400	360 U	810	650	380 J	160 J	460	170 J	280 J	170	1700 J	5000 U	400 U
Dibenzo(a,h)anthracene	400	360 U	180 J	190 J	400 U	400 U	430 U	360 U	400 U	430 U	460 UJ	5000 UJ	400 U
Indeno(1,2,3-cd)pyrene	900	360 U	520	350 J	280 J	400 U	350	360 U	400 U	180	800 J	5000 U	400 U
TAL Metal Analysis (MG/KG)													
Antimony	10	0.34 UR	0.49 U	0.36 U	0.93 U	0.35 UR	0.51 U	0.44 U	39.2 J	0.41 U	0.76 U	4.0 J	0.36 U
Arsenic	7.0	4.1 J	14.3 J	5.7 J	6.2 J	13.8 J	8.3	4.8 J	18.3 J	10.5	9.9 J	74.4 J	8.2
Beryllium	0.4	0.27 U	0.27 U	0.32 U	0.29 U	0.35 U	0.46 U	0.22 U	0.20 U	0.28 U	0.38 U	0.24 J	0.32 U
Lead	150	46.6 J	540 J	55.5 J	40.7 J	57.8 J	563	283 J	7820 J	42.0	766 J	3350	13.3
Manganese	390	292 J	698 J	410 J	417 J	478 J	306	516 J	898 J	231	157 J	1110 J	267
Total Petroleum Hydrocarbon Analysis (MG/KG)													
Total Petroleum Hydrocarbons	500	140 J	40 U	130 J	59 U	31 U	7500	4100 J	7400 J	4800	21000 J	6400 J	200

Notes:
(1) - elevation = feet NGVD (MSL) 1929

UJ - Detection limit approximate
J - Quantitation approximate
R - Rejected
NA - Not Analyzed
* - From dilution analysis
E - Estimated due to interference
N - Spike %R outside limits

TABLE 5-1
SELECTION OF RECOMMENDED REMOVAL ACTION GOALS
DRAFT SOIL PRE-DESIGN INVESTIGATION
OLD FIREFIGHTING TRAINING AREA
NAVAL STATION NEWPORT, NEWPORT RHODE ISLAND

Parameter	PRG	Recommended / Not Recommended	Basis
Benzo(a)anthracene	900 ug/kg	Recommended	Note 1
Benzo(a)pyrene	400 ug/kg	Recommended	Note 1
Benzo(b)fluoranthene	900 ug/kg	Recommended	Note 1
Benzo(g,h,I) perylene	800 ug/kg	Recommended	Note 3
Benzo(k)fluoranthene	900 ug/kg	Recommended	Note 3
Chrysene	400 ug/kg	Recommended	Note 3
Dibenzo(a,h)anthracene	400 ug/kg	Recommended	Note 1
Indeno(1,2,3-cd)pyrene	900 ug/kg	Recommended	Note 1
Dieldrin	40 ug/kg	Not Recommended	Note 2
Total Petroleum Hydrocarbons	500 mg/kg	Recommended	Note 3
Antimony	10 mg/kg	Not Recommended	Note 2
Arsenic	7.0 mg/kg*	Not Recommended	Note 4
Beryllium	0.4 mg/kg	Not Recommended	Note 2, 4
Lead	150 mg/kg	Recommended	Note 5
Manganese	390 mg/kg	Not Recommended	Note 2, 4

* - RIDEM direct exposure criteria for arsenic was revised with the 2004 amendment to the remediation regulations.

Notes:

Note 1: These PAHs are fuel-related contaminants found to provide elevated risk to humans under a residential land use scenario. These fuel related contaminants are present at the site as a result of releases of such fuels during the site use as a fire training facility, and therefore the PRGs for these contaminants are recommended to be retained as Removal Action Goals to direct soil removal actions at the site.

Note 2: These contaminants were included as PRGs because they exceed RIDEM Direct Exposure criteria, they were not selected through a risk based process. They do not contribute greatly to the measured risk at the site. These contaminants have no known connection to the releases from fire training operations. Therefore, they are not recommended to be used to direct removal of soils at the site.

Note 3: These fuel related contaminants in soils do not have risk based PRGs, however, they exceed RIDEM Remediation Regulations direct exposure criteria for residential use soil. These contaminants are present in soil presumably as a result of releases of fuel used in fire training operations, therefore, these criteria are recommended to be used as action levels for soil removal actions at this site.

Note 4: These metals are naturally present in soil, and during the PDI have been found above PRGs in till and other soils not impacted by the site contaminants associated with the fire training operations. Average concentrations of these metals measured in till at the site exceed PRGs. Because the till is assumed to be unaffected by site releases, it is presumed that these metals are natural components of the mineral composition of the soil and degraded bedrock. Therefore, these criteria alone are not recommended to be used to direct soil removal actions at the site.

Note 5: Lead is associated with older gasoline releases, and is co-located in soil with fill and with fuel-related contaminants. Therefore, lead is likely to be present as a result of the releases from fire training operations, and the action level cited (RIDEM DEC) is recommended to be used as a removal action goal.

TABLE 5-2
SUMMARY OF POSSIBLE EXCAVATION DEPTHS
DRAFT SOIL PREDESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Boring Number	Ground Surface Elev. (1)	Base Grade Elev. (1)	Water Table (2)	PAH PRG Exceed.	TPH PRG Exceed.	Fill Bottom	Bedrock Top	Till Top	Possible Excavation Depth	Target Contaminant	Water Table (2)	PAH PRG Exceed.	TPH PRG Exceed.	Fill Bottom	Bedrock Top	Till Top	Possible Excavation Elevation
			Depth Below Base Grade (ft)								Elevation (1)						
AREA 1																	
B-9**	17.7	8.0	4.6 (MW-4S)	NS	NS	5.5 (5)	(6)	--	(3)		3.0 (MW-4S)	NS	NS	4.7	3.7	--	(3)
B-10**	13.7	8.0		NS	NS	3.0 (5)	(6)	--	(3)			NS	NS	6.7	5.7	--	(3)
B-11**	8.4	8.4		NA	NS	4	21.0	9.0	6.0	Lead		NA	NS	4.4	-12.6	-0.6	4.4
SB415	13.3	8.0		NA	NA	0.7	7.7	--	6.7(4)	Lead		NA	NA	7.3	0.3	--	2.3(4)
SB416	11.5	8.5		3.0	NA	6.0	20.0	11.0	3.0	PAHs		5.5	NA	2.5	-11.5	-2.5	5.5(4)
SB417	8.5	8.5		NA	NA	9	--	16.0	None(3)			NA	NA	-0.5	--	-7.5	-3
SB418	10.0	8.0		NA	NA	5.0	18.0	16.0	4	Lead		NA	NA	3.0	-10.0	-8.0	4
SB433	17.3	8.0		NA	NA	6.7	18.2	9.3	None(3)			NA	NA	1.3	-10.2	-7.7	-3
AREA 2																	
B-8**	11.5	7.0	4.6 (MW-4S)	6.0	NS	7.5	19.5	17.5	8.1(4)	PAHs	3.0 (MW-4S)	1.0	NS	-0.5	-12.5	-10.5	-1.1
MW-4S(B-7)	8.1	8.1		8	NS	4	11.5	--	8.1(4)	PAHs		0.1	NS	4.1	-3.4	--	0
SB405	7.0	7.0		8	NA	11	18	13.0	8.0(4)	PAHs		-1.0	NA	-4.0	-11	-6.0	-1.0(4)
SB406	11.4	7.0		3.6	NA	5.6	15.6	11.6	3.6	PAHs		3.4	NA	1.4	-4.6	-6.6	3.4
SB407	12.9	7.0		8.1	8.1	0.1	18.1	14.1	8.1(4)	PAHs, TPH		-1.1	-1.1	6.9	-11.1	-7.1	-1.1(4)
AREA 3																	
B-6**	10.1	10.1	5.7 (average MW-3S and MW-101)	NA	NS	2	--	--	See SB432	PAHs, TPH	3.9 (average of MW-3S and MW-101)	NA	NS	8.1	--	--	See SB432
MW-3S**	9.8	9.8		NA	NS	4	--	--	See SB421	PAHs, TPH		NA	NS	5.8	--	--	See SB421
MW-7S**	10.9	10.9		4	NS	--	--	--	See SB421	PAHs, TPH		6.9	NS	--	--	--	See SB421
TP1	10.5	10.5		4	NS	>5	--	--	See SB421	PAHs, TPH		6.5	NS	<5.5	--	--	See SB421
TP-10	10.5	10.5		NS	NS	--	--	--	See SB421	PAHs, TPH		NS	NS	--	--	--	See SB421
TP-11	10.0	10.0		NA	6*	6	--	--	See SB410	PAHs, TPH		NA	4*	4.0	--	--	See SB410
TP-12	9.0	9.0		NA	5*	>5	--	--	See SB409	TPH		NA	4*	<7	--	--	See SB409
TP-17	10.0	10.0		NA	NA	3	--	--	See SB420	TPH		NA	NA	7.0	--	--	See SB420
MW-101**	9.4	9.4		NA	8*	5	14	8.0	8.0(4)	TPH		NA	1.4*	1.4	-4.6	4.4	1.4(4)
SB408	8.0	8.0		8*	4	4	12	6.0	8.0(4)	PAHs		0*	4.0	2.0	-4.0	-2.0	0.0(4)
SB409	9.1	9.1		NA	8	4	12	8.0	8.0(4)	TPH		NA	1.1	5.1	-2.9	1.1	1.1(4)
SB410	9.4	9.4		NA	8	6	--	--	8.0(4)	TPH		NA	1.4	3.4	--	--	1.4(4)
SB419	8.4	8.4		NA	8	4	11	6.5	8.0(4)	TPH		NA	0.4	4.4	-2.6	1.9	0.4(4)
SB420	10.0	10.0		4	12	4	15	10.0	12.0(4)	TPH		6.0	-2.0	6.0	-5.0	0.0	-2.0 (4)
SB421	10.8	10.8		8	8	5	--	18.0	8.0(4)	TPH		2.8	2.8	5.8	--	-7.2	2.8(4)
SB422	11.8	11.8		4	NA	2	--	15.0	4.0	PAHs		7.8	NA	9.8	--	-3.2	7.8
SB432	9.8	9.8		8	8	8	--	18.0	8.0(4)	PAHs, TPH		1.8	1.8	1.8	--	-8.2	1.8 (4)

TABLE 5-2 (cont.)
SUMMARY OF POSSIBLE EXCAVATION DEPTHS
DRAFT SOIL PREDESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

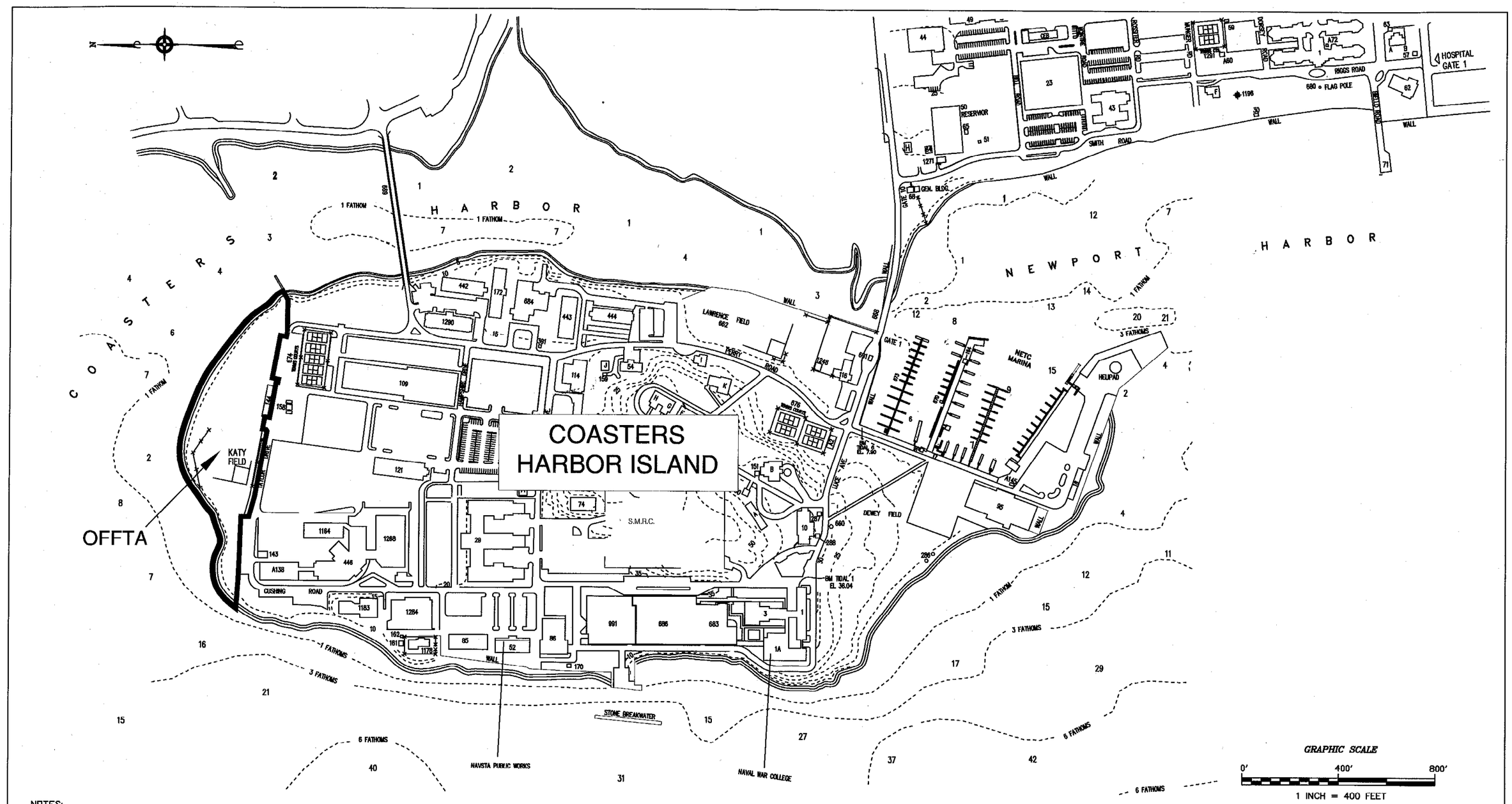
Boring Number	Ground Surface Elev. (1)	Base Grade Elev. (1)	Water Table (2)	PAH PRG Exceed.	TPH PRG Exceed.	Fill Bottom	Bedrock Top	Till Top	Possible Excavation Depth	Target Contaminant	Water Table (2)	PAH PRG Exceed.	TPH PRG Exceed.	Fill Bottom	Bedrock Top	Till Top	Possible Excavation Elevation
			Depth Below Base Grade (ft)								Elevation (1)						
AREA 4																	
B-5**	7.8	7.8	4.0 (MW-11S)	NA	NS	3	--	--	See SB401	PAHs	3.8 (MW-11S)	NA	NS	4.8	--	--	See SB401
B-12**	7.9	7.9		1.0	NS	0.5	9.5	--	See SB401	PAHs		6.9	NS	7.4	-1.6	--	See SB401
MW-11R**	7.6	7.6		NS	NS	14	14	--	4	Lead		NS	NS	-6.4	-6.4	--	3.6
MW-11S**	7.9	7.9		NA	NS	10	--	--	4	Lead		NA	NS	-2.2	--	--	3.9
SB400	7.3	7.3		NA	NA	8	13	--	4	Surrounding		NA	NA	-0.7	-5.7	--	3.3
SB401	7.9	7.9		4	NA	2	13.5	--	4.0	PAHs		3.9	NA	5.9	-5.6	--	3.9
SB402	8.4	8.4		NA	NA	8	--	16.0	10	Lead		NA	NA	0.4	--	-7.6	-1.6
SB427	8.3	8.3		4	NA	7	10	--	4.0	PAHs		4.3	NA	13.0	-1.7	--	4.3
AREA 5																	
B-1**	12.5	12.5	6.2 (average of MW-1R and MW-8R)	NA	NS	--	10	--	8	Lead	5.6 (average of MW-1R and MW-8R)	NA	NS	--	2.5	--	4.5
B-2**	12.9	12.9		NA	NS	2	--	--	1.0	PAHs, Surface		NA	NS	10.9	--	--	11.9
B-4**	11.5	11.5		NA	NS	3	13.5	--	See SB422	PAHs		NA	NS	8.5	-2.0	--	See SB422
B-14**	30.7	10.5		NS	NS	2.8	7.8	--	See SB411			NS	NS	7.7	2.7	--	See SB411
B-15**	27.6	10.5		1.9*	NS	1.9	2.9	--	See SB412			8.6*	NS	8.6	7.6	--	See SB412
B-17**	11.5	11.5		NA	NS	--	4	--	See B-2	PAHs, Surface		NA	NS	--	7.5	--	See B-2
MW-1R**	11.3	11.3		NS	NS	--	6	--	See TP04	PAHs, Surface		NS	NS	--	5.3	--	See TP-04
MW-8R**	12.7	12.7		1.0	NS	--	6	--	See TP06	PAHs		11.7	NS	--	6.7	--	See TP-06
MW-9R**	11.7	11.0		1.0	NS	--	3.3	--	See B-2	PAHs, Surface		11	NS	--	7.7	--	See B-2
TP2	13.0	10.0		NS	NS	4.0	--	--	See SB410	TPH		NS	NS	6.0	--	--	See SB410
TP3	15.0	10.0		NS	NS	>3.0	--	--	See SB404	TPH		NS	NS	<12	--	--	See SB404
TP-02	12.0	12.0		NA	NA	0.5	3.5	--	See TP04	PAHs, Surface		NA	NA	11.5	8.5	--	See TP-04
TP-03	12.5	12.5		NS	NS	2.5	2.5	--	See TP04	PAHs, Surface		NS	NS	10.0	10.0	--	See TP-04
TP-04	12.5	12.5		2*	NS	>3	--	--	2.0	PAHs, Surface		10.5*	NS	<9	--	--	10.5
TP-05	11.0	11.0		8*	NA	>8	--	--	8.0	Lead, PAHs		3*	NA	>3	--	--	3
TP-06	12.5	12.5		7*	NA	7		--	7.0	PAHs		5.5*	NA	5.5		--	5.5
TP-07	12.5	12.5		NA	NA	4	8	--	See TP06	PAHs		NA	NA	8.5	4.5	--	See TP-06
TP-08	11.5	11.5		NA	NA	2.5	2.5	--	See B-2	PAHs, Surface		NA	NA	9.0	9.0	--	See B-2
TP-09	12.0	12.0		NS	NS	1	3	--	See B-2	PAHs, Surface		NS	NS	11.0	9.0	--	See B-2
TP-13	13.0	10.0		NA	7*	>4.0	--	--	See SB404	TPH		NA	3*	<6	--	--	See SB404
TP-16	14.0	10.0		NA	11*	6	--	--	See SB404	TPH		NA	-1*	4.0	--	--	See SB404
SB411	31.0	10.5		NA	NA	10.5	7	--	None(3)			NA	NA	10.0	3.5	--	None(3)
SB412	24.5	10.5		NA	NA	--	2	--	None(3)			NA	NA	10.5	8.5	--	None(3)
SB423	11.9	11.9		NA	NA	--	6	--	2.0, See B-2	PAHs, Surface		NA	NA	5.9	5.9	--	9.9, See B-2
SB424	12.0	12.0		NA	NA	--	4	--	2.0, See TP06	PAHs		NA	NA	--	8.0	--	10.0, See TP-06
SB425	12.1	12.1		NA	NA	--	5.5	--	2.0, See TP04	PAHs, Surface		NA	NA	--	6.6	--	10.1, See TP-04
SB426	11.5	11.5		NA	NA	--	4	--	4	PAHs, Lead		NA	NA	--	7.5	--	7.5
SB434	11.5	11.5		NA	NA	--	8	--	See B-2	PAHs, Surface		NA	NA	--	3.5	--	See B-2

TABLE 5-2 (cont.)
SUMMARY OF POSSIBLE EXCAVATION DEPTHS
DRAFT SOIL PREDESIGN INVESTIGATION
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Boring Number	Ground Surface Elev. (1)	Base Grade Elev. (1)	Water Table (2)	PAH PRG Exceed.	TPH PRG Exceed.	Fill Bottom	Bedrock Top	Till Top	Possible Excavation Depth	Target Contaminant	Water Table (2)	PAH PRG Exceed.	TPH PRG Exceed.	Fill Bottom	Bedrock Top	Till Top	Possible Excavation Elevation
			Depth Below Base Grade (ft)								Elevation (1)						
AREA 6																	
B-3**	10.1	10.1	5.0 (average of MW-2D, MW-10S and MW-102)	8	NS	--	--	--	See SB430	PAHs, TPH	4.1 (average of MW-2D, MW-10S and MW-102)	2.1	NS	--	--	--	See SB430
B-13**	8.9	8.9		NA	NS	6	18	--	See SB403	PAHs, TPH		NA	NS	2.9	-9.1	--	See SB403
B-16**	9.2	9.2		4	NS	--	22.5	--	See SB404	TPH		5.2	NS	--	-13.3	--	See SB404
MW-2S**	9.1	9.1		7	NS	2	--	--	See SB404	TPH		2.1	NS	7.1	--	--	See SB404
MW-2D**	9.2	9.2		NS	NS	2	29	--	See SB404	TPH		NS	NS	7.2	-19.8	--	See SB404
MW-10S**	10.4	10.4		NA	NS	2	13.5	--	See SB413	PAHs, TPH		NA	NS	8.4	-3.2	--	See SB413
MW-102**	8.3	8.3		8*	8*	17	30	17.0	See SB429	Lead		0.3*	0.3*	-8.7	-21.7	-8.7	See SB429
TP-14	10.0	10.0		NA	4*	--	--	--	See SB430	PAHs, TPH		NA	6*	--	--	--	See SB430
TP-15	9.0	9.0		6*	6*	>5	--	--	See SB403	PAHs, TPH		3*	3*	<4	--	--	See SB403
SB403	9.4	9.4		8	8	10	--	16.0	8.0(4)	PAHs, TPH		1.4	1.4	-0.6	--	-6.6	1.4(4)
SB404	8.9	8.9		8	12	12	--	--	12(4)	TPH		0.9	-3.1	-3.1	--	--	-3.1(4)
SB413	10.6	10.6		4*	4*	3	5.5	--	5.5	PAHs, TPH		6.6*	6.6*	7.6	5.1	--	5.1
SB414	10.7	10.7		8*	12*	--	13.6	--	12(4)	TPH		2.7*	-1.3*	--	-2.9	--	-1.3
SB428	8.0	8.0		8	4	6	--	--	8.0(4)	PAHs		0.0	4.0	2.0	--	--	0.0(4)
SB429	8.6	8.6		8	8	6	--	15.0	12(4)	Lead		0.6	0.6	2.6	--	-6.4	-3.4(4)
SB430	9.8	9.8		4	10	4	18.5	--	10	TPH, Lead		5.8	-0.2	5.8	-8.7	--	-0.2 (4)
SB431	11.1	11.1		NA	12*	--	13	--	12(4)	TPH		--	-0.9*	--	-1.9	--	-09(4)

Notes:
bedrock assumed to be within 1' of refusal, but not confirmed
* sample exceeding PRG was deepest sample collected
** TPH not analyzed from these locations
NA not applicable - no exceedances noted in the boring.
NS no samples collected for the parameter
-- material not encountered in the boring
(1) elevations are presented as feet NGVD 1929 (MLW) Surface Grade elevation is prior to mound removal. Base grade elevation is ground elevation after mound removal
(2) water table averaged from 8/8/02 groundwater level measurement from wells on-site; MW-4S used for Areas 1 and 2
(3) No Detections above actionable PRGs in subsurface soils, surface soils may require some removal
(4) Water table will impact excavation
(5) Bottom of fill not confirmed
(6) Bedrock not encountered

FIGURES



NOTES:

BASE MAP FROM PLAN BY DEPT. OF NAVY, "COASTERS HARBOR ISLAND AND NAVAL HOSPITAL EXISTING CONDITIONS MAP", DATED: 9/98, NETC DWG NO.: 31058-307, CODE ID NO.: 80091, SCALE: 1"=200'.

OFFTA LOCATION MAP			FIGURE 2-1
OLD FIRE FIGHTING TRAINING AREA			
NAVSTA NEWPORT – NEWPORT, RHODE ISLAND			TETRA TECH NUS, INC.
DRAWN BY:	D.W. MACDOUGALL	REV.: 0	
CHECKED BY:	S. PARKER	DATE: MARCH 25, 2004	55 Jonspin Road Wilmington, MA 01887 (978)658-7899
SCALE:	1" = 400'	FILE NO.: DWG\4152\3551\FIG_2-1.DWG	

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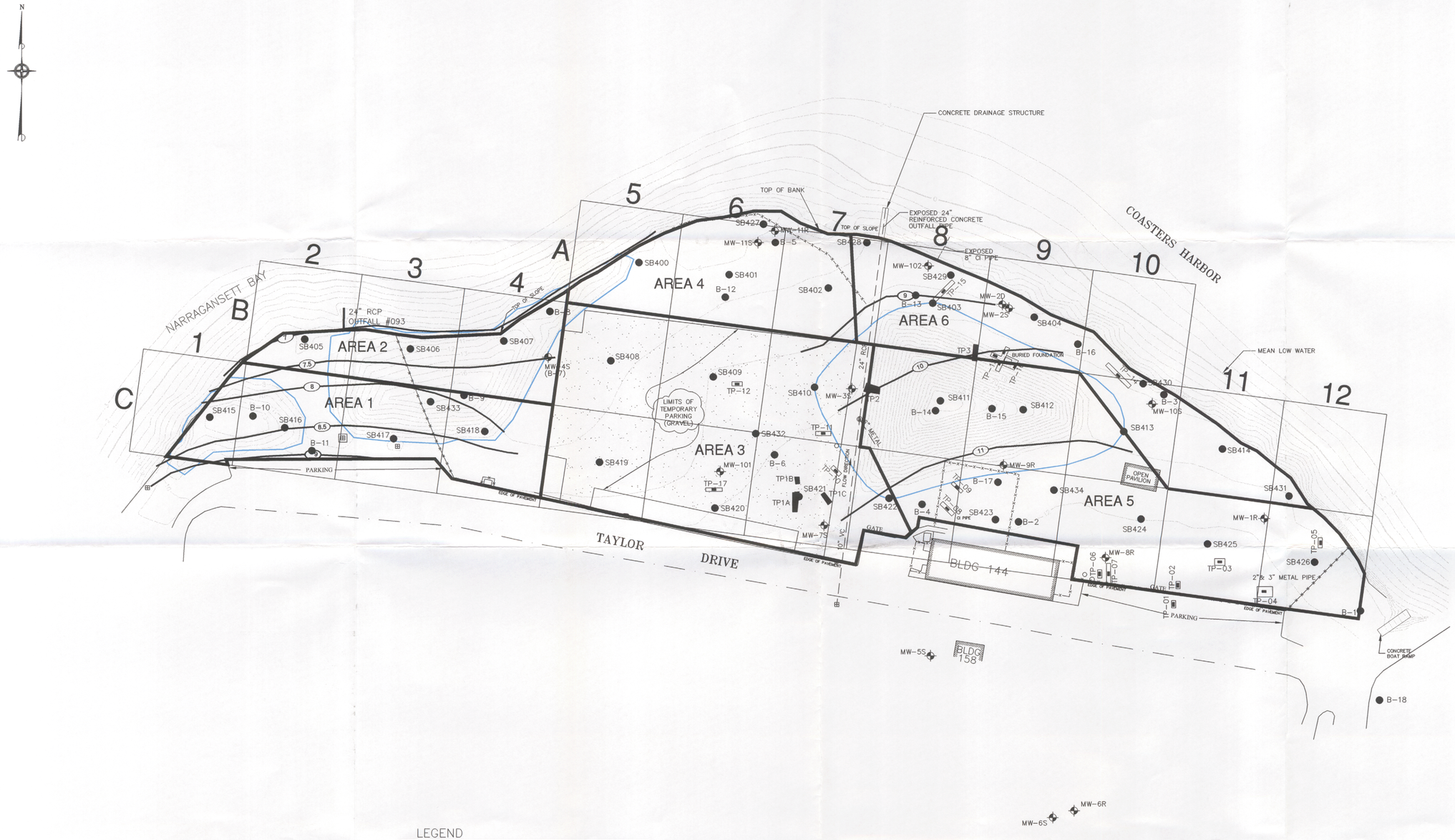

LEGEND

- CATCH BASIN
- FENCE
- EXISTING CONTOUR
- B-16 SOIL BORING LOCATION
- MW-6S MONITORING WELL LOCATION
- STORM SEWER
- TP-10 TEST PIT LOCATION (B&RE, 6/97)
- TP1C TEST PIT LOCATION (TRC, 1/94)
- ROAD CHANGED FROM LAST SURVEY DUE TO CONSTRUCTION ON TAYLOR DRIVE
- 8 EXPECTED TOPOGRAPHY AFTER MOUND REMOVAL (2004)
- AREAS WITHIN WILL BE REGRADED 2004
- SITE AREA BOUNDARY

NOTES AND REFERENCES:

1. DRAWING COMPILED FROM A DRAWING ENTITLED "BASE MAP OLD FIRE FIGHTING TRAINING AREA NETC, NEWPORT, RHODE ISLAND, JULY 1997, PROJ. NO. 7578 CTO: 288, BY BROWN & ROOT ENVIRONMENTAL, SOURCE: BASE PLAN BY GUERRIERE & HALNON, INC., DATED NOVEMBER 10, 1997, AND THE ADDITION OF FIELD MEASURED FEATURES, BY LOUIS FEDERICI AND ASSOCIATES 3/16/99, PRESENTED ON A DRAWING ENTITLED "KADY FIELD, TOPOGRAPHIC, SOIL SAMPLE LOCATION, AND SITE SURVEY AT THE OLD FIRE FIGHTING TRAINING AREA, NAVAL STATION NEWPORT IN NEWPORT, RHODE ISLAND FOR TETRA TECH NUS, INC., LOUIS FEDERICI & ASSOCIATES, 3/16/99, DWG NO. 990205-01.

2. HORIZONTAL DATUM BASE ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM BASED ON NAVAL BASE MEAN LOW WATER.

3. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

4. PLAN NOT TO BE USED FOR DESIGN.

GRAPHIC SCALE

50' 0' 50' 100'

1 INCH = 50 FEET

DRAWN BY: D.W. MACDOUGALL	TITLE: SOIL BORING LOCATIONS SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND		
PREPARED BY: D. HARTIGAN			
CHECKED BY: J. FORRELLI			
	SOURCE: BASE PLAN BY SEE NOTES.		
	SCALE: 1" = 50'	DATE: JULY 12, 2004	PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: FIGURE 4-1	ACFILE NAME: DWG\4152\3551\FIG_4-1(1).DWG	REV: 0
PROGRAM MANAGER: J. TREPANOWSKI			

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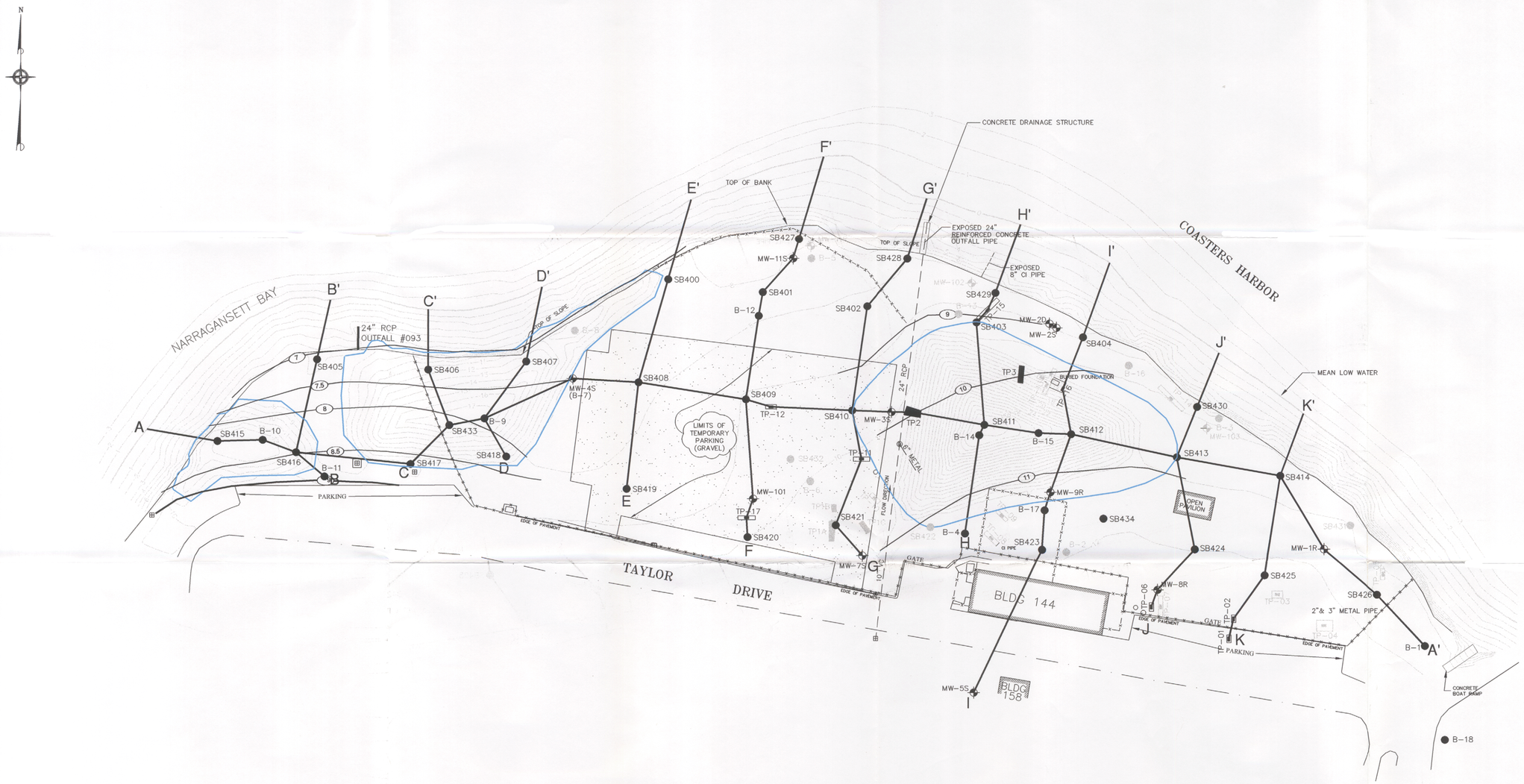
0448BB2Y



LEGEND

- CATCH BASIN
- FENCE
- EXISTING CONTOUR
- B-16 SOIL BORING LOCATION
- MW-6S MONITORING WELL LOCATION
- STORM SEWER
- TP-10 TEST PIT LOCATION (B&RE, 6/97)
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- 8 EXPECTED TOPOGRAPHY AFTER MOUND REMOVAL (2004)
- AREAS WITHIN WILL BE REGRADED 2004

NOTES AND REFERENCES:

1. DRAWING COMPILED FROM A DRAWING ENTITLED "BASE MAP OLD FIRE FIGHTING TRAINING AREA NETC, NEWPORT, RHODE ISLAND, JULY 1997, PROJ. NO. 7578 CTO: 288, BY BROWN & ROOT ENVIRONMENTAL, SOURCE: BASE PLAN BY GUERRIERE & HALNON, INC., DATED NOVEMBER 10, 1997, AND THE ADDITION OF FIELD MEASURED FEATURES, BY LOUIS FEDERICI AND ASSOCIATES 3/16/99, PRESENTED ON A DRAWING ENTITLED "KADY FIELD, TOPOGRAPHIC, SOIL SAMPLE LOCATION, AND SITE SURVEY AT THE OLD FIRE FIGHTING TRAINING AREA, NAVAL STATION NEWPORT IN NEWPORT, RHODE ISLAND FOR TETRA TECH NUS, INC., LOUIS FEDERICI & ASSOCIATES, 3/16/99, DWG NO. 990205-01.

2. HORIZONTAL DATUM BASE ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM BASED ON NAVAL BASE MEAN LOW WATER.

3. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

4. PLAN NOT TO BE USED FOR DESIGN.

GRAPHIC SCALE

50' 0' 50' 100'

1 INCH = 50 FEET

DRAWN BY: D.W. MACDOUGALL	TITLE: CROSS-SECTION LOCATIONS SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: J. LAMBERT	
CHECKED BY: S. PARKER	
	SOURCE: BASE PLAN BY SEE NOTES.
	SCALE: 1" = 50' / DATE: FEBRUARY 24, 2004 / PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: FIGURE 4-2 / ACFILE NAME: DWG\4152\3551\FIG_4-2.DWG / REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

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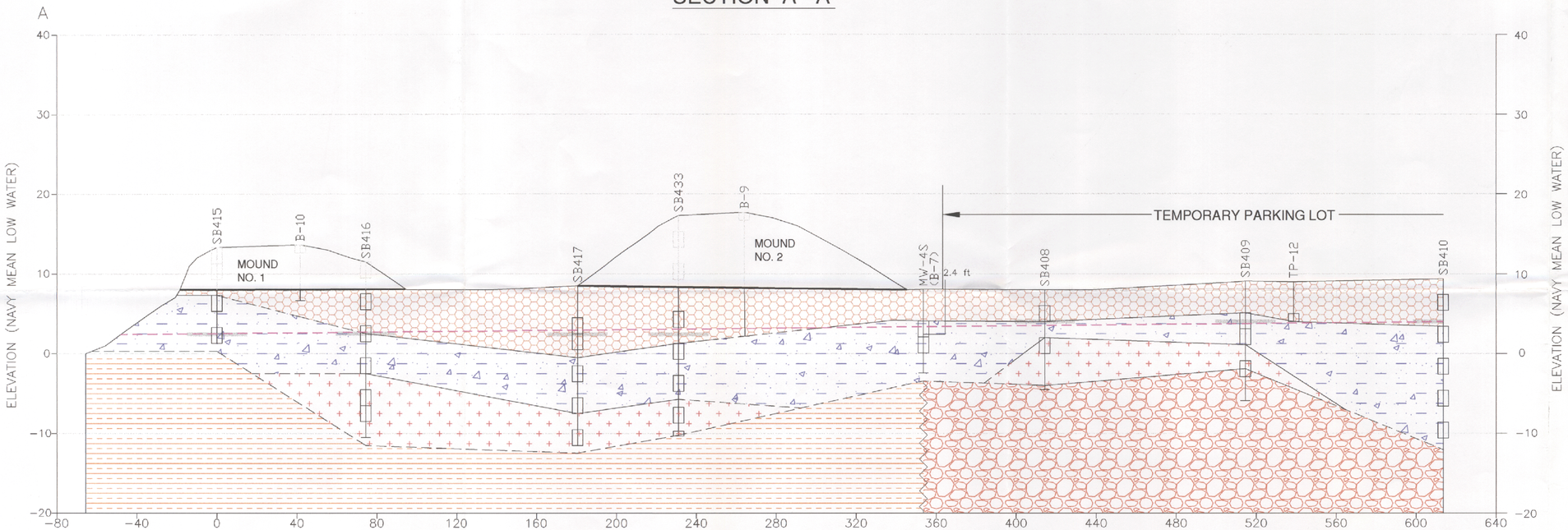
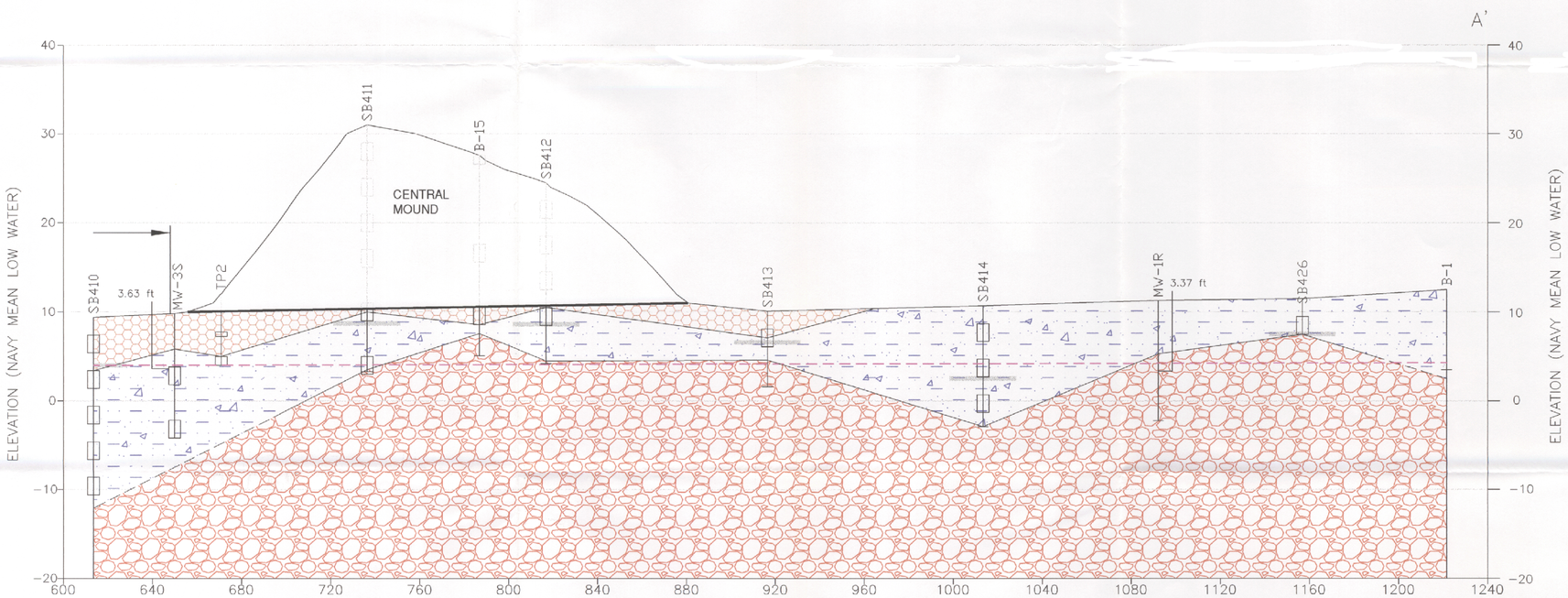
SECTION A - A'





NOTES:

1. THE DEPTHS AND THICKNESSES DETERMINED FOR THE SUBSURFACE STRATA WERE GENERALIZED FROM AND INTERPOLATED BETWEEN TEST BORINGS. THE STRATIFICATION LINES REPRESENT AN APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; THE TRANSITION MAY BE GRADUAL. INFORMATION ON SUBSURFACE CONDITIONS EXIST ONLY AT THE LOCATION OF THE TEST BORINGS; THEREFORE, IT IS POSSIBLE THAT THE SUBSURFACE CONDITIONS MAY VARY FROM THOSE INDICATED.

2. HORIZONTAL DATUM IS BASED ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM IS BASED ON NAVAL BASE MEAN LOW WATER (NGVD 1929).

3. BASE PLAN BY GUERRIERE AND HALNON, INC., JULY 1997, DATED NOVEMBER 10, 1997, PROJ. NO. 7578 CTO 288, BY BROWN AND ROOT ENVIRONMENTAL.

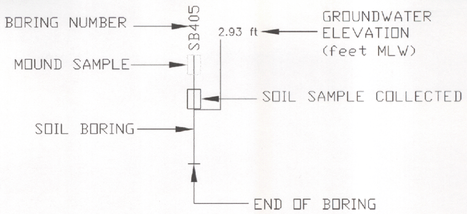
4. ELEVATIONS ON SUBSURFACE CONTACTS WERE GENERALIZED FROM BORING LOGS BY TRC AND TtNUS.

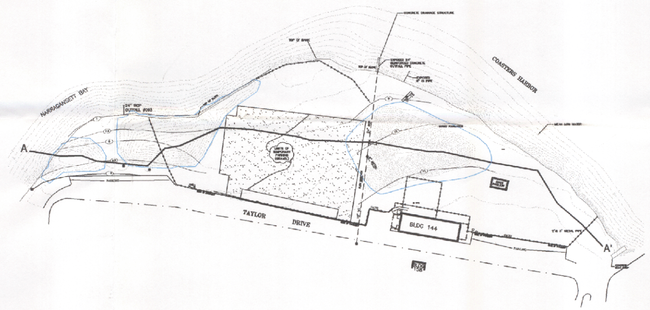
5. BEDROCK ELEVATIONS ARE BASED ON THE DEPTH TO BEDROCK OBSERVED IN TEST PITS AND BORING. IF A REFUSAL WAS NOTED IN A BORING, THE TOP OF BEDROCK WAS GENERALLY ASSUMED TO BE WITHIN ONE FOOT OF THE REFUSAL DEPTH. THE BEDROCK CONTOURS ARE INTERPRETATIONS OF THESE DATA AND THE ACTUAL BEDROCK ELEVATION MAY BE DIFFERENT FROM THE ELEVATION INDICATED.

6. DASHED LINES INDICATE UNCERTAINTY.

7. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.

8. PLAN NOT TO BE USED FOR DESIGN.





MOUND MATERIAL – CONSISTS OF FILL AND WILL BE REMOVED PRIOR TO SUBSURFACE EXCAVATION

FILL – FINE TO MEDIUM SAND, SILT, GRAVEL, AND ROCK FRAGMENTS MIXED WITH VARYING AMOUNTS OF CONSTRUCTION-TYPE DEBRIS INCLUDING: ASPHALT, CONCRETE, METAL, BRICK, WOOD AND GLASS

SILTY SAND AND GRAVEL – FINE TO MEDIUM SAND, SILT AND GRAVEL, WITH VARYING AMOUNTS OF COBBLES, ROCK FRAGMENTS AND SEASHELL FRAGMENTS

TILL – DENSE SILT WITH FINE TO MEDIUM SAND, GRAVEL AND ROCK FRAGMENTS

BEDROCK – CONGLOMERATE WITH QUARTZITE COBBLES

BEDROCK – PHYLLITE

GROUNDWATER ELEVATION MEASURED ON 7/7/1997

BASE GRADE ELEVATION

EXCAVATION ELEVATION

DRAWN BY: D.W. MACDOUGALL	TITLE: CROSS-SECTION A-A' SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: D. HARTIGAN	
CHECKED BY: J. FORRELLI	
	SOURCE: REFER TO FIGURE 4-1 FOR TOPOGRAPHIC SOURCE
	SCALE: AS NOTED / DATE: JULY 13, 2004 / PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: 4-3 / ACFILE NAME: DWG\4152\3551\FIG_4-3.DWG / REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

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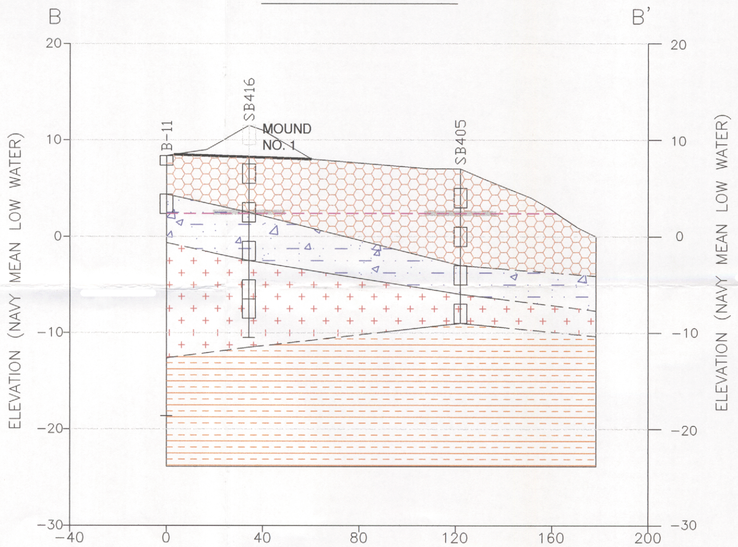
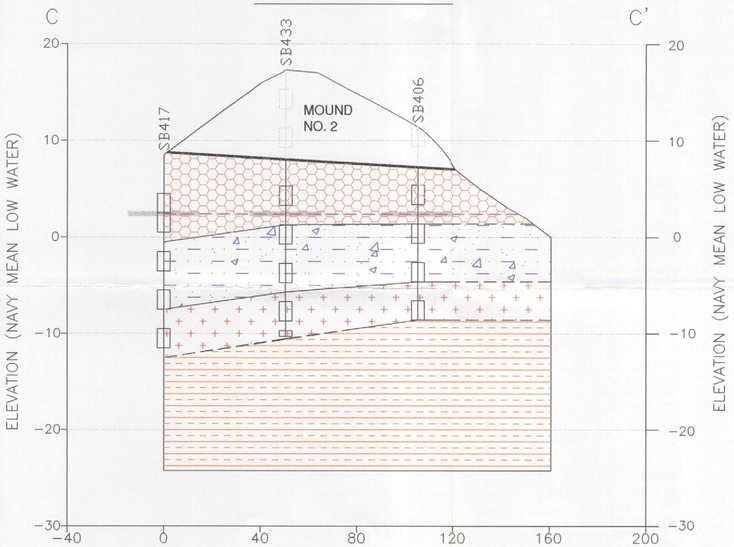
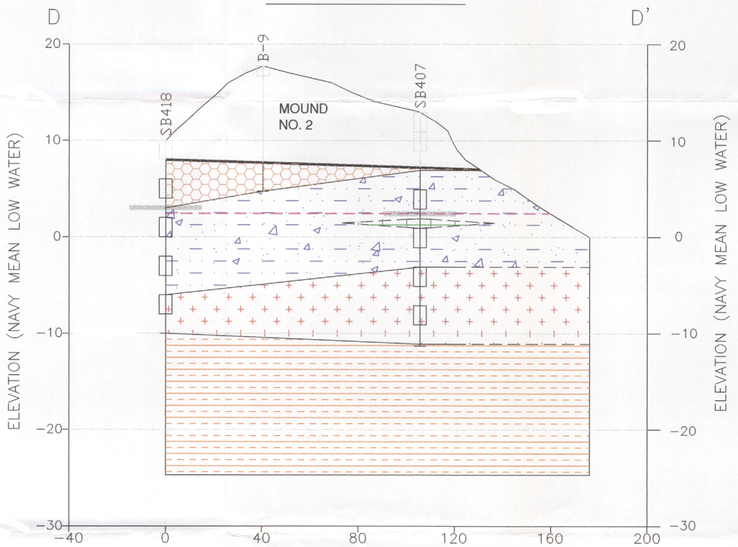
SECTION B - B'

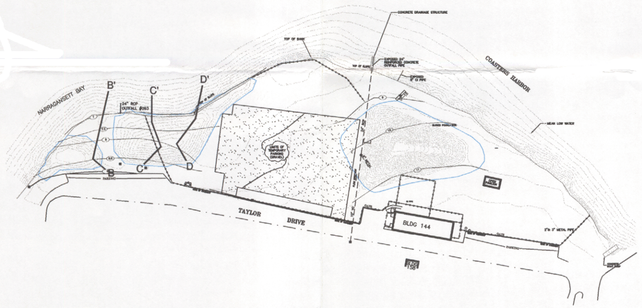


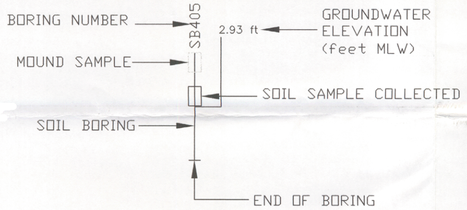
SECTION C - C'



SECTION D - D'







NOTES:

1. THE DEPTHS AND THICKNESSES DETERMINED FOR THE SUBSURFACE STRATA WERE GENERALIZED FROM AND INTERPOLATED BETWEEN TEST BORINGS. THE STRATIFICATION LINES REPRESENT AN APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; THE TRANSITION MAY BE GRADUAL. INFORMATION ON SUBSURFACE CONDITIONS EXIST ONLY AT THE LOCATION OF THE TEST BORINGS; THEREFORE, IT IS POSSIBLE THAT THE SUBSURFACE CONDITIONS MAY VARY FROM THOSE INDICATED.

2. HORIZONTAL DATUM IS BASED ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM IS BASED ON NAVAL BASE MEAN LOW WATER (NGVD 1929).

3. BASE PLAN BY GUERRIERE AND HALNON, INC., JULY 1997, DATED NOVEMBER 10, 1997, PROJ. NO. 7578 CTO 288, BY BROWN AND ROOT ENVIRONMENTAL.

4. ELEVATIONS ON SUBSURFACE CONTACTS WERE GENERALIZED FROM BORING LOGS BY TRC AND TtNUS.

5. BEDROCK ELEVATIONS ARE BASED ON THE DEPTH TO BEDROCK OBSERVED IN TEST PITS AND BORING. IF A REFUSAL WAS NOTED IN A BORING, THE TOP OF BEDROCK WAS GENERALLY ASSUMED TO BE WITHIN ONE FOOT OF THE REFUSAL DEPTH. THE BEDROCK CONTOURS ARE INTERPRETATIONS OF THESE DATA AND THE ACTUAL BEDROCK ELEVATION MAY BE DIFFERENT FROM THE ELEVATION INDICATED.

6. DASHED LINES INDICATE UNCERTAINTY.

7. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.

8. PLAN NOT TO BE USED FOR DESIGN.

MOUND MATERIAL – CONSISTS OF FILL AND WILL BE REMOVED PRIOR TO SUBSURFACE EXCAVATION

FILL – FINE TO MEDIUM SAND, SILT, GRAVEL, AND ROCK FRAGMENTS MIXED WITH VARYING AMOUNTS OF CONSTRUCTION–TYPE DEBRIS INCLUDING: ASPHALT, CONCRETE, METAL, BRICK, WOOD AND GLASS

SILTY SAND AND GRAVEL – FINE TO MEDIUM SAND, SILT AND GRAVEL, WITH VARYING AMOUNTS OF COBBLES, ROCK FRAGMENTS AND SEASHELL FRAGMENTS

PEAT – PEAT AND ORGANIC MUCK WITH VARYING AMOUNTS OF SAND AND SILT

TILL – DENSE SILT WITH FINE TO MEDIUM SAND, GRAVEL AND ROCK FRAGMENTS

BEDROCK – PHYLLITE

GROUNDWATER ELEVATION BASED ON MW–4S (2.4 MLW ON 7/7/1997)

BASE GRADE ELEVATION

EXCAVATION ELEVATION

DRAWN BY: D.W. MACDOUGALL	TITLE: CROSS–SECTIONS B–B', C–C', AND D–D' SUBSURFACE PRE–DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: D. HARTIGAN	
CHECKED BY: J. FORRELLI	
	SOURCE: REFER TO FIGURE 4–1 FOR TOPOGRAPHIC SOURCE
	SCALE: AS NOTED; DATE: JULY 12, 2004; PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: 4–4; ACFILE NAME: DWG\4152\3551\FIG_4–4.DWG; REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

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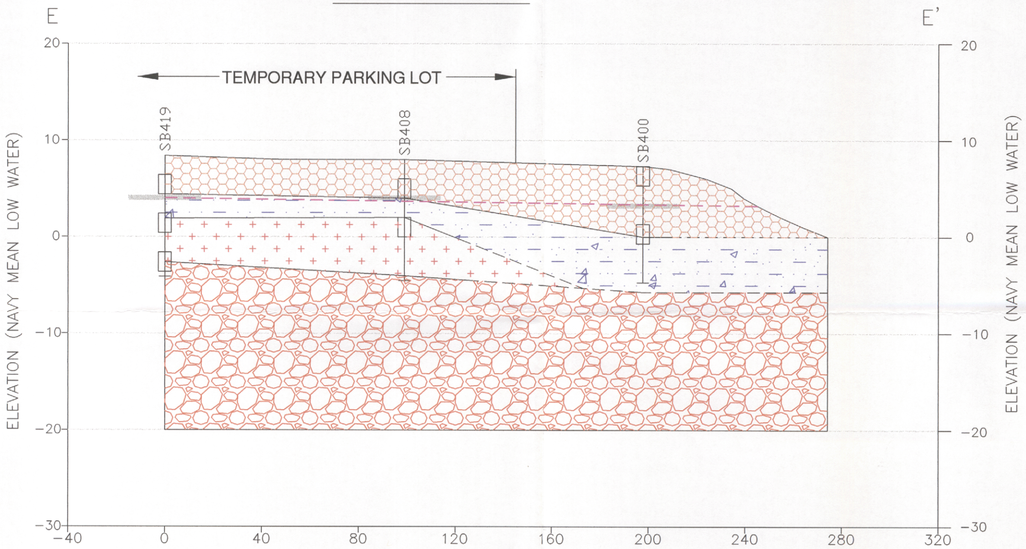
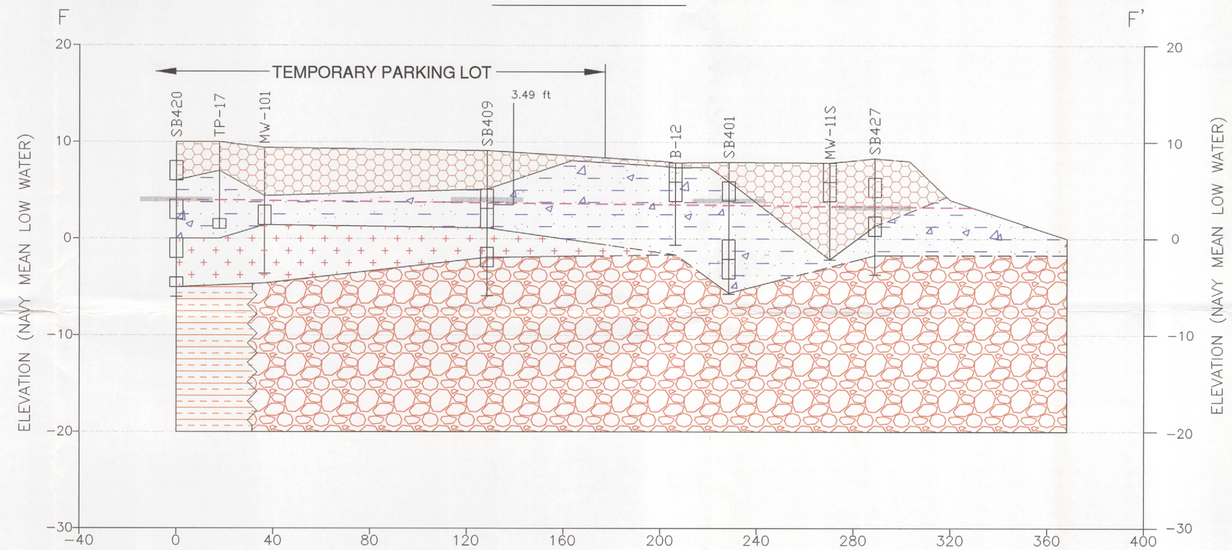
(978)658–7899

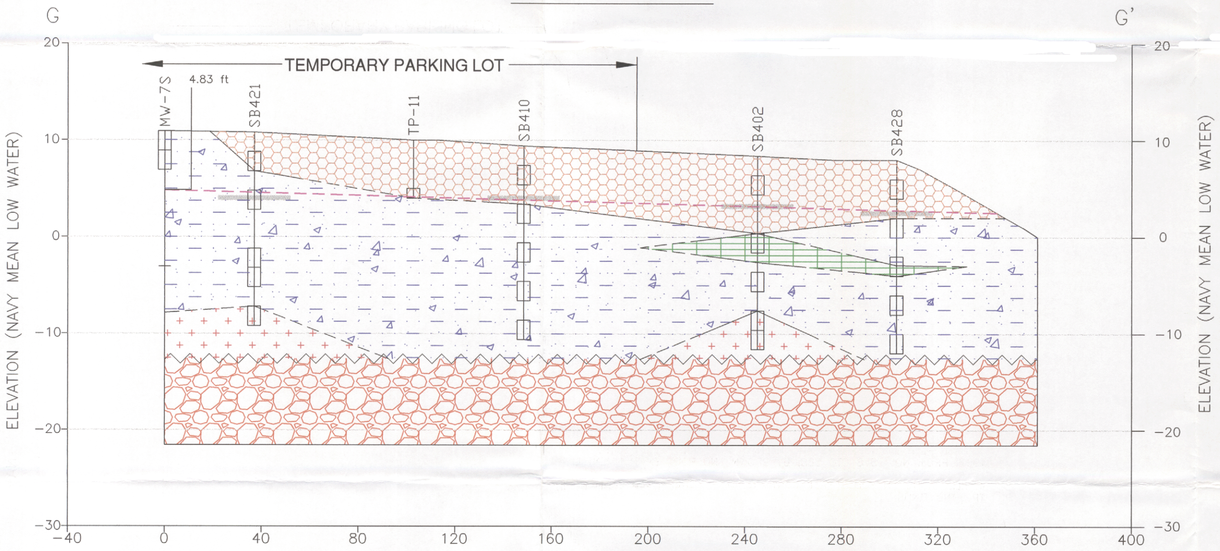
SECTION E - E'

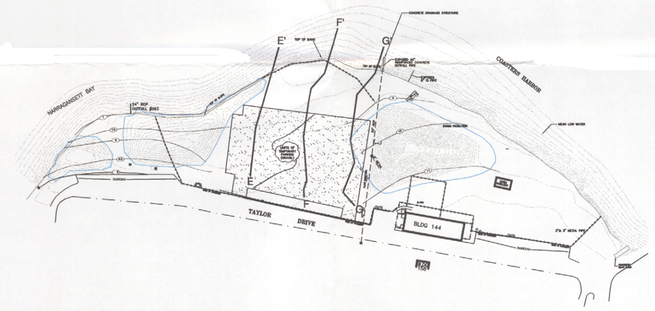


SECTION F - F'



SECTION G - G'





NOTES:

1. THE DEPTHS AND THICKNESSES DETERMINED FOR THE SUBSURFACE STRATA WERE GENERALIZED FROM AND INTERPOLATED BETWEEN TEST BORINGS. THE STRATIFICATION LINES REPRESENT AN APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; THE TRANSITION MAY BE GRADUAL. INFORMATION ON SUBSURFACE CONDITIONS EXIST ONLY AT THE LOCATION OF THE TEST BORINGS; THEREFORE, IT IS POSSIBLE THAT THE SUBSURFACE CONDITIONS MAY VARY FROM THOSE INDICATED.

2. HORIZONTAL DATUM IS BASED ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM IS BASED ON NAVAL BASE MEAN LOW WATER (NGVD 1929).

3. BASE PLAN BY GUERRIERE AND HALNON, INC., JULY 1997, DATED NOVEMBER 10, 1997, PROJ. NO. 7578 CTO 288, BY BROWN AND ROOT ENVIRONMENTAL.

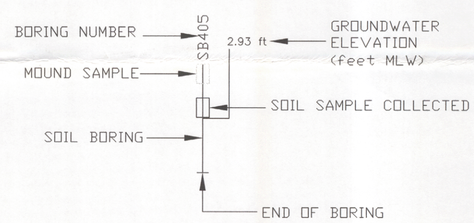
4. ELEVATIONS ON SUBSURFACE CONTACTS WERE GENERALIZED FROM BORING LOGS BY TRC AND TtNUS.

5. BEDROCK ELEVATIONS ARE BASED ON THE DEPTH TO BEDROCK OBSERVED IN TEST PITS AND BORING. IF A REFUSAL WAS NOTED IN A BORING, THE TOP OF BEDROCK WAS GENERALLY ASSUMED TO BE WITHIN ONE FOOT OF THE REFUSAL DEPTH. THE BEDROCK CONTOURS ARE INTERPRETATIONS OF THESE DATA AND THE ACTUAL BEDROCK ELEVATION MAY BE DIFFERENT FROM THE ELEVATION INDICATED.

6. DASHED LINES INDICATE UNCERTAINTY.

7. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.

8. PLAN NOT TO BE USED FOR DESIGN.



MOUND MATERIAL – CONSISTS OF FILL AND WILL BE REMOVED PRIOR TO SUBSURFACE EXCAVATION

FILL – FINE TO MEDIUM SAND, SILT, GRAVEL, AND ROCK FRAGMENTS MIXED WITH VARYING AMOUNTS OF CONSTRUCTION-TYPE DEBRIS INCLUDING: ASPHALT, CONCRETE, METAL, BRICK, WOOD AND GLASS

SILTY SAND AND GRAVEL – FINE TO MEDIUM SAND, SILT AND GRAVEL, WITH VARYING AMOUNTS OF COBBLES, ROCK FRAGMENTS AND SEASHELL FRAGMENTS

PEAT – PEAT AND ORGANIC MUCK WITH VARYING AMOUNTS OF SAND AND SILT

TILL – DENSE SILT WITH FINE TO MEDIUM SAND, GRAVEL AND ROCK FRAGMENTS

BEDROCK – CONGLOMERATE WITH QUARTZITE COBBLES

BEDROCK – PHYLLITE

GROUNDWATER ELEVATIONS MEASURED ON 7/7/1997; MW-4S GROUNDWATER ELEVATION USED FOR E-E'; MW-3S USED FOR G-G'

BASE GRADE ELEVATION

EXCAVATION ELEVATION

DRAWN BY: D.W. MACDOUGALL	TITLE: CROSS-SECTIONS E-E', F-F', AND G-G' SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: D. HARTIGAN	
CHECKED BY: J. FORRELLI	
	SOURCE: REFER TO FIGURE 4-1 FOR TOPOGRAPHIC SOURCE
	SCALE: AS NOTED / DATE: JULY 12, 2004 / PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: 4-5 / ACFILE NAME: DWG\4152\3551\FIG_4-5.DWG / REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

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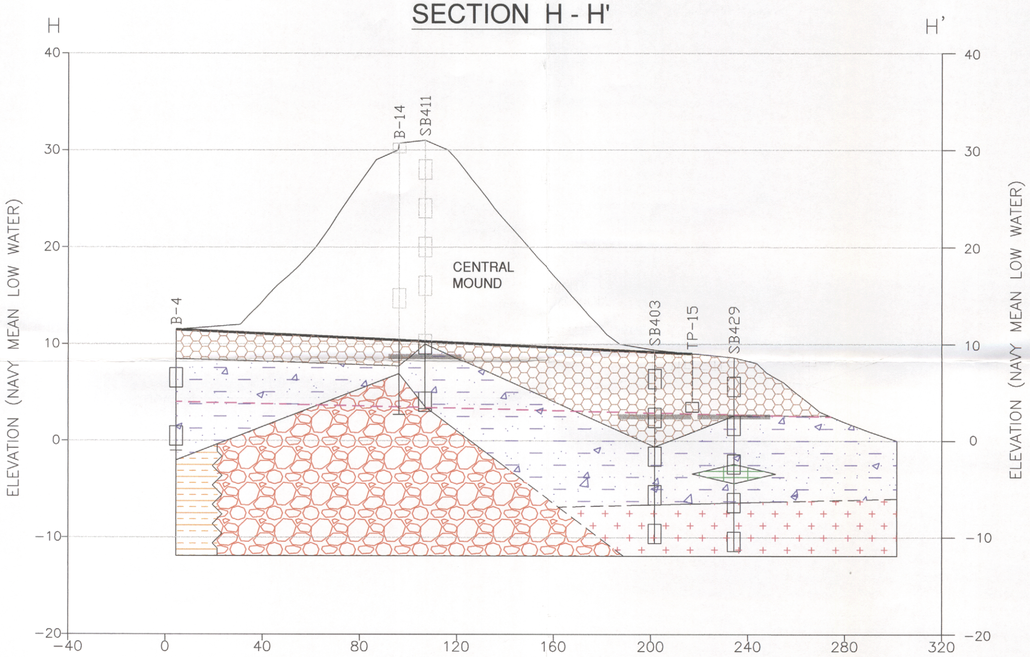
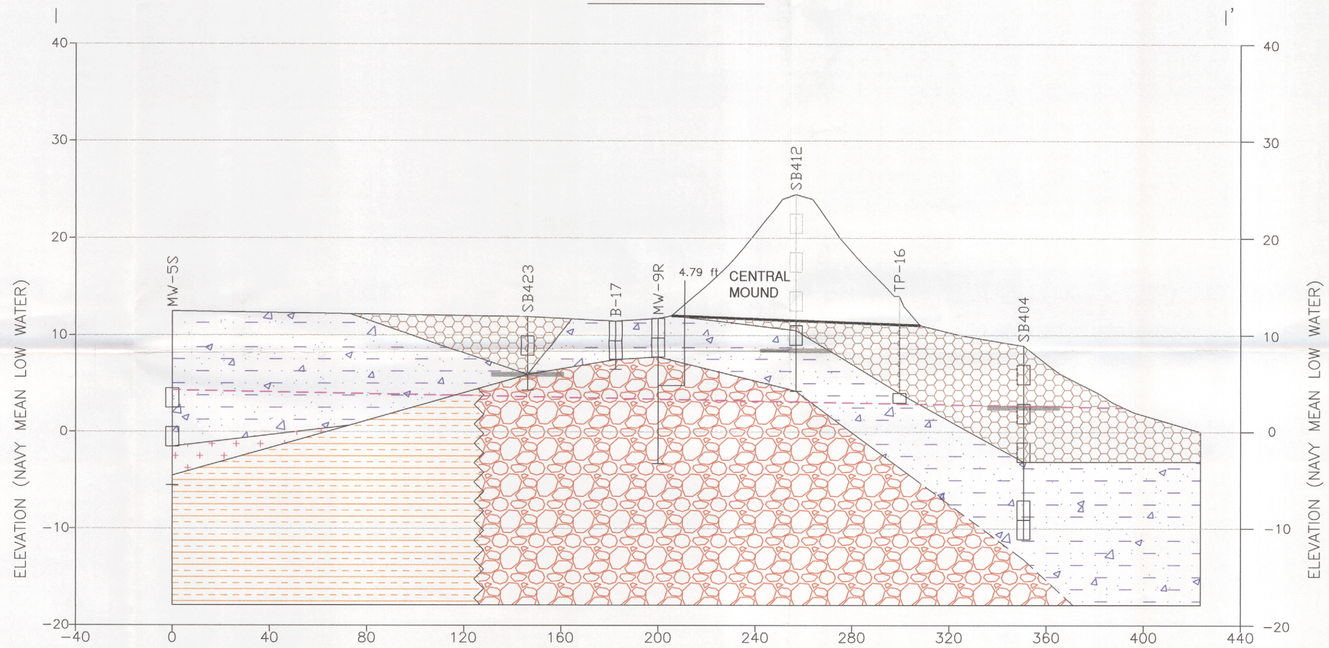
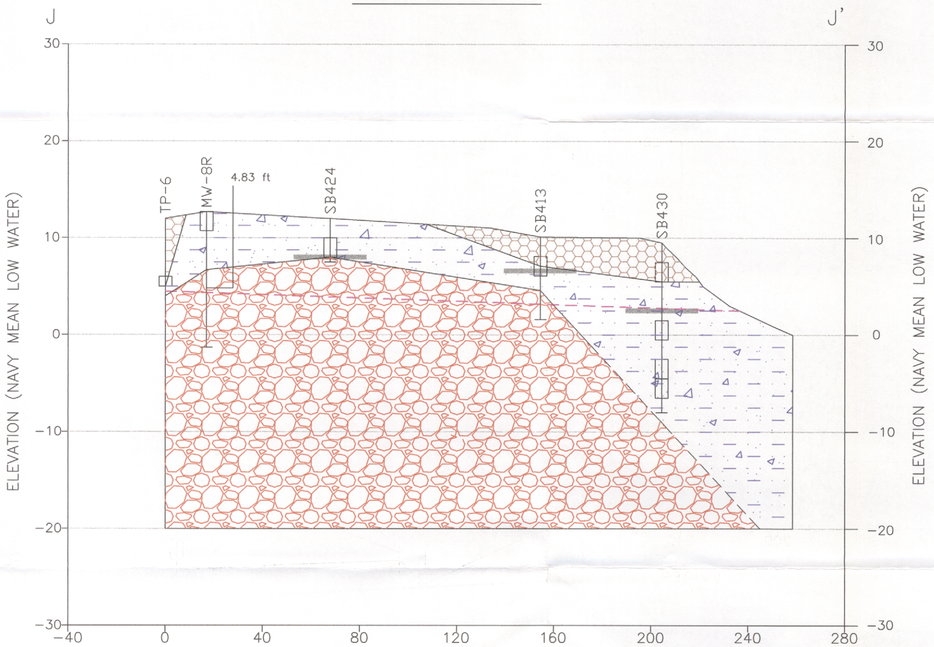
SECTION H - H'



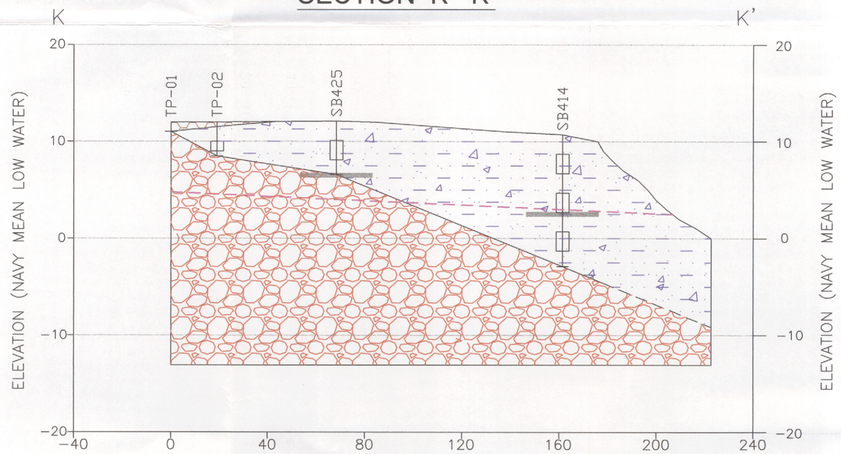
SECTION I - I'



SECTION J - J'



SECTION K - K'



NOTES:

1. THE DEPTHS AND THICKNESSES DETERMINED FOR THE SUBSURFACE STRATA WERE GENERALIZED FROM AND INTERPOLATED BETWEEN TEST BORINGS. THE STRATIFICATION LINES REPRESENT AN APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; THE TRANSITION MAY BE GRADUAL. INFORMATION ON SUBSURFACE CONDITIONS EXIST ONLY AT THE LOCATION OF THE TEST BORINGS; THEREFORE, IT IS POSSIBLE THAT THE SUBSURFACE CONDITIONS MAY VARY FROM THOSE INDICATED.

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3. BASE PLAN BY GUERRIERE AND HALNON, INC., JULY 1997, DATED NOVEMBER 10, 1997, PROJ. NO. 7578 CTO 288, BY BROWN AND ROOT ENVIRONMENTAL.

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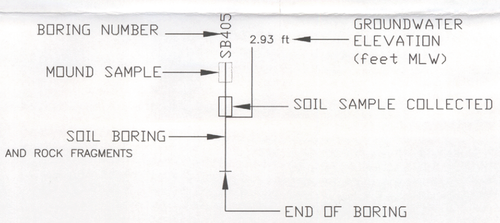
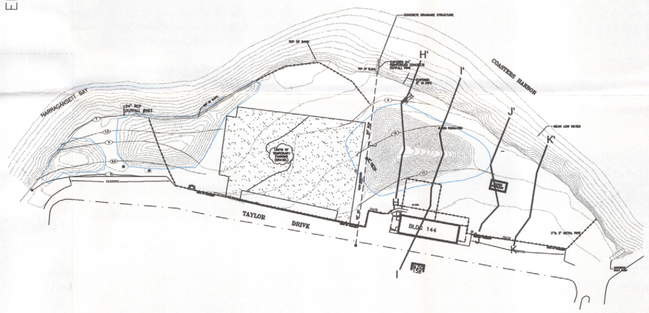
5. BEDROCK ELEVATIONS ARE BASED ON THE DEPTH TO BEDROCK OBSERVED IN TEST PITS AND BORING. IF A REFUSAL WAS NOTED IN A BORING, THE TOP OF BEDROCK WAS GENERALLY ASSUMED TO BE WITHIN ONE FOOT OF THE REFUSAL DEPTH. THE BEDROCK CONTOURS ARE INTERPRETATIONS OF THESE DATA AND THE ACTUAL BEDROCK ELEVATION MAY BE DIFFERENT FROM THE ELEVATION INDICATED.

6. DASHED LINES INDICATE UNCERTAINTY.

7. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.

8. PLAN NOT TO BE USED FOR DESIGN.





MOUND MATERIAL – CONSISTS OF FILL AND WILL BE REMOVED PRIOR TO SUBSURFACE EXCAVATION

FILL – FINE TO MEDIUM SAND, SILT, GRAVEL, AND ROCK FRAGMENTS MIXED WITH VARYING AMOUNTS OF CONSTRUCTION–TYPE DEBRIS INCLUDING: ASPHALT, CONCRETE, METAL, BRICK, WOOD AND GLASS

SILTY SAND AND GRAVEL – FINE TO MEDIUM SAND, SILT AND GRAVEL, WITH VARYING AMOUNTS OF COBBLES, ROCK FRAGMENTS AND SEASHELL FRAGMENTS

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TILL – DENSE SILT WITH FINE TO MEDIUM SAND, GRAVEL AND ROCK FRAGMENTS

BEDROCK – CONGLOMERATE WITH QUARTZITE COBBLES

BEDROCK – PHYLLITE

GROUNDWATER ELEVATIONS MEASURED ON 7/7/1997; MW–102 GROUNDWATER ELEVATIONS USED FOR H–H'; MW–1R GROUNDWATER ELEVATIONS USED FOR K–K'

BASE GRADE ELEVATION

EXCAVATION ELEVATION

DRAWN BY: D.W. MACDOUGALL	TITLE: CROSS–SECTIONS H–H', I–I', J–J', AND K–K' SUBSURFACE PRE–DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: D. HARTIGAN	SOURCE: REFER TO FIGURE 4–1 FOR TOPOGRAPHIC SOURCE
CHECKED BY: J. FORRELLI	SCALE: AS NOTED; DATE: JULY 13, 2004; PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: 4–6; ACFILE NAME: DWG\4152\3551\FIG_4–6.DWG; REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

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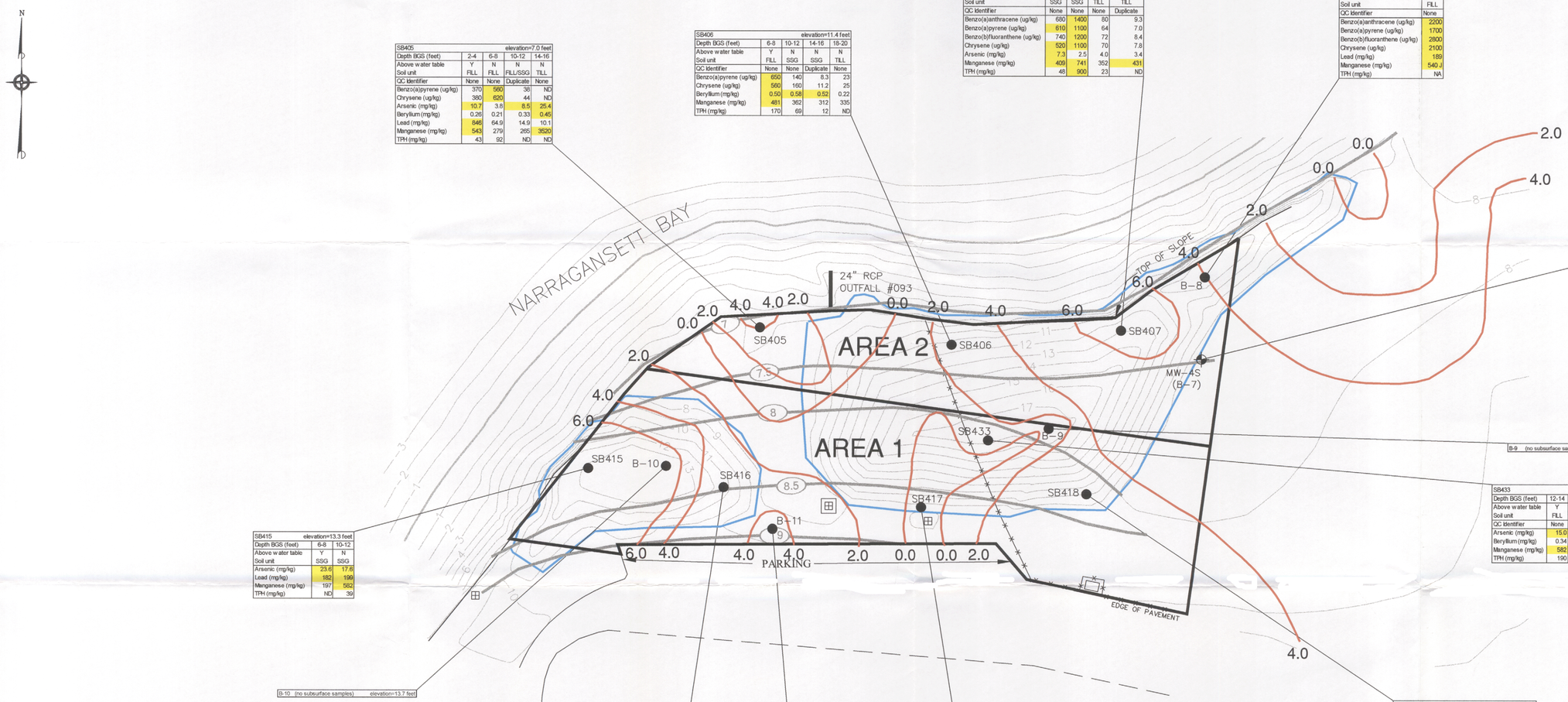

SB405			elevation=7.0 feet
Depth BGS (feet)	2-4	6-8	10-12	14-16
Above water table	Y	N	N	N
Soil unit	FILL	FILL	FILL/SSG	TILL
QC Identifier	None	None	Duplicate	None
Benzo(a)pyrene (ug/kg)	370	560	38	ND
Chrysene (ug/kg)	380	620	44	ND
Arsenic (mg/kg)	10.7	3.8	8.5	25.4
Beryllium (mg/kg)	0.26	0.21	0.33	0.45
Lead (mg/kg)	546	64.9	14.9	10.1
Manganese (mg/kg)	543	279	265	3520
TPH (mg/kg)	43	92	ND	ND

SB406				elevation=11.4 feet
Depth BGS (feet)	6-8	10-12	14-16	18-20
Above water table	Y	N	N	N
Soil unit	FILL	SSG	SSG	TILL
QC Identifier	None	None	Duplicate	None
Benzo(a)pyrene (ug/kg)	650	140	8.3	23
Chrysene (ug/kg)	560	160	11.2	25
Beryllium (mg/kg)	0.50	0.58	0.52	0.22
Manganese (mg/kg)	481	362	312	335
TPH (mg/kg)	170	69	12	ND

SB407				elevation=12.9 feet
Depth BGS (feet)	8-10	12-14	16-18	20-22
Above water table	Y	Y	N	N
Soil unit	SSG	SSG	TILL	TILL
QC Identifier	None	None	None	Duplicate
Benzo(a)anthracene (ug/kg)	680	1400	80	9.3
Benzo(a)pyrene (ug/kg)	610	1100	64	7.0
Benzo(b)fluoranthene (ug/kg)	740	1200	72	8.4
Chrysene (ug/kg)	520	1100	70	7.8
Arsenic (mg/kg)	7.3	2.5	4.0	3.4
Manganese (mg/kg)	409	741	352	431
TPH (mg/kg)	46	900	23	ND

B-8		elevation=11.5 feet
Depth BGS (feet)	8-10	
Above water table	N	
Soil unit	FILL	
QC Identifier	None	
Benzo(a)anthracene (ug/kg)	2200	
Benzo(a)pyrene (ug/kg)	1700	
Benzo(b)fluoranthene (ug/kg)	2800	
Chrysene (ug/kg)	2100	
Lead (mg/kg)	189	
Manganese (mg/kg)	540 J	
TPH (mg/kg)	NA	

B-7		elevation=8.1 feet
Depth BGS (feet)	4-6	6-8
Above water table	N	N
Soil unit	SSG	SSG
QC Identifier	None	None
Benzo(a)anthracene (ug/kg)	1300 J	550
Benzo(a)pyrene (ug/kg)	1000 J	490
Benzo(b)fluoranthene (ug/kg)	1300 J	400
Chrysene (ug/kg)	1000 J	540
TPH (mg/kg)	NA	NA

MW-4S (well installed in location of boring B-7)

B-9 (no subsurface samples) elevation=17.7 feet

SB415		elevation=13.3 feet
Depth BGS (feet)	6-8	10-12
Above water table	Y	N
Soil unit	SSG	SSG
Arsenic (mg/kg)	23.6	17.6
Lead (mg/kg)	182	199
Manganese (mg/kg)	197	582
TPH (mg/kg)	ND	39

B-10 (no subsurface samples) elevation=13.7 feet

SB433					elevation=17.3 feet
Depth BGS (feet)	12-14	16-18	20-22	24-26	28-30
Above water table	Y	N	N	N	N
Soil unit	FILL	SSG	SSG	TILL	TILL
QC Identifier	None	None	Duplicate	Duplicate	None
Arsenic (mg/kg)	15.0	3.6	5.6	4.1	2.1
Beryllium (mg/kg)	0.34	0.09	0.23	0.41	0.20
Manganese (mg/kg)	582	171	279	2205	511
TPH (mg/kg)	190	170	95	ND	ND

SB418				elevation=10.0 feet
Depth BGS (feet)	4-6	8-10	12-14	16-18
Above water table	Y	N	N	N
Soil unit	FILL	SSG	SSG	TILL
QC Identifier	None	None	None	Duplicate
Arsenic (mg/kg)	3.7	1.1	3.8	5.2
Beryllium (mg/kg)	0.56	0.48	0.44	0.39
Lead (mg/kg)	321	14.5	12.7	10.3
Manganese (mg/kg)	496	333	759	1360
TPH (mg/kg)	32	44	ND	ND

SB416				elevation=11.5 feet
Depth BGS (feet)	4-6	8-10	12-14	16-18
Above water table	Y	Y	N	N
Soil unit	FILL	FILL/SSG	SSG	TILL
Benzo(a)pyrene (ug/kg)	820	11	ND	55
Benzo(b)fluoranthene (ug/kg)	1100	13	ND	67
Chrysene (ug/kg)	890	11	ND	60
Arsenic (mg/kg)	11.8	12.4	15.6	25.9
Beryllium (mg/kg)	0.43	0.52	0.48	0.42
Manganese (mg/kg)	570	189	357	3210
TPH (mg/kg)	170	ND	ND	13

B-11	elevation=8.4 feet
Depth BGS (feet)	4-6
Above water table	Y
Soil unit	SSG
QC Identifier	None
Arsenic (mg/kg)	10.0 J
Lead (mg/kg)	314
Manganese (mg/kg)	627 J
TPH (mg/kg)	NA

SB417					elevation=8.5 feet
Depth BGS (feet)	4-6	6-8	10-12	12-14	18-20
Above water table	Y	N	N	N	N
Soil unit	FILL	FILL	SSG	SSG	TILL
QC Identifier	None	Duplicate	None	None	None
Arsenic (mg/kg)	7.8	8.4	5.8	14.3	14.1
Beryllium (mg/kg)	0.44	0.33	0.35	0.41	0.45
Manganese (mg/kg)	129	193	114	1540	219
TPH (mg/kg)	310	175	ND	ND	ND

LEGEND

- CATCH BASIN
- FENCE
- EXISTING CONTOUR (DECEMBER 2003)
- B-16 — SOIL BORING LOCATIONS: TRC 1992, 1993: B-#; TtNUS, 2003: SB4##
- MW-6S — MONITORING WELL LOCATION
- STORM SEWER
- 627.2 — CONCENTRATION EXCEEDS THE SITE PRG. REFER TO TABLE 1-1 FOR PRGs.
- SITE AREA BOUNDARY
- TP-10 — TEST PIT LOCATION (B&RE, 6/97)
- TP1C — TEST PIT LOCATION (TRC, 1/94)
- 8 — EXPECTED TOPOGRAPHY AFTER MOUND REMOVAL (2004)
- AREAS WITHIN WILL BE REGRADED 2004
- SSG — SILTY SAND AND GRAVEL
- ELEVATION OF BOTTOM OF FILL

GRAPHIC SCALE

30' 0' 30' 60'

1 INCH = 30 FEET

NOTES AND REFERENCES:

1. DRAWING COMPILED FROM A DRAWING ENTITLED "BASE MAP OLD FIRE FIGHTING TRAINING AREA", NETC, NEWPORT, RHODE ISLAND, JULY 1997, PROJ. NO. 7578 CTO: 288, BY BROWN & ROOT ENVIRONMENTAL; SOURCE: BASE PLAN BY GUERRIERE & HALNON, INC., DATED NOVEMBER 10, 1997, AND THE ADDITION OF FIELD MEASURED FEATURES, BY LOUIS FEDERICI AND ASSOCIATES 3/16/99, PRESENTED ON A DRAWING ENTITLED "KADY FIELD, TOPOGRAPHIC, SOIL SAMPLE LOCATION, AND SITE SURVEY AT THE OLD FIRE FIGHTING TRAINING AREA", NAVAL STATION NEWPORT IN NEWPORT, RHODE ISLAND FOR TETRA TECH NUS, INC., LOUIS FEDERICI & ASSOCIATES, 3/16/99, DWG NO. 990205-01 AND "TOPOGRAPHIC SURVEY AND SOIL BORING LOCATION", LOUIS FEDERICI AND ASSOCIATES, DATED: 1/16/04, DWG NO.: 19990205-02.

2. HORIZONTAL DATUM BASE ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM BASED ON NAVAL BASE MEAN LOW WATER.

3. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

4. PLAN NOT TO BE USED FOR DESIGN.

5. CONCENTRATIONS ARE PROVIDED AS NUMERIC AVERAGES FOR DUPLICATE PAIRS. NA – CONTAMINANT NOT ANALYZED. ND – NOT DETECTED.

DRAWN BY: D.W. MACDOUGALL	TITLE: WESTERN SECTION EXCEEDENCES AND FILL BOTTOM ELEVATION SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: L. SEYDEWITZ	
CHECKED BY: J. FORRELLI	
	SOURCE: BASE PLAN BY SEE NOTES.
	SCALE: AS NOTED; DATE: JULY 13, 2004; PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: FIGURE 4-7; ACFILE NAME: DWG\4152\3551\FIG_4-7.DWG; REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

TETRA TECH NUS, INC.
55 JONSPIN ROAD
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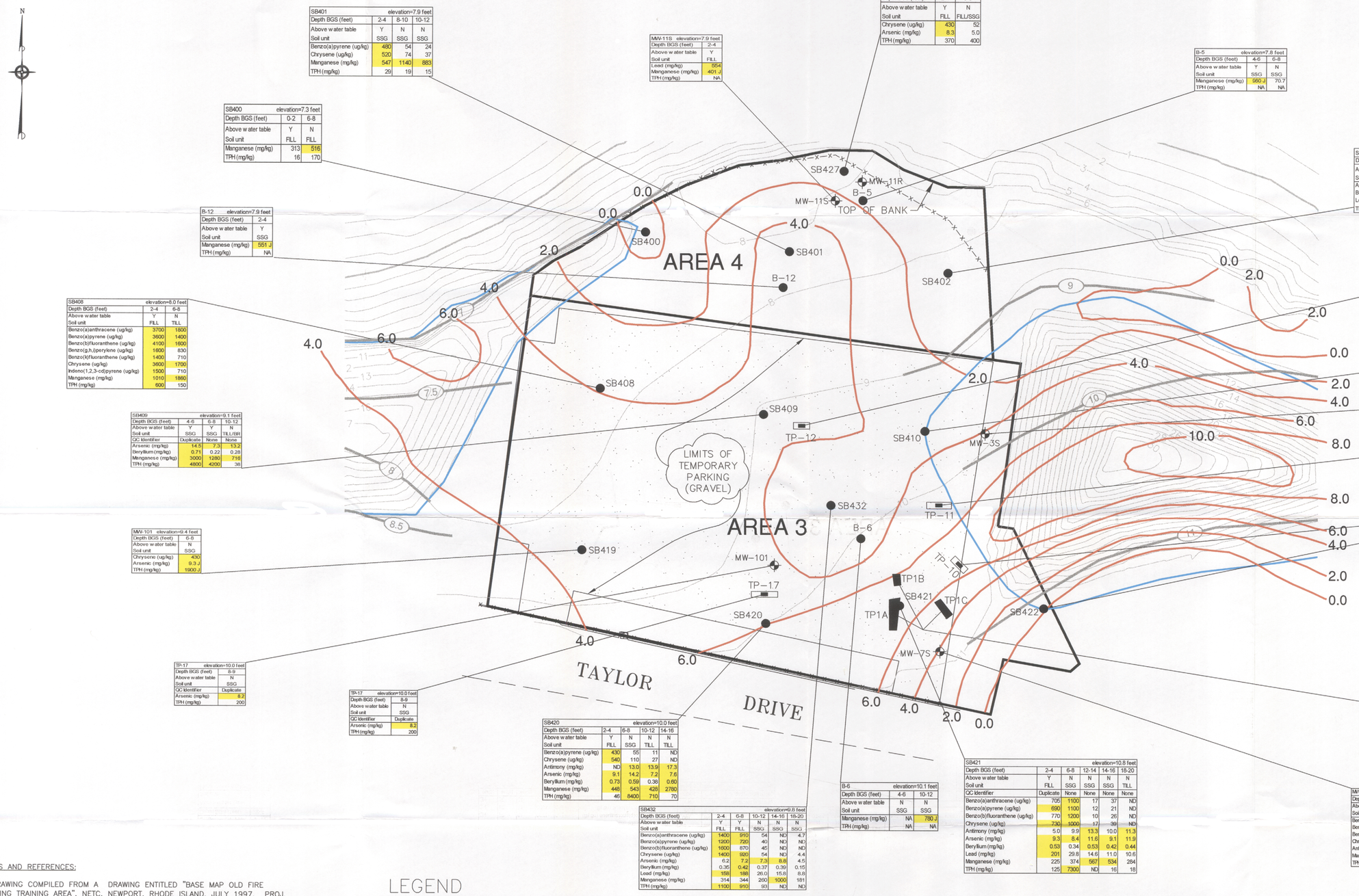


SB401	elevation=7.9 feet		
Depth BGS (feet)	2-4	8-10	10-12
Above water table	Y	N	N
Soil unit	SSG	SSG	SSG
Benzo(a)pyrene (ug/kg)	480	54	24
Chrysene (ug/kg)	520	74	37
Manganese (mg/kg)	547	1140	883
TPH (mg/kg)	29	19	15

MW-11S	elevation=7.9 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	FILL
Lead (mg/kg)	554
Manganese (mg/kg)	401 J
TPH (mg/kg)	NA

SB427	elevation=8.3 feet	
Depth BGS (feet)	2-4	6-8
Above water table	Y	N
Soil unit	FILL	FILL/SSG
Chrysene (ug/kg)	430	52
Arsenic (mg/kg)	8.3	5.0
TPH (mg/kg)	370	400

B-5	elevation=7.8 feet	
Depth BGS (feet)	4-6	6-8
Above water table	Y	N
Soil unit	SSG	SSG
Manganese (mg/kg)	560 J	70.7
TPH (mg/kg)	NA	NA

SB400	elevation=7.3 feet	
Depth BGS (feet)	0-2	6-8
Above water table	Y	N
Soil unit	FILL	FILL
Manganese (mg/kg)	313	516
TPH (mg/kg)	16	170

B-12	elevation=7.9 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	SSG
Manganese (mg/kg)	551 J
TPH (mg/kg)	NA

SB402	elevation=8.4 feet				
Depth BGS (feet)	2-4	8-10	12-14	16-18	18-20
Above water table	Y	N	N	N	N
Soil unit	FILL	PEAT	SSG	TILL	TILL
Arsenic (mg/kg)	4.0	4.4	3.3	8.0	8.6
Beryllium (mg/kg)	0.24	0.19	0.23	0.44	0.34
Lead (mg/kg)	147	1300	37.7	17.4	12.9
TPH (mg/kg)	63	180	ND	ND	ND

TP-12	elevation=9.0 feet
Depth BGS (feet)	4-5
Above water table	Y
Soil unit	FILL
QC Identifier	None
Lead (mg/kg)	283 J
Manganese	516 J
TPH (mg/kg)	4100 J

SB408	elevation=8.0 feet	
Depth BGS (feet)	2-4	6-8
Above water table	Y	N
Soil unit	FILL	TILL
Benzo(a)anthracene (ug/kg)	3700	1800
Benzo(a)pyrene (ug/kg)	3600	1400
Benzo(b)fluoranthene (ug/kg)	4100	1600
Benzo(g,h,i)perylene (ug/kg)	1600	830
Benzo(k)fluoranthene (ug/kg)	1400	710
Chrysene (ug/kg)	3600	1700
Indeno(1,2,3-cd)pyrene (ug/kg)	1500	710
Manganese (mg/kg)	1010	1860
TPH (mg/kg)	600	150

SB410	elevation=9.4 feet				
Depth BGS (feet)	2-4	6-8	10-12	14-16	18-20
Above water table	Y	Y	N	N	N
Soil unit	FILL	SSG	SSG	SSG	SSG
Arsenic (mg/kg)	10.0	8.3	4.6	7.0	6.7
Beryllium (mg/kg)	0.22	0.25	0.24	0.40	0.41
Manganese (mg/kg)	274	563	173	2120	316
TPH (mg/kg)	52	2900	110	25	ND

MW-3S	elevation=9.8 feet	
Depth BGS (feet)	6-8	12-14
Above water table	Y	N
Soil unit	SSG	SSG
Beryllium (mg/kg)	0.24	0.48
TPH (mg/kg)	NA	NA

SB409	elevation=9.1 feet		
Depth BGS (feet)	4-6	6-8	10-12
Above water table	Y	Y	N
Soil unit	SSG	SSG	TILL/BR
QC Identifier	Duplicate	None	None
Arsenic (mg/kg)	14.5	7.3	13.2
Beryllium (mg/kg)	0.71	0.22	0.28
Manganese (mg/kg)	3000	1280	716
TPH (mg/kg)	4800	4200	38

TP-11	elevation=10.0 feet
Depth BGS (feet)	5-6
Above water table	Y
Soil unit	FILL
QC Identifier	Duplicate
Chrysene (ug/kg)	460
Arsenic (mg/kg)	8.3
Lead (mg/kg)	563
TPH (mg/kg)	7500

TP-10 (no subsurface samples) elevation=10.5 feet

MW-101	elevation=9.4 feet
Depth BGS (feet)	6-8
Above water table	N
Soil unit	SSG
Chrysene (ug/kg)	430
Arsenic (mg/kg)	9.3 J
TPH (mg/kg)	1900 J

SB422	elevation=11.8 feet				
Depth BGS (feet)	2-4	6-8	10-12	14-16	18-20
Above water table	Y	Y	N	N	N
Soil unit	SSG	SSG	SSG	SSG/TILL	TILL
Benzo(a)anthracene (ug/kg)	18000	79	ND	ND	ND
Benzo(a)pyrene (ug/kg)	15000	84	ND	ND	ND
Benzo(b)fluoranthene (ug/kg)	17000	110	ND	ND	ND
Benzo(g,h,i)perylene (ug/kg)	9000	55	ND	ND	ND
Benzo(k)fluoranthene (ug/kg)	7800	36	ND	ND	ND
Chrysene (ug/kg)	15000	79	ND	ND	ND
Dibenzo(a,h)anthracene (ug/kg)	1900	17	ND	ND	ND
Indeno(1,2,3-cd)pyrene (ug/kg)	7500	50	ND	ND	ND
Antimony (mg/kg)	6.4	5.0	8.0	9.0	10.5
Beryllium (mg/kg)	0.44	0.22	0.62	0.64	0.40
Manganese (mg/kg)	334	160	528	917	514
TPH (mg/kg)	360	37	ND	ND	ND

TP-17	elevation=10.0 feet
Depth BGS (feet)	8-9
Above water table	N
Soil unit	SSG
QC Identifier	Duplicate
Arsenic (mg/kg)	8.2
TPH (mg/kg)	200

TP-17	elevation=10.0 feet
Depth BGS (feet)	8-9
Above water table	N
Soil unit	SSG
QC Identifier	Duplicate
Arsenic (mg/kg)	8.2
TPH (mg/kg)	200

SB420	elevation=10.0 feet			
Depth BGS (feet)	2-4	6-8	10-12	14-16
Above water table	Y	N	N	N
Soil unit	FILL	SSG	TILL	TILL
Benzo(a)pyrene (ug/kg)	430	55	11	ND
Chrysene (ug/kg)	540	110	27	ND
Antimony (mg/kg)	ND	13.0	13.9	17.3
Arsenic (mg/kg)	9.1	14.2	7.2	7.6
Beryllium (mg/kg)	0.73	0.59	0.38	0.60
Manganese (mg/kg)	448	543	428	2780
TPH (mg/kg)	46	8400	710	70

TP1	elevation= 10.5 feet	
Depth BGS (feet)	1.5-2.0	3.5-4.0
Above water table	Y	Y
Soil unit	FILL	FILL
Benzo(a)pyrene (ug/kg)	440 J	660 J
Chrysene (ug/kg)	410 J	730 J
Lead (mg/kg)	40.1 J	475 J
TPH (mg/kg)	NA	NA

SB421	elevation=10.8 feet				
Depth BGS (feet)	2-4	6-8	12-14	14-16	18-20
Above water table	Y	N	N	N	N
Soil unit	FILL	SSG	SSG	SSG	TILL
QC Identifier	Duplicate	None	None	None	None
Benzo(a)anthracene (ug/kg)	705	1100	17	37	ND
Benzo(a)pyrene (ug/kg)	690	1100	12	21	ND
Benzo(b)fluoranthene (ug/kg)	770	1200	10	26	ND
Chrysene (ug/kg)	730	1000	17	39	ND
Antimony (mg/kg)	5.0	9.9	13.3	10.0	11.3
Arsenic (mg/kg)	9.3	8.4	11.6	9.1	11.9
Beryllium (mg/kg)	0.53	0.34	0.53	0.42	0.44
Lead (mg/kg)	201	29.8	14.6	11.0	10.6
Manganese (mg/kg)	225	374	567	534	284
TPH (mg/kg)	125	7300	ND	16	18

B-6	elevation=10.1 feet	
Depth BGS (feet)	4-6	10-12
Above water table	N	N
Soil unit	SSG	SSG
Manganese (mg/kg)	NA	780 J
TPH (mg/kg)	NA	NA

SB432	elevation=9.8 feet				
Depth BGS (feet)	2-4	6-8	10-12	14-16	18-20
Above water table	Y	Y	N	N	N
Soil unit	FILL	FILL	SSG	SSG	SSG
Benzo(a)anthracene (ug/kg)	1400	910	54	ND	4.7
Benzo(a)pyrene (ug/kg)	1200	720	40	ND	ND
Benzo(b)fluoranthene (ug/kg)	1600	870	45	ND	ND
Chrysene (ug/kg)	1400	920	54	ND	4.4
Arsenic (mg/kg)	6.2	7.2	7.3	8.8	4.5
Beryllium (mg/kg)	0.35	0.42	0.37	0.39	0.15
Lead (mg/kg)	158	188	26.0	15.8	8.8
Manganese (mg/kg)	314	344	260	1000	181
TPH (mg/kg)	1100	910	93	ND	ND

MW-7S	elevation=10.9 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	SSG
Benzo(a)anthracene	1300
Benzo(a)pyrene (ug/kg)	1000
Benzo(b)fluoranthene	1800
Chrysene (ug/kg)	1100
Antimony (mg/kg)	ND
Manganese (mg/kg)	396 J
TPH (mg/kg)	NA

NOTES AND REFERENCES:

1. DRAWING COMPILED FROM A DRAWING ENTITLED "BASE MAP OLD FIRE FIGHTING TRAINING AREA", NETC, NEWPORT, RHODE ISLAND, JULY 1997, PROJ. NO. 7578 CTO: 288, BY BROWN & ROOT ENVIRONMENTAL, SOURCE: BASE PLAN BY GUERRIERE & HALNON, INC., DATED NOVEMBER 10, 1997, AND THE ADDITION OF FIELD MEASURED FEATURES, BY LOUIS FEDERICI AND ASSOCIATES 3/16/99, PRESENTED ON A DRAWING ENTITLED "KADY FIELD, TOPOGRAPHIC, SOIL SAMPLE LOCATION, AND SITE SURVEY AT THE OLD FIRE FIGHTING TRAINING AREA", NAVAL STATION NEWPORT IN NEWPORT, RHODE ISLAND FOR TETRA TECH NUS, INC., LOUIS FEDERICI & ASSOCIATES, 3/16/99, DWG NO. 990205-01 AND "TOPOGRAPHIC SURVEY AND SOIL BORING LOCATION", LOUIS FEDERICI AND ASSOCIATES, DATED: 1/16/04, DWG NO.: 19990205-02.

2. HORIZONTAL DATUM BASE ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM BASED ON NAVAL BASE MEAN LOW WATER.

3. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

4. PLAN NOT TO BE USED FOR DESIGN.

5. CONCENTRATIONS ARE PROVIDED AS NUMERIC AVERAGES FOR DUPLICATE PAIRS. NA – CONTAMINANT NOT ANALYZED. ND – NOT DETECTED.

LEGEND

- CATCH BASIN
- FENCE
- EXISTING CONTOUR (DECEMBER 2003)
- B-16 — SOIL BORING LOCATIONS: TRC 1992, 1993: B-#; TtNUS, 2003: SB4##
- MW-6S — MONITORING WELL LOCATION
- STORM SEWER
- 627 J — CONCENTRATION EXCEEDS THE SITE PRG. REFER TO TABLE 1-1 FOR PRGs.
- SSG — SILTY SAND AND GRAVEL
- TP-10 — TEST PIT LOCATION (B&RE, 6/97)
- TP1C — TEST PIT LOCATION (TRC, 1/94)
- 8 — EXPECTED TOPOGRAPHY AFTER MOUND REMOVAL (2004)
- AREAS WITHIN WILL BE REGRADED 2004
- SITE AREA BOUNDARY
- ELEVATION OF BOTTOM OF FILL
- BR — BEDROCK

GRAPHIC SCALE

30' 0' 30' 60'

1 INCH = 30 FEET

DRAWN BY:	D.W. MACDOUGALL
PREPARED BY:	L. SEYDEWITZ
CHECKED BY:	J. FORRELLI
PROJECT MANAGER:	S. PARKER
PROGRAM MANAGER:	J. TREPANOWSKI

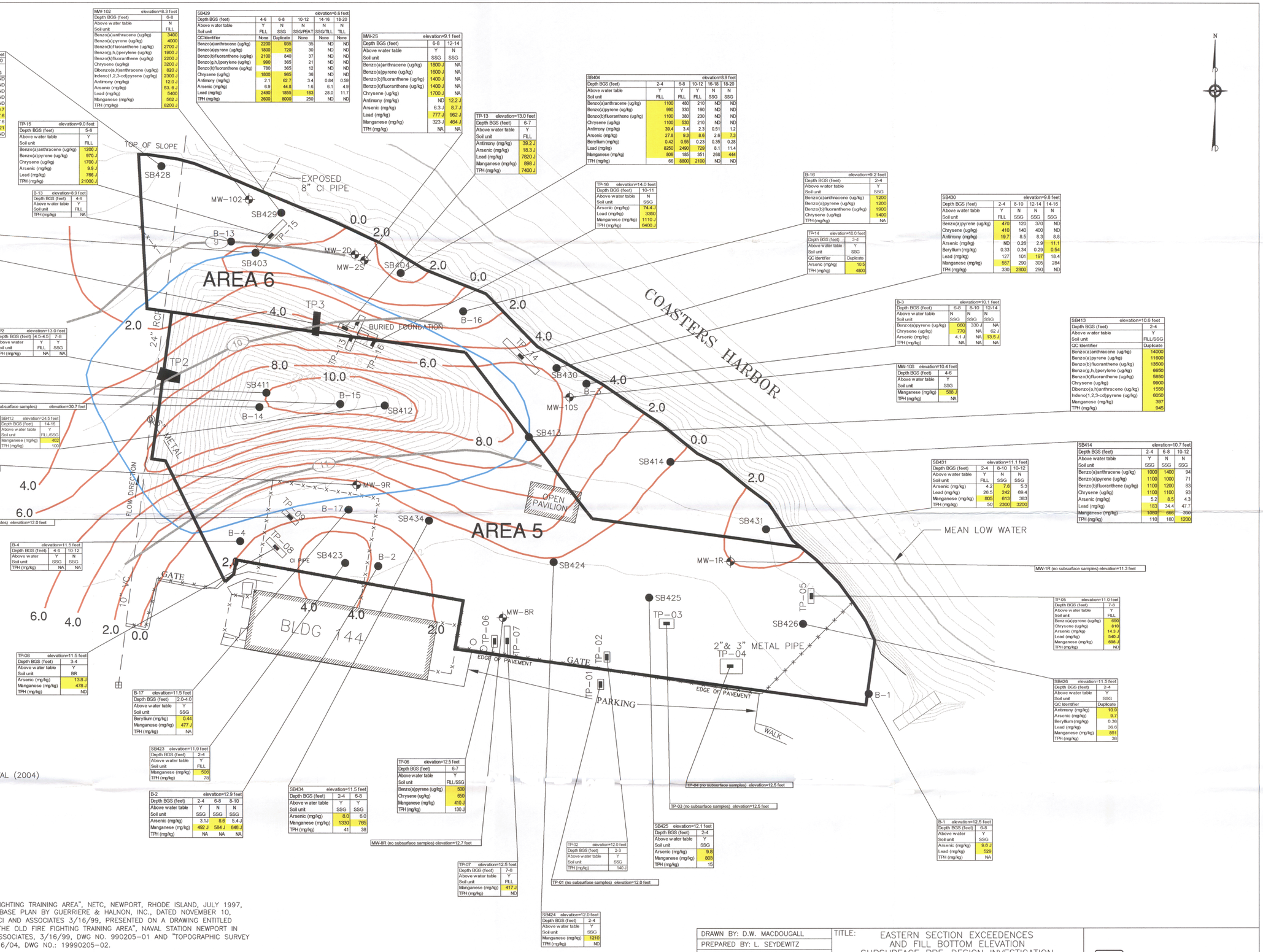
TITLE: CENTRAL SECTION EXCEEDENCES AND FILL BOTTOM ELEVATION SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND

SOURCE: BASE PLAN BY SEE NOTES.

SCALE: AS NOTED | DATE: JULY 13, 2004 | PROJ. NO: 4152

DRAWING NO: FIGURE 4-8 | ACFILE NAME: DWG\4152\3551\FIG_4-8.DWG | REV: 0

TETRA TECH NUS, INC.
55 JONSPIN ROAD
WILMINGTON, MASSACHUSETTS 01887
(978)658-7899



SB428	elevation=8.0 feet				
Depth BGS (feet)	2-4	6-8	10-12	14-16	18-20
Above water table	Y	N	N	N	N
Soil unit	FILL	SSG	PEAT	SSG	SSG
Benzo(a)anthracene (ug/kg)	1200	1900	200	ND	ND
Benzo(a)pyrene (ug/kg)	1100	1600	190	ND	ND
Benzo(b)fluoranthene (ug/kg)	1400	1900	220	ND	ND
Benzo(k)fluoranthene (ug/kg)	580	830	120	ND	ND
Chrysene (ug/kg)	1300	1700	210	ND	ND
Antimony (mg/kg)	19.3	7.5	3.6	ND	10.7
Arsenic (mg/kg)	17.3	9.1	4.4	8.0	7.6
Lead (mg/kg)	780	72.6	25.8	8.0	7.6
Manganese (mg/kg)	383	311	99.9	165	421
TPH (mg/kg)	1700	290	56	ND	ND

MW-102	elevation=8.3 feet
Depth BGS (feet)	6-8
Above water table	N
Soil unit	FILL
Benzo(a)anthracene (ug/kg)	3400
Benzo(a)pyrene (ug/kg)	4000
Benzo(b)fluoranthene (ug/kg)	2700 J
Benzo(g,h,i)perylene (ug/kg)	1900 J
Benzo(k)fluoranthene (ug/kg)	2200 J
Chrysene (ug/kg)	3200 J
Dibenzo(a,h)anthracene (ug/kg)	820 J
Indeno(1,2,3-cd)pyrene (ug/kg)	2300 J
Antimony (mg/kg)	12.0 J
Arsenic (mg/kg)	53. 6 J
Lead (mg/kg)	5400
Manganese (mg/kg)	562 J
TPH (mg/kg)	8200 J

SB429	elevation=8.6 feet				
Depth BGS (feet)	4-6	6-8	10-12	14-16	18-20
Above water table	Y	N	N	N	N
Soil unit	FILL	SSG	SSG/PEAT	SSG/TILL	TILL
QC Identifier	None	Duplicate	None	None	None
Benzo(a)anthracene (ug/kg)	2200	930	35	ND	ND
Benzo(a)pyrene (ug/kg)	1800	720	30	ND	ND
Benzo(b)fluoranthene (ug/kg)	2100	840	37	ND	ND
Benzo(g,h,i)perylene (ug/kg)	990	365	21	ND	ND
Benzo(k)fluoranthene (ug/kg)	780	365	12	ND	ND
Chrysene (ug/kg)	1800	985	36	ND	ND
Antimony (mg/kg)	2.1	62.7	3.4	0.84	0.59
Arsenic (mg/kg)	6.9	44.8	1.6	6.1	4.9
Lead (mg/kg)	2490	1855	183	28.0	11.7
Manganese (mg/kg)	2600	8000	250	ND	ND

MW-2S	elevation=9.1 feet	
Depth BGS (feet)	6-8	12-14
Above water table	Y	N
Soil unit	SSG	SSG
Benzo(a)anthracene (ug/kg)	1800 J	NA
Benzo(a)pyrene (ug/kg)	1600 J	NA
Benzo(b)fluoranthene (ug/kg)	1400 J	NA
Benzo(k)fluoranthene (ug/kg)	1400 J	NA
Chrysene (ug/kg)	1700 J	NA
Antimony (mg/kg)	ND	12.2 J
Arsenic (mg/kg)	6.3 J	8.7 J
Lead (mg/kg)	777 J	962 J
Manganese (mg/kg)	323 J	464 J
TPH (mg/kg)	NA	NA

SB404	elevation=8.9 feet				
Depth BGS (feet)	2-4	6-8	10-12	16-18	18-20
Above water table	Y	Y	Y	N	N
Soil unit	FILL	FILL	FILL	SSG	SSG
Benzo(a)anthracene (ug/kg)	1100	480	210	ND	ND
Benzo(a)pyrene (ug/kg)	990	330	190	ND	ND
Benzo(b)fluoranthene (ug/kg)	1100	380	230	ND	ND
Chrysene (ug/kg)	1100	530	210	ND	ND
Antimony (mg/kg)	39.4	3.4	2.3	0.51	1.2
Arsenic (mg/kg)	27.8	9.3	8.6	2.6	7.3
Beryllium (mg/kg)	0.42	0.55	0.23	0.35	0.28
Lead (mg/kg)	8250	2490	729	8.1	11.4
Manganese (mg/kg)	806	185	351	288	444
TPH (mg/kg)	66	8800	2100	ND	ND

TP-15	elevation=9.0 feet
Depth BGS (feet)	5-6
Above water table	Y
Soil unit	FILL
Benzo(a)anthracene (ug/kg)	1200 J
Benzo(a)pyrene (ug/kg)	970 J
Chrysene (ug/kg)	1700 J
Arsenic (mg/kg)	9.9 J
Lead (mg/kg)	766 J
TPH (mg/kg)	21000 J

B-13	elevation=8.9 feet
Depth BGS (feet)	4-6
Above water table	Y
Soil unit	FILL
TPH (mg/kg)	NA

TP-13	elevation=13.0 feet
Depth BGS (feet)	6-7
Above water table	Y
Soil unit	FILL
Antimony (mg/kg)	39.2 J
Arsenic (mg/kg)	18.3 J
Lead (mg/kg)	7820 J
Manganese (mg/kg)	898 J
TPH (mg/kg)	7400 J

TP-16	elevation=14.0 feet
Depth BGS (feet)	10-11
Above water table	N
Soil unit	SSG
Arsenic (mg/kg)	74.4 J
Lead (mg/kg)	3350
Manganese (mg/kg)	1110 J
TPH (mg/kg)	6400 J

B-16	elevation=9.2 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	SSG
Benzo(a)anthracene (ug/kg)	1200
Benzo(a)pyrene (ug/kg)	1200
Benzo(b)fluoranthene (ug/kg)	1900
Chrysene (ug/kg)	1400
TPH (mg/kg)	NA

TP-14	elevation=10.0 feet
Depth BGS (feet)	3-4
Above water table	Y
Soil unit	SSG
QC Identifier	Duplicate
Arsenic (mg/kg)	10.5
TPH (mg/kg)	4800

SB430	elevation=9.8 feet			
Depth BGS (feet)	2-4	8-10	12-14	14-16
Above water table	Y	N	N	N
Soil unit	FILL	SSG	SSG	SSG
Benzo(a)pyrene (ug/kg)	470	120	370	ND
Chrysene (ug/kg)	410	140	400	ND
Antimony (mg/kg)	19.7	8.5	8.3	8.8
Arsenic (mg/kg)	ND	0.26	2.9	11.1
Beryllium (mg/kg)	0.33	0.34	0.29	0.54
Lead (mg/kg)	127	101	197	18.4
Manganese (mg/kg)	557	290	305	284
TPH (mg/kg)	330	2800	290	ND

B-3	elevation=10.1 feet		
Depth BGS (feet)	6-8	8-10	12-14
Above water table	N	N	N
Soil unit	SSG	SSG	SSG
Benzo(a)pyrene (ug/kg)	650	330 J	NA
Chrysene (ug/kg)	770	NA	62 J
Arsenic (mg/kg)	4.1 J	NA	13.5 J
TPH (mg/kg)	NA	NA	NA

MW-10S	elevation=10.4 feet
Depth BGS (feet)	4-6
Above water table	Y
Soil unit	SSG
Manganese (mg/kg)	588 J
TPH (mg/kg)	NA

SB413	elevation=10.6 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	FILL/SSG
QC Identifier	Duplicate
Benzo(a)anthracene (ug/kg)	14000
Benzo(a)pyrene (ug/kg)	11600
Benzo(b)fluoranthene (ug/kg)	13500
Benzo(g,h,i)perylene (ug/kg)	6650
Benzo(k)fluoranthene (ug/kg)	5850
Chrysene (ug/kg)	9900
Dibenzo(a,h)anthracene (ug/kg)	1550
Indeno(1,2,3-cd)pyrene (ug/kg)	6050
Manganese (mg/kg)	397
TPH (mg/kg)	945

TP3	elevation=15.0 feet	
Depth BGS (feet)	7-8	7-7
Above water table	Y	Y
Soil unit	FILL	FILL
Benzo(a)anthracene (ug/kg)	500 J	2400 J
Benzo(a)pyrene (ug/kg)	ND	2900 J
Benzo(b)fluoranthene (ug/kg)	430 J	2300 J
Benzo(g,h,i)perylene (ug/kg)	ND	1700 J
Benzo(k)fluoranthene (ug/kg)	850 J	2500 J
Chrysene (ug/kg)	690 J	2500 J
Dibenzo(a,h)anthracene (ug/kg)	ND	780 J
Indeno(1,2,3-cd)pyrene (ug/kg)	ND	1700 J
Arsenic (mg/kg)	16.3 J	2.9 J
Lead (mg/kg)	3090 J	67.6 J
Manganese (mg/kg)	299 J	413 J
TPH (mg/kg)	NA	NA

SB403	elevation=9.4 feet				
Depth BGS (feet)	2-4	6-8	10-12	14-16	18-20
Above water table	Y	Y	N	N	N
Soil unit	FILL	FILL	SSG	SSG	TILL
Benzo(a)anthracene (ug/kg)	240	1700	36	ND	4.8
Benzo(a)pyrene (ug/kg)	530	1400	36	ND	ND
Benzo(b)fluoranthene (ug/kg)	590	1600	37	ND	ND
Benzo(k)fluoranthene (ug/kg)	210	840	15	ND	ND
Chrysene (ug/kg)	250	1800	37	ND	4.0
Arsenic (mg/kg)	6.7	9.4	3.2	6.2	4.6
Lead (mg/kg)	22.3	1950	69.9	12.3	11.5
Manganese (mg/kg)	471	382	166	180	860
TPH (mg/kg)	780	4300	21	ND	ND

TP2	elevation=13.0 feet		
Depth BGS (feet)	4.5-4.5	7-8	
Above water table	Y	Y	
Soil unit	FILL	SSG	
TPH (mg/kg)	NA	NA	

SB411	elevation=31.0 feet		
Depth BGS (feet)	20-22	22-24	26-28
Above water table	Y	Y	N
Soil unit	FILL/SSG	SSG	SSG/BR
Beryllium (mg/kg)	0.081	0.27	0.69
Manganese (mg/kg)	409	775	4650
TPH (mg/kg)	300	170	380

B-15	elevation=27.6 feet
Depth BGS (feet)	17-19
Above water table	Y
Soil unit	FILL
Benzo(a)anthracene (ug/kg)	1300
Benzo(a)pyrene (ug/kg)	760
Benzo(b)fluoranthene (ug/kg)	1400
Chrysene (ug/kg)	1100
Lead (mg/kg)	292
Manganese (mg/kg)	419 J
TPH (mg/kg)	NA

SB412	elevation=24.5 feet
Depth BGS (feet)	14-16
Above water table	Y
Soil unit	FILL/SSG
Manganese (mg/kg)	402
TPH (mg/kg)	100

SB431	elevation=11.1 feet		
Depth BGS (feet)	2-4	8-10	10-12
Above water table	Y	N	N
Soil unit	FILL	SSG	SSG
Arsenic (mg/kg)	4.2	7.6	5.3
Lead (mg/kg)	26.5	242	69.4
Manganese (mg/kg)	805	613	383
TPH (mg/kg)	50	2300	3200

SB414	elevation=10.7 feet		
Depth BGS (feet)	2-4	6-8	10-12
Above water table	Y	N	N
Soil unit	SSG	SSG	SSG
Benzo(a)anthracene (ug/kg)	1000	1400	94
Benzo(a)pyrene (ug/kg)	1100	1000	71
Benzo(b)fluoranthene (ug/kg)	1100	1200	83
Chrysene (ug/kg)	1100	1100	93
Arsenic (mg/kg)	5.2	8.5	4.3
Lead (mg/kg)	183	34.4	47.7
Manganese (mg/kg)	1080	666	390
TPH (mg/kg)	110	180	1200

B-4	elevation=11.5 feet	
Depth BGS (feet)	4-6	10-12
Above water	Y	N
Soil unit	SSG	SSG
TPH (mg/kg)	NA	NA

TP-05	elevation=11.0 feet
Depth BGS (feet)	7-8
Above water table	Y
Soil unit	FILL
Benzo(a)pyrene (ug/kg)	690
Chrysene (ug/kg)	810
Arsenic (mg/kg)	14.3 J
Lead (mg/kg)	540 J
Manganese (mg/kg)	698 J
TPH (mg/kg)	ND

TP-08	elevation=11.5 feet
Depth BGS (feet)	3-4
Above water table	Y
Soil unit	BR
Arsenic (mg/kg)	13.8 J
Manganese (mg/kg)	478 J
TPH (mg/kg)	ND

B-17	elevation=11.5 feet
Depth BGS (feet)	2.0-4.0
Above water table	Y
Soil unit	SSG
Beryllium (mg/kg)	0.44
Manganese (mg/kg)	477 J
TPH (mg/kg)	NA

SB426	elevation=11.5 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	SSG
QC Identifier	Duplicate
Antimony (mg/kg)	10.9
Arsenic (mg/kg)	9.7
Beryllium (mg/kg)	0.38
Lead (mg/kg)	36.6
Manganese (mg/kg)	851
TPH (mg/kg)	38

SB423	elevation=11.9 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	FILL
Manganese (mg/kg)	506
TPH (mg/kg)	78

TP-06	elevation=12.5 feet
Depth BGS (feet)	6-7
Above water table	Y
Soil unit	FILL/SSG
Benzo(a)pyrene (ug/kg)	500
Chrysene (ug/kg)	650
Manganese (mg/kg)	410 J
TPH (mg/kg)	130 J

B-2	elevation=12.9 feet		
Depth BGS (feet)	2-4	6-8	8-10
Above water table	Y	N	N
Soil unit	SSG	SSG	SSG
Arsenic (mg/kg)	3.1 J	8.6	5.4 J
Manganese (mg/kg)	492 J	584 J	646 J
TPH (mg/kg)	NA	NA	NA

SB434	elevation=11.5 feet	
Depth BGS (feet)	2-4	6-8
Above water table	Y	Y
Soil unit	SSG	SSG
Arsenic (mg/kg)	8.0	6.0
Manganese (mg/kg)	1330	765
TPH (mg/kg)	41	38

B-1	elevation=12.5 feet	
Depth BGS (feet)	6-8	
Above water	Y	
Soil unit	SSG	
Arsenic (mg/kg)	9.6 J	
Lead (mg/kg)	529	
TPH (mg/kg)	NA	

TP-07	elevation=12.5 feet
Depth BGS (feet)	7-8
Above water table	Y
Soil unit	FILL
Manganese (mg/kg)	417 J
TPH (mg/kg)	ND

TP-02	elevation=12.0 feet
Depth BGS (feet)	2-3
Above water table	Y
Soil unit	SSG
TPH (mg/kg)	140 J

SB425	elevation=12.1 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	SSG
Arsenic (mg/kg)	9.8
Manganese (mg/kg)	803
TPH (mg/kg)	15

SB424	elevation=12.0 feet
Depth BGS (feet)	2-4
Above water table	Y
Soil unit	SSG
Manganese (mg/kg)	1210
TPH (mg/kg)	ND

LEGEND

- CATCH BASIN
- FENCE
- EXISTING CONTOUR (DECEMBER 2003)
- B-16 / MW-6S — SOIL BORING LOCATIONS: TRC 1992, 1993: B-#; THNUS 2003: SB4## / MONITORING WELL LOCATION
- STORM SEWER
- TP-10 — TEST PIT LOCATION (B&RE, 6/97)
- TP1C — TEST PIT LOCATION (TRC, 1/94)
- 8 — EXPECTED TOPOGRAPHY AFTER MOUND REMOVAL (2004)
- AREAS WITHIN WILL BE REGRADED 2004
- 627 J — CONCENTRATION EXCEEDS THE SITE PRG. REFER TO TABLE 1-1 FOR PRGs.
- SITE AREA BOUNDARY
- ELEVATION OF BOTTOM OF FILL

NOTES AND REFERENCES:

1. DRAWING COMPILED FROM A DRAWING ENTITLED "BASE MAP OLD FIRE FIGHTING TRAINING AREA", NETC, NEWPORT, RHODE ISLAND, JULY 1997, PROJ. NO. 7578 CTO: 288, BY BROWN & ROOT ENVIRONMENTAL, SOURCE: BASE PLAN BY GUERRIERE & HALNON, INC., DATED NOVEMBER 10, 1997, AND THE ADDITION OF FIELD MEASURED FEATURES, BY LOUIS FEDERICI AND ASSOCIATES 3/16/99, PRESENTED ON A DRAWING ENTITLED "KADY FIELD, TOPOGRAPHIC, SOIL SAMPLE LOCATION, AND SITE SURVEY AT THE OLD FIRE FIGHTING TRAINING AREA", NAVAL STATION NEWPORT IN NEWPORT, RHODE ISLAND FOR TETRA TECH NUS, INC., LOUIS FEDERICI & ASSOCIATES, 3/16/99, DWG NO. 990205-01 AND "TOPOGRAPHIC SURVEY AND SOIL BORING LOCATION", LOUIS FEDERICI AND ASSOCIATES, DATED: 1/16/04, DWG NO.: 19990205-02.

2. HORIZONTAL DATUM BASE ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM BASED ON NAVAL BASE MEAN LOW WATER.

3. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

4. PLAN NOT TO BE USED FOR DESIGN.

5. CONCENTRATIONS ARE PROVIDED AS NUMERIC AVERAGES FOR DUPLICATE PAIRS. NA – CONTAMINANT NOT ANALYZED. ND – NOT DETECTED.

DRAWN BY: D.W. MACDOUGALL	TITLE: EASTERN SECTION EXCEEDENCES AND FILL BOTTOM ELEVATION SUBSURFACE PRE-DESIGN INVESTIGATION OLD FIRE FIGHTING TRAINING AREA NAVAL STATION NEWPORT, RHODE ISLAND
PREPARED BY: L. SEYDEWITZ	SOURCE: BASE PLAN BY SEE NOTES.
CHECKED BY: J. FORRELLI	SCALE: AS NOTED; DATE: JULY 13, 2004; PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: FIGURE 4-9; ACFILE NAME: DWG\4152\3551\FIG_4-9.DWG; REV: 0
PROGRAM MANAGER: J. TREPANOWSKI	

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(978)658-7899

REFERENCES

REFERENCES

TRC Environmental Corporation (TRC). 1994. Old Fire Fighting Training Area Remedial Investigation Report, Naval Education and Training Center, Newport, Rhode Island. Draft Final Report with Appendices. U.S. Department of the Navy, Installation Restoration Program Contract No. N62472-86-C-1282. August.

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APPENDIX A

SITE PHOTOGRAPHS
(COMPACT DISK)

4x4
OFF ROAD

MERCHANTS

SP 403

SB408

SBH07

SB407

MERC
RENT
800-

SB406

SB405

SB-405,
12-14 BGS

SB412

MERCHANTS

SB-411 Total Depth
27' 8"

SB410

SB409

SB418

SB417

SB416

SB415

SP 414

SI 416

SI 425

SITE 1
SF 424

SP 423

B422

SB421

SB-421
6-8

SB-421
6-8

SB420

SB419

SB432

SP 431

SP429

SI 428

SI 427

SP 426

SB403

SC 434

APPENDIX B
FIELD LOGS

- RI Test Pit Logs
- RI Soil Boring Logs
- PDI Soil Boring Logs

RI Test Pit Logs

TP1

TP2

TP3

TP-01

TP-02

TP-03

TP-04

TP-05

TP-06

TP-07

TP-08

TP-09

TP-10

TP-11

TP-12

TP-13

TP-14

TP-15

TP-16

TP-17

NETC - Newport
Site 09 - Old Fire Fighting Training Area
Test Pit Log FF-TP1
January 11, 1994

Rationale: To investigate the geophysical anomaly encountered in the central portion of the site during the Phase I investigation.

Date: January 11, 1994

Dimensions: FF-TP1A = 14' X 3.5' X 4.5' (L X W X D).
FF-TP1B = 3.5' X 3.5' X 4" (L X W X D).
FF-TP1C = 7' X 3.5' X 4.5' (L X W X D).

TRC Inspector: Tom McMorrow & John Coykendall

Excavation Subcontractor: Clean Harbors

Sample ID: FF-TP11 collected from the oily sludge within a pipe.
FF-TP12 collected from approximately 3.5 to 4 feet below grade.
FF-TP13 collected from approximately 1.5 to 2 feet below grade.

DEPTH (FT)	DESCRIPTION
0 - 3'	FILL, brown M to F SAND, some cobbles, and rock fragments, little brick and concrete fragments, trace asphalt.
3 - 5'	FILL, dk brown M to F SAND, some cobbles and rock fragments, trace brick and concrete.
	A concrete slab was encountered in test pits TP-1A, TP-1B, and TP-1C at a depth of approximately 4". The extent of the slab was determined at test pits TP-1A and TP-1C and was determined to be approx. 2' thick. Only contamination noted was in broken pipe.

CONCLUSIONS

Concrete slab encountered in test pit would account for the high geophysical anomaly detected during the Phase I investigation.

NETC - Newport
Site 09 - Old Fire Fighting Training Area
Test Pit Log FF-TP2
January 11, 1994

Rationale: To characterize the fill material in the western portion of the soil mound.

Date: January 11, 1994

Dimensions: 15' X 4' X 8.5' (L X W X D).

TRC Inspector: Tom McMorrow & John Coykendall

Excavation Subcontractor: Clean Harbors

Sample ID: FF-TP21 collected from oily soils encountered 7 to 8 feet below grade.
FF-TP22 collected from 4.5 feet below grade.
FF-TP23 collected from 2 feet below grade.

DEPTH (FT)	DESCRIPTION
0 - 3'	FILL, brown F-M SAND, some cobbles, little concrete and asphalt, trace wire.
3 - 6'	FILL, brown/grey F SAND and SILT, little rock fragments and cobbles, trace brick.
6 - 7'	FILL, brown C sand and brick, damp.
7 - 8'	Grey/black F-M SAND, some cobbles and rock fragments, black staining with a strong petroleum odor.
	Strong petroleum odor with PID readings of 1200 ppm were noted in soils from the 7 to 8 foot layer.

CONCLUSIONS

Construction debris encountered from surface to a depth of 7 feet. Strong Petroleum odor and staining encountered in soils at the ground water table (approx. 8 feet).

NETC - Newport
Site 09 - Old Fire Fighting Training Area
Test Pit Log FF-TP3
January 11, 1994

Rationale: To characterize the fill material in the northern portion of the soil mound in the central portion of the site.

Date: January 11, 1994

Dimensions: 15' X 4' X 8.5' (L X W X D).

TRC Inspector: Tom McMorrow & John Coykendall

Excavation Subcontractor: Clean Harbors

Sample ID: FF-TP31 collected from oily soils encountered at a depth of 7 to 8 feet.
FF-TP32 collected from approx. 7 feet below grade.
FF-TP33 collected from approx. 3 feet below grade.

DEPTH (FT)	DESCRIPTION
0 - 4'	FILL, brown F to M SAND and rock fragments, little brick, concrete, and wood, dry, no odor.
4 - 4.5'	FILL, asphalt layer.
4.5 - 7'	FILL, dark brown F-M SAND and rock fragments, brick and metal.
7 - 8'	Light brown sand with rusted metal pieces. Black staining and petroleum odor noted in soils at ground water table (approx 8 feet).

CONCLUSIONS

Construction debris encountered from surface to depth of 7 feet. Petroleum odor and stained soils noted in soils at ground water table.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-01

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for oil, buried piping, etc.)identified on 1953 Y&D drawing No. 637871.

Date: June 30, 1997

Dimensions: 7' x 4' x 1.5' (L x W x D)

B&RE Geologist: T. Dorgan

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: NA

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0'-0.5'	ASPHALT Steel Pipe-1.5" diameter X 12" long. Pipe was removed.		Asphalt varies from 4-6" thick.	
8" - 1'	GRAVELLY SAND. Brown, loose, well graded sand	SW	Fill.	0-1
1'	Conglomerate. Gray with slightly stretched pebbles and cobbles.		Bedrock	

General remarks: No samples collected. No visable contamination or odors, no FID readings above background. CAT 311 Excavator used.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-02

Rationale: Confirm/identify presence or absence of buried subsurface features based on a strong subsurface signal recorded during the metal and buried piping survey.

Date: June 30, 1997

Dimensions: 7' x 4' x 3.75' (L x W x D)

B&RE Geologist: T. Dorgan

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TPO2-0203

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-4"	LOAM. Brown, dry, and loose. Grass at surface.		Hollow pipe with 90° elbow and fitting.	1.7
4"-3.5'	SANDY GRAVEL. TRACE SILT. Dry, loose, lt. brown.	GM	FID from inside pipe on S-SE side.	30
3.5'	CONGLOMERATE. Slightly stretched cobbles or imbricated cobbles.		Bedrock.	

General remarks: No staining or odors noted outside of pipe. FID background = approximately 1-1.5 ppm around pipe. Inside pipe on south side is petroleum contamination (wet sediment with a petroleum odor). FID = 30 ppm in this area. Sampled 2-3" BGS area from exterior of pipe on S-SE side of excavation.

Photo Log: Video and 2-3 stills.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-03

Rationale: Confirm presence or absence of buried piping that may have led to various surface training structures (i.e. christmas trees, open fire tanks) identified on Y&D drawing No. 637871.

Date: June 30, 1997

Dimensions: 10' x 6.5' x 2.75' (L x W x D)

B&RE Geologist: T. Dorgan

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: NA

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	TOPSOIL OR LOAM. Brown, dry, and loose. Grass at surface.		No petroleum contamination noted.	0.0
6"-2.5'	SANDY GRAVEL. TRACE SILT. Trace brick and concrete.	GM	Fill. No piping or metallic objects found.	0.0
2.5'	CONGLOMERATE. Slightly stretched cobbles or imbricated cobbles.		Bedrock. Poss. metals in bedrock? Iron staining noted.	0.0

General remarks: No sample collected. No evidence of any subsurface features or contamination.

Photo Log: Video and still photo.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-04

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for oil, buried piping, etc.)identified on 1953 Y&D drawing No. 637871. Define presence/absence of buried piping detected in TP-03.

Date: July 1, 1997

Dimensions: 15' x 10' x 3' (L x W x D)

B&RE Geologist: T. Dorgan

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-04-0102

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	SILTY SAND. Topsoil or loam. Dry, loose, and brown. Grass at surface.			
6"-3'	SAND and GRAVEL. Misc. brick, glass, wood, shingles, metal debris. 2 pipes found as described in remarks.		Fill. Ist Pipe (3" steel). Open ended @ 1.75'. 2nd Pipe (4" steel). Open ended @ 1.75'.	
3'	Stopped excavation due to Potentially Asbestos-Containing Material (PACM).			

General remarks: Both pipes are dipping at low angle to the east. PACM on both sides on bottoms and lower exposed portions. The 4" pipe has a hanger still on it indicating it was not intended for underground use.
Samples taken as a composite from in and around bottom of pipes.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-05

Rationale: Confirm/identify presence or absence of buried subsurface features based on a strong signal recorded during the metal and buried piping survey.

Date: July 1, 1997

Dimensions: 15' x 4' x 8' (L x W x D)

B&RE Geologist: T. Dorgan

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-05-0708

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	SILTY SAND with grass at surface. Topsoil or loam. Dry, loose and brown.			0.0
6"-5'	SANDY GRAVEL. Mostly fine to coarse gravel and cobbles up to 1.5' diam. Rounded. Trace amounts of brown wood debris at 2' depth. China fragments noted. Dry.		Fill.	
5'-8'	SANDY GRAVEL. Similar to above. Orange/brown color. Damp. Steel cable or wire at approximately 7' BGS on E-SE side of excavation.		Fill.	

General remarks: Water table at approximately 8' BGS.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-06

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for oil, buried piping, etc.) identified on 1953 Y&D drawing No. 637871.

Date: July 1, 1997

Dimensions: 8' x 4' x 7' (L x W x D)

B&RE Geologist: T. Dorgan

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-06-0607

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	SILTY SAND beneath grassy surface. Topsoil. Root mat. Dry, loose, brown.			0.0
6"-2'	SANDY GRAVEL. Mostly fine and coarse gravel up to 2 inches, rounded. Some cobbles > 4 inches in length, rounded. Fine and medium sand, brown. Metal debris (strapping, rack scaffolding?)			
2'-7'	SANDY GRAVEL. Similar to above with concrete rubble, rebar, metal (sheet) debris, concrete footings, duct work, wood, metal strapping visible.			
7'	CONCRETE slab at base. Sounds solid. Possible foundation for former UST?			

General remarks: No groundwater visible in test pit.

Photo Log: Video and still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-07

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for oil, buried piping, etc) based on finding of a potential concrete foundation or pad in TP-06. TP-07 excavation added at the request of RIDEM.

Date: July 2, 1997

Dimensions: 20' x 4' x 8' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-07-0708

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	SILTY SAND with grass at surface. Topsoil or loam. Dry, loose, brown.	SM		0.0
6"-8'	SANDY GRAVEL. With cobbles, metal strapping, and concrete rubble with rebar.	GM	Fill.	
4'	CONGLOMERATE.		Bedrock.	

General remarks: Potential water table at 8 ft. BGS.

Photo Log: Video and 2 still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-08

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for oil, buried piping, etc.) identified on 1953 Y&D drawing No. 637871.

Date: July 2, 1997

Dimensions: 16' x 4' x 4' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-08-0304

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	TOPSOIL or LOAM with grass at surface.	SM		0.0
6"-2.5'	SAND AND GRAVEL with cobbles. Brown. Pipe running NW-SE. Pipe is black iron pipe (6" sewer pipe?).	GM		
2.5'	SHALE.		Bedrock.	

General remarks: No groundwater encountered.

Photo Log: Video.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-09

Rationale: Confirm/identify presence or absence of buried subsurface features based on a strong signal recorded during the metal and buried piping survey, the presence of surface scars on the ground in this location, and on the absence of a UST in TP-08.

Date: July 2, 1997

Dimensions: 13' x 4' x 3' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: NA

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-1'	TOPSOIL with grass at surface.	SM		0.0
1'-3'	SANDY GRAVEL with cobbles.	GW		
3'	CONGLOMERATE.		Bedrock.	

General remarks: No subsurface features, stained soil, or groundwater encountered.

Photo Log: Video and still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-10

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for gasoline, buried piping, etc.) identified on 1953 Y&D drawing No. 637871.

Date: July 2, 1997

Dimensions: 11' x 4' x 9" (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: NA

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-9"	TOPSOIL with grass at surface.	SM		0.0
9"	CONCRETE slab with exposed rebar.			

General remarks: NA

Photo Log: Video and still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-11

Rationale: Reconfirm presence or absence of buried subsurface features adjacent to former Building 134, based on refusal in TP-10 (i.e. foundation).

Date: July 2, 1997

Dimensions: 15' x 4' x 6' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-11-0506

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-6"	TOPSOIL with grass at surface.	SM		0.0
6"-5'	GRAVELLY SAND. Pieces of brick and concrete.	GM	Fill.	
5'-6'	GRAVELLY SAND. Similar to above but stained black, saturated with petroleum. Metal frame and cable.			35

General remarks: Water table at 6 ft. BGS. Strong petroleum odor.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-12

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected UST for gasoline, buried piping, etc.) identified on 1953 Y&D drawing No. 637871

Date: July 2, 1997

Dimensions: 10' x 4' x 5' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-12-0405

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-8"	TOPSOIL with grass at surface.	SM		0.0
8"-5'	SANDY GRAVEL. Pieces of clay tile pipe and brick. A pipe containing petroleum was encountered at 5'.	GM	Fill.	

General remarks: NA

Photo log: Video and still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-13

Rationale: Confirm/identify presence or absence of buried subsurface features (i.e. suspected oil/water separator) and further evaluate the nature of the buried/interior materials of the central mound.

Date: July 3, 1997

Dimensions: 24' x 4' x 7' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-13-0607

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-9"	TOPSOIL with grass at surface.	SM		0.0
9"-7'	SAND AND GRAVEL. SOME SILT. Concrete pieces 4-6" in length. Top of concrete foundation at 4' BGS.	GM	Fill.	0.0
7'	SAND AND GRAVEL. Similar to above but oil-stained. Water seeps in from sidewalls at 7'.			3.2

General remarks: Test pit did not locate the bottom of the foundation. Sample taken from area in which the MicroFID reading of 3.2 ppm was obtained.

Photo log: Video and still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-14

Rationale: Confirm/identify presence or absence of buried piping associated with the former location of Building 132.

Date: July 3, 1997

Dimensions: 31' x 4' x 4.5' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-14-0304

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-9"	TOPSOIL with grass at surface.	SM		0.0
9"-4'	SAND AND GRAVEL. SOME SILT. Cobbles.	GM		
4'-4.5'	SAND AND GRAVEL. Similar to above but potentially petroleum impacted. Brown stained soils. Water table at 4.5' BGS.			2-10

General remarks: Test pit did not locate subsurface features or fill debris. Sample taken from approximately 4 feet in depth in area of soils with petroleum odor.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-15

Rationale: Confirm/identify presence or absence of buried piping associated with the former location of Building 132.

Date: July 3, 1997

Dimensions: 26' x 4' x 5' (L x W x D)

B&RE Geologist: R. Bastow

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-15-0506

Depth	Description	USCS	Remarks	MicroFID Reading (ppm)
0-1'	TOPSOIL with grass at surface.	SM		0.0
1'-4.5'	SAND AND GRAVEL. SOME SILT. Construction debris including bricks, small pieces of concrete, and steel debris.	GM	Fill.	
4.5'-5'	SAND AND GRAVEL. Similar to above but potentially petroleum impacted. Black soil. Water table at 5' BGS.			2-10

General remarks: Fill material consists largely of brick and metal debris.

Photo log: Video and still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-16

Rationale: Further evaluate the nature of a suspected foundation for the oil/water separator. Widened excavation at the request of RIDEM.

Date: July 7, 1997

Dimensions: 12.6' x 4' x 10' (L x W x D)

B&RE Geologist: K. Jalkut

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-16-1011

Depth	Description	USCS	Remarks	PID Reading (ppm)
0-7"	SILTY SAND. Topsoil, root mat, grass. Light brown. Fine to medium sand.	SM	Fill.	0.0
7"-3'3"	SAND AND GRAVEL. Bricks, metal, rounded cobbles up to 5" in length. Fine to coarse sand.	GM		
3'3"-5'	SAND AND GRAVEL. Similar to above but color has darkened to black. Asphalt-like.			
5'-10'	SAND AND GRAVEL. Similar to above with increased corroded metal debris, bricks, and wood. Potentially oil laden soil at bottom of excavation.		Fill. PID reading taken at approximately 10 feet.	4

General remarks: NA

Photo log: Video and 3 still photos.

TEST PIT LOG
OLD FIRE FIGHTING TRAINING AREA
NETC
NEWPORT, RI

Location: TP-17

Rationale: Confirm presence/absence of buried subsurface features (i.e. piping) in proximity to approximate former location of Building 135. Confirm presence or absence of soil contaminants based on the previous discovery of petroleum-like substances in a utility trench excavated parallel to the fence line.

Date: July 7, 1997

Dimensions: 16' x 3.5' x 9' (L x W x D)

B&RE Geologist: K. Jalkut

Excavation Subcontractor: Franklin Environmental Services, Inc.

Sample ID: OFF-S-TP-17-0809

Depth	Description	USCS	Remarks	PID Reading (ppm)
0-1'	SILTY SAND. Topsoil, root mat, grass. Light brown. Dry.	SM	Fill.	0.0
1'-3'	SAND AND GRAVEL. SOME SILT. Fine to coarse sand. Coarse rounded gravel. Light brown. Cobbles > 5 inches.	GM		
3'-9'	SAND AND GRAVEL. SOME SILT. Fine to coarse sand. Dark brown, dry. Fewer cobbles than above.		Water with light brown oil on top enters side of excavation at approximately 8'.	9

General remarks: Petroleum odors encountered at water table, approximately 8 ft.

Photo log: Video and still photos.

RI Soil Boring Logs

B-1

B-2

B-3

B-4

B-5

B-6

B-7

B-8

B-9

B-10

B-11

B-12

B-13

B-14

B-15

B-16

B-17

B-18

MW-1

MW-2

MW-2D

MW-3S

MW-4

MW-5

MW-6S

MW-6R

MW-7S

MW-8R

MW-9R

MW-10S

MW-11S

MW-11R

MW-101

MW-102

BORING NO.:	B-1	BORING DEPTH:	9 FT	DATE STARTED:	4/18/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/18/90
PROJECT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	12.51
LOCATION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,077
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,963

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	2 12 34 32	0.3	FINE SAND AND SILT, TRACE ORGANICS, BROWN (12") ROCK FRAGMENTS (6")	0.0
2 - 4	12 14 7 5	0.8	F - M SAND, SOME GRAVEL, SOME ROCK FRAGMENTS (6")	
4 - 6	3 3 2 4	0.5	FINE SAND AND SILT, SOME GRAVEL, BROWN, MOIST (6")	
6 - 8	5 7 75/2"	4	FINE SAND AND SILT, SOME GRAVEL, LITTLE COBBLES, BROWN, WET	
8 - 10	23 100/1	1.2	FINE SAND AND SILT, SOME GRAVEL, BROWN, WET (4") ROCK FRAGMENTS (3")	9.0

END OF BORING - 9 FT.

NO ODORS ENCOUNTERED

ENCOUNTERED REFUSAL AT 9 FT.

SAMPLE FF-B011-418 TAKEN FROM 6-8 FT.

BORING NO.:	B-2	BORING DEPTH:	11 FT	DATE STARTED:	4/18/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/18/90
PROJECT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	12.89
LOCATION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,250
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,667

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	3 15	3.4	FINE SAND AND SILT, TRACE ORGANICS, BROWN (6")	0.0
	28 23		FILL, F - M SAND, SOME GRAVEL, CONCRETE PIECES, BROWN (18")	
2 - 4	25 50	3.7	FINE SAND AND SILT, LITTLE GRAVEL, BROWN (8")	2.0
	41 33		ROCK FRAGMENTS (6")	
4 - 6	31 37	3.8	F - M SAND AND ROCK FRAGMENTS, GRAY, (6")	
	75/1"			
6 - 8	7 15	6	F - M SAND AND ROCK FRAGMENTS, BROWN (8")	
	22 55		SAME AS ABOVE, BLACK, VISIBLE CONTAMINATION, WET (8")	
8 - 10	16 42	5.6	F - M SAND AND GRAVEL, GRAY, SLIGHT PETROL ODOR (24")	
	91 58			
10 - 12	4 10		SAME AS ABOVE, BROWN (4")	
	10 56			11.0

END OF BORING - ~~11~~ 12 FT.

PETROLEUM ODOR FROM 6-10 FT.
VISIBLE OILY STAINING FROM 6-8 FT.

SAMPLE FF-B021-418 TAKEN FROM 2-4 FT.
SAMPLE FF-B022-418 TAKEN FROM 6-8 FT.
SAMPLE FF-B023-418 TAKEN FROM 8-10 FT.

BORING NO.:	B-3	BORING DEPTH:	14 FT	DATE STARTED:	4/18/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/18/90
PROJECT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	10.09
LOCATION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,331
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,836

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	5 15	1.5	FINE SAND AND SILT. TRACE CLAY. TRACE ORGANICS. BROWN (6")	0.0
	11 7		F - M SAND AND ROCK FRAGMENTS. BROWN (6")	
2 - 4	14 9	1.5	FINE SAND . SOME SILT. SOME GRAVEL. BROWN (8")	
	7 7			
4 - 6	5 14	5	FINE SAND AND SILT. SOME GRAVEL. TRACE COBBLES. BROWN. MOIST (5")	
	35 18			
6 - 8	7 10	40	FINE SAND AND SILT SOME GRAVEL. BROWN (6")	
	7 3		FINE SAND AND SILT. SOME ORGANICS. BLACK. SLIGHT PETROL ODOR. WET	
8 - 10	2 7	12	FINE SAND AND SILT. SOME GRAVEL. TRACE COBBLES. BLACK. WET.	
	12 11		SOME PETROLEUM ODOR. VISIBLE STAINING	
10 - 12	11 35	9	SILT AND GRAVEL. SOME COBBLES. TRACE ORGANICS. BLACK. WET (15")	
	71 75/2"			
12 - 14	56 100/2	17	FINE SAND AND GRAVEL. SOME ROCK FRAGMENTS. BLACK. PETROL ODOR (8")	
				14.0

END OF BORING - 14 FT.

PETROLEUM ODOR FROM 6-14 FT.
VISIBLE OILY STAINING FROM 8-10 FT.

SAMPLE FF-B031-418 TAKEN FROM 6-8 FT.
SAMPLE FF-B032-418 TAKEN FROM 8-10 FT.
SAMPLE FF-B033-418 TAKEN FROM 12-14 FT.

BORING NO.:	B-4	BORING DEPTH:	12.5 FT	DATE STARTED:	4/20/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/20/90
PROJECT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	11.49
LOCATION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,291
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,592

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	3 17	0.3	FINE SAND AND SILT, TRACE ORGANICS, BROWN (6")	0.0
	14 18		FILL, FINE SAND, SOME SILT, SOME CONCRETE, BROWN (12")	
2 - 4	5 5		NO RECOVERY	
	5 48			3.0
4 - 6	27 16	1.2	SILT, SOME GRAVEL, SOME COBBLES, DK. GRAY, SLIGHT ODOR (14")	
	19 18			
6 - 8	77 75	1.2	SILT AND GRAVEL, SOME FINE SAND, DK. GRAY, SLIGHT ODOR (12")	
	100/2"			
8 - 10	100/3"	0.8	FINE SAND AND GRAVEL, SOME SILT, GRAY, WET, SLIGHT ODOR (3")	
10 - 12	100/4"	0.9	SAME AS ABOVE (3")	
			SILT AND CLAY, SOME WEATHERED ROCK, BLACK (2")	
12 - 14	100/3"		FINE SAND AND GRAVEL, GRAY (3")	
				12.5

END OF BORING - 12.5 FT

LIGHT HYDROCARBONS ODOR (i.e. DIESEL) FROM 4-12 FT.

SAMPLE FF-B041-420 TAKEN FROM 4-6 FT.
SAMPLE FF-B042-420 TAKEN FROM 10-12 FT.

BORING NO.:	B-5	BORING DEPTH:	12 FT	DATE STARTED:	4/17/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/18/90
CT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	7.79
ION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,574
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,514

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	5 21	21	FINE SAND AND SILT, TRACE ORGANICS, BROWN (4")	0.0
	18 19		FINE SAND AND ROCK FRAGMENTS, BROWN (6")	
2 - 4	4 11	75	FINE SAND AND SILT, TRACE GRAVEL, BROWN (8")	
	34 38		WEATHERED SHALE FRAGMENTS, GRAY (6")	
4 - 6	10 7	100	FINE SAND, SOME GRAVEL, BROWN/BLACK, STRONG PETROL ODOR, VISIBLE	
	6 2		CONTAMINATION (8")	
6 - 8	1 2	>1000	SILT AND ORGANIC MUCK, BROWN, SWAMP ODOR (12")	6.0
	1 2		SAME AS ABOVE GRAY (12")	
8 - 10	6 8	10	SILT AND ORGANIC MUCK, GRAY, SWAMP ODOR (24")	
	7 11			
10 - 12	2 2	200	SILT AND FINE SAND, GRAY, ORGANIC ODOR (24")	
	8 20			
				12.0

END OF BORING - 12 FT.

VISIBLE OILY STAINING AND ODOR FROM 4-6 FT.
SWAMPY MATERIAL AND METHANE ODOR FROM 6-12 FT.

SAMPLE FF-B051-417 TAKEN FROM 4-6 FT.
SAMPLE FF-B052-417 TAKEN FROM 6-8 FT.

BORING NO.:	B-6	BORING DEPTH:	14 FT	DATE STARTED:	4/19/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/19/90
PROJECT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	10.05
LOCATION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,376
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,458

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	12 21	2.8	FINE SAND AND SILT, TRACE ORGANICS, BROWN (3")	0.0
	21 27		FILL, F - M SAND, BRICK & ASPHALT PIECES, BLACK (15")	
2 - 4	19 33	4.3	F - M SAND, LITTLE GRAVEL, BROWN, WET AT TIP (3")	2.0
	40 3			
4 - 6	4 13	11.2	F - M SAND AND COBBLES, BROWN, WET, PETROL ODOR (4")	
	6 8			
6 - 8	34 100/3"		NO RECOVERY	
8 - 10	17 43	19.2	FINE SAND AND GRAVEL, TRACE COBBLES, BLACK, SLIGHT ODOR (9")	
	55 88			
10 - 12	15 10	3.4	SILT, SOME CLAY, TRACE GRAVEL, DARK GRAY, MOIST, SLIGHT ODOR (24")	
	19 20			
12 - 14	21 20	3.6	SAME AS ABOVE, NO ODOR (24")	
	15 16			
				14.0

END OF BORING - 14 FT

LIGHT HYDROCARBONS ODOR FROM 4-12 FT.

SAMPLE FF-B061-419 TAKEN FROM 4-6 FT.
SAMPLE FF-B062-419 TAKEN FROM 10-12 FT.

BORING NO.:	B-7	BORING DEPTH:	10.5 FT	DATE STARTED:	4/19/90
PROJECT NO.:	6760-N81	CONTRACTOR:	CDS	DATE COMPLETED:	4/19/90
PROJECT:	U.S. NAVY-NETC	DRILLERS:	GAYLORD/QUINN	GROUND ELEVATION:	8.09
LOCATION:	NEWPORT, RI	TRC INSPECTOR:	GLEZEN/MCMORROW	LOCATION:	N 10,524
SITE:	09-FIREFIGHTER	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS		E 4,271

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY
0 - 2	2 17	2.6	FINE SAND AND SILT, BROWN (12")	0.0
	24 22		FILL, ASPHALT AND RED BRICK FRAGMENTS (6")	
2 - 4	19 28	3.8	FILL, FINE SAND, (BRICK AND ASPHALT), LITTLE SILT, BROWN (24")	
	23 24			
4 - 6	13 13	23	F - M SAND, SOME COARSE SAND, BROWN (4")	4.0
	18 37		F - M SAND, TRACE GRAVEL, BLACK, WET, PETROL ODOR (8")	
6 - 8	9 45	37	FINE SAND AND SILT, SOME ROCK FRAGMENTS, BLACK,	
	100/6"		STRONG PETROL ODOR (14")	
8 - 10	100/3"		NO RECOVERY	
10 - 12	100/3"	6	SILT AND GRAVEL, GRAY, NO ODOR (3")	
				10.3

END OF BORING - 11.5 FT

PETROLEUM ODOR FROM 5-10 FT.

SAMPLE FF-B071-419 TAKEN FROM 4-6 FT.
SAMPLE FF-B072-419 TAKEN FROM 6-8 FT.

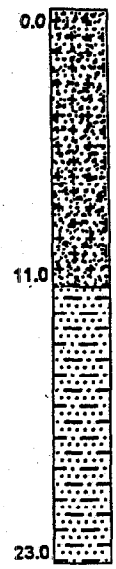
Test Boring: B-8
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 23 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: K. Callendar & P. Hendrick
TRC Inspector: J. Coykendall & K. Prochorena
Test Boring Coordinates:
N 156989.51
E 546998.41

Date Started: November 22, 1993
Date Completed: November 22, 1993
Approximate Depth to Water: 11 feet
Test Boring Elevation: 11.52 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	3 20	24 21	ND	ND	0-7" FILL, brown F sand & organics, trace gravel & silt. 7-18" FILL, grey F sand, some rock fragments, little gravel & brick fragments, trace asphalt, dry, no odor.
2-4	17 50/4"	50	ND	ND	0-8" FILL, brown/grey F sand, some silt & rock fragments, little gravel, trace glass. 8-10" FILL, brick. 10-12" FILL, brown F sand & silt, some gravel, dry, no odor.
4-6	50/2.5"		NR	NR	FILL, grey shale fragments, dry. Recovery = 1".
6-8	33 11	12 42	ND	6	FILL, brown/grey F sand & rock fragments, some silt & gravel. Piece of brick in tip, moist, no odor. Recovery = 12".
8-10	22 42	28 45	ND	7	FILL, brown/grey F-M sand & rock fragments, some gravel, little silt, asphalt, & brick fragments, moist, no odor. Recovery = 16".
10-12	39	50/5"	NR	NR	FILL, Brick & rock fragments.
12-14	22 50	33 50/4"	28	20	Grey M-F SAND, some gravel & rock fragments, trace shale fragments, strong petroleum odor & staining in bottom 4" of spoon, wet. Recovery = 12".
14-16	20 50/5"	34	ND	6	Grey/black ROCK fragments, some M-F sand & gravel, little silt, wet, petroleum odor. Recovery = 6".
16-18	50/3"		NR	NR	ROCK fragments, wet, slight odor. Recovery = 1".
18-20	33	50/2"	1	8	Brown/grey F SAND & ROCK fragments, some silt, wet, slight odor. Recovery = 6".
20-22	48	50/3"	1	2	Brown F SAND & SILT, some rock fragments & gravel, wet, slight odor. Recovery = 6".
22-23	50/5"		ND	4	Grey ROCK fragments, some F sand & silt, wet, no odor. Recovery = 5". Auger refusal at 23'

Lithology



Sample FF-B81-112293 collected from 0-1'.
Sample FF-B82-112293 collected from 8-10'.

Notes: NR = No Reading
ND = Not Detected

Test Boring: B-9
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 13 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: K. Callendar & P. Hendrick
TRC Inspector: J. Coykendall & K. Prochorena
Test Boring Coordinates:
N 156908.45
E 546915.05

Date Started: November 23, 1993
Date Completed: November 23, 1993
Approximate Depth to Water: Unknown
Test Boring Elevation: 17.71 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description		Lithology
0-2	4	37	ND	ND	0-6" FILL, brown F sand & organics, little rock fragments. 6-12" FILL, brown F	0.0	
	40	28			sand, some rock fragments. 12-14" FILL, rock fragments, some F sand, dry, no odor.		
2-4	47	50/5"	NR	NR	No Recovery		
4-6	50/5"		NR	NR	No Recovery		
6-7	100/5"		NR	NR	No Recovery		
7-9	13	11	ND	ND	0-2" FILL, rock fragments. 2-10" FILL, brown F sand & silt, some rock fragments		
	9	50/5"			& gravel. 10-12" FILL, asphalt chunks, dry, no odor.		
9-11	67	35	ND	ND	0-2" FILL, brown F-M sand, some rock fragments, trace brick. 2-6" FILL, asphalt		
	29	48			fragments, little brown F-M sand. 6-12" FILL, concrete fragments, dry, no odor.		
11-12	100/3"		NR	NR	FILL, concrete fragments, dry, no odor. Recovery.= 1"		
12-14	89	100/3"	ND	ND	FILL, concrete fragments, dry, no odor. Recovery = 4".		
					Auger refusal at 13'	13.0	

Sample FF-B91-112393 collected from 0-1'.

Notes: NR = No Reading
ND = Not Detected

Test Boring: B-10
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 7 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: K. Callendar & P. Hendrick
TRC Inspector: J. Coykendall & K. Prochorena
Test Boring Coordinates:
N 156888.50
E 546710.64

Date Started: November 23, 1993
Date Completed: November 23, 1993
Approximate Depth to Water: unknown
Test Boring Elevation: 13.66 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description	Lithology
0-2	4 17	16 15	ND	ND	0-8" FILL, brown F sand & organics, some rock fragments. 8-22" FILL, brown F sand, some gravel, little asphalt & concrete, dry, no odor.	0.0
2-4	21 46	17 20	ND	ND	FILL, brown F sand, some rock fragments & gravel, little concrete fragments, dry, no odor. Recovery = 14".	
4-6	3 5	4 8	NR	NR	No Recovery	
6-8	33 50/1"	42	ND	ND	0-3" FILL, brown F sand, some rock fragments & gravel. 3-5" FILL, asphalt pieces, little brown F sand. 5-7" FILL, brick pieces, dry, no odor.	7.0

Auger refusal at 7 feet.

Sample FF-B101-112393 collected from 0-1'.

Notes: NR = No Reading
ND = Not Detected

Test Boring: B-11
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 27 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: K. Callendar & P. Hendrick
TRC Inspector: J. Coykendall & K. Prochorena
Test Boring Coordinates:
N 156854.90
E 546767.50

Date Started: November 24, 1993
Date Completed: November 24, 1993
Approximate Depth to Water: 6 Feet
Test Boring Elevation: 8.39 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description	Lithology
0-2	3 26	10 28	ND	ND	0-8" FILL, brown F sand & organics, little rock fragments & silt. 8-24" FILL, dk brown F sand, some rock fragments & gravel, dry, no odor.	0.0
2-4	16 40	23 28	ND	ND	0-8" FILL, brown F sand, some silt, trace rock fragments & brick. 8-22" FILL, brown F sand, some silt & rock fragments, little gravel, trace wood, dry, no odor.	
4-6	12 8	11 15	ND	ND	Brown F-M SAND, some gravel & rock fragments, moist, no odor. Recovery = 18". Tip of spoon appears wet.	4.0
6-8	13 4	27 13	1	ND	0-5" Brown F-M SAND, some gravel & rock fragments. 5-8" Grey/black F-M SAND, some shell fragments. 8-20" Brown F SAND, some silt, trace shells, wet, no odor.	
8-10	4 21	8 19	.1	ND	0-11" Brown F SAND, some rock fragments, little silt, trace shells. 11-17" Black/grey TILL, F sand & silt, little rock fragments & gravel, wet, no odor.	
10-12	5 13	11 15	ND	ND	Black/grey TILL, silt, some F sand & rock fragments, little gravel, wet, no odor. Recovery = 15".	
12-14	7 100/5"	15	ND	ND	0-10" Black/grey TILL, silt, some rock fragments & gravel, little F sand. 10-12" Brown/grey M-F SAND, some silt & rock fragments, wet, no odor.	
14-16	6 12	30 16	ND	ND	Black/grey TILL, silt, some rock fragments & gravel, trace F sand, wet, no odor. Recovery = 14".	
16-18	9 33	16 37	ND	ND	Black/grey TILL, silt, some rock fragments & gravel, trace F sand, wet, no odor. Recovery = 12".	
18-20	7 19	9 25	ND	ND	Black/grey TILL, silt, some rock fragments & gravel, trace F sand, wet, no odor. Recovery = 8".	
20-22	7 19	12 23	ND	ND	0-6" Black/grey TILL, silt, some rock fragments & gravel, trace F sand. 6-12" Highly weathered BEDROCK, wet, no odor.	21.0
22-24	12 12	13 25	ND	ND	Brown/grey weathered BEDROCK, wet, no odor. Recovery = 12".	
25-27	35 50/4"	40	ND	ND	Brown/grey weathered BEDROCK, wet, no odor. Recovery = 8".	27.0

Sample FF-B111-112493 collected from 0-1'.
Sample FF-B112-112493 collected from 4-6'.

Note: ND = Not Detected

Test Boring: B-12
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 8.5 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: A. Mercugliano & B. Reilly
Test Boring Coordinates:
N 157003.14
E 547168.02

Date Started: November 24, 1993
Date Completed: November 24, 1993
Approximate Depth to Water: 4 Feet
Test Boring Elevation: 7.86 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	Field Measurements HNu (ppm)	Soil Description	Lithology
0-2	43	38	ND	ND	0-6" Brown F SAND & SILT.	0.0
	40	37			6-20" Brown F-C SAND & GRAVEL, little cobbles, dry, no odor.	
2-4	23	20	ND	ND	Brown F-C SAND & GRAVEL, little cobbles, dry, no odor.	
	21	16			Recovery = 18".	
4-6	23	40	1	ND	Brown F-C SAND & GRAVEL, little cobbles, wet, petroleum odor.	
	50/3"				Recovery = 10".	
6-8	50/5"		ND	ND	Brown F-C SAND & GRAVEL, wet, no odor. Recovery = 4".	
					Augered to refusal at 8.5'	8.5

Sample MP-B121-112493 collected from 0-2'.
Sample MP-B122-112493 collected from 2-4'.

Note: ND = Not Detected

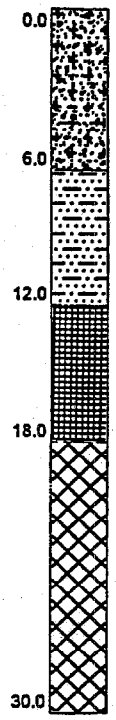
Test Boring: B-13
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 30 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: B. Reilly & A. Mercugliano
Test Boring Coordinates:
N 157004.87
E 547352.24

Date Started: November 23, 1993
Date Completed: November 23, 1993
Approximate Depth to Water: 6 feet
Test Boring Elevation: 8.93 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	18	23	ND	3	FILL, brown F sand & brick, trace gravel, dry, no odor.
	45	33			Recovery = 18".
2-4	18	27	ND	3	FILL, brown F sand, little rock fragments, trace silt & bricks, dry, no odor.
	50/1"				Recovery = 12".
4-6	4	7	35	25	FILL, brown F sand, trace silt, brick & glass, moist, petroleum odor.
	10	14			Recovery = 22". Spoon appears wet at tip.
6-8	5	3	700	55	Dk grey/black F SAND, little cobbles, trace silt, petroleum odor, wet.
	3	7			Recovery = 12".
8-10	3	6	NR	55	Dark grey/black F SAND, little cobbles, trace silt, petroleum odor, wet.
	16	7			Recovery = 14".
10-12	7	8	ND	3	Dark grey/black F SAND, little cobbles, trace silt, petroleum odor, wet.
	10	5			Recovery = 6".
12-14	1	1	>1000	28	Brown PEAT, little silt, wet, petroleum odor.
	2	6			Recovery = 16".
14-16	16	10	200	20	Brown PEAT, little silt, wet, petroleum odor.
	11	13			Recovery = 12".
16-18	6	10	250	15	0-8" Brown PEAT, little silt, wet, petroleum odor.
	10	11	ND	ND	8-17" Grey SILT, wet, no odor.
18-20	10	10	ND	ND	Grey weathered BEDROCK, some silt, wet, no odor.
	12	12			Recovery = 15".
20-22	3	27	ND	ND	0-7" Grey weathered BEDROCK, some silt, wet, no odor.
	25	31			7-14" Grey/orange weathered BEDROCK, trace F sand, wet, no odor.
22-24	9	21	ND	ND	Grey weathered BEDROCK, little silt, wet, no odor. Recovery = 16".
	23	33			
24-26	14	14	ND	ND	Grey weathered BEDROCK, trace silt, wet, no odor.
	21	41			Recovery = 14".
26-28	27	41	ND	ND	Grey weathered BEDROCK, trace silt, wet, no odor.
	50/3"				Recovery = 10".
28-30	21	20	ND	ND	Grey weathered BEDROCK, wet, no odor.
	40	50/3"			
					Augered to refusal at 30'

Lithology



Sample FF-B131-112393 collected from 0-2'.
Sample FF-B132-112393 collected from 4-6'.

Notes: NR = No Reading
ND = Not Detected

Test Boring: B-14
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 28 Feet

Drilling Company: Soil Explorations
Drillers: G. Juinta & G. Caquette
TRC Inspector: J. Coykendall
Test Boring Coordinates:
N 156893.04
E 547371.18

Date Started: December 13, 1993
Date Completed: December 13, 1993
Approximate Depth to Water: 27 Feet
Test Boring Elevation: 30.71 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description	Lithology
0-2	5 10	5 30	ND	ND	0-12" FILL, brown F sand & organics, trace rock fragments. 12-16" FILL, dk brown F-M sand, little rock fragments, trace brick, dry, no odor.	0.0
5-7	7 16	9 30	ND	ND	FILL, brown F-M sand, some gravel & rock fragments, little concrete & asphalt, trace brick fragments, dry, no odor. Recovery = 18".	
7-9	27 27	30 34	ND	ND	FILL, brown/grey F-M sand, some rock fragments & cobbles, little concrete & gravel, trace asphalt & brick fragments, dry, no odor. Recovery = 22".	
9-11	61	120/4"	ND	ND	FILL, brown/grey F-M sand, some rock fragments & cobbles, little concrete & gravel, trace asphalt & brick fragments, dry, no odor. Recovery = 2".	
15-17	9 6	7 6	ND	ND	FILL, grey/black silt, little F sand & rock fragments, trace gravel, moist, no odor. Recovery = 18".	
17-19	9 25	13 10	ND	ND	0-8" FILL, grey/black silt, little F sand & rock fragments, trace gravel. 8-18" FILL, brown F sand, little cobbles, trace wood & brick, moist, no odor.	
20-22	120/4"		NR	NR	FILL, concrete fragments. Recovery = 1".	
						23.0
25-27	50/1"		NR	NR	No Recovery	
					Auger to 28 feet and hit auger refusal. Bedrock estimated to be approximately 23 feet below grade. Water in borehole at approximately 27 feet below grade.	28.0
					Sample FF-B141-121393 collected from 0-1'. Sample FF-B142-121393 collected from 15-17'.	

Notes: NR = No Reading
ND = Not Detected

Test Boring: B-15
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 22.5 Feet

Drilling Company: Soil Explorations
Drillers: G. Juinta & G. Caquette
TRC Inspector: J. Coykendall
Test Boring Coordinates:
N 156895.02
E 547425.72

Date Started: December 13, 1993
Date Completed: December 13, 1993
Approximate Depth to Water: Unknown
Test Boring Elevation: 27.58 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description	Lithology
0-2	14 7	14 6	ND	ND	0-4" FILL, brown F sand & organics, little rock fragments. 4-12" FILL, brown F-M sand, some rock fragments, trace brick fragments, dry, no odor.	0.0
2-4	11 9	9 11	ND	ND	FILL, brown F-M sand, some rock fragments & cobbles, little gravel, trace concrete, asphalt & brick, dry, no odor. Recovery = 18".	
4-6	11 100/3"	9	ND	ND	FILL, brown F-M sand & rock fragments, some cobbles & gravel, trace brick & concrete, dry, no odor. Recovery = 12".	
8-10	20 67	65 62	ND	ND	FILL, brown/grey M-F sand & gravel, some rock fragments & cobbles, little concrete & asphalt, trace brick & glass, dry, no odor. Recovery = 14".	
10-12	13 34	19 100/4"	ND	ND	FILL, grey F-M sand, some rock fragments & cobbles, little concrete & asphalt, trace brick, dry, slight petroleum odor. Recovery = 18".	
15-17	9 18	12 26	ND	ND	FILL, brown F sand & silt, some gravel & cobbles, little rock fragments & concrete, trace brick, moist, no odor. Recovery = 12".	
17-19	100/4"		NR	NR	No recovery - piece of wood & chunk of asphalt in tip of spoon	
20-21	25	100/1"	NR	NR	No Recovery	20.0
					Augered to refusal at 22.5 feet - did not reach water table. Bedrock estimated to be approximately 20 feet below grade.	22.5
					Sample FF-B151-121393 collected from 0-1'. Sample FF-B152-121393 collected from 10-12'. Sample FF-B153-121393 collected from 15-17'.	

Notes: NR = No Reading
ND = Not Detected

Test Boring: B-16
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 22.5 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: A. Mercugliano & B. Reilly
Test Boring Coordinates:
N 156957.39
E 547508.80

Date Started: November 23, 1993
Date Completed: November 23, 1993
Approximate Depth to Water: 6 Feet
Test Boring Elevation: 9.24 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description	Lithology
0-2	8	18	ND	ND	0-3" Brown TOPSOIL, F sand & silt. 3-11" Brown F-M SAND & GRAVEL,	0.0
	27	17			some silt. 11-20" Brown F-C SAND & GRAVEL, dry, no odor.	
2-4	12	25	0.5	ND	Brown F-M SAND & GRAVEL, some silt, dry, no odor. Recovery = 10".	
	15	13				
4-6	50/3"		ND	ND	Brown F-M SAND & GRAVEL, some silt, dry, no odor. Recovery = 3".	
6-8	5	6	5	1	Brown F-C SAND & GRAVEL, little silt, wet with petroleum odor at bottom	
	6	5			of spoon. Recovery = 7".	
8-10	18	15	ND	ND	Brown/black F SAND & GRAVEL, some silt and cobbles, wet, petroleum odor.	
	17	20			Recovery = 10".	
10-12	17	12	ND	ND	Brown/black F SAND & GRAVEL, some silt, wet, petroleum odor.	
	15	10			Recovery = 2".	
12-14	7	7	ND	ND	Brown F-M SAND & SILT, some gravel, wet, petroleum odor.	
	7	5			Recovery = 10".	
14-16	5	12	ND	ND	Brown PEAT, wet, no odor. Recovery = 9".	14.0
	6	2				
16-18	2	2	ND	5	0-6" Brown M-C SAND & PEAT	
	3	6			6-12" Tan SILT, wet, no odor.	16.5
18-20	6	18	ND	5	Grey SILT, some F sand, little gravel, wet, no odor. Recovery = 12".	
	47	50/3"				
20-22	27	50/2"	ND	2	Grey F SAND & GRAVEL, some silt, wet, no odor.	
					Recovery = 10".	21.0
22-22.5	50/2"		0	0	Weathered ROCK, wet, no odor.	
					Auger refusal at 22.5'.	22.5

Sample FF-B161-112393 collected from 0-2'.
Duplicate Sample FF-B164-112393 collected from 0-2'.
Sample FF-B162-112393 collected from 2-4'.
Sample FF-B163-112393 collected from 6-7'.

Note: ND = Not Detected

Test Boring: B-17
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 30 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: B. Reilly & A. Mercugliano
Test Boring Coordinates:
N 156823.64
E 547431.34

Date Started: November 24, 1993
Date Completed: November 24, 1993
Approximate Depth to Water: 6 feet
Test Boring Elevation: 11.45 Feet (mlw)

Depth (feet)	Blow Counts	Field Measurements OVA (ppm)	Field Measurements HNu (ppm)	Soil Description	Lithology
0-2	3 20	ND	ND	0-6" Brown F SAND & SILT, trace cobbles.	0.0
	12 8			6-12" Brown F-C SAND & GRAVEL, dry, no odor.	
2-4	13 9	ND	ND	0-6" Brown F-C SAND & GRAVEL.	
	6 6			6-9" Brown F SAND, dry, no odor.	
4-6	45 . 50/0"	NR	NR	No Recovery	4.0
				Augered to refusal at 5.0 feet below grade.	5.0

Sample FF-B131-112393 collected from 0-2'.
Sample FF-B132-112393 collected from 2-4'.

Notes: NR = No Recovery
ND = Not Detected

Test Boring: B-18
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Boring Depth: 5.5 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: B. Reilly & A. Mercugliano
Test Boring Coordinates:
N 156611.81
E 547794.62

Date Started: November 23, 1993
Date Completed: November 23, 1993
Approximate Depth to Water: unknown
Test Boring Elevation: 12.52 Feet (mlw)

Depth (feet)	Blow Counts	Field Measurements OVA (ppm)	Field Measurements HNu (ppm)	Soil Description	Lithology
0-2	8 23 50/1"	ND	ND	Brown F SAND, trace silt, dry, no odor. Recovery = 16".	0.0
2-4	50/2"	NR	NR	No recovery. Very hard drilling, cobbles in drill cuttings. Bedrock estimated at 2 feet below grade.	2.0
4-6	50/2"	NR	NR	No Recovery. Augered to refusal at 5.5' below grade.	5.5

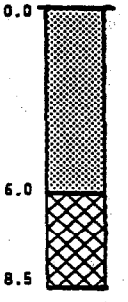
Sample FF-B181-112393 collected from 0-2'.

Notes: NR = No Reading
ND = Not Detected

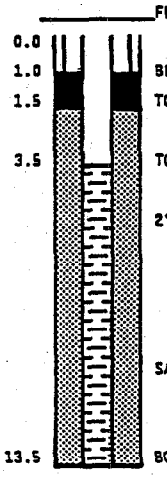
BORING NO.:	MW-1	CONTRACTOR:	CDS	DATE STARTED:	4/23/90
PROJECT NO.:	6760-N81	DRILLERS:	GAYLORD/QUINN	DATE COMPLETED:	4/26/90
[illegible]:	U.S. NAVY-NETC	TRC INSPECTOR:	GLEZEN/MCMORROW	WATER TABLE LEVEL:	7.5 FT.
[illegible]ION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 10.191
SITE:	09-FIRE FIGHTER	GROUND ELEVATION:	11.34		E 4.897
BORING DEPTH:	13.5 FT	CASING ELEVATION:	11.14		

DEPTH (FT)	BLOWS	SOIL DESCRIPTION (RECOVERY)
0 - 2	9 29 16 14	F - M SAND, SOME GRAVEL, BROWN (5")
2 - 4	10 13 13 21	ROCK FRAGMENTS, SOME FINE - MEDIUM SAND, BROWN (6")
4 - 6	75/5"	F - M SAND, SOME GRAVEL, BROWN (5")
6 - 8	75/1"	NO RECOVERY, FEW SANDSTONE CHIPS IN SPOON.
8 - 10	75/0"	NO RECOVERY, FEW SANDSTONE CHIPS IN SPOON.
		CHIPS OF BEDROCK (SANDSTONE) COMING UP WITH DRILLING FLUID.
		END OF BORING - 13.5 FT.
		WATER ROTARY DRILLING USED TO ADVANCE THROUGH ROCKS.
		NO SAMPLES COLLECTED

LITHOLOGY



WELL CONSTRUCTION

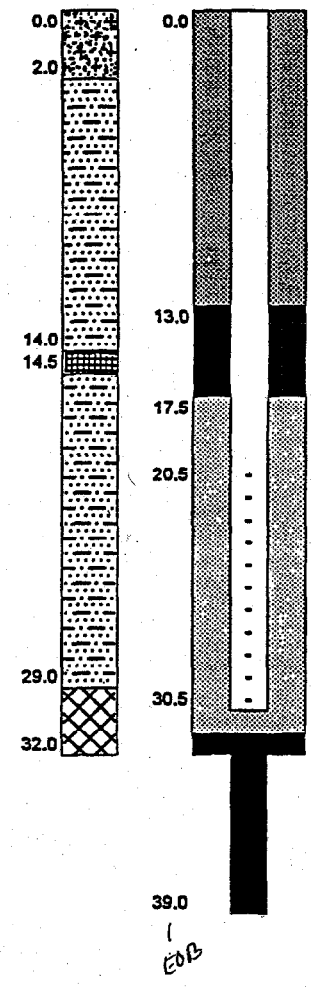


Monitoring Well: MW-2D
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 30.5 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: K. Callendar & P. Hendrick
TRC Inspector: J. Coykendall
Monitoring Well Coordinates:
N 156995.86
E 547435.37

Date Started: November 29, 1993
Date Completed: December 1, 1993
Depth to Water: 4.36 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 8.56 Feet (mlw)
Ground Elevation = 9.16 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2					See well log for MW-2S from Phase I for soil information from 0 to 14 feet below grade.
2-4					
4-6					
6-8					
8-10					
10-12					
12-14					
14-16	3	2	650	80	0-6" Brown PEAT, some F sand, trace silt. 6-18" Grey F
	1	2			SAND, some M sand, trace silt, wet, slight petroleum odor.
16-18	2	1	7	3	Grey F SAND, some M sand, trace silt, gravel, wet, no odor.
	2	5			Recovery = 6".
18-20	6	9	8.5	ND	0-6" Grey F SAND, some M sand, trace silt. 6-14" Orange/
	9	10			grey F SAND, some M sand, trace rocks, wet, no odor.
20-22	3	6	15	1	Grey F SAND, trace rock fragments & silt, wet, no odor.
	9	11			Recovery = 14".
22-24	5	6	ND	ND	0-4" Grey F SAND & SILT, trace shell fragments. 4-14"
	10	14			Brown F-M SAND, trace gravel, silt, wet, no odor.
24-26	3	13	8	ND	Brown F-M SAND, some gravel, trace silt & rock fragments,
	42	37			wet, no odor. Recovery = 10".
26-28	9	16	ND	ND	Brown/grey F SAND, some silt & gravel, trace rock
	18	21			fragments, wet, no odor. Recovery = 12".
28-30	17	20	ND	ND	0-10" Brown/grey F-M SAND, some silt & gravel. 10-12"
	28	34			Grey weathered BEDROCK, wet, no odor.
30-32	8	16	NR	NR	No Recovery
	27	32			
32-34	63/0"		NR	NR	No Recovery
					Attempted to core to 40 feet to set bedrock well, but hole kept collapsing, so installed deep well instead.

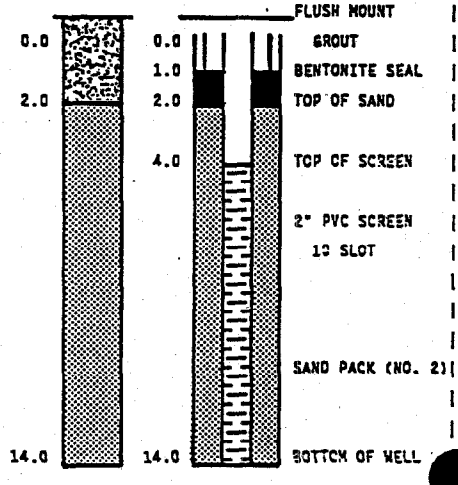


Notes: NR = No Reading
ND = Not Detected
Depth to Water Measured From Top of PVC.

BORING NO.:	MW-2	CONTRACTOR:	CDS	DATE STARTED:	4/23/90
PROJECT NO.:	6760-N81	DRILLERS:	GAYLORD/QUINN	DATE COMPLETED:	4/23/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	GLEZEN/MCMORROW	WATER TABLE LEVEL:	6 FT.
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 10.453
SITE:	09-FIREFIGHTER	GROUND ELEVATION:	9.07		E 4.713
BORING DEPTH:	14 FT.	CASING ELEVATION:	8.76		

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)
0 - 2	11 21	3.6	FINE SAND AND SILT, TRACE ORGANICS, BROWN (3")
	21 14		FILL, F - M SAND, LITTLE BRICK FRAGMENTS, TRACE GRAVEL, BLACK (15")
2 - 4	13 12	15.1	F - M SAND, SOME GRAVEL, BROWN (4")
	5 4		
4 - 6	4 5	68	F - M SAND, SOME GRAVEL, BLACK, VISIBLE PETROL CONTAMINATION (6")
	5 9		
6 - 8	4 3	75	SAME AS ABOVE, STRONG ODOR, WET (7")
	2 1		
8 - 10	1 2	80	FINE SAND AND SILT, LITTLE GRAVEL, BLACK, STRONG ODOR, WET (6")
	8 12		
10 - 12	11 8	67	F - M SAND AND FRACTURED ROCK, BLACK, STRONG ODOR, WET (12")
	5 4		
12 - 14	7 5	82	SAME AS ABOVE (14")
	3 3		

LITHOLOGY WELL CONSTRUCTION



END OF BORING - 14 FT.

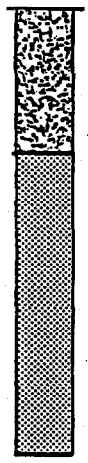
STRONG PETROLEUM ODOR FROM 4-14 FT.
VISIBLE OILY STAINING FROM 4-8 FT.

SAMPLE FF-MW21-423 TAKEN FROM 6-8 FT.
SAMPLE FF-MW22-423 TAKEN FROM 12-14 FT.

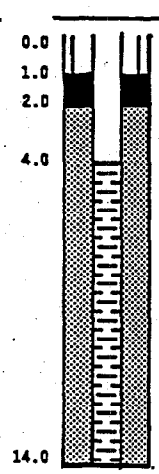
BORING NO.:	MW-3	CONTRACTOR:	CDS	DATE STARTED:	4/24/90
PROJECT NO.:	6760-N81	DRILLERS:	GAYLORD/QUINN	DATE COMPLETED:	4/24/90
ECT:	U.S. NAVY-NETC	TRC INSPECTOR:	GLEZEN/MCMORROW	WATER TABLE LEVEL:	6 FT.
TION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 10,418
SITE:	09-FIREFIGHTER	GROUND ELEVATION:	9.83		E 4,546
BORING DEPTH:	14 FT.	CASING ELEVATION:	9.61		

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)
0 - 2	3 10	13.8	FILL, FINE SAND, SOME SILT, BROWN (14")
	30 80		FILL, F-M SAND, LITTLE GRAVEL, ROCK FRAGMENTS, BROWN (8")
2 - 4	41 25	14.2	FILL, FINE SAND AND ROCK FRAGMENTS, LT. BROWN (8")
	17 13		FILL, FINE SAND AND SILT, TRACE BRICK FRAGMENTS, BROWN (12")
4 - 6	28 25	10	SILT AND FINE SAND, TRACE GRAVEL, BROWN. BLACK PETROL STAINING
	29 13		FROM 12" - 15", STRONG ODOR, MOIST (24")
6 - 8	9 11	144	FINE SAND AND SILT, SOME GRAVEL, BROWN/BLACK, VISIBLE CONTAMINATION,
	6 7		STRONG ODOR, WET (20")
8 - 10	2 2	59	F - M SAND AND GRAVEL, BLACK, STRONG ODOR, WET (8")
	6 4		
10 - 12	2 6	24	SILT AND FINE SAND, BROWN (4")
	19 30		FINE SAND, BROWN, SLIGHT ODOR (16")
12 - 14	12 13	18.2	FINE SAND, GRAY, SLIGHT PETROL ODOR (24")
	13 13		

LITHOLOGY



WELL CONSTRUCTION



FLUSH MOUNT
GROUT
BENTONITE SEAL
TOP OF SAND
TOP OF SCREEN
2" PVC SCREEN
10 SLOT
SAND PACK (NO. 2)
BOTTOM OF WELL

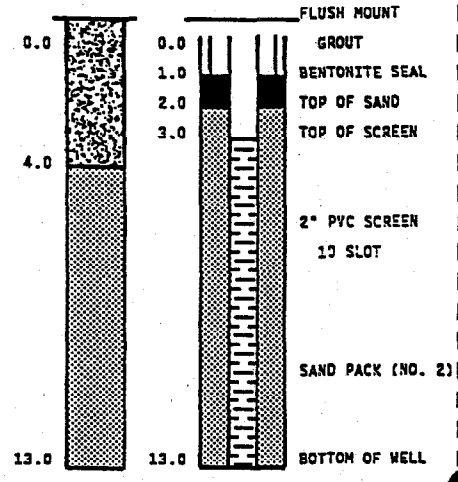
END OF BORING - 14 FT.

STRONG PETROLEUM ODOR FROM 4-12 FT.
VISIBLE OILY STAINING FROM 4-8 FT.

SAMPLE FF-MW31-424 TAKEN FROM 6-8 FT.
SAMPLE FF-MW32-424 TAKEN FROM 12-14 FT.

BORING NO.:	MW-4	CONTRACTOR:	CDS	DATE STARTED:	4/24/90
PROJECT NO.:	6760-N81	DRILLERS:	GAYLORD/QUINN	DATE COMPLETED:	4/24/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	GLEZEN/MCMORROW	WATER TABLE LEVEL:	6 FT.
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 10.524
SITE:	09-FIREFIGHTER	GROUND ELEVATION:	7.73		E 4.271
BORING DEPTH:	14 FT.	CASING ELEVATION:	7.53		

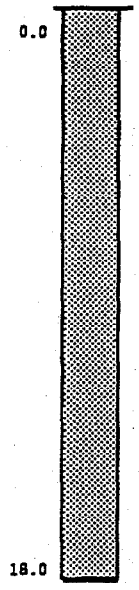
DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
			WELL INSTALLED IN LOCATION OF BORING B-7		
			SEE LOG OF B-7 FOR SOIL DESCRIPTION		
			END OF BORING - 13 FT.		



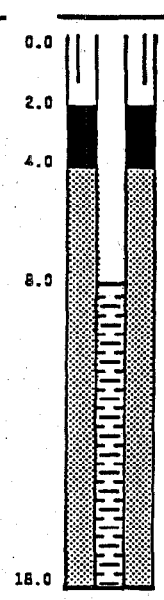
BORING NO.:	MW-5	CONTRACTOR:	CDS	DATE STARTED:	4/25/90
PROJECT NO.:	6760-N81	DRILLERS:	GAYLORD/QUINN	DATE COMPLETED:	4/25/90
JECT:	U.S. NAVY-NETC	TRC INSPECTOR:	GLEZEN/MCMORROW	WATER TABLE LEVEL:	12 FT.
ATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 10,148
SITE:	09-FIREFIGHTER	GROUND ELEVATION:	12.47		E 4,551
BORING DEPTH:	18 FT.	CASING ELEVATION:	12.30		

DEPTH (FT)	BLOWS	HNU (PPM)	SOIL DESCRIPTION (RECOVERY)
0 - 0.5			ASPHALT
0.5- 2.5	13 11 15 5	0.6	FINE SAND AND SILT, SOME GRAVEL, BROWN (24")
2.5- 4	4 14 5	0.4	F - M SAND, SOME GRAVEL, BLACK (6")
4 - 6	3 2 2 9	0.4	SILT AND FINE SAND, LITTLE CLAY, BROWN, MOIST (8")
6 - 8	8 14 14 15	0.4	SILT, SOME FINE SAND, LITTLE GRAVEL, GRAY, MOIST (18")
8 - 10	15 13 20 32	0.4	SILT, SOME FINE SAND, LITTLE CLAY, GRAY, MOIST (18")
10 - 12	1 6 10 18	0.4	SAME AS ABOVE (14")
12 - 14	13 16 16 10	0.4	SILT AND FINE SAND, TRACE M. SAND, BLACK, PETROL ODOR, WET (3") SILT AND FINE SAND, BROWN, SLIGHT ODOR, WET (15")
14 - 16	28 73 100/6"	0.5	SILT AND FINE SAND, TRACE GRAVEL, BROWN, DENSE (14")
16 - 18	31 91 100/4"	0.4	SILT AND FINE SAND, SOME ROCK FRAGMENTS, BROWN (6") WEATHERED SHALE, GRAY (4")

LITHOLOGY



WELL CONSTRUCTION



END OF BORING - 18 FT

VERY SLIGHT PETROLEUM ODOR AT 12 FT

SAMPLE FF-MW51-425 TAKEN FROM 8-10 FT.
SAMPLE FF-MW52-425 TAKEN FROM 12-14 FT.

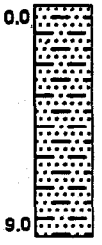
Monitoring Well: MW-6S
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 9 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: J. Breen & B. Reilly
Monitoring Well Coordinates:
N 156498.17
E 547483.71

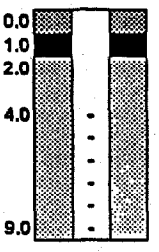
Date Started: November 30, 1993
Date Completed: November 30, 1993
Depth to Water: 7.07 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 13.39 Feet (mlw)
Ground Elevation = 13.59 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	4	6	ND	ND	0-6" TOPSOIL. 6-18" Brown F SAND, some silt, little gravel, trace asphalt, dry, no odor.
	9	6			
2-4	8	12	ND	ND	0-4" Brown F SAND, some silt, little gravel. 4-16" Grey F SAND & SILT, some rock fragments, moist, no odor.
	8	10			
4-6	10	14	ND	ND	Grey F SAND & SILT, some rock fragments, moist, no odor. Recovery = 10".
	50/4"				
6-8	50/1"		NR	NR	No Recovery.
8-10	50/0"		NR	NR	No Recovery. Auger refusal at 9 feet.

Lithology



Monitoring Well Construction



Curb Box
Bentonite Seal
Top of Sand
Top of Screen
#1 Morie Sand
2" - 10 Slot PVC Screen
Bottom of Well

Sample FF-M61-113093 collected from 0-2'.
Sample FF-M62-113093 collected from 4-6'.

Notes: ND = Not Detected
NR = No Recovery
Depth to Water Measured From Top of PVC.

Monitoring Well: MW-6R
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 26 Feet

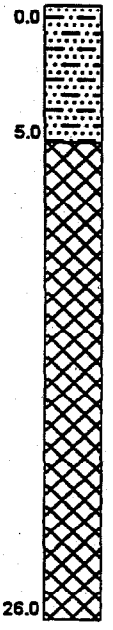
Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: B. Reilly
Monitoring Well Coordinates:
N 156505.80
E 547504.73

Date Started: December 1, 1993
Date Completed: December 1, 1993
Depth to Water: 7.23 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 13.49 Feet (mlw)
Ground Elevation = 13.81 Feet (mlw)

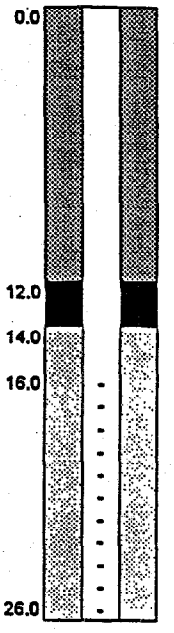
Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	4	6	ND	ND	0-6" TOPSOIL. 6-18" Brown F SAND, some silt, little gravel, trace asphalt, dry, no odor.
	9	6			
2-4	8	12	ND	ND	0-4" Brown F SAND, some silt, little gravel. 4-16" Grey F SAND & SILT, some rock fragments, moist, no odor.
	8	10			
4-6	15	40	ND	ND	0-3" Brown F SAND, little gravel & silt. 3-18" Brown/grey weathered BEDROCK, moist, no odor.
	46	50/2"			

Augered to 26 feet through weathered bedrock to set well.

Lithology



Monitoring Well Construction



Notes: ND = Not Detected
Depth to Water Measured From Top of PVC.

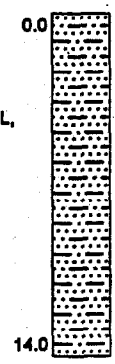
Monitoring Well: MW-7S
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 13 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: B. Reilly & J. Breen
Monitoring Well Coordinates:
N 156781.40
E 547262.98

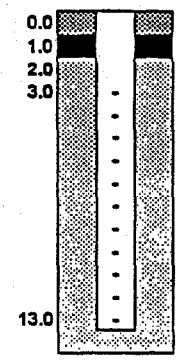
Date Started: November 29, 1993
Date Completed: November 29, 1993
Depth to Water: 3.86 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 10.34 Feet (mlw)
Ground Elevation = 10.91 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	3	22	ND	ND	0-12" Brown F SAND, little cobbles, trace silt. 12-16"
	44	35			COBBLES. 16-20" Brown F SAND, trace gravel, dry, no odor.
2-4	9	9	ND	ND	0-3" ROCK fragments. 3-15" Grey F SAND & SILT, trace
	9	10			gravel, dry, no odor.
4-6	8	12	7	6	0-8" Brown F SAND, some silt. 8-11" Black F SAND & GRAVEL,
	8	13			petroleum odor. 11-17" Brown F SAND, little silt, wet.
6-8	3	3	ND	ND	Gray F SAND, some silt, wet, slight petroleum odor.
	3	6			Recovery = 6".
8-10	6	8	700	ND	Grey F SAND, some silt, wet, slight petroleum odor.
	10	22			Recovery = 20".
10-12	28	15	ND	ND	Grey F SAND, some silt, trace gravel, wet, no odor.
	14	8			Recovery = 22".
12-14	4	6	ND	ND	Grey F SAND, some silt, trace gravel, wet, no odor.
	7	8			Recovery = 20".

Lithology



Monitoring Well Construction



Sample FF-M71-112993 collected from 0-2'.
Sample FF-M72-112993 collected from 2-4'.

Notes: ND = Not Detected
Depth to Water Measured From Top of PVC.

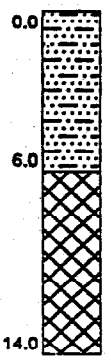
Monitoring Well: MW-8R
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 14 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: T. McMorrow
Monitoring Well Coordinates:
N 156750.14
E 547535.02

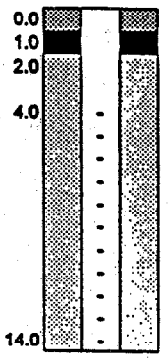
Date Started: December 13, 1993
Date Completed: December 13, 1993
Depth to Water: 6.35 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 11.90 Feet (mlw)
Ground Elevation = 12.70 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	3	6	ND	ND	0-3" TOPSOIL. 3-18" Brown F SAND, little cobbles,
	14	32			trace silt, dry, no odor.
2-4	2	4	ND	ND	ROCK cobbles, dry, no odor. Recovery = 3".
	32	50/1"			
					Unable to continue drilling and sampling with augers.
					Continue well with air rotary drill rig.
					Estimated depth to bedrock = 6 feet.

Lithology



Monitoring Well Construction



Sample FF-M81-113093 collected from 0-2'.

Notes: ND = Not Detected
Depth to Water Measured From Top of PVC.
Split spoon sampling conducted on 11/30/93.
Monitoring well installed on 12/13/93.

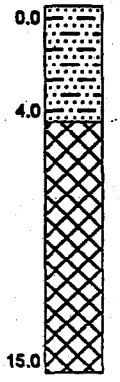
Monitoring Well: MW-9R
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 15 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: T. McMorrow
Monitoring Well Coordinates:
N 156840.31
E 547435.91

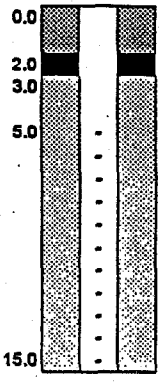
Date Started: December 13, 1993
Date Completed: December 14, 1993
Depth to Water: 5.37 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 11.18 Feet (mlw)
Ground Elevation = 11.73 Feet (mlw)

Depth (feet)	Blow Counts	Field Measurements OVA (ppm)	Field Measurements HNu (ppm)	Soil Description
0-2	12 15 47 50/2"	ND	ND	0-6" TOPSOIL. 6-16" Brown SILT & ROCK fragments, little F sand, dry, no odor.
2-4	50/4"	ND	ND	Brown F SAND, little gravel & silt, dry, no odor. Recovery = 2".
4-6	50/2"	NR	NR	No Recovery Unable to continue drilling and sampling with augers. Continue drilling with air rotary drill rig. Bedrock estimated to be 4 feet below grade.

Lithology



Monitoring Well Construction



Sample FF-M91-120193 collected from 0-2'.
Duplicate sample FF-M93-120193 collected from 0-2'.
Sample FF-M92-120193 collected from 2-4'.

Notes:
NR = No Reading
ND = Not Detected
Depth to Water Measured From Top of PVC.
Split spoon sampling conducted on 12/01/93.
Monitoring well installed on 12/13/93 - 12/14/93.

Monitoring Well: MW-10S
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 12.5 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: J. Breen & B. Reilly
Monitoring Well Coordinates:
N 156899.69
E 547579.96

Date Started: November 29, 1993
Date Completed: November 29, 1993
Depth to Water: 6.30 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 10.20 Feet (mlw)
Ground Elevation = 10.35 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	6	20	ND	ND	0-6" FILL, topsoil. 6-18" FILL, brown F sand & silt, little brick
	20	21			& gravel, trace seashells, dry, no odor.
2-4	10	10	NR	NR	ROCK fragments, dry, no odor. Recovery = 2".
	11	11			
4-6	5	9	ND	ND	Brown F SAND, some rock fragments, little gravel, trace silt,
	15	16			dry, no odor. Recovery = 8".
6-8	7	7	ND	ND	Brown F SAND, some rock fragments, little gravel, trace silt,
	22	34			wet, petroleum odor, visual staining. Recovery = 12".
8-10	50/5"		ND	ND	Brown F SAND, some rock fragments, little gravel, trace silt,
					wet, petroleum odor. Recovery = 5".
10-12	50/5"		ND	ND	Brown F SAND, some rock fragments, little gravel, trace silt,
					wet, petroleum odor. Recovery = 5".
12-14	50/5"		ND	ND	Grey F-C SAND, little silt & gravel, wet,
					slight petroleum odor. Recovery = 2".

Lithology: 0.0, 2.0, 12.5

Monitoring Well Construction: 0.0 Curb Box; 1.0 Bentonite Seal; 2.0 Top of Sand; 4.0 Top of Screen; #1 Morie Sand; 2" - 10 Slot PVC Screen; 12.0 Bottom of Well

Auger refusal at 12.5 feet.

Sample FF-M101-112993 collected from 0-2'.
Sample FF-M102-112993 collected from 4-6'.
Sample FF-M103-112993 collected from 10-12'.

Notes: ND = Not Detected
NR = No Recovery
Depth to Water Measured From Top of PVC.

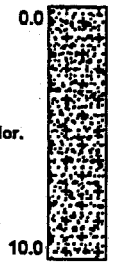
Monitoring Well: MW-11S
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Well Depth: 9 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: B. Reilly & J. Breen
Monitoring Well Coordinates:
N 157055.66
E 547198.71

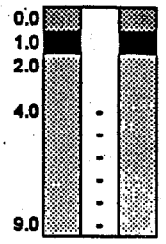
Date Started: December 1, 1993
Date Completed: December 1, 1993
Depth to Water: 3.92 Feet (01/04/94)
Monitoring Well Elevations:
Top of PVC = 7.70 Feet (mlw)
Ground Elevation = 7.85 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	8	5	ND	ND	0-3" FILL, brown F sand, plastic. 3-22" FILL, black charred wood fragments, little asphalt & concrete, dry, no odor.
	7	14			
2-4	6	23	15	5	0-8" FILL, black/grey F sand, some gravel & wood. 8-12" FILL, concrete & rock. 12-18" FILL, brown F-M sand, dry, no odor.
	15	19			
4-6	24	26	1	ND	0-2" FILL, concrete fragments. 2-12" FILL, brown F-M sand, some brick & concrete. 12-15" FILL, rock fragments, wet, no odor.
	29	35			
6-8	50/3"		ND	ND	FILL, rock fragments, wet, no odor. Recovery = 1".
8-10	48	50/1"	2	ND	FILL, brown F-C gravel, some F-C sand & rock fragments, little brick fragments, slight petroleum odor, wet. Recovery = 8".
10-12	50/3"		NR	NR	No Recovery.

Lithology



Monitoring Well Construction



Curb Box
Bentonite Seal
Top of Sand
Top of Screen
#1 Morie Sand
2" - 10 Slot PVC Screen
Bottom of Well

Sample FF-M111-112993 collected from 0-2'.
Sample FF-M112-112993 collected from 2-4'.

Notes:
ND = Not Detected
NR = No Recovery
Depth to Water Measured From Top of PVC.
Split spoon sampling conducted on 11/29/93.
Monitoring well installed on 12/01/93.

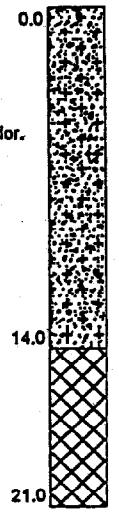
Monitoring Well: MW-11R
Site 09 - Old Fire Fighting Training Area
NETC - Newport
Vell Depth: 21 Feet

Drilling Company: Hardin-Huber, Inc.
Drillers: M. Stawas
TRC Inspector: J. Coykendall & T. McMorrow
Monitoring Well Coordinates:
N 157066.93
E 547215.37

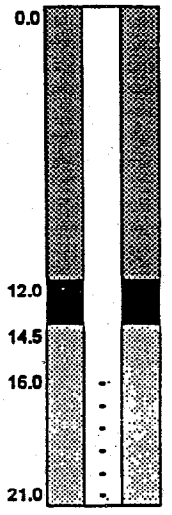
Date Started: December 15, 1993
Date Completed: December 16, 1993
Depth to Water: 3.55 Feet (01/04/93)
Monitoring Well Elevations:
Top of PVC = 7.40 Feet (mlw)
Ground Elevation = 7.64 Feet (mlw)

Depth (feet)	Blow Counts		Field Measurements OVA (ppm)	HNu (ppm)	Soil Description
0-2	8	5	ND	ND	0-3" FILL, brown F sand, plastic. 3-22" FILL, black charred wood fragments, little asphalt & concrete, dry, no odor.
	7	14			
2-4	6	23	15	5	0-8" FILL, black/grey F sand, some gravel & wood. 8-12" FILL, concrete & rock. 12-18" FILL, brown F-M sand, dry, no odor.
	15	19			
4-6	24	26	1	ND	0-2" FILL, concrete fragments. 2-12" FILL, brown F-M sand, some brick & concrete. 12-15" FILL, rock fragments, wet, no odor.
	29	35			
6-8	50/3"		ND	ND	FILL, rock fragments, wet, no odor. Recovery = 1".
8-10	48	50/1"	2	ND	FILL, brown F-C gravel, some F-C sand & rock fragments, little brick fragments, slight odor, wet. Recovery = 8".
10-12	50/3"		NR	NR	No Recovery.
					Unable to continue drilling and sampling with augers. Continue drilling with air rotary drill rig. Bedrock estimated to be 14 feet below grade.

Lithology



Monitoring Well Construction



Notes: NR = No Reading
ND = Not Detected
Depth to Water Measured From Top of PVC.

BORING LOG FOR: NEK Newport, OFFTA
PROJECT NO: 7578
LOGGED BY: M. Healey
DRILLED BY (Company/Driller): EDI / Scott
GRD. SURFACE ELEVATION:
ELEVATION FROM:

BORING NO.: MW-101
START DATE: 070997
COMPLETION DATE: 070997
MON. WELL NO.: MW-101
CHECKED BY:

TRANSCRIBED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID Head Space]
	15 43	18/24	S-1	1.0		Brown	Silty SAND; fine sand with silt +	SM	dry	
2	50 27		0730				roots, Brick (Loam) Fill			
	32 28	18/24	S-2			Gray	Silty sand; medium to fine sand	SM		0.0 ppm
4	17 26		0800				with some silt and trace			
	11 14	14/24	S-3	5.0			gravel (Fill)			
6	9 9		0830			Gray	Silty gravelly sand; fine to	SM/GM	S-3 odor +	
	4 3	20/24	S-4 (lab sample)				coarse sand with some sl		sheen	
8	3 3		0845				plastic fines (till) angular		S-4 sl odor +	
	38 42	16/24	S-5		Dense	Gray/	gravel to 1.5 in.		sheen (sample for	
10	60 58		0912			Black			lab)	
	43 26	24/24	S-6				S-5 Silty gravelly sand, fine-		S-5 oil sheen +	
12	38 66		0940				coarse sand with sl plastic		odor	
	38 65	13/24	S-7				fines gravel to 1½ in. (angular)		S-6 no sheen no	
	120/1		1010				till		odor.	

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:

FID Broke @ 0800 hrs.

GROUNDWATER LEVELS:
OTHER OBSERVATIONS:

Brown & Root Environmental

BORING NO.: 101

PAGE: 1 of 1

BORING LOG FOR: NETC Newport RI / OFFTA
PROJECT NO: 7578
LOGGED BY: M. Healy
TRANSCRIBED BY:
DRILLED BY (Company/Driller): EDI / Scott
GRD. SURFACE ELEVATION:
ELEVATION FROM:

BORING NO.: MW-102
START DATE: 07-07-97
COMPLETION DATE: 07-08-97
MON. WELL NO.: MW-102
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID/Head]
	12 9	14/24	1405 hrs. S-1	0.5		Brown	Silty Sand; fine sand & silt	SM		-0-
2	15 16						some roots Loam			
	18 22	14/24	1413 hrs S-2			Brown/Black	Silty Sand; fine to medium sand	SM	moist	S-2 8ppm
4	29 36						some silt trace gravel to 1.5in			
	31 24	9/24	1448 hrs S-3				(fill)			S-3 120ppm
6	41 58			Fill			S-3 oil in nose			
	6 3	14/24	1502 S-4				S-4 oily sand			
8	3 7						S-5 oily sand.			S-4 2,700ppm
	32 28	9/24	1530 S-5							
10	16 17								last sample 7-7-97	S-5 29ppm.
	6 8	0/24	S-6							
12	9 9								Water @ 4.5' BGS	
	9 7	6/24	S-7						0740 7-8-97	S-7 10ppm
14	12 9									
	30 28	29/24	S-8							
16	31 29						S-8			S-8 400ppm

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: Driven Wash (4in)
METHOD OF SOIL SAMPLING: 3in split spoon (140 lbs)
METHOD OF ROCK CORING:

Background FID in Breathing Zone. 1400 hrs. 1500 hrs 1530 hrs, 2ppm @ Casing Zero ppm Breathing Zone.

GROUNDWATER LEVELS: Water @ 4.5' BGS @ 0740 7-8-97
OTHER OBSERVATIONS:

Brown & Root Environmental

BORING NO.: 102
PAGE: 1 of 2

BORING LOG FOR: NETC Newport RI / OFFTA
PROJECT NO: 7578
LOGGED BY: M. Healey
TRANSCRIBED BY:
DRILLED BY (Company/Driller): EDI / Scott
GRD. SURFACE ELEVATION:
ELEVATION FROM:

BORING NO.: MW-102
START DATE: 07-07-97
COMPLETION DATE: 07-08-97
MON. WELL NO.: MW-102
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID/Head Space]
	13									
	14	22/24	S-9				Silty sand, mostly fine sand	SM		S-9 50ppm
	19		9:50	-17-	Dense	gray	with some fine gravel to occasional			
18	23									
	20									
	28	14/24	S-10				gravel to 1in. (till)			S-10 20ppm
	38		10:30							
20	50						S-10 similar to S-9			
	21									
	27	16/24	S-11			gray	S-11 silty sand fine-med sand	SM		S-11 8ppm
	36		10:52							
22	34						with some silt and sil plastic fines			
	10									
	18	20/24	S-12				fine gravel sub rounded to 1in.			S-12 3ppm
	41		11:07							
24	50						oxidized layer (till)			
	42									
	57	13/24	S-13				S-12 similar to S-11			S-13 5ppm.
	70		11:48							
26	49						S-13 similar to S-11			
	26									
	32	16/24	S-14							S-14 5ppm
	43		11:58							
28	49						S-14 similar to S-11			
	63									
	124	10/24	S-15				S-15 similar to S-11			S-15 5.0ppm
	60/2"		12:15	-29½"-						

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:

GROUNDWATER LEVELS:
OTHER OBSERVATIONS:

Brown & Root Environmental

BORING NO.: MW-102

PDI Soil Boring Logs

SB400
SB401
SB402
SB403
SB404
SB405
SB406
SB407
SB408
SB409
SB410
SB411
SB412
SB413B
SB414
SB415
SB416
SB417
SB418
SB419
SB420
SB421
SB422
SB423
SB424
SB425
SB426
SB427
SB428
SB429
SB430
SB431
SB432
SB433
SB434

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-400
PROJECT NO.:	4152-0552			START DATE:	12/01/03
LOGGED BY:	J.DANIELI / J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/01/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BIERHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	7.3' (MLW)	ELEVATION FROM:		CHECKED BY:	JL

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	3				Medium	Gray-	0.0-0.4' = fine to coarse sand, some silt, trace gravel		Dry	
	5	0.6 / 2.0'	1300 OFF-SB-400-0002	Fill	Dense	Brown		SW		PID = 0.0
	6					Light	0.4-1.6' = Silty fine to coarse SAND, some gravel (rounded)			
2	9					Brown		SM		FID = 0.0
	15				Very		Silty fine to coarse SAND, trace gravel		Dry	
	100/2"	0.4' / 0.5'	No sample		Dense				Note: caught on a piece of riprap – will move over	PID = 0.0
4										FID = 0.0
				(EOB)						
0										
				Fill			Auger from 0-4' - no samples collected			
			No sample							
2										
			No sample							
4										
	17				Very		0.0-0.3' = Fine sand	SP	Moist	
	19	1.2' / 2.0'	No sample		Dense	Tan	0.3-0.9' = Fine to coarse SAND, some silt, some gravel	SW	Brick fragments, trace coal, slag fragments	PID = 6.8
	33						0.9-1.2' = Cobble	--		
6	120/3"									FID = 9.4
	50						0.0-0.4' = Cobble	--	Piece of plastic at 6' bgs	
	44	1.1' / 1.5'	No sample				0.4-1.1' = Fine to coarse sand, some silt, some gravel, bottom 0.5'	SW	Trace brick - no manmade materials after 7'	
	60/3"						very dense			
8										
	60/2"									
		0.0' / 2.0'	1340 OFF-SB-400-0810							
10							No recovery			

TYPE OF DRILLING RIG:	CME – Track mounted		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven by 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	FIRST ATTEMPT = 4' refusal, second attempt = 12' refusal, third attempt = 12' refusal	BORING NO.: SB-400	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-400
PROJECT NO.:	4152-0552			START DATE:	12/01/03
LOGGED BY:	J.DANIELI / J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/01/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BIERHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	7.3' (MLW)	ELEVATION FROM:		CHECKED BY:	JL

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
10										
	65/0"		No sample		Very Dense		No recovery - slough only (natural materials in slough)		Augers have been moving well last 4', driller believes we are pushing a cobble	
12										
				(EOB)						
0										
			No sample				Auger to 2' - no samples collected from 0-2'			
2										
	70/2"	0.2' / 0.2'	No sample		Very Dense		Silty fine to coarse sand, some gravel - will keep 0-2' sample from first attempt	SM	Dry	
4										
6										
		1.0'	No sample				No sample collected - see attempt 2			
8										
	4 / 70/2"	0.5' / 1.0'	No sample		Very Dense	Light Brown	Silty fine to coarse sand, some gravel	SM	Wet - driller believes this is on a slab/blocky boulder due to reverberations from spoon	
10										
	70/1"						No recovery, material all slough, angular fragments, no manmade material		Spoon and auger refusal - borehole complete	
12				EOB (refusal)						

TYPE OF DRILLING RIG:	Track mounted
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon driven by 300 lb. hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING NO.: SB-400

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-401A
PROJECT NO.:	4152-0552			START DATE:	11/19/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION:	11/20/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	7.9'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
							No sample collected - auger to 2'			
2										
	13		MS/MSD			Dark	0-0.3' = Sandy silt		Moist	
	33	1.8' / 2.0'	1600			Brown				PID = 54.3
	66		OFF-SB-401-0204				0.3-0.6' = Fine to coarse sand, trace gravel, trace silt			
4	120/0"					Brown	0.6-0.8' = Fine to coarse sand, some gravel			FID = 4.5
	120/5"						Fine to coarse sand, some gravel		Moist	
		0.8' / 2.0'				Brown	PID = 8-10 in sample		Petroleum odor	PID = 0.7
									Auger grinding - cuttings	
6				EOB						FID = 0.0
				6'			Auger refusal at 6' – will move over		Possible solvent odor from cuttings when pulling augers	
									15 ppm near borehole, no sustained readings in breathing zone	
							Second attempt: moved 10' north of original location and began augering - refusal at 5'			
							11/20: Third attempt - moved 8' south of original location - refusal at 2" (rock - non native in cuttings from augers - will stop for now			
							and return later with another rig set up for drive and wash			

TYPE OF DRILLING RIG:	CME 75
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon driven with a 300 lb. hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	

BORING NO.: SB-401A

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-401 (RE-DRILL)
PROJECT NO.:	4152-0552			START DATE:	12/04/03
LOGGED BY:	J.DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/04/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	7.9'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
			No sample				Auger down to 2' bgs – no sample			
2										
	7	1.3' / 2.0'	No sample		Dense	Brown	Topsoil – Silty SAND – roots 0-0.2'		Dry	
	10				Loose	Dark brown	0.2-0.7' = Fine to medium silty SAND, trace gravels	SM		FID = 0.0
4	24					Gray	0.7-1.3' = Cobble, weathered, orange		Staining	PID = 0.0
	31									
	30	0.8' / 0.8'	No sample			Gray			Dry	FID = 32.4
	60/3"									
6										PID = 5.3
	60/1"	No Recovery / 0.1'	No sample			Gray Green	No recovery – 1 piece of rock - rounded, boulder (try to auger through obstruction to 8' bgs)			FID = NA
8										PID = NA
	10	0.5' / 1.0'	0900 OFF-SB-401-0810		Loose	Gray	Pulverized rock - boulder		Dry	FID = 17.4
	60/5.5"									
10										PID = 0.0
	16	0.9' / 1.0'	MS/MSD 0905 OFF-SB-401-1012						Dry (Note: pull augers Believe boulder at shoe - removed, send back down hole)	FID = 5.7
	60/6"									
12										PID = 0.0
	80/4"	0.7' / 1.0'	No sample		Loose	Gray	Fine to coarse SAND with gravel, compact layers of SILT, 3.5' weathered rock – till? Auger refusal	SW	Dry	FID = 15.4
14										PID = 0.0
	60/1"	No Recovery / 0.1'	No sample				No recovery - slough in spoon			FID = NA
16							EOB @ 13'7"			PID = NA

TYPE OF DRILLING RIG:	Track mounted – CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 2' long, 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not evident		
OTHER OBSERVATIONS:		BORING NO.: SB-401	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-402
PROJECT NO.:	4152-0552			START DATE:	11/18/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/18/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.4'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Fill			Auger to 2' bgs, soils not logged from 0-2'			
2										
	4				Slightly		0-0.8' = Crumbly fine to coarse SAND		Dry	
	7	1.4' / 2.0'	0955		Loose	Brown		SW	Piece of tile in spoon	PID = 84.2
4	7		OFF-SB-402-0204				0.8-1.4' = SILT and SAND, fine to coarse sand	SM		FID = 15.0
	4				Medium		Fine to coarse SAND, trace silt, some gravel		Moist - wet	
	8	0.4' / 2.0'	No sample		Dense	Black		SW	Faint sweet (non-petroleum) odor	PID = 81.0
6	11									
	13									FID = 23.6
	7						Angular GRAVEL, trace fine to coarse sand *		White ceramic fragments (`fine gravel sized)	
	7	0.9' / 2.0'	No sample					GP		PID = 72.8
8	7									
	11									FID = 28.3
	9					Red -	Compressed peat - organic fibers visible, very difficult to pull apart		Organic odor	
	10	0.8' / 2.0'	1015			Brown		PT		PID = 7.5
10	7		OFF-SB-402-0810				0-0.5' = Compressed peat, some organic silt mixed			
	4									FID = 417.2
	2								0.6' slough	
	3	0.8' / 2.0'	No sample		Loose			PT		PID = 23.9
12	3					Dark	0.5-0.8' = Organic silty SAND (fine to medium sand)			
	6					Gray		SM		FID = 157.0
	8				Medium		Silty SAND (fine sand)		Moist - wet	
	14	0.9' / 2.0'	1030		Dense					PID = 6.1
14	7		OFF-SB-402-1214						Slight odor	
	8									FID = 452.3
	7						0-0.4' = Similar to above		Moist	
	9	1.2' / 2.0'	No sample				0.4-0.6' = SAND (fine to coarse sand) and GRAVEL	SW		PID = 11.3
16	8						0.6-1.2' = SILT, some fine sand, trace clay			
	9							ML		FID = 17.0

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 6'		
OTHER OBSERVATIONS:	* = Predominant material from 6-8' was gravel; > 1" in diameter, so sample was collected from the next interval instead.	BORING NO.: SB-402	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-402
PROJECT NO.:	4152-0552			START DATE:	11/18/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/18/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.4'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	8				Very		Sandy SILT (fine sand, some gravel, oxidized, very dense -		Moist	
	10	0.9' / 2.0'	1100		Dense	Dark	possible till	ML		PID = 1.6
	35		OFF-SB-402-1618			Brown			Till	
18	30									FID = 17.9
	11						0.0-0.4' = Sandy SILT (fine sand) some oxidation spots		Moist	
	19	0.6' / 2.0'	1120			Black	0.4-0.6' = Silty fine to coarse SAND, some gravel			PID = 0.0
	17		OFF-SB-402-1820							
20	17			EOB						FID = 0.0
				20'			Boring stopped as per work plan - bedrock not encountered			

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-402	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-403
PROJECT NO.:	4152-0552	START DATE:	11/24/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY: MES	COMPLETION: DATE: 11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.4' (MLW)	ELEVATION FROM:	CHECKED BY: JD

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
				Fill			Auger to 2' bgs – no sample collected			
2										
	5				Medium		0-0.6' = SILT, some fine sand, trace angular gravel		Moist	
	10	1.5 / 2	1600 (11/24/03) OFF-SB-403-0204		Dense	Brown		ML	(Angular gravel)	PID = 188
4	8 / 10					Dark brown Orange brown	0.6-0.9 = similar to above, some black staining 0.9-1.5 = SILT, some fine sand, some gravel			FID = 0.0
	6					Gray-orange	0-0.4' = SILT, some angular gravel		Wet	
	10	1.2 / 2	No sample			Red-black	0.4-0.7' = Friable fill material – SLAG?	Fill	(Mottled)	PID = 101
6	14 / 16					-- Red-black	0.7-0.8 = GLASS layer 0.8-1.2' = SLAG (gravel - fine sand (?))			FID = 79.1
	6						Fine to coarse SAND, some silt, some gravel, trace glass → oil - saturated soils, ceramic		Wet	
	7	0.8 / 2	1615 (11/24/03) OFF-SB-403-0608			Black		SW	Petroleum odor	PID = 215
8	8 / 9						Similar to above		Sheen on water in split spoon	FID = 540.0
	4								Wet	
	7	0.6 / 2	No sample							PID = 34.3
10	5 / 2									FID = 170.1
	7					Dark	Fine SAND, trace shell fragments		Wet	
	8	1.0 / 2	1630 (11/24/03) OFF-SB-403-1012			Gray		SP		
12	4 / 3									
	2				Very		No recovery (slough)	--		
	1	0.0 / 2	No sample		Loose	--				PID = 35.6
14	2 / 9									FID = 158
	4				Medium	Dark	0-0.4' = Fine SAND, trace shell fragments			
	8	0.6 / 2	1645 (11/24/03) OFF-SB-403-1416		Dense	Gray		SP		PID = 14.0
16	8 / 8						0.4-0.6' = Sandy (fine sand) SILT	ML		FID = 24.3

TYPE OF DRILLING RIG:	CME 75
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon driven by 300 lb. hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-403
PROJECT NO.:	4152-0552			START DATE:	11/24/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.4' (MLW)	ELEVATION FROM:		CHECKED BY:	JD

DEPTH (FEET) 16	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	8						Fine sandy SILT, some angular gravel, possible till		Wet	
	9		No sample		Dense	Gray		SM		PID = 1.8
	10									
18	9									FID = 0.0
	7						Fine sandy SILT, some gravel, trace coarse sand, possible till		Wet	
	12		0735 (11/25/03)							PID = 0.0
	14		OFF-SB-403-1820							
20	14			EOB						FID = 7.3
				20'						

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven by 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-403	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-404
PROJECT NO.:	4152-0552	START DATE:	11/25/03
LOGGED BY:	J. LAMBERT	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.9'	CHECKED BY:	JD

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD 1929 (MLW)

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Fill			Auger from 0-2' bgs, soils not logged			
2										
	6				Medium		Fine to coarse SAND, some silt, trace rounded gravel, mixed		Moist	
	11	0.6' / 2.0'	1135		Dense	Brown	glass, brick and charcoal fragments	SW		PID = 0.0
	4		OFF-SB-404-0204						Cobble in nose of spoon	
4	23									FID = 13.5
	45						Cobble fragments, angular pieces		Wet	
	13	0.5' / 2.0'	No sample					COBBLE		PID = 9.8
	10									
6	6									FID = 22.4
	2						Silty fine to coarse SAND, some gravel, some glass →		Petroleum odor	
	4	0.8' / 2.0'	1155		Loose	Black	petroleum saturated	SW		PID = 77.0
	4		OFF-SB-404-0608						(Wet)	
8	10									FID = 187.1
	4				Medium		Fine to coarse SAND, some gravel, some silt, petroleum		Oil sheen on water in	
	9	1.0' / 2.0'	No sample		Dense		saturated soils		spoon	PID = 19.8
	5									
10	6									FID = 21.3
	4						Fine to coarse SAND, some gravel, some silt, some glass -		Wet	
	6	0.6' / 2.0'	1220				petroleum saturated			
	6		OFF-SB-404-1012						Odor (petroleum)	
12	4									
	13									
	7	0.4' / 2.0'	No sample				Fine to medium sandy SILT, trace angular gravel	SM		PID = 50.0
	7									
14	11									FID = 258.4
	7		* Not enough volume to				GRAVEL, some silty fine sand			
	7	0.3' / 2.0'	sample will collect next					GP		PID = 14.1
	7		interval							
16	24									FID = 60.2

TYPE OF DRILLING RIG:	CME 75
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon driven with a 300 lb. hammer (18")
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-404
PROJECT NO.:	4152-0552			START DATE:	11/25/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.9'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	13		MS/MSD		Medium		Fine to medium SAND, trace gravel, trace silt		Wet	
	15	1.1' / 2.0'	1305		Dense	Dark		SP		PID = 7.3
	14		OFF-SB-404-1618			Gray				
18	8		GRAIN SIZE							FID = 15.3
	3					Dark	0-0.7' = SILT, some fine to medium sand, trace gravel		Wet	
	6	1.2' / 2.0'	1320			Gray		SM		PID = 1.7
	11		OFF-SB-404-1820			Light	0.7-1.2' = Similar material to above, color change only			
20	8			20'		Brown				FID = 15.3
				EOB						

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven 18" with 300 lb. hammer		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-404	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-405
PROJECT NO.:	4152-0552	START DATE:	11/18/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY: MES	COMPLETION: DATE: 11/18/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN		MON. WELL NO.: --
GRD. SURFACE ELEVATION:	7.0' (MLW)	ELEVATION FROM:	CHECKED BY: JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Fill			Auger to 2' – no samples collected from 0-2'			
2										
	19				Medium	Light	Fine to coarse SAND and GRAVEL		Dry	
	15	1.0' / 2'	1320		Dense	Brown		SW	Brick fragments at 4'	PID = 0.0
4	15		OFF-SB-405-0204							
	17									FID = 0.0
	20						Spoon blocked by cobble			
	21	0.1' / 2'	No sample		Dense					PID = 0.0
6	20									
	10									FID = 0.0
	3		1340		Medium		Fine to coarse SAND, some gravel mixed with brick fragments throughout		Moist	
	10	1.0' / 2'	MS/MSD		Dense	Brown		SW	Piece of copper wire in sample	PID = 0.0
8	6		OFF-SB-405-0608							
	5									FID = 0.0
	6						Gravelly SILT, angular brick fragments throughout		Moist	
	6	0.5' / 2'	No sample					ML		PID = 0.0
10	5									
	6									FID = 0.0
	10		1410 =				0-0.4' = Similar to above		Saturated	
	7	1.0' / 2'	OFF-SB-405-1012				0.4-1.0' = Fine to coarse SAND and SILT, some gravel (very	SM		PID = 0.0
12	5		1415 =				Dense-potential till)			
	11		OFF-SB-DUP02							FID = 0.0
	19				Very		0-0.5' = Gravelly fine to coarse SAND, gravel = angular →			
	24	0.9' / 1.5'	No sample		Dense		subangular	SW		PID = 0.0
14	120/4"					Red-	0.5-0.9' = Similar to above but more consolidated - saprolite or till			
						Brown				FID = 0.0
	17						Silty gravelly SAND (fine to coarse sand), angular gravel - (till)		Auger refusal at 16' very hard at 15', will try a split spoon	
	53	1.0' / 1.5'	1430							PID = 0.0
16	120/5"		OFF-SB-405-1416							
										FID = 0.0

TYPE OF DRILLING RIG:	CME – Track mounted
METHOD OF ADVANCING BORING:	Hollow stem augers
METHOD OF SOIL SAMPLING:	3" Split spoons driven with 300 lb. hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	~ 10' bgs
OTHER OBSERVATIONS:	

BORING NO.: SB-405

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-405
PROJECT NO.:	4152-0552			START DATE:	11/18/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/18/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	7.0' (MLW)	ELEVATION FROM:		CHECKED BY:	JD

DEPTH (FEET) 16'	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
	120/4"	0.0 / 2.0	No sample		Very Dense		Split spoon refusal; steady grind on augers (auger refusal) – believed to be at or close to bedrock			
18				18'						
				EOB						

TYPE OF DRILLING RIG:	CME – 75
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" Split spoons driven with 300 lb. hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	~ 10' bgs
OTHER OBSERVATIONS:	

BORING NO.: SB-405

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-406
PROJECT NO.:	4152-0552			START DATE:	12/03/03
LOGGED BY:	J.DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/03/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.4' (MLW)	ELEVATION FROM:		CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	4			Fill	Dense	Brown	Fine silty SAND with roots, topsoil 1.0-0.2'		Dry	
	5	0.8 / 2.0'	1455 OFF-SB-406-0002		Loose		0.2-0.6' = fine to coarse SAND, trace silt	SM		FID = 20.6
2	5						0.6-0.8' = piece of boulder, some rounded gravels			PID = 0.0
	6									
	13				Loose	White	0.0-0.2' = pieces of cobble, concrete?		Dry	
	25	1.0 / 1.2'	No sample		Dense	Olive	0.2-1.2' = SILT with trace sand and sub-angular gravel, pieces of	ML		FID = 0.0
4	60/2"				(Compact)	Gray	Brick and asphalt			PID = 0.9
	20								Dry	
	12	1.1 / 2.0'	No sample							FID = 0.0
6	12									PID = 1.8
	8									
	60/4"					Dark	Silty SAND with some gravel, pieces of cobble / concrete?		Dry	
		0.3 / 0.3'	1530 OFF-SB-406-0608		Loose	Gray		SM		FID = 0.0
8										PID = 3.8
	20					Dark	Piece of concrete (0.3-0.5')		Dry	
	12	1.0 / 2.0'	No sample		Loose	Gray			Wet ~ 9' bgs	FID = 1.3
10	17					Dark	Piece of brick (0.9-1.0')			PID = 3.7
	13					Brown				
	6						Gravelly SILT, trace sand	ML	Wet Soupy	
	7	0.7 / 2.0'	1550 (& grain size) OFF-SB-406-1012							FID = 5.2
12	7									PID = 2.7
	9									
	7						0.0-0.8' = fine to medium SAND, well sorted		Wet	
	8	1.0 / 2.0'	No sample		Dense	Dark		SP		FID = 0.0
14	6					Brown	0.8-1.0' = SILT with sand			PID = 1.6
	12							ML		
	6					Dark	SILT, trace rounded gravels and sand		Wet	
	8	1.4 / 2.0'	1610 (Dup 1615) OFF-SB-406-1416		Dense	Gray		ML		FID = 0.8
16	7									PID = 3.5
	5									

TYPE OF DRILLING RIG:	Track mounted – CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon – 2' long - 300 lb. hammer – 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 9' bgs		
OTHER OBSERVATIONS:		BORING NO.: SB-406	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-406
PROJECT NO.:	4152-0552			START DATE:	12/03/03
LOGGED BY:	J.DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/03/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.4' (MLW)	ELEVATION FROM:		CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
16										
	9					Dark	0.0-0.7' = silty GRAVEL with sand, till		Wet	
	22	1.3 / 2.0'	No sample		Dense	Gray		GM		FID = 0.0
	56						0.7-1.3' = silty GRAVEL, trace sand, till		Soupy	
18	51				Dense	Brown		GM		PID = 3.7
	21						Silty sandy GRAVEL, till		Wet	
	20	0.9 / 1.0'	1625		Dense	Brown		GM		FID = 0.0
	60/1"		OFF-SB-406-1820				19.5' auger refusal			
20							Pieces of rock (phyllite) in nose?			PID = 2.6
		No Recovery / No' Penetration	No sample				EOB @ 19.5' bgs			
	60/0"									
22										
24										

TYPE OF DRILLING RIG:	Track mounted – CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon – 2' long - 300 lb. hammer – 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 9' bgs		
OTHER OBSERVATIONS:		BORING NO.: SB-406	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-407
PROJECT NO.:	4152-0552	START DATE:	12/01/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY: MES	COMPLETION: DATE: 12/01/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	12.9' (MLW)	ELEVATION FROM:	CHECKED BY: DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
0	29	1.6' / 2.0'	1020 Dup 1030 OFF-SB-407-0002	Fill	Topsoil Dense	Brown	Topsoil with roots 0-6'		Dry	FID = 0.0
2	42				Loose		SAND and GRAVEL with pieces of brick, fill	SW/ GW		PID = 0.0
4	6 / 10	1.3' / 2.0'	1040 MS/MSD OFF-SB-407-0204						Dry	FID = 0.0
	10 / 12				Dense	Dark Brown	Sandy and gravelly SILT	ML		PID = 0.0
6	16 / 17	1.5' / 2.0'	No sample				Large pieces of concrete 0.5' long, pieces of brick and asphalt		Dry	FID = 0.0
	13 / 16									PID = 0.0
8	5 / 6	0.6' / 2.0'	No sample	Natural Materials		Light Brown	Pieces of cobble at nose of spoon Sandy SILT – trace gravel	ML	Dry	FID = 0.0
	9 / 13									PID = 0.0
10	10 / 16	1.0' / 2.0'	1103 OFF-SB-407-0810		Loose	White/ Pink	Broken up cobble – 0.5' long		Dry	FID = 0.0
	16 / 19					Dark Brown	Silty SAND and GRAVEL	SW/ GM		PID = 0.0
12	5 / 5	0.9' / 2.0'	No sample		Loose	Brown	Fine to medium SAND, trace silt and gravel	SM	Wet	FID = 0.0
	11 / 17				Dense	Dark Brown	Sandy silt with layers of brown peat and roots	ML		PID = 0.0
14	20 / 11	0.9' / 2.0'	1120 OFF-SB-407-1214		Loose	Olive Gray	Silty SAND with gravel, soupy, saturated with oil	SM	Wet Sheen noted	FID = 29.2
	17 / 9									PID = 19.1
16	13 / 11	2.0' / 2.0'	No sample		Dense	Olive Gray	Soupy, saturated with oil, SILT with sand and gravel	ML	Wet Sheen noted	FID = 1.1
	7 / 8					Brown	0.5' – fine silty SAND	SM		PID = 0.1

TYPE OF DRILLING RIG:	Track mounted CME
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon – 2' length, 18" drop with 300 lb. hammer
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	~ 10' bgs (from top of mound)
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-407
PROJECT NO.:	4152-0552			START DATE:	12/01/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/01/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	12.9' (MLW)	ELEVATION FROM:		CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	38	1.0' / 2.0'	1140 (grain size Collected) OFF-SB-407-1618		Loose	Dark Gray	Soupy, broken rock, weathered, phyllite?		Wet – sheen, saturated with oil, weathered rock	PID = 4.1
	23									
18	33				Dense	Olive Gray	0.5' long - mixture, SILT with sand and gravel - till?	ML		FID = 4.7
	20									
	4	0.9' / 2.0'	No sample		Dense	Olive Gray	SILT with sand and gravel - till?	ML	Orange staining Wet	PID = 3.8
	5									
20	5					Gray	Pieces of weathered rx - orange staining			FID = 6.9
	6									
	11	1.4' / 2.0'	1215 Dup			Gray	Piece of wire-copper (most likely slough from above) SILT with gravel and trace sand		Wet	PID = 2.1
	5									
22	5		1220 OFF-SB-407-2022				Orange staining - rx- phyllite?			FID = 4.8
	9									
	47	0.7' / 1.5'	No sample						Wet	PID = 0.0
	120/2"									
24							Soupy			FID = 0.0
		0.2' / 1.0'	No sample Weathered rx Low recovery			Gray	Weathered broken rx – phyllite?	Broken rock	Wet	PID = 0.0
	120/2"									
26							EOB @ 24' 2"			FID = 0.6

TYPE OF DRILLING RIG:	Track mounted rig – CME		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon – 2' length, 18" drop with 300 lb. hammer		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 10' bgs (from top of mound)		
OTHER OBSERVATIONS:		BORING NO.: SB-407	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-408
PROJECT NO.:	4152-0552			START DATE:	11/17/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/17/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
0										
				Fill			Hollow stem auger to 2' bgs – no samples collected			
2										
	46				Very		0.0-0.7' = Silty fine SAND, some gravel, piece of geosynthetic liner		Moist	
	30	1.4' / 1.5'	1510		Dense	Dark	at 2'		Possible cobble zone at 3'	PID = 0.0
4	150/5"		OFF-SB-408-0204			Brown	0.7-1.4' = Silty fine SAND			FID = 0.0
	90/5"	0.2' / 2.0'	No sample				Little recovery - mostly slough		Spoon bouncing, possible wood	PID = 0.0
6										FID = 0.0
	150/4"	0.4' / 0.4'	1540			Dark	Silty fine to coarse SAND, trace angular gravel (possible till)		Moist - wet	PID = 1.8
8			OFF-SB-408-0608			Brown				FID = 0.0
	150/4"	0.1' / 0.4'	No sample				No recovery - slough = fine to coarse sand		Wet	
10										
	150/4"	0.0' / 0.4'	No sample						Wet, spoon bouncing again, having difficulty penetrating moist	
12										
	120/4"	0.0' / 0.4'	No sample			Dark	Weathered pieces of rock, possible bedrock, for 12-14' sample, tried using 2" spoon for better recovery - did not help		Auger refusal at 12'	
14						Gray				
				EOB						

TYPE OF DRILLING RIG:	CME 75 – Track mounted		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	4.25" ID Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer and dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-408	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-409
PROJECT NO.:	4152-0552	START DATE:	11/20/03
LOGGED BY:	J. LAMBERT	COMPLETION: DATE:	11/20/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.1'	CHECKED BY:	JD

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD 1929 (MLW)

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0							Auger to 2' – no sample collected from 0-2'			
2										
	19	0.1' / 2.0'	No sample		Very Dense		Cobble in nose - almost no recovery - will collect next sample interval		Moist	
	29									PID = 0.0
	34								PID/FID readings (from slough and fragments)	
4	74									FID = 1.5
	17	1.3' / 2.0'	1330 OFF-SB-409-0406		Medium Dense	Light brown Black	0-0.6' = sandy SILT, trace gravel 0.6-1.3' = sandy SILT, some gravel, heavy petroleum staining,	ML	Moist Sampled only petroleum stained soils (0.6-1.3')	
	13									PID = 130
	14		1340 OFF-SB-DUP05				Trace free oil at top of this layer			
6	11									FID = 70.0
	14	1.4' / 2.0'	1345 OFF-SB-409-0608		Dense	Light Brown	0-0.4' = similar to above 0.4-1.0' = sandy, gravelly SILT		Wet	
	26									PID = 193
	24						(angular gravel) 1.0-1.4' = silty GRAVEL (angular)	GM		
8	38									FID = 240.7
	12	1.2' / 2.0'	No sample				Silty angular GRAVEL, some fine to coarse sand		Wet Sheen on water in spoon	
	22									PID = 62.0
	27									
10	34									FID = 23.2
	20	1.3' / 2.0'	1400 OFF-SB-409-1012		Very Dense		0.0-0.3' = material similar to above		Wet Slight petroleum Odor	
	41									PID = 44.0
	32			Native Material (Bedrock)			0.3-1.3' = silty GRAVEL, trace medium to coarse sand, conglomerate fragments - possible bedrock			
12	120/3"									FID = 24.0
	120/5"	0.1' / 0.5'	No sample				Material = slough, sand and gravel (pulverized)		Sheen on water Slight petroleum Odor	
										PID = 69.0
14							Steady auger grind last 4' of drillings (12-16' bgs) based on slough, material is most likely a soft conglomerate or bedrock			
	55	0.1' / 1.0'	No sample							FID = 26.5
	120/3"									PID = 37.0
16				16' EOB						FID = 8.9

TYPE OF DRILLING RIG:	CME 75
METHOD OF ADVANCING BORING:	Hollow stem auger – 4.25" ID
METHOD OF SOIL SAMPLING:	3" split spoons driven with a 300 lb. hammer dropped from 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	No manmade materials in column - depth bottom of fill estimated → must be above probable fill / weathered Bedrock (12') stained soils to ~ 7' bgs

Tetra Tech NUS, Inc.

BORING NO.: SB-409

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-410
PROJECT NO.:	4152-0552	START DATE:	11/20/03
LOGGED BY:	J. LAMBERT	COMPLETION: DATE:	11/21/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.4'	CHECKED BY:	DH
TRANSCRIBED BY:	MES		
ELEVATION FROM:	NGVD 1929 (MLW)		

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Fill			Hollow stem auger to 2' - no sample collected		Dry	
2										
	10					Light	Fine to coarse SAND, trace gravel (angular - rounded)		Dry	
	20	1.0 / 2	1540 (11/20/03)		Dense	Brown		SW		PID = 0.0
	11		OFF-SB-410-0204				0.0-0.2' = Stained material, similar to above			
4	14						0.2-0.4' = Dry friable manmade material - no reaction to acid			FID = 1.5
	7				Medium	Red			Petroleum odor	
	8	0.8 / 2	No sample		Dense	Tan		Fill	Moist	PID = 127
	10			Oil -			0.4-0.8' = Stained, gravelly SILT, some sand			
6	5			Impacted		Black		ML		FID = 122.5
	8			Soil			Similar to above - very strong petroleum odor, free product		Wet	
	2	1.2 / 4	1600 (11/20/03)		Loose					PID = 52.0
	3		OFF-SB-410-0608							
8	3									FID = 1438
	2						Slough material to above, sheen on water in spoon		Wet	
	2	0 / 4.2	No sample			Black				PID = 88.7
	2									
10	2									FID = 107.6
	3		MS/MSD				0.0-0.4' = same as above		Wet	
	6	1.1 / 4.2	1615 (11/20/03)		Medium Dense		0.4-1.0' = fine to coarse SAND, trace gravel (angular - subangular)	SW		PID = 60.0
	8		OFF-SB-410-1012				1.0-1.1' = coarse SAND			
12	10							SP		FID = 61.6
	9					Dark	Fine to coarse SAND and SILT, trace fine gravel		Very slight odor	
	13	1.7 / 4.2	No sample			Gray		SM		PID = 5.3
	13									
14	18									FID = 0.0
	5								Petroleum odor slight	
	10	1.1 / 2.0	0725 (11/21/03)						sheen on wash water	
	11		OFF-SB-410-1416				Fine silty SAND, trace coarse sand, trace fine gravel (rounded)			
16	12									

TYPE OF DRILLING RIG:	CME – 75
METHOD OF ADVANCING BORING:	Hollow stem auger 4.25"
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-410
PROJECT NO.:	4152-0552			START DATE:	11/20/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/21/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.4'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	5				Medium		Silty fine SAND, trace coarse sand, trace fine gravel (rounded)		Wet	
	5	1.2 / 2	No sample		Dense	Dark		SM		PID = 4.5
	8					Gray				
18	8									FID = 4.0
	5						Similar to above			
	12	1.2 / 2	0750							PID = 0.0
	17		OFF-SB-410-1820							
20	31			20'						FID = 3.2
				EOB						

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger 4.25" ID		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-410	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-411
PROJECT NO.:	4152-0552			START DATE:	11/24/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	31.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
			No sample							
2			No split spoon auger to 2' bgs							
	7			Fill			0-0.6' = Topsoil with grass and roots	GW/	2-4' used 140 lb Hammer	
	9	1.4 / 2.0'	1440			Brown	0.6-2.0' = SAND and GRAVEL	SW	Dry	FID = 0.0
4	8 / 12		OFF-SB-411-0204			Brown	- Fill -			
	10 / 16	1.5 / 2.0'	No sample			Dark Brown	SAND and GRAVEL – some silt Pieces of asphalt	GW/ SW	Dry	FID = 0.0
6	19 / 35						- Fill -			
	18 / 130/5"	0.5 / 1.0'	1520 OFF-SB-411-0608		Dense	Gray	Silty sand with gravel Pieces of brick	SM	Moist	FID = 72.8
8							- Fill -			
	8 / 12	0.4 / 2.0'	No sample						Moist	FID = 94.1
10	22 / 45						Large piece of gravel 0.2'- diameter at base of split spoon			
	30 / 15	1.1 / 2.0'	1535		Dense	Gray	SAND and GRAVEL with silt	GW/ SW	Moist	FID = 0.0
12	10 / 9		OFF-SB-411-1012				0.2- Piece of gravel - boulder? Concrete? 11.5-11.7 – Fill			
	13 / 11	1.4 / 2.0'	No sample		Dense	Gray/ Black	Silty SAND and GRAVEL – pieces of brick, pieces of asphalt	GW/ SW		FID = 574
14	11 / 14						13.9-14.1 – Piece of asphalt, fill			
	12 / 11	1.3 / 2.0'	1600		Dense	Gray/ Black	Sandy SILT with pieces of asphalt, piece of green plate, rock phyllite? Compact, fill	ML	Moist	FID = 201
16	10 / 100		OFF-SB-411-1416							FID = 0.0

TYPE OF DRILLING RIG:	Track mounted CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger – 140 lb hammer		
METHOD OF SOIL SAMPLING:	3" split spoon S.S. – 2' long		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not clear		
OTHER OBSERVATIONS:	Uuse140 lb. hammer w/ 30" stroke – missing pin for 300 lb hammer, BZ = 0.0 ppm, in hole at ~ 16' stem from hole Reading 1500 ppm - down to 0.0 ppm	BORING NO.: SB-411	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-411
PROJECT NO.:	4152-0552			START DATE:	11/24/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	31.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 16'	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	130 FOR 6"	0.2 / 0.5'	NO SAMPLE		Dense	Gray	Sandy SILT, piece of boulder at base of split spoon	ML	Moist	FID = 489 PPM
18							Fill			
	130 FOR 4"	NO RECOVERY / 0.33'	NO SAMPLE				No recovery (18-20')			--
20										
	39 42	1.1 / 1.8'	1650	Fill		Gray	Sandy SILT with asphalt fill	ML	Moist	FID = 0.0 PPM
22	39 130 /4"		OFF-SB-411-2022	Natural Materials		Brown	21.5 – SAND and GRAVEL (rounded)	GW/ SP	Dry	
	130/5"	0.4 / 0.4'	0735 OFF-SB-411-2224		Loose		Fine to medium SAND with gravel, pieces of boulder/cobble (rounded edges)	SP	Dry	FID = 0.0 PPM
24	27					Olive Gray				
	130/4"	0.3 / 0.3'	NO SAMPLE		Loose			SP	Dry	FID = 0.0 PPM
26	120/2"									
		0.1 / 0.16'	0830 OFF-SB-411-2628		Dense/ Compact	Dark Gray	Silty SAND with gravel (rounded)	SM		
28	130/2"				Loose	Light Gray	Fine to medium SAND with gravel - rx? Concrete? Pulverized rx?			
		0.1 / 0.16'	NO SAMPLE			Light Gray	Wet mixture of powder with pieces of rock		Auger refusal @ 27.5' – send split spoon down	
							EOB @ 27'8" / top of rx ~ 27'6"?			
									Only drives down and then 2" and 0.1' recovered	

TYPE OF DRILLING RIG:	TRACK MOUNTED – CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	HOLLOW STEM AUGER – 140 LB. HAMMER		
METHOD OF SOIL SAMPLING:	3" SPLIT SPOON, 2' LONG		
METHOD OF ROCK CORING:	NA		
GROUNDWATER LEVELS:	NOT CLEAR		
OTHER OBSERVATIONS:	USE 140 LB. HAMMER W/ 30" STROKE – MISSING PIN FOR 300 LB. HAMMER	BORING NO.: SB-411	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-412
PROJECT NO.:	4152-0552			START DATE:	11/25/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	24.5'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
			No sample							
2			No split spoon Auger to 2' bgs							
	10						Silty SAND with roots		Moist	FID = 25
	56	0.55 / 2.0	1050		Dense	Brown	Topsoil	SM		PID = 123
4	65 90		OFF-SB-412-0204 1055 Dup	Topsoil						
	12					Dark	Fill, SAND and GRAVEL with boulder piece (0.5' in length) Pieces	SW/	Dry	FID = 7.2
	31	1.5 / 2.0	No sample	Fill	Loose	Brown	of red brick	GW		PID = 0.0
6	36 48					Red Brick				
	31		1120							FID = 33
	130/5.5"	1.5 / 1.5	OFF-SB-412-0608							PID = 51.6
8							Smaller pieces of boulder	SW/ GW		
	13					Olive	SAND with gravel - fill - pieces of brick		Dry	FID = 8.3
	13	1.3 / 2.0	No sample		Loose	Gray		SW		PID = 0.0
10	16 6				Dense	Light gray Dark gray	Boulder (0.2' long) SILT with sand, shell, asphalt and brick	ML		
	5						Silty SAND and gravel, fill	SW/	Moist	FID = 8.8
	7	1.2 / 2.0	1145					GW		PID = 19.7
12	7 8		OFF-SB-412-1012				Pieces of asphalt and brick, orange staining			
	4						Sandy SILT with gravel, pieces of boulders, brick, asphalt and		Moist	FID = 103.3
	7	1.2 / 2.0	No sample	Fill			wood chips	ML		PID =38.9
14	12 37									
	30			Natural		Olive	Fine to medium SAND with gravel, trace silt, pieces of boulder -		Dry	FID = 137.0
	130/3"	0.2 / 0.25	1230	Material	Loose	Gray	dark gray platey rock	SP		PID = 50.3
16			OFF-SB-412-1416							

TYPE OF DRILLING RIG:	Track rig CME		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon – 2' in length – 300 lb. hammer – 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not clear		
OTHER OBSERVATIONS:		BORING NO.: SB-412	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-412
PROJECT NO.:	4152-0552			START DATE:	11/25/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	24.5'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	33						Pieces of boulder - rounded		Dry	PID = 63
	133/3"	0.2 / 0.5	No sample		Loose	Gray	*Traces of fine SAND*	SW		FID = 132.6
18										
	130/4"	No Recovery / 0.30	No sample				No recovery			
20										
	130/3"	No Recovery / 0.25	No sample				No recovery			
22										
							Auger refused at 20' bgs, stop augering - can't go any further - may come back with drive and wash			
							EOB @ 20.25' BGS			

TYPE OF DRILLING RIG:	Track mounted rig – CME		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 2' long, 300 lb hammer, 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not clear		
OTHER OBSERVATIONS:		BORING NO.: SB-412	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-413A
PROJECT NO.:	4152-0552			START DATE:	12/02/03
LOGGED BY:	J. DANIELI / J.LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/02/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.6'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
							Auger to 2' bgs, no samples collected			
2	3									
	5		1255			Light	0-0.4' – Fine to coarse SAND, some gravel, trace silt, some brick			
	60/3"	1.3' / 1.5'	OFF-SB-413-0204			Brown		SW		FID = 0.8
4						Black Light brown	0.4-0.7 – Staining, possible burn zone, similar to above 0.7-1.0' = fine to coarse SAND, some gravel and silt			PID = 0.0
	60/1"	No Recovery	No sample						Auger refusal @ 5' will try re-spoon and get material in nose	FID = 0.2
6							No recovery - slough			PID = 0.0
	60/0"	No Recovery	No sample						EOB 1st attempt = 5' bgs	
8							Pieces of rx? boulder? In nose - move 2' north for 2nd attempt			
	60/1"									
6										
		0.1' / 0.1'	No sample				2nd attempt - refused @ ~ 5' with auger again take spoon		Dry	FID = 1.5
8							SAND with gravel - pieces of boulder/rx?	SW		PID = 0.0
			No sample				EOB – 2nd attempt @ ~ 5' bgs			
6			↓				3rd attempt - moved additional 3' north Refused @ 4' – auger refusal - send spoon down hole, no			
	60/1"	No Recovery	↓				Recovery, slough - piece of rx in nose? May be concrete, may need to return with drive and wash			
8							3rd attempt – EOB – 4' bgs			

TYPE OF DRILLING RIG:	Track mounted CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon – 2' length, 300 lb. hammer with 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not evident		
OTHER OBSERVATIONS:		BORING NO.: SB-413	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-413B
PROJECT NO.:	4152-0552			START DATE:	12/04/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/04/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.6'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
			No sample				Auger to 4' bgs, no sample			
2										
										FID = 7.1
4										PID = 0.0
	70/1"	0.1 / 0.1'	No sample						Moist	
6					Dense	Brown	In nose - SILT with sand (0-0.1')	ML		
	70/0"	No Recovery	No sample				Auger refusal 5.5' bgs No recovery - pieces of broken rock			
8		No Penetration					Switch over to drive and wash, will roller bit in 3' the take spoon			
8.5	65/1"	0.1 / 0.1'	No sample				Roller bit down 3' for total depth of 8.5' bgs Send spoon down → roller bit steady pieces of rx in wash water			
9.5										
						Gray	Pulverized rx			
							EOB @ 8.5' BGS			

TYPE OF DRILLING RIG:	Track mounted CME		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger and drive and wash		
METHOD OF SOIL SAMPLING:	3" split spoon –300 lb. hammer with 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not evident		
OTHER OBSERVATIONS:		BORING NO.: SB-413B	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-414
PROJECT NO.:	4152-0552			START DATE:	12/02/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/02/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL AND JIMMY			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.7'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
			No sample				Auger to 2' – no spoon			
2										
	5	1.4' / 2.0'	0840 (& Grain size)		Dense	Brown	Silty SAND with gravels	SM	Dry	PID = 0.0
4	7 / 5 / 8		OFF-SB-414-0204							FID = 0.0
	8	0.7' / 2.0'	No sample		Loose	Brown	SAND with silt and gravels	SW	Dry	PID = 0.0
6	6 / 8 / 7									FID = 0.0
	5	0.5' / 2.0'	0855						Dry	PID = 0.0
8	9 / 18 / 20		OFF-SB-414-0608							FID = 0.0
	14	0.7' / 2.0'	No sample		Loose	Gray	Soupy – SILT with broken rx? Boulder (large pieces)	ML	Wet	PID = 0.0
10	40 / 60/2"						Sheen noted			FID = 5.0
	15	0.5' / 0.7'	0910			Dark Gray		ML	Wet	PID = 0.0
12	60/2"		OFF-SB-414-1012							FID = 2.0
	55	0.5' / 0.16'	No sample				Orange staining		Wet	PID = 0.1
14	60/2"						Weathered rx?	ML		FID = 3.5
	60/1"	0.5' / 0.8'	No sample		Loose	Dark	13.5' = Refusal, auger, send spoon down hole		Wet	PID = 0.0
16						Gray	Pulverized rx EOB @ 13.7'	Brkn Rock		FID = 1.0

TYPE OF DRILLING RIG:	Track mounted CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 8' bgs		
OTHER OBSERVATIONS:		BORING NO.: SB-414	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-415
PROJECT NO.:	4152-0552	START DATE:	11/18/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY: MES	COMPLETION: DATE: 11/19/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	13.3'	ELEVATION FROM: NGVD 1929	CHECKED BY: DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	2	1.5 / 2.0'	1530 (11/18)	Fill	Medium	Dark	0-0.7' organic sandy SILT (fine sand)		Asphalt, brick, concrete fragments in sample	
	5		OFF-SB-415-0002		Dense	Brown		OL		PID = 0.0
	7		1535 (11/18)				0.7-1.5 – silty fine to coarse SAND			
2	14		OFF-SB-415-DUP03					SM		FID = 0.0
	4	0 / 2.0'	No sample				No recovery - will retrieve sample from 2ND borehole			
	6									
	8									
4	15									
	11	1.4 / 2.0'	No sample		Dense	Black	0-0.2' – Asphalt (prob. Reason for poor recovery)	--	Moist	
	13					Brown	0.2-0.6' – Fine to coarse SAND and GRAVEL	SW		PID = 0.0
	22					Red	0.6-0.8' – Brick	--		
6	20					Brown	0.8-1.4' – Fine to coarse SAND and GRAVEL	SW		FID = 0.0
	14	1.2 / 2.0'	1550 (11/18)		Medium		Silty fine to coarse SAND, some angular gravel, some orange molting from oxidation		Moist	
	15		OFF-SB-415-0608					SM		PID = 0.0
	10				Dense					
8	15									FID = 0.0
	19	0.2 / 2.0'	No sample				Minimal recovery - slough			
	13									
	8									
10	11									
	8	0.8 / 2.0'	1600 (11/18)		Very		Cobble at 10' (likely reason for 8-10' poor recovery) fine to coarse SAND and GRAVEL		Wet	
	20		OFF-SB-415-1012		Dense					PID = 0.0
	120/4"		Grain size							
12								SW		FID = 0.0
				EOB			EOB @ 12' bgs – both auger and split spoon refusal, no indications of fill or contamination			
2										
	10	1.0 / 2.0'	0825 (11/19)		Very	Light	0-0.5' concrete fragments	--	Concrete layer not sampled (only sampled soil)	
	26		OFF-SB-415-0204 *			Gray				
	36				Dense	Dark	0.5-1.0' – fine to coarse SAND, some gravel, trace silt			
4	20					Brown		SW		

TYPE OF DRILLING RIG:	CME 75
METHOD OF ADVANCING BORING:	Hollow stem aguer
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	* Second boring advanced for 2-4' recovery and sample only

BORING NO.: SB-415

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-416
PROJECT NO.:	4152-0552			START DATE:	11/19/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/19/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.5'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	5		MS/MSD		Medium	Dark	0.0-0.4' = Grass and roots		PID/FID = 0.0 on sample	
	10	1.8 / 2.0'	0850	Fill	Dense	Brown	0.4-1.8' = silty fine to coarse sand, some coarse rounded gravel	SM	Damp	PID = 0.6
	15		OFF-SB-416-0002							
2	15									FID = 0.0
	6				Very	Brown	0-0.2 = silty fine to coarse sand, some gravel		Damp	
	9	1.1 / 2.0'	No sample		Dense	Red	0.2-0.6 = brick fragments	--		PID = 0.9
	70					White	0.6-0.8 = concrete			
4	34					Brown	0.8-1.1 = silty fine sand, trace gravel	--		FID = 0.0
	7				Medium	Light	Fine to coarse sand, some gravel		Damp	
	11	0.8 / 2.0'	0910		Dense	Brown	(angular to subrounded)	SW	Small pieces of slag and concrete	PID = 0.0
	8		OFF-SB-416-0406							
6	6									FID = 0.0
	6						0.0-0.7 = sandy silt (fine to medium sand)		0.3' – non-native gravel	
	8	1.2 / 2.0'	No sample					ML		PID = 0.0
	9						0.7-0.9' = Possible burn zone (slag and charcoal)	--		
8	9					Black	0.9-1.2' = Silty fine to coarse sand, some gravel	SM		FID = 0.0
	10					Light	0.0-0.2' = Fine to coarse sand, brick particles, slag, ash, some silt		Wet	
	14	1.1 / 2.0'	0925			Brown		SW	PID = 72.7 at ~ 0.6' in the sample, saturated at bottom	PID = 1.3
	11		OFF-SB-416-0810			Olive /	0.2-1.1' = Densely packed fine SAND, generally olive colored,			
10	8					Red	orange - red mottled oxidation	SP		FID = 0.0
	4					Light	Silt, some rounded gravel, trace clay (gravel rounded -		PID = 1.0 ppm at 10.5' in the sample	
	9	1.5 / 2.0'	No sample			Brown	subrounded), mottled blue gray spots	ML		PID = 0.8
	17									
12	14									FID = 0.0
	14				Very				Wet	
	40	1.7 / 2.0'	0940		Dense					PID = 1.8
	41		OFF-SB-416-1214				Gravelly silt, some fine to coarse sand, gravel is angular to			
14	42						subrounded			FID = 0.5
	6						0.0-0.8' = gravelly, sandy silt (sand – medium to coarse sand, trace		Wet	
	12	1.2 / 2.0'	No sample		Dense		fine sand) - very dense (potential Till)			PID = 0.9
	27									
16	32					Red				FID = 0.0

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with a 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	* - 0.8-1.2' = similar to above, less silt	BORING NO.: SB-416	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-416
PROJECT NO.:	4152-0552			START DATE:	11/19/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/19/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.5'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	37	1.3 / 2.0'	1020 OFF-SB-416-1618	Till	Very Dense	Light Brown	0-0.6' – light brown, gravelly silt, some medium to coarse sand (potential Till)	ML		PID = 1.5
	120									
	120/0"					Red Brown	0.6-1.3' – gravelly sandy silt, possible till (gravel = fine to coarse angular to subangular)			FID = 3.0
18										
	45	1.0 / 1.3'	1042 OFF-SB-416-1820				Partially consolidated gravelly silt, some medium to coarse sand (till)			PID = 0.6
	45									
	120/3"									FID = 11.4
20										
	120/2"	0.0 / 2.0'	No sample				No recovery - cobble in the nose of the spoon - broken face			
22										
				EOB Spoon Refusal						

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer, dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-416	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-417
PROJECT NO.:	4152-0552			START DATE:	11/19/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/19/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.5'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
				Fill			Auger to 2' – no sample collected from 0-2'			
2										
	8				Medium		No recovery			
	11	0.0 / 2.0'	No sample		Dense					
4	7									
	9									
	8						Silty sand (fine to coarse sand)		Moist	
	4	1.3 / 2.0'	1340		Loose	Brown		SM	Wet – bottom 0.5'	PID = 122
	4		OFF-SB-417-0406				Oxidized above 0.5', petroleum staining and odor			
6	5									FID = 10.9
	7		1400		Medium		Oil stained fine to coarse SAND		PID = 10.3 ppm in sample	
	6	1.0 / 2.0'	OFF-SB-417-0608		Dense	Black	0.4' = white gray material surrounding a hard white center -	SW		PID = 7.0
	7		1410				Possibly grout, inorganic or tile, also off-white material, possible grout			
8	5		OFF-SB-DUP04							FID = 0.0
	8						0-0.5' – oil stained material, shell in spoon			
	8	0.9 / 2.0'	No sample			Black				PID = 11.0
	8					Dark	0.5-0.9' – fine sand, some olive green mottling			
10	8					Gray		SP		FID = 0.0
	8						Similar to above, fine sand		Wet	
	7	1.0 / 2.0'	1415							PID = 1.0
	7		OFF-SB-417-1012							
12	8									FID = 0.0
	12						0.0-0.4' = fine sand, trace silt in lower portions		Wet	
	11	0.8 / 2.0'	No sample		Dense					PID = 0.3
	23						0.0-0.8' = dropstone with varves bent around it			
14	21									FID = 0.0
	18								Wet	
	19	1.2 / 2.0'	1430					SM	Cobble at 16'	PID = 0.6
	18		OFF-SB-417-1416				Silty fine sand, some gravel, pockets of heavily oxidized (dark red) material			
16	20									FID = 0.0

TYPE OF DRILLING RIG:	CME 75 – track mounted
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb hammer dropped 18"
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-417
PROJECT NO.:	4152-0552			START DATE:	11/19/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/19/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.5'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 16	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	13					Dark	Gravelly silt, some sand, extremely dense	Till		
	19	1.3 / 2.0'	No sample			Gray	Possibly weathered conglomerate or till, layers and nodules of			PID = 1.0
	22						heavily oxidized material, mottled (light brown, gray and red)			
18	22						0.0-0.4' = similar to above			FID = 0.0
	28									
	78	1.0 / 2.0'	1455							PID = 2.2
	72		OFF-SB-417-1820			Light	0.4-1.0' = compacted gravelly sand, some silt - TILL			
20	82					Brown				FID = 0.0
				EOB						

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with a 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-417	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-418
PROJECT NO.:	4152-0552	START DATE:	12/03/03
LOGGED BY:	J. LAMBERT	COMPLETION: DATE:	12/03/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.0'	CHECKED BY:	DH

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD 1929 (MLW)

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	7			Topsoil			0.0-0.5 = Fine to medium SAND with silt - topsoil		Dry	
	12	1.7 / 2.0'	1120 OFF-SB-418-0002		Loose	Brown				FID = 2.1
	18			Fill			Fine to medium SAND with gravel Intermittent pieces of dense/compact silt, trace brick		Fill	
2	17							SW		PID = 3.2
	12				Loose	White	Piece of cobble 0-0.2'		Dry	
	24	1.1 / 2.0'	No sample		Dense	Brown	SILT with sand and gravel - large piece of asphalt (0.3') long and	ML		FID = 0.0
	30				Compact		Piece of cobble = 0.1'longG			
4	46				Materials					PID = 4.1
	5						Sandy SILT, trace gravel		Dry	
	5	1.2 / 2.0'	1140 OFF-SB-418-0406					ML		FID = 3.9
	6									
6	3									PID = 4.1
	5					Dark	Wood debris		Dry	
	7	1.1 / 2.0'	No sample			Brown				FID = 23.5
	6			Native	Dense	Dark	Silty SAND with gravel layers of silt			
8	6				Compact	Gray	Orange staining; pieces of black goo, piece of cobble (0.1' long)	SM	Moist	PID = 151
	10						SILT with sand and gravel		Wet	
	10	1.1 / 2.0'	1205 OFF-SB-418-0810					ML		FID = 23.5
	12								Saturated with oil Strong oil odor	
10	13									PID = 139
	5					Dark	SILT – trace sand and gravel		Wet	
	5	1.1 / 2.0'	No sample			Gray		ML		FID = 5.2
	7					Olive	Sandy silt with gravels - layers of fine silty sand (brown)		Strong petroleum odor	
12	9					Gray				PID = 38.5
	7						Silty with sand, trace gravel		Wet	
	9	1.1 / 2.0'	1220 OFF-SB-418-1214							FID = 1.8
	9						Orange staining		Saturated in oil Petroleum odor	
14	8									PID = 25.0
	7				Dense	Olive	SILT with sand, trace gravel (rounded)		Wet	
	12	1.1 / 2.0'	No sample		Compact	Gray		ML		FID = 1.7
	12						Interbedded with fine sand brown Orange staining		Petroleum odor	
16	15									PID = 20.8

TYPE OF DRILLING RIG:	Track mounted – CME
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon - 2' long – 300 lb. hammer, 18" drop
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	~ OR = 8' bgs
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-418
PROJECT NO.:	4152-0552			START DATE:	12/03/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/03/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	17	1.1 / 2.0	1310 = Sample		Loose	Dark Brown	Silty SAND with gravel - piece of weathered rx - orange staining - till?	SW/ SM	Wet	FID = 0.0
	21		1315 = Dup13							
	34		OFF-SB-418-1618							PID = 3.6
18	46									
	18	0.9 / 1.1	No sample		Loose	Dark Brown	Sandy GRAVEL, trace silt - abundant pieces of weathered rx - phyllite? Orange staining	GW	Wet	FID = 2.1
	49									
	80/2"									PID = 11.5
20										
	60/0"	No Recovery No Penetration	No sample				No recovery - piece of rx in nose of spoon - phyllite?			FID = NR
22							EOB @ 20' bgs			PID = NR

TYPE OF DRILLING RIG:	Track mounted CME		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon – 2' length – 300 lb. hammer with 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ OR = 8' bgs		
OTHER OBSERVATIONS:		BORING NO.: SB-418	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-419
PROJECT NO.:	4152-0552	START DATE:	11/18/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY: MES	COMPLETION: DATE: 11/18/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.4'	ELEVATION FROM: NGVD 1929 (MLW)	CHECKED BY: DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0				FILL			Auger to 2' – no samples taken from 0-2' BGS			
2										
	7	2.0' / 2.0'	0745 OFF-SB-419-0204		Medium Dense	Gray/ Orange	0-1.0' = Oixidized silty fine to coarse SAND, some gravel	SW	Moist Petroleum odor Brick fragments	PID = 59.9
4	10 17 15					Dark Gray	1.0' – Geotech fabric 1.0-2.0' – Similar to above, slightly stained	-- SW		FID = 44.6
	4 16	1.8' / 2.0'	No sample				Silty fine to coarse SAND	SM	Moist	PID = 277
6	18 18						PID = 128 ppm in sample			FID = 289
	26 46	1.5' / 2.0'	0800 OFF-SB-419-0608		Very Dense		Crumbly silty fine to coarse SAND in sample PID = 310 ppm in sample		Petroleum odor	PID = 294
8	55 85		0810 OFF-SB-DUP01					SW		FID = 174
	10 40	1.2' / 2.0'	No sample				0-0.8' = Crumbly fine to coares SAND, some gravel	SM	Wet Sheen on water in spoon	PID = 23.3
10	25 20						0.8-1.2' = Silty fine to coarse SAND			FID = 34.9
	6 10	1.0' / 2.0'	0820 OFF-SB-419-1012			Red-Gray	0-0.6' = Silty fine to coarse SAND, some clay, trace gravel		Spoon refusal at 11.5' - light petroleum odor	PID = 27.7
12	35 120/5"						0.6-1.0' = Saprolitic rock (more dense)			FID = 20.9
	120/4"			EOB 12.5' Spoon Refusal			Saprolitic rock - possible conglomerate with oxidized coarse sand sized pieces		Petroleum odor	PID = 52.6
14										FID = 40.0

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	4.25" ID hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer and dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	Augers started pulling up water and saturated soils @ 10'.	BORING NO.: SB-419	PAGE: 1 OF 1

Only manmade material to 4' - the rest is most likely native

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-420
PROJECT NO.:	4152-0552			START DATE:	11/21/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/21/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / R. DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
0										
				Fill			Auger to 2' – soils not logged from 0-2' bgs			
2										
	20				Very		Fine to coarse sand, trace gravel (feels loose) fill material, no		No odor	
	28	1.1' / 2.0'	0915		Dense	Light	manmade materials	SW		PID = 2.5
4	48		OFF-SB-420-0204			Brown			Dry	
	43									FID = 4.6
	20				Medium		Cobble in nose, fine to coarse sand, oil - stained		Geosynthetic liner ~ 2' bgs	
	3	0.3' / 2.0'	No sample		Dense	Black				PID = 560
6	12			Oil - Stained Soils					Petroleum odor	
	22									FID = 684.3
	14						Silty fine sand, trace gravel (rounded)		PID = 232 in nose,	
	14	1.0' / 2.0'	0925				FID = 510 ppm in sample	SM	Oil squeezing out of pores	PID = 280
8	15		OFF-SB-420-0608							
	12									FID = 155
	7						Almost no recovery - most likely pushing a cobble, material same			
	9	0.1' / 2.0'	No sample				as above			PID = 249
10	10									
	11									FID = 1298
	6					Light	Gravelly silty, some fine to coarse sand, very dense, till (mottled		Moist, PID = 223 in nose	
	7	1.3' / 2.0'	0945			Blue /	gray, light orange)	Till	FID = 59 in nose	PID = 158
12	8		OFF-SB-420-1012			Gray			Cobble at 11'	
	12									FID = 490
	31				Very	Red/	Rock - weathered, saprolitic, possible shale			
	120	0.9' / 2.0'	No sample		Dense	Gray				PID = 37.3
14	60/1"						(Platy, lightly oxidized)			
										FID = 23.0
	60						Same as above – approaching competent in last 0.2'		Augering smoothly bringing	
	98		1015			Red			up very few cuttings	PID = 63.4
	120/2"		OFF-SB-420-1416							
16				EOB 16'				Rock		FID = 35.3

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-420	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-421
PROJECT NO.:	4152-0552			START DATE:	11/21/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/21/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.8'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
							0-2 Auger – No samples			
2/0							Refusal at 1' possible concrete with rebar - move NE 6'			
			2nd hole	(EOB 2')			Refusal 2nd attempt at 2', most likely building foundation			
2/0										
			3rd hole	(EOB 2') Fill			Auger 0-2' 3rd attempt - no soils logged from 0-2' bgs			
2										
	17	1.2' / 2.0'	1135 OFF-SB-421-0204		Medium Dense	Dark Brown	0.0-0.6' = fine to coarse SAND, some gravel (angular) cobble at 0.3'	SW	Moist	PID = 0.6
4	10 11		1145 OFF-SB-DUP06			Black	0.6-1.2' = burn layer, slag and charcoal	--		FID = 143
	15 21	1.0' / 2.0'	No sample		Dense	Dark Brown	0.0-0.7' = SAND and GRAVEL		Wet	PID = 270
6	13 9			Oil-Saturated		Black	0.7-1.0' = free product, similar material to above			FID = 832.7
	12 11	0.8' / 2.0'	1150 OFF-SB-421-0608		Medium Dense		Free product, some fine to coarse SAND and GRAVEL, appears to be heavy oil (possibly # 4)		Wet	PID = 250
8	5 11									FID = 672.0
	5 9	0.0' / 2.0'	No sample		Dense		Cobble in nose – no recovery (sheen on water in spoon)			PID = 22.4
10	23 32									FID = 232.9
	28 70	0.2' / 2.0'	No sample		Very Dense		SILT, some gravel, trace fine sand		Wet	
12	46 44						Will sample next interval due to poor recovery			

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-421	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-421
PROJECT NO.:	4152-0552			START DATE:	11/21/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/21/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	10.8'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	JD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
12										
	8	0.9' / 2.0'	1235 OFF-SB-421-1214		Medium Dense	Dark Gray	Sandy (fine sand) SILT, trace fine gravel (sub-rounded to rounded)	ML	Little petroleum odor	PID = 8.8
	10									
	15									
14	17									
	10	0.4' / 2.0'	1245 OFF-SB-421-1416				Sandy (fine) SILT, trace gravel (rounded)		Not enough volume for headspace	
	15									
	15									
16	12									
	25	0.3' / 2.0'	No sample		Very Dense		SILT, some clay, some sand, trace angular gravel - possible till		Slight odor - possibly from water	PID = 3.9
	25									
	38									
18	21									
	15	1.1' / 2.0'	1310 OFF-SB-421-1820			Gray	Very dense SILT and fine SAND, some gravel, trace medium to coarse sand - TILL	SM		PID = 1.1
	17									
	28									
20	32			EOB						

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-421	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-422
PROJECT NO.:	4152-0552			START DATE:	12/03/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/03/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.8'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
							Auger to 2' bgs			
2							No sample			
	11 / 4	2.0' / 2.0'	0745 OFF-SB-422-0204		Loose	Brown	Fine to coarse SAND with gravel, some orange staining	SW	Dry	PID = 0.0
4	4 / 9									FID = 0.0
	9 / 7	1.4' / 2.0'	No sample		Loose	Brown / Gray	0-0.3' / 0.3-0.7 = Pieces of cobble	SP	Dry	PID = 18.0
6	11 / 9				Dense	Brown / Dark brown	0.7-0.8 = Fine to medium SAND, well sorted / 0.8-1.4 = Sandy SILT with pieces of boulder	ML		FID = 18.6
	4 / 4	1.3' / 2.0'	0805 OFF-SB-422-0406		Loose	Gray	0-0.7' = Fine to coarse SAND with gravel	SW	Dry	PID = 6.4
8	8 / 7				Dense	Dark gray / Black	0.7-1.3' = SILT, trace clay, pieces of cobble	ML	Orange staining	FID = 334
	13 / 12	1.3' / 2.0'	No sample		Dense	Gray	0.1-0.5' = SILT with sand, trace gravels	ML	Wet	PID = 6.0
10	12 / 13						0.5-1.3' = Sandy SILT with orange staining			FID = 3.2
	6 / 8	2.0' / 2.0'	0820 OFF-SB-422-1012		Dense	Gray	0.0-0.7' = Slough / 0.7-2.0' = SILT, trace clay	ML	Wet	PID = 1.3
12	7 / 8						Orange staining			FID = 1.1
	6 / 9	0.9' / 2.0'	No sample					ML	WET	PID = 1.0
14	9 / 15									FID = 3.7
	6 / 11	1.5' / 2.0'	MS/MSD 0840 OFF-SB-422-1416		Dense	Gray	Silty fine SAND (0-0.5')	SM	Wet	PID = 0.3
16	12 / 16				Very Dense	Dark gray/ Black	0.5-1.5' = SILT with trace clay and gravels – till?	ML		FID = 0.0

TYPE OF DRILLING RIG:	Track mounted CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" Split spoon, 2' long, 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 8' bgs		
OTHER OBSERVATIONS:		BORING NO.: SB-422	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-422
PROJECT NO.:	4152-0552			START DATE:	12/03/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/03/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.8'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 16	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	12				Very	Brown	0-0.2' = Slough		Wet	
	13	2.0' / 2.0'	No sample		Dense	Dark				FID = 0.0
	12					Gray	SILT with gravel, trace clay and intermittent layers fine sand – till?			
18	15					↓		ML		PID = 1.7
	12					Dark	Sandy SILT with gravels		1 piece of weathered rock	
	14	1.7' / 2.0'	0910		Dense	Brown		ML		FID = 0.0
	17		OFF-SB-422-1820				Till?			
20	22				↓	↓				PID = 0.3
							EOB @ 20' bgs			

TYPE OF DRILLING RIG:	Track mounted CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 2' long, 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	~ 8' bgs		
OTHER OBSERVATIONS:		BORING NO.: SB-422	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-423
PROJECT NO.:	4152-0552			START DATE:	11/25/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL AND CLAY			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.9'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
0										
			No sample No split spoon				Auger to 2' bgs			
2										
	30 130/4"	0.3' / 0.3'	1145 OFF-SB-423-0204		Dense Loose	Brown Brown	Topsoil with roots, silty SAND SAND	SM/ SP	Moist	PID = 0.0
4							Large piece of boulder 0.7' long			FID = 0.0
	130/3"	0.25' / 0.25'	No sample			Gray	Ground up piece of concrete or boulder - powder with some large pieces		Dry	PID = 0.0
6										FID = 0.0
	130/1"	0.1' / 0.1'	No sample				Auger refusal at 6' bgs Send spoon down – recover		Dry	--
8/4							0.5' of broken / ground up rock? boulder? Move ahead 5' to west - to try again - 1st spoon at 6'			--
			(from 2nd hole) No sample						2nd attempt	
6							Auger refusal at 4.5' bgs - move ahead 5' to the west			
8/4										
			(from 3rd hole) No sample						3rd attempt	FID = 0.0
6	100				Dense	Dark	Sandy silty GRAVEL	GM	Moist	PID = 0.0
	For 1"	0.1 / 0.1'	No sample Recovery too low			Gray	Rounded and angular - till? Ground up piece of rock with some large pieces, angular		Dry	PID = NR
8	130/1"						Augers refused at 7.5' bgs EOB at 7.7'			FID = NR

Auger to 7.6' → spoon 1" = 7'7"

TYPE OF DRILLING RIG:	Track mount rig - CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoons, 2' in length - 300 lb. hammer with 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:	Not clear?		
OTHER OBSERVATIONS:		BORING NO.: SB-423	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-424
PROJECT NO.:	4152-0552			START DATE:	11/26/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/26/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	12.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD =* [FID, (PPM)]
0										
							Auger to 2' bgs – no samples 0-2' bgs			
2										
	9		MS/MSD			Dark	0-0.2' = silty fine sand, some gravel, trace medium to coarse sand			
	34	1.1' / 2.0'	0955			Brown		SM		PID = 0.0
	44		OFF-SB-424-0204				0.2-1.1' = sand and gravel (fine to coarse sand), trace silt, cobbles at 3.5' and 4.0'			
4	34					Brown		SW		FID = 0.0
	19						Cobble / rock fragment in nose – crystalline		Refusal at 4.5'	
	60/1"	0.1' / 2.0'	No sample							
6							Move over 5' for second attempt			
2							Auger to 2' bgs - soils not logged from 0-2'			
	19		Sample collected				Sand and gravel, crystalline		Auger refusal at 3'	
	60/3"	0.3' / 0.75'	For extra volume			Brown	Rock fragment (fractured) in nose of spoon	SW	Spoon refusal at ~ 3'	
4			Only							
							Move 10' north of original staked location for third attempt			
0										
1										
2			No sample				Fractured crystalline rock		Auger refusal at 3'	
3	60/1"	0.1' / 0.1'					(Similar to other attempts) in nose			

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem aguer		
METHOD OF SOIL SAMPLING:	3" split spoon driver with 300 lb hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	No manmade materials noted in the borings	BORING NO.: SB-424	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-425
PROJECT NO.:	4152-0552			START DATE:	11/26/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/26/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	12.1'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
							Auger to 2' bgs - no samples 0-2' bgs			
2										
	19	0.8' / 2.0'	0800 OFF-SB-425-0204			Brown	Fine to coarse sand and gravel, some silt Gravel = angular (mostly broken up cobble)			PID = 0.0
4	28 17 30									FID = 0.0
	38 60/3"	0.4' / 0.75'	No sample				Similar to above, cobble/ chunks of rock in nose		Auger refusal at 5.5' will attempt a spoon from here	PID = 0.0
6				EOB						FID = 0.0
	60/1"			6'			2nd spoon, no recovery, broke the spoon			
0							Move 5' north for 2nd attempt Will try to go to 6' then continue sampling			
							Refusal (auger) at 5', shallower than 1st refusal			
5				EOB						
				5'						
0							Move 10' west for 3RD ate,[t			
							Refusal at 5.5' – will try a split spoon			
5.5										
	60/3"	0.1' / 0.25'	No sample	EOB			Rock fragment in nose – Chrystaline, same material as 1st refusal		Spoon bouncing	
				5.5'						

TYPE OF DRILLING RIG:	CME 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	No evidence of manmade materials in any of the borings at this location	BORING NO.: SB-425	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09	BORING NO.:	SB-426
PROJECT NO.:	4152-0552	START DATE:	11/25/03
LOGGED BY:		COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN	MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.5'	CHECKED BY:	DH

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD 1929 (MLW)

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
							Auger to 2' bgs – no sample collected			
2										
	15					Light Brown	Fine to coarse SAND and GRAVEL, trace SILT, boulder conglomerate in nose and spoon		Spoon bouncing (?) refusal @ 6'	
	45	1.0' / 1.25'	1430							PID = 0.0
4	60/3"		1435 = DUP OFF-SB-426-0204							FID = 0.0
	60/0"									
0			Note: Move 10' west							
							Auger from 0-4' - no sample collected			
2										
4							(?) Spoon picked up similar rock (?) May be that or (?) will move south away from the (?) and see if it			
	60/0.5"						goes (?). Will consult with Steve Parker to either return with casing or conclude			
6							It is bedrock			
							Note: 100' away is conglomerate with cobble sized (?) – probably this refusal is same material			

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: SB-426

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-427
PROJECT NO.:	4152-0552			START DATE:	11/24/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/24/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.3'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Fill			Auger to 2' bgs – no sample collected from 0-2'			
2										
	11				Medium	Light	Silty fine to coarse sand, brick at 3'		Dry	
	8	1.0' / 2.0'	1100		Dense	Brown	cobble at 4'	SM	Piece of plastic	PID = 0.0
4	7 / 9		OFF-SB-427-0204							FID = 0.0
	8						Oily silty fine to coarse SAND, some gravel		Wet	
	8	0.9' / 2.0'	No sample			Black			Petroleum odor	PID = 123
6	7 / 7									FID = 90.5
	3					Dark			Saturated	
	6	1.5' / 2.0'	1120		Loose	Brown			Sulfur odor	PID = 52.1
8	7 / 60/3"		OFF-SB-427-0204 (Grain size)				0-1.0' = Fine sandy SILT 1.0-1.5' = Gravelly SILT, some fine sand, very loose		Plastic in spoon	FID = 29.3
	60/2"				Very	Dark	Silty gravel, very little recovery			
		0.4' / 2.0'	No sample		Dense	Brown		GP		PID = 26.3
10										FID = 13.6
	60/1"						Slough only - will try and collect sample on next spoon (no stacking spoons and center bit used with water)		Augers grinding	
		0.0 / 2.0'	No sample					--		
12										
	60/0"					Dark	Chunks of conglomerate (weathered) in nose - bedrock		Spoon bouncing	
		0.0 / 2.0'	No sample			Brown		Rock		
14				EOB						
				14'						

TYPE OF DRILLING RIG:	CME - 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoons driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-427	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-428
PROJECT NO.:	4152-0552			START DATE:	11/24/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/24/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Fill			Auger to 2' bgs – no split spoon collected			
2										
	13								Dry	
	16	1.2' / 2.0'	1245		Dense	Brown		SW		PID = 15.5
4	20		OFF-SB-428-0204				0-0.7' = Crumbly fine to coarse SAND, trace brick	Fill		FID = 0.0
	2						0.7-1.2' = Burn zone – charcoal pieces, cobble at 4'		Brick at 5.5'	
	5	0.8' / 2.0'	No sample		Loose	Brown		SM	Dry	PID = 0.5
6	3						Sandy SILT, some angular to subangular gravel			FID = 21.8
	5						Silty GRAVEL, trace fine to coarse sand		Moist	
	5	0.6' / 2.0'	1305		Medium	Dark		GP		PID = 1.3
8	8		OFF-SB-428-0608		Dense	Gray				FID = 0.0
	4						No recovery			
	4	0.0' / 2.0'	No sample		Loose					PID = 0.0
10	3									FID = 0.0
	1					Dark	0-0.2' = Silty fine SAND		Wet	
	WOH*	1.0' / 2.0'	1320		Very	Gray		SM	Organic odor	PID = 0.0
12	1		Grain size		Loose		0.2-1.0' = PEAT, compressed			
	WOH*		OFF-SB-428-1012			Red		PT		FID = 301.0
	5					Gray	0-0.6' = Silty fine SAND	SP	Wet	
	3	1.0' / 2.0'	No sample		Loose		0.6-0.8' = Dense fine SAND			PID = 0.0
14	3						0.8-1.0' = Sandy (fine sand) SILT, trace subrounded gravel	ML		
	6									FID = 26.0
	6				Medium		Sandy (fine sand) SILT, trace rounded gravel clasts (possible			
	11	1.1' / 2.0'	1340		Dense		dropstones), some mottling from oxidation			
16	11		OFF-SB-428-1416							
	11									

TYPE OF DRILLING RIG:	CME – 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" Split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:			
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	WOH* = Weight of hammer	BORING NO.: SB-428	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-428
PROJECT NO.:	4152-0552			START DATE:	11/24/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/24/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.0'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	7						Sandy (fine sand) SILT, trace gravel, some oxidation mottling		Wet	
	8	0.9' / 2.0'	No sample		Dense	Gray		ML		PID = 0.0
	9									
18	13									FID = 0.0
	8						Sandy SILT (fine sand), some gravel			
	14	0.6' / 2.0'	1400							PID = 0.0
	11		OFF-SB-428-1820							
20	10			20'						FID = 0.0
				EOB						

TYPE OF DRILLING RIG:	CME - 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:			
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-428	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-429
PROJECT NO.:	4152-0552			START DATE:	11/25/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.6'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
				Fill			Auger from 0-2' bgs – no samples collected			
2										
	6		Not enough to				COBBLE in nose of spoon, minimal fine to coarse sand		Dry	
	37	0.2' / 2.0'	Sample, will collect		Dense*			--		PID = 6.0
	18		Next interval				* - high blowcounts caused by cobble - not representative of soil			
4	10									FID = 23.9
	2					Light	0.0-0.5' = Fine to coarse SAND, some silt		Brick fragments noted	
	2	0.8' / 2.0'	0820		Loose	Brown		SM		PID = 0.0
	4		OFF-SB-429-0406				0.5-0.8' = Silty fine to coarse SAND		Wet	
6	7					Black				FID = 7.1
	1		0830				SILT, some fine sand, trace gravel → oil - saturated soil		Wet	
	1	1.1' / 2.0'	OFF-SB-429-0608						(Not enough volume for grain size)	PID = 51.8
	7		0840							
8	20		OFF-SB-Dup							FID = 28.7
	5						Similar to above		Wet	
	17	1.3' / 2.0'	No sample	Potential Oil Saturated Material	Dense					PID = 48.1
	14									
10	10									FID = 395
	3						0-0.6' = Sandy (fine sand) SILT, some gravel		Wet	
	5	0.8' / 2.0'	0850		Loose	Red				PID = 26.2
	3		OFF-SB-429-1012				0.6-0.8' = PEAT, compressed			
12	4					Red		PT		FID = 126
	2						0.0-0.5' = PEAT, compressed		Wet	
	2	1.0' / 2.0'	No sample		Very				Organic odor	PID = 52.5
	2				Loose		0.5-1.0' = fine SAND, trace silt			
14	4					Gray		SP		FID = 433.1
	2				Medium		SILT, some fine sand, trace angular gravel			
	7	1.1' / 2.0'	0915		Dense			ML		PID = 6.4
	14		OF-SB-429-1416							
16	16		Grain size							FID = 10.9

TYPE OF DRILLING RIG:	CME – 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-429	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-429
PROJECT NO.:	4152-0552			START DATE:	11/25/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/25/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	8.6'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET) 16	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	5				Medium	Dark	SILT, some fine sand, trace coarse sand and subangular to		Wet	
	10	0.8' / 2.0'	No sample		Dense	Gray	subrounded gravel	ML		PID = 2.1
	14									
18	13									FID = 10.9
	2						SILT, some fine sand, trace coarse sand, trace gravel			
	10	0.6' / 2.0'	Not enough volume To sample							
	18									
20	20			EOB						
				20'						

TYPE OF DRILLING RIG:	CME - 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven by 300 lb. hammer, dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-429	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-430
PROJECT NO.:	4152-0552			START DATE:	12/02/03
LOGGED BY:	J.DANIELI / J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/02/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.8'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
			No sample				Auger to 2'			
2							No spoon			
	5						Silty SAND with gravels		Dry	
	8	1.5' / 2.0'	1425		Loose	Dark		SW		PID = 0.0
4	7		OFF-SB-430-0204			Brown	Pieces of brick - fill			
	9									FID = 0.4
	4						Silty fine to coarse sand, some gravel, some oxidation staining, no manmade materials visible			
	4	1.2' / 2.0'	No sample					SW		PID = 0.0
6	5									
	10									FID = 0.0
	7						No recovery		Wet	
	9	0.0' / 2.0'	No sample							PID = N/A
8	7						Will collect sample on next spoon			
	13									FID = N/A
	9						Silty fine to coarse sand and gravel		Petroleum odor	
	11	0.8' / 2.0'	1445			Black		SW		PID = 0.0
10	9		OFF-SB-430-0810						Wet	
	17									FID = 0.0
	5						Sand (fine to coarse) some silt		Wet	
	3	0.2' / 2.0'	No sample			Black		SW		FID = 0.0
12	7								Petroleum odor	
	9									PID = 0.0
	3						Fine to coarse sand, some silt, some gravel			
	4	0.3' / 2.0'	1500			Black		SW		FID = N/A
14	4		OFF-SB-430-1214							
	4									PID = N/A
	9						Silty fine to coarse sand and gravel		Wet	
	11	0.6' / 2.0'	1510			Brown				FID = 0.0
16	13									
	60/3"									PID = 0.0

TYPE OF DRILLING RIG:	Track mounted - CME		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 2' long – 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-430	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-430
PROJECT NO.:	4152-0552			START DATE:	12/02/03
LOGGED BY:	J.DANIELI / J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	12/02/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.8'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16										
	13	0.4' / 2.0'	No sample			Brown	Fine to coarse sand and gravel, some silt		17.5' auger refusal	
	30									
	60/3"									
18										
	60/0"		No recovery				No recovery - refusal			
20										

TYPE OF DRILLING RIG:	CME (track mounted)		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon, 300 lb. hammer, 18" drop		
METHOD OF ROCK CORING:			
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-430	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-431
PROJECT NO.:	4152-0552			START DATE:	11/26/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/26/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	11.1'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
				Possible fill			Auger 0-2' bgs, soils not logged			
2										
	9	1.0' / 2.0'	1135 OFF-SB-431-0204 (Grain size)			Brown	Silty fine to coarse SAND, trace gravel, cobbles at 3' and 3.5'	SM	Dry	PID = 4.0
4	8 7 9									FID = 2.0
	7 9	0.0' / 2.0'	No sample				No recovery			
6	7 6									
	5 5	0.0' / 2.0'	Will collect next sample Interval				No recovery		Wet	
8	4 5						(Slough = fine to coarse sand)			
	12 11	0.3' / 2.0'	1155 OFF-SB-431-0810	Oil - Impacted soils		BLACK	Fine SAND, some silt, cobble at 8' → oil-stained soils	SM	Wet Cobble in nose Petroleum odor	PID = 14.0
10	12 20									FID = 8.2
	17 11	0.4' / 2.0'	Not enough volume to Sample				Fine SAND, some silt (Oil stained soils		Slight petroleum odor	PID = 36.2
12	7 11									FID = 14.0
	42 60/3"	0.3' / 0.75'	Not enough volume to sample			LIGHT BROWN	Cobble/fractured rock in nose Some associated fine to coarse sand	Rock	Wet	PID = 26.1
14										FID = 12.3
				EOB					Auger, spoon refusal at 13'	
							Note: almost no cuttings when hole complete, hole wide open to 11', soil is very loose and cobbly			

TYPE OF DRILLING RIG:	CME – 75		Tetra Tech NUS, Inc.
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" Split spoon driven with 300 lb. hammer dropped 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	Note: no manmade material noted in borehole – possible fill to 8' bgs	BORING NO.: SB-431	PAGE: 1 OF 1

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-432
PROJECT NO.:	4152-0552			START DATE:	11/20/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/20/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.8'	ELEVATION FROM:	NGVD 1929	CHECKED BY:	DH

DEPTH (FEET) 0	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
				Fill			Auger to 2' – no samples collected from 0-2'			
2										
	15 120/6"	0.7' / 1.0'	0825 OFF-SB-432-0204			Dark Brown	Fine to coarse sand, some gravel, trace silt, brick fragments throughout, also asphalt, piece of geosynthetic liner, cobble in		Sweet, non-petroleum odor, PID = 727 in sample	PID = > 2,000
4							nose.			FID = 5,425
	5 13	0.6' / 2.0'	No sample				Silty fine to coarse SAND (0-0.3')			PID = > 2,000
6	29 93					Red Gray	0.3-0.5' = brick 0.5-0.6' = cobble in nose of spoon			FID = 2,929
	10 18	0.5' / 2.0'	0840 OFF-SB-432-0608			Dark	Silty fine to coarse sand, brick and concrete fragments throughout		Moist PID = 188 ppm in sample *	PID = > 2,000
8	24 13					Brown				FID = 5,677
	10 14	1.6' / 2.0'	No sample	Petroleum Staining		Dark	Fine sand, trace silt PID = 49 in sample, 15 = FID		Wet Strong petroleum odor	PID = 153
10	14 14					Gray				FID = 241
	3 6	1.1' / 2.0'	0905 OFF-SB-432-1012				Fine sand, trace silt, petroleum staining and odor in top 0.4'		Saturated	PID = 485
12	3 4									FID = 365
	11 13	1.6' / 2.0'	No sample				0-0.3' = Similar to above		Moist	PID = 28.3
14	17 18					Reddish	0.3-1.0' = Silty fine sand, some coarse sand, some fine gravel, very dense, possible till			FID = 12.6
	6 12	1.3' / 2.0'	1030 OFF-SB-432-1416			Light	Sandy silt (fine to coarse sand)		Moist	PID = 12.0
16	17 18					Brown	Trace fine gravel			FID = 1.9

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoons driven with a 300 lb. hammer dropped from 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:	* 0850 readings in the breathing zone = ~ 5 for PID, 0 for FID, higher at the borehole, will keep an eye on it	BORING NO.: SB-432	PAGE: 1 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-432
PROJECT NO.:	4152-0552			START DATE:	11/20/03
LOGGED BY:	J. LAMBERT	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/20/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / RODNEY DEAN			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	9.8'	ELEVATION FROM:	NGVD 1929	CHECKED BY:	DH

DEPTH (FEET) 16	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
	120/5"	OU1 / 2.0	No sample		Very	Dark	0-0.6' = Very dense fine sand		Wet	PID = 7.7
18					Dense	Gray	0.6-1.1' = Wet, loose, silty coarse sand, some gravel			FID = 0.0
	43	0.8 / 1.0	1118			Mottled	Silt, some coarse sand, some gravel, very dense		Wet	
	120/5		OFF-SB-432-1820			Dark				PID = 0.0
20				EOB		Gray				FID = 0.0
				20'						

TYPE OF DRILLING RIG:	CME 75		*Tetra Tech NUS, Inc.*
METHOD OF ADVANCING BORING:	Hollow stem auger		
METHOD OF SOIL SAMPLING:	3" split spoon driven with 300 lb. hammer 18"		
METHOD OF ROCK CORING:	N/A		
GROUNDWATER LEVELS:			
OTHER OBSERVATIONS:		BORING NO.: SB-432	PAGE: 2 OF 2

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-433
PROJECT NO.:	4152-0552			START DATE:	11/26/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/26/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	17.3'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
			No sample				No split spoon – auger to 2' bgs			
2				Fill						
	9 / 8	0.9' / 2.0'	0845 OFF-SB-433-0204		Dense	Dark Brown	Silty fine to medium SAND with gravel, roots – top 0.1', pieces of brick throughout	SM	Dry	PID = 0.0
4	5 / 6									FID = 0.0
	8 / 5	1.0' / 2.0'	No sample		Dense		Sandy SILT with gravel, pieces of brick	ML	Moist	PID = 0.0
6	6 / 5								Wet V ~ 5.5'	FID = 0.0
	5 / 3	1.0' / 2.0'	0900 OFF-SB-433-0608							PID = 20.0
8	3 / 2									FID = 38.0
	3 / 6	1.0' / 2.0'	No sample			Dark Brown	SILT with sand, trace gravel, trace roots		Wet	PID = 17.1
10	5 / 6							ML		FID = 34.0
	2 / 2	0.9' / 2.0'							Wet	PID = 0.0
12	2 / 3									FID = 0.0
	27 / 59	1.0' / 2.0'	0920 OFF-SB-433-1214		Loose		Pieces of boulder (0.8' long)		Wet	PID = 24.6
14	59 / 24						Silty SAND and GRAVEL, trace brick pieces	SW/ GW		FID = 47.0
16	130/3"	0.8' / 2.0'	No sample (14.0'-14.25')				Auger refusal at 14.5'		Wet	PID = 116.0
18	130/1"	0.15' / 0.16'	No sample (14.5'-14.9')	EOB			piece of concrete 0.15' in length – drive auger to 14.5'			FID = 326.0

TYPE OF DRILLING RIG:	Track mounted CME
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon, 2' long, 300 lb. hammer, 18" drop
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	~ 5.5' BGS
OTHER OBSERVATIONS:	

BORING NO.: SB-433

Tetra Tech NUS, Inc.

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09			BORING NO.:	SB-433
PROJECT NO.:	4152-0552			START DATE:	11/26/03
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES	COMPLETION: DATE:	11/26/03
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM			MON. WELL NO.:	--
GRD. SURFACE ELEVATION:	17.3'	ELEVATION FROM:	NGVD 1929 (MLW)	CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	130/1"						Move south ~ 5' to auger to 16' and take 16-18' spoon			FID = --
16										PID = --
	14						Silty fine to medium SAND with gravel		Wet (Second hole)	PID = 0.4
	18	0.9 / 2.0'	1050 OFF-SB-433-1618		Dense	Brown		SW	Wet	FID = 0.0
	11									PID = 1.0
18	9									FID = 0.0
	11					Dark	SILT with trace sand and gravel		Wet	
	14	1.5' / 2.0'	No sample		Dense	Gray		ML		FID = 8.0
	19									
20	17									PID = 5.4
	4		1140						Wet	
	4	2.0'	OFF-SB-433-2022						Rock – brittle breaks apart easily	FID = 0.0
	8	2.0'	1145				SILT - less sand and gravel			
22	17		Dup09				Sandy SILT with gravels (20 - 21.5')	ML		PID = 0.0
	90						SILT with trace sand and gravels (21.5 - 22.0')		Wet	
	53	1.5' / 2.0'	No sample		Dense	Brown		ML		FID = 0.0
	79						SILT, weathered rock			
24	29						Orange staining, pieces of gravel, till - soupy	ML		PID = 1.6
	24		1215				Soupy - silty, sandy - GRAVEL with weathered rock, orange staining, till		Wet	
	26	1.5' / 2.0'	OFF-SB-433-2426					GM		FID = 0.0
	31		1220							
26	38		Dup10							PID = 0.1
							Trace clay	GC	Wet	
	130/4"	0.9' / 2.0'	No sample				Auger refusal @ 27.5' bgs	GM		FID = 0.0
						Light	Soupy, silty, sandy GRAVEL with weathered rock, orange staining - till			
28						Brown		GM		PID = 0.0
	130/1"						Sample from 27.5' plus 1" - 27.7'			
		0.8' / 0.8'	1240 OFF-SB-433-2830		Loose	Brown				
30							EOB @ 27.7' - did not reach competent bedrock but till overlies bedrock in area and just shy of 20' requirement stated in Work Plan - 20' from base of mound (8' high)			

TYPE OF DRILLING RIG:	Track mounted CME
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon, 2' long, 300 lb. hammer, 18" drop
METHOD OF ROCK CORING:	~ 5.5' bgs
GROUNDWATER LEVELS:	N/A
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING NO.: SB-433

BORING LOG FOR:	CTO 833 – OFFTA – SITE 09		
PROJECT NO.:	4152-0552		
LOGGED BY:	J. DANIELI	TRANSCRIBED BY:	MES
DRILLED BY (Company/Driller):	AMERICAN DRILLING / CARL BEIRHOLM		
GRD. SURFACE ELEVATION:	11.5'	ELEVATION FROM:	NGVD 1929 (MLW)

BORING NO.:	SB-434
START DATE:	12/02/03
COMPLETION: DATE:	12/02/03
MON. WELL NO.:	--
CHECKED BY:	DH

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
			No sample				Auger to 2' = no spoon			
2										
	37						Fine to medium SAND, trace silt and gravels		Dry	
	36	1.4' / 1.5'	1030		Loose	Brown		SW		PID = 0.0
	34		OFF-SB-434-0204			Light Gray	Piece of boulder - fine to medium SAND			
4	60/5"									FID = 5.0
	10						Fine to medium SAND, pieces of boulder - interbedded with fine to medium SAND (brown)		Dry	
	15	0.7' / 1.5'	No sample					SW		PID = 0.0
	60/4"									
6										FID = 2.0
	60/2"						Fine to medium SAND with gravel and trace silt intermittent pieces of light gray boulder		Dry	
		0.5' / 0.16'	1040			Brown		SW		PID = 7.0
			OFF-SB-434-0608							
8										FID = 10.0
	60/2"						8' Auger refusal - send down spoon		Dry	
			No sample			Light Gray	Fine to medium SAND with pieces of boulder	SW		PID = 0.0
		/ 0.16'				Dark Gray	Silty SAND – gravels and pieces of broken rock			
10					Dense		Till? At nose of spoon 2 large pieces of crystalline rock			FID = 24.0
							EOB = 8'2"			

TYPE OF DRILLING RIG:	Track mounted - CME
METHOD OF ADVANCING BORING:	Hollow stem auger
METHOD OF SOIL SAMPLING:	3" split spoon, 2' length, 300 lb. hammer with 18" drop
METHOD OF ROCK CORING:	N/A
GROUNDWATER LEVELS:	Not evident
OTHER OBSERVATIONS:	

Tetra Tech NUS, Inc.

BORING NO.: SB-434

APPENDIX C
SURVEY DATA

LOUIS FEDERICI and ASSOCIATES

365 Smith Street, Providence, RI 02908 *Tele:* 401-331-1570 Fax: 401-331-1593
land surveyors biologists planners

Tabulation of field located soil samples for Tetra Tech NUS, Inc.
at the Old Fire Fighting Training Area, Naval Station Newport, in Newport, RI

LFA PROJECT NUMBER = 990205

Date Surveyed: 1/2/2004
The values below are based on the following datums:
Horizontal = NAD 1927; Vertical = NGVD 1929 (MLW)

LFA PT. NO.	TETRA TECH I.D.	NORTHING	EASTING	ORIGINAL GRADE
2000	SB-421	156808.8	547238.1	10.8
2001	SB-420	156797.8	547156.9	10.0
2002	SB-419	156842.2	547045.4	8.4
2003	SB-408	156940.5	547056.3	8.0
2004	SB-409	156924.9	547155.3	9.1
2005	SB-410	156914.9	547253.2	9.4
2006	SB-402	157010.9	547266.9	8.4
2007	SB-432	156869.9	547196.4	9.8
2008	SB-401	157023.8	547170.7	7.9
2009	SB-400	157035.5	547083.5	7.3
2010	SB-428	157054.9	547304.0	8.0
2011	SB-403	156996.3	547367.7	9.4
2012	SB-429	157023.5	547385.1	8.6
2013	SB-404	156982.7	547465.7	8.9
2014	SB-430	156918.5	547570.9	9.8
2016	SB-427	157072.7	547203.9	8.3
2162	SB-415	156885.5	546668.1	13.3
2167	SB-416	156875.4	546740.5	11.5
2232	SB-426	156745.3	547737.1	11.5
2233	SB-425	156763.1	547633.3	12.1
2234	SB-424	156787.1	547568.9	12.0
2235	SB-413	156872.0	547552.2	10.6
2238	SB-412	156893.2	547454.9	24.5
2239	SB-411	156901.8	547375.0	31.0
2240	SB-434	156815.2	547484.7	11.5
2245	SB-423	156786.8	547428.2	11.9
2247	SB-422	156807.2	547325.4	11.8
2248	SB-414	156855.1	547647.6	10.7
2249	SB-431	156809.4	547712.1	11.1
2277	SB-433	156900.7	546881.8	17.3
2278	SB-406	156951.9	546862.3	11.4
2279	SB-407	156959.5	546952.7	12.9
2280	SB-418	156871.9	546934.3	10.0
2285	SB-417	156864.9	546846.1	8.5
2292	SB-405	156961.0	546759.8	7.0

RI Rge. Number 1646

APPENDIX D

MOUND SOIL PRG EXCEEDANCE TABLES AND ANALYTICAL RESULTS

- Mound Soil Sample PRG Exceedance Tables
- Mound PDI Soil Sample Analytical Results

MOUND SOIL SAMPLE PRG EXCEEDANCE TABLES

TABLE D-1
MOUND No. 1 SOIL ANALYTE CONCENTRATIONS EXCEEDING PRGs AND SOIL TPH AND GRO CONCENTRATIONS
DRAFT FINAL MOUND SUMMARY REPORT
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (ft bgs)	Sample ID	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Parameter	Concentration	units	Soil PRG
B-10	13.7	B101-112393	0.0	1.0	13.7	12.7	No PRG exceedances			
SB415	13.3	SB-415-0002	0.0	2.0	13.3	11.3	Benzo(a)pyrene	440	µg/kg	400
							Chrysene	450	µg/kg	400
							Arsenic	11.5	mg/kg	6.2
							Beryllium	0.63	mg/kg	0.4
							TPH	370	mg/kg	500
		SB-415-0204	2.0	4.0	11.3	9.3	Benzo(a)pyrene	800	µg/kg	400
							Benzo(b)flouranthene	1100	µg/kg	900
							Chrysene	880	µg/kg	400
							Arsenic	11.1	mg/kg	6.2
							Beryllium	0.42	mg/kg	0.4
							TPH	470	mg/kg	500
		SB-415-0608	6.0	8.0	7.3	5.3	Arsenic	23.6	mg/kg	6.2
							Lead	182	mg/kg	150
							TPH	13 U	mg/kg	500
							GRO	2500 U	µg/kg	na
SB416	11.5	SB-416-0002	0.0	2.0	11.5	9.5	Benzo(a)pyrene	480	µg/kg	400
							Chrysene	520	µg/kg	400
							Arsenic	10.7	mg/kg	6.2
							Beryllium	0.53	mg/kg	0.4
							Lead	168	mg/kg	150
							TPH	95	mg/kg	500
		SB-416-0406	4.0	6.0	7.5	5.5	Benzo(a)pyrene	820	µg/kg	400
							Benzo(b)flouranthene	1100	µg/kg	900
							Chrysene	890	µg/kg	400
							Arsenic	11.8	mg/kg	6.2
							Beryllium	0.43	mg/kg	0.4
							Manganese	570	mg/kg	390
							TPH	170	mg/kg	500
							GRO	3300 U	µg/kg	na

Notes:
Soil preliminary remediation goals (PRGs) from OFFTA Feasibility Study, TtNUS September 2002.
TPH analysis conducted only on PDI soil samples (Sample ID: SB-XXX-XXXX).
GRO analysis conducted only on PDI soil samples (Sample ID: SB-XXX-XXXX) collected below base grade elevation.

ft MLW	feet above mean low water
ft bgs	feet below ground surface
GRO	gasoline range organics
ID	identifier
µg/kg	microgram per kilogram
mg/kg	milligram per kilogram
na	not applicable
U	not detected
TPH	total petroleum hydrocarbons

TABLE D-2
MOUND No. 2 SOIL ANALYTE CONCENTRATIONS EXCEEDING PRGs AND SOIL TPH CONCENTRATIONS
DRAFT FINAL MOUND SUMMARY REPORT
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (ft bgs)	Sample ID	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Parameter	Concentration	units	Soil PRG
SS-5	17.5	SS-05	0	0.5	17.5	17	Beryllium	0.48	mg/kg	0.4
B-8	11.5	B81-112293	0	1	11.5	10.5	Arsenic	6.3 J	mg/kg	6.2
B-9	17.7	B91-112393	0	1	17.7	16.7	Beryllium	0.43	mg/kg	0.4
SB406	11.4	SB-406-0002	0	2	11.4	9.4	Benzo(a)pyrene	460	µg/kg	400
							Chrysene	510	µg/kg	400
							Arsenic	6.7	mg/kg	6.2
							Beryllium	0.56	mg/kg	0.4
							Lead	268	mg/kg	150
							Manganese	450	mg/kg	390
							TPH	36	mg/kg	500
SB407	12.9	SB-407-0002	0	2	12.9	10.9	Benzo(a)anthracene	1000 J	µg/kg	900
							Benzo(a)pyrene	860 J	µg/kg	400
							Benzo(b)flouranthene	1100 J	µg/kg	900
							Chrysene	930 J	µg/kg	400
							Lead	217	mg/kg	150
							Manganese	445	mg/kg	390
							TPH	92	mg/kg	500
		SB-407-0204	2	4	10.9	8.9	Benzo(a)anthracene	1000 J	µg/kg	900
							Benzo(a)pyrene	1000 J	µg/kg	400
							Benzo(b)flouranthene	1400 J	µg/kg	900
							Chrysene	980 J	µg/kg	400
							Arsenic	6.9	mg/kg	6.2
							Lead	192	mg/kg	150
							Manganese	424	mg/kg	390
							TPH	190	mg/kg	500
SB418	10.0	SB-418-0002	0	2	10	8	Arsenic	8.4	mg/kg	6.2
							Beryllium	0.64	mg/kg	0.4
							TPH	31	mg/kg	500
SB433	17.3	SB-433-0204	2	4	15.3	13.3	Benzo(a)pyrene	620 J	µg/kg	400
							Benzo(b)flouranthene	910 J	µg/kg	900
							Chrysene	640 J	µg/kg	400
							Arsenic	10.6	mg/kg	6.2
							Beryllium	0.49	mg/kg	0.4
							Manganese	417	mg/kg	390
							TPH	62	mg/kg	500
		SB-433-0608	6	8	11.3	9.3	No PRG exceedances	na	na	na
							TPH	410	mg/kg	500

Notes:
Soil preliminary remediation goals (PRGs) from OFFTA Feasibility Study, TtNUS September 2002.
TPH analysis conducted only on PDI soil samples (Sample ID: SB-XXX-XXXX).

ft MLW	feet above mean low water
ft bgs	feet below ground surface
ID	identifier
µg/kg	microgram per kilogram
mg/kg	milligram per kilogram
na	not applicable
J	quantitation approximate
TPH	total petroleum hydrocarbons

TABLE D-3
CENTRAL MOUND SOIL ANALYTE CONCENTRATIONS EXCEEDING PRGs AND SOIL TPH AND GRO CONCENTRATIONS
DRAFT FINAL MOUND SUMMARY REPORT
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (ft bgs)	Sample ID	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Parameter	Concentration	units	Soil PRG
SS-3	24	SS-03	0.0	0.5	24.0	23.5	Beryllium	0.41	mg/kg	0.4
SS-25	19.5	SS25-110493	0.0	0.5	19.5	19.0	No PRG exceedances	na	na	na
SS-26	22.5	SS26-110493	0.0	0.5	22.5	22.0	No PRG exceedances	na	na	na
SS-11	12	SS-11	0.0	0.5	12.0	11.5	Beryllium	0.5	mg/kg	0.4
SS-325	12	SS-325-0001	0.0	1.0	12.0	11.0	Arsenic	10.4	mg/kg	6.2
SS-326	11	SS-326-0001	0.0	1.0	11.0	10.0	Arsenic	10.1	mg/kg	6.2
							Beryllium	0.47	mg/kg	0.4
B-14	30.7	B141-121393	0.0	1.0	30.7	29.7	Arsenic	8.5	mg/kg	6.2
		B142-121393	15.0	17.0	15.7	13.7	Arsenic	9.2	mg/kg	6.2
							Chrysene	460 J	µg/kg	400
							Lead	252	mg/kg	150
B-15	27.6	B151-121393	0.0	1.0	27.6	26.6	Arsenic	7	mg/kg	6.2
							Benzo(a)anthracene	2400	µg/kg	900
							Benzo(a)pyrene	2600	µg/kg	400
							Benzo(b)fluoranthene	3900	µg/kg	900
							Benzo(g,h,i)perylene	1300 J	µg/kg	800
							Chrysene	2400	µg/kg	400
							Indeno(1,2,3-cd)pyrene	1100 J	µg/kg	900
							Manganese	506 J	mg/kg	390
		B152-121393	10.0	12.0	17.6	15.6	Benzo(a)anthracene	1200	µg/kg	900
							Benzo(a)pyrene	730	µg/kg	400
							Benzo(b)fluoranthene	1300	µg/kg	900
							Chrysene	1100	µg/kg	400
		B153-121393	15.0	17.0	12.6	10.6	Benzo(a)anthracene	1300	µg/kg	900
							Benzo(a)pyrene	760	µg/kg	400
							Benzo(b)fluoranthene	1400	µg/kg	900
							Chrysene	1100	µg/kg	400
							Lead	292	mg/kg	150
							Manganese	419 J	mg/kg	390
TP2	13.0	TP23	2.0	2.0	11.0	11.0	Benzo(a)pyrene	460 J	µg/kg	400
							Chrysene	580 J	µg/kg	400
TP3	17.0	TP33	3.0	3.0	14.0	14.0	Benzo(a)pyrene	630 J	µg/kg	400
							Chrysene	640 J	µg/kg	400
		TP32	7.0	7.0	10.0	10.0	Benzo(a)anthracene	2400 J	µg/kg	900
							Benzo(a)pyrene	2900 J	µg/kg	400
							Benzo(b)fluoranthene	2300 J	µg/kg	900
							Benzo(g,h,i)perylene	1700 J	µg/kg	800
							Benzo(k)fluoranthene	2500 J	µg/kg	900
							Chrysene	2500 J	µg/kg	400
							Dibenz(a,h)anthracene	780 J	µg/kg	400
							Indeno(1,2,3-cd)pyrene	1700 J	µg/kg	900
							Manganese	413 J	mg/kg	390
		TP31	7.0	8.0	10.0	9.0	Arsenic	16.3 J	mg/kg	6.2
							Chrysene	690 J	µg/kg	400
							Lead	3090 J	mg/kg	150

TABLE D-3
CENTRAL MOUND SOIL ANALYTE CONCENTRATIONS EXCEEDING PRGs AND SOIL TPH AND GRO CONCENTRATIONS
DRAFT FINAL MOUND SUMMARY REPORT
OLD FIRE FIGHTING TRAINING AREA
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Location	Surface Elevation (ft bgs)	Sample ID	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Parameter	Concentration	units	Soil PRG
SB411	31.0	SB-411-0204	2.0	4.0	29.0	27.0	Benzo(a)pyrene	410	µg/kg	400
							Chrysene	480	µg/kg	400
							Arsenic	7.8	mg/kg	6.2
							Manganese	491	mg/kg	390
							TPH	94	mg/kg	500
		SB-411-0608	6.0	8.0	25.0	23.0	Chrysene	490	µg/kg	400
							Arsenic	12.8	mg/kg	6.2
							Beryllium	0.54	mg/kg	0.4
							Manganese	557	mg/kg	390
							TPH	230	mg/kg	500
		SB-411-1012	10.0	12.0	21.0	19.0	Benzo(a)anthracene	930	µg/kg	900
							Benzo(a)pyrene	610	µg/kg	400
							Benzo(b)flouranthene	1100	µg/kg	900
							Chrysene	970	µg/kg	400
							Arsenic	8.8	mg/kg	6.2
							Beryllium	0.5	mg/kg	0.4
							Manganese	424	mg/kg	390
							TPH	290	mg/kg	500
		SB-411-1416	14.0	16.0	17.0	15.0	Benzo(a)anthracene	3600	µg/kg	900
							Benzo(a)pyrene	2900	µg/kg	400
							Benzo(b)flouranthene	3300	µg/kg	900
							Benzo(g,h,i)perylene	1700 J	µg/kg	800
							Benzo(k)flouranthene	1400 J	µg/kg	900
							Chrysene	3300	µg/kg	400
							Dibenzo(a,h)anthracene	600 J	µg/kg	400
							Indeno(1,2,3-cd)pyrene	1500 J	µg/kg	900
							Arsenic	9.5	mg/kg	6.2
							Beryllium	0.46	mg/kg	0.4
							Lead	559	mg/kg	150
							TPH	300	mg/kg	500
							GRO	2900 U	mg/kg	na
		SB-411-2022	20.0	22.0	11.0	9.0	Manganese	409	mg/kg	390
							TPH	340	mg/kg	500
SB412	24.5	SB-412-0204	2.0	4.0	22.5	20.5	Arsenic	11.5	mg/kg	6.2
							Beryllium	0.55	mg/kg	0.4
							TPH	41	mg/kg	500
		SB-412-0608	6.0	8.0	18.5	16.5	Arsenic	8.9	mg/kg	6.2
							Beryllium	0.44	mg/kg	0.4
							Manganese	574	mg/kg	390
							TPH	210	mg/kg	500
		SB-412-1012	10.0	12.0	14.5	12.5	Benzo(a)pyrene	590	µg/kg	400
							Chrysene	680	µg/kg	400
							Antimony	21.2	mg/kg	10
							Arsenic	11.6	mg/kg	6.2
							Lead	186	mg/kg	150
							Manganese	536	mg/kg	390
							TPH	760	mg/kg	500

Notes:
Soil preliminary remediation goals (PRGs) from OFFTA Feasibility Study, TtNUS September 2002.
TPH analysis conducted only on PDI soil samples (Sample ID: SB-XXX-XXXX).
GRO analysis conducted only on PDI soil samples (Sample ID: SB-XXX-XXXX) collected below base grade elevation.

ft MLW	feet above mean low water
ft bgs	feet below ground surface
GRO	gasoline range organics
ID	identifier
µg/kg	microgram per kilogram
mg/kg	milligram per kilogram
na	not applicable
U	not detected
J	quantitation approximate
TPH	total petroleum hydrocarbons

MOUND PDI SOIL SAMPLE ANALYTICAL RESULTS

- RI Soil Sample Analytical Results
- PDI Soil Sample Analytical Results

RI Soil Sample Analytical Results

Sample ID

Surface Soil Samples

SS-03

SS-05

SS-11

SS25-110493

SS26-110493

B81-112293

B91-112393

B101-112393

B141-121393

B151-121393

SS-325-0001

SS-326-0001

Subsurface Soil Samples

TP23

TP33

TP32

TP31

B142-121393

B152-121393

B153-121393

SITE 09 - OLD FIRE FIGHTER TRAINING AREA
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	FB-041290	TB-041290
**** VOLATILE ORGANICS (PPB) ***								
METHYLENE CHLORIDE.....	10 U*	14 U*	24 U*	11 U*	13 U*	12 U*	7 B	8 B
ACETONE.....		12 U**	10 U**	10 U**	10 U**		5 J	11
CARBON DISULFIDE.....								
CHLOROFORM.....								
2-BUTANONE.....								
TETRACHLOROETHENE.....		2 J						
TOLUENE.....								
ETHYLBENZENE.....								
XYLENE.....								
TOTAL VOLATILE ORGANICS....	0	2	0	0	0	0	12	19
** BASE NEUTRAL / ACIDS (PPB) **								
PHENOL.....								N/A
BENZOIC ACID.....								
NAPHTHALENE.....@						480 J		
2-METHYLNAPHTHALENE.....@								
ACENAPHTHYLENE.....@								
ACENAPHTHENE.....@						940 J		
DIBENZOFURAN.....						650 J		
FLUORENE.....@						1200 J		
PHENANTHRENE.....@	83 J	350 J		250 J	100 J	7200		
ANTHRACENE.....@						1500 J		
DI-N-BUTYLPHTHALATE.....								
FLUORANTHENE.....@	97 J	250 J	44 J	290 J	180 J	8000		
PYRENE.....@	160 J	480		300 J	190 J	5700 J*		
BUTYLBENZYLPHTHALATE.....								
BENZO(a)ANTHRACENE.....@@		150 J		130 J	76 J	3300		
CHRYSENE.....@@		170 J		110 J	78 J	2800		
BIS(2-ETHYLHEXYL)PHTHALATE.	590 *	450 U**		340 U*				
BENZO(b)FLUORANTHENE.....@@		130 J		120 J	65 J	2800		
BENZO(k)FLUORANTHENE.....@@		91 J		110 J		3100		
BENZO(a)PYRENE.....@@		130 J		120 J	61 J	2700		
INDENO(1,2,3-cd)PYRENE.....@@								
DIBENZO(a,h)ANTHRACENE.....@@								
BENZO(g,h,i)PERYLENE.....@								N/A
TOTAL BNA'S.....	930	1751	44	1430	750	40370	0	
TOTAL PAH'S.....	340	1751	44	1430	750	39720	0	
TOTAL CARCINOGENIC PAH'S...	0	671	0	590	280	14700	0	

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.
N/A - INDICATES THAT THE COMPOUNDS WERE NOT ANALYZED FOR.

SITE 09 - OLD FIRE FIGHTER TRAINING AREA
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	FB-041290	TB-041290
**** PESTICIDES/PCB'S (PPB) ****								
4,4'-DDE.....	7.3 J	7.2 J	8.1 J	2.9 J	3.7 J			N/A
4,4'-DDT.....	8.3 J	8.8 U*	6.3 J	8.8 J	3.7 J	2.3 J		|
AROCLOR-1254.....	80 J							N/A
******* INORGANICS (PPM) *******								
SILVER.....		0.68 J*						N/A
ALUMINUM.....	8800	6080	8730	5070	10500	10600		|
ARSENIC.....	6.2	5.1 J*	5.5	2	5.8	8.9		|
BARIUM.....	25.8	18.7	21.8	21.7	28.3	8		|
BERYLLIUM.....	0.47		0.41		0.48	0.39		|
CALCIUM.....	1100	673	540	21000	1480	1870	0.19 B1	|
CADMIUM.....				0.94				|
COBALT.....	7.5	5.7	7.1	4.7	9.3	20		|
CHROMIUM.....	15.9	6.8	18.8	8.8	16.7	16.4		|
COPPER.....	27.1	11.2	16.8	15.4	23	44.3		|
IRON.....	17400	10100	14500	10300	17800	35600		|
MERCURY.....				0.17				|
POTASSIUM.....	261	229	247	442	503	424		|
MAGNESIUM.....	1480	917	1530	7340	1820	5010		|
MANGANESE.....	249	174	185	174	251	750		|
SODIUM.....	60.8 U*	49	47.6 U*	93.6 U*	91.9 U*	907	0.198	|
NICKEL.....	12.3	5.4	10.9	7	12.8	25.6		|
LEAD.....	52.5	19	21		28.1	77.8		|
ANTIMONY.....						5.6		|
SELENIUM.....	0.53						0.0022	|
VANADIUM.....	24.5	9.8	19.5	19.3	27.4	36.3		|
ZINC.....	80.1	26.2	32.4	34.5	70.4	142	0.0111	|
CYANIDE.....								N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A - INDICATES THAT THE COMPOUNDS WERE NOT ANALYZED FOR.

TABLE 1

SITE 09 - OLD FIRE FIGHTING TRAINING AREA
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-07 (1)	SS-08 (2)	SS-12	SS-09	SS-10	SS-11	FB-1219
******* INORGANICS (ppm) *******							
SILVER.....							
ALUMINUM.....	4160	3430	2420	6120	6350	6570	
ARSENIC.....	3.5	2.2 B	2 B	5.6	4	4.4	
BARIUM.....	17 B	19.4 B	14 B	22.7 B	28.4 B	21.9 B	
BERYLLIUM.....			0.32 B	0.31 B	0.43 B	0.5 B	
CALCIUM.....	1090 B	859 B	628 B	1090 B	1220 B	1100 B	
CADMIUM.....							
COBALT.....	2.7 B	2.4 B	1.8 B	4.2 B	4 B	4.5 B	
CHROMIUM.....	8.7	5.8	4.3	10.3	10	8.5	
COPPER.....	8.4	9.8	6.9	9.7	13.4	11.4	
IRON.....	6760	6160	4470	9670	9470	10100	
MERCURY.....		0.08 B	0.07 B	0.07 B	0.09 B		
POTASSIUM.....	273 B	433 B	373 B	290 B	411 B		
MAGNESIUM.....	783 B	932 B	717 B	886 B	1010 B	945 B	
MANGANESE.....	143	166	117	189	197	201	
SODIUM.....							
NICKEL.....				8.6 B	6.2 B	5.1 B	
LEAD.....	22.2	27.5	26	32.4	38.7	20.6	
ANTIMONY.....							
SELENIUM.....							
THALLIUM.....							
VANADIUM.....	6.2 B	5.3 B	4.6 B	9.1 B	9.8 B	10.1 B	5.5 B
ZINC.....	36.1	38.1	26.6	34.9	46.5	35.3	

Note: (1) SS-07 was collected from the same location as SS-02.
(2) SS-12 is a duplicate sample of SS-8.
B = Indicates that the reported value is less than the CRDL

TABLE L1.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-SS24-110493			FF-SS25-110493			FF-SS26-110493			FF-SS27-110493		
Sample Designation=		031390-0004-SA			031390-0005-SA			031390-0006-SA			031390-0007-SA		
Sample Collection Date=		04 NOV 93			04 NOV 93			04 NOV 93			04 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
beta-BHC	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
delta-BHC	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
gamma-BHC (Lindane)	ug/kg	0.37	J	2.1	0.096	J	1.8	ND	UJ*	2.0	ND	R	2.1
Heptachlor	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
Aldrin	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
Heptachlor epoxide	ug/kg	ND	U	2.1	ND	U	1.8	0.58	J	2.0	ND	R	2.1
Endosulfan I	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
Dieldrin	ug/kg	0.91	NJ	4.1	0.66	J	3.5	ND	UJ*	6.2	ND	R	4.1
4,4'-DDE	ug/kg	12		4.1	10		3.5	5.1	J	3.9	ND	R	4.1
Endrin	ug/kg	3.6	J	4.1	2.2	NJ	3.5	ND	U	3.9	ND	R	4.1
Endosulfan II	ug/kg	ND	U	4.1	ND	U	3.5	ND	U	3.9	ND	R	4.1
4,4'-DDD	ug/kg	2.3	J	4.1	5.5		3.5	ND	U	3.9	ND	R	4.1
Endosulfan sulfate	ug/kg	ND	U	4.1	ND	U	3.5	ND	U	3.9	ND	R	4.1
4,4'-DDT	ug/kg	14		4.1	17		3.5	9.4	J	3.9	ND	R	4.1
Methoxychlor	ug/kg	ND	U*	21	3.8	J	18	ND	U	20	ND	R	21
Endrin ketone	ug/kg	ND	U	4.1	ND	U	3.5	ND	U	3.9	ND	R	4.1
Endrin aldehyde	ug/kg	6.9	J	4.1	5.1	J	3.5	9.4		3.9	ND	R	4.1
alpha-Chlordane	ug/kg	ND	U	2.1	ND	U	1.8	0.62	J	2.0	ND	R	2.1
gamma-Chlordane	ug/kg	ND	U	2.1	ND	U	1.8	ND	U	2.0	ND	R	2.1
Toxaphene	ug/kg	ND	U	210	ND	U	180	ND	U	200	ND	R	210
Aroclor 1016	ug/kg	ND	U	41	ND	U	35	ND	U	39	ND	R	41
Aroclor 1221	ug/kg	ND	U	84	ND	U	71	ND	U	79	ND	R	84
Aroclor 1232	ug/kg	ND	U	41	ND	U	35	ND	U	39	ND	R	41
Aroclor 1242	ug/kg	ND	U	41	ND	U	35	ND	U	39	ND	R	41
Aroclor 1248	ug/kg	ND	U	41	ND	U	35	ND	U	39	ND	R	41
Aroclor 1254	ug/kg	ND	U	41	ND	U	35	ND	U	39	ND	R	41
Aroclor 1260	ug/kg	ND	U	41	ND	U	35	ND	U	39	ND	R	41

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L1.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-SS24-110493			FF-SS25-110493			FF-SS26-110493		
Sample Designation=		031390-0004-SA			031390-0005-SA			031390-0006-SA		
Sample Collection Date=		04 NOV 93			04 NOV 93			04 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Acenaphthene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Acenaphthylene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Anthracene	ug/kg	ND	U	420	ND	U	350	ND	U	390
9H-Carbazole	ug/kg	ND	U	420	ND	U	350	ND	U	390
Benzo(a)anthracene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Benzo(a)pyrene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Benzo(b)fluoranthene	ug/kg	46	J	420	36	J	350	ND	U	390
Benzo(g,h,i)perylene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Benzo(k)fluoranthene	ug/kg	ND	U	420	ND	U	350	ND	U	390
4-Bromophenyl phenyl ether	ug/kg	ND	U	420	ND	U	350	ND	U	390
Butyl benzyl phthalate	ug/kg	ND	U	420	ND	U	350	ND	U	390
4-Chloroaniline	ug/kg	ND	U	420	ND	U	350	ND	U	390
bis(2-Chloroethoxy)-methane	ug/kg	ND	U	420	ND	U	350	ND	U	390
bis(2-Chloroethyl) ether	ug/kg	ND	U	420	ND	U	350	ND	U	390
bis(2-Chloroisopropyl) ether	ug/kg	ND	U	420	ND	U	350	ND	U	390
4-Chloro-3-methylphenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
2-Chloronaphthalene	ug/kg	ND	U	420	ND	U	350	ND	U	390
2-Chlorophenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
4-Chlorophenyl phenyl ether	ug/kg	ND	U	420	ND	U	350	ND	U	390
Chrysene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Di-n-butyl phthalate	ug/kg	ND	U	420	ND	U	350	ND	U	390
Dibenz(a,h)anthracene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Dibenzofuran	ug/kg	ND	U	420	ND	U	350	ND	U	390
1,2-Dichlorobenzene	ug/kg	ND	U	420	ND	U	350	ND	U	390
1,3-Dichlorobenzene	ug/kg	ND	U	420	ND	U	350	ND	U	390
1,4-Dichlorobenzene	ug/kg	ND	U	420	ND	U	350	ND	U	390
3'-Dichlorobenzidine	ug/kg	ND	U	420	ND	U	350	ND	U	390
-Dichlorophenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
Diethyl phthalate	ug/kg	ND	U	420	ND	U	350	ND	U	390
2,4-Dimethylphenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
Dimethyl phthalate	ug/kg	ND	U	420	ND	U	350	ND	U	390
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	1000	ND	U	850	ND	U	940
2,4-Dinitrophenol	ug/kg	ND	U	1000	ND	U	850	ND	U	940
2,4-Dinitrotoluene	ug/kg	ND	U	420	ND	U	350	ND	U	390
2,6-Dinitrotoluene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Di-n-octyl phthalate	ug/kg	ND	U	420	ND	U	350	ND	U	390
bis(2-Ethylhexyl) phthalate	ug/kg	ND	U*	420	ND	U*	350	ND	U*	390
Fluoranthene	ug/kg	46	J	420	38	J	350	ND	U	390
Fluorene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Hexachlorobenzene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Hexachlorobutadiene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Hexachlorocyclo-pentadiene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Hexachloroethane	ug/kg	ND	U	420	ND	U	350	ND	U	390
Indeno(1,2,3-cd)pyrene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Isophorone	ug/kg	ND	U	420	ND	U	350	ND	U	390
2-Methylnaphthalene	ug/kg	ND	U	420	ND	U	350	ND	U	390
2-Methylphenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
4-Methylphenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
Naphthalene	ug/kg	ND	U	420	ND	U	350	ND	U	390
2-Nitroaniline	ug/kg	ND	U	1000	ND	U	850	ND	U	940
3-Nitroaniline	ug/kg	ND	U	1000	ND	U	850	ND	U	940
4-Nitroaniline	ug/kg	ND	U	1000	ND	U	850	ND	U	940
Nitrobenzene	ug/kg	ND	U	420	ND	U	350	ND	U	390
2-Nitrophenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
4-Nitrophenol	ug/kg	ND	U	1000	ND	U	850	ND	U	940
N-Nitrosodiphenylamine	ug/kg	ND	U	420	ND	U	350	ND	U	390
N-Nitroso-di-n-propylamine	ug/kg	ND	U	420	ND	U	350	ND	U	390
Pentachlorophenol	ug/kg	ND	U	1000	ND	U	850	ND	U	940
Phenanthrene	ug/kg	ND	U	420	ND	U	350	ND	U	390
Phenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
Pyrene	ug/kg	48	J	420	40	J	350	49	J	390
1,2,4-Trichlorobenzene	ug/kg	ND	U	420	ND	U	350	ND	U	390
2,4,5-Trichlorophenol	ug/kg	ND	U	1000	ND	U	850	ND	U	940
2,4,6-Trichlorophenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
al PAHs		140			114			49		
Total Carcinogenic PAHs		46			36			0		
Total SVOCs		140			114			49		

NOTE: '*' indicates a value which was changed to 'ND' following data validation.

TABLE L1.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-SS24-110493			FF-SS25-110493			FF-SS26-110493			FF-SS27-110493		
Sample Designation=		031390-0004-SA			031390-0005-SA			031390-0006-SA			031390-0007-SA		
Sample Collection Date=		04 NOV 93			04 NOV 93			04 NOV 93			04 NOV 93		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Aluminum	mg/kg	9360		NA	9890		NA	9090		NA	7650		NA
Antimony	mg/kg	6.3	UJ	NA	5.4	UJ	NA	5.9	UJ	NA	6.2	UJ	NA
Arsenic	mg/kg	5.2	J	NA	5.5	J	NA	5.2	J	NA	4.3	J	NA
Barium	mg/kg	24	B	NA	22.9	B	NA	22.8	B	NA	20.9	B	NA
Beryllium	mg/kg	0.36	B	NA	0.34	B	NA	0.33	B	NA	0.31	B	NA
Cadmium	mg/kg	0.75	U	NA	0.65	U	NA	0.71	U	NA	0.75	U	NA
Calcium	mg/kg	907	J	NA	604	J	NA	643	J	NA	743	J	NA
Chromium	mg/kg	16.7		NA	10.5		NA	12.1		NA	9		NA
Cobalt	mg/kg	5.5	B	NA	5.6	B	NA	5.6	B	NA	4.5	B	NA
Copper	mg/kg	9.8		NA	14.2		NA	8.8		NA	8.7		NA
Iron	mg/kg	13300		NA	14200		NA	14300		NA	11800		NA
Lead	mg/kg	16.5	J	NA	15.1	J	NA	16.1	J	NA	14.9	J	NA
Magnesium	mg/kg	1720		NA	1720		NA	1790		NA	1460		NA
Manganese	mg/kg	191		NA	205		NA	210		NA	173		NA
Mercury	mg/kg	0.06	U	NA	0.07	B	NA	0.06	U	NA	0.06	U	NA
Nickel	mg/kg	11.5		NA	12.8		NA	12		NA	11.3		NA
Potassium	mg/kg	351	B	NA	249	B	NA	286	B	NA	163	U	NA
Selenium	mg/kg	0.5	U	NA	0.43	U	NA	0.47	U	NA	0.5	U	NA
Silver	mg/kg	1	U	NA	0.86	U	NA	0.94	U	NA	1	U	NA
Sodium	mg/kg	302	U	NA	259	U	NA	283	U	NA	300	U	NA
Thallium	mg/kg	0.5	U	NA	0.43	U	NA	0.47	U	NA	0.5	UW	NA
Vanadium	mg/kg	16.9		NA	16		NA	15.3		NA	13		NA
Zinc	mg/kg	40.6		NA	38.2		NA	37.2		NA	41.5		NA
Cyanide, Total	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.62	U	NA

SURFACE SOIL VOLATILE ORGANIC ANALYSIS (UG/KG)
OLD FIREFIGHTER TRAINING AREA
REMEDIAL INVESTIGATION REPORT
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Number	OFF-SS-323-0001		OFF-SS-324-0001		OFF-SS-325-0001		OFF-SS-326-0001		OFF-SS-327-0001		OFF-SS-328-0001-MAX		OFF-SS-329-0001	
Date Sampled	11/19/98		11/19/98		11/19/98		11/19/98		11/19/98		11/20/98		11/20/98	
QC Identifier	None		None		None		None		None		Field Dup. OFF-SS-328-0001		None	
Interval (ft)	0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0	
1,1,1-TRICHLOROETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,1,2,2-TETRACHLOROETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,1,2-TRICHLOROETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,1-DICHLOROETHENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,2-DICHLOROETHENE (TOTAL)	4	U	5	U	8	U	5	U	5	U	5	U	5	U
1,2-DICHLOROPROPANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
2-BUTANONE	9	U	9	J	28	U	11	U	7	J	11	U	11	U
2-HEXANONE	9	U	9	U	17	U	11	U	10	U	10	U	11	U
4-METHYL-2-PENTANONE	9	U	9	U	17	U	11	U	10	U	10	U	11	U
ACETONE	150	J	130	J	320	J	80	U	77	J	110		100	J
BENZENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
BROMODICHLOROMETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
BROMOFORM	4	U	5	U	8	U	5	U	5	U	5	U	5	U
BROMOMETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CARBON DISULFIDE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CARBON TETRACHLORIDE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CHLOROBENZENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CHLOROETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CHLOROFORM	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CHLOROMETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
CIS-1,3-DICHLOROPROPENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
DIBROMOCHLOROMETHANE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
ETHYLBENZENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	2	J	4	J	3	J	2	J	3	J	2		3	J
STYRENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
TETRACHLOROETHENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
TOLUENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
TOTAL XYLENES	4	U	5	U	8	U	5	U	5	U	5	U	5	U
TRANS-1,3-DICHLOROPROPENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
TRICHLOROETHENE	4	U	5	U	8	U	5	U	5	U	5	U	5	U
VINYL CHLORIDE	4	U	5	U	8	U	5	U	5	U	5	U	5	U

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; EB/TB - Equipment/Trip Blank contamination;
NA - Not Analyzed; * - From dilution analysis; R - Rejected; EMPC - Est. Max. Poss. Conc.

SURFACE SOIL SEMIVOLATILE ORGANIC ANALYSIS (UG/KG)
OLD FIREFIGHTER TRAINING AREA
REMEDIAL INVESTIGATION REPORT
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Number	OFF-SS-322-0001		OFF-SS-323-0001		OFF-SS-324-0001		OFF-SS-325-0001		OFF-SS-326-0001		OFF-SS-327-0001		OFF-SS-328-0001-MAX	
Date Sampled	11/19/98		11/19/98		11/19/98		11/19/98		11/19/98		11/19/98		11/20/98	
QC Identifier	None		None		None		None		None		None		Field Dup. OFF-SS-328-0001	
Interval (ft)	0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0	
1,2,4-TRICHLOROBENZENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
1,2-DICHLOROBENZENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
1,3-DICHLOROBENZENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
1,4-DICHLOROBENZENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2,2'-OXYBIS(1-CHLOROPROPANE)	350	UJ	360	UJ	1800	UJ	670	U	400	UJ	1900	UJ	390	U
2,4,5-TRICHLOROPHENOL	890	U	900	U	4600	UJ	1700	U	1000	U	4700	UJ	980	U
2,4,6-TRICHLOROPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2,4-DICHLOROPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2,4-DIMETHYLPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2,4-DINITROPHENOL	890	U	900	U	4600	UJ	1700	UJ	1000	UJ	4700	UJ	980	U
2,4-DINITROTOLUENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2,6-DINITROTOLUENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2-CHLORONAPHTHALENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2-CHLOROPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2-METHYLNAPHTHALENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2-METHYLPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
2-NITROANILINE	890	U	900	U	4600	U	1700	UJ	1000	U	4700	U	980	U
2-NITROPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
3,3'-DICHLOROBENZIDINE	350	U	360	U	1800	UJ	670	UJ	400	UJ	1900	UJ	390	U
3-NITROANILINE	890	U	900	U	4600	U	1700	U	1000	U	4700	U	980	U
4,6-DINITRO-2-METHYLPHENOL	890	U	900	U	4600	U	1700	UJ	1000	UJ	4700	U	980	U
4-BROMOPHENYL-PHENYLETHER	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
4-CHLORO-3-METHYLPHENOL	350	U	360	U	1800	U	670	U	140	J	1900	U	390	U
4-CHLOROANILINE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
4-CHLOROPHENYL-PHENYLETHER	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
4-METHYLPHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
4-NITROANILINE	890	U	900	U	4600	UJ	1700	UJ	1000	UJ	4700	UJ	980	U
4-NITROPHENOL	890	U	900	U	4600	UJ	1700	UJ	1000	U	4700	UJ	980	U
ACENAPHTHENE	350	U	360	U	1800	UJ	670	U	400	U	240	J	390	U
ACENAPHTHYLENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
ANTHRACENE	350	U	360	U	1800	U	95	J	400	U	1800	J	390	U
BENZO(A)ANTHRACENE	350	U	360	U	1800	U	300	J	400	U	2500		390	U
BENZO(A)PYRENE	350	U	360	U	1800	U	300	J	400	U	1900		390	U
BENZO(B)FLUORANTHENE	350	U	360	U	210	J	400	J	400	U	2400		45	
BENZO(G,H,I)PERYLENE	350	U	360	U	1800	U	150	J	400	U	1200	J	390	U

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; EB/TB - Equipment/Trip Blank contamination;
NA - Not Analyzed; * - From dilution analysis; R - Rejected; EMPC - Est. Max. Poss. Conc.

SURFACE SOIL SEMIVOLATILE ORGANIC ANALYSIS (UG/KG)
OLD FIREFIGHTER TRAINING AREA
REMEDIAL INVESTIGATION REPORT
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Number	OFF-SS-322-0001		OFF-SS-323-0001		OFF-SS-324-0001		OFF-SS-325-0001		OFF-SS-326-0001		OFF-SS-327-0001		OFF-SS-328-0001-MAX	
Date Sampled	11/19/98		11/19/98		11/19/98		11/19/98		11/19/98		11/19/98		11/20/98	
QC Identifier	None		None		None		None		None		None		Field Dup. OFF-SS-328-0001	
Interval (ft)	0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0	
BENZO(K)FLUORANTHENE	350	U	360	U	1800	U	170	J	400	U	930	J	390	U
BIS(2-CHLOROETHOXY)METHANE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
BIS(2-CHLOROETHYL)ETHER	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
BUTYLBENZYLPHTHALATE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
CARBAZOLE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
CHRYSENE	350	U	360	U	1800	U	270	J	400	U	2300		41	
DI-N-BUTYLPHTHALATE	53	J	50	J	1800	U	94	J	400	U	1900	U	390	U
DI-N-OCTYLPHTHALATE	350	U	360	U	1800	UJ	670	UJ	400	U	1900	UJ	390	U
DIBENZO(A,H)ANTHRACENE	350	U	360	U	1800	U	670	U	400	U	230	J	390	U
DIBENZOFURAN	350	U	360	U	1800	U	670	U	400	U	220	J	390	U
DIETHYLPHTHALATE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
DIMETHYLPHTHALATE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
FLUORANTHENE	350	U	360	U	210	J	660	J	400	U	5500		78	
FLUORENE	350	U	360	U	1800	U	670	U	400	U	370	J	390	U
HEXACHLOROBENZENE	350	U	360	U	1800	U	670	UJ	400	UJ	1900	U	390	U
HEXACHLOROBUTADIENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
HEXACHLOROCYCLOPENTADIENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
HEXACHLOROETHANE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
INDENO(1,2,3-CD)PYRENE	350	U	360	U	1800	U	160	J	400	U	1100	J	390	U
ISOPHORONE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
N-NITROSO-DI-N-PROPYLAMINE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
N-NITROSO-DIPHENYLAMINE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
NAPHTHALENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
NITROBENZENE	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
PENTACHLOROPHENOL	890	U	900	U	4600	UJ	1700	UJ	1000	U	4700	UJ	980	U
PHENANTHRENE	350	U	360	U	1800	U	440	J	400	U	4700		41	
PHENOL	350	U	360	U	1800	U	670	U	400	U	1900	U	390	U
PYRENE	41	J	360	U	270	J	690		400	U	4700		72	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; EB/TB - Equipment/Trip Blank contamination;
NA - Not Analyzed; * - From dilution analysis; R - Rejected; EMPC - Est. Max. Poss. Conc.

SURFACE SOIL TAL METAL ANALYSIS (MG/KG)
OLD FIREFIGHTER TRAINING AREA
REMEDIAL INVESTIGATION REPORT
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Sample Number	OFF-SS-325-0001		OFF-SS-326-0001		OFF-SS-327-0001		OFF-SS-328-0001-MAX		OFF-SS-329-0001		OFF-SS-330-0001		OFF-SS-331-0001		OFF-SS-332-0001	
Date Sampled	11/19/98		11/19/98		11/19/98		11/20/98		11/20/98		11/18/98		11/18/98		11/20/98	
QC Identifier	None		None		None		Field Dup. OFF-SS-328-0001		None		None		None		None	
Interval (ft)	0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0		0.0-1.0	
ALUMINUM	10700		10900		11000		11000		11400	J	11400		10400		10600	J
ANTIMONY	1.1	U	0.56	U	0.58	J	0.55	U	0.55	UJ	0.57	UJ	0.56	UJ	0.59	J
ARSENIC	10.4		10.1		7.7	J	10.3		7.2		8.7	J	6.8	J	7.9	
BARIUM	24.7		24.7		27.7		25.7		27.7		27.4		25.9		26.2	
BERYLLIUM	0.35	J	0.47		0.32	U	0.38		0.39	J	0.49	U	0.48	U	0.32	
CADMIUM	0.1	U	0.09	U	0.08	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
CALCIUM	707		1210		2610	J	1070	U	5970		759	J	650	J	903	U
CHROMIUM	11.1		11		12.2		9.6		10.9		13.7		14.6		11.4	
COBALT	8.6		6.8		7		8.5		9.4		5.8		6.5		9.1	
COPPER	16.6		8.8	J	13.6		13.5		14.1		7.6		12.2		17.4	
IRON	20200		18100		18000		21000		18100	J	16700		16300		19800	J
LEAD	46.1	J	18.9	J	36.1		24.2		26.1		30.3		33.9		55.1	
MAGNESIUM	2420		1910		2420		1910		3780	J	2110		2750		2180	J
MANGANESE	293		196		282		305		226	J	229		240		274	J
MERCURY	0.06	U	0.06	U	0.05	U	0.06	U	0.07		0.06	U	0.06	U	0.05	U
NICKEL	15.7		13.2		13.1		15.5	U	17.2		12.8		11.8		16.4	
POTASSIUM	260	U	274	U	425		234		269		409		932		272	
SELENIUM	0.77	U	0.69	U	0.64	U	0.68	U	0.68	U	0.71	U	0.7	U	0.69	U
SILVER	6	U	5.6	U	3.1	J	5.3		4.3		5.2	J	5	J	4.2	
SODIUM	84.9	U	99.1	U	103	J	218	U	128	U	53.4	UJ	52.5	UJ	247	U
THALLIUM	0.58	U	0.51	U	0.48	U	0.51	U	0.51	U	0.53	U	0.52	U	0.52	U
VANADIUM	18.8		19.3		17.3		18.3		20		18.9		19.8		19.9	
ZINC	61.5		33.8		75.1		50.3		52.8		50.1		49.9		67.2	

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; EB/TB - Equipment/Trip Blank contamination;
NA - Not Analyzed; * - From dilution analysis; R - Rejected; EMPC - Est. Max. Poss. Conc.

TABLE L1.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-SS31-110493			FF-B81-112293			FF-B91-112393			FF-B101-112393		
Sample Designation=		031390-0012-SA			031806-0005-SA			031806-0008-SA			031813-0008-SA		
Sample Collection Date=		04 NOV 93			22 NOV 93			23 NOV 93			23 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Chloromethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Bromomethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Vinyl Chloride	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Chloroethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Methylene chloride	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Acetone	ug/kg	ND	U*	12	ND	UJ	12	ND	UJ	11	ND	U	11
Carbon disulfide	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,1-Dichloroethene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,1-Dichloroethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Chloroform	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,2-Dichloroethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
2-Butanone	ug/kg	ND	U*	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,1,1-Trichloroethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Carbon tetrachloride	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Bromodichloromethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,2-Dichloropropane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
cis-1,3-Dichloropropene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Trichloroethene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Dibromochloromethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,1,2-Trichloroethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Benzene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
trans-1,3-Dichloropropene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Bromoform	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
4-Methyl-2-Pentanone	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
2-Hexanone	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Tetrachloroethene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	16		11
Toluene	ug/kg	ND	U	12	ND	UJ	12	2	J	11	ND	U	11
Chlorobenzene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Ethylbenzene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Styrene	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Xylenes (total)	ug/kg	ND	U	12	ND	UJ	12	ND	UJ	11	ND	U	11
Total VOCs		**0**			**0**			**2**			**16**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L1.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-B151-121393			FF-B161-112393			FF-B164-112393 (Dup of B161)			FF-B171-112493		
Sample Designation=		32184-03-SA			031806-0011-SA			031806-0014-SA			031813-0005-SA		
Sample Collection Date=		13 DEC 93			23 NOV 93			23 NOV 93			24 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Chloromethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Bromomethane	ug/kg	ND	UJ	11	ND	UJ	11	ND	UJ	11	ND	U	11
Vinyl Chloride	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Chloroethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Methylene chloride	ug/kg	1	J	11	ND	UJ	11	ND	UJ	11	ND	U	11
Acetone	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Carbon disulfide	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,1-Dichloroethene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,1-Dichloroethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Chloroform	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,2-Dichloroethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
2-Butanone	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,1,1-Trichloroethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Carbon tetrachloride	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Bromodichloromethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,2-Dichloropropane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
cis-1,3-Dichloropropene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Trichloroethene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Dibromochloromethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,1,2-Trichloroethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Benzene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
trans-1,3-Dichloropropene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Bromoform	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
4-Methyl-2-Pentanone	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
2-Hexanone	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Tetrachloroethene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Toluene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Chlorobenzene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Ethylbenzene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Styrene	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	ND	U	11
Xylenes (total)	ug/kg	ND	U	11	ND	UJ	11	ND	UJ	11	1	J	11
Total VOCs		**1**			**0**			**0**			**1**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L1.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-B111-112493			FF-B121-112493			FF-B131-112393			FF-B141-121393		
Sample Designation=		031813-0001-SA			031813-0003-SA			031806-0009-SA			32184-01-SA		
Sample Collection Date=		24 NOV 93			24 NOV 93			23 NOV 93			13 DEC 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Chloromethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Bromomethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	UJ	12
Vinyl Chloride	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	3	J	12
Chloroethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Methylene chloride	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Acetone	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Carbon disulfide	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,1-Dichloroethene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,1-Dichloroethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	17		12
Chloroform	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,2-Dichloroethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
2-Butanone	ug/kg	3	J	11	3	J	11	ND	UJ	11	1	J	12
1,1,1-Trichloroethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Carbon tetrachloride	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Bromodichloromethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,2-Dichloropropane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
cis-1,3-Dichloropropene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Trichloroethene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Dibromochloromethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,1,2-Trichloroethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Benzene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
trans-1,3-Dichloropropene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Bromoform	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
4-Methyl-2-Pentanone	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
2-Hexanone	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Tetrachloroethene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Toluene	ug/kg	ND	U	11	2	J	11	ND	UJ	11	ND	U	12
Chlorobenzene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Ethylbenzene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Styrene	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Xylenes (total)	ug/kg	ND	U	11	ND	U	11	ND	UJ	11	ND	U	12
Total VOCs		**3**			**5**			**0**			**21**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L1.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-B141-121393			FF-B151-121393			FF-B161-112393		
Sample Designation=		32184-01-SA			32184-0003-SA			031806-0011-SA		
Sample Collection Date=		13 DEC 93			13 DEC 93			23 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Acenaphthene	ug/kg	ND	U	390	ND	U	370	330	J	1400
Acenaphthylene	ug/kg	ND	U	390	40	J	370	ND	U	1400
Anthracene	ug/kg	ND	U	390	170	J	370	720	J	1400
9H-Carbazole	ug/kg	ND	U	390	ND	U	370	240	J	1400
Benzo(a)anthracene	ug/kg	ND	U	390	440		370	2400		1400
Benzo(a)pyrene	ug/kg	ND	U	390	240	J	370	2600		1400
Benzo(b)fluoranthene	ug/kg	ND	U	390	440		370	3900		1400
Benzo(g,h,i)perylene	ug/kg	ND	U	390	120	J	370	1300	J	1400
Benzo(k)fluoranthene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4-Bromophenyl phenyl ether	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Butyl benzyl phthalate	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4-Chloroaniline	ug/kg	ND	U	390	ND	U	370	ND	U	1400
bis(2-Chloroethoxy)-methane	ug/kg	ND	U	390	ND	U	370	ND	U	1400
bis(2-Chloroethyl) ether	ug/kg	ND	U	390	ND	U	370	ND	U	1400
bis(2-Chloroisopropyl) ether	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4-Chloro-3-methylphenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2-Chloronaphthalene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2-Chlorophenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4-Chlorophenyl phenyl ether	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Chrysene	ug/kg	ND	U	390	390		370	2400		1400
Di-n-butyl phthalate	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Dibenz(a,h)anthracene	ug/kg	ND	U	390	77	J	370	350	J	1400
Dibenzofuran	ug/kg	ND	U	390	ND	U	370	ND	U	1400
1,2-Dichlorobenzene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
1,3-Dichlorobenzene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
1,4-Dichlorobenzene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
3,3'-Dichlorobenzidine	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2,4-Dichlorophenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Diethyl phthalate	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2,4-Dimethylphenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Dimethyl phthalate	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	950	ND	U	900	ND	U	3600
2,4-Dinitrophenol	ug/kg	ND	U	950	ND	U	900	ND	U	3600
2,4-Dinitrotoluene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2,6-Dinitrotoluene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Di-n-octyl phthalate	ug/kg	ND	U	390	ND	U	370	ND	U	1400
bis(2-Ethylhexyl) phthalate	ug/kg	ND	U*	390	ND	U*	370	ND	U*	1400
Fluoranthene	ug/kg	ND	U	390	740		370	3200		1400
Fluorene	ug/kg	ND	U	390	ND	U	370	380	J	1400
Hexachlorobenzene	ug/kg	ND	U	390	43	J	370	ND	U	1400
Hexachlorobutadiene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Hexachlorocyclo-pentadiene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Hexachloroethane	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Indeno(1,2,3-cd)pyrene	ug/kg	ND	U	390	130	J	370	1100	J	1400
Isophorone	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2-Methylnaphthalene	ug/kg	ND	U	390	ND	U	370	190	J	1400
2-Methylphenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4-Methylphenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Naphthalene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2-Nitroaniline	ug/kg	ND	U	950	ND	U	900	ND	U	3500
3-Nitroaniline	ug/kg	ND	U	950	ND	U	900	ND	U	3500
4-Nitroaniline	ug/kg	ND	U	950	ND	U	900	ND	U	3500
Nitrobenzene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2-Nitrophenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
4-Nitrophenol	ug/kg	ND	U	950	ND	U	900	ND	U	3500
N-Nitrosodiphenylamine	ug/kg	ND	U	390	ND	U	370	ND	U	1400
N-Nitroso-di-n-propylamine	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Pentachlorophenol	ug/kg	ND	U	950	ND	U	900	ND	U	3500
Phenanthrene	ug/kg	ND	U	390	500		370	3300		1400
Phenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Pyrene	ug/kg	ND	U	390	800		370	4600		1400
1,2,4-Trichlorobenzene	ug/kg	ND	U	390	ND	U	370	ND	U	1400
2,4,5-Trichlorophenol	ug/kg	ND	U	950	ND	U	900	ND	U	3500
2,4,6-Trichlorophenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Total PAHs		0			4087			26770		
Total Carcinogenic PAHs		0			1837			14050		
Total SVOCs		0			4130			27010		

NOTE: "*" indicates a value which was changed to 'ND' following data validation.

TABLE L1.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-B81-112293			FF-B91-112393			FF-B101-112393		
Sample Designation=		031806-0005-SA			031806-0008-SA			031813-0008-SA		
Sample Collection Date=		22 NOV 93			23 NOV 93			23 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Acenaphthene	ug/kg	92	J	380	62	J	380	ND	U	360
Acenaphthylene	ug/kg	270	J	380	ND	U	380	ND	U	360
Anthracene	ug/kg	320	J	380	130	J	380	68	J	360
9H-Carbazole	ug/kg	61	J	380	68	J	380	ND	U	360
Benzo(a)anthracene	ug/kg	1400		380	350	J	380	240	J	360
Benzo(a)pyrene	ug/kg	1200		380	310	J	380	220	J	360
Benzo(b)fluoranthene	ug/kg	1700		380	540		380	440		360
Benzo(g,h,i)perylene	ug/kg	420		380	140	J	380	59	J	360
Benzo(k)fluoranthene	ug/kg	ND	U	380	ND	U	380	ND	U	360
4-Bromophenyl phenyl ether	ug/kg	ND	U	380	ND	U	380	ND	U	360
Butyl benzyl phthalate	ug/kg	ND	U	380	ND	U	380	ND	U	360
4-Chloroaniline	ug/kg	ND	U	380	ND	U	380	ND	U	360
bis(2-Chloroethoxy)-methane	ug/kg	ND	U	380	ND	U	380	ND	U	360
bis(2-Chloroethyl) ether	ug/kg	ND	U	380	ND	U	380	ND	U	360
bis(2-Chloroisopropyl) ether	ug/kg	ND	U	380	ND	U	380	ND	U	360
4-Chloro-3-methylphenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
2-Chloronaphthalene	ug/kg	ND	U	380	ND	U	380	ND	U	360
2-Chlorophenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
4-Chlorophenyl phenyl ether	ug/kg	ND	U	380	ND	U	380	ND	U	360
Chrysene	ug/kg	1400		380	380		380	250	J	360
Di-n-butyl phthalate	ug/kg	41	J	380	ND	U	380	140	J	360
Dibenz(a,h)anthracene	ug/kg	270	J	380	59	J	380	43	J	360
Dibenzofuran	ug/kg	130	J	380	46	J	380	ND	U	360
1,2-Dichlorobenzene	ug/kg	ND	U	380	ND	U	380	ND	U	360
1,3-Dichlorobenzene	ug/kg	ND	U	380	ND	U	380	ND	U	360
1,4-Dichlorobenzene	ug/kg	ND	U	380	ND	U	380	ND	U	360
3,3'-Dichlorobenzidine	ug/kg	ND	U	380	ND	U	380	ND	U	360
2,4-Dichlorophenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
Diethyl phthalate	ug/kg	80	J	380	ND	U	380	ND	U	360
2,4-Dimethylphenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
Dimethyl phthalate	ug/kg	ND	U	380	ND	U	380	ND	U	360
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	910	ND	U	910	ND	U	880
2,4-Dinitrophenol	ug/kg	ND	U	910	ND	U	910	ND	U	880
2,4-Dinitrotoluene	ug/kg	ND	U	380	ND	U	380	ND	U	360
2,6-Dinitrotoluene	ug/kg	ND	U	380	ND	U	380	ND	U	360
Di-n-octyl phthalate	ug/kg	ND	U	380	ND	U	380	ND	U	360
bis(2-Ethylhexyl) phthalate	ug/kg	ND	U*	380	ND	U*	380	59	J	360
Fluoranthene	ug/kg	2100		380	740		380	430		360
Fluorene	ug/kg	190	J	380	75	J	380	ND	U	360
Hexachlorobenzene	ug/kg	ND	U	380	ND	U	380	ND	U	360
Hexachlorobutadiene	ug/kg	ND	U	380	ND	U	380	ND	U	360
Hexachlorocyclo-pentadiene	ug/kg	ND	U	380	ND	U	380	ND	U	360
Hexachloroethane	ug/kg	ND	U	380	ND	U	380	ND	U	360
Indeno(1,2,3-cd)pyrene	ug/kg	560		380	170	J	380	100	J	360
Isophorone	ug/kg	ND	U	380	ND	U	380	ND	U	360
2-Methylnaphthalene	ug/kg	ND	U	380	45	J	380	ND	U	360
2-Methylphenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
4-Methylphenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
Naphthalene	ug/kg	ND	U	380	39	J	380	ND	U	360
2-Nitroaniline	ug/kg	ND	U	910	ND	U	910	ND	U	880
3-Nitroaniline	ug/kg	ND	U	910	ND	U	910	ND	U	880
4-Nitroaniline	ug/kg	ND	U	910	ND	U	910	ND	U	880
Nitrobenzene	ug/kg	ND	U	380	ND	U	380	ND	U	360
2-Nitrophenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
4-Nitrophenol	ug/kg	ND	U	910	ND	U	910	ND	U	880
N-Nitrosodiphenylamine	ug/kg	ND	U	380	ND	U	380	ND	U	360
N-Nitroso-di-n-propylamine	ug/kg	ND	U	380	ND	U	380	ND	U	360
Pentachlorophenol	ug/kg	ND	U	910	ND	U	910	ND	U	880
Phenanthrene	ug/kg	1600		380	640		380	210	J	360
Phenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
Pyrene	ug/kg	2300		380	710		380	490		360
1,2,4-Trichlorobenzene	ug/kg	ND	U	380	ND	U	380	ND	U	360
2,4,5-Trichlorophenol	ug/kg	ND	U	910	ND	U	910	ND	U	880
2,4,6-Trichlorophenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
Total PAHs		13822			4390			2550		
Total Carcinogenic PAHs		6950			1949			1352		
Total SVOCs		14134			4504			2749		

NOTE: "*" indicates a value which was changed to 'ND' following data validation.

TABLE L1.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-SS31-110493			FF-B81-112293			FF-B91-112393			FF-B101-112393		
Sample Designation=		031390-0012-SA			031806-0005-SA			031806-0008-SA			031813-0008-SA		
Sample Collection Date=		04 NOV 93			22 NOV 93			23 NOV 93			23 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ	1.9
beta-BHC	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ	1.9
delta-BHC	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ	1.9
gamma-BHC (Lindane)	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ*	4.6
Heptachlor	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ	1.9
Aldrin	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ	1.9
Heptachlor epoxide	ug/kg	0.17	J	2.0	1.3	J	1.9	0.81	J	1.9	0.06	NJ	1.9
Endosulfan I	ug/kg	ND	UJ	2.0	ND	UJ	1.9	ND	UJ	1.9	ND	UJ	1.9
Dieldrin	ug/kg	ND	UJ*	4.0	3.5	J	3.8	ND	UJ*	6.1	0.61	J	3.6
4,4'-DDE	ug/kg	72	J	4.0	9.2	J	3.8	8.3	J	3.8	6.5	J	3.6
Endrin	ug/kg	ND	UJ	4.0	7.6	J	3.8	2.5	J	3.8	ND	UJ	3.6
Endosulfan II	ug/kg	ND	UJ	4.0	1.6	J	3.8	0.92	J	3.8	ND	UJ	3.6
4,4'-DDD	ug/kg	3.4	J	4.0	3.8	J	3.8	3.3	J	3.8	ND	UJ	3.6
Endosulfan sulfate	ug/kg	ND	UJ	4.0	ND	UJ	3.8	ND	UJ	3.8	0.56	J	3.6
4,4'-DDT	ug/kg	38	J	4.0	15	J	3.8	12	J	3.8	11	J	3.6
Methoxychlor	ug/kg	ND	UJ*	20	ND	UJ	19	1.4	NJ	19	ND	UJ	19
Endrin ketone	ug/kg	ND	UJ	4.0	ND	UJ	3.8	ND	UJ	3.8	ND	UJ	3.6
Endrin aldehyde	ug/kg	ND	UJ*	4.0	ND	UJ	3.8	ND	UJ	3.8	3.3	J	3.6
alpha-Chlordane	ug/kg	0.17	J	2.0	ND	UJ	1.9	ND	UJ*	1.9	0.33	J	1.9
gamma-Chlordane	ug/kg	ND	U	2.0	ND	UJ*	1.9	ND	UJ*	1.9	ND	UJ	1.9
Toxaphene	ug/kg	ND	U	200	ND	UJ	190	ND	UJ	190	ND	UJ	190
Aroclor 1016	ug/kg	ND	U	40	ND	UJ	38	ND	UJ	38	ND	UJ	36
Aroclor 1221	ug/kg	ND	U	80	ND	UJ	77	ND	UJ	76	ND	UJ	74
Aroclor 1232	ug/kg	ND	U	40	ND	UJ	38	ND	UJ	38	ND	UJ	36
Aroclor 1242	ug/kg	ND	U	40	ND	UJ	38	ND	UJ	38	ND	UJ	36
Aroclor 1248	ug/kg	ND	U	40	ND	UJ	38	ND	UJ	38	ND	UJ	36
Aroclor 1254	ug/kg	ND	U	40	ND	UJ	38	ND	UJ	38	ND	UJ	36
Aroclor 1260	ug/kg	ND	U	40	ND	UJ	38	ND	UJ	38	ND	UJ	36

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L1.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-B111-112493			FF-B121-112493			FF-B131-112393			FF-B141-121393		
Sample Designation=		031813-0001-SA			031813-0003-SA			031806-0009-SA			32184-0001-SA		
Sample Collection Date=		24 NOV 93			24 NOV 93			23 NOV 93			13 DEC 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	U	2.0	0.046	J	1.9	ND	UJ	3.8	ND	U	2.0
beta-BHC	ug/kg	ND	U	2.0	ND	UJ	1.9	ND	UJ	3.8	ND	U	2.0
delta-BHC	ug/kg	ND	U	2.0	ND	UJ	1.9	ND	UJ	3.8	ND	U	2.0
gamma-BHC (Lindane)	ug/kg	ND	UJ*	3.3	ND	UJ*	5.0	ND	UJ	3.8	0.24	J	2.0
Heptachlor	ug/kg	ND	U	2.0	ND	UJ	1.9	ND	UJ	3.8	0.27	J	2.0
Aldrin	ug/kg	ND	U	2.0	ND	UJ	1.9	ND	UJ	3.8	ND	U	2.0
Heptachlor epoxide	ug/kg	0.24	J	2.0	0.66	J	1.9	1.4	J	3.8	0.34	J	2.0
Endosulfan I	ug/kg	ND	U	2.0	ND	UJ	1.9	0.66	NJ	3.8	ND	U	2.0
Dieldrin	ug/kg	ND	UJ*	3.3	ND	UJ*	7.1	5.6	NJ	7.4	0.88	J	3.9
4,4'-DDE	ug/kg	6.5		3.8	0.41	J	3.7	ND	UJ*	7.4	20	J	3.9
Endrin	ug/kg	3.2	J	3.8	4.8	J	3.7	9.7	NJ	7.4	0.59	NJ	3.9
Endosulfan II	ug/kg	0.98	J	3.8	ND	UJ	3.7	7.3	NJ	7.4	0.72	J	3.9
4,4'-DDD	ug/kg	1.8	J	3.8	ND	UJ	3.7	ND	UJ	7.4	2.6	NJ	3.9
Endosulfan sulfate	ug/kg	ND	U	3.8	ND	UJ*	4.3	ND	UJ	7.4	ND	U	3.9
4,4'-DDT	ug/kg	11		3.8	7.2	J	3.7	ND	UJ	7.4	34	J	3.9
Methoxychlor	ug/kg	ND	U	20	5.4	J	19	ND	UJ*	54	ND	U	20
Endrin ketone	ug/kg	ND	U	3.8	ND	U	3.7	ND	UJ	7.4	ND	U	3.9
Endrin aldehyde	ug/kg	ND	UJ*	12	ND	UJ*	32	ND	UJ	7.4	1.4	NJ	3.9
alpha-Chlordane	ug/kg	0.61	J	2.0	ND	U	1.9	ND	UJ*	5.7	ND	U	2.0
gamma-Chlordane	ug/kg	0.29	J	2.0	ND	U	1.9	ND	UJ*	3.8	ND	U	2.0
Toxaphene	ug/kg	ND	U	200	ND	U	190	ND	UJ	380	ND	U	200
Aroclor 1016	ug/kg	ND	U	38	ND	U	37	ND	UJ	74	ND	U	39
Aroclor 1221	ug/kg	ND	U	78	ND	U	74	ND	UJ	150	ND	U	80
Aroclor 1232	ug/kg	ND	U	38	ND	U	37	ND	UJ	74	ND	U	39
Aroclor 1242	ug/kg	ND	U	38	ND	U	37	ND	UJ	74	ND	U	39
Aroclor 1248	ug/kg	ND	U	38	ND	U	37	ND	UJ	74	ND	U	39
Aroclor 1254	ug/kg	ND	U	38	ND	U	37	ND	UJ	74	ND	U	39
Aroclor 1260	ug/kg	ND	U	38	ND	U	37	ND	UJ	74	ND	U	39

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L1.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-B151-121393			FF-B161-112393			FF-B164-112393 (Dup of B161)			FF-B171-112493		
Sample Designation=		32184-0003-SA			031806-0011-SA			031806-0014-SA			031813-0005-SA		
Sample Collection Date=		13 DEC 93			23 NOV 93			23 NOV 93			24 NOV 93		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	U	1.9	ND	UJ	9.2	ND	UJ	1.9	ND	U	1.9
beta-BHC	ug/kg	ND	U	1.9	ND	UJ	9.2	ND	UJ	1.9	ND	U	1.9
delta-BHC	ug/kg	ND	U	1.9	ND	UJ	9.2	ND	UJ	1.9	ND	U	1.9
gamma-BHC (Lindane)	ug/kg	0.21	J	1.9	ND	UJ	9.2	ND	UJ	1.9	ND	UJ*	4.7
Heptachlor	ug/kg	ND	U	1.9	ND	UJ	9.2	ND	UJ	1.9	ND	U	1.9
Aldrin	ug/kg	ND	U	1.9	ND	UJ*	9.2	ND	UJ	1.9	ND	U	1.9
Heptachlor epoxide	ug/kg	1.1	NJ	1.9	8.1	J	9.2	2	J	1.9	ND	UJ*	4.2
Endosulfan I	ug/kg	ND	U	1.9	9.4	J	9.2	2	J	1.9	ND	U	1.9
Dieldrin	ug/kg	ND	UJ*	8.4	ND	UJ*	100	ND	UJ*	28	ND	U	3.7
4,4'-DDE	ug/kg	3.3	J	3.7	ND	UJ	18	ND	UJ	3.7	1.5	J	3.7
Endrin	ug/kg	13	J	3.7	74	J	18	25	J	3.7	ND	U	3.7
Endosulfan II	ug/kg	3.6	J	3.7	25	NJ	18	6.5	J	3.7	ND	UJ*	3.7
4,4'-DDD	ug/kg	ND	U	3.7	17	J	18	4.7	J	3.7	ND	U	3.7
Endosulfan sulfate	ug/kg	1.7	J	3.7	33	J	18	11	J	3.7	ND	U	3.7
4,4'-DDT	ug/kg	ND	U*	28	ND	UJ	18	9.6	J	3.7	3.6	J	3.7
Methoxychlor	ug/kg	ND	U	19	ND	UJ	92	ND	UJ	19	1.4	J	19
Endrin ketone	ug/kg	ND	U	3.7	ND	UJ	18	ND	UJ	3.7	ND	U	3.7
Endrin aldehyde	ug/kg	6.8	NJ	3.7	ND	UJ	18	ND	UJ	3.7	3.9	NJ	3.7
alpha-Chlordane	ug/kg	ND	U*	1.9	ND	UJ	9.2	ND	UJ	1.9	ND	U	1.9
gamma-Chlordane	ug/kg	ND	U*	1.9	3.5	J	9.2	ND	UJ	1.9	ND	U	1.9
Toxaphene	ug/kg	ND	U	190	ND	UJ	920	ND	UJ	190	ND	U	190
Aroclor 1016	ug/kg	ND	U	37	ND	UJ	180	ND	UJ	37	ND	U	37
Aroclor 1221	ug/kg	ND	U	75	ND	UJ	360	ND	UJ	75	ND	U	76
Aroclor 1232	ug/kg	ND	U	37	ND	UJ	180	ND	UJ	37	ND	U	37
Aroclor 1242	ug/kg	ND	U	37	ND	UJ	180	ND	UJ	37	ND	U	37
Aroclor 1248	ug/kg	ND	U	37	ND	UJ	180	ND	UJ	37	ND	U	37
Aroclor 1254	ug/kg	ND	U	37	ND	UJ	180	ND	UJ	37	ND	U	37
Aroclor 1260	ug/kg	ND	U	37	ND	UJ	180	ND	UJ	37	ND	U	37

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L1.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-SS31-110493			FF-B81-112293			FF-B91-112393			FF-B101-112393		
Sample Designation=		031390-0012-SA			031806-0005-SA			031806-0008-SA			031813-0008-SA		
Sample Collection Date=		04 NOV 93			22 NOV 93			23 NOV 93			23 NOV 93		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Aluminum	mg/kg	10000		NA	10300		NA	11200		NA	9910		NA
Antimony	mg/kg	6	UJ	NA	5.7	UJ	NA	5.6	UJ	NA	5.7	J	NA
Arsenic	mg/kg	6.2	J	NA	6.3	J	NA	6	J	NA	5	J	NA
Barium	mg/kg	27.2	B	NA	25.6	B	NA	29.9	B	NA	25.4	B	NA
Beryllium	mg/kg	0.4	B	NA	0.33	B	NA	0.43	B	NA	0.39	B	NA
Cadmium	mg/kg	0.72	U	NA	0.71	U	NA	0.7	U	NA	0.69	U	NA
Calcium	mg/kg	668		NA	644	B	NA	1830		NA	1170		NA
Chromium	mg/kg	11.6		NA	12.1		NA	13.2		NA	11.5		NA
Cobalt	mg/kg	5.8	B	NA	6.7	B	NA	9.7	B	NA	6.5	B	NA
Copper	mg/kg	17.2		NA	11.3		NA	19.8		NA	16.4		NA
Iron	mg/kg	17300		NA	16500		NA	19800		NA	16800		NA
Lead	mg/kg	133		NA	35.1	S	NA	68.7		NA	60.4		NA
Magnesium	mg/kg	1900		NA	1930		NA	2390		NA	2120		NA
Manganese	mg/kg	211		NA	233	J	NA	331	J	NA	221	J	NA
Mercury	mg/kg	0.19		NA	0.06	U	NA	0.06	U	NA	0.07	B	NA
Nickel	mg/kg	14.3		NA	12		NA	15.7		NA	15.4		NA
Potassium	mg/kg	280	B	NA	446	B	NA	419	B	NA	402	B	NA
Selenium	mg/kg	0.48	UW	NA	0.47	UW	NA	0.47	U	NA	0.46	U	NA
Silver	mg/kg	0.96	U	NA	1.2	U	NA	1.2	U	NA	1.1	U	NA
Sodium	mg/kg	289	U	NA	401	U	NA	396	U	NA	388	U	NA
Thallium	mg/kg	0.48	U	NA	0.47	UJ	NA	0.47	UJ	NA	0.46	UJ	NA
Vanadium	mg/kg	29.5		NA	18.3	J	NA	22.5		NA	41.2		NA
Zinc	mg/kg	82		NA	42.8	UJ	NA	73.4	J	NA	65.1	J	NA
Cyanide, Total	mg/kg	0.60	U	NA	0.59	U	NA	0.59	UJ	NA	0.57	UJ	NA

TABLE L1.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-B111-112493			FF-B121-112493			FF-B131-112393			FF-B141-121393		
Sample Designation=		031813-0001-SA			031813-0003-SA			031806-0009-SA			32184-01-SA		
Sample Collection Date=		24 NOV 93			24 NOV 93			23 NOV 93			13 DEC 93		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Aluminum	mg/kg	10500		NA	10500		NA	8380		NA	10700		NA
Antimony	mg/kg	5.3	UJ	NA	5.3	UJ	NA	5.4	UJ	NA	5.9	UJ	NA
Arsenic	mg/kg	6.6	J	NA	6.6	J	NA	10	J	NA	8.5		NA
Barium	mg/kg	25.9	B	NA	25.9	B	NA	32.4	B	NA	27.4	B	NA
Beryllium	mg/kg	0.28	B	NA	0.28	B	NA	0.37	B	NA	0.35	B	NA
Cadmium	mg/kg	0.66	U	NA	0.66	U	NA	0.67	U	NA	0.74	U	NA
Calcium	mg/kg	1400	B	NA	1400		NA	4520		NA	937	B	NA
Chromium	mg/kg	13.7		NA	13.7		NA	19.3		NA	11.8		NA
Cobalt	mg/kg	10.8	B	NA	10.8	B	NA	10.6	B	NA	5.8	B	NA
Copper	mg/kg	33.9		NA	33.9		NA	63.8		NA	9.1		NA
Iron	mg/kg	23000		NA	23000		NA	31000		NA	15400		NA
Lead	mg/kg	108		NA	108		NA	125		NA	22.5	S	NA
Magnesium	mg/kg	3280		NA	3280		NA	3540		NA	1930		NA
Manganese	mg/kg	439	J	NA	439	J	NA	325	J	NA	215	J	NA
Mercury	mg/kg	0.080	B	NA	0.08	B	NA	0.14		NA	0.06	U	NA
Nickel	mg/kg	18.3		NA	18.3		NA	20.8		NA	11.7		NA
Potassium	mg/kg	382	B	NA	382	B	NA	443	B	NA	279	B	NA
Selenium	mg/kg	0.47	U	NA	0.47	U	NA	0.58	B	NA	0.49	U	NA
Silver	mg/kg	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.2	U	NA
Sodium	mg/kg	372	U	NA	372	U	NA	378	U	NA	415	U	NA
Thallium	mg/kg	0.44	UJ	NA	0.44	UJ	NA	0.45	UJ	NA	0.49	UJ	NA
Vanadium	mg/kg	19.0		NA	19		NA	21.9		NA	18.7		NA
Zinc	mg/kg	104	J	NA	104	J	NA	168	J	NA	38	J	NA
Cyanide, Total	mg/kg	0.55	UJ	NA	0.55	UJ	NA	0.56	UJ	NA	0.61	U	NA

TABLE L1.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-B151-121393			FF-B161-112393			FF-B164-112393 (Dup of B161)			FF-B171-112493		
Sample Designation=		32184-0003-SA			031806-0011-SA			031806-0014-SA			031813-0005-SA		
Sample Collection Date=		13 DEC 93			23 NOV 93			23 NOV 93			24 NOV 93		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Aluminum	mg/kg	9540		NA	7080		NA	9580		NA	6270		NA
Antimony	mg/kg	5.1	UJ	NA	5.2	UJ	NA	6.5	J	NA	5.1	UJ	NA
Arsenic	mg/kg	7		NA	6.9	J	NA	7.3	J	NA	3.4	J	NA
Barium	mg/kg	26.9	B	NA	46.5		NA	10.2	B	NA	13.3	B	NA
Beryllium	mg/kg	0.36	B	NA	0.22	B	NA	0.4	B	NA	0.23	B	NA
Cadmium	mg/kg	0.72	B	NA	0.65	U	NA	0.66	U	NA	0.64	U	NA
Calcium	mg/kg	1640		NA	1550		NA	849	B	NA	732	B	NA
Chromium	mg/kg	12.1		NA	28.4		NA	17.6		NA	7.2		NA
Cobalt	mg/kg	11.1		NA	7.4	B	NA	14.9		NA	7	B	NA
Copper	mg/kg	20.5		NA	87		NA	45.1		NA	11.6		NA
Iron	mg/kg	22700		NA	39200		NA	31100		NA	12700		NA
Lead	mg/kg	77.4		NA	126		NA	83.2		NA	23.6	S	NA
Magnesium	mg/kg	2640		NA	3330		NA	3320		NA	2170		NA
Manganese	mg/kg	506	J	NA	290	J	NA	554	J	NA	404	J	NA
Mercury	mg/kg	0.05	U	NA	0.11	B	NA	0.1	B	NA	0.05	U	NA
Nickel	mg/kg	19.5		NA	26.8		NA	19.1		NA	11		NA
Potassium	mg/kg	329	B	NA	1160		NA	339	B	NA	330	B	NA
Selenium	mg/kg	0.43	UW	NA	0.44	U	NA	0.44	U	NA	0.43	U	NA
Silver	mg/kg	1.1	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA
Sodium	mg/kg	362	U	NA	368	U	NA	372	U	NA	362	U	NA
Thallium	mg/kg	0.43	UJ	NA	0.44	UJ	NA	0.44	UJ	NA	0.43	UJ	NA
Vanadium	mg/kg	19.3		NA	27.3		NA	16.4		NA	9	B	NA
Zinc	mg/kg	89.3	J	NA	207	J	NA	125	J	NA	39.5	J	NA
Cyanide, Total	mg/kg	0.54	U	NA	0.54	UJ	NA	0.55	UJ	NA	0.46	UJ	NA

TABLE L3.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-TP11-011194			FF-TP12-011194			FF-TP13-011194			FF-TP21-011194		
Sample Designation=		9401L245-001			9401L245-002			9401L245-003			9401L245-004		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94			11 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Diesel Scan	mg/kg	ND	U	749	Not Analyzed			Not Analyzed			Not Analyzed		
Chloromethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Bromomethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Vinyl Chloride	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Chloroethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Methylene chloride	ug/kg	ND	U*	2400	ND	U*	15	ND	U*	17	ND	U*	1700
Acetone	ug/kg	ND	U*	5100	ND	U*	29	ND	U*	29	ND	U	1400
Carbon disulfide	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,1-Dichloroethene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,1-Dichloroethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Chloroform	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,2-Dichloroethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
2-Butanone	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,1,1-Trichloroethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Carbon tetrachloride	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Bromodichloromethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,2-Dichloropropane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
cis-1,3-Dichloropropene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Trichloroethene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Dibromochloromethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,1,2-Trichloroethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Benzene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
trans-1,3-Dichloropropene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Bromoform	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
4-Methyl-2-Pentanone	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
2-Hexanone	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Tetrachloroethene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Toluene	ug/kg	ND	U	2400	ND	U	11	2	J	11	ND	U	1400
Chlorobenzene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Ethylbenzene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Styrene	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Xylenes (total)	ug/kg	ND	U	2400	ND	U	11	ND	U	11	ND	U	1400
Total VOCs		**0**			**0**			**2**			**0**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L3.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-TP22-011194			FF-TP23-011194			FF-TP31-011194			FF-TP32-011194		
Sample Designation=		9401L245-005			9401L245-006			9401L245-007			9401L245-008		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94			11 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Chloromethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Bromomethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Vinyl Chloride	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Chloroethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Methylene chloride	ug/kg	ND	U*	13	ND	U*	18	ND	U*	3800	ND	U*	17
Acetone	ug/kg	ND	U*	56	ND	U*	32	ND	U*	3500	ND	U*	29
Carbon disulfide	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,1-Dichloroethene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,1-Dichloroethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Chloroform	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,2-Dichloroethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
2-Butanone	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,1,1-Trichloroethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Carbon tetrachloride	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Bromodichloromethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,2-Dichloropropane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
cis-1,3-Dichloropropene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Trichloroethene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Dibromochloromethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,1,2-Trichloroethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Benzene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
trans-1,3-Dichloropropene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Bromoform	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
4-Methyl-2-Pentanone	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
2-Hexanone	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Tetrachloroethene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Toluene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	1	J	11
Chlorobenzene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Ethylbenzene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Styrene	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Xylenes (total)	ug/kg	ND	U	12	ND	U	11	ND	U	1500	ND	U	11
Total VOCs		**0**			**0**			**0**			**1**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L3.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-TP33-011194			FB-011194			TB-011294		
Sample Designation=		9401L245-009			9401L245-010			9401L245-011		
Sample Collection Date=		11 JAN 94			11 JAN 94			12 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Chloromethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
Bromomethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
Vinyl Chloride	ug/kg	ND	U	11	ND	U	10	ND	U	10
Chloroethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
Methylene chloride	ug/kg	ND	U*	18	ND	U*	12	ND	U*	23
Acetone	ug/kg	ND	U*	32	ND	U*	12	ND	U*	10
Carbon disulfide	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,1-Dichloroethene	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,1-Dichloroethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	11	ND	U	10	ND	U	10
Chloroform	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,2-Dichloroethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
2-Butanone	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,1,1-Trichloroethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
Carbon tetrachloride	ug/kg	ND	U	11	ND	U	10	ND	U	10
Bromodichloromethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,2-Dichloropropane	ug/kg	ND	U	11	ND	U	10	ND	U	10
cis-1,3-Dichloropropene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Trichloroethene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Dibromochloromethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,1,2-Trichloroethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
Benzene	ug/kg	ND	U	11	ND	U	10	ND	U	10
trans-1,3-Dichloropropene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Bromoform	ug/kg	ND	U	11	ND	U	10	ND	U	10
4-Methyl-2-Pentanone	ug/kg	ND	U	11	ND	U	10	ND	U	10
2-Hexanone	ug/kg	ND	U	11	ND	U	10	ND	U	10
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	11	ND	U	10	ND	U	10
Tetrachloroethene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Toluene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Chlorobenzene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Ethylbenzene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Styrene	ug/kg	ND	U	11	ND	U	10	ND	U	10
Xylenes (total)	ug/kg	ND	U	11	ND	U	10	ND	U	10
Total VOCs		**0**			**0**			**0**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L3.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-TP21-011194			FF-TP22-011194			FF-TP23-011194		
Sample Designation=		9401L245-004			9401L245-005			9401L245-006		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Phenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
bis(2-Chloroethyl)ether	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2-Chlorophenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
1,3-Dichlorobenzene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
1,4-Dichlorobenzene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
1,2-Dichlorobenzene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2-Methylphenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,2'-oxybis(1-Chloropropane)	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
4-Methylphenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
N-Nitroso-di-n-propylamine	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Hexachloroethane	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Nitrobenzene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Isophorone	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2-Nitrophenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,4-Dimethylphenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
bis(2-Chloroethoxy)methane	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,4-Dichlorophenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
1,2,4-Trichlorobenzene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Naphthalene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
4-Chloroaniline	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Hexachlorobutadiene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
4-Chloro-3-methylphenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2-Methylnaphthalene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Hexachlorocyclopentadiene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,4,6-Trichlorophenol	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,4,5-Trichlorophenol	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
2-Chloronaphthalene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2-Nitroaniline	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
Dimethylphthalate	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Acenaphthylene	ug/kg	ND	U	7700	ND	UJ	380	100	J	360
2,6-Dinitrotoluene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
3-Nitroaniline	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
Acenaphthene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,4-Dinitrophenol	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
4-Nitrophenol	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
Dibenzofuran	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
2,4-Dinitrotoluene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Diethylphthalate	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
4-Chlorophenyl-phenylether	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Fluorene	ug/kg	1500	J	7700	ND	UJ	380	ND	UJ	360
4-Nitroaniline	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
N-Nitrosodiphenylamine	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
4-Bromophenyl-phenylether	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Hexachlorobenzene	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Pentachlorophenol	ug/kg	ND	U	19000	ND	UJ	940	ND	UJ	900
Phenanthrene	ug/kg	850	J	7700	ND	UJ	380	860	J	360
Anthracene	ug/kg	440	J	7700	ND	UJ	380	170	J	360
Carbazole	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Di-n-butylphthalate	ug/kg	ND	U	7700	ND	UJ*	380	ND	UJ	360
Fluoranthene	ug/kg	460	J	7700	ND	UJ	380	930	J	360
Pyrene	ug/kg	1000	J	7700	ND	UJ	380	1100	J	360
Butylbenzylphthalate	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
3,3'-Dichlorobenzidine	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Benzo(a)anthracene	ug/kg	ND	U	7700	ND	UJ	380	500	J	360
Chrysene	ug/kg	ND	U	7700	ND	UJ	380	580	J	360
bis(2-Ethylhexyl)phthalate	ug/kg	ND	U*	7700	ND	UJ	380	ND	UJ	360
Di-n-octyl phthalate	ug/kg	ND	U	7700	ND	UJ	380	ND	UJ	360
Benzo(b)fluoranthene	ug/kg	ND	U	7700	ND	UJ	380	320	J	360
Benzo(k)fluoranthene	ug/kg	ND	U	7700	ND	UJ	380	390	J	360
Benzo(a)pyrene	ug/kg	ND	U	7700	ND	UJ	380	460	J	360
Indeno(1,2,3-cd)pyrene	ug/kg	ND	U	7700	ND	UJ	380	260	J	360
Dibenz(a,h)anthracene	ug/kg	ND	U	7700	ND	UJ	380	160	J	360
Benzo(g,h,i)perylene	ug/kg	ND	U	7700	ND	UJ	380	330	J	360
Total PAHs		4250			0			6160		
Total Carcinogenic PAHs		0			0			3000		
Total SVOCs		4250			0			6160		

NOTE: '*' indicates a value which was changed to 'ND' following data validation.

TABLE L3.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-TP31-011194			FF-TP32-011194			FF-TP33-011194		
Sample Designation=		9401L245-007			9401L245-008			9401L245-009		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Phenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
bis(2-Chloroethyl)ether	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2-Chlorophenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
1,3-Dichlorobenzene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
1,4-Dichlorobenzene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
1,2-Dichlorobenzene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2-Methylphenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,2'-oxybis(1-Chloropropane)	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
4-Methylphenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
N-Nitroso-di-n-propylamine	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Hexachloroethane	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Nitrobenzene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Isophorone	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2-Nitrophenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,4-Dimethylphenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
bis(2-Chloroethoxy)methane	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,4-Dichlorophenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
1,2,4-Trichlorobenzene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Naphthalene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
4-Chloroaniline	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Hexachlorobutadiene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
4-Chloro-3-methylphenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2-Methylnaphthalene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Hexachlorocyclopentadiene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,4,6-Trichlorophenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	37[illegible]
2,4,5-Trichlorophenol	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	9[illegible]
2-Chloronaphthalene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	3[illegible]
2-Nitroaniline	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
Dimethylphthalate	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Acenaphthylene	ug/kg	ND	UJ	6700	380	J	700	ND	UJ	370
2,6-Dinitrotoluene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
3-Nitroaniline	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
Acenaphthene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,4-Dinitrophenol	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
4-Nitrophenol	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
Dibenzofuran	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,4-Dinitrotoluene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Diethylphthalate	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
4-Chlorophenyl-phenylether	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Fluorene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
4-Nitroaniline	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
4,6-Dinitro-2-methylphenol	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
N-Nitrosodiphenylamine	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
4-Bromophenyl-phenylether	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Hexachlorobenzene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Pentachlorophenol	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
Phenanthrene	ug/kg	6300	J	6700	1300	J	700	730	J	370
Anthracene	ug/kg	480	J	6700	520	J	700	200	J	370
Carbazole	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Di-n-butylphthalate	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ*	370
Fluoranthene	ug/kg	ND	UJ	6700	3000	J	700	1200	J	370
Pyrene	ug/kg	ND	UJ	6700	3100	J	700	980	J	370
Butylbenzylphthalate	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
3,3'-Dichlorobenzidine	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Benzo(a)anthracene	ug/kg	500	J	6700	2400	J	700	580	J	370
Chrysene	ug/kg	690	J	6700	2500	J	700	640	J	370
bis(2-Ethylhexyl)phthalate	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Di-n-octyl phthalate	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Benzo(b)fluoranthene	ug/kg	430	J	6700	2300	J	700	480	J	370
Benzo(k)fluoranthene	ug/kg	850	J	6700	2500	J	700	570	J	370
Benzo(a)pyrene	ug/kg	ND	UJ	6700	2900	J	700	630	J	370
Indeno(1,2,3-cd)pyrene	ug/kg	ND	UJ	6700	1700	J	700	400	J	370
Dibenz(a,h)anthracene	ug/kg	ND	UJ	6700	780	J	700	130	J	37[illegible]
Benzo(g,h,i)perylene	ug/kg	ND	UJ	6700	1700	J	700	440	J	
Total PAHs		9250			25080			6980		
Total Carcinogenic PAHs		2470			16780			3870		
Total SVOCs		9250			25080			6980		

NOTE: * indicates a value which was changed to 'ND' following data validation.

TABLE L3.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-TP22-011194			FF-TP23-011194			FF-TP31-011194			FF-TP32-011194		
Sample Designation=		9401L245-005			9401L245-006			9401L245-007			9401L245-008		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94			11 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
beta-BHC	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
delta-BHC	ug/kg	ND	UJ	1.8	ND	U	1.6	2.4	J	2.0	ND	UJ	3.6
gamma-BHC (Lindane)	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
Heptachlor	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
Aldrin	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
Heptachlor epoxide	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
Endosulfan I	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
Dieldrin	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
4,4'-DDE	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
Endrin	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
Endosulfan II	ug/kg	ND	UJ	3.6	5.1	J	3.2	4.7	J	3.9	9.7	J	7.2
4,4'-DDD	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
Endosulfan sulfate	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
4,4'-DDT	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
Methoxychlor	ug/kg	ND	UJ	18	ND	U	16	ND	UJ	20	ND	UJ	36
Endrin ketone	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
Endrin aldehyde	ug/kg	ND	UJ	3.6	ND	U	3.2	ND	UJ	3.9	ND	UJ	7.2
alpha-Chlordane	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
gamma-Chlordane	ug/kg	ND	UJ	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
Toxaphene	ug/kg	ND	UJ	180	ND	U	160	ND	UJ	200	ND	UJ	360
Aroclor 1016	ug/kg	ND	UJ	36	ND	U	32	ND	UJ	39	ND	UJ	72
Aroclor 1221	ug/kg	ND	UJ	71	ND	U	64	ND	UJ	78	ND	UJ	140
Aroclor 1232	ug/kg	ND	UJ	36	ND	U	32	ND	UJ	39	ND	UJ	72
Aroclor 1242	ug/kg	ND	UJ	36	ND	U	32	ND	UJ	39	ND	UJ	72
Aroclor 1248	ug/kg	ND	UJ	36	ND	U	32	ND	UJ	39	ND	UJ	72
Aroclor 1254	ug/kg	ND	UJ	36	ND	U	32	ND	UJ	39	ND	UJ	72
Aroclor 1260	ug/kg	ND	UJ	36	ND	U	32	ND	UJ	39	ND	UJ	72

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L3.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-TB33-011194			FB-011194		
Sample Designation=		9401L245-009			9401L245-010		
Sample Collection Date=		11 JAN 94			11 JAN 94		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	UJ	1.9	ND	UJ	0.052
beta-BHC	ug/kg	ND	UJ	1.9	ND	UJ	0.052
delta-BHC	ug/kg	ND	UJ	1.9	ND	UJ	0.052
gamma-BHC (Lindane)	ug/kg	ND	UJ	1.9	ND	UJ	0.052
Heptachlor	ug/kg	ND	UJ	1.9	ND	UJ	0.052
Aldrin	ug/kg	ND	UJ	1.9	ND	UJ	0.052
Heptachlor epoxide	ug/kg	ND	UJ	1.9	ND	UJ	0.052
Endosulfan I	ug/kg	ND	UJ	1.9	ND	UJ	0.052
Dieldrin	ug/kg	ND	UJ	3.7	ND	UJ	0.10
4,4'-DDE	ug/kg	ND	UJ	3.7	ND	UJ	0.10
Endrin	ug/kg	ND	UJ	3.7	ND	UJ	0.10
Endosulfan II	ug/kg	5.4	J	3.7	ND	UJ	0.10
4,4'-DDD	ug/kg	ND	UJ	3.7	ND	UJ	0.10
Endosulfan sulfate	ug/kg	ND	UJ	3.7	ND	UJ	0.10
4,4'-DDT	ug/kg	ND	UJ	3.7	ND	UJ	0.10
Methoxychlor	ug/kg	ND	UJ	19	ND	UJ	0.52
Endrin ketone	ug/kg	ND	UJ	3.7	ND	UJ	0.10
Endrin aldehyde	ug/kg	ND	UJ	3.7	ND	UJ	0.10
alpha-Chlordane	ug/kg	ND	UJ	1.9	ND	UJ	0.052
gamma-Chlordane	ug/kg	ND	UJ	1.9	ND	UJ	0.052
Toxaphene	ug/kg	ND	UJ	190	ND	UJ	5.2
Aroclor 1016	ug/kg	ND	UJ	37	ND	UJ	1.0
Aroclor 1221	ug/kg	ND	UJ	74	ND	UJ	2.1
Aroclor 1232	ug/kg	ND	UJ	37	ND	UJ	1.0
Aroclor 1242	ug/kg	ND	UJ	37	ND	UJ	1.0
Aroclor 1248	ug/kg	ND	UJ	37	ND	UJ	1.0
Aroclor 1254	ug/kg	ND	UJ	37	ND	UJ	1.0
Aroclor 1260	ug/kg	ND	UJ	37	ND	UJ	1.0

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L3.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-TP11-011194			FF-TP12-011194			FF-TP13-011194			FF-TP21-011194		
Sample Designation=		9401L245-001			9401L245-002			9401L245-003			9401L245-004		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94			11 JAN 94		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Silver, Total	mg/kg	0.66	J	0.15	ND	UJ	0.091	ND	UJ	0.089	ND	UJ	0.092
Aluminum, Total	mg/kg	10900		5.8	8710		3.5	7970		3.2	5650		3.5
Arsenic, Total	mg/kg	9.5	J	0.77	4.1	J	0.45	2.6	J	0.45	3.7	J	0.46
Barium, Total	mg/kg	329		1.2	46.2	B	0.70	23.6	B	0.65	9.6	B	0.70
Beryllium, Total	mg/kg	1	B	0.39	0.28	B	0.23	0.37	B	0.22	ND	U	0.23
Calcium, Total	mg/kg	4930		7.0	4930		4.2	795	B	3.9	760	B	4.2
Cadmium, Total	mg/kg	11.5		0.31	0.25	J	0.091	ND	UJ	0.089	ND	UJ	0.092
Cobalt, Total	mg/kg	33.8		0.77	8.3	B	0.47	12.2		0.43	8	B	0.46
Chromium, Total	mg/kg	97.9	J	1.2	8.6	J	0.70	11.8	J	0.65	5.8	J	0.70
Copper, Total	mg/kg	544		0.77	23.3		0.47	16.1		0.43	16.9		0.46
Iron, Total	mg/kg	170000		2.3	17200		1.4	23000		1.3	16900		1.4
Mercury, Total	mg/kg	0.26		0.097	0.25		0.059	ND	U	0.056	ND	U	0.045
Potassium, Total	mg/kg	592	B	258	329	B	156	538	B	144	320	B	154
Magnesium, Total	mg/kg	3650		18.2	1840		11.0	2180		10.2	2040		10.9
Manganese, Total	mg/kg	692	J	1.2	255	J	0.70	186	J	0.65	243	J	0.70
Sodium, Total	mg/kg	196	B	10.4	89.2	B	6.3	97.9	B	5.8	87.3	B	6.3
Nickel, Total	mg/kg	145		3.5	13.7		2.1	28.1		1.9	16.3		2.1
Lead, Total	mg/kg	497	J	7.0	475	J	4.2	40.1	J	3.9	10.8	J	4.6
Antimony, Total	mg/kg	ND	U	10.4	ND	U	6.3	ND	U	5.8	ND	U	6.3
Selenium, Total	mg/kg	ND	UJ	0.77	0.59	J	0.45	ND	UJ	0.45	ND	UJ	0.46
Thallium, Total	mg/kg	ND	UJ	0.77	ND	UJ	4.5	ND	UJ	0.45	ND	UJ	0.46
Vanadium, Total	mg/kg	ND	U	1.5	16.5		0.94	7.1	B	0.87	11.1	B	0.93
Zinc, Total	mg/kg	4480		1.2	169		0.70	57.8		0.65	210		0.70
Cyanide, Total	mg/kg	ND	U	1.9	ND	U	1.2	ND	U	1.2	ND	U	1.2

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation.

TABLE L3.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-TP22-011194			FF-TP23-011194			FF-TP31-011194			FF-TP32-011194		
Sample Designation=		9401L245-005			9401L245-006			9401L245-007			9401L245-008		
Sample Collection Date=		11 JAN 94			11 JAN 94			11 JAN 94			11 JAN 94		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Silver, Total	mg/kg	ND	UJ	0.092	ND	UJ	0.084	ND	UJ	0.095	ND	UJ	0.089
Aluminum, Total	mg/kg	12000		3.2	6620		3.3	3030		3.6	10300		3.3
Arsenic, Total	mg/kg	4.3	J	0.46	2.1	J	0.42	16.3	J	1.9	2.9	J	0.45
Barium, Total	mg/kg	18.2	B	0.65	13.2	B	0.65	200		0.72	22.1	B	0.66
Beryllium, Total	mg/kg	0.37	B	0.22	0.24	B	0.22	ND	U	0.24	0.29	B	0.22
Calcium, Total	mg/kg	884	B	3.9	4330		3.9	32300		4.3	1090	B	4.0
Cadmium, Total	mg/kg	ND	UJ	0.092	ND	UJ	0.084	3.6		0.095	ND	UJ	0.089
Cobalt, Total	mg/kg	10.4	B	0.43	8.6	B	0.44	2.9	B	0.48	11.8		0.44
Chromium, Total	mg/kg	12.5	J	0.65	8.8	J	0.65	6.1	J	0.72	12.3	J	0.66
Copper, Total	mg/kg	10.6		0.43	26.6		0.44	52.4		0.48	27.4		0.44
Iron, Total	mg/kg	22100		1.3	15500		1.3	12300		1.4	24400		1.3
Mercury, Total	mg/kg	ND	U	0.049	ND	U	0.055	0.16		0.060	0.076	B	0.046
Potassium, Total	mg/kg	336	B	144	471	B	145	822	B	161	809	B	147
Magnesium, Total	mg/kg	2570		10.2	2490		10.3	4630		11.3	3150		10.4
Manganese, Total	mg/kg	139	J	0.65	273		0.65	299	J	0.72	413	J	0.66
Sodium, Total	mg/kg	ND	U*	60.1	ND	U*	49.8	324	B	6.5	76	B	6.0
Nickel, Total	mg/kg	17.7		1.9	11.8		2.0	4.3	B	2.2	18.7		2.0
Lead, Total	mg/kg	6.9	J	4.6	65.6	J	3.9	3090	J	4.3	67.6	J	4.0
Antimony, Total	mg/kg	ND	U	5.8	ND	U	5.9	6.7		6.5	ND	U	6.0
Selenium, Total	mg/kg	ND	UJ	0.46	0.5	J	0.42	ND	UJ	0.48	ND	UJ	0.45
Thallium, Total	mg/kg	ND	UJ	0.46	ND	UJ	0.42	ND	UJ	4.8	ND	UJ	0.45
Vanadium, Total	mg/kg	7.4	B	0.86	ND	U*	4.6	ND	U*	6.9	7.7	B	0.88
Zinc, Total	mg/kg	42.7		0.65	112		0.65	1580		0.72	76.3		0.66
Cyanide, Total	mg/kg	ND	U	1.2	ND	U	1.1	ND	U	1.2	ND	U	1.1

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation.

TABLE L3.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
TEST PIT SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-TP33-011194			FB-011194		
Sample Designation=		9401L245-009			9401L245-010		
Sample Collection Date=		11 JAN 94			11 JAN 94		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Silver, Total	mg/kg	ND	UJ	0.083	ND	U	0.0004
Aluminum, Total	mg/kg	8170		3.2	0.121	B	0.015
Arsenic, Total	mg/kg	2.9	J	0.42	ND	U	0.002
Barium, Total	mg/kg	21.7	B	0.65	0.0077	B	0.003
Beryllium, Total	mg/kg	0.37	B	0.22	ND	U	0.001
Calcium, Total	mg/kg	2600		3.9	ND	U*	0.179
Cadmium, Total	mg/kg	ND	UJ	0.083	ND	UJ	0.0004
Cobalt, Total	mg/kg	10.3	B	0.43	0.0022	B	0.002
Chromium, Total	mg/kg	9.7	J	0.65	ND	U	0.003
Copper, Total	mg/kg	25.6		0.43	ND	U	0.002
Iron, Total	mg/kg	19700		1.3	0.087	B	0.006
Mercury, Total	mg/kg	0.073	B	0.051	ND	U	0.0001
Potassium, Total	mg/kg	353	B	144	ND	U	0.666
Magnesium, Total	mg/kg	2350		10.2	0.275	B	0.047
Manganese, Total	mg/kg	310	J	0.65	ND	U	0.003
Sodium, Total	mg/kg	ND	U*	55.6	ND	U*	0.0532
Nickel, Total	mg/kg	15.3		1.9	ND	U	0.009
Lead, Total	mg/kg	76.6	J	3.9	ND	U	0.002
Antimony, Total	mg/kg	ND	U	5.8	ND	U	0.027
Selenium, Total	mg/kg	0.45	J	0.42	ND	U	0.002
Thallium, Total	mg/kg	ND	UJ	0.42	ND	U	0.002
Vanadium, Total	mg/kg	9.2	B	0.86	ND	U	0.004
Zinc, Total	mg/kg	102		0.65	ND	U*	0.0142
Cyanide, Total	mg/kg	ND	U	1.1	ND	U	0.01

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation.

TABLE L2.A
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SUBSURFACE SOIL SAMPLES
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

Sample Location=	FF-B142-121393			FF-B152-121393			FF-B153-121393			FF-B162-112393		
Sample Designation=	32184-02-SA			32184-04-SA			32184-05-SA			081806-0012-SA		
Sample Collection Date=	13 DEC 93			13 DEC 93			13 DEC 93			23 NOV 93		
Sample Depth=	15-17'			10-12'			17-19'			2-4'		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Chloromethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Bromomethane	ug/kg	ND	U	13	ND	UJ	11	ND	U	11	ND	UJ	11
Vinyl Chloride	ug/kg	ND	UJ	13	ND	U	11	ND	U	11	ND	UJ	11
Chloroethane	ug/kg	1	J	13	ND	U	11	ND	U	11	ND	UJ	11
Methylene chloride	ug/kg	ND	U	13	2	J	11	1	J	11	ND	UJ	11
Acetone	ug/kg	ND	U*	34	ND	U*	15	ND	UJ*	11	ND	UJ*	11
Carbon disulfide	ug/kg	10	J	13	ND	U	11	ND	U	11	ND	UJ	11
1,1-Dichloroethene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
1,1-Dichloroethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
1,2-Dichloroethene (cis/trans)	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Chloroform	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
1,2-Dichloroethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
2-Butanone	ug/kg	ND	U*	13	ND	U*	11	ND	UJ*	11	ND	UJ	11
1,1,1-Trichloroethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Carbon tetrachloride	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Bromodichloromethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
1,2-Dichloropropane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
cis-1,3-Dichloropropene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Trichloroethene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Dibromochloromethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
1,1,2-Trichloroethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Benzene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
trans-1,3-Dichloropropene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Bromoform	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
4-Methyl-2-Pentanone	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
2-Hexanone	ug/kg	ND	U	13	ND	U	11	ND	UJ	11	ND	UJ	11
1,1,2,2-Tetrachloroethane	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Tetrachloroethene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Toluene	ug/kg	2	J	13	2	J	11	ND	U	11	5	J	11
Chlorobenzene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Ethylbenzene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Styrene	ug/kg	ND	U	13	ND	U	11	ND	U	11	ND	UJ	11
Xylenes (total)	ug/kg	3	J	13	2	J	11	ND	U	11	ND	UJ	11
Total VOCs		**16**			**6**			**1**			**5**		

NOTE: '*' indicates a value which was changed to 'Not Detected' following data validation

TABLE L2.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SUBSURFACE SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-B132-112393			FF-B142-121393			FF-B152-121393		
Sample Designation=		031806-0010-SA			32184-02-SA			32184-04-SA		
Sample Collection Date=		23 NOV 93			13 DEC 93			13 DEC 93		
Sample Depth=		4-6'			15-17			10-12'		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Acenaphthene	ug/kg	160	J	420	ND	U	780	230	J	730
Acenaphthylene	ug/kg	ND	U	420	ND	U	780	240	J	730
Anthracene	ug/kg	110	J	420	150	J	780	510	J	730
9H-Carbazole	ug/kg	ND	U	420	ND	U	780	130	J	730
Benzo(a)anthracene	ug/kg	360	J	420	410	J	780	1200		730
Benzo(a)pyrene	ug/kg	280	J	420	250	J	780	730		730
Benzo(b)fluoranthene	ug/kg	510		420	420	J	780	1300		730
Benzo(g,h,i)perylene	ug/kg	88	J	420	130	J	780	300	J	730
Benzo(k)fluoranthene	ug/kg	ND	U	420	ND	U	780	ND	U	730
4-Bromophenyl phenyl ether	ug/kg	ND	U	420	ND	U	780	ND	U	730
Butyl benzyl phthalate	ug/kg	ND	U	420	ND	U	780	ND	U	730
4-Chloroaniline	ug/kg	ND	U	420	ND	U	780	ND	U	730
bis(2-Chloroethoxy)-methane	ug/kg	ND	U	420	ND	U	780	ND	U	730
bis(2-Chloroethyl) ether	ug/kg	ND	U	420	ND	U	780	ND	U	730
bis(2-Chloroisopropyl) ether	ug/kg	ND	U	420	ND	U	780	ND	U	730
4-Chloro-3-methylphenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
2-Chloronaphthalene	ug/kg	ND	U	420	ND	U	780	ND	U	730
2-Chlorophenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
4-Chlorophenyl phenyl ether	ug/kg	ND	U	420	ND	U	780	ND	U	730
Chrysene	ug/kg	320	J	420	460	J	780	1100		730
Di-n-butyl phthalate	ug/kg	56	J	420	120	J	780	ND	U	730
Dibenz(a,h)anthracene	ug/kg	66	J	420	100	J	780	220	J	730
Dibenzofuran	ug/kg	86	J	420	ND	U	780	200	J	730
1,2-Dichlorobenzene	ug/kg	ND	U	420	ND	U	780	ND	U	730
1,3-Dichlorobenzene	ug/kg	ND	U	420	ND	U	780	ND	U	730
1,4-Dichlorobenzene	ug/kg	ND	U	420	ND	U	780	ND	U	730
3,3'-Dichlorobenzidine	ug/kg	ND	U	420	ND	U	780	ND	U	730
2,4-Dichlorophenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
Diethyl phthalate	ug/kg	ND	U	420	ND	U	780	ND	U	730
2,4-Dimethylphenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
Dimethyl phthalate	ug/kg	ND	U	420	ND	U	780	ND	U	730
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	1000	ND	U	1900	320	J	1800
2,4-Dinitrophenol	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
2,4-Dinitrotoluene	ug/kg	ND	U	420	ND	U	780	ND	U	730
2,6-Dinitrotoluene	ug/kg	ND	U	420	ND	U	780	ND	U	730
Di-n-octyl phthalate	ug/kg	ND	U	420	ND	U	780	ND	U	730
bis(2-Ethylhexyl) phthalate	ug/kg	ND	U*	420	ND	U*	780	ND	U	730
Fluoranthene	ug/kg	830		420	820		780	2200		730
Fluorene	ug/kg	140	J	420	ND	U	780	330	J	730
Hexachlorobenzene	ug/kg	ND	U	420	370	J	780	ND	U	730
Hexachlorobutadiene	ug/kg	ND	U	420	ND	U	780	ND	U	730
Hexachlorocyclo-pentadiene	ug/kg	ND	U	420	ND	U	780	ND	U	730
Hexachloroethane	ug/kg	ND	U	420	ND	U	780	ND	U	730
Indeno(1,2,3-cd)pyrene	ug/kg	120	J	420	140	J	780	360	J	730
Isophorone	ug/kg	ND	U	420	ND	U	780	ND	U	730
2-Methylnaphthalene	ug/kg	ND	U	420	ND	U	780	110	J	730
2-Methylphenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
4-Methylphenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
Naphthalene	ug/kg	ND	U	420	ND	U	780	84	J	730
2-Nitroaniline	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
3-Nitroaniline	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
4-Nitroaniline	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
Nitrobenzene	ug/kg	ND	U	420	ND	U	780	ND	U	730
2-Nitrophenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
4-Nitrophenol	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
N-Nitrosodiphenylamine	ug/kg	ND	U	420	ND	U	780	ND	U	730
N-Nitroso-di-n-propylamine	ug/kg	ND	U	420	ND	U	780	ND	U	730
Pentachlorophenol	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
Phenanthrene	ug/kg	480		420	410	J	780	1600		730
Phenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
Pyrene	ug/kg	660		420	790		780	1700		730
1,2,4-Trichlorobenzene	ug/kg	ND	U	420	ND	U	780	ND	U	730
2,4,5-Trichlorophenol	ug/kg	ND	U	1000	ND	U	1900	ND	U	1800
2,4,6-Trichlorophenol	ug/kg	ND	U	420	ND	U	780	ND	U	730
Total PAHs		4124			4080			12214		
Total Carcinogenic PAHs		1744			1910			5210		
Total SVOCs		4266			4570			12864		

NOTE: * indicates a value which was changed to 'ND' following data validation.

TABLE L2.B
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SUBSURFACE SOIL SAMPLES
SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS

Sample Location=		FF-B153-121393			FF-B162-112393			FF-B172-112493		
Sample Designation=		32184-05-SA			031806-0012-SA			031813-0006-SA		
Sample Collection Date=		13 DEC 93			23 NOV 93			24 NOV 93		
Sample Depth=		17-19'			2-4'			2-4'		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Acenaphthene	ug/kg	340	J	370	250	J	730	ND	U	360
Acenaphthylene	ug/kg	120	J	370	78	J	730	ND	U	360
Anthracene	ug/kg	570		370	480	J	730	ND	U	360
9H-Carbazole	ug/kg	220	J	370	120	J	730	ND	U	360
Benzo(a)anthracene	ug/kg	1300		370	1200		730	ND	U	360
Benzo(a)pyrene	ug/kg	760		370	1200		730	ND	U	360
Benzo(b)fluoranthene	ug/kg	1400		370	1900		730	47	J	360
Benzo(g,h,i)perylene	ug/kg	360	J	370	510	J	730	ND	U	360
Benzo(k)fluoranthene	ug/kg	ND	U	370	ND	U	730	ND	U	360
4-Bromophenyl phenyl ether	ug/kg	ND	U	370	ND	R	730	ND	U	360
Butyl benzyl phthalate	ug/kg	120	J	370	ND	U	730	ND	U	360
4-Chloroaniline	ug/kg	ND	U	370	ND	U	730	ND	U	360
bis(2-Chloroethoxy)-methane	ug/kg	ND	U	370	ND	R	730	ND	U	360
bis(2-Chloroethyl) ether	ug/kg	ND	U	370	ND	R	730	ND	U	360
bis(2-Chloroisopropyl) ether	ug/kg	ND	U	370	ND	U	730	ND	U	360
4-Chloro-3-methylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
2-Chloronaphthalene	ug/kg	ND	U	370	ND	U	730	ND	U	360
2-Chlorophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
4-Chlorophenyl phenyl ether	ug/kg	ND	U	370	ND	R	730	ND	U	360
Chrysene	ug/kg	1100		370	1400		730	ND	U	360
Di-n-butyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360
Dibenz(a,h)anthracene	ug/kg	200	J	370	170	J	730	ND	U	360
Dibenzofuran	ug/kg	200	J	370	ND	U	730	ND	U	360
1,2-Dichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360
[illegible]-Dichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360
[illegible]Dichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360
[illegible]-Dichlorobenzidine	ug/kg	ND	U	370	ND	U	730	ND	U	360
2,4-Dichlorophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
Diethyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360
2,4-Dimethylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
Dimethyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880
2,4-Dinitrophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880
2,4-Dinitrotoluene	ug/kg	ND	U	370	ND	U	730	ND	U	360
2,6-Dinitrotoluene	ug/kg	ND	U	370	ND	U	730	ND	U	360
Di-n-octyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360
bis(2-Ethylhexyl) phthalate	ug/kg	ND	U*	370	ND	U*	730	56	J	360
Fluoranthene	ug/kg	2200		370	2100		730	39	J	360
Fluorene	ug/kg	370		370	260	J	730	ND	U	360
Hexachlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360
Hexachlorobutadiene	ug/kg	ND	U	370	ND	U	730	ND	U	360
Hexachlorocyclo-pentadiene	ug/kg	ND	U	370	ND	U	730	ND	U	360
Hexachloroethane	ug/kg	ND	U	370	ND	U	730	ND	U	360
Indeno(1,2,3-cd)pyrene	ug/kg	380		370	500	J	730	ND	U	360
Isophorone	ug/kg	ND	U	370	ND	U	730	ND	U	360
2-Methylnaphthalene	ug/kg	160	J	370	110	J	730	ND	U	360
2-Methylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
4-Methylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
Naphthalene	ug/kg	79	J	370	ND	U	730	ND	U	360
2-Nitroaniline	ug/kg	ND	U	900	ND	U	1800	ND	U	880
3-Nitroaniline	ug/kg	ND	U	900	ND	U	1800	ND	U	880
4-Nitroaniline	ug/kg	ND	U	900	ND	U	1800	ND	U	880
Nitrobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360
2-Nitrophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
4-Nitrophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880
N-Nitrosodiphenylamine	ug/kg	ND	U	370	ND	R	730	ND	U	360
N-Nitroso-di-n-propylamine	ug/kg	ND	U	370	ND	R	730	ND	U	360
Pentachlorophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880
Phenanthrene	ug/kg	1800		370	2200		730	38	J	360
Phenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
Pyrene	ug/kg	1800		370	3000		730	70	J	360
1,2,4-Trichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360
[illegible]5-Trichlorophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880
[illegible]-Trichlorophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360
Total PAHs		12939			15358			194		
Total Carcinogenic PAHs		5500			6880			47		
Total SVOCs		13479			15478			250		

NOTE: * indicates a value which was changed to "ND" following data validation.

TABLE L2.C
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SUBSURFACE SOIL SAMPLES
SUMMARY OF PESTICIDE/PCB COMPOUNDS

Sample Location=		FF-B142-121393			FF-B152-121393			FF-B153-121393			FF-B162-112393		
Sample Designation=		32184-02-SA			32184-04-SA			32184-05-SA			31806-12-SA		
Sample Collection Date=		13 DEC 93			13 DEC 93			13 DEC 93			23 NOV 93		
Sample Depth=		15-17'			10-12'			17-19'			2-4'		
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
alpha-BHC	ug/kg	ND	U	2	ND	U	1.9	ND	U	1.9	ND	UJ	3.7
beta-BHC	ug/kg	ND	U	2	ND	U	1.9	ND	U	1.9	ND	UJ	3.7
delta-BHC	ug/kg	ND	U	2	ND	U	1.9	ND	U	1.9	ND	UJ	3.7
gamma-BHC (Lindane)	ug/kg	0.28	J	2	ND	U	1.9	ND	U	1.9	ND	UJ	3.7
Heptachlor	ug/kg	ND	U	2	ND	U	1.9	1.4	J	1.9	ND	UJ	3.7
Aldrin	ug/kg	ND	U	2	ND	U	1.9	ND	U	1.9	ND	UJ	3.7
Heptachlor epoxide	ug/kg	0.89	J	2	3.4	J	1.9	3.3	NJ	1.9	3.4	J	3.7
Endosulfan I	ug/kg	ND	U	2	ND	U	1.9	4.3	NJ	1.9	4	J	3.7
Dieldrin	ug/kg	1.5	NJ	3.9	ND	UJ*	30	ND	UJ*	21	ND	UJ*	47
4,4'-DDE	ug/kg	4.4	J	3.9	ND	U*	1.9	7.2	J	3.7	ND	UJ	7.2
Endrin	ug/kg	6.3	J	3.9	ND	UJ*	40	ND	U	3.7	43	J	7.2
Endosulfan II	ug/kg	2.5	J	3.9	ND	U	3.7	ND	U	3.7	13	J	7.2
4,4'-DDD	ug/kg	9.1	J	3.9	ND	U	3.7	10	J	3.7	9.3	J	7.2
Endosulfan sulfate	ug/kg	1.1	NJ	3.9	ND	U	3.7	3.8	J	3.7	17	J	7.2
4,4'-DDT	ug/kg	77	J	7.8	ND	U*	11	58	J	7.4	42	J	7.2
Methoxychlor	ug/kg	ND	U	20	ND	U	19	ND	U	19	ND	UJ	37
Endrin ketone	ug/kg	ND	U	3.9	ND	U	3.7	ND	U	3.7	ND	UJ	7.2
Endrin aldehyde	ug/kg	2.2	UJ	3.9	ND	UJ*	73	14	J	3.7	ND	UJ	7.2
alpha-Chlordane	ug/kg	1.3	U	2	ND	U	1.9	ND	U	1.9	ND	UJ	3.7
gamma-Chlordane	ug/kg	ND	U	2	1.9	J	1.9	2.5	J	1.9	ND	UJ	3.7
Toxaphene	ug/kg	ND	U	200	ND	U	190	ND	U	190	ND	UJ	370
Aroclor 1016	ug/kg	ND	U	39	ND	U	37	ND	U	37	ND	UJ	72
Aroclor 1221	ug/kg	ND	U	79	ND	U	74	ND	U	75	ND	UJ	150
Aroclor 1232	ug/kg	ND	U	39	ND	U	37	ND	U	37	ND	UJ	72
Aroclor 1242	ug/kg	ND	U	39	ND	U	37	ND	U	37	ND	UJ	72
Aroclor 1248	ug/kg	ND	U	39	ND	U	37	ND	U	37	ND	UJ	72
Aroclor 1254	ug/kg	ND	U	39	ND	U	37	190	J	33	ND	UJ	72
Aroclor 1260	ug/kg	ND	U	39	ND	U	37	ND	U	37	ND	UJ	72

NOTE: '*' indicates a value which was changed to 'ND' following data validation

TABLE L2.D
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SUBSURFACE SOIL SAMPLES
SUMMARY OF INORGANIC ANALYTES

Sample Location=		FF-B142-121393			FF-B152-121393			FF-B153-121393			FF-B162-112393		
Sample Designation=		32184-02-SA			32184-04-SA			32184-05-SA			031806-0012-SA		
Sample Collection Date=		13 DEC 93			13 DEC 93			13 DEC 93			23 NOV 93		
Sample Depth=		15-17'			10-12'			17-19'			2-4'		
Analyte	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Aluminum	mg/kg	7490		NA	9660		NA	8620		NA	9020		NA
Antimony	mg/kg	5.6	UJ	NA	5.3	UJ	NA	5.7	J	NA	6.8	J	NA
Arsenic	mg/kg	9.2		NA	5.3		NA	5.5		NA	5.8	J	NA
Barium	mg/kg	25.7	B	NA	25.3	B	NA	28.9	B	NA	23.1	B	NA
Beryllium	mg/kg	0.28	B	NA	0.33	B	NA	0.36	B	NA	0.22	U	NA
Cadmium	mg/kg	0.86	B	NA	0.86	B	NA	0.77	B	NA	0.66	U	NA
Calcium	mg/kg	6250		NA	4550		NA	11400		NA	2250		NA
Chromium	mg/kg	17.6		NA	11.9		NA	17.2		NA	24		NA
Cobalt	mg/kg	5.9	B	NA	8.5	B	NA	8.1	B	NA	9.7	B	NA
Copper	mg/kg	35.2		NA	23.8		NA	48.2		NA	83.4		NA
Iron	mg/kg	19900		NA	21000		NA	24700		NA	39700		NA
Lead	mg/kg	252		NA	86.4		NA	292		NA	92.9		NA
Magnesium	mg/kg	3990		NA	3000		NA	3940		NA	3380		NA
Manganese	mg/kg	259	J	NA	291	J	NA	419	J	NA	303	J	NA
Mercury	mg/kg	0.16		NA	0.07	B	NA	0.17		NA	0.1	B	NA
Nickel	mg/kg	15		NA	17.2		NA	19.2		NA	32.9		NA
Potassium	mg/kg	1010	B	NA	470	B	NA	1030	B	NA	588	B	NA
Selenium	mg/kg	0.51	J	NA	0.44	U	NA	0.45	U	NA	0.44	U	NA
Silver	mg/kg	1.2	U	NA	1.1	U	NA	1.1	U	NA	1.1	U	NA
Sodium	mg/kg	682	B	NA	373	U	NA	571	B	NA	373	U	NA
Thallium	mg/kg	0.47	UJ	NA	0.44	UJ	NA	0.45	UJ	NA	0.44	UJ	NA
Vanadium	mg/kg	19		NA	19.2		NA	19.3		NA	19.8		NA
Zinc	mg/kg	97.7	J	NA	121	J	NA	156	J	NA	123	J	NA
Cyanide, Total	mg/kg	0.58	U	NA	0.55	U	NA	0.56	U	NA	0.55	UJ	NA

PDI Soil Sample Analytical Results

Sample ID

SB-406-0002

SB-407-0002

SB-407-0204

SB-411-0204

SB-411-0608

SB-411-1012

SB-411-1416

SB-412-0204

SB-412-0608

SB-412-1012

SB-415-0002

SB-415-0608

SB-416-0002

SB-418-0002

SB-433-0204

SB-433-0608

SB-411-2022

SB-415-0204

SB-416-0406

ANALYTICAL RESULTS: DETECTED CONTAMINANTS IN MOUND SAMPLES
OFFTA PDI DECEMBER 2003: SITE 09
NEWPORT, RHODE ISLAND

Sample Number		OFF-SB-406-0002		OFF-SB-407-0002		OFF-SB-407-0204		OFF-SB-411-0204		OFF-SB-411-0608		OFF-SB-411-1012		OFF-SB-411-1416		OFF-SB-412-0204	
Sample Location		406		407		407		411		411		411		411		412	
Date Sampled		12/3/2003		12/1/2003		12/1/2003		11/24/2003		11/24/2003		11/24/2003		11/24/2003		11/25/2003	
Interval		0.0-2.0		0.0-2.0		2.0-4.0		2.0-4.0		6.0-8.0		10.0-12.0		14.0-16.0		2.0-4.0	
QC Identifier	Preliminary Remediation Goal (PRG)	None		None		None		None		None		None		None		Field Dup. OFF-SB-412-0204	
Volatile Organic Analysis (UG/KG)																	
1,1-Dichloroethane		8	U	6	U	5	U	9	U	6	U	5	U	1	J	6	U
2-Butanone		8	U	6	U	5	U	10		7		5	U	8		6	
2-Hexanone		8	U	6	U	5	U	9	U	6	U	5	U	6	U	6	U
Acetone		39	B	18		15		240	J*	960	*	260		240	J*	480	*
Benzene		8	U	6	U	5	U	9	U	6	U	5	U	6	U	6	U
Methylene Chloride		14		11		7		21		9		8		12		18	
Tetrachloroethene		8	U	6	U	5	U	9	U	6	U	5	U	6	U	6	U
Toluene		8	U	6	U	5	U	9	U	6	U	5	U	6	U	6	U
Total Xylenes		8	U	6	U	5	U	4	J	6	U	1	J	6	U	6	U
Trichloroethene		8	U	6	U	5	U	9	U	6	U	5	U	6	U	6	U
Trichlorofluoromethane		8	U	6	U	5	U	9	U	6	U	5	U	6	U	6	U
Semivolatile Organic Analysis (UG/KG)																	
2-Methylnaphthalene		410	U	1800	U	1800	U	42	J	52	J	170	J	1900	U	410	U
Acenaphthene		83	J	1800	U	1800	U	36	J	76	J	110	J	330	J	410	U
Acenaphthylene		69	J	1800	U	1800	U	91	J	77	J	120	J	330	J	410	U
Anthracene		190	J	270	J	290	J	170	J	190	J	380		1300	J	410	U
Benzaldehyde		71	J	1800	U	1800	U	360	U	380	U	370	U	1900	U	410	U
Benzo(a)anthracene	900	600		1000	J	1000	J	480		520		930		3600		43	J
Benzo(a)pyrene	400	460		860	J	1000	J	410		270	J	610		2900		410	U
Benzo(b)fluoranthene	900	510		1100	J	1400	J	460		520		1100		3300		42	J
Benzo(g,h,i)perylene	800	63	J	380	J	390	J	290	J	290	J	670		1700	J	410	U
Benzo(k)fluoranthene	900	280	J	570	J	520	J	190	J	190	J	410		1400	J	410	U
bis(2-Ethylhexyl)phthalate		68	J	1800	U	1800	U	38	J	820		140	J	1900	U	200	J
Butylbenzylphthalate		120	J	1800	U	1800	U	360	U	380	U	370	U	1900	U	410	U
Carbazole		130	J	1800	U	1800	U	40	J	67	J	96	J	470	J	410	U
Chrysene	400	510		930	J	980	J	480		490		970		3300		45	J
Dibenzo(a,h)anthracene	400	60	J	1800	U	1800	U	82	J	82	J	160	J	600	J	410	U
Dibenzofuran		45	J	1800	U	1800	U	360	U	48	J	91	J	1900	U	410	U
Fluoranthene		990		1700	J	1700	J	690		870		1800		7900		66	J
Fluorene		84	J	1800	U	1800	U	38	J	64	J	120	J	520	J	410	U
Indeno(1,2,3-cd)pyrene	900	230	J	330	J	330	J	260	J	240	J	540		1500	J	410	U
Naphthalene		410	U	1800	U	1800	U	360	U	54	J	130	J	210	J	410	U
Phenanthrene		740		1300	J	1400	J	460		670		1400		5600		410	U
Pyrene		990		2200		2500		900		960		1900		7400		75	J
Pesticide/PCB Analysis (UG/KG)																	
4,4'-DDD		4.0	U	3.6	U	3.6	U	3.6	U	0.64	JP	3.6	U	7.9	P	1.2	JP
4,4'-DDE		4.0	U	3.6	U	3.6	U	3.6	U	1.6	JP	3.6	U	5.3	P	11	P
4,4'-DDT		4.0	U	5.0	P	11	P	3.6	U	1.1	JP	3.6	U	3.8	U	6.6	
alpha-Chlordane		2.1	U	1.8	U	1.9	U	1.9	U	1.9	U	1.9	U	1.9	U	2.1	U
Aroclor-1254		40	U	36	U	36	U	36	U	38	U	36	U	400		41	U
Aroclor-1260		40	U	36	U	53	P	36	U	38	U	36	U	38	U	41	U
beta-BHC		2.1	U	1.8	U	1.9	U	1.9	U	1.9	U	1.9	U	1.9	U	2.1	U
Endrin Ketone		4.0	U	3.6	U	3.6	U	3.6	U	3.8	U	3.6	U	8.0	P	4.1	U
gamma-Chlordane		2.1	U	1.8	U	1.9	U	1.9	U	1.9	U	1.9	U	6.5	P	2.1	U
TAL Metal Analysis (MG/KG)																	
Aluminum		12100		12300	*	10900	*	9820		12200		11300		9680		13200	
Antimony	10	7.0	N	0.84	BN*	1.1	N*	7.8	N	9.6	N	7.4	N	8.2	N	6.6	N
Arsenic	6.2	6.7		5.8	*	6.9	*	7.8		12.8		8.8		9.5		11.5	
Barium		49.3		60.6	*	43.3	*	26.9		36.1		40.1		40.9		35.9	
Beryllium	0.4	0.56		0.27	*	0.19	B*	0.36		0.54		0.50		0.46		0.54	
Cadmium		0.035	U	0.38	*	0.48	*	0.16	B	0.28		0.29		0.50		0.016	U
Calcium		1790		1800	*	10600	*	3610		3490		14900		13000		1660	
Chromium		16.2		13.2	*	14.9	*	13.2		17.2		14.3		24.7		15.8	
Cobalt		8.6	E	11.5	*	9.2	*	9.1		9.2		7.8		8.6		7.0	
Copper		29.1		67.3	N*	29.0	N*	35.5		37.7		59.3		54.3		15.7	
Iron		23900		29900	*	40000	*	25700		29800		24800		25700		21800	
Lead	150	268	E	217	*	192	*	63.4		88.8		143		559		31.1	
Magnesium		3260		3550	*	3460	*	3330		3420		3500		4000		2380	
Manganese	390	450	E	445	*	424	*	491		557		424		234		321	
Mercury		0.076		0.027	B	0.043		0.039		0.16		0.14		0.28		0.063	
Nickel		21.4	E	20.2	*	20.0	*	16.8		18.7		17.0		19.3		14.4	
Potassium		560		341	*	331	*	503		434		617		873		378	
Selenium		2.6		0.14	UN	0.16	UN	0.23	U	0.27	U	0.25	U	0.27	U	0.27	U
Silver		0.040	U	2.5		2.9		0.033	U	0.037	U	0.036	U	0.038	U	0.038	U
Sodium		69.7		83.4	*	103	*	48.6		70.7		234		560		76.9	
Thallium		2.6		0.090	UN	0.11	UN	3.4		4.2		3.5		3.1		2.6	
Vanadium		38.1		31.6	*	57.7	*	21.8		34.0		17.3		22.1		19.9	
Zinc		207		139	*	190	*	111	E	119	E	130	E	147	E	63.4	E
Total Petroleum Hydrocarbons (mg/kg)																	
Extractable TPH	500	36		92		190		94		230		290		340		41	

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed

ANALYTICAL RESULTS: DETECTED CONTAMINANTS IN MOUND SAMPLES
OFFTA PDI DECEMBER 2003: SITE 09
NEWPORT, RHODE ISLAND

Sample Number		OFF-SB-DUP07		OFF-SB-412-0608		OFF-SB-412-1012		OFF-SB-415-0002		OFF-SB-DUP03		OFF-SB-415-0204		OFF-SB-416-0002		OFF-SB-418-0002	
Sample Location		412		412		412		415		415		415		416		418	
Date Sampled		11/25/2003		11/25/2003		11/25/2003		11/18/2003		11/18/2003		11/19/2003		11/19/2003		12/3/2003	
Interval		2.0-4.0		6.0-8.0		10.0-12.0		0.0-2.0		0.0-2.0		2.0-4.0		0.0-2.0		0.0-2.0	
QC Identifier	Preliminary Remediation Goal (PRG)	Field Dup. OFF-SB-412-0204		None		None		Field Dup. OFF-SB-415-0002		Field Dup. OFF-SB-415-0002		None		None		None	
Volatile Organic Analysis (UG/KG)																	
1,1-Dichloroethane		6	U		NA	6	U	6	U	6	U	7	U	7	U	6	U
2-Butanone		5	J		NA	13		11		6	U	7	U	7	U	6	U
2-Hexanone		6	U		NA	6	U	1	J	6	U	7	U	7	U	6	U
Acetone		580	*		NA	3600	*	230		450		25		23		46	B
Benzene		6	U		NA	4	J	6	U	6	U	7	U	7	U	6	U
Methylene Chloride		17			NA	14		19		13		13		17		10	
Tetrachloroethene		6	U		NA	6	U	6	U	2	J	13		7	U	6	U
Toluene		6	U		NA	3	J	6	U	6	U	7	U	7	U	6	U
Total Xylenes		6	U		NA	6	U	6	U	6	U	7	U	7	U	6	U
Trichloroethene		6	U		NA	6	U	6	U	6	U	2	J	7	U	6	U
Trichlorofluoromethane		6	U		NA	6	U	6	U	1	J	7	U	7	U	6	U
Semivolatile Organic Analysis (UG/KG)																	
2-Methylnaphthalene		410	U		NA	130	J	390	U	390	U	39	J	370	U	370	U
Acenaphthene		410	U		NA	100	J	42	J	400	U	120	J	72	J	370	U
Acenaphthylene		410	U		NA	84	J	89	J	110	J	44	J	96	J	370	U
Anthracene		410	U		NA	410		160	J	140	J	220	J	180	J	370	U
Benzaldehyde		410	U		NA	370	U	390	U	390	U	340	U	370	U	370	U
Benzo(a)anthracene	900	42	J		NA	740		480		470		840		510		120	J
Benzo(a)pyrene	400	410	U		NA	590		420		440		800		480		92	J
Benzo(b)fluoranthene	900	51	J		NA	780		540		580		1100		620		95	J
Benzo(g,h,i)perylene	800	410	U		NA	450		300	J	310	J	540		370	J	60	J
Benzo(k)fluoranthene	900	410	U		NA	310	J	210	J	190	J	400		230	J	58	J
bis(2-Ethylhexyl)phthalate		280	J		NA	610		41	J	390	U	40	J	370	U	370	U
Butylbenzylphthalate		410	U		NA	370	U	390	U	390	U	340	U	370	U	370	U
Carbazole		410	U		NA	370	U	60	J	390	U	150	J	69	J	370	U
Chrysene	400	44	J		NA	680		450		450		880		520		120	J
Dibenzo(a,h)anthracene	400	410	U		NA	93	J	77	J	80	J	140	J	100	J	370	U
Dibenzofuran		410	U		NA	76	J	390	U	390	U	55	J	370	U	370	U
Fluoranthene		72	J		NA	1300		1000		970		2100		930		180	J
Fluorene		410	U		NA	150	J	50	J	390	U	74	J	47	J	370	U
Indeno(1,2,3-cd)pyrene	900	410	U		NA	350	J	260	J	270	J	480		320	J	53	J
Naphthalene		410	U		NA	100	J	390	U	390	U	59	J	370	U	370	U
Phenanthrene		50	J		NA	1100		590		430		1200		560		100	J
Pyrene		93	J		NA	1900		950		980		1600		910		200	J
Pesticide/PCB Analysis (UG/KG)																	
4,4'-DDD		1.3	JP		NA	14	P	5.8	P	5.0	P	3.4	U	2.7	J	3.7	U
4,4'-DDE		10			NA	4.3	P	20	P	21	P	24	P	3.7	U	9.2	
4,4'-DDT		6.6	P		NA	3.7	U	16		16		14		12		7.3	P
alpha-Chlordane		2.1	U		NA	1.9	U	2.0	U	2.0	U	1.6	J	1.9	U	1.9	U
Aroclor-1254		40	U		NA	85		39	U	40	U	34	U	37	U	37	U
Aroclor-1260		40	U		NA	37	U	39	U	40	U	34	U	37	U	37	U
beta-BHC		2.1	U		NA	1.9	U	2.0	U	2.0	U	2.4		1.9	U	1.9	U
Endrin Ketone		4.0	U		NA	3.7	U	3.9	U	4.0	U	3.4	U	3.7	U	3.7	U
gamma-Chlordane		2.1	U		NA	1.9	U	2.0	U	2.0	U	2.8	P	1.9	U	1.9	U
TAL Metal Analysis (MG/KG)																	
Aluminum		14000		12000		8860		11200		11700		5850		10100		12900	
Antimony	10	6.2	N	9.6	N	21.2	N	5.7	N	4.8	N	5.0	N	6.7	N	5.5	N
Arsenic	6.2	11.1		8.9		11.6		10.6		11.5		11.1		10.7		8.4	
Barium		35.4		38.2		44.3		32.6		35.0		26.7		36.6		32.1	
Beryllium	0.4	0.55		0.44		0.38		0.55		0.63		0.42		0.53		0.64	
Cadmium		0.018	U	0.24	B	1.5		0.016	U	0.016	U	0.015	U	0.016	U	0.033	U
Calcium		1640		3860		15200		2400		2690		3550		5080		983	
Chromium		15.2		25.6		35.4		14.2		17.3		10.2		14.4		15.6	
Cobalt		7.4		9.3		4.4		8.7		7.3		6.1		8.5		9.3	E
Copper		14.7		40.0		104		21.8		19.8		516		38.9		19.6	
Iron		21900		41000		75400		22300	*	19800	*	14400	*	28000	*	22500	
Lead	150	28.6		118		186		77.4		63.8		50.3		168		40.6	E
Magnesium		2820		4070		3160		2770		2680		1790		2620		2660	
Manganese	390	339		574		536		303		260		243		343		338	E
Mercury		0.13		0.097		0.20		0.066		0.069		0.39		0.076		0.050	
Nickel		16.1		23.0		34.3		17.6		17.1		13.8		20.6		21.4	E
Potassium		365		500		826		423		440		344		369		358	
Selenium		0.30	U	0.25	U	0.25	U	0.27	U	0.26	U	0.26	U	0.28	U	3.0	
Silver		0.042	U	0.036	U	0.035	U	0.038	U	0.037	U	0.036	U	0.039	U	0.039	U
Sodium		68.5		122		360		52.3	B	56.0		67.7		67.4		85.2	
Thallium		2.6		4.3		8.0		2.5		2.0		1.9		2.9		2.2	
Vanadium		20.3		26.0		18.8		20.3		21.2		16.9		21.5		20.6	
Zinc		77.0	E	124	E	180	E	78.2		67.3		90.2		119		54.1	
Total Petroleum Hydrocarbons (mg/kg)																	
Extractable TPH	500	38		210		760		370		140		470		95		31	

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed

ANALYTICAL RESULTS: CONTAMINANTS DETECTED AT MOUND/SOIL INTERFACE
OFFTA PDI DECEMBER 2003: SITE 09
NEWPORT, RHODE ISLAND

Sample Number		OFF-SB-411-2022		OFF-SB-415-0608		OFF-SB-416-0406	
Sample Location		411		415		416	
Date Sampled		11/24/2003		11/18/2003		11/19/2003	
Interval		20.0-22.0		6.0-8.0		4.0-6.0	
QC Identifier	Preliminary Remediation Goal (PRG)	None		None		None	
Low Concentration PAH (SIM) Analysis (UG/KG)							
2-Methylnaphthalene		24	U	3.6	U	18	U
Acenaphthene		24	U	3.6	U	35	
Acenaphthylene		24	U	3.6	U	40	
Anthracene		24	U	3.6	U	110	
Benzo(a)anthracene	900	48		19		880	
Benzo(a)pyrene	400	47		18		820	
Benzo(b)fluoranthene	900	60		22		1100	
Benzo(g,h,i)perylene	800	30		11		450	
Benzo(k)fluoranthene	900	25		7.9		470	
Chrysene	400	72		21		890	
Dibenzo(a,h)anthracene	400	24	U	3.6	U	120	
Fluoranthene		67		30		1000	
Fluorene		24	U	3.6	U	26	
Indeno(1,2,3-cd)pyrene	900	24	U	8.8		370	
Naphthalene		24	U	3.6	U	18	U
Phenanthrene		47		15		440	
Pyrene		94		36		1200	
Gasoline Range Organic Analysis (UG/KG)							
Gasoline Range Organics		2900	U	2500	U	3300	U
TAL Metal Analysis (MG/KG)							
Aluminum		7650	E	8070		9630	
Antimony	10	0.76	BN	7.5	N	6.2	N
Arsenic	6.2	4.3	*	23.6		11.8	
Barium		20.3	*	10.0	B	17.6	
Beryllium	0.4	0.081	B	0.35		0.43	
Cadmium		0.013	U	0.016	U	0.014	U
Calcium		1520	E	948		1840	
Chromium		7.5	*	7.7		12.6	
Cobalt		7.3	E	3.7		10.2	
Copper		17.4	*	43.2		33.9	
Iron		17000		31600	*	25100	*
Lead	150	16.2	N*	182		136	
Magnesium		3380	*	2370		3070	
Manganese	390	409	E	197		570	
Mercury		0.023	U*	0.064		0.081	
Nickel		12.7	E	13.1		18.8	
Potassium		616	*	215		389	
Selenium		0.20	U	0.26	U	0.24	U
Silver		2.3	E	0.036	U	0.034	U
Sodium		317	*	41.4	B	71.5	
Thallium		0.13	U	2.9		2.6	
Vanadium		12.1	E	10.9		16.8	
Zinc		54.5	E	30.8		119	
Total Petroleum Hydrocarbon Analysis (MG/KG)							
Total Petroleum Hydrocarbons	500	300		13	U	170	

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; R - Rejected; NA - Not Analyzed

ANALYTICAL RESULTS: CONTAMINANTS DETECED AT MOUND/SOIL INTERFACE
OFFTA PDI DECEMBER 2003: SITE 09
NEWPORT, RHODE ISLAND

Sample Number		OFF-SB-433-0204		OFF-SB-433-0608	
Sample Location		433		433	
Date Sampled		11/26/2003		11/26/2003	
Interval		2.0-4.0		6.0-8.0	
QC Identifier	Preliminary Remediation Goal (PRG)	None		None	
Volatile Organic Analysis (UG/KG)					
2-Butanone		6		5	U
Acetone		120		440	*
Benzene		3	J	5	U
Methylene Chloride		12		12	
Toluene		2	J	5	U
Semivolatile Organic Analysis (UG/KG)					
Anthracene		270	J	1800	U
Benzo(a)anthracene	900	670	J	230	J
Benzo(a)pyrene	400	620	J	250	J
Benzo(b)fluoranthene	900	910	J	330	J
Benzo(g,h,i)perylene	800	230	J	220	J
Benzo(k)fluoranthene	900	350	J	1800	U
Chrysene	400	640	J	220	J
Fluoranthene		1200	J	270	J
Indeno(1,2,3-cd)pyrene	900	210	J	1800	U
Phenanthrene		1000	J	190	J
Pyrene		1500	J	520	J
Pesticide/PCB Analysis (UG/KG)					
4,4'-DDD		4.0	U	5.6	P
4,4'-DDE		4.0	U	3.7	JP
4,4'-DDT		10	P	14	
alpha-Chlordane		2.0	U	6.0	
gamma-Chlordane		2.0	U	5.6	P
Heptachlor		2.0	U	2.4	P
TAL Metal Analysis (MG/KG)					
Aluminum		12300		8120	
Antimony	10	7.4	N	7.3	N
Arsenic	6.2	10.6		5.7	
Barium		50.4		27.0	
Beryllium	0.4	0.49		0.35	
Cadmium		0.28		0.12	B
Calcium		7490		7350	
Chromium		17.4		26.4	
Cobalt		9.3		6.8	
Copper		41.8		33.4	
Iron		28000		24800	
Lead	150	150		96.6	
Magnesium		3250		2930	
Manganese	390	417		318	
Mercury		0.076		0.049	
Nickel		18.8		21.2	
Potassium		585		577	
Selenium		0.27	U	0.26	U
Silver		0.038	U	0.036	U
Sodium		56.8		70.5	
Thallium		3.3		2.8	
Vanadium		22.8		28.8	
Zinc		165	E	89.3	E
Total Petroleum Hydrocarbons (mg/kg)					
Extractable TPH	500	62		410	

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed

APPENDIX E
SUBSURFACE SOIL ANALYTICAL RESULTS

- RI Subsurface Soil Sample Analytical Results
- PDI Subsurface Soil Sample Analytical Results

PDI SOIL SAMPLE ANALYTICAL RESULTS

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-400-0002		OFF-SB-400-0608		OFF-SB-401-0204		OFF-SB-401-0810		OFF-SB-401-1012		OFF-SB-402-0204		OFF-SB-402-0810		OFF-SB-402-1214		OFF-SB-402-1618		OFF-SB-402-1820		OFF-SB-403-0204		OFF-SB-403-0608		OFF-SB-403-1012	
Sample Location		400		400		401		401		401		402		402		402		402		402		403		403		403	
Date Sampled		12/1/2003		12/1/2003		11/19/2003		12/4/2003		12/4/2003		11/18/2003		11/18/2003		11/18/2003		11/18/2003		11/18/2003		11/24/2003		11/24/2003		11/24/2003	
Interval		0.0-2.0		6.0-8.0		2.0-4.0		8.0-10.0		10.0-12.0		2.0-4.0		8.0-10.0		12.0-14.0		16.0-18.0		18.0-20.0		2.0-4.0		6.0-8.0		10.0-12.0	
QC Identifier		None		None		None		None		None		None		None		None		None		None		None		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		3.7	U	12		8.7		27		13		15		11	U	3.7	U	3.7	U	3.5	U	36		9200	*	7.3	
Acenaphthene		4.8		18		28		26		12		12		56		3.7	U	3.7	U	3.5	U	27		1900		5.5	
Acenaphthylene		22		14		48		36		22		54		11	U	3.7	U	3.7	U	3.5	U	200		640		4.6	U
Anthracene		25		40		140		59		32		65		11	U	3.7	U	3.7	U	3.5	U	110		1600		14	
Benzo(a)anthracene	900	140		110		520	*	75		36		170		11	U	3.7	U	3.7	U	3.5	U	240		1700		36	
Benzo(a)pyrene	400	130		96		480	*	54		24		180		11	U	3.7	U	3.7	U	3.5	U	530	*	1400		36	
Benzo(b)fluoranthene	900	170		120		610	*	61		27		180		11	U	3.7	U	3.7	U	3.5	U	590	*	1600		37	
Benzo(g,h,i)perylene	900	84		87		240		29		13		77		11	U	3.7	U	3.7	U	3.5	U	430		580		24	
Benzo(k)fluoranthene	800	59		39		220		29		18		89		11	U	3.7	U	3.7	U	3.5	U	210		840		15	
Chrysene	400	130		110		520	*	74		37		170		11	U	3.7	U	3.7	U	3.5	U	250		1800		37	
Dibenzo(a,h)anthracene	400	24		15		69		8.7		3.4	U	22		11	U	3.7	U	3.7	U	3.5	U	77		200		5.4	
Fluoranthene		210		150		800	*	120		59		270		17		3.7	U	3.7	U	3.5	U	230		3300		64	
Fluorene		5.6		16		40		46		26		14		11	U	3.7	U	3.7	U	3.5	U	46		2400		4.6	U
Indeno(1,2,3-cd)pyrene	900	74		38		220		24		10		70		11	U	3.7	U	3.7	U	3.5	U	360		550		18	
Naphthalene		3.7	U	6.8		12		18		8.4		14		11	U	3.7	U	3.7	U	3.5	U	18		2200		4.6	U
Phenanthrene		87		140		460	*	250		140		93		11	U	3.7	U	3.7	U	3.8		54		6800	*	32	
Pyrene		230		240		870	*	160		84		370		23		3.7	U	3.7	U	4.1		600	*	3600		53	
TAL Metal Analysis (MG/KG)																											
Aluminum		11300	*	13100	*	10400	*	16900		13900		11600		5370		9680		10800		7860		14200	E	6040	E	9470	E
Antimony	10	0.98	BN*	0.38	BN*	0.22	UN	9.3	N	8.2	N	0.79	BN	1.7	UN	0.70	BN	1.0	BN	0.89	BN	1.0	BN	3.9	N	0.77	BN
Arsenic	7.0	0.49	B*	4.3	*	6.5		5.4		2.2		4.0	B	4.4	B	3.3	B	8.0		8.6		6.7	*	9.4	*	3.2	*
Barium		133	*	18.2	*	20.8	B	18.9		22.3		23.2	B	11.3	B	21.9	B	31.3	B	11.2	B	22.8	*	306	*	31.1	*
Beryllium	0.4	0.011	U*	0.20	B*	0.27	B	0.27		0.25		0.24	B	0.19	B	0.23	B	0.44	B	0.34	B	0.22	B	0.30		0.16	B
Cadmium		0.16	B*	0.41	*	0.022	U	0.072	U	0.029	U	0.045	U	0.17	U	0.056	U	0.047	U	0.048	U	0.15	B	3.4		0.013	U
Calcium		2440	*	3080	*	1190	*	1910		1660		4330	*	7920	*	780	*	1300	*	1170	*	1160	E	13400	E	5320	E
Chromium		35.7	*	16.4	*	9.3	*	131		100		13.0	*	7.2	B*	15.8	*	17.9	*	13.3	*	16.0	E*	10.0	E*	11.8	E*
Cobalt		12.2	*	9.5	*	8.9		11.2	E	9.4	E	8.4	B	3.0	B	3.3	B	21.6		13.5		13.0	E	6.5	E	4.0	E
Copper		21.4	N*	43.0	N*	27.8		29.3		19.8		16.0	*	217	*	12.7	*	28.5	*	24.9	*	17.8	*	400	*	31.2	*
Iron		22600	*	40400	*	20100	*	42700		32800		26000	*	7360	*	11800	*	47100	*	35500	*	42500		39900		26000	
Lead	150	8.9	*	33.2	*	56.1		20.2	E	15.1	E	147	N*	1300	N*	37.7	N*	17.4	N*	12.9	N*	22.3	NE*	1950	NE*	69.9	NE*
Magnesium		10000	*	5430	*	3590	*	7110		5780		3220		6280		2400		3950		3230		3690	E*	1710	E*	4140	E*
Manganese	390	313	*	516	*	547		1140	E	883	E	220	*	152	*	92.5	*	297	*	311	*	471	E	382	E	166	E
Mercury		0.020	B	0.017	U	0.067		0.015	U	0.017	U	0.29		0.055	U	0.018	U	0.016	U	0.016	U	0.034	B*	1.2	*	0.036	B*
Nickel		19.5	*	20.0	*	15.2		34.1	E	23.0	E	17.5		28.5	B	10.0	B	47.5		32.4		23.1	E	22.4	E	15.3	E
Potassium		5120	*	685	*	283		540		650		253	*	723	*	610	*	640	*	444	*	441	*	825	*	353	*
Selenium		0.16	UN	0.15	UN	3.5		3.0		3.1		4.0	B	2.6	B	2.1	B	6.9	B	5.7	B	0.17	U	0.17	U	0.19	U
Silver		1.5	B	3.0		1.9	B	0.033	U	0.033	U	3.5	B	0.91	B	1.6	B	6.2	B	4.8	B	4.2	E	4.9	E	3.0	E
Sodium		109	*	628	*	39.1	B	176		175		57.2	E	8390	E	1190	E	697	E	196	E	165	*	606	*	129	*
Thallium		0.11	UN	0.10	UN	0.22	U	4.3		3.9		0.73	B	1.7	U	1.2	B	0.47	U	0.48	U	0.12	U	0.11	U	0.13	U
Vanadium		39.9	*	20.5	*	15.0		13.4		13.5		18.6		24.6	B	20.8		23.1		17.1		25.6	E	19.5	E	17.1	E
Zinc		50.1	*	75.1	*	63.2		74.9		64.9		85.1	*	44.9	*	24.4	*	115	*	84.9	*	62.3	E	2110	E	93.9	E
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		2700	U	5300		3400	U	3200	U	2900	U	16000		44000		4700		3300	U	3500	U	51000		430000		4300	U
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	16		170		29		19		15		63		180		13	U	13	U	12	U	780		4300		21	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-403-1416		OFF-SB-403-1820		OFF-SB-404-0204		OFF-SB-404-0608		OFF-SB-404-1012		OFF-SB-404-1618		OFF-SB-404-1820		OFF-SB-405-0204		OFF-SB-405-0608		OFF-SB-405-1012		OFF-SB-DUP02		OFF-SB-405-1416		OFF-SB-406-0608	
Sample Location		403		403		404		404		404		404		404		405		405		405		405		405		406	
Date Sampled		11/24/2003		11/25/2003		11/25/2003		11/25/2003		11/25/2003		11/25/2003		11/25/2003		11/18/2003		11/18/2003		11/18/2003		11/18/2003		11/18/2003		12/3/2003	
Interval		14.0-16.0		18.0-20.0		2.0-4.0		6.0-8.0		10.0-12.0		16.0-18.0		18.0-20.0		2.0-4.0		6.0-8.0		10.0-12.0		10.0-12.0		14.0-16.0		6.0-8.0	
QC Identifier		None		None		None		None		None		None		None		None		None		Field Dup.		Field Dup.		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		4.1	U	3.9	U	38		760		160		3.8	U	4.7	U	17	U	13		3.6	U	3.5	U	3.5	U	75	
Acenaphthene		4.1	U	3.9	U	94		3700		710	*	4.1		4.7	U	42		120		3.6	U	3.5	U	3.5	U	69	
Acenaphthylene		4.1	U	3.9	U	81		1800		400	*	3.8	U	4.7	U	50		43		3.6	U	3.5	U	3.5	U	120	
Anthracene		4.1	U	3.9	U	320		2200		320		3.8	U	4.7	U	120		270		8.9		3.5	U	3.5	U	270	
Benzo(a)anthracene	900	4.1	U	4.8		1100		480		210		3.8	U	4.7	U	390		640	*	64		15		3.5	U	680	*
Benzo(a)pyrene	400	4.1	U	3.9	U	990		330		190		3.8	U	4.7	U	370		560	*	62		14		3.5	U	650	*
Benzo(b)fluoranthene	900	4.1	U	3.9	U	1100		380		230		3.8	U	4.7	U	460		690	*	78		18		3.5	U	770	*
Benzo(g,h,i)perylene	900	4.1	U	3.9	U	530		140		110		3.8	U	4.7	U	210		180		29		3.5	U	3.5	U	330	
Benzo(k)fluoranthene	800	4.1	U	3.9	U	570		170		78		3.8	U	4.7	U	150		260		26		8.1		3.5	U	280	
Chrysene	400	4.1	U	4.0		1100		530		210		3.8	U	4.7	U	380		620	*	71		17		3.5	U	560	*
Dibenzo(a,h)anthracene	400	4.1	U	3.9	U	140		64	U	29		3.8	U	4.7	U	52		58		9.7		3.5	U	3.5	U	92	
Fluoranthene		4.1	U	9.1		2000	*	1200		360		3.8	U	4.7	U	730		1200	*	78		21		6.6		1200	*
Fluorene		4.1	U	3.9	U	95		3600		740	*	3.8	U	4.7	U	37		120		3.6	U	3.5	U	3.5	U	110	
Indeno(1,2,3-cd)pyrene	900	4.1	U	3.9	U	470		130		92		3.8	U	4.7	U	180		180		25		3.5	U	3.5	U	300	
Naphthalene		4.1	U	3.9	U	57		570		110		3.8	U	4.7	U	17	U	15		3.6	U	3.5	U	3.5	U	55	
Phenanthrene		4.1	U	10		1000		8900	*	1800	*	8.8		4.7	U	420		930	*	30		12		3.5	U	890	*
Pyrene		4.1	U	8.7		2000	*	2300		700	*	3.8	U	4.7	U	750		1200	*	83		24		7.3		1100	*
TAL Metal Analysis (MG/KG)																											
Aluminum		7820	E	8760	E	9770		12600	E	9920	E	6600	E	10400	E	12100		7650		9800		11500		12700		15200	
Antimony	10	0.54	BN	0.71	BN	39.4	N	3.4	N	2.3	N	0.51	BN	1.2	BN	0.90	BN	0.84	BN	0.98	BN	1.1	BN	0.99	BN	8.7	N
Arsenic	7.0	6.2	*	4.6	*	27.8		9.3	*	8.6	*	2.6	*	7.3	*	10.7		3.8	B	7.7		9.3		25.4		2.9	
Barium		11.0	B*	18.4	*	660		124	*	388	*	5.8	B*	20.5	*	28.7	B	23.0	B	8.4	B	7.8	B	35.1	B	34.9	
Beryllium	0.4	0.22	B	0.30		0.42	B	0.55		0.23	B	0.35		0.28	B	0.26	B	0.21	B	0.32	B	0.34	B	0.45	B	0.50	
Cadmium		0.012	U	0.096	B	6.9		2.9		3.7		0.010	U	0.014	U	0.042	U	0.054	U	0.054	U	0.048	U	0.050	U	0.031	U
Calcium		311	E	437	E	9320		11700	E	8470	E	495	E	801	E	5390	*	1250	*	342	*	564	*	786	*	4680	
Chromium		11.2	E*	15.0	E*	35.7		18.6	E*	9.2	E*	9.6	E*	16.1	E*	11.8	*	8.4	*	12.2	*	16.2	*	0.15	U*	21.9	
Cobalt		13.4	E	15.0	E	1.9	B	4.3	E	6.1	E	6.1	E	13.8	E	9.7	B	7.2	B	11.5	B	16.9		196		11.9	E
Copper		19.6	*	24.7	*	1070		558	*	1330	*	15.9	*	27.3	*	22.7	*	25.4	*	34.5	*	32.1	*	17.5	*	35.3	
Iron		27200		37900		123000		40600		54400		25700		49600		26200	*	19400	*	28300	*	32300	*	31300	*	36200	
Lead	150	12.3	NE*	11.5	NE*	8250		2490	NE*	729	NE*	8.1	NE*	11.4	NE*	846	N*	64.9	N*	15.9	N*	13.8	N*	10.1	N*	107	E
Magnesium		2440	E*	3270	E*	4510		3110	E*	4740	E*	1770	E*	3690	E*	5130		4480		4080		4720		5600		4770	
Manganese	390	180	E	860	E	806		185	E	351	E	268	E	444	E	543	*	279	*	245	*	284	*	3520	*	481	E
Mercury		0.020	U*	0.019	U*	0.67		0.63	*	0.21	*	0.029	B*	0.024	U*	0.037		0.053		0.016	U	0.018	U	0.018	U	0.56	
Nickel		21.1	E	24.1	E	38.8		28.4	E	25.1	E	14.3	E	32.8	E	19.6		14.3		22.5		28.0		56.3		27.4	E
Potassium		548	*	775	*	485		1100	*	373	*	335	*	745	*	436	*	345	*	459	*	461	*	428	*	696	
Selenium		0.17	U	0.15	U	0.53	U	0.19	U	0.15	U	0.15	U	0.20	U	4.0	B	3.3	B	4.5	B	5.0	B	3.7	B	3.0	
Silver		3.2	E	3.6	E	0.074	U	5.1	E	5.3	E	2.3	E	4.5	E	3.4	B	2.5	B	3.8	B	4.3	B	4.3	B	0.036	U
Sodium		97.1	*	156	*	1500		4390	*	1190	*	186	*	297	*	280	E	1490	E	1140	E	1210	E	1860	E	90.9	
Thallium		0.12	U	0.10	U	15.4		0.13	U	0.10	U	0.10	U	0.14	U	0.42	U	0.54	U	0.54	U	0.48	U	0.50	U	3.9	
Vanadium		17.3	E	18.9	E	57.6		17.2	E	21.3	E	22.1	E	22.3	E	16.9		27.5		13.8		18.3		9.3	B	25.5	
Zinc		56.4	E	63.0	E	4100	E	2330	E	917	E	44.5	E	77.0	E	157	*	69.3	*	59.5	*	75.1	*	81.3	*	134	
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		3100	U	25000		25000		180000		110000		3900		3600	U	3200	U	2900	U	2300	U	3100	U	4000	U	4600	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	14	U	14	U	66		8800		2100		13	U	17	U	43		92		13	U	13	U	13	U	170	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL.

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-406-1012		OFF-SB-406-1416		OFF-SB-DUP14		OFF-SB-406-1820		OFF-SB-407-0810		OFF-SB-407-1214		OFF-SB-407-1618		OFF-SB-407-2022		OFF-SB-DUP11		OFF-SB-408-0204		OFF-SB-408-0608		OFF-SB-409-0406		OFF-SB-DUP05	
Sample Location		406		406		406		406		407		407		407		407		407		408		408		409		409	
Date Sampled		12/3/2003		12/3/2003		12/3/2003		12/3/2003		12/1/2003		12/1/2003		12/1/2003		12/1/2003		12/1/2003		11/17/2003		11/17/2003		11/20/2003		11/20/2003	
Interval		10.0-12.0		14.0-16.0		14.0-16.0		18.0-20.0		8.0-10.0		12.0-14.0		16.0-18.0		20.0-22.0		20.0-22.0		2.0-4.0		6.0-8.0		4.0-6.0		4.0-6.0	
QC Identifier		None		Field Dup.		Field Dup.		None		None		None		None		Field Dup.		Field Dup.		None		None		Field Dup.		Field Dup.	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		4.8		3.8	U	3.7	U	3.8	U	21		62		3.8	U	3.7	U	3.8	U	44		120		94	U	450	
Acenaphthene		30		3.8	U	3.7	U	3.8	U	41		290		4.7		3.7	U	3.8	U	68		71		3300		3000	
Acenaphthylene		5.6		3.8	U	3.7	U	4.0		100		160		19		3.7	U	3.8	U	910		470		1300		1100	
Anthracene		52		3.8	U	9.2		13		200		550	*	33		5.4		5.2		850		520		1200		1000	
Benzo(a)anthracene	900	150		7.4		17		28		680	*	1400	*	80		6.5		12		3700	*	1800		120		110	
Benzo(a)pyrene	400	140		5.6		11		23		610	*	1100	*	64		4.7		9.3		3600	*	1400		94	U	94	U
Benzo(b)fluoranthene	900	170		7.2		14		28		740	*	1200	*	72		5.8		11		4100	*	1600		94	U	94	U
Benzo(g,h,i)perylene	900	96		3.8	U	4.0		13		350		490	*	33		3.7	U	4.7		1600		830		94	U	94	U
Benzo(k)fluoranthene	800	69		3.8	U	5.6		12		250		640	*	31		3.7	U	4.2		1400		710		94	U	94	U
Chrysene	400	160		7.4		15		25		520	*	1100	*	70		5.6		10		3600	*	1700		140		140	
Dibenzo(a,h)anthracene	400	24		3.8	U	3.7	U	3.8	U	93		120		8.9		3.7	U	3.8	U	120		230		94	U	94	U
Fluoranthene		270		14		39		54		1200	*	2300	*	170		12		19		5900	*	3200	*	470		400	
Fluorene		20		3.8	U	10		10		71		240		18		3.7	U	3.8	U	190		240		4200		3900	
Indeno(1,2,3-cd)pyrene	900	83		3.8	U	3.8		11		290		470	*	29		3.7	U	4.1		1500		710		94	U	94	U
Naphthalene		6.7		3.8	U	3.7	U	4.4		37		190		3.8	U	3.7	U	3.8	U	54		54		810		680	
Phenanthrene		180		8.5		41		48		760	*	1600	*	130		7.1		8.5		2700	*	2600	*	8700		8000	
Pyrene		280		13		35		49		1100	*	2700	*	170		15		24		6400	*	3500	*	1000		930	
TAL Metal Analysis (MG/KG)																											
Aluminum		12600		14000		12600		11000		12900	*	6290	*	12200	*	17400	*	16800	*	6820		10100		16400	*	15600	*
Antimony	10	7.7	N	9.3	N	9.0	N	6.6	N	0.76	BN*	0.11	UN*	0.56	BN*	0.99	BN*	1.2	N*	0.54	BN	0.77	BN	0.48	UN	0.47	UN
Arsenic	7.0	0.75	B	3.8		4.5		3.1		7.3	*	2.5	*	4.0	*	2.1	*	4.7	*	4.3	B	5.8		15.1		13.8	
Barium		24.8		14.4		20.2		4.4	B	13.5	*	18.4	*	13.5	*	8.3	B*	9.1	B*	31.9	B	25.3	B	27.3	B	24.1	B
Beryllium	0.4	0.58		0.51		0.52		0.22	B	0.17	B*	0.086	B*	0.30	*	0.34	*	0.38	*	0.20	B	0.35	B	0.73	B	0.69	B
Cadmium		0.035	U	0.078	U	0.070	U	0.033	U	0.29	*	6.6	*	0.45	*	0.69	*	0.74	*	0.045	U	0.053	U	0.048	U	0.047	U
Calcium		16100		715		666		827		1660	*	4350	*	423	*	1000	*	1160	*	7910	*	2400	*	1740	*	1620	*
Chromium		16.3		24.0		21.1		15.3		16.5	*	9.4	*	18.1	*	19.2	*	16.8	*	7.6	*	9.5	*	2.5	B*	4.8	*
Cobalt		7.2	E	12.1	E	11.8	E	5.6	E	10.8	*	7.2	*	14.5	*	34.4	*	30.8	*	7.2	B	15.4		38.8		30.2	
Copper		20.7		30.7		30.9		16.6		19.8	N*	86.3	N*	45.1	N*	31.0	N*	29.5	N*	23.9	*	21.9	*	48.0		45.7	
Iron		25600		39900		38700		24900		38200	*	219000	*	43100	*	53000	*	48200	*	15500	*	24800	*	40900	*	40200	*
Lead	150	36.1	E	12.1	E	10.8	E	10.9	E	57.5	*	79.4	*	13.1	*	6.9	*	12.7	*	71.2	N*	24.1	N*	30.6		26.6	
Magnesium		6490		5520		4660		4830		5030	*	3780	*	5230	*	6490	*	6170	*	2580		4320		5930	*	5790	*
Manganese	390	362	E	323	E	300	E	335	E	409	*	741	*	352	*	425	*	436	*	1010	*	1860	*	3200		2800	
Mercury		0.064		0.017	U	0.015	U	0.018	U	0.045		0.017	U	0.018	U	0.016	U	0.017	U	0.020	B	0.018	U	0.019	U	0.019	U
Nickel		19.7	E	31.4	E	31.5	E	17.6	E	19.7	*	14.2	*	20.7	*	43.0	*	38.9	*	10.7	B	14.1		29.4		26.6	*
Potassium		932		803		734		268		341	*	195	*	386	*	298	*	336	*	570	*	558	*	555		440	
Selenium		2.6		2.9		3.2		2.7		0.17	UN	0.16	UN	0.14	UN	0.15	UN	0.14	UN	2.1	B	3.6	B	7.2	B	7.4	
Silver		0.041	U	0.036	U	0.033	U	0.038	U	3.0		5.2		3.1		3.4		3.3		2.1	B	3.3	B	4.0	B	3.9	B
Sodium		2290		828		750		216		698	*	349	*	275	*	413	*	432	*	184	E	109	E	125		102	
Thallium		2.9		4.4		4.2		3.0		0.11	UN	0.11	UN	0.096	UN	0.099	UN	0.093	UN	0.45	U	0.53	U	0.48	U	0.47	U
Vanadium		18.8		22.7		21.2		12.4		27.1	*	23.9	*	19.3	*	18.4	*	19.8	*	24.6		11.7	B	16.5		16.0	
Zinc		53.8		71.2		73.4		43.9		99.7	*	118	*	132	*	85.6	*	88.5	*	79.8	*	72.2	*	101		98.3	
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		3600	U	2600	U	2800	U	2700	U	2400	U	31000		2400	U	2200	U	2400	U	4300	U	4200	U	120000		120000	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	69		17		13	U	13	U	48		900		23		13	U	13	U	600		150		4400		5200	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-409-0608		OFF-SB-409-1012		OFF-SB-410-0204		OFF-SB-410-0608		OFF-SB-410-1012		OFF-SB-410-1416		OFF-SB-410-1820		OFF-SB-411-2022		OFF-SB-411-2224		OFF-SB-411-2628		OFF-SB-412-1416		OFF-SB-413-0204		OFF-SB-DUP12	
Sample Location		409		409		410		410		410		410		410		411		411		411		412		413		413	
Date Sampled		11/20/2003		11/20/2003		11/20/2003		11/20/2003		11/20/2003		11/21/2003		11/21/2003		11/24/2003		11/25/2003		11/25/2003		11/25/2003		12/2/2003		12/2/2003	
Interval		6.0-8.0		10.0-12.0		2.0-4.0		6.0-8.0		10.0-12.0		14.0-16.0		18.0-20.0		20.0-22.0		22.0-24.0		26.0-28.0		14.0-16.0		2.0-4.0		2.0-4.0	
QC Identifier		None		None		None		None		None		None		None		None		None		None		None		Field Dup.		Field Dup.	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		1900		8.6		7.2		3.6	U	58		3.6	U	3.7	U	24	U	34		7.5		3.8		840		1100	
Acenaphthene		1900		21		4.9		1200	*	32		3.6	U	3.7	U	24	U	47		14		4.0		2500		3600	
Acenaphthylene		920		9.4		22		340		26		3.6	U	3.7	U	24	U	19		20		7.2		190		250	
Anthracene		750		12		32		540	*	41		3.6	U	3.7	U	24	U	100		38		10		4500	*	7000	*
Benzo(a)anthracene	900	82		3.6	U	150		84		65		3.6	U	3.7	U	48		290		50		34		11000	*	17000	*
Benzo(a)pyrene	400	76	U	3.6	U	140		59		70		3.6	U	3.7	U	47		250		35		31		9200	*	14000	*
Benzo(b)fluoranthene	900	76	U	3.6	U	190		74		90		3.6	U	3.7	U	60		330		42		43		12000	*	15000	*
Benzo(g,h,i)perylene	900	76	U	3.6	U	71		32		52		3.6	U	3.7	U	30		120		24		21		5400	*	7900	*
Benzo(k)fluoranthene	800	76	U	3.6	U	68		25		36		3.6	U	3.7	U	25		110		21		13		3900	*	7800	*
Chrysene	400	110		3.6	U	150		98		75		3.6	U	3.7	U	72		270		42		35		7800	*	12000	*
Dibenzo(a,h)anthracene	400	76	U	3.6	U	20		7.9		13		3.6	U	3.7	U	24	U	33		6.3		6.1		1300		1800	
Fluoranthene		260		6.0		220		300	*	99		3.6	U	3.7	U	67		500	*	84		52		18000	*	28000	*
Fluorene		2200		27		7.0		1900	*	46		3.6	U	4.8		24	U	51		12		5.9		2300		3400	
Indeno(1,2,3-cd)pyrene	900	76	U	3.6	U	66		27		43		3.6	U	3.7	U	24	U	110		22		16		4900	*	7200	*
Naphthalene		810		3.6	U	4.6		3.6	U	16		3.6	U	3.7	U	24	U	22		5.0		10		2200		3000	
Phenanthrene		5100		67		81		3600	*	120		9.1		13		47		370		66		33		13000	*	21000	*
Pyrene		680		12		240		360		120		3.6	U	3.7	U	94		560	*	100		68		14000	*	21000	*
TAL Metal Analysis (MG/KG)																											
Aluminum		11900	*	16200	*	14800	*	14700	*	7660	*	9080	*	11700	*	7650	E	12500	E	12100	E	8570	E	8160		7410	
Antimony	10	0.47	UN	0.47	UN	0.54	UN	0.53	UN	0.20	UN	0.46	UN	0.52	UN	0.76	BN	0.82	BN	0.71	BN	0.67	BN	7.0	N	5.5	N
Arsenic	7.0	7.3		13.2		10.0		8.3		4.6		7.0		6.7		4.3	*	4.7	*	4.4	*	4.3	*	0.64	B	1.4	
Barium		13.4	B	15.6	B	23.0	B	26.6	B	22.7		37.1	B	23.9	B	20.3	*	27.5	*	20.0	*	14.4	*	26.0		19.6	
Beryllium	0.4	0.22	B	0.28	B	0.22	B	0.25	B	0.24	B	0.40	B	0.41	B	0.081	B	0.27	B	0.69		0.11	B	0.41		0.39	
Cadmium		0.047	U	0.047	U	0.054	U	0.053	U	0.020	U	0.046	U	0.052	U	0.013	U	0.13	B	0.086	B	0.0097	U	0.017	U	0.014	U
Calcium		679	*	1800	*	2190	*	1350	*	1350	*	1600	*	2090	*	1520	E	5650	E	1960	E	1330	E	17800		12500	
Chromium		6.8	*	18.2	*	17.5	*	13.7	*	9.4	*	8.1	*	16.6	*	7.5	E*	17.6	E*	28.7	E*	9.5	E*	11.8		10.2	
Cobalt		18.8		24.2		6.7	B	11.6	B	5.7		17.9		15.2		7.3	E	9.8	E	7.7	E	8.4	E	5.4	E	4.2	E
Copper		15.7		20.4		16.6		18.3		13.9		24.6		20.4		17.4	*	40.8	*	29.0	*	13.2	*	16.7		12.7	
Iron		25700	*	33600	*	31500	*	39100	*	17400	*	33600	*	35300	*	17000		43300		36100		19700		23100		18800	
Lead	150	14.2		32.2		42.4		19.6		113		12.0		13.3		16.2	NE*	71.7	NE*	22.1	NE*	15.5	NE*	11.2	E	10.3	E
Magnesium		5250	*	7630	*	6010	*	5050	*	2450	*	3510	*	4690	*	3380	E*	5190	E*	5280	E*	3820	E*	3520		3330	
Manganese	390	1280		716		274		563		173		2120		316		409	E	775	E	4850	E	402	E	407	E	386	E
Mercury		0.019	U	0.017	U	0.074		0.024	B	0.066		0.016	U	0.019	U	0.023	U*	0.051	*	0.018	U*	0.019	U*	0.017	U	0.018	U
Nickel		13.7		19.5		17.2		16.2		14.2		28.4		34.1		12.7	E	22.3	E	23.0	E	14.6	E	14.1		11.5	
Potassium		317		298		473		409		303		813		647		616	*	709	*	987	*	470	*	602		537	
Selenium		5.0	B	6.3	B	5.7	B	7.5	B	3.0	B	5.9	B	6.4	B	0.20	U	0.18	U	0.17	U	0.15	U	0.28	U	0.24	U
Silver		2.5	B	3.2	B	3.0	B	3.8	B	1.8	B	3.4	B	3.5	B	2.3	E	3.6	E	3.7	E	2.2	E	0.039	U	0.034	U
Sodium		97.1		107		70.0		80.8		203		113		52.9		317	*	464	*	551	*	83.9	*	90.1		69.9	
Thallium		0.47	U	0.47	U	0.54	U	0.53	U	0.36	B	0.46	U	0.52	U	0.13	U	0.12	U	0.12	U	0.097	U	1.4		2.2	
Vanadium		10.1	B	15.9		19.0		21.3		20.0		20.3		21.0		12.1	E	19.9	E	14.7	E	9.7	E	14.5		12.6	
Zinc		49.2		66.2		69.9		113		86.1		74.2		76.9		54.5	E	89.3	E	49.2	E	41.7	E	51.9		42.4	
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		110000		2800	U	3500	U	110000		37000		2200	U	2100		2900	U	3200	U	22000		3000	U	4700		5800	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	4200		38		52		2900		110		25		13	U	300		170		380		100		890		1000	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference, N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-414-0204		OFF-SB-414-0608		OFF-SB-414-1012		OFF-SB-415-0608		OFF-SB-415-1012		OFF-SB-416-0406		OFF-SB-416-0810		OFF-SB-416-1214		OFF-SB-416-1618		OFF-SB-417-0406		OFF-SB-417-0608		OFF-SB-DUP04		OFF-SB-417-1012	
Sample Location		414		414		414		415		415		416		416		416		416		417		417		417		417	
Date Sampled		12/2/2003		12/2/2003		12/2/2003		11/18/2003		11/18/2003		11/19/2003		11/19/2003		11/19/2003		11/19/2003		11/19/2003		11/19/2003		11/19/2003		11/19/2003	
Interval		2.0-4.0		6.0-8.0		10.0-12.0		6.0-8.0		10.0-12.0		4.0-6.0		8.0-10.0		12.0-14.0		16.0-18.0		4.0-6.0		6.0-8.0		6.0-8.0		10.0-12.0	
QC Identifier		None		None		None		None		None		None		None		None		None		None		Field Dup.		Field Dup.		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		20		38		12		3.6	U	18	U	18	U	3.8	U	3.5	U	3.7	U	19		35		21		3.7	U
Acenaphthene		98		240		81		3.6	U	22		35		3.8	U	3.5	U	3.7	U	9.4		69		62		3.7	U
Acenaphthylene		51		24		66		3.6	U	18	U	40		3.8	U	3.5	U	16		18		17		16		3.7	U
Anthracene		230		430	*	220		3.6	U	54		110		3.8	U	3.5	U	24		39		130		110		7.6	
Benzo(a)anthracene	900	1000	*	1400	*	94		19		270		880		12		3.5	U	62		56		170		170		22	
Benzo(a)pyrene	400	1100	*	1000	*	71		18		280		820		11		3.5	U	55		56		130		150		21	
Benzo(b)fluoranthene	900	1100	*	1200	*	83		22		340		1100		13		3.5	U	67		68		140		180		24	
Benzo(g,h,i)perylene	900	550	*	440	*	46		11		180		450		3.8	U	3.5	U	32		36		58		80		12	
Benzo(k)fluoranthene	800	350		400	*	30		7.9		150		470		3.8	U	3.5	U	25		25		72		64		9.8	
Chrysene	400	1100	*	1100	*	93		21		340		890		11		3.5	U	60		55		160		150		20	
Dibenzo(a,h)anthracene	400	110		110		11		3.6	U	44		120		3.8	U	3.5	U	7.8		8.4		16		18		3.7	U
Fluoranthene		1300	*	1900	*	210		30		470		1000		19		3.5	U	120		110		360		350		39	
Fluorene		79		180		29		3.6	U	20		26		3.8	U	3.5	U	11		8.4		72		55		3.7	U
Indeno(1,2,3-cd)pyrene	900	350		390	*	36		8.8		140		370		3.8	U	3.5	U	28		31		56		72		9.8	
Naphthalene		16		51		10		3.6	U	18	U	18	U	3.8	U	3.5	U	8.4		3.8	U	34		35		3.7	U
Phenanthrene		950	*	1500	*	100		15		270		440		10		3.5	U	94		63		400	*	310		23	
Pyrene		2500	*	2300	*	370		36		510		1200		20		3.5	U	120		140		360		340		41	
TAL Metal Analysis (MG/KG)																											
Aluminum		9450	*	13000	*	9060	*	8070		12200		9630		10300		11100		12000		7840		5550		7250		5130	
Antimony	10	0.38	BN*	0.56	BN*	0.37	BN*	7.5	N	8.5	N	6.2	N	7.1	N	9.1	N	8.9	N	5.5	N	4.4	N	5.4	N	4.2	N
Arsenic	7.0	5.2	*	8.5	*	4.3	*	23.6		17.6		11.8		12.4		15.6		25.9		7.8		8.2		8.6		5.8	
Barium		35.6	*	17.0	*	8.5	B*	10.0	B	32.2		17.6		7.0	B	9.3	B	14.6		7.3	B	6.1	B	6.8	B	6.5	B
Beryllium	0.4	0.15	B*	0.23	B*	0.21	B*	0.35		0.35		0.43		0.52		0.48		0.42		0.44		0.31		0.35		0.35	
Cadmium		0.17	B*	0.40	*	0.074	B*	0.016	U	0.016	U	0.014	U	0.017	U	0.016	U	0.013	U	0.015	U	0.014	U	0.014	U	0.014	U
Calcium		997	*	1490	*	1270	*	948		2040		1840		837		1050		1240		649		20700		15400		923	
Chromium		9.9	*	12.3	*	8.2	*	7.7		16.1		12.6		15.9		16.9		12.0		11.6		9.0		11.0		7.8	
Cobalt		9.5	*	12.8	*	7.2	*	3.7		10.8		10.2		5.4		21.2		81.3		8.3		6.8		8.4		4.4	
Copper		31.6	N*	25.7	N*	25.6	N*	43.2		39.4		33.9		19.5		27.8		26.0		18.2		20.7		19.0		11.9	
Iron		26300	*	37200	*	24400	*	31600	*	34200	*	25100	*	27900	*	35600	*	39500	*	18100	*	13200	*	18900	*	12500	*
Lead	150	183	*	34.4	*	47.7	*	182		199		136		20.7		12.7		12.4		101		95.2		108		15.1	
Magnesium		2810	*	5220	*	4560	*	2370		4870		3070		3560		3820		3730		2390		5400		6320		1930	
Manganese	390	1080	*	666	*	390	*	197		582		570		189		357		3210		129		194		191		114	
Mercury		0.040		0.018	B	0.028	B	0.064		0.075		0.081		0.030	B	0.016	U	0.017	U	0.026	B	0.020	B	0.018	U	0.019	U
Nickel		15.4	*	24.3	*	14.0	*	13.1		22.9		18.8		16.7		28.4		31.9		17.9		11.5		15.8		12.0	
Potassium		466	*	570	*	424	*	215		399		369		430		538		481		392		286		329		400	
Selenium		0.15	UN	0.14	UN	0.17	UN	0.26	U	0.27	U	0.24	U	0.28	U	0.26	U	0.22	U	0.25	U	0.24	U	0.23	U	0.23	U
Silver		2.5		2.8		2.3		0.036	U	0.038	U	0.034	U	0.039	U	0.036	U	0.031	U	0.035	U	0.033	U	0.033	U	0.032	U
Sodium		45.7	B*	539	*	205	*	41.4	B	1010		71.5		822		856		1270		1210		1250		1220		1350	
Thallium		0.10	UN	0.094	UN	0.12	UN	2.9		3.7		2.6		2.5		3.6		5.6		2.0		1.3		1.9		1.5	
Vanadium		17.0	*	19.4	*	9.4	*	10.9		16.5		16.8		19.0		16.7		15.7		14.4		11.0		13.2		9.6	
Zinc		76.6	*	83.2	*	108	*	30.8		86.8		119		43.2		78.0		73.4		41.8		29.0		36.6		27.2	
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		2500	U	2200	U	23000		2500	U	3300	U	3300	U	2000	U	2100	U	3500	U	34000		23000		3000	U	2600	U
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	110		180		1200		13	U	39		170		13	U	12	U	13		310		180		170		13	U

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-417-1416		OFF-SB-417-1820		OFF-SB-418-0406		OFF-SB-418-0810		OFF-SB-418-1214		OFF-SB-418-1618		OFF-SB-DUP13		OFF-SB-419-0204		OFF-SB-419-0608		OFF-SB-DUP01		OFF-SB-419-1012		OFF-SB-420-0204		OFF-SB-420-0608	
Sample Location		417		417		418		418		418		418		418		419		419		419		419		420		420	
Date Sampled		11/19/2003		11/19/2003		12/3/2003		12/3/2003		12/3/2003		12/3/2003		12/3/2003		11/18/2003		11/18/2003		11/18/2003		11/18/2003		11/21/2003		11/21/2003	
Interval		14.0-16.0		18.0-20.0		4.0-6.0		8.0-10.0		12.0-14.0		16.0-18.0		16.0-18.0		2.0-4.0		6.0-8.0		6.0-8.0		10.0-12.0		2.0-4.0		6.0-8.0	
QC Identifier		None		None		None		None		None		Field Dup.		Field Dup.		None		Field Dup.		Field Dup.		None		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		3.8	U	3.8	U	4.5		3.8	U	3.8	U	3.7	U	3.8	U	3.5	U	260		310		3.9		11		54000	*
Acenaphthene		3.8	U	3.8	U	27		7.7		3.8	U	3.7	U	3.8	U	440	*	1000	*	1300	*	3.7	U	23		3.9	U
Acenaphthylene		3.8	U	3.8	U	13		18		3.8	U	3.7	U	3.8	U	290		320		290		3.7	U	92		3.9	U
Anthracene		3.8	U	3.8	U	51		33		3.8	U	3.7	U	4.2		210		430	*	450	*	3.7	U	130		1700	*
Benzo(a)anthracene	900	3.8	U	3.8	U	150		15		3.8	U	3.7	U	4.9		71		33		32		3.7	U	510	*	96	
Benzo(a)pyrene	400	3.8	U	3.8	U	150		11		3.8	U	3.7	U	3.8	U	70		15		14		3.7	U	430	*	55	
Benzo(b)fluoranthene	900	3.8	U	3.8	U	200		13		3.8	U	3.7	U	4.2		70		18		17		3.7	U	530	*	65	
Benzo(g,h,i)perylene	900	3.8	U	3.8	U	95		4.4		3.8	U	3.7	U	3.8	U	44		7.7		7.4		3.7	U	200		23	
Benzo(k)fluoranthene	800	3.8	U	3.8	U	62		5.9		3.8	U	3.7	U	3.8	U	26		18		9.7		3.7	U	170		43	
Chrysene	400	3.8	U	3.8	U	150		16		3.8	U	3.7	U	4.0		93		39		42		3.7	U	540	*	110	
Dibenzo(a,h)anthracene	400	3.8	U	3.8	U	25		3.8	U	3.8	U	3.7	U	3.8	U	9.6		3.4	U	3.5	U	3.7	U	56		6.2	
Fluoranthene		5.8		7.6		270		29		3.8	U	3.7	U	7.6		210		98		43		3.7	U	770	*	700	E
Fluorene		3.8	U	3.8	U	18		3.8	U	3.8	U	3.7	U	3.8	U	820	*	1600	*	2000	*	17		48		4000	*
Indeno(1,2,3-cd)pyrene	900	3.8	U	3.8	U	81		4.2		3.8	U	3.7	U	3.8	U	34		6.0		6.0		3.7	U	180		22	
Naphthalene		3.8	U	3.8	U	11		3.8	U	3.8	U	3.7	U	3.8	U	200		320		470	*	3.7	U	10		10000	*
Phenanthrene		3.8	U	9.6		160		9.5		3.8	U	3.7	U	4.3		1200	*	2600	*	3000	*	33		590	*	7500	*
Pyrene		7.7		12		280		46		4.3		4.1		9.4		310		250		260		3.7	U	910	*	420	E
TAL Metal Analysis (MG/KG)																											
Aluminum		9680		12000		14400		17300		11600		8510		11500		11700		14300		17000		14700		10400	*	13700	
Antimony	10	9.7	N	8.7	N	8.2	N	9.5	N	9.7	N	5.7	N	8.0	N	1.3	BN	0.76	BN	0.85	BN	0.87	BN	0.20	UN	13.0	N
Arsenic	7.0	14.3		14.1		3.7		1.1		3.8		3.1		7.3		34.7		19.7		24.3		69.2		9.1		14.2	
Barium		25.5		5.9	B	29.5		13.6		17.7		10.5		18.4		18.6	B	10.8	B	13.2	B	20.2	B	21.1		15.7	B*
Beryllium	0.4	0.41		0.45		0.56		0.48		0.44		0.28		0.50		0.60	B	0.45	B	0.47	B	0.66	B	0.73		0.59	B
Cadmium		0.016	U	0.015	U	0.033	U	0.078	U	0.035	U	0.029	U	0.032	U	0.047	U	0.052	U	0.043	U	0.048	U	0.020	U	0.084	U
Calcium		1000		1900		1350		977		720		899		1290		1340	*	1830	*	1430	*	2290	*	1050	*	1510	
Chromium		15.5		19.5		19.1		25.4		19.6		8.1		12.1		8.1	*	3.4	B*	3.9	B*	6.1	*	9.9		18.2	
Cobalt		34.3		9.9		12.2	E	10.1	E	21.9	E	9.9	E	15.5	E	7.2	B	2.9	B	3.6	B	9.7	B	9.5		18.2	
Copper		21.5		11.7		53.0		30.5		27.9		16.3		20.9		13.7	*	20.1	*	22.3	*	27.8	*	25.6	*	25.9	N
Iron		43200	*	37000	*	30300		41000		34800		19800		28400		38900	*	35100	*	40300	*	39900	*	23600	*	36500	
Lead	150	14.8		12.2		321	E	14.5	E	12.7	E	8.4	E	12.2	E	14.3	N*	9.4	N*	11.5	N*	6.6	N*	77.7		14.3	*
Magnesium		3890		3870		4240		7140		4380		4180		5210		4230		5390		6240		5090		3510	*	5280	
Manganese	390	1540		219		496	E	333	E	759	E	1020	E	1700	E	209	*	451	*	439	*	737	*	448		543	
Mercury		0.018	U	0.019	U	0.049		0.017	U	0.018	U	0.018	U	0.019	U	0.017	U	0.017	U	0.016	U	0.018	U	0.037		0.020	U
Nickel		23.6		20.2		32.3	E	32.1	E	38.2	E	17.8	E	25.9	E	15.5		10.9	B	11.7		25.0		16.7		29.3	
Potassium		395		189		493		693		550		233		388		321	*	186	*	191	*	360	*	478		469	
Selenium		0.26	U	0.25	U	3.3		3.6		3.1		2.3		2.9		5.6	B	4.9	B	5.8	B	5.8	B	4.0		1.4	UN
Silver		0.037	U	0.035	U	0.039	U	0.036	U	0.041	U	0.034	U	0.038	U	5.0	B	4.6	B	5.2	B	5.2	B	2.2	B	0.20	UN
Sodium		982		344		252		1080		736		244		477		192	E	94.9	E	93.6	E	188	E	126		314	
Thallium		4.7		3.5		3.5		4.5		4.7		3.1		4.5		0.47	U	0.52	U	0.44	U	0.48	U	0.20	U	4.8	B
Vanadium		12.4		19.3		22.0		23.8		20.6		7.4		11.5		13.7		13.0		18.9		13.7		15.4		22.9	*
Zinc		54.3		53.2		68.2		72.5		71.8		45.2		74.5		53.4	*	53.9	*	65.2	*	73.2	*	82.9		75.8	N
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		2600	U	3000	U	2900	U	3600		2700	U	2700	U	2600	U	380000		680000		120000		33000		2900	U	210000	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	13	U	13	U	32		44		13	U	13	U	13	U	1600		2700		2600		35		46		8400	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-420-1012		OFF-SB-420-1416		OFF-SB-421-0204		OFF-SB-DUP06-112103		OFF-SB-421-0608		OFF-SB-421-1214		OFF-SB-421-1416		OFF-SB-421-1820		OFF-SB-422-0204		OFF-SB-422-0608		OFF-SB-422-1012		OFF-SB-422-1416		OFF-SB-422-1820	
Sample Location		420		420		421		421		421		421		421		421		422		422		422		422		422	
Date Sampled		11/21/2003		11/21/2003		11/21/2003		11/21/2003		11/21/2003		11/21/2003		11/21/2003		11/21/2003		12/3/2003		12/3/2003		12/3/2003		12/3/2003		12/3/2003	
Interval		10.0-12.0		14.0-16.0		2.0-4.0		2.0-4.0		6.0-8.0		12.0-14.0		14.0-16.0		18.0-20.0		2.0-4.0		6.0-8.0		10.0-12.0		14.0-16.0		18.0-20.0	
QC Identifier		None		None		Field Dup.		Field Dup.		None		None		None		None		None		None		None		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		4400	*	420	*	45		19	U	4800	*	6.9		11		13		1100		7.4		3.6	U	3.8	U	3.6	U
Acenaphthene		340		50		110		48		1700		13		14		8.0		7600	*	4.3		3.6	U	3.8	U	3.6	U
Acenaphthylene		3.5	U	3.4	U	94		87		19	U	12		6.3		3.9	U	210		20		3.6	U	3.8	U	3.6	U
Anthracene		150		24		260		140		1100		18		17		3.9	U	14000	*	22		3.6	U	3.8	U	3.6	U
Benzo(a)anthracene	900	24		3.4	U	820		590		1100		17		37		3.9	U	18000	*	79		3.6	U	3.8	U	3.6	U
Benzo(a)pyrene	400	11		3.4	U	810		570		1100		12		21		3.9	U	15000	*	64		3.6	U	3.8	U	3.6	U
Benzo(b)fluoranthene	900	14		3.4	U	870		670		1200		10		26		3.9	U	17000	*	110		3.6	U	3.8	U	3.6	U
Benzo(g,h,i)perylene	900	4.2		3.4	U	440		340		650		4.5	U	3.8	U	3.9	U	9000	*	55		3.6	U	3.8	U	3.6	U
Benzo(k)fluoranthene	800	5.7		3.4	U	440		260		460		4.5	U	13		3.9	U	7800	*	36		3.6	U	3.8	U	3.6	U
Chrysene	400	27		3.4	U	880		580		1000		17		39		3.9	U	15000	*	79		3.6	U	3.8	U	3.6	U
Dibenzo(a,h)anthracene	400	3.5	U	3.4	U	130		98		140		4.5	U	3.8	U	3.9	U	1900		17		3.6	U	3.8	U	3.6	U
Fluoranthene		93		8.5		1200		720		2000	*	22		96		3.9	U	46000	*	89		3.6	U	3.8	U	3.6	U
Fluorene		660	*	58		140		65		3300	*	17		16		9.6		6400	*	7.3		3.6	U	3.8	U	3.6	U
Indeno(1,2,3-cd)pyrene	900	4.1		3.4	U	390		290		550		4.5	U	3.8	U	3.9	U	7500	*	50		3.6	U	3.8	U	3.6	U
Naphthalene		320		39		45		19	U	1400		4.5	U	3.8	U	3.9	U	510		6.7		3.6	U	3.8	U	3.6	U
Phenanthrene		1100	*	120		900		460		6100	*	60		99		18		48000	*	40		3.6	U	3.8	U	3.6	U
Pyrene		130		14		1500		970		2700	*	41		100		3.9	U	44000	*	100		3.6	U	3.8	U	3.6	U
TAL Metal Analysis (MG/KG)																											
Aluminum		20100		20800		8250		6560		11200		10500		7590		6630		10700		9940		8130		8460		7560	
Antimony	10	13.9	N	17.3	N	5.5	N	4.4	N	9.9	N	13.3	N	10.0	N	11.3	N	6.4	N	5.0	N	8.0	N	9.0	N	10.5	N
Arsenic	7.0	7.2		7.6		10.1		8.4		8.4		11.6		9.1		11.9		3.5		0.87	B	4.6		2.1		2.0	
Barium		12.5	B*	25.4	B*	74.5	*	59.9	*	25.4	B*	19.6	B*	20.6	B*	23.2	B*	34.3		10.9		16.8		24.2		18.0	
Beryllium	0.4	0.38	B	0.60	B	0.64		0.42		0.34	B	0.53	B	0.42	B	0.44	B	0.44		0.22	B	0.62		0.64		0.40	
Cadmium		0.065	U	0.072	U	0.017	U	0.015	U	0.073	U	0.089	U	0.071	U	0.080	U	0.18	B	0.015	U	0.016	U	0.014	U	0.30	
Calcium		3570		4230		3880		2890		2360		1580		1260		1560		20200		1520		980		808		898	
Chromium		23.5		23.3		11.6		10.2		13.9		20.7		13.5		16.3		12.8		10.0		12.5		15.5		16.9	
Cobalt		21.3		50.3		9.1		8.6		12.9		22.5		14.3		16.8		5.9	E	2.9	E	9.6	E	12.1	E	12.1	E
Copper		24.5	N	31.4	N	24.8	N	24.0	N	26.5	N	23.5	N	17.4	N	17.8	N	17.3		5.6		18.9		22.3		20.6	
Iron		42900		49900		18800		13700		28300		37300		28200		31800		22100		17900		25900		29300		35200	
Lead	150	8.5	*	16.1	*	215	*	186	*	29.8	*	14.6	*	11.0	*	10.6	*	39.3	E	27.5	E	9.8	E	10.0	E	10.7	E
Magnesium		7730		6600		1950		1680		3270		3960		2730		2470		3780		3350		2610		2650		2320	
Manganese	390	428		2780		237		212		374		567		534		284		334	E	160	E	528	E	917	E	514	E
Mercury		0.018	U	0.017	U	0.74		0.94		0.052		0.022	U	0.019	U	0.018	U	0.050		0.030	B	0.019	U	0.018	U	0.015	U
Nickel		41.4		52.8		19.8		17.1		19.6		34.7		24.4		33.2		13.0		10.7		14.3		27.8		32.7	
Potassium		357		327		481		349		360		903		667		677		462		399		569		591		455	
Selenium		1.1	UN	1.2	UN	0.28	UN	0.27	BN	1.2	UN	1.5	UN	1.2	UN	1.3	UN	0.24	U	0.24	U	0.27	U	0.24	U	0.22	U
Silver		0.15	UN	0.17	UN	0.039	UN	0.036	UN	0.17	UN	0.21	UN	0.17	UN	0.19	UN	0.034	U	0.034	U	0.037	U	0.034	U	0.031	U
Sodium		370		129		137		94.7		90.4		369		244		85.0		115		254		75.6		85.4		37.5	B
Thallium		5.2		8.7		1.9		1.5		3.6	B	4.7	B	3.6	B	4.0	B	2.1		0.67	B	2.9		4.1		4.7	
Vanadium		20.4	*	30.9	*	43.8	*	58.1	*	18.4	*	21.3	*	15.9	*	16.2	*	16.8		18.9		21.0		18.9		18.1	
Zinc		90.0	N	137	N	114	N	91.6	N	89.0	N	80.9	N	61.0	N	67.0	N	59.6		36.3		62.5		82.3		106	
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		56000		2500		4200	U	3600	U	150000		27500		11000		25000		3200	U	3600	U	3000	U	2700	U	2900	U
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	710		70		110		140		7300		16	U	16		18		360		37		13	U	13	U	13	U

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-423-0204		OFF-SB-424-0204		OFF-SB-425-0204		OFF-SB-426-0204		OFF-SB-DUP08		OFF-SB-427-0204		OFF-SB-427-0608		OFF-SB-428-0204		OFF-SB-428-0608		OFF-SB-428-1012		OFF-SB-428-1416		OFF-SB-428-1820		OFF-SB-429-0406	
Sample Location		423		424		425		426		426		427		427		428		428		428		428		428		429	
Date Sampled		11/25/2003		11/26/2003		11/26/2003		11/25/2003		11/25/2003		11/24/2003		11/24/2003		11/24/2003		11/24/2003		11/24/2003		11/24/2003		11/24/2003		11/25/2003	
Interval		2.0-4.0		2.0-4.0		2.0-4.0		2.0-4.0		2.0-4.0		2.0-4.0		6.0-8.0		2.0-4.0		6.0-8.0		10.0-12.0		14.0-16.0		18.0-20.0		4.0-6.0	
QC Identifier		None		None		None		Field Dup.		Field Dup.		None		None		None		None		None		None		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		17	U	3.4	U	3.5	U	3.6	U	3.6	U	21	U	9.5		190		96		9.5		3.6	U	3.4	U	290	
Acenaphthene		55		3.4	U	3.5	U	7.7		8.6		110		3.8	U	280		150		26		3.6	U	3.4	U	500	*
Acenaphthylene		17	U	8.1		3.5	U	8.4		8.5		50		3.8	U	180		180		21		3.6	U	3.4	U	67	
Anthracene		93		8.7		7.3		18		20		130		160		660		710	*	62		3.6	U	3.4	U	1200	*
Benzo(a)anthracene	900	290		30		26		94		89		460		52		1200		1900	*	200		3.6	U	3.4	U	2200	*
Benzo(a)pyrene	400	290		32		22		93		92		400		42		1100		1600	*	190		3.6	U	3.4	U	1800	*
Benzo(b)fluoranthene	900	380		33		26		110		100		530		50		1400		1900	*	220		3.6	U	3.4	U	2100	*
Benzo(g,h,i)perylene	900	120		19		15		52		51		180		28		770		890	*	89		3.6	U	3.4	U	990	*
Benzo(k)fluoranthene	800	130		17		12		37		34		200		18		580		830	*	120		3.6	U	3.4	U	780	*
Chrysene	400	280		33		28		100		100		430		52		1300		1700	*	210		3.6	U	3.4	U	1800	*
Dibenzo(a,h)anthracene	400	37		5.3		3.7		14		13		58		5.3		160		190		26		3.6	U	3.4	U	190	
Fluoranthene		520		38		56		130		120		740		100		2400	*	3500	*	270		3.6	U	3.4	U	3400	*
Fluorene		40		3.4	U	3.5	U	7.7		7.8		25		3.8	U	200		450	*	30		3.6	U	3.4	U	360	
Indeno(1,2,3-cd)pyrene	900	110		16		12		43		42		160		22		610		770	*	87		3.6	U	3.4	U	850	*
Naphthalene		21		3.4	U	3.5	U	3.6	U	3.6	U	21	U	3.8	U	220		200		21		3.6	U	3.4	U	200	
Phenanthrene		310		12		31		79		95		420		68		1100		2200	*	160		3.6	U	3.4	U	2800	*
Pyrene		550		35		42		180		170		920		190		2500	*	3000	*	420	*	3.6	U	3.4	U	3700	*
TAL Metal Analysis (MG/KG)																											
Aluminum		9660		10500		11600		15300		11700		8970		6260		7260		8900		4240		7660		7100		8620	E
Antimony	10	6.2	N	0.92	BN	1.1	N	12.1	N	9.6	N	6.0	N	2.9	N	19.3	N	7.5	N	3.6	N	8.6	N	10.7	N	2.1	N
Arsenic	7.0	5.5		5.1		9.8		11.0		8.3		8.3		5.0		17.3		9.1		4.4		8.0		7.6		6.9	*
Barium		15.5		32.7		14.6		38.6		21.1		35.2	*	10.0	B*	72.3	*	19.6	B*	6.5	B*	23.7	B*	17.9	B*	148	*
Beryllium	0.4	0.26		0.35		0.27		0.42		0.34		0.39		0.35		0.32	B	0.38	B	0.18	B	0.38	B	0.34	B	0.29	
Cadmium		0.013	U	0.61		0.28		0.33		0.16	B	0.016	U	0.016	U	0.074	U	0.072	U	0.015	U	0.083	U	0.072	U	1.8	
Calcium		1510		4700	*	1480	*	4290		4270		8870		1160		2510		1970		1880		1270		2040		4880	E
Chromium		11.2		11.6	*	12.0	*	20.0		18.4		13.8		7.0		23.4		9.7		5.9		12.3		15.4		13.0	E*
Cobalt		6.2		18.0	E	14.1	E	13.6		9.7		7.1		2.5	B	10.3	B	9.4	B	3.2		11.1	B	14.5		5.8	E
Copper		10.7		22.6		24.1		26.4		18.9		17.6	N	5.8	N	66.1	N	21.2	N	7.5	N	14.7	N	19.0	N	174	*
Iron		20500		43200	E	37500	E	38000		30900		19600		9960		51100		20700		10000		23900		28500		49100	
Lead	150	14.3		16.1	E	36.7	E	42.0		31.2		47.1	*	13.4	*	760	*	72.6	*	25.8	*	8.0	*	7.6	*	2490	NE*
Magnesium		3500		4870		4340		5420		4440		3950		1780		2520		3320		2270		3300		3460		2970	E*
Manganese	390	506		1210	E	803	E	961		741		342		167		383		311		99.9		165		421		173	E
Mercury		0.063		0.034		0.098		0.042		0.055		0.029	B	0.022	B	0.074		0.064		0.019	B	0.019	U	0.017	U	0.28	*
Nickel		11.9		29.5	E	17.3	E	23.2		17.7		18.4		6.5		27.3		14.3		8.9		22.6		28.3		18.5	E
Potassium		366		1180		415		507		422		963		434		321		344		333		768		497		493	*
Selenium		0.22	U	0.15	UN	0.15	UN	0.23	U	0.24	U	0.27	UN	0.26	UN	1.2	UN	1.2	UN	0.24	UN	1.4	UN	1.2	UN	0.15	U
Silver		0.031	U	3.7	E	3.1	E	0.033	U	0.034	U	0.037	UN	0.036	UN	0.17	UN	0.17	UN	0.034	UN	0.19	UN	0.17	UN	4.5	E
Sodium		38.6	B	52.1		38.5	B	56.2		45.5	B	305		1300		211		697		2310		122		70.5		2400	*
Thallium		3.0		0.098	UN	0.099	UN	4.9		4.4		2.1		0.84	B	6.7		2.0	B	1.2		3.0	B	3.5	B	0.098	U
Vanadium		11.2		14.1		13.1		20.2		17.1		19.8	*	11.5	*	13.1	*	13.0	*	9.9	*	16.1	*	15.4	*	15.0	E
Zinc		42.0	E	53.7	E	61.8	E	87.3	E	66.0	E	77.9	N	26.8	N	159	N	78.7	N	32.8	N	51.8	N	65.5	N	743	E
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		23000		3600	U	3400	U	2600	U	3300	U	17000		63000		59000		100000		22000		12000		15000		92000	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	78		12	U	15		35		41		370		400		1700		290		56		13	U	12	U	2600	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-429-0608		OFF-SB-DUP06-112503		OFF-SB-429-1012		OFF-SB-429-1416		OFF-SB-429-1820		OFF-SB-430-0204		OFF-SB-430-0810		OFF-SB-430-1214		OFF-SB-430-1416		OFF-SB-431-0204		OFF-SB-431-0810		OFF-SB-431-1012		OFF-SB-432-0204	
Sample Location		429		429		429		429		429		430		430		430		430		431		431		431		432	
Date Sampled		11/25/2003		11/25/2003		11/25/2003		11/25/2003		11/25/2003		12/2/2003		12/2/2003		12/2/2003		12/2/2003		11/26/2003		11/26/2003		11/26/2003		11/20/2003	
Interval		6.0-8.0		6.0-8.0		10.0-12.0		14.0-16.0		18.0-20.0		2.0-4.0		8.0-10.0		12.0-14.0		14.0-16.0		2.0-4.0		8.0-10.0		10.0-12.0		2.0-4.0	
QC Identifier		Field Dup.		Field Dup.		None		None		None		None		None		None		None		None		None		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		1200		990		26		4.2	U	4.2	U	43		3.8	U	40		3.8	U	3.6	U	9.3		28		1600	D
Acenaphthene		3000		2900		100		6.2		4.2	U	13		3.8	U	89		3.8	U	4.9		25		70		580	
Acenaphthylene		1400		1300		31		4.2	U	4.2	U	68		3.8	U	26		3.8	U	11		3.9	U	140		220	D
Anthracene		2200		2100		100		6.6		4.2	U	120		310		220		3.8	U	15		80		290		900	
Benzo(a)anthracene	900	1000		870		35		4.2	U	4.2	U	400	*	140		530	*	3.8	U	58		130		340		1400	
Benzo(a)pyrene	400	770		670		30		4.2	U	4.2	U	470	*	120		370	*	3.8	U	58		180		280		1200	
Benzo(b)fluoranthene	900	910		770		37		4.2	U	4.2	U	620	*	130		460	*	3.8	U	76		240		380		1600	
Benzo(g,h,i)perylene	900	400		330		21		4.2	U	4.2	U	640	*	84		220		3.8	U	36		120		190		430	
Benzo(k)fluoranthene	800	380		350		12		4.2	U	4.2	U	280		60		150		3.8	U	27		93		120		520	
Chrysene	400	1000		930		36		4.2	U	4.2	U	410	*	140		400	*	3.8	U	59		120		210		1400	
Dibenzo(a,h)anthracene	400	110		87		5.3		4.2	U	4.2	U	150		16		56		3.8	U	9.9		30		46		140	
Fluoranthene		2000		1800		64		6.2		4.2	U	510	*	380		770	*	3.8	U	76		160		670		2900	*
Fluorene		1200		1100		67		4.2	U	4.2	U	19		3.8	U	98		3.8	U	4.3		3.9	U	31		680	
Indeno(1,2,3-cd)pyrene	900	340		280		16		4.2	U	4.2	U	410	*	64		190		3.8	U	31		100		150		400	
Naphthalene		400		380		13		4.2	U	4.2	U	19		3.8	U	70		3.8	U	3.6	U	12		32		1100	D
Phenanthrene		2900		2600		200		12		4.2	U	160		170		600	*	3.8	U	42		98		380		3600	*
Pyrene		3000		2700		71		5.5		4.2	U	690	*	640	*	830	*	5.0		88		560	*	1000		3600	*
TAL Metal Analysis (MG/KG)																											
Aluminum		2370	E	2400	E	10900	E	9350	E	9100	E	1400		14300		9890		11600		6990		11800		8630		9980	*
Antimony	10	53.7	N	71.6	N	3.4	N	0.84	BN	0.59	BN	19.7	N	8.5	N	8.3	N	8.8	N	0.67	BN	1.1	N	0.57	BN	0.20	UN
Arsenic	7.0	36.3	*	53.3	*	1.6	*	6.1	*	4.9	*	0.16	U	0.26	B	2.9		11.1		4.2		7.6		5.3		6.2	
Barium		74.9	*	72.1	*	20.4	*	41.3	*	30.7	*	23.7		13.2		24.6		6.8	B	18.7		29.0		22.1		41.5	
Beryllium	0.4	0.094	B	0.075	B	0.16	B	0.24	B	0.25	B	0.33		0.34		0.29		0.54		0.14	B	0.20	B	0.24	B	0.35	B
Cadmium		5.9		12.4		0.61		0.011	U	0.012	U	1.9		0.047	B	0.069	B	0.014	U	0.12	B	0.49		0.24	B	0.020	U
Calcium		25400	E	21400	E	2590	E	475	E	716	E	21400		1800		5990		1140		780	*	3320	*	582	*	10200	*
Chromium		11.2	E*	22.4	E*	12.6	E*	14.8	E*	14.5	E*	36.9		15.7		13.4		11.6		9.3	*	13.1	*	13.3	*	11.4	*
Cobalt		17.9	E	30.0	E	5.0	E	17.2	E	14.5	E	3.1	E	7.6	E	7.2	E	8.4	E	7.7	E	10.8	E	9.0	E	7.5	
Copper		372	*	501	*	26.9	*	25.5	*	21.5	*	97.7		30.6		73.6		18.5		14.6		46.6		52.8		55.6	
Iron		129000		227000		37400		31300		37600		13900		30900		27800		31100		20900	E	31100	E	35400	E	19800	*
Lead	150	1890	NE*	1820	NE*	183	NE*	28.0	NE*	11.7	NE*	127	E	101	E	197	E	18.4	E	26.5	E	242	E	69.4	E	158	
Magnesium		3100	E*	3190	E*	5030	E*	3280	E*	3500	E*	2620		6660		4070		4730		2480		5200		3220		3640	*
Manganese	390	238	E	462	E	143	E	198	E	270	E	557	E	290	E	305	E	284	E	805	E	613	E	383	E	314	
Mercury		0.17	*	0.30	*	0.065	*	0.021	U*	0.021	U*	0.032	B	0.10		0.078		0.016	U	0.10		0.050		0.051		0.081	
Nickel		35.6	E	66.0	E	17.8	E	18.5	E	22.8	E	33.5		21.5		21.6		19.8		11.5	E	20.1	E	22.8	E	17.3	
Potassium		405	*	469	*	328	*	824	*	913	*	498		348		390		377		306		650		631		699	
Selenium		0.16	U	0.28	U	0.16	U	0.17	U	0.18	U	0.26	U	0.24	U	0.23	U	0.24	U	0.14	UN	0.16	UN	0.16	UN	3.0	
Silver		6.7	E	12.4	E	3.6	E	3.2	E	3.5	E	0.037	U	0.033	U	0.033	U	0.033	U	2.2	E	3.5	E	3.1	E	1.9	B
Sodium		3930	*	4660	*	581	*	392	*	221	*	152		966		1290		622		39.3	B	1390		1340		334	
Thallium		0.10	U	0.18	U	0.11	U	0.11	U	0.12	U	7.9		3.9		3.6		3.3		0.094	UN	0.11	UN	0.11	UN	0.37	B
Vanadium		10.8	E	18.4	E	17.8	E	19.5	E	21.4	E	24.0		14.3		15.8		15.0		10.4		17.5		18.3		20.3	
Zinc		1190	E	1680	E	179	E	59.5	E	63.4	E	2690		155		221		54.6		47.9	E	245	E	81.9	E	151	
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		130000		310000		3000	U	3700	U	3000	U	4300		27000		11000		2800	U	2300	U	67000		73000		2300000	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	8200		7800		250		15	U	15	U	330		2800		290		13	U	50		2300		3200		1100	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-SB-432-0608		OFF-SB-432-1012		OFF-SB-432-1416		OFF-SB-432-1820		OFF-SB-433-1214		OFF-SB-433-1618		OFF-SB-433-2022		OFF-SB-DUP09		OFF-SB-433-2426		OFF-SB-DUP10		OFF-SB-433-2830		OFF-SB-434-0204		OFF-SB-434-0608	
Sample Location		432		432		432		432		433		433		433		433		433		433		433		434		434	
Date Sampled		11/20/2003		11/20/2003		11/20/2003		11/20/2003		11/26/2003		11/26/2003		11/26/2003		11/26/2003		11/26/2003		11/26/2003		11/26/2003		12/2/2003		12/2/2003	
Interval		6.0-8.0		10.0-12.0		14.0-16.0		18.0-20.0		12.0-14.0		16.0-18.0		20.0-22.0		20.0-22.0		24.0-26.0		24.0-26.0		28.0-30.0		2.0-4.0		6.0-8.0	
QC Identifier		None		None		None		None		None		None		Field Dup.		Field Dup.		Field Dup.		Field Dup.		None		None		None	
Criteria	PRG																										
Low Concentration PAH (SIM) Analysis (UG/KG)																											
2-Methylnaphthalene		2600	*	260		3.6	U	4.6		18	U	14		8.0		14		3.7	U	3.6	U	3.7	U	13		3.6	
Acenaphthene		700		60		3.6	U	8.1		22		54		16		55		3.7	U	3.6	U	3.7	U	19		7.3	
Acenaphthylene		240		18		3.6	U	3.8	U	65		9.2		12		20		3.7	U	3.6	U	3.7	U	15		11	
Anthracene		740		53		3.6	U	6.0		110		68		38		93		3.7	U	3.6	U	3.7	U	74		22	
Benzo(a)anthracene	900	910		54		3.6	U	4.7		310		170		140		280		3.7	U	3.6	U	6.3		200		94	
Benzo(a)pyrene	400	720		40		3.6	U	3.8	U	270		150		130		250		3.7	U	3.6	U	4.7		180		91	
Benzo(b)fluoranthene	900	870		45		3.6	U	3.8	U	360		170		160		290		3.7	U	3.6	U	5.7		230		110	
Benzo(g,h,i)perylene	900	370		20		3.6	U	3.8	U	310		78		72		140		3.7	U	3.6	U	3.7	U	120		62	
Benzo(k)fluoranthene	800	370		17		3.6	U	3.8	U	110		85		73		140		3.7	U	3.6	U	3.7	U	74		49	
Chrysene	400	920		54		3.6	U	4.4		310		160		140		300		3.7	U	3.6	U	5.2		180		80	
Dibenzo(a,h)anthracene	400	91		3.7	U	3.6	U	3.8	U	52		21		17		33		3.7	U	3.6	U	3.7	U	32		15	
Fluoranthene		2000		120		3.6	U	8.9		460		290		240		520	*	3.7	U	3.6	U	12		290		120	
Fluorene		850		86		3.6	U	4.7		33		33		14		44		3.7	U	3.6	U	3.7	U	20		8.4	
Indeno(1,2,3-cd)pyrene	900	310		16		3.6	U	3.8	U	150		70		61		120		3.7	U	3.6	U	3.7	U	99		48	
Naphthalene		1300		41		3.6	U	6.5		18	U	33		11		36		3.7	U	3.6	U	3.7	U	19		3.3	U
Phenanthrene		3800	*	250		3.6	U	18		300		210		120		320		3.7	U	3.6	U	5.4		210		74	
Pyrene		2800	*	140		3.6	U	14		540		290		320		540	*	3.7	U	3.6	U	10		320		130	
TAL Metal Analysis (MG/KG)																											
Aluminum		11000	*	8410	*	10900	*	9920	*	10400		6270		8020		9810		16200		13900		9310		12200	*	11500	*
Antimony	10	0.21	UN	0.21	UN	0.54	UN	0.51	UN	1.5	N	0.55	BN	0.61	BN	0.67	BN	1.1	N	0.86	BN	0.78	BN	0.90	BN*	0.53	BN*
Arsenic	7.0	7.2		7.3		8.8		4.5	B	15.0		3.6		5.1		6.1		4.3		3.8		2.1		8.0	*	6.0	*
Barium		43.9		26.0		45.7	B	11.1	B	12.0		9.5	B	11.5		14.6		13.1		14.5		6.8	B	18.6	*	19.3	*
Beryllium	0.4	0.42	B	0.37	B	0.39	B	0.15	B	0.34		0.085	B	0.21	B	0.25	B	0.42		0.40		0.20	B	0.30	*	0.21	B*
Cadmium		0.021	U	0.021	U	0.054	U	0.051	U	0.74		0.084	B	0.19	B	0.39		0.32		0.24	B	0.043	B	0.38	*	0.28	*
Calcium		15100	*	2260	*	1650	*	2380	*	7540	*	887	*	631	*	548	*	685	*	688	*	754	*	4970	*	3920	*
Chromium		13.7	*	12.6	*	15.5	*	11.3	*	14.3	*	10.8	*	14.7	*	16.3	*	14.1	*	12.2	*	14.9	*	11.8	*	8.8	*
Cobalt		8.3		9.8		27.3		11.9	B	11.3	E	5.9	E	8.3	E	10.4	E	48.7	E	48.2	E	11.1	E	12.1	*	10.2	*
Copper		47.8		20.7		33.5		15.0		43.2		54.7		41.1		39.7		20.8		21.4		13.2		18.6	N*	22.0	N*
Iron		23900	*	23600	*	41900	*	28400	*	45200	E	25600	E	33900	E	37300	E	41000	E	37000	E	25600	E	35800	*	33800	*
Lead	150	188		26.0		15.8		8.8		55.0	E	101	E	71.8	E	55.0	E	13.5	E	16.0	E	8.4	E	24.4	*	21.5	*
Magnesium		3590	*	2940	*	3710	*	3180	*	4010		2720		2880		3550		6590		5470		3970		5660	*	5050	*
Manganese	390	344		260		1000		181		582	E	171	E	249	E	308	E	2120	E	2290	E	511	E	1330	*	765	*
Mercury		0.062		0.017	U	0.018	U	0.017	U	0.058		0.028	B	0.045		0.076		0.026	B	0.031	B	0.016	U	0.027	B	0.018	B
Nickel		16.8		18.0		41.1		21.1		21.1	E	19.5	E	21.8	E	24.7	E	22.2	E	21.7	E	15.9	E	18.8	*	17.2	*
Potassium		589		580		674		215		506		378		634		627		300		399		249		617	*	585	*
Selenium		3.2		4.2		7.8	B	5.3	B	0.15	UN	0.15	UN	0.16	UN	0.15	UN	0.17	UN	0.15	UN	0.16	UN	0.14	UN	0.13	UN
Silver		2.3	B	2.2	B	4.2	B	2.8	B	3.9	E	2.3	E	3.0	E	3.4	E	3.4	E	3.0	E	2.5	E	2.7		2.5	
Sodium		427		280		77.0		40.0	B	932		1600		1310		1290		143		163		226		57.7	*	62.7	*
Thallium		0.65	B	0.31	B	0.54	U	0.51	U	0.10	UN	0.098	UN	0.11	UN	0.10	UN	0.11	UN	0.10	UN	0.10	UN	0.091	UN	0.088	UN
Vanadium		18.5		17.3		23.8		14.7		27.5		12.5		18.1		21.0		24.5		19.1		12.0		13.4	*	14.3	*
Zinc		601		105		96.0		52.1		126	E	60.8	E	68.3	E	86.7	E	80.3	E	70.1	E	47.4	E	74.0	*	61.5	*
Gasoline Range Organic Analysis (UG/KG)																											
Gasoline Range Organics		890000		91000		2100	U	2100	U	2400	U	3100	U	3200	U	2500	U	2400	U	2300	U	2400	U	5200		3700	
Total Petroleum Hydrocarbon Analysis (MG/KG)																											
Total Petroleum Hydrocarbons	500	910		93		13	U	13	U	190		170		92		98		13	U	12	U	13	U	41		38	

Black Background = Criteria Exceeded; U - Not detected;
NA - Not Analyzed; * - From dilution analysis; E- estimated due to interference; N - spike %R outside limits; B - < CRDL but > IDL

RI SOIL SAMPLE ANALYTICAL RESULTS

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-B011-418		FF-B021-418		FF-B022-418		FF-B023-418		FF-B031-418		FF-B032-418		FF-B033-418	
Sample Location		B-1		B-2		B-2		B-2		B-3		B-3		B-3	
Date Sampled		4/18/1990		4/18/1990		4/18/1990		4/18/1990		4/18/1990		4/18/1990		4/20/1990	
Interval		6.0-8.0		2.0-4.0		6.0-8.0		8.0-10.0		6.0-8.0		8.0-10.0		12.0-14.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Semivolatile Organic Analysis (UG/KG)															
1,2,4-Trichlorobenzene			NA		NA		NA		NA		NA		NA		NA
1,2-Dichlorobenzene			NA		NA		NA		NA		NA		NA		NA
1,3-Dichlorobenzene			NA		NA		NA		NA		NA		NA		NA
1,4-Dichlorobenzene			NA		NA		NA		NA		NA		NA		NA
2,2'-oxybis(1-Chloropropane)			NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol			NA		NA		NA		NA		NA		NA		NA
2,4,6-Trichlorophenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dichlorophenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dimethylphenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dinitrophenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dinitrotoluene			NA		NA		NA		NA		NA		NA		NA
2,6-Dinitrotoluene			NA		NA		NA		NA		NA		NA		NA
2-Chloronaphthalene			NA		NA		NA		NA		NA		NA		NA
2-Chlorophenol			NA		NA		NA		NA		NA		NA		NA
2-Methylnaphthalene			NA		NA		NA		NA	240	J		NA		NA
2-Methylphenol			NA		NA		NA		NA		NA		NA		NA
2-Nitroaniline			NA		NA		NA		NA		NA		NA		NA
2-Nitrophenol			NA		NA		NA		NA		NA		NA		NA
3,3'-Dichlorobenzidine			NA		NA		NA		NA		NA		NA		NA
3-Nitroaniline			NA		NA		NA		NA		NA		NA		NA
4,6-Dinitro-2-methylphenol			NA		NA		NA		NA		NA		NA		NA
4-Bromophenyl-phenylether			NA		NA		NA		NA		NA		NA		NA
4-Chloro-3-methylphenol			NA		NA		NA		NA		NA		NA		NA
4-Chloroaniline			NA		NA		NA		NA		NA		NA		NA
4-Chlorophenyl-phenylether			NA		NA		NA		NA		NA		NA		NA
4-Methylphenol			NA		NA		NA		NA		NA		NA		NA
4-Nitroaniline			NA		NA		NA		NA		NA		NA		NA
4-Nitrophenol			NA		NA		NA		NA		NA		NA		NA
9H-CARBAZOLE			NA		NA		NA		NA		NA		NA		NA
Acenaphthene			NA		NA		NA		NA	240	J		NA		NA
Acenaphthylene			NA		NA		NA		NA		NA		NA		NA
Anthracene		97	J		NA		NA		NA	310	J	440	J	130	J
Benzo(a)anthracene	900	330	J	89	J		NA		NA	670			NA	73	J
Benzo(a)pyrene	400	300	J	84	J		NA		NA	660		330	J		NA
Benzo(b)fluoranthene	900	330	J	85	J		NA		NA	580		300	J		NA
Benzo(g,h,i)perylene	900	210	J	84	J		NA		NA	740		310	J		NA
Benzo(k)fluoranthene	800	240	J	62	J		NA		NA	510		210	J		NA
Benzoic acid			NA		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane			NA		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethyl)ether			NA		NA		NA		NA		NA		NA		NA
bis(2-Ethylhexyl)phthalate		400	U**	390	U**	400	U**	390	U**	930	U**		NA	480	U**
Butylbenzylphthalate			NA		NA		NA		NA		NA		NA		NA
Carbazole			NA		NA		NA		NA		NA		NA		NA
Chrysene	400	330	J	92	J		NA		NA	770			NA	62	J
Dibenzo(a,h)anthracene	400	60	J		NA		NA		NA	140	J	93	J		NA
Dibenzofuran			NA		NA		NA		NA	230	J		NA		NA
Diethylphthalate			NA		NA		NA		NA		NA		NA		NA
Dimethylphthalate			NA		NA		NA		NA		NA		NA		NA
Di-n-Butylphthalate		400	U**	390	U**		NA		NA		NA		NA	1400	*
Di-n-octylphthalate			NA		NA		NA		NA		NA		NA		NA
Fluoranthene		840		150	J		NA		NA	1600		800		170	J
Fluorene			NA		NA		NA		NA	300	J		NA		NA
Hexachlorobenzene			NA		NA		NA		NA		NA		NA		NA
Hexachlorobutadiene			NA		NA		NA		NA		NA		NA		NA
Hexachlorocyclopentadiene			NA		NA		NA		NA		NA		NA		NA
Hexachloroethane			NA		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-B011-418		FF-B021-418		FF-B022-418		FF-B023-418		FF-B031-418		FF-B032-418		FF-B033-418	
Sample Location		B-1		B-2		B-2		B-2		B-3		B-3		B-3	
Date Sampled		4/18/1990		4/18/1990		4/18/1990		4/18/1990		4/18/1990		4/18/1990		4/20/1990	
Interval		6.0-8.0		2.0-4.0		6.0-8.0		8.0-10.0		6.0-8.0		8.0-10.0		12.0-14.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Indeno(1,2,3-cd)pyrene	900	180	J	71	J		NA		NA	620		280	J		NA
Isophorone			NA		NA		NA		NA		NA		NA		NA
Naphthalene			NA		NA		NA		NA		NA		NA		NA
Nitrobenzene			NA		NA		NA		NA		NA		NA		NA
N-Nitroso-di-n-propylamine			NA		NA		NA		NA		NA		NA		NA
N-Nitroso-diphenylamine			NA		NA		NA		NA		NA		NA		NA
Pentachlorophenol			NA		NA		NA		NA		NA		NA		NA
Phenanthrene		490		61	J	57	J		NA	670		200	J	82	J
Phenol		2000	U**		NA		NA		NA		NA		NA		NA
Phenols			NA		NA		NA		NA		NA		NA		NA
Pyrene		850		110	J	72	J	82	J	990	J*	690	J*	230	J
Total PAH		4257		888		129		82		9040		3653		747	
TAL Metal Analysis (MG/KG)															
Aluminum		5030		8120		8120		5670		7820			NA	6180	
Antimony	10	9.5	U*		NA		NA		NA	9.5	U*		NA		NA
Arsenic	7.0	9.6	J*	3.1	J*	8.6		5.4	J*	4.1	J*		NA	13.5	J*
Barium		22.4		19.9		17.1		16.6		13.3			NA	6.3	
Beryllium	0.4		NA		NA		NA		NA		NA		NA		NA
Cadmium		0.90	J*		NA		NA		NA	0.56	J*		NA		NA
Calcium		91300		1430		7520		7100		1340			NA	1380	
Chromium		7.0	J*	15.1	J*	9.5	J*	7.5	J*	11.8	J*		NA	11.9	J*
Cobalt		6.4	J*	11.4		14.1		11.1		9.8	J*		NA	16.2	J*
Copper		108	J*	22.7	J*	18.4	J*	12.0	U*	26.4	J*		NA	25.3	J*
Cyanide			NA		NA		NA		NA		NA		NA		NA
Iron		19900		21400		19900		16300		17100			NA	17000	
Lead	150	529		61.0		66.0		5.2		118			NA	67.6	
Magnesium		1710		2920		4000		3580		2750			NA	2900	
Manganese	390	301	J*	492	J*	584	J*	646	J*	243	J*		NA	285	J*
Mercury		0.21			NA		NA		NA		NA		NA	0.18	
Nickel		9.0		16.2		27.0		18.0		15.3			NA	10.5	
Potassium		210		470		607		519		346			NA	184	
Selenium			NA		NA		NA		NA		NA		NA		NA
Silver			NA		NA		NA		NA		NA		NA		NA
Sodium		1310		57.6		58.9		56.6		374			NA	601	
Thallium			NA		NA		NA		NA		NA		NA		NA
Vanadium		22.0	J*	19.2	J*	18.3	J*	14.0	J*	16.2	U*		NA	13.0	J*
Zinc		222	J*	52.3	U*	69.6		39.4	U*	77.7	J*		NA	48.4	U*
Total Petroleum Hydrocarbon Analysis (MG/KG)															
Total Petroleum Hydrocarbons	500		NA		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-B041-420		FF-B042-420		FF-B051-417		FF-B052-417		FF-B061-419		FF-B062-419		FF-B071-419	
Sample Location		B-4		B-4		B-5		B-5		B-6		B-6		B-7	
Date Sampled		4/20/1990		4/20/1990		4/17/1990		4/17/1990		4/19/1990		4/19/1990		4/19/1990	
Interval		4.0-6.0		10.0-12.0		4.0-6.0		6.0-8.0		4.0-6.0		10.0-12.0		4.0-6.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Semivolatile Organic Analysis (UG/KG)															
1,2,4-Trichlorobenzene			NA		NA		NA		NA		NA		NA		NA
1,2-Dichlorobenzene			NA		NA		NA		NA		NA		NA		NA
1,3-Dichlorobenzene			NA		NA		NA		NA		NA		NA		NA
1,4-Dichlorobenzene			NA		NA		NA		NA		NA		NA		NA
2,2'-oxybis(1-Chloropropane)			NA		NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol			NA		NA		NA		NA		NA		NA		NA
2,4,6-Trichlorophenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dichlorophenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dimethylphenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dinitrophenol			NA		NA		NA		NA		NA		NA		NA
2,4-Dinitrotoluene			NA		NA		NA		NA		NA		NA		NA
2,6-Dinitrotoluene			NA		NA		NA		NA		NA		NA		NA
2-Chloronaphthalene			NA		NA		NA		NA		NA		NA		NA
2-Chlorophenol			NA		NA		NA		NA		NA		NA		NA
2-Methylnaphthalene			NA		NA		NA		NA	670	J*		NA		NA
2-Methylphenol			NA		NA		NA		NA		NA		NA		NA
2-Nitroaniline			NA		NA		NA		NA		NA		NA		NA
2-Nitrophenol			NA		NA		NA		NA		NA		NA		NA
3,3'-Dichlorobenzidine			NA		NA		NA		NA		NA		NA		NA
3-Nitroaniline			NA		NA		NA		NA		NA		NA		NA
4,6-Dinitro-2-methylphenol			NA		NA		NA		NA		NA		NA		NA
4-Bromophenyl-phenylether			NA		NA		NA		NA		NA		NA		NA
4-Chloro-3-methylphenol			NA		NA		NA		NA		NA		NA		NA
4-Chloroaniline			NA		NA		NA		NA		NA		NA		NA
4-Chlorophenyl-phenylether			NA		NA		NA		NA		NA		NA		NA
4-Methylphenol			NA		NA		NA		NA		NA		NA		NA
4-Nitroaniline			NA		NA		NA		NA		NA		NA		NA
4-Nitrophenol			NA		NA		NA		NA		NA		NA		NA
9H-CARBAZOLE			NA		NA		NA		NA		NA		NA		NA
Acenaphthene			NA		NA		NA		NA	130	J		NA		NA
Acenaphthylene			NA		NA		NA		NA		NA		NA		NA
Anthracene		66	J		NA		NA		NA	84	J		NA	640	J
Benzo(a)anthracene	900	140	J		NA	110	J		NA		NA		NA	1300	J
Benzo(a)pyrene	400	100	J		NA	100	J		NA		NA		NA	1000	J
Benzo(b)fluoranthene	900	97	J		NA	83	J		NA		NA		NA	1300	J
Benzo(g,h,i)perylene	900		NA		NA		NA		NA	75	J		NA		NA
Benzo(k)fluoranthene	800	120	J		NA	89	J		NA	98	J		NA	520	J
Benzoic acid		1900	U**		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane			NA		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethyl)ether			NA		NA		NA		NA		NA		NA		NA
bis(2-Ethylhexyl)phthalate			NA		NA	480	U**	470	U**	460	U*		NA		NA
Butylbenzylphthalate			NA		NA		NA		NA		NA		NA		NA
Carbazole			NA		NA		NA		NA		NA		NA		NA
Chrysene	400	140	J		NA	76	J		NA		NA		NA	1000	J
Dibenzo(a,h)anthracene	400		NA		NA		NA		NA		NA		NA		NA
Dibenzofuran			NA		NA		NA		NA		NA		NA		NA
Diethylphthalate			NA		NA		NA		NA		NA		NA		NA
Dimethylphthalate			NA		NA		NA		NA		NA		NA		NA
Di-n-Butylphthalate		390	U**		NA		NA		NA		NA		NA		NA
Di-n-octylphthalate			NA		NA		NA		NA		NA		NA		NA
Fluoranthene		300	J		NA	300	J	88	J	130	J		NA	2300	
Fluorene			NA		NA		NA		NA	200	J		NA		NA
Hexachlorobenzene			NA		NA		NA		NA		NA		NA		NA
Hexachlorobutadiene			NA		NA		NA		NA		NA		NA		NA
Hexachlorocyclopentadiene			NA		NA		NA		NA		NA		NA		NA
Hexachloroethane			NA		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-B041-420		FF-B042-420		FF-B051-417		FF-B052-417		FF-B061-419		FF-B062-419		FF-B071-419	
Sample Location		B-4		B-4		B-5		B-5		B-6		B-6		B-7	
Date Sampled		4/20/1990		4/20/1990		4/17/1990		4/17/1990		4/19/1990		4/19/1990		4/19/1990	
Interval		4.0-6.0		10.0-12.0		4.0-6.0		6.0-8.0		4.0-6.0		10.0-12.0		4.0-6.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Indeno(1,2,3-cd)pyrene	900		NA		NA		NA		NA		NA		NA	420	J
Isophorone			NA		NA		NA		NA		NA		NA		NA
Naphthalene			NA		NA		NA		NA	120	J		NA		NA
Nitrobenzene			NA		NA		NA		NA		NA		NA		NA
N-Nitroso-di-n-propylamine			NA		NA		NA		NA		NA		NA		NA
N-Nitroso-diphenylamine			NA		NA		NA		NA		NA		NA		NA
Pentachlorophenol			NA		NA		NA		NA		NA		NA		NA
Phenanthrene		190	J		NA		NA	90	J	490	J*		NA	1700	J
Phenol		250	J		NA		NA		NA		NA		NA		NA
Phenols			NA		NA		NA		NA		NA		NA		NA
Pyrene		280	J		NA	480		110	J	180	J		NA	2200	
Total PAH		1433		0.00		1238		288		2177		0.00		12380	
TAL Metal Analysis (MG/KG)															
Aluminum		8720		3210		8580		6080			NA	7580		4570	
Antimony	10		NA		NA		NA		NA		NA	5.5		5.3	
Arsenic	7.0	3.4	J*	5.3	J*	2.4		1.4			NA	1.3	J*	1.9	J*
Barium		25.6		6.9		8.1		4.9			NA	24.4		6.8	
Beryllium	0.4	0.26		0.20			NA		NA		NA	0.31			NA
Cadmium			NA		NA	0.55			NA		NA		NA		NA
Calcium		749		705		3320		1170			NA	523		702	
Chromium		9.3	J*	6.3	J*	9.5	J*	5.4			NA	14.2	J*	9.9	
Cobalt		9.4	J*	10.1	J*	9.4	J*	2.8			NA	20.5	J*	8.5	
Copper		22.3	J*	18.1	J*	30.9	J*	6.1			NA	30.9	J*	33.8	J*
Cyanide			NA		NA		NA		NA		NA		NA		NA
Iron		15400		15600		20600		5230			NA	30200		15400	
Lead	150		NA	2.2	J*	104		7.0			NA	6.6	J*	52.0	J*
Magnesium		1780	J*	602	J*	3790		1710			NA	2870		1640	
Manganese	390	215		72.4		960	J*	70.7			NA	780	J*	138	
Mercury			NA		NA		NA		NA		NA		NA		NA
Nickel		13.6		8.0		19.6	J*	5.8			NA	28.8		14.5	
Potassium		304	J*	217	J*	214	J*	471	J*		NA	901	J*	332	J*
Selenium		0.55	U*		NA	0.34	U*	0.69	U*		NA		NA	0.54	U*
Silver			NA		NA		NA	2.4	U*		NA	0.66	U*		NA
Sodium		61.3		67.4	U*	551		3820			NA	475		44.4	U*
Thallium			NA		NA		NA		NA		NA		NA		NA
Vanadium		13.7	J*	8.3	J*	19.9	J*	12.5			NA	21.0	J*	10.5	
Zinc		45.5	J*	27.9	J*	76.7	J*	23.6	J*		NA	58.8	J*	46.7	J*
Total Petroleum Hydrocarbon Analysis (MG/KG)															
Total Petroleum Hydrocarbons	500		NA		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-B072-419		OFF-B82-112293		OFF-B112-112493		OFF-B122-112493		OFF-B132-112393		OFF-B153-121393		OFF-B162-112393	
Sample Location		B-7		B-8		B-11		B-12		B-13		B-15		B-16	
Date Sampled		4/19/1990		11/22/1993		11/24/1993		11/24/1993		11/23/1993		12/13/1993		11/23/1993	
Interval		6.0-8.0		8.0-10.0		4.0-6.0		2.0-4.0		4.0-6.0		17.0-19.0		2.0-4.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Semivolatile Organic Analysis (UG/KG)															
1,2,4-Trichlorobenzene			NA	360	U	360	U	370	U	420	U	370	U	730	U
1,2-Dichlorobenzene			NA	360	U	360	U	370	U	420	U	370	U	730	U
1,3-Dichlorobenzene			NA	360	U	360	U	370	U	420	U	370	U	730	U
1,4-Dichlorobenzene			NA	360	U	360	U	370	U	420	U	370	U	730	U
2,2'-oxybis(1-Chloropropane)			NA	360	U	360	U	370	U	420	U	370	U	730	U
2,4,5-Trichlorophenol			NA	870	U	880	U	900	U	1000	U	900	U	1800	R
2,4,6-Trichlorophenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
2,4-Dichlorophenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
2,4-Dimethylphenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
2,4-Dinitrophenol			NA	870	U	880	U	900	UJ	1000	U	900	U	1800	R
2,4-Dinitrotoluene			NA	360	U	360	U	370	U	420	U	370	U	730	U
2,6-Dinitrotoluene			NA	360	U	360	U	370	U	420	U	370	U	730	U
2-Chloronaphthalene			NA	360	U	360	U	370	U	420	U	370	U	730	U
2-Chlorophenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
2-Methylnaphthalene			NA	77	J	360	U	370	U	420	U	160	J	110	J
2-Methylphenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
2-Nitroaniline			NA	870	U	880	U	900	U	1000	U	900	U	1800	U
2-Nitrophenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
3,3'-Dichlorobenzidine			NA	360	U	360	U	370	U	420	U	370	U	730	U
3-Nitroaniline			NA	870	U	880	U	900	U	1000	U	900	U	1800	U
4,6-Dinitro-2-methylphenol			NA	870	U	880	U	900	U	1000	U	900	U	1800	R
4-Bromophenyl-phenylether			NA	360	U	360	U	370	U	420	U	370	U	730	R
4-Chloro-3-methylphenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
4-Chloroaniline			NA	360	U	360	U	370	U	420	U	370	U	730	U
4-Chlorophenyl-phenylether			NA	360	U	360	U	370	U	420	U	370	U	730	R
4-Methylphenol			NA	360	U	360	U	370	U	420	U	370	U	730	R
4-Nitroaniline			NA	870	U	880	U	900	U	1000	U	900	U	1800	U
4-Nitrophenol			NA	870	U	880	U	900	U	1000	U	900	U	1800	R
9H-CARBAZOLE			NA	200	J	360	U	370	U	420	U	220	J	120	J
Acenaphthene		1600		110	J	360	U	370	U	160	J	340	J	250	J
Acenaphthylene			NA	640		360	U	63	J	420	U	120	J	78	J
Anthracene		620		680		360	U	130	J	110	J	570		480	J
Benzo(a)anthracene	900	550		2200		120	J	320	J	360	J	1300		1200	
Benzo(a)pyrene	400	490		1700		110	J	280	J	280	J	760		1200	
Benzo(b)fluoranthene	900	400		2800		220	J	560		510		1400		1900	
Benzo(g,h,i)perylene	900	520		610		360	U	110	J	88	J	360	J	510	J
Benzo(k)fluoranthene	800	530		360	U	360	U	370	U	420	U	370	U	730	U
Benzoic acid			NA		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane			NA	360	U	360	U	370	U	420	U	370	U	730	R
Bis(2-Chloroethyl)ether			NA	360	U	360	U	370	U	420	U	370	U	730	R
bis(2-Ethylhexyl)phthalate			NA	360	U	44	J	370	U	420	U	370	U	730	U
Butylbenzylphthalate			NA	360	U	360	U	370	U	420	U	120	J	730	U
Carbazole			NA		NA		NA		NA		NA		NA		NA
Chrysene	400	540		2100		130	J	290	J	320	J	1100		1400	
Dibenzo(a,h)anthracene	400	140	J	370		360	U	64	J	66	J	200	J	170	J
Dibenzofuran			NA	240	J	360	U	370	U	86	J	200	J	730	U
Diethylphthalate			NA	360	U	360	U	370	U	420	U	370	U	730	U
Dimethylphthalate			NA	360	U	360	U	370	U	420	U	370	U	730	U
Di-n-Butylphthalate		400	U*	360	U	360	U	370	U	56	J	370	U	730	U
Di-n-octylphthalate			NA	360	U	360	U	370	U	420	U	370	U	730	U
Fluoranthene		1200		4300	D	230	J	560		830		2200		2100	
Fluorene			NA	310	J	360	U	370	U	140	J	370		260	J
Hexachlorobenzene			NA	360	U	360	U	370	U	420	U	370	U	730	U
Hexachlorobutadiene			NA	360	U	360	U	370	U	420	U	370	U	730	U
Hexachlorocyclopentadiene			NA	360	U	360	U	370	U	420	U	370	U	730	U
Hexachloroethane			NA	360	U	360	U	370	U	420	U	370	U	730	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-B072-419		OFF-B82-112293		OFF-B112-112493		OFF-B122-112493		OFF-B132-112393		OFF-B153-121393		OFF-B162-112393	
Sample Location		B-7		B-8		B-11		B-12		B-13		B-15		B-16	
Date Sampled		4/19/1990		11/22/1993		11/24/1993		11/24/1993		11/23/1993		12/13/1993		11/23/1993	
Interval		6.0-8.0		8.0-10.0		4.0-6.0		2.0-4.0		4.0-6.0		17.0-19.0		2.0-4.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Indeno(1,2,3-cd)pyrene	900	380	J	860		48	J	160	J	120	J	380		500	J
Isophorone			NA	360	U	360	U	370	U	420	U	370	U	730	U
Naphthalene			NA	140	J	360	U	370	U	420	U	79	J	730	U
Nitrobenzene			NA	360	U	360	U	370	U	420	U	370	U	730	U
N-Nitroso-di-n-propylamine			NA	360	U	360	U	370	U	420	U	370	U	730	R
N-Nitroso-diphenylamine			NA	360	U	360	U	370	U	420	U	370	U	730	R
Pentachlorophenol			NA	870	U	880	U	900	U	1000	U	900	U	1800	R
Phenanthrene		4600		2600		150	J	310	J	480		1800		2200	
Phenol		490		360	U	360	U	370	U	420	U	370	U	730	R
Phenols			NA		NA		NA		NA		NA		NA		NA
Pyrene		1300		4100	D	260	J	600		660		1800		3000	
Total PAH		12870			NA		NA		NA		NA		NA		NA
TAL Metal Analysis (MG/KG)															
Aluminum		4950		11300		11800		13500		8640		8620		9020	
Antimony	10		NA	5.2	UJ	5.4	UJ	5.3	UJ	5.9	UJ	5.7	J	6.8	J
Arsenic	7.0	3.0	J*	6.4	J	10.0	J	5.1	J	6.3	J	5.5		5.8	J
Barium		5.9		45.6		24.4	B	20.0	B	24.1	B	28.9	B	23.1	B
Beryllium	0.4		NA	0.33	B	0.36	B	0.29	B	0.25	B	0.36	B	0.22	U
Cadmium			NA	0.65	U	0.67	U	0.66	U	0.74	U	0.77	B	0.66	U
Calcium		957		3760		4790		1580		2060		11400		2250	
Chromium		8.2		14.9		10.8		16.6		10.5		17.2		24.0	
Cobalt		5.8		11.8		13.5		13.0		8.0	B	8.1	B	9.7	B
Copper		31.8	J*	37.1		76.8		30.4		16.9		48.2		83.4	
Cyanide			NA	0.54	UJ	0.56	UJ	0.55	UJ	0.62	UJ	0.56	U	0.55	UJ
Iron		14700		24700		28100		28000		19000		24700		39700	
Lead	150	67.0	J*	189		314		71.4		68.6		292		92.9	
Magnesium		2150		4430		4230		5020		2390		3940		3380	
Manganese	390	167		540	J	627	J	551	J	309		419	J	303	J
Mercury			NA	0.050	U	0.070	B	0.38		0.14	J	0.17		0.10	B
Nickel		11.2		18.0		33.0		21.1		14.0		19.2		32.9	
Potassium		216	J*	580	B	494	B	411	B	372	B	1030	B	588	B
Selenium			NA	0.43	U	0.48	U	0.44	U	0.49	U	0.45	U	0.44	U
Silver			NA	1.1	U	1.1	U	1.1	U	1.2	U	1.1	U	1.1	U
Sodium		55.8	U*	716	B	473	B	370	U	712	B	571	B	373	U
Thallium			NA	0.43	UJ	0.45	UJ	0.44	UJ	0.49	UJ	0.45	UJ	0.44	UJ
Vanadium		9.2		24.8		14.7		20.4		14.5		19.3		19.8	
Zinc		36.2	J*	158	J	69.5	J	110	J	58.2	J	156	J	123	J
Total Petroleum Hydrocarbon Analysis (MG/KG)															
Total Petroleum Hydrocarbons	500		NA		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-B163-112393		OFF-B172-112493		FF-M21-423		FF-M22-423		FF-M31-424		FF-M32-424		FF-M51-425	
Sample Location		B-16		B-17		MW-2		MW-2		MW-3		MW-3		MW-5	
Date Sampled		11/23/1993		11/24/1993		4/23/1990		4/23/1990		4/24/1990		4/24/1990		4/25/1990	
Interval		6.0-8.0		2.0-4.0		6.0-8.0		12.0-14.0		6.0-8.0		12.0-14.0		8.0-10.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Semivolatile Organic Analysis (UG/KG)															
1,2,4-Trichlorobenzene			NA	360	U		NA		NA		NA		NA		NA
1,2-Dichlorobenzene			NA	360	U		NA		NA		NA		NA		NA
1,3-Dichlorobenzene			NA	360	U		NA		NA		NA		NA		NA
1,4-Dichlorobenzene			NA	360	U		NA		NA		NA		NA		NA
2,2'-oxybis(1-Chloropropane)			NA	360	U		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol			NA	880	U		NA		NA		NA		NA		NA
2,4,6-Trichlorophenol			NA	360	U		NA		NA		NA		NA		NA
2,4-Dichlorophenol			NA	360	U		NA		NA		NA		NA		NA
2,4-Dimethylphenol			NA	360	U		NA		NA		NA		NA		NA
2,4-Dinitrophenol			NA	880	U		NA		NA		NA		NA		NA
2,4-Dinitrotoluene			NA	360	U		NA		NA		NA		NA		NA
2,6-Dinitrotoluene			NA	360	U		NA		NA		NA		NA		NA
2-Chloronaphthalene			NA	360	U		NA		NA		NA		NA		NA
2-Chlorophenol			NA	360	U		NA		NA		NA		NA		NA
2-Methylnaphthalene			NA	360	U		NA		NA		NA		NA	88	J
2-Methylphenol			NA	360	U		NA		NA		NA		NA		NA
2-Nitroaniline			NA	880	U		NA		NA		NA		NA		NA
2-Nitrophenol			NA	360	U		NA		NA		NA		NA		NA
3,3'-Dichlorobenzidine			NA	360	U		NA		NA		NA		NA		NA
3-Nitroaniline			NA	880	U		NA		NA		NA		NA		NA
4,6-Dinitro-2-methylphenol			NA	880	U		NA		NA		NA		NA		NA
4-Bromophenyl-phenylether			NA	360	U		NA		NA		NA		NA		NA
4-Chloro-3-methylphenol			NA	360	U		NA		NA		NA		NA		NA
4-Chloroaniline			NA	360	U		NA		NA		NA		NA		NA
4-Chlorophenyl-phenylether			NA	360	U		NA		NA		NA		NA		NA
4-Methylphenol			NA	360	U		NA		NA		NA		NA		NA
4-Nitroaniline			NA	880	U		NA		NA		NA		NA		NA
4-Nitrophenol			NA	880	U		NA		NA		NA		NA		NA
9H-CARBAZOLE			NA	360	U		NA		NA		NA		NA		NA
Acenaphthene			NA	360	U		NA		NA	500			NA	190	J
Acenaphthylene			NA	360	U		NA		NA		NA		NA	54	J
Anthracene			NA	360	U	1100	J		NA	160	J		NA	620	
Benzo(a)anthracene	900		NA	360	U	1800	J		NA	52	J		NA	880	
Benzo(a)pyrene	400		NA	360	U	1600	J		NA		NA		NA	700	
Benzo(b)fluoranthene	900		NA	47	J	1400	J		NA		NA		NA	680	
Benzo(g,h,i)perylene	900		NA	360	U		NA		NA		NA		NA	500	
Benzo(k)fluoranthene	800		NA	360	U	1400	J		NA		NA		NA	500	
Benzoic acid			NA		NA		NA		NA		NA	48	J	200	J
Bis(2-Chloroethoxy)methane			NA	360	U		NA		NA		NA		NA		NA
Bis(2-Chloroethyl)ether			NA	360	U		NA		NA		NA		NA		NA
bis(2-Ethylhexyl)phthalate			NA	56	J		NA		NA	220	U*	340	U*	200	U*
Butylbenzylphthalate			NA	360	U		NA		NA		NA		NA		NA
Carbazole			NA		NA		NA		NA		NA		NA		NA
Chrysene	400		NA	360	U	1700	J		NA	51	J		NA	950	
Dibenzo(a,h)anthracene	400		NA	360	U		NA		NA		NA		NA		NA
Dibenzofuran			NA	360	U		NA		NA		NA		NA	170	J
Diethylphthalate			NA	360	U		NA		NA		NA		NA		NA
Dimethylphthalate			NA	360	U		NA		NA		NA		NA		NA
Di-n-Butylphthalate			NA	360	U		NA		NA	63	U*	44	U*	100	U*
Di-n-octylphthalate			NA	360	U		NA		NA		NA		NA		NA
Fluoranthene			NA	39	J	3700	J	2200	J	120	J		NA	2400	
Fluorene			NA	360	U		NA		NA	730			NA	280	J
Hexachlorobenzene			NA	360	U		NA		NA		NA		NA		NA
Hexachlorobutadiene			NA	360	U		NA		NA		NA		NA		NA
Hexachlorocyclopentadiene			NA	360	U		NA		NA		NA		NA		NA
Hexachloroethane			NA	360	U		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-B163-112393		OFF-B172-112493		FF-M21-423		FF-M22-423		FF-M31-424		FF-M32-424		FF-M51-425	
Sample Location		B-16		B-17		MW-2		MW-2		MW-3		MW-3		MW-5	
Date Sampled		11/23/1993		11/24/1993		4/23/1990		4/23/1990		4/24/1990		4/24/1990		4/25/1990	
Interval		6.0-8.0		2.0-4.0		6.0-8.0		12.0-14.0		6.0-8.0		12.0-14.0		8.0-10.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Indeno(1,2,3-cd)pyrene	900		NA	360	U		NA		NA		NA		NA	440	
Isophorone			NA	360	U		NA		NA		NA		NA		NA
Naphthalene			NA	360	U		NA		NA		NA		NA	78	J
Nitrobenzene			NA	360	U		NA		NA		NA		NA		NA
N-Nitroso-di-n-propylamine			NA	360	U		NA		NA		NA		NA		NA
N-Nitroso-diphenylamine			NA	360	U		NA		NA		NA		NA		NA
Pentachlorophenol			NA	880	U		NA		NA		NA		NA		NA
Phenanthrene			NA	38	J	3500	J	14000		1600			NA	2300	
Phenol			NA	360	U		NA	490			NA		NA	45	J
Phenols			NA		NA		NA		NA		NA		NA		NA
Pyrene			NA	70	J	4900	J	4200	J	240	J		NA	1800	
Total PAH			NA		NA	21100		20400		3453		0.00		12460	
TAL Metal Analysis (MG/KG)															
Aluminum			NA	8180		7160	J*	6600	J*	11900	J*	8120	J*	9280	J*
Antimony	10		NA	5.3	UJ	4.7	U*	12.2	J*		NA		NA		NA
Arsenic	7.0		NA	3.2	J	6.3	J*	8.7	J*	4.4	J*	3.1	J*	4.0	J*
Barium			NA	23.6	B	57.5		112		19.9	B1	23.8	B1	22.1	B1
Beryllium	0.4		NA	0.44	B	0.28	B1		NA	0.24	B1	0.48	B1	0.35	B1
Cadmium			NA	0.66	U	8.1		4.8			NA		NA	0.93	J*
Calcium			NA	1060	B	5810		10300		819	B1	755	B1	1080	B1
Chromium			NA	11.4		13.7	J*	20.6	J*	12.5	J*	13.0	J*	15.2	J*
Cobalt			NA	6.9	B	9.7	J*	16.6	J*	9.8	J*	13.0	J*	19.4	J*
Copper			NA	14.1		312	J*	277	J*	40.2	J*	30.3	J*	26.3	J*
Cyanide			NA	0.55	UJ		NA		NA		NA		NA		NA
Iron			NA	14100		36200	J*	112000	J*	31300	J*	32600	J*	29000	J*
Lead	150		NA	14.6		777	J*	962	J*	24.0	J*	7.8	J*	12.0	J*
Magnesium			NA	3070		2830	J*	3720	J*	4010	J*	3030	J*	2940	J*
Manganese	390		NA	477	J	323	J*	464	J*	311	J*	292	J*	476	J*
Mercury			NA	0.060	U	0.16		0.18			NA		NA		NA
Nickel			NA	11.8		15.9	J*	15.7	J*	15.3	J*	23.8	J*	26.1	J*
Potassium			NA	973	B	403	B1	302	B1	354	J*	749	J*	661	J*
Selenium			NA	0.44	U	0.58	J*	0.39	J*	1.7	B1		NA		NA
Silver			NA	1.1	U		NA		NA		NA		NA		NA
Sodium			NA	378	B	605	B1	746	B1	166	B1	275	B1	62.3	B1
Thallium			NA	0.44	UJ		NA		NA		NA		NA		NA
Vanadium			NA	13.4		20.4	J*	30.3	J*	19.1	J*	24.3	J*	24.3	J*
Zinc			NA	33.3	J	2580	J*	2810	J*	70.1	J*	69.0	J*	69.0	J*
Total Petroleum Hydrocarbon Analysis (MG/KG)															
Total Petroleum Hydrocarbons	500		NA		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-M52-425		OFF-M62-113093		OFF-M72-112993		OFF-M92-120193		OFF-M102-112993		OFF-M112-112993		OFF-S-MW101-0608	
Sample Location		MW-5		MW-6		MW-7		MW-9		MW-10		MW-11		MW-	
Date Sampled		4/25/1990		11/30/1993		11/29/1993		12/1/1993		11/29/1993		11/29/1993		7/9/1997	
Interval		12.0-14.0		4.0-6.0		2.0-4.0		2.0-4.0		4.0-6.0		2.0-4.0		6.0-8.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Semivolatile Organic Analysis (UG/KG)															
1,2,4-Trichlorobenzene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
1,2-Dichlorobenzene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
1,3-Dichlorobenzene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
1,4-Dichlorobenzene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
2,2'-oxybis(1-Chloropropane)			NA	380	U	380	U		NA	370	U	440	U	360	UJ
2,4,5-Trichlorophenol			NA	920	U	920	U		NA	890	U	1100	U	910	U
2,4,6-Trichlorophenol			NA	380	U	380	U		NA	370	U	440	U	360	U
2,4-Dichlorophenol			NA	380	U	380	U		NA	370	U	440	U	360	U
2,4-Dimethylphenol			NA	380	U	380	U		NA	370	U	440	U	360	U
2,4-Dinitrophenol			NA	920	U	920	U		NA	890	U	1100	U	910	U
2,4-Dinitrotoluene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
2,6-Dinitrotoluene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
2-Chloronaphthalene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
2-Chlorophenol			NA	380	U	380	U		NA	370	U	440	U	360	U
2-Methylnaphthalene			NA	380	U	79	J		NA	370	U	810		11000	
2-Methylphenol			NA	380	U	380	U		NA	370	U	440	U	360	U
2-Nitroaniline			NA	920	U	920	U		NA	890	U	1100	U	910	UJ
2-Nitrophenol			NA	380	U	380	U		NA	370	U	440	U	360	U
3,3'-Dichlorobenzidine			NA	380	U	380	U		NA	370	U	440	U	360	UJ
3-Nitroaniline			NA	920	U	920	U		NA	890	U	1100	U	910	UJ
4,6-Dinitro-2-methylphenol			NA	920	U	920	U		NA	890	U	1100	U	910	UJ
4-Bromophenyl-phenylether			NA	380	U	380	U		NA	370	U	440	U	360	UJ
4-Chloro-3-methylphenol			NA	380	U	380	U		NA	370	U	440	U	360	U
4-Chloroaniline			NA	380	U	380	U		NA	370	U	440	U	360	UJ
4-Chlorophenyl-phenylether			NA	380	U	380	U		NA	370	U	440	U	360	UJ
4-Methylphenol			NA	380	U	380	U		NA	370	U	440	U	360	U
4-Nitroaniline			NA	920	U	920	U		NA	890	U	1100	U	910	UJ
4-Nitrophenol			NA	920	U	920	U		NA	890	U	1100	U	910	U
9H-CARBAZOLE			NA	380	U	180	J		NA	370	U	69	J		NA
Acenaphthene			NA	380	U	220	J		NA	370	U	100	J	360	UJ
Acenaphthylene			NA	380	U	180	J		NA	47	J	440	U	360	UJ
Anthracene			NA	380	U	690			NA	41	J	100	J	890	J
Benzo(a)anthracene	900		NA	380	U	1300			NA	240	J	140	J	470	
Benzo(a)pyrene	400		NA	380	U	1000			NA	220	J	77	J	380	
Benzo(b)fluoranthene	900		NA	380	U	1800			NA	400		180	J	260	J
Benzo(g,h,i)perylene	900		NA	380	U	420			NA	89	J	57	J	180	J
Benzo(k)fluoranthene	800		NA	380	U	380	U		NA	370	U	440	U	310	J
Benzoic acid		43	J		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Bis(2-Chloroethyl)ether			NA	380	U	380	U		NA	370	U	440	U	360	UJ
bis(2-Ethylhexyl)phthalate		170	U*	380	U	380	U		NA	370	U	110	J	360	UJ
Butylbenzylphthalate			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Carbazole			NA		NA		NA		NA		NA		NA	360	UJ
Chrysene	400		NA	380	U	1100			NA	230	J	130	J	430	
Dibenzo(a,h)anthracene	400		NA	380	U	220	J		NA	370	U	440	U	360	UJ
Dibenzofuran			NA	380	U	260	J		NA	370	U	95	J	830	
Diethylphthalate			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Dimethylphthalate			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Di-n-Butylphthalate			NA	65	J	380	U		NA	370	U	440	U	360	UJ
Di-n-octylphthalate			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Fluoranthene			NA	380	U	3800	D		NA	250	J	400	J	2500	J
Fluorene			NA	380	U	460			NA	370	U	120	J	1200	J
Hexachlorobenzene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Hexachlorobutadiene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Hexachlorocyclopentadiene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Hexachloroethane			NA	380	U	380	U		NA	370	U	440	U	360	UJ

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		FF-M52-425		OFF-M62-113093		OFF-M72-112993		OFF-M92-120193		OFF-M102-112993		OFF-M112-112993		OFF-S-MW101-0608	
Sample Location		MW-5		MW-6		MW-7		MW-9		MW-10		MW-11		MW-	
Date Sampled		4/25/1990		11/30/1993		11/29/1993		12/1/1993		11/29/1993		11/29/1993		7/9/1997	
Interval		12.0-14.0		4.0-6.0		2.0-4.0		2.0-4.0		4.0-6.0		2.0-4.0		6.0-8.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Indeno(1,2,3-cd)pyrene	900		NA	380	U	550			NA	100	J	48	J	210	J
Isophorone			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Naphthalene			NA	380	U	41	J		NA	370	U	170	J	3700	J
Nitrobenzene			NA	380	U	380	U		NA	370	U	440	U	360	UJ
N-Nitroso-di-n-propylamine			NA	380	U	380	U		NA	370	U	440	U	360	UJ
N-Nitroso-diphenylamine			NA	380	U	380	U		NA	370	U	440	U	360	UJ
Pentachlorophenol			NA	920	U	920	U		NA	890	U	1100	U	910	UJ
Phenanthrene			NA	380	U	3600	D		NA	56	J	660		3800	
Phenol			NA	40	J	380	U		NA	370	U	440	U		NA
Phenols			NA		NA		NA		NA		NA		NA	360	U
Pyrene			NA	380	U	2600			NA	290	J	390	J	970	J
Total PAH		0.00			NA		NA		NA		NA		NA		NA
TAL Metal Analysis (MG/KG)															
Aluminum		7380	J*	13900		20700			NA	9060		9910		15300	
Antimony	10		NA	5.2	UJ	5.5	UJ		NA	5.3	UJ	5.4	UJ	0.35	UR
Arsenic	7.0	3.7	J*	4.1		6.2	S		NA	7.0		3.9		9.3	J
Barium		21.9	B1	13.3	B	11.9	B		NA	15.4	B	92.0		13.4	
Beryllium	0.4	0.24	B1	0.26	B	0.33	B		NA	0.32	B	0.34	B	0.24	U
Cadmium			NA	0.65	U	0.68	U		NA	0.66	U	0.68	U	0.030	U
Calcium		1290		1310		1740			NA	980	B	6170		764	J
Chromium		13.9	J*	16.0		23.1			NA	9.6		17.0		14.8	
Cobalt		15.6	J*	12.2		19.9			NA	10.8	B	10.3	B	9.2	
Copper		24.0	J*	14.3		16.0			NA	16.4		321		10.4	
Cyanide			NA	0.55	U	0.57	U		NA	0.55	U	0.56	U		NA
Iron		25900	J*	31500		48300			NA	20300		26800		42000	
Lead	150	16.0	J*	18.2		19.5			NA	42.3		554		12.7	
Magnesium		2790	J*	4140		6000			NA	3140		4040		4260	
Manganese	390	1020	J*	385	J	396	J		NA	588	J	401	J	144	J
Mercury			NA	0.050	U	0.060	U		NA	0.060	U	0.070	B	0.010	UJ
Nickel		26.2	B1	18.9		27.0			NA	17.8		58.1		22.5	
Potassium		628	J*	407	B	258	B		NA	361	B	468	B	268	U
Selenium			NA	0.44	U	0.46	U		NA	0.44	UW	0.45	U	0.50	J
Silver			NA	1.1	U	1.1	U		NA	1.1	U	1.1	U	0.13	U
Sodium		48.1	B1	369	U	385	U		NA	372	U	843	B	98.3	U
Thallium			NA	0.44	UJ	0.46	UJ		NA	0.44	UJ	0.45	UJ	0.64	UJ
Vanadium		20.7	J*	23.0		57.0			NA	11.7		16.3		25.7	
Zinc		93.1	J*	56.4	J	74.2	J		NA	56.9	J	453	J	45.0	
Total Petroleum Hydrocarbon Analysis (MG/KG)															
Total Petroleum Hydrocarbons	500		NA		NA		NA		NA		NA		NA	1900	J

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-3-MW102-0608		OFF-TP12-011194		OFF-TP13-011194		OFF-TP21-011194		OFF-TP22-011194		OFF-TP31-011194		OFF-TP32-011194	
Sample Location		MW-		TP1		TP1		TP2		TP2		TP3		TP3	
Date Sampled		7/7/1997		1/11/1994		1/11/1994		1/11/1994		1/11/1994		1/11/1994		1/11/1994	
Interval		6.0-8.0		3.5-4.0		1.5-2.0		7.0-8.0		4.5-4.5		7.0-8.0		7.0-7.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Semivolatile Organic Analysis (UG/KG)															
1,2,4-Trichlorobenzene		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
1,2-Dichlorobenzene		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
1,3-Dichlorobenzene		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
1,4-Dichlorobenzene		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2,2'-oxybis(1-Chloropropane)		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2,4,5-Trichlorophenol		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
2,4,6-Trichlorophenol		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2,4-Dichlorophenol		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2,4-Dimethylphenol		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2,4-Dinitrophenol		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
2,4-Dinitrotoluene		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2,6-Dinitrotoluene		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2-Chloronaphthalene		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2-Chlorophenol		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2-Methylnaphthalene		4300	J	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2-Methylphenol		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
2-Nitroaniline		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
2-Nitrophenol		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
3,3'-Dichlorobenzidine		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
3-Nitroaniline		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
4,6-Dinitro-2-methylphenol		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
4-Bromophenyl-phenylether		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
4-Chloro-3-methylphenol		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
4-Chloroaniline		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
4-Chlorophenyl-phenylether		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
4-Methylphenol		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
4-Nitroaniline		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
4-Nitrophenol		1100	U	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
9H-CARBAZOLE			NA		NA		NA		NA		NA		NA		NA
Acenaphthene		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Acenaphthylene		430	UR	65	J	370	UJ	7700	U	380	UJ	6700	UJ	380	J
Anthracene		4800		200	J	94	J	440	J	380	UJ	480	J	520	J
Benzo(a)anthracene	900	3400		660	J	370	J	7700	U	380	UJ	500	J	2400	J
Benzo(a)pyrene	400	4000		660	J	440	J	7700	U	380	UJ	6700	UJ	2900	J
Benzo(b)fluoranthene	900	2700	J	500	J	320	J	7700	U	380	UJ	430	J	2300	J
Benzo(g,h,i)perylene	900	1900	J	440	J	230	J	7700	U	380	UJ	6700	UJ	1700	J
Benzo(k)fluoranthene	800	2200	J	600	J	380	J	7700	U	380	UJ	850	J	2500	J
Benzoic acid			NA		NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Bis(2-Chloroethyl)ether		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
bis(2-Ethylhexyl)phthalate		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Butylbenzylphthalate		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Carbazole		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Chrysene	400	3200	J	730	J	410	J	7700	U	380	UJ	690	J	2500	J
Dibenzo(a,h)anthracene	400	820	J	170	J	110	J	7700	U	380	UJ	6700	UJ	780	J
Dibenzofuran		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Diethylphthalate		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Dimethylphthalate		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Di-n-Butylphthalate		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Di-n-octylphthalate		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Fluoranthene		16000		1300	J	500	J	460	J	380	UJ	6700	UJ	3000	J
Fluorene		430	UR	390	UJ	370	UJ	1500	J	380	UJ	6700	UJ	700	UJ
Hexachlorobenzene		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Hexachlorobutadiene		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Hexachlorocyclopentadiene		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Hexachloroethane		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-S-MW102-0608		OFF-TP12-011194		OFF-TP13-011194		OFF-TP21-011194		OFF-TP22-011194		OFF-TP31-011194		OFF-TP32-011194	
Sample Location		MW-		TP1		TP1		TP2		TP2		TP3		TP3	
Date Sampled		7/7/1997		1/11/1994		1/11/1994		1/11/1994		1/11/1994		1/11/1994		1/11/1994	
Interval		6.0-8.0		3.5-4.0		1.5-2.0		7.0-8.0		4.5-4.5		7.0-8.0		7.0-7.0	
QC Identifier		None		None		None		None		None		None		None	
Criteria	PRG														
Indeno(1,2,3-cd)pyrene	900	2300	J	390	J	230	J	7700	U	380	UJ	6700	UJ	1700	J
Isophorone		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Naphthalene		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Nitrobenzene		430	UJ	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
N-Nitroso-di-n-propylamine		430	U	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
N-Nitroso-diphenylamine		430	UR	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Pentachlorophenol		1100	UR	970	UJ	940	UJ	19000	U	940	UJ	17000	UJ	1800	UJ
Phenanthrene		12000		680	J	330	J	850	J	380	UJ	6300	J	1300	J
Phenol			NA	390	UJ	370	UJ	7700	U	380	UJ	6700	UJ	700	UJ
Phenols		430	U		NA		NA		NA		NA		NA		NA
Pyrene		5300		1100	J	490	J	1000	J	380	UJ	6700	UJ	3100	J
Total PAH			NA		NA		NA		NA		NA		NA		NA
TAL Metal Analysis (MG/KG)															
Aluminum		4570		8710		7970		5650		12000		3030		10300	
Antimony	10	12.0	J	6.3	U	5.8	U	6.3	U	5.8	U	6.7		6.0	U
Arsenic	7.0	53.6	J	4.1	J	2.6	J	3.7	J	4.3	J	16.3	J	2.9	J
Barium		220		46.2	B	23.6	B	9.6	B	18.2	B	200		22.1	B
Beryllium	0.4	0.15	U	0.28	B	0.37	B	0.23	U	0.37	B	0.24	U	0.29	B
Cadmium		2.0	U	0.25	J	0.089	UJ	0.092	UJ	0.092	UJ	3.6		0.089	UJ
Calcium		28800		4330		795	B	760	B	884	B	32300		1090	B
Chromium		44.3		8.6	J	11.8	J	5.8	J	12.5	J	6.1	J	12.3	J
Cobalt		18.0	J	8.3	B	12.2		8.0	B	10.4	B	2.9	B	11.8	
Copper		2310		23.3		16.1		16.9		10.6		52.4		27.4	
Cyanide			NA	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.1	U
Iron		204000		17200		23000		16900		22100		12300		24400	
Lead	150	5400		475	J	40.1	J	10.8	J	6.9	J	3090	J	67.6	J
Magnesium		7770		1840		2180		2040		2570		4630		3150	
Manganese	390	562	J	255	J	186	J	243	J	139	J	299	J	413	J
Mercury		0.65	J	0.25		0.056	U	0.045	U	0.049	U	0.16		0.076	B
Nickel		64.1		13.7		28.1		16.3		17.7		4.3	B	18.7	
Potassium		590		329	B	538	B	320	B	336	B	822	B	809	B
Selenium		1.3	J	0.59	J	0.45	UJ	0.46	UJ	0.46	UJ	0.48	UJ	0.45	UJ
Silver		0.91	U	0.091	UJ	0.089	UJ	0.092	UJ	0.092	UJ	0.095	UJ	0.089	UJ
Sodium		3240		89.2	B	97.9	B	87.3	B	60.1	U	324	B	76.0	B
Thallium		0.73	UJ	4.5	UJ	0.45	UJ	0.46	UJ	0.46	UJ	4.8	UJ	0.45	UJ
Vanadium		18.8		16.5		7.1	B	11.1	B	7.4	B	6.9	U	7.7	B
Zinc		3410		169		57.8		210		42.7		1580		76.3	
Total Petroleum Hydrocarbon Analysis (MG/KG)															
Total Petroleum Hydrocarbons	500	8200	J		NA		NA		NA		NA		NA		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-S-TP-02-0203		OFF-S-TP-05-0708		OFF-S-TP-06-0607		OFF-S-TP-07-0708		OFF-S-TP-08-0304		OFF-S-TP-11-0506-MAX	
Sample Location		TP-02		TP-05		TP-06		TP-07		TP-08		TP-11	
Date Sampled		6/30/1997		7/1/1997		7/1/1997		7/2/1997		7/2/1997		7/2/1997	
Interval		2.0-3.0		7.0-8.0		6.0-7.0		7.0-8.0		3.0-4.0		5.0-6.0	
QC Identifier		None		None		None		None		None		Field Dup. OFF-S-TP-11-0506	
Criteria	PRG												
Semivolatile Organic Analysis (UG/KG)													
1,2,4-Trichlorobenzene		360	U	360	U	400	U	400	U	400	U	430	U
1,2-Dichlorobenzene		360	U	360	U	400	U	400	U	400	U	430	U
1,3-Dichlorobenzene		360	U	360	U	400	U	400	U	400	U	430	U
1,4-Dichlorobenzene		360	U	360	U	400	U	400	U	400	U	430	U
2,2'-oxybis(1-Chloropropane)		360	U	360	U	400	U	400	U	400	U	430	U
2,4,5-Trichlorophenol		910	U	910	U	1000	U	1000	U	1000	U	1100	U
2,4,6-Trichlorophenol		360	U	360	U	400	U	400	U	400	U	430	U
2,4-Dichlorophenol		360	U	360	U	400	U	400	U	400	U	430	U
2,4-Dimethylphenol		360	U	360	U	400	U	400	U	400	U	430	U
2,4-Dinitrophenol		910	U	910	U	1000	U	1000	U	1000	U	1100	U
2,4-Dinitrotoluene		360	U	360	U	400	U	400	U	400	U	430	U
2,6-Dinitrotoluene		360	U	360	U	400	U	400	U	400	U	430	U
2-Chloronaphthalene		360	U	360	U	400	U	400	U	400	U	430	U
2-Chlorophenol		360	U	360	U	400	U	400	U	400	U	430	U
2-Methylnaphthalene		360	U	360	U	400	U	400	U	400	U	3700	
2-Methylphenol		360	U	360	U	400	U	400	U	400	U	430	U
2-Nitroaniline		910	U	910	U	1000	U	1000	U	1000	U	1100	U
2-Nitrophenol		360	U	360	U	400	U	400	U	400	U	430	U
3,3'-Dichlorobenzidine		360	U	360	U	400	U	400	U	400	U	430	U
3-Nitroaniline		910	U	910	U	1000	U	1000	U	1000	U	1100	U
4,6-Dinitro-2-methylphenol		910	U	910	U	1000	U	1000	U	1000	U	1100	U
4-Bromophenyl-phenylether		360	U	360	U	400	U	400	U	400	U	430	U
4-Chloro-3-methylphenol		360	U	360	U	400	U	400	U	400	U	430	U
4-Chloroaniline		360	U	360	U	400	U	400	U	400	U	430	U
4-Chlorophenyl-phenylether		360	U	360	U	400	U	400	U	400	U	430	U
4-Methylphenol		360	U	360	U	400	U	400	U	400	U	430	U
4-Nitroaniline		910	U	910	U	1000	U	1000	U	1000	U	1100	U
4-Nitrophenol		910	U	910	U	1000	U	1000	U	1000	U	1100	U
9H-CARBAZOLE			NA		NA		NA		NA		NA		NA
Acenaphthene		360	U	190	J	400	U	400	U	400	U	430	U
Acenaphthylene		360	U	360	U	400	U	400	U	400	U	430	U
Anthracene		360	U	420		400	U	400	U	400	U	1500	
Benzo(a)anthracene	900	360	U	840		610		350	J	170	J	580	
Benzo(a)pyrene	400	360	U	690		500		360	J	400	U	350	
Benzo(b)fluoranthene	900	360	U	650		380	J	240	J	400	U	430	
Benzo(g,h,i)perylene	900	360	U	360	U	400	U	400	U	400	U	430	U
Benzo(k)fluoranthene	800	360	U	530		410		270	J	400	U	490	
Benzoic acid			NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane		360	U	360	U	400	U	400	U	400	U	430	U
Bis(2-Chloroethyl)ether		360	U	360	U	400	U	400	U	400	U	430	U
bis(2-Ethylhexyl)phthalate		360	U	360	U	400	U	400	U	400	U	430	U
Butylbenzylphthalate		360	U	360	U	400	U	400	U	400	U	430	U
Carbazole		360	U	170	J	400	U	400	U	400	U	430	U
Chrysene	400	360	U	810		650		380	J	160	J	460	
Dibenzo(a,h)anthracene	400	360	U	180	J	190	J	400	U	400	U	430	U
Dibenzofuran		360	U	360	U	400	U	400	U	400	U	1800	
Diethylphthalate		360	U	360	U	400	U	400	U	400	U	430	U
Dimethylphthalate		360	U	360	U	400	U	400	U	400	U	430	U
Di-n-Butylphthalate		360	U	360	U	400	U	400	U	400	U	430	U
Di-n-octylphthalate		360	U	360	U	400	U	400	U	400	U	430	U
Fluoranthene		360	U	1700		860		520		240	J	2000	
Fluorene		360	U	160	J	400	U	400	U	400	UJ	3400	
Hexachlorobenzene		360	U	360	U	400	U	400	U	400	U	430	U
Hexachlorobutadiene		360	U	360	U	400	U	400	U	400	U	430	U
Hexachlorocyclopentadiene		360	U	360	U	400	U	400	U	400	U	430	U
Hexachloroethane		360	U	360	U	400	U	400	U	400	U	430	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-S-TP-02-0203		OFF-S-TP-05-0708		OFF-S-TP-06-0607		OFF-S-TP-07-0708		OFF-S-TP-08-0304		OFF-S-TP-11-0506-MAX	
Sample Location		TP-02		TP-05		TP-06		TP-07		TP-08		TP-11	
Date Sampled		6/30/1997		7/1/1997		7/1/1997		7/2/1997		7/2/1997		7/2/1997	
Interval		2.0-3.0		7.0-8.0		6.0-7.0		7.0-8.0		3.0-4.0		5.0-6.0	
QC Identifier		None		None		None		None		None		Field Dup. OFF-S-TP-11-0506	
Criteria	PRG												
Indeno(1,2,3-cd)pyrene	900	360	U	520		350	J	280	J	400	U	350	
Isophorone		360	U	360	U	400	U	400	U	400	U	430	U
Naphthalene		360	U	360	U	400	U	400	U	400	U	4000	
Nitrobenzene		360	U	360	U	400	U	400	U	400	U	430	U
N-Nitroso-di-n-propylamine		360	U	360	U	400	U	400	U	400	U	430	U
N-Nitroso-diphenylamine		360	U	360	U	400	U	400	U	400	U	430	U
Pentachlorophenol		910	U	910	U	1000	U	1000	U	1000	U	1100	U
Phenanthrene		360	U	1800		1300		510		200	J	4900	
Phenol			NA		NA		NA		NA		NA		NA
Phenols		360	U	360	U	400	U	400	U	400	U	430	U
Pyrene		360	U	1700		1800		800		330	J	710	
Total PAH			NA		NA		NA		NA		NA		NA
TAL Metal Analysis (MG/KG)													
Aluminum		6600		11100		11900		9000		11800		9210	
Antimony	10	0.34	UR	0.49	U	0.36	U	0.93	U	0.35	UR	0.51	U
Arsenic	7.0	4.1	J	14.3	J	5.7	J	6.2	J	13.8	J	8.3	
Barium		14.1	J	41.4	J	26.0	J	22.7	J	33.7	J	90.0	
Beryllium	0.4	0.27	U	0.27	U	0.32	U	0.29	U	0.35	U	0.46	U
Cadmium		1.3	U	0.14	U	0.090	U	0.090	U	0.030	U	0.13	U
Calcium		597	J	1480	J	1570	J	1320	J	1090	J	1650	
Chromium		8.7	J	15.6	J	12.3	J	10.1	J	15.4	J	13.1	
Cobalt		6.8		14.2		10.0		7.4		10.8		9.9	
Copper		16.5		88.2		22.7		19.7		41.0		49.7	
Cyanide			NA		NA		NA		NA		NA		NA
Iron		25300		56300		25000		19100		27500		26500	
Lead	150	46.6	J	540	J	55.5	J	40.7	J	57.8	J	563	
Magnesium		2360		3970		3000		2180		2590		2400	
Manganese	390	292	J	698	J	410	J	417	J	478	J	306	
Mercury		0.020	U	0.21	J	0.060	J	0.10	J	0.11	J	0.24	
Nickel		14.6		24.5		20.5		19.2		20.1		19.6	
Potassium		418		417		363	U	316	U	380	U	450	
Selenium		0.81	J	0.53	J	0.45	UJ	0.50	J	0.66	J	1.1	
Silver		0.13	U	0.13	U	0.13	U	0.13	U	0.13	U	0.16	U
Sodium		99.1	U	1070	J	71.9	U	65.0	U	51.4	U	199	
Thallium		0.62	UJ	0.63	U	0.61	UJ	0.61	UJ	0.65	UJ	0.73	U
Vanadium		8.2		17.8		17.5		13.2		20.7		19.8	
Zinc		986	J	533	J	101	J	80.0	J	60.6	J	201	
Total Petroleum Hydrocarbon Analysis (MG/KG)													
Total Petroleum Hydrocarbons	500	140	J	40	U	130	J	59	U	31	U	7500	

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-S-TP-12-0405		OFF-S-TP-13-0607		OFF-S-TP-14-0304-MAX		OFF-S-TP-15-0506		OFF-S-TP-16-1011		OFF-S-TP-17-0809-MAX	
Sample Location		TP-12		TP-13		TP-14		TP-15		TP-16		TP-17	
Date Sampled		7/2/1997		7/3/1997		7/3/1997		7/3/1997		7/7/1997		7/7/1997	
Interval		4.0-5.0		6.0-7.0		3.0-4.0		5.0-6.0		10.0-11.0		8.0-9.0	
QC Identifier		None		None		OFF-S-TP-14-0304		None		None		OFF-S-TP-17-0809	
Criteria	PRG												
Semivolatile Organic Analysis (UG/KG)													
1,2,4-Trichlorobenzene		360	U	400	UJ	430	U	460	U	5000	U	400	U
1,2-Dichlorobenzene		360	U	400	U	430	U	460	U	5000	U	400	U
1,3-Dichlorobenzene		360	U	400	U	430	U	460	U	5000	U	400	U
1,4-Dichlorobenzene		360	U	400	U	430	U	460	U	5000	U	400	U
2,2'-oxybis(1-Chloropropane)		360	U	400	U	430	U	460	U	5000	U	400	U
2,4,5-Trichlorophenol		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
2,4,6-Trichlorophenol		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
2,4-Dichlorophenol		360	U	400	U	430	U	460	U	5000	U	400	U
2,4-Dimethylphenol		360	U	400	U	430	U	460	U	5000	U	400	U
2,4-Dinitrophenol		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
2,4-Dinitrotoluene		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
2,6-Dinitrotoluene		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
2-Chloronaphthalene		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
2-Chlorophenol		360	U	400	U	430	U	460	U	5000	U	400	U
2-Methylnaphthalene		360	U	400	U	430	U	1300	J	5000	U	690	
2-Methylphenol		360	U	400	U	430	U	460	U	5000	U	400	U
2-Nitroaniline		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
2-Nitrophenol		360	U	400	U	430	U	460	U	5000	U	400	U
3,3'-Dichlorobenzidine		360	UJ	400	UJ	430	U	460	UJ	5000	UJ	400	U
3-Nitroaniline		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
4,6-Dinitro-2-methylphenol		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
4-Bromophenyl-phenylether		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
4-Chloro-3-methylphenol		360	U	400	UJ	430	U	460	U	5000	U	400	U
4-Chloroaniline		360	U	400	U	430	U	460	U	5000	U	400	U
4-Chlorophenyl-phenylether		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
4-Methylphenol		360	U	400	U	430	U	460	U	5000	U	400	U
4-Nitroaniline		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
4-Nitrophenol		910	UJ	1000	UJ	1100	U	1200	U	12000	U	1000	U
9H-CARBAZOLE			NA		NA		NA		NA		NA		NA
Acenaphthene		1900	J	400	UJ	430	U	4900		5000	U	400	U
Acenaphthylene		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
Anthracene		700	J	400	UJ	430	U	2200	J	5000	U	400	U
Benzo(a)anthracene	900	360	U	230	J	430	U	1200	J	5000	U	400	U
Benzo(a)pyrene	400	360	U	200	J	430	U	970	J	5000	U	400	U
Benzo(b)fluoranthene	900	360	U	400	U	430	U	610	J	300	J	400	U
Benzo(g,h,i)perylene	900	360	U	400	U	430	U	460	UJ	5000	U	400	U
Benzo(k)fluoranthene	800	360	U	400	U	430	U	730	J	5000	U	400	U
Benzoic acid			NA		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane		360	U	400	U	430	U	460	U	5000	U	400	U
Bis(2-Chloroethyl)ether		360	U	400	U	430	U	460	U	5000	U	400	U
bis(2-Ethylhexyl)phthalate		360	UJ	400	U	430	U	460	UJ	5000	U	400	U
Butylbenzylphthalate		360	U	400	U	430	U	460	UJ	5000	U	400	U
Carbazole		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
Chrysene	400	170	J	280	J	170		1700	J	5000	U	400	U
Dibenzo(a,h)anthracene	400	360	U	400	U	430	U	460	UJ	5000	UJ	400	U
Dibenzofuran		1100	J	400	UJ	430	U	4000		5000	U	400	U
Diethylphthalate		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
Dimethylphthalate		360	UJ	400	U	430	U	460	UR	5000	U	400	U
Di-n-Butylphthalate		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
Di-n-octylphthalate		360	UJ	400	U	430	U	460	UJ	5000	UJ	400	U
Fluoranthene		650	J	750	J	340		3600	J	910	J	400	U
Fluorene		2600	J	400	UJ	430	U	1900	J	5000	U	120	
Hexachlorobenzene		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
Hexachlorobutadiene		360	U	400	U	430	U	460	U	5000	U	400	U
Hexachlorocyclopentadiene		360	UJ	400	UJ	430	U	460	UR	5000	UJ	400	U
Hexachloroethane		360	U	400	U	430	U	460	U	5000	U	400	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number		OFF-S-TP-12-0405		OFF-S-TP-13-0607		OFF-S-TP-14-0304-MAX		OFF-S-TP-15-0506		OFF-S-TP-16-1011		OFF-S-TP-17-0809-MAX	
Sample Location		TP-12		TP-13		TP-14		TP-15		TP-16		TP-17	
Date Sampled		7/2/1997		7/3/1997		7/3/1997		7/3/1997		7/7/1997		7/7/1997	
Interval		4.0-5.0		6.0-7.0		3.0-4.0		5.0-6.0		10.0-11.0		8.0-9.0	
QC Identifier		None		None		OFF-S-TP-14-0304		None		None		OFF-S-TP-17-0809	
Criteria	PRG												
Indeno(1,2,3-cd)pyrene	900	360	U	400	U	180		800	J	5000	U	400	U
Isophorone		360	U	400	U	430	U	460	U	5000	U	400	U
Naphthalene		360	U	400	U	430	U	1300		5000	U	140	
Nitrobenzene		360	U	400	U	430	U	460	U	5000	U	400	U
N-Nitroso-di-n-propylamine		360	U	400	U	430	U	460	U	5000	U	400	U
N-Nitroso-diphenylamine		360	UJ	400	UJ	430	U	460	UR	5000	U	400	U
Pentachlorophenol		910	UJ	1000	UJ	1100	U	1200	UR	12000	U	1000	U
Phenanthrene		3600	J	400	UJ	520		14000		5000	U	240	
Phenol			NA		NA		NA		NA		NA		NA
Phenols		360	U	400	U	430	U	460	U	5000	U	400	U
Pyrene		360		710		310		2700	J	1300	J	400	U
Total PAH			NA		NA		NA		NA		NA		NA
TAL Metal Analysis (MG/KG)													
Aluminum		8340		8620		13200		5220		7510		11700	
Antimony	10	0.44	U	39.2	J	0.41	U	0.76	U	4.0	J	0.36	U
Arsenic	7.0	4.8	J	18.3	J	10.5		9.9	J	74.4	J	8.2	
Barium		23.9	J	160	J	15.6		144	J	126		13.4	
Beryllium	0.4	0.22	U	0.20	U	0.28	U	0.38	U	0.24	J	0.32	U
Cadmium		0.030	U	4.4	J	0.040	U	1.7	U	6.3	U	0.030	U
Calcium		1740	J	24400	J	917		5190	J	14400		1090	
Chromium		8.0	J	21.7	J	16.6		12.3	J	61.9		14.5	
Cobalt		6.0		12.9		9.8		5.6		15.3	J	14.1	
Copper		51.0		604		22.8		146		264		25.6	
Cyanide			NA		NA		NA		NA		NA		NA
Iron		18500		110000		31100		19000		186000		31400	
Lead	150	283	J	7820	J	42.0		766	J	3350		13.3	
Magnesium		1800	J	3870		4720		2810		3240		4320	
Manganese	390	516	J	898	J	231		157	J	1110	J	267	
Mercury		0.090	J	0.35		0.050	U	0.18	J	2.2	J	0.010	U
Nickel		18.4		29.1		21.9		14.3		37.3		25.0	
Potassium		355	U	382	U	492		481	U	362	U	374	U
Selenium		0.50	UJ	0.71	J	0.65		0.87	J	1.2	J	0.50	U
Silver		0.14	U	0.97	U	0.16	U	0.89	U	0.48	U	0.14	U
Sodium		85.6	U	926	J	1540		1720	J	1030	J	243	
Thallium		0.68	UJ	0.75	UJ	0.76	U	0.86	UJ	0.89	UJ	0.67	U
Vanadium		13.8		18.2		17.4		19.2		16.5		16.0	
Zinc		63.7	J	2870	J	70.1		577	J	4240		65.9	
Total Petroleum Hydrocarbon Analysis (MG/KG)													
Total Petroleum Hydrocarbons	500	4100	J	7400	J	4800		21000	J	6400	J	200	

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	PTW-FB01		OFF-SB-RB01		OFF-SB-RB02		RB03		OFF-SB-RB04		OFF-SB-RB05		OFF-SB-RB06		RB07		RB08		RB09		OFF-SB-RB10		OFF-SB-RB11		RB12		OFF-SB-TB01	
Sample Location	Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank	
Date Sampled	11/26/2003		11/18/2003		11/18/2003		11/19/2003		11/20/2003		11/21/2003		11/24/2003		11/25/2003		11/26/2003		12/1/2003		12/2/2003		12/3/2003		12/4/2003		11/17/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Blank		Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Blank		Trip Blank	
Filtered																												
Semivolatile Organic Analysis (UG/L)																												
1,1'-Biphenyl	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2,2'-oxybis(1-Chloropropane)	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2,4,5-Trichlorophenol	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
2,4,6-Trichlorophenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2,4-Dichlorophenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2,4-Dimethylphenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2,4-Dinitrophenol	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
2,4-Dinitrotoluene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2,6-Dinitrotoluene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2-Chloronaphthalene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2-Chlorophenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2-Methylnaphthalene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2-Methylphenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
2-Nitroaniline	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
2-Nitrophenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
3,3'-Dichlorobenzidine	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
3-Nitroaniline	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
4,6-Dinitro-2-methylphenol	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
4-Bromophenyl-phenylether	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
4-Chloro-3-methylphenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
4-Chloroaniline	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
4-Chlorophenyl-phenylether	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
4-Methylphenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
4-Nitroaniline	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
4-Nitrophenol	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
Acenaphthene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Acenaphthylene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Acetophenone	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Anthracene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Atrazine	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Benzaldehyde	5	J		NA		NA	10	U		NA		NA		NA	10	U	11		10			NA		NA	3	J		NA
Benzo(a)anthracene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Benzo(a)pyrene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Benzo(b)fluoranthene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Benzo(g,h,i)perylene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Benzo(k)fluoranthene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Bis(2-Chloroethoxy)methane	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Bis(2-Chloroethyl)ether	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
bis(2-Ethylhexyl)phthalate	5	J		NA		NA	6	JB		NA		NA		NA	1	J	10	U	2	J		NA		NA	10	U		NA
Butylbenzylphthalate	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Caprolactam	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Carbazole	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA

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SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	PTW-FB01		OFF-SB-RB01		OFF-SB-RB02		RB03		OFF-SB-RB04		OFF-SB-RB05		OFF-SB-RB06		RB07		RB08		RB09		OFF-SB-RB10		OFF-SB-RB11		RB12		OFF-SB-TB01	
Sample Location	Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank	
Date Sampled	11/26/2003		11/18/2003		11/18/2003		11/19/2003		11/20/2003		11/21/2003		11/24/2003		11/25/2003		11/26/2003		12/1/2003		12/2/2003		12/3/2003		12/4/2003		11/17/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Blank		Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Blank		Trip Blank	
Filtered																												
Chrysene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Dibenzo(a,h)anthracene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Dibenzofuran	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Diethylphthalate	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Dimethylphthalate	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Di-n-Butylphthalate	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	1	J		NA		NA	10	U		NA
Di-n-octylphthalate	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Fluoranthene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Fluorene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Hexachlorobenzene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Hexachlorobutadiene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Hexachlorocyclopentadiene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Hexachloroethane	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Indeno(1,2,3-cd)pyrene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Isophorone	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Naphthalene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Nitrobenzene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
N-Nitroso-di-n-propylamine	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
N-Nitroso-diphenylamine	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Pentachlorophenol	20	U		NA		NA	20	U		NA		NA		NA	20	U	20	U	20	U		NA		NA	20	U		NA
Phenanthrene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Phenol	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	5	J		NA		NA	10	U		NA
Pyrene	10	U		NA		NA	10	U		NA		NA		NA	10	U	10	U	10	U		NA		NA	10	U		NA
Low Concentration PAH (SIM) Analysis (UG/L)																												
2-Methylnaphthalene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.37		0.10	U	0.10	U	0.10	U	0.10	U		NA
Acenaphthene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Acenaphthylene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Anthracene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Benzo(a)anthracene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Benzo(a)pyrene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Benzo(b)fluoranthene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Benzo(g,h,i)perylene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Benzo(k)fluoranthene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Chrysene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Dibenzo(a,h)anthracene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Fluoranthene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Fluorene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Indeno(1,2,3-cd)pyrene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Naphthalene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Phenanthrene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Pyrene	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U		NA
Gasoline Range Organic Analysis (UG/L)																												
Gasoline Range Organics	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U	50	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
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SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	PTW-FB01		OFF-SB-RB01		OFF-SB-RB02		RB03		OFF-SB-RB04		OFF-SB-RB05		OFF-SB-RB06		RB07		RB08		RB09		OFF-SB-RB10		OFF-SB-RB11		RB12		OFF-SB-TB01	
Sample Location	Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank		Blank	
Date Sampled	11/26/2003		11/18/2003		11/18/2003		11/19/2003		11/20/2003		11/21/2003		11/24/2003		11/25/2003		11/26/2003		12/1/2003		12/2/2003		12/3/2003		12/4/2003		11/17/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Field Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Blank		Blank		Rinsate Blank		Rinsate Blank		Rinsate Blank		Blank		Trip Blank	
Filtered																												
TAL Metal Analysis (UG/L)																												
Aluminum	46.9	B	26.0	U	26.0	U	26.5	B	26.0	U	13.0	U	13.0	U	22.1	B	13.0	U	38.4	*	49.3	*	71.1	B	63.3	B		NA
Antimony	4.0	U	2.1	BN	2.0	U	5.1	B	2.0	U	4.9	B	6.2	B	4.0	U	4.0	U	2.0	U	2.0	U	4.0	U	4.0	U		NA
Arsenic	3.0	U	2.0	U	2.0	U	3.0	U	2.0	U	3.0	U	3.0	U	3.0	U	3.0	U	2.0	U	2.0	U	3.0	U	3.0	U		NA
Barium	10.6	B	7.4	B	6.7	B	4.0	B	4.3	B	3.1	B	1.8	B	3.1	B	1.7	B	3.0	U	3.3	B	0.60	U	0.60	U		NA
Beryllium	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U		NA
Cadmium	0.30	U	0.20	U	0.20	U	0.30	U	0.20	U	0.30	U	0.30	U	0.58	B	0.30	U	0.20	U	0.20	U	0.30	U	0.46	B		NA
Calcium	21100		55.8	B	64.7	B	167	B	38.0	U	158	U	158	U	206	B	158	U	38.0	U	38.0	U	158	U	239	B		NA
Chromium	0.88	B	0.60	U	0.60	U	0.44	B	0.60	U	0.30	U	0.86	B	0.55	B	0.36	B	0.60	U	0.60	U	0.30	U	0.32	B		NA
Cobalt	0.40	U	1.9	B	1.8	B	0.44	B	0.88	B	0.40	U	0.40	U	0.63	B	0.40	U	0.20	U	0.20	U	0.40	U	0.40	U		NA
Copper	34.7		6.3	B	3.8	B	0.80	U	7.6	B	0.80	U	0.80	U	5.3	B	4.0	B	5.7	B	6.5	B	4.5	B	2.5	B		NA
Iron	106	B	73.7	B	67.1	B	238		67.7	B	66.4	B	15.5		26.1	B	4.5	B	22.3	B*	14.3	B*	48.2	B	23.1	B		NA
Lead	4.2	B	1.3	B	0.73	B	2.0	U	0.70	U	2.2	B	2.0	U	2.0	U	2.0	U	0.70	U	0.70	U	2.1	B	2.0	U		NA
Magnesium	3430		7.0	U	7.0	U	15.0	B	16.7	B	14.6	B	9.0	U	23.1	B	9.0	U	7.0	U	7.0	U	70.4	B	23.9	B		NA
Manganese	5.6	B	5.5	B	2.3	B	7.9	B	2.0	U	2.5	B	1.3	B	2.8	B	0.98	B	2.0	U	2.0	U	0.71	B	0.85	B		NA
Mercury	0.13	U	0.12	U	0.14	U	0.13	U	0.12	U	0.14	U	0.13	U	0.13	U	0.14	U	0.14	U	0.16	U	0.13	U*	0.12	U		NA
Nickel	0.70	U	2.7	B	1.9	B	0.91	B	1.0	B	0.70	U	1.1	B	0.99	B	0.70	U	0.60	U	0.60	U	0.70	U	0.70	U		NA
Potassium	2910		290	B	146	B	75.4	B	57.0	U	78.1	B	57.0	U	126	B	88.7	B	125	B*	79.9	B*	158	B	423	B		NA
Selenium	5.0	U	3.0	U	3.0	U	5.0	U	3.0	U	5.0	U	5.0	U	5.1	B	5.0	U	3.0	U	3.0	U	5.0	U	5.0	U		NA
Silver	0.70	U	0.40	U	0.40	U	4.0	B	0.40	U	3.4	B	0.88	B	1.3	B	0.70	U	0.40	U	0.40	U	10.3	B	2.1	B		NA
Sodium	30400		152	B	100	B	78.3	B	43.0	U	78.5	B	43.0	U	43.0	U	43.0	U	43.0	U	43.0	U*	124	B	95.4	B		NA
Thallium	4.0	U	2.0	U	2.0	U	4.0	U	2.0	U	4.0	U	4.0	U	4.0	U	4.0	U	2.0	U	2.0	U	4.0	U	4.0	U		NA
Vanadium	1.8	B	0.40	U	0.40	U	0.60	U	0.40	U	0.60	U	0.60	U	0.60	U	0.60	U	0.40	U	0.40	U	0.60	U	0.60	U		NA
Zinc	10.2	B	10.2	B	7.2	B	5.5	B	2.9	B	4.1	B	4.5	B	9.3	B	3.8	B	4.3	B	4.9	B	7.1	B	8.6	B		NA
Total Petroleum Hydrocarbon Analysis (MG/L)																												
Total Petroleum Hydrocarbons	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U	0.35	U		NA

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	OFF-SB-TB02		OFF-SB-TB03		OFF-SB-TB04		OFF-SB-TB05		OFF-SB-TB06	
Sample Location	Blank		Blank		Blank		Blank		Blank	
Date Sampled	11/18/2003		11/19/2003		11/20/2003		11/24/2003		11/24/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
Filtered										
Semivolatile Organic Analysis (UG/L)										
1,1'-Biphenyl		NA		NA		NA		NA		NA
2,2'-oxybis(1-Chloropropane)		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol		NA		NA		NA		NA		NA
2,4,6-Trichlorophenol		NA		NA		NA		NA		NA
2,4-Dichlorophenol		NA		NA		NA		NA		NA
2,4-Dimethylphenol		NA		NA		NA		NA		NA
2,4-Dinitrophenol		NA		NA		NA		NA		NA
2,4-Dinitrotoluene		NA		NA		NA		NA		NA
2,6-Dinitrotoluene		NA		NA		NA		NA		NA
2-Chloronaphthalene		NA		NA		NA		NA		NA
2-Chlorophenol		NA		NA		NA		NA		NA
2-Methylnaphthalene		NA		NA		NA		NA		NA
2-Methylphenol		NA		NA		NA		NA		NA
2-Nitroaniline		NA		NA		NA		NA		NA
2-Nitrophenol		NA		NA		NA		NA		NA
3,3'-Dichlorobenzidine		NA		NA		NA		NA		NA
3-Nitroaniline		NA		NA		NA		NA		NA
4,6-Dinitro-2-methylphenol		NA		NA		NA		NA		NA
4-Bromophenyl-phenylether		NA		NA		NA		NA		NA
4-Chloro-3-methylphenol		NA		NA		NA		NA		NA
4-Chloroaniline		NA		NA		NA		NA		NA
4-Chlorophenyl-phenylether		NA		NA		NA		NA		NA
4-Methylphenol		NA		NA		NA		NA		NA
4-Nitroaniline		NA		NA		NA		NA		NA
4-Nitrophenol		NA		NA		NA		NA		NA
Acenaphthene		NA		NA		NA		NA		NA
Acenaphthylene		NA		NA		NA		NA		NA
Acetophenone		NA		NA		NA		NA		NA
Anthracene		NA		NA		NA		NA		NA
Atrazine		NA		NA		NA		NA		NA
Benzaldehyde		NA		NA		NA		NA		NA
Benzo(a)anthracene		NA		NA		NA		NA		NA
Benzo(a)pyrene		NA		NA		NA		NA		NA
Benzo(b)fluoranthene		NA		NA		NA		NA		NA
Benzo(g,h,i)perylene		NA		NA		NA		NA		NA
Benzo(k)fluoranthene		NA		NA		NA		NA		NA
Bis(2-Chloroethoxy)methane		NA		NA		NA		NA		NA
Bis(2-Chloroethyl)ether		NA		NA		NA		NA		NA
bis(2-Ethylhexyl)phthalate		NA		NA		NA		NA		NA
Butylbenzylphthalate		NA		NA		NA		NA		NA
Caprolactam		NA		NA		NA		NA		NA
Carbazole		NA		NA		NA		NA		NA

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SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	OFF-SB-TB02		OFF-SB-TB03		OFF-SB-TB04		OFF-SB-TB05		OFF-SB-TB06	
Sample Location	Blank		Blank		Blank		Blank		Blank	
Date Sampled	11/18/2003		11/19/2003		11/20/2003		11/24/2003		11/24/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
Filtered										
Chrysene		NA		NA		NA		NA		NA
Dibenzo(a,h)anthracene		NA		NA		NA		NA		NA
Dibenzofuran		NA		NA		NA		NA		NA
Diethylphthalate		NA		NA		NA		NA		NA
Dimethylphthalate		NA		NA		NA		NA		NA
Di-n-Butylphthalate		NA		NA		NA		NA		NA
Di-n-octylphthalate		NA		NA		NA		NA		NA
Fluoranthene		NA		NA		NA		NA		NA
Fluorene		NA		NA		NA		NA		NA
Hexachlorobenzene		NA		NA		NA		NA		NA
Hexachlorobutadiene		NA		NA		NA		NA		NA
Hexachlorocyclopentadiene		NA		NA		NA		NA		NA
Hexachloroethane		NA		NA		NA		NA		NA
Indeno(1,2,3-cd)pyrene		NA		NA		NA		NA		NA
Isophorone		NA		NA		NA		NA		NA
Naphthalene		NA		NA		NA		NA		NA
Nitrobenzene		NA		NA		NA		NA		NA
N-Nitroso-di-n-propylamine		NA		NA		NA		NA		NA
N-Nitroso-diphenylamine		NA		NA		NA		NA		NA
Pentachlorophenol		NA		NA		NA		NA		NA
Phenanthrene		NA		NA		NA		NA		NA
Phenol		NA		NA		NA		NA		NA
Pyrene		NA		NA		NA		NA		NA
Low Concentration PAH (SIM) Analysis (UG/L)										
2-Methylnaphthalene		NA		NA		NA		NA		NA
Acenaphthene		NA		NA		NA		NA		NA
Acenaphthylene		NA		NA		NA		NA		NA
Anthracene		NA		NA		NA		NA		NA
Benzo(a)anthracene		NA		NA		NA		NA		NA
Benzo(a)pyrene		NA		NA		NA		NA		NA
Benzo(b)fluoranthene		NA		NA		NA		NA		NA
Benzo(g,h,i)perylene		NA		NA		NA		NA		NA
Benzo(k)fluoranthene		NA		NA		NA		NA		NA
Chrysene		NA		NA		NA		NA		NA
Dibenzo(a,h)anthracene		NA		NA		NA		NA		NA
Fluoranthene		NA		NA		NA		NA		NA
Fluorene		NA		NA		NA		NA		NA
Indeno(1,2,3-cd)pyrene		NA		NA		NA		NA		NA
Naphthalene		NA		NA		NA		NA		NA
Phenanthrene		NA		NA		NA		NA		NA
Pyrene		NA		NA		NA		NA		NA
Gasoline Range Organic Analysis (UG/L)										
Gasoline Range Organics	50	U	50	U	50	U	50	U	50	U

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R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	OFF-SB-TB02		OFF-SB-TB03		OFF-SB-TB04		OFF-SB-TB05		OFF-SB-TB06	
Sample Location	Blank		Blank		Blank		Blank		Blank	
Date Sampled	11/18/2003		11/19/2003		11/20/2003		11/24/2003		11/24/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank	
Filtered										
TAL Metal Analysis (UG/L)										
Aluminum		NA		NA		NA		NA		NA
Antimony		NA		NA		NA		NA		NA
Arsenic		NA		NA		NA		NA		NA
Barium		NA		NA		NA		NA		NA
Beryllium		NA		NA		NA		NA		NA
Cadmium		NA		NA		NA		NA		NA
Calcium		NA		NA		NA		NA		NA
Chromium		NA		NA		NA		NA		NA
Cobalt		NA		NA		NA		NA		NA
Copper		NA		NA		NA		NA		NA
Iron		NA		NA		NA		NA		NA
Lead		NA		NA		NA		NA		NA
Magnesium		NA		NA		NA		NA		NA
Manganese		NA		NA		NA		NA		NA
Mercury		NA		NA		NA		NA		NA
Nickel		NA		NA		NA		NA		NA
Potassium		NA		NA		NA		NA		NA
Selenium		NA		NA		NA		NA		NA
Silver		NA		NA		NA		NA		NA
Sodium		NA		NA		NA		NA		NA
Thallium		NA		NA		NA		NA		NA
Vanadium		NA		NA		NA		NA		NA
Zinc		NA		NA		NA		NA		NA
Total Petroleum Hydrocarbon Analysis (MG/L)										
Total Petroleum Hydrocarbons		NA		NA		NA		NA		NA

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R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	OFF-SB-TB07		OFF-SB-TB08		OFF-SB-TB09		OFF-SB-TB10		OFF-SB-TB11		OFF-SB-TB12		OFF-SB-TB13		DIUF-FB01	
Sample Location	Blank		Blank		Blank		Blank		Blank		Blank		Blank		DIUF	
Date Sampled	11/25/2003		11/26/2003		11/26/2003		12/1/2003		12/1/2003		12/2/2003		12/3/2003		11/21/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Field Blank	
Filtered																
Semivolatile Organic Analysis (UG/L)																
1,1'-Biphenyl		NA		NA		NA		NA		NA		NA		NA	10	U
2,2'-oxybis(1-Chloropropane)		NA		NA		NA		NA		NA		NA		NA	10	U
2,4,5-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA	20	U
2,4,6-Trichlorophenol		NA		NA		NA		NA		NA		NA		NA	10	U
2,4-Dichlorophenol		NA		NA		NA		NA		NA		NA		NA	10	U
2,4-Dimethylphenol		NA		NA		NA		NA		NA		NA		NA	10	U
2,4-Dinitrophenol		NA		NA		NA		NA		NA		NA		NA	20	U
2,4-Dinitrotoluene		NA		NA		NA		NA		NA		NA		NA	10	U
2,6-Dinitrotoluene		NA		NA		NA		NA		NA		NA		NA	10	U
2-Chloronaphthalene		NA		NA		NA		NA		NA		NA		NA	10	U
2-Chlorophenol		NA		NA		NA		NA		NA		NA		NA	10	U
2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA	10	U
2-Methylphenol		NA		NA		NA		NA		NA		NA		NA	10	U
2-Nitroaniline		NA		NA		NA		NA		NA		NA		NA	20	U
2-Nitrophenol		NA		NA		NA		NA		NA		NA		NA	10	U
3,3'-Dichlorobenzidine		NA		NA		NA		NA		NA		NA		NA	10	U
3-Nitroaniline		NA		NA		NA		NA		NA		NA		NA	20	U
4,6-Dinitro-2-methylphenol		NA		NA		NA		NA		NA		NA		NA	20	U
4-Bromophenyl-phenylether		NA		NA		NA		NA		NA		NA		NA	10	U
4-Chloro-3-methylphenol		NA		NA		NA		NA		NA		NA		NA	10	U
4-Chloroaniline		NA		NA		NA		NA		NA		NA		NA	10	U
4-Chlorophenyl-phenylether		NA		NA		NA		NA		NA		NA		NA	10	U
4-Methylphenol		NA		NA		NA		NA		NA		NA		NA	10	U
4-Nitroaniline		NA		NA		NA		NA		NA		NA		NA	20	U
4-Nitrophenol		NA		NA		NA		NA		NA		NA		NA	20	U
Acenaphthene		NA		NA		NA		NA		NA		NA		NA	10	U
Acenaphthylene		NA		NA		NA		NA		NA		NA		NA	10	U
Acetophenone		NA		NA		NA		NA		NA		NA		NA	10	U
Anthracene		NA		NA		NA		NA		NA		NA		NA	10	U
Atrazine		NA		NA		NA		NA		NA		NA		NA	10	U
Benzaldehyde		NA		NA		NA		NA		NA		NA		NA	2	J
Benzo(a)anthracene		NA		NA		NA		NA		NA		NA		NA	10	U
Benzo(a)pyrene		NA		NA		NA		NA		NA		NA		NA	10	U
Benzo(b)fluoranthene		NA		NA		NA		NA		NA		NA		NA	10	U
Benzo(g,h,i)perylene		NA		NA		NA		NA		NA		NA		NA	10	U
Benzo(k)fluoranthene		NA		NA		NA		NA		NA		NA		NA	10	U
Bis(2-Chloroethoxy)methane		NA		NA		NA		NA		NA		NA		NA	10	U
Bis(2-Chloroethyl)ether		NA		NA		NA		NA		NA		NA		NA	10	U
bis(2-Ethylhexyl)phthalate		NA		NA		NA		NA		NA		NA		NA	4	JB
Butylbenzylphthalate		NA		NA		NA		NA		NA		NA		NA	10	U
Caprolactam		NA		NA		NA		NA		NA		NA		NA	10	U
Carbazole		NA		NA		NA		NA		NA		NA		NA	10	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	OFF-SB-TB07		OFF-SB-TB08		OFF-SB-TB09		OFF-SB-TB10		OFF-SB-TB11		OFF-SB-TB12		OFF-SB-TB13		DIUF-FB01	
Sample Location	Blank		Blank		Blank		Blank		Blank		Blank		Blank		DIUF	
Date Sampled	11/25/2003		11/26/2003		11/26/2003		12/1/2003		12/1/2003		12/2/2003		12/3/2003		11/21/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Field Blank	
Filtered																
Chrysene		NA		NA		NA		NA		NA		NA		NA	10	U
Dibenzo(a,h)anthracene		NA		NA		NA		NA		NA		NA		NA	10	U
Dibenzofuran		NA		NA		NA		NA		NA		NA		NA	10	U
Diethylphthalate		NA		NA		NA		NA		NA		NA		NA	10	U
Dimethylphthalate		NA		NA		NA		NA		NA		NA		NA	10	U
Di-n-Butylphthalate		NA		NA		NA		NA		NA		NA		NA	10	U
Di-n-octylphthalate		NA		NA		NA		NA		NA		NA		NA	10	U
Fluoranthene		NA		NA		NA		NA		NA		NA		NA	10	U
Fluorene		NA		NA		NA		NA		NA		NA		NA	10	U
Hexachlorobenzene		NA		NA		NA		NA		NA		NA		NA	10	U
Hexachlorobutadiene		NA		NA		NA		NA		NA		NA		NA	10	U
Hexachlorocyclopentadiene		NA		NA		NA		NA		NA		NA		NA	10	U
Hexachloroethane		NA		NA		NA		NA		NA		NA		NA	10	U
Indeno(1,2,3-cd)pyrene		NA		NA		NA		NA		NA		NA		NA	10	U
Isophorone		NA		NA		NA		NA		NA		NA		NA	10	U
Naphthalene		NA		NA		NA		NA		NA		NA		NA	10	U
Nitrobenzene		NA		NA		NA		NA		NA		NA		NA	10	U
N-Nitroso-di-n-propylamine		NA		NA		NA		NA		NA		NA		NA	10	U
N-Nitroso-diphenylamine		NA		NA		NA		NA		NA		NA		NA	10	U
Pentachlorophenol		NA		NA		NA		NA		NA		NA		NA	20	U
Phenanthrene		NA		NA		NA		NA		NA		NA		NA	10	U
Phenol		NA		NA		NA		NA		NA		NA		NA	10	U
Pyrene		NA		NA		NA		NA		NA		NA		NA	10	U
Low Concentration PAH (SIM) Analysis (UG/L)																
2-Methylnaphthalene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Acenaphthene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Acenaphthylene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Anthracene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Benzo(a)anthracene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Benzo(a)pyrene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Benzo(b)fluoranthene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Benzo(g,h,i)perylene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Benzo(k)fluoranthene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Chrysene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Dibenzo(a,h)anthracene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Fluoranthene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Fluorene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Indeno(1,2,3-cd)pyrene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Naphthalene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Phenanthrene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Pyrene		NA		NA		NA		NA		NA		NA		NA	0.10	U
Gasoline Range Organic Analysis (UG/L)																
Gasoline Range Organics		NA	50	U		NA	50	U	50	U	50	U	50	U	50	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

SUBSURFACE SOIL
ANALYTICAL RESULTS
OFFTA, NEWPORT, RI

Sample Number	OFF-SB-TB07		OFF-SB-TB08		OFF-SB-TB09		OFF-SB-TB10		OFF-SB-TB11		OFF-SB-TB12		OFF-SB-TB13		DIUF-FB01	
Sample Location	Blank		Blank		Blank		Blank		Blank		Blank		Blank		DIUF	
Date Sampled	11/25/2003		11/26/2003		11/26/2003		12/1/2003		12/1/2003		12/2/2003		12/3/2003		11/21/2003	
Interval	0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0	
QC Identifier	Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Trip Blank		Field Blank	
Filtered																
TAL Metal Analysis (UG/L)																
Aluminum		NA		NA		NA		NA		NA		NA		NA	26.0	U
Antimony		NA		NA		NA		NA		NA		NA		NA	2.0	U
Arsenic		NA		NA		NA		NA		NA		NA		NA	2.0	U
Barium		NA		NA		NA		NA		NA		NA		NA	7.6	B
Beryllium		NA		NA		NA		NA		NA		NA		NA	0.20	U
Cadmium		NA		NA		NA		NA		NA		NA		NA	0.20	U
Calcium		NA		NA		NA		NA		NA		NA		NA	38.0	U
Chromium		NA		NA		NA		NA		NA		NA		NA	1.4	B
Cobalt		NA		NA		NA		NA		NA		NA		NA	2.2	B
Copper		NA		NA		NA		NA		NA		NA		NA	1.1	B
Iron		NA		NA		NA		NA		NA		NA		NA	83.3	B
Lead		NA		NA		NA		NA		NA		NA		NA	0.70	U
Magnesium		NA		NA		NA		NA		NA		NA		NA	32.4	B
Manganese		NA		NA		NA		NA		NA		NA		NA	2.2	B
Mercury		NA		NA		NA		NA		NA		NA		NA	0.12	U
Nickel		NA		NA		NA		NA		NA		NA		NA	4.0	B
Potassium		NA		NA		NA		NA		NA		NA		NA	57.0	U
Selenium		NA		NA		NA		NA		NA		NA		NA	3.0	U
Silver		NA		NA		NA		NA		NA		NA		NA	0.40	U
Sodium		NA		NA		NA		NA		NA		NA		NA	43.0	U
Thallium		NA		NA		NA		NA		NA		NA		NA	2.0	U
Vanadium		NA		NA		NA		NA		NA		NA		NA	0.40	U
Zinc		NA		NA		NA		NA		NA		NA		NA	2.8	B
Total Petroleum Hydrocarbon Analysis (MG/L)																
Total Petroleum Hydrocarbons		NA		NA		NA		NA		NA		NA		NA	0.35	U

Black Background = Criteria Exceeded; U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
R - Rejected; NA - Not Analyzed; * - From dilution analysis

APPENDIX F
CALCULATIONS

TABLE F-1
AVERAGE METALS CONCENTRATIONS IN FILL
SOIL PREDESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Sample Number	OFF-SB-400-0002	OFF-SB-400-0608	OFF-SB-402-0204	OFF-SB-403-0204	OFF-SB-403-0608	OFF-SB-404-0204	OFF-SB-404-0608	OFF-SB-404-1012	OFF-SB-405-0204	OFF-SB-405 0608	OFF-SB-406-0608	OFF-SB-408-0204	OFF-SB-410-0204	OFF-SB-416-0406
Sample Location	400	400	402	403	403	404	404	404	405	405	406	408	410	416
Interval	0.0-2.0	6.0-8.0	2.0-4.0	2.0-4.0	6.0-8.0	2.0-4.0	6.0-8.0	10.0-12.0	2.0-4.0	6.0-8.0	6.0-8.0	2.0-4.0	2.0-4.0	4.0-6.0
QC Identifier	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Antimony	0.98 BN*	0.38 BN*	0.79 BN	1 BN	3.9 N	39.4 N	3.4 N	2.3 N	0.9 BN	0.84 BN	8.7 N	0.54 BN	0.27 UN	6.2 N
Arsenic	0.49 B*	4.3 *	4 B	6.7 *	9.4 *	27.8	9.3 *	8.6 *	10.7	3.8 B	2.9	4.3 B	10	11.8
Beryllium	0.0055 U*	0.2 B*	0.24 B	0.22 B	0.3	0.42 B	0.55	0.23 B	0.26 B	0.21 B	0.5	0.2 B	0.22 B	0.43
Lead	8.9 *	33.2 *	147 N*	22.3 NE*	1950 NE*	8250	2490 NE*	729 NE*	846 N*	64.9 N*	107 E	71.2 N*	42.4	136
Manganese	313 *	516 *	220 *	471 E	382 E	806	185 E	351 E	543 *	279 *	481 E	1010 *	274	570

*number is averaged from dup and sample
**samples with a "U" qualifier are listed for purposes of averaging as 1/2 the detection limit
Black Background = Criteria Exceeded
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

TABLE F-1
AVERAGE METALS CONCENTRATIONS IN FILL
SOIL PREDESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Sample Number	OFF-SB-416-0810	OFF-SB-417-0406	OFF-SB-417-0608	OFF-SB-419 0204	OFF-SB-420 0204	OFF-SB-421 0204	OFF-SB-427 0204	OFF-SB-428 0204	OFF-SB-429 0406	OFF-SB-430 0204	OFF-SB-432 0204	OFF-SB-432 0608	OFF-SB-433 1214	OFF-B132-112393
Sample Location	416	417	417*	419	420	421*	427	428	429	430	432	432	433	B-13
Interval	8.0-10.0	4.0-6.0	6.0-8.0	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	4.0-6.0	2.0-4.0	2.0-4.0	6.0-8.0	12.0-14.0	4.0-6.0
QC Identifier	None	None	Dup.	None	None	Field Dup.	None	None	None	None	None	None	None	None
Antimony	7.1 N	5.5 N	4.9 N	1.3 BN	0.1 UN	4.95 N	6 N	19.3 N	2.1 N	19.7 N	0.1 UN	0.105 UN	1.5 N	2.95 UJ
Arsenic	12.4	7.8	8.4	34.7	9.1	9.25	8.3	17.3	6.9 *	0.08 U	6.2	7.2	15	6.3 J
Beryllium	0.52	0.44	0.33	0.6 B	0.73	0.53	0.39	0.32 B	0.29	0.33	0.35 B	0.42 B	0.34	0.25 B
Lead	20.7	101	101.6	14.3 N*	77.7	200.5 *	47.1 *	760 *	2490 NE*	127 E	158	188	55 E	68.6
Manganese	189	129	192.5	209 *	448	224.5	342	383	173 E	557 E	314	344	582 E	309

*number is averaged from dup and sample
**samples with a "U" qualifier are listed for purposes of averaging as 1/2 the detection limit
Black Background = Criteria Exceeded
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

TABLE F-1
AVERAGE METALS CONCENTRATIONS IN FILL
SOIL PREDESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Sample Number	OFF-S-TP-05-0708		OFF-S-TP-06-0607		OFF-S-TP-07-0708		OFF-S-TP-11-0506-MAX		OFF-S-TP-12-0405		OFF-S-TP-13-0607		OFF-S-TP-15-0506		OFF-S-TP-16-1011		OFF-S-TP-17-0809-MAX		OFF-TP12-011194		OFF-TP13-011194		OFF-TP31-011194		OFF-TP32-011194		
Sample Location	TP-05		TP-06		TP-07		TP-11		TP-12		TP-13		TP-15		TP-16		TP-17		TP-12		TP-13		TP-31		TP-32		
Interval	7.0-8.0		6.0-7.0		7.0-8.0		5.0-6.0		4.0-5.0		6.0-7.0		5.0-6.0		10.0-11.0		8.0-9.0		0.0-0.0		0.0-0.0		0.0-0.0		0.0-0.0		
QC Identifier	None		None		None		Field Dup.		None		None		None		None		Field Dup.		None		None		None		None		E
Antimony	0.245	U	0.18	U	0.465	U	0.255	U	0.22	U	39.2	J	0.38	U	4	J	0.18	U	3.15	U	2.9	U	6.7		3	U	5.0
Arsenic	14.3	J	5.7	J	6.2	J	8.3		4.8	J	18.3	J	9.9	J	74.4	J	8.2		4.1	J	2.6	J	16.3	J	2.9	J	10.7
Beryllium	0.135	U	0.16	U	0.145	U	0.23	U	0.11	U	0.1	U	0.19	U	0.24	J	0.16	U	0.28	B	0.37	B	0.12	U	0.29	B	0.30
Lead	540	J	55.5	J	40.7	J	563		283	J	7820	J	766	J	3350		13.3		475	J	40.1	J	3090	J	67.6	J	888.1
Manganese	698	J	410	J	417	J	306		516	J	898	J	157	J	1110	J	267		255	J	186	J	299	J	413	J	408.0

*number is averaged from dup and sample
**samples with a "U" qualifier are listed for purposes of averaging as 1/2 the detection limit
Black Background = Criteria Exceeded
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

TABLE F-2
AVERAGE METALS CONCENTRATIONS IN NATIVE SOIL (EXCLUDES TILL)
SOIL PREDESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Sample Number	OFF-SB-402-0810	OFF-SB-402-1214	OFF-SB-417-1416	OFF-SB-428-1012	OFF-SB-428-1416	OFF-SB-428-1820	OFF-SB-429-1416	OFF-SB-429-1820	FF-B052-417	
Sample Location	402	402	417	428	428	428	429	429	B-5	
Interval	8.0-10.0	12.0-14.0	14.0-16.0	10.0-12.0	14.0-16.0	18.0-20.0	14.0-16.0	18.0-20.0	6.0-8.0	
QC Identifier	None	None	None	None	None	None	None	None	None	AVERAGE
Antimony	0.85 UN	0.7 BN	9.7 N	3.6 N	8.6 N	10.7 N	0.84 BN	0.59 BN	NA	4.4
Arsenic	4.4 B	3.3 B	14.3	4.4	8	7.6	6.1 *	4.9 *	1.4	6.0
Beryllium	0.19 B	0.23 B	0.41	0.18 B	0.38 B	0.34 B	0.24 B	0.25 B	NA	0.28
Lead	1300 N*	37.7 N*	14.8	25.8 *	8 *	7.6 *	28 NE*	11.7 NE*	7	160.1
Manganese	152 *	92.5 *	1540	99.9	165	421	198 E	270 E	70.7	334.3

**samples with a "U" qualifier are listed as 1/2 the detection limit for averaging
Black Background = Criteria Exceeded
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

TABLE F-3
AVERAGE METALS CONCENTRATIONS IN TILL
SOIL PRE DESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Sample Number	OFF-SB-402-1618	OFF-SB-402-1820	OFF-SB-405-1416	OFF-SB-406-1820	OFF-SB-407-1618	OFF-SB-407-2022	OFF-SB-409-1012	OFF-SB-416-1618	OFF-SB-417-1820	OFF-SB-418-1618	OFF-SB-419-1012	OFF-SB-420-1012
Sample Location	402	402	405	406	407	407*	409	416	417	418*	419	420
Interval	16.0-18.0	18.0-20.0	14.0-16.0	18.0-20.0	16.0-18.0	20.0-22.0	10.0-12.0	16.0-18.0	18.0-20.0	16.0-18.0	10.0-12.0	10.0-12.0
QC Identifier	None	None	None	None	None	Field Dup.	None	None	None	Field Dup.	None	None
Antimony	1 BN	0.89 BN	0.99 BN	6.6 N	0.56 BN*	1.095 BN*	0.235 UN	8.9 N	8.7 N	6.85 N	0.87 BN	13.9 N
Arsenic	8	8.6	25.4	3.1	4 *	3.4 *	13.2	25.9	14.1	5.2	69.2	7.2
Beryllium	0.44 B	0.34 B	0.45 B	0.22 B	0.3 *	0.36 *	0.28 B	0.42	0.45	0.39	0.66 B	0.38 B
Lead	17.4 N*	12.9 N*	10.1 N*	10.9 E	13.1 *	9.8 *	32.2	12.4	12.2	10.3 E	6.6 N*	8.5 *
Manganese	297 *	311 *	3520 *	335 E	352 *	430.5 *	716	3210	219	1360 E	737 *	428

*number is averaged from dup and sample
**samples with a "U" qualifier are listed as 1/2 the detection limit for averaging
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

Black Background = Criteria Exceeded
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

TABLE F-3
AVERAGE METALS CONCENTRATIONS IN TILL
SOIL PRE DESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Sample Number	OFF-SB-421-1820		OFF-SB-422-1820		OFF-SB-432-1820		OFF-SB-433-2426		OFF-S-MW101-0608		
Sample Location	421		422		432		433*		MW-101		
Interval	18.0-20.0		18.0-20.0		18.0-20.0		24.0-26.0		6.0-8.0		
QC Identifier	None		None		None		Field Dup.		None		AVERAGE
Antimony	11.3	N	10.5	N	0.255	UN	0.92	N	0.175	UR	4.3
Arsenic	11.9		2		4.5	B	3.925		9.3	J	12.9
Beryllium	0.44	B	0.4		0.15	B	0.405		0.12	U	0.37
Lead	10.6	*	10.7	E	8.8		15.375	E	12.7		12.6
Manganese	284		514	E	181		2247.5	E	144	J	899.2

*number is averaged from dup and sample
**samples with a "U" qualifier are listed as 1/2 the detection limit for averaging
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

Black Background = Criteria Exceeded
U - Not detected
UJ - Detection limit approximate
J - Quantitation approximate;
R - Rejected
NA - Not Analyzed
* - From dilution analysis

TABLE F-4
GROUNDWATER ELEVATIONS (8/2002)
SOIL PREDESIGN INVESTIGATION REPORT, APPENDIX F
OLD FIRE FIGHTING TRAINING AREA

Well ID	Date	water level indicator reading	measure from	LNAPL/ DNAPL present?	elevation top of PVC (1)	elevation ground surface (1)	depth GW below ground surface (ft)	elevation GW (1)
MW-1R	8/8/2002	5.94	top of PVC	No	11.14	11.34	6.14	5.20
MW-2D	8/8/2002	4.12	top of PVC	No	8.56	9.16	4.72	4.44
MW-3S	8/8/2002	5.77	top of PVC	No	9.61	9.83	5.99	3.84
MW-4S	8/8/2002	4.60	top of PVC	No	7.53	7.73	4.80	2.93
MW-5S	8/8/2002	6.99	top of PVC	No	12.30	12.47	7.16	5.31
MW-6S	8/8/2002	8.23	top of PVC	No	13.39	13.59	8.43	5.16
MW-6R	8/8/2002	8.14	top of PVC	No	13.49	13.81	8.46	5.35
MW-8R	8/8/2002	6.50	top of PVC	No	11.90	12.70	7.30	5.40
MW-9R	8/8/2002	6.12	top of PVC	No	11.18	11.73	6.67	5.06
MW-10S	8/8/2002	6.25	top of PVC	No	10.20	10.35	6.40	3.95
MW-11S	8/8/2002	4.02	top of PVC	No	7.70	7.85	4.17	3.68
MW-101	8/8/2002	5.65	top of PVC	No	9.20	9.40	5.85	3.55
MW-102	8/8/2002	4.50	top of PVC	No	8.10	8.30	4.70	3.60

(1) elevation = feet above MLW (NGVD 1929)
note: monitoring wells MW-11R and MW-7S could not be located
monitoring well MW-2S was permanently sealed

TABLE F-5
VOLUME OF FILL AND SOIL EXCEEDING PRGS
SOIL PREDESIGN INVESTIGATION, APPENDIX E
OLD FIRE FIGHTING TRAINING AREA
NAVAL STATION NEWPORT, NEWPORT RHODE ISLAND

Grid Cell	Boring Number	Elev.	Base Grade Elev.(1)	Fill Elev.		PRG Exceed. Elev.		Fill/PRG Excedance		Notes	PRG Exceeded	Area (sq ft)	Volume (CY)
				Top	Bottom	Top	Bottom	Bottom Elev.	Depth				
AREA 1													
C1	SB415	13.3	8.0	8.0	7.3	7.3	**1.3**	1.3	6.7		As, Mn, Pb	3,675	912
C2	SB416	11.5	8.0	8.0	2.5	7.5	**-6.5**	-6.5	14.5		PAH, As, Be, Mn	9,350	5,021
C3	SB417	8.5	8.0	8.5	-0.5	4.5	**-11.5**	-11.5	19.5		As, Be, Mn	7,675	5,714
	SB433	17.3	8.0	7.3	1.3	5.3	**-12.7**	-12.7	20.7		Be, Mn		
C4	SB418	10.0	8.0	8.0	3.0	6.0	**-8.0**	-8.0	16.0		Be, Mn, Pb	8,625	5,111
												AREA 1 sub total	**16,758**
AREA 2													
B2	SB405	7.0	7.0	7.0	-4.0	5.0	**-9.0**	-9.0	16.0		PAHs, As, Be, Mn, Pb	3,525	2,089
B3	SB406	11.4	7.0	6.4	1.4	5.4	**-8.6**	-8.6	15.6		PAHs, Be, Mn, Pb	4,650	2,687
B4	SB407	12.9	7.0	7.6	6.9	4.9	**-9.1**	-9.1	16.1		PAHs, TPH, As, Mn	7,500	4,472
												AREA 2 sub total	**9,248**
AREA 3													
B5	SB408	8.0	8.0	8.0	4.0	6.0	**0.0**	0.0	8.0		PAHs, TPH, Mn	10,000	2,963
B6	SB409	9.1	9.1	9.1	5.1	5.1	**-2.9**	-2.9	12.0		TPH, As, Be, Mn	10,000	4,444
B7	SB410	9.4	9.4	9.4	3.4	7.4	**-10.6**	-10.6	20.0		TPH, As, Be, Mn	10,000	7,407
C5	SB419	8.4	8.4	8.4	4.4	6.4	**-3.6**	-3.6	12.0		TPH, As, Be, Mn	9,675	4,300
C6	SB420	10.0	10.0	10.0	6.0	8.0	**-6.0**	-6.0	16.0		PAHs, TPH, As, Be, Mn, Sb	10,000	5,926
	SB432	9.8	9.8	9.8	1.8	7.8	**-6.2**	-6.2	16.0		PAHs, TPH, As, Be, Mn, Pb		
C7	SB421	10.8	10.8	10.8	6.8	8.8	**-9.2**	-9.2	20.0		PAHs, TPH, As, Be, Mn, Pb, Sb	10,000	7,407
C8	SB422	11.8	11.8	NA	NA	9.8	**-8.2**	-8.2	20.0	(2)	PAHs, Be, Mn, Sb	3,475	2,574
												AREA 3 sub total	**35,022**
AREA 4													
A5	SB400	7.3	7.3	7.3	-0.7	5.3	**-0.7**	-0.7	8.0		Mn	5,175	1,533
A6	SB401	7.9	7.9	7.9	5.9	5.9	**-4.1**	-4.1	12.0		PAHs, Mn	10,850	4,019
	SB427	8.3	8.3	8.3	1.3	6.3	**0.3**	0.3	8.0		PAHs, As		
A7	SB402	8.4	8.4	8.4	0.4	6.4	**-11.6**	-11.6	20.0		As, Be, Pb	7,575	5,611
												AREA 4 sub total	**11,163**
AREA 5													
B8	SB411	31.0	10.5	11.0	**10.0**	29.0	11.0	10.0	0.5		Be, Mn	10,000	185
B9	SB412	24.5	10.5	10.5	10.0	10.5	**8.5**	8.5	2.0		Mn	10,000	741
C9	SB423	11.9	11.9	11.9	**5.9**	9.9	7.9	5.9	6.0		Mn	6,150	1,594
	SB434	11.5	11.5	NA	NA	9.5	**3.5**	3.5	8.0	(2)	As, Mn		
C10	SB424	12.0	12.0	NA	NA	10.0	**8.0**	8.0	4.0	(2)	Mn	9,450	1,400
C11	SB425	12.1	12.1	NA	NA	10.1	**8.1**	8.1	4.0	(2)	As, Mn	10,000	1,481
C12	SB426	11.5	11.5	NA	NA	9.5	**7.5**	7.5	4.0	(2)	As, Mn, Sb	8,875	1,315
												AREA 5 sub total	**6,717**
AREA 6													
A8	SB403	9.4	9.4	9.4	-0.6	7.4	**-10.6**	-10.6	20.0		PAHs, TPH, As, Mn, Pb	8,775	5,200
	SB429	8.6	8.6	8.6	2.6	4.6	**-3.4**	-3.4	12.0		PAHs, TPH, As, Pb, Sb		
A9	SB404	8.9	8.9	8.9	-3.1	6.9	**-11.1**	-11.1	20.0		PAHs, TPH, As, Be, Mn, Pb, Sb	5,675	4,204
B10	SB413	10.6	10.6	10.6	7.6	8.6	**6.6**	6.6	4.0		PAHs, TPH, Mn	5,000	741
B11	SB414	10.7	10.7	NA	NA	8.7	**-1.3**	-1.3	12.0	(2)	PAHs, TPH, As, Mn, Pb	6,400	2,844
A7	SB428	8.0	8.0	8.0	2.0	6.0	**-12.0**	-12.0	20.0		PAHs, TPH, As, Mn, Pb, Sb	2,000	1,481
A10	SB430	9.8	9.8	9.8	5.8	7.8	**-6.2**	-6.2	16.0		PAHs, TPH, As, Be, Mn, Pb, Sb	1,625	963
B12	SB431	11.1	11.1	11.1	3.1	9.1	**-0.9**	-0.9	12.0		TPH, As, Mn, Pb	1,050	467
												AREA 6 sub total	**15,900**
												Total	**94,808**

Notes:
Bolded bottom elevation: lowest fill or PRG exceddance elevation in that boring.
(1) elevations are presented as feet NGVD 1929 (MLW)
(2) Fill not present.

TABLE F-6
VOLUME OF FILL AND SOIL EXCEEDING RECOMMENDED REMOVAL ACTION GOALS
SOIL PREDESIGN INVESTIGATION, APPENDIX E
OLD FIRE FIGHTING TRAINING AREA
NAVAL STATION NEWPORT, NEWPORT RHODE ISLAND

Grid Cell	Boring Number	Elev.	Base Grade Elev.(1)	Fill Elev.		Recommended Removal Action Goal Elev.		Fill/Recommended Removal Action Goal		Notes	Rec. Removal Action Goals Exceeded	Area (sq ft)	Volume (CY)
				Top	Bottom	Top	Bottom	Bottom Elev.	Depth				
AREA 1													
C1	SB415	13.3	8.0	8.0	**7.3**	7.3	1.3	1.3	6.7		Pb	3,675	912
C2	SB416	11.5	8.0	8.0	**2.5**	7.5	5.5	2.5	5.5		PAH	9,350	1,905
C3	SB417	8.5	8.0	8.5	**-0.5**	NA	NA	-0.5	8.5		None	7,675	2,160
	SB433	17.3	8.0	7.3	**1.3**	NA	NA	1.3	6.7		None		
C4	SB418	10.0	8.0	8.0	**3.0**	6.0	4.0	3.0	5.0		Pb	8,625	1,597
												AREA 1 sub total	**6,574**
AREA 2													
B2	SB405	7.0	7.0	7.0	-4.0	5.0	**-1.0**	-4.0	11.0		PAHs, Pb	3,525	1,436
B3	SB406	11.4	7.0	6.4	**1.4**	5.4	3.4	1.4	5.6		PAHs, Pb	4,650	964
B4	SB407	12.9	7.0	7.6	6.9	4.9	**-1.1**	-1.1	8.1		PAHs, TPH	7,500	2,250
												AREA 2 sub total	**4,651**
AREA 3													
B5	SB408	8.0	8.0	8.0	4.0	6.0	**0.0**	0.0	8.0		PAHs, TPH, Mn	10,000	2,963
B6	SB409	9.1	9.1	9.1	5.1	5.1	**1.1**	1.1	8.0		TPH	10,000	2,963
B7	SB410	9.4	9.4	9.4	3.4	3.4	**1.4**	1.4	8.0		TPH	10,000	2,963
C5	SB419	8.4	8.4	8.4	4.4	6.4	**0.4**	0.4	8.0		TPH	9,675	2,867
C6	SB420	10.0	10.0	10.0	6.0	8.0	**-2.0**	-2.0	12.0		PAHs, TPH	10,000	3,704
	SB432	9.8	9.8	9.8	**1.8**	7.8	**1.8**	1.8	8.0		PAHs, TPH, Pb		
C7	SB421	10.8	10.8	10.8	6.8	8.8	**2.8**	2.8	8.0		PAHs, TPH, Pb	10,000	2,963
C8	SB422	11.8	11.8	NA	NA	9.8	**7.8**	7.8	4.0	(2)	PAHs	3,475	515
												AREA 3 sub total	**18,937**
AREA 4													
A5	SB400	7.3	7.3	7.3	**-0.7**	NA	NA	-0.7	8.0		None	5,175	1,533
A6	SB401	7.9	7.9	7.9	5.9	5.9	**3.9**	3.9	4.0		PAHs	10,850	2,210
	SB427	8.3	8.3	8.3	**1.3**	6.3	4.3	1.3	7.0		PAHs		
A7	SB402	8.4	8.4	8.4	0.4	6.4	**-1.6**	-1.6	10.0		Pb	7,575	2,806
												AREA 4 sub total	**6,549**
AREA 5													
B8	SB411	31.0	10.5	11.0	**10.0**	NA	NA	10.0	0.5		None	10,000	185
B9	SB412	24.5	10.5	10.0	**10.5**	NA	NA	10.0	0.5		None	10,000	185
C9	SB423	11.9	11.9	11.9	**5.9**	NA	NA	5.9	6.0		None	6,150	-
	SB434	11.5	11.5	NA	NA	NA	NA	NA	NA	(2)	None		
C10	SB424	12.0	12.0	NA	NA	NA	NA	NA	NA	(2)	None	9,450	-
C11	SB425	12.1	12.1	NA	NA	NA	NA	NA	NA	(2)	None	10,000	-
C12	SB426	11.5	11.5	NA	NA	NA	NA	NA	NA	(2)	None	8,875	-
												AREA 5 sub total	**370**
AREA 6													
A8	SB403	9.4	9.4	9.4	**-0.6**	7.4	1.4	-0.6	10.0		PAHs, TPH, Pb	8,775	3,575
	SB429	8.6	8.6	8.6	2.6	4.6	**-3.4**	-3.4	12.0	(2)	PAHs, TPH, Pb		
A9	SB404	8.9	8.9	8.9	-3.1	6.9	**-3.1**	-3.1	20.0		PAHs, TPH, Pb	5,675	4,204
B10	SB413	10.6	10.6	10.6	7.6	8.6	**6.6**	6.6	4.0		PAHs, TPH	5,000	741
B11	SB414	10.7	10.7	NA	NA	8.7	**-1.3**	-1.3	12.0		PAHs, TPH, Pb	6,400	2,844
A7	SB428	8.0	8.0	8.0	2.0	6.0	**0.0**	0.0	8.0		PAHs, TPH, Pb	2,000	593
A10	SB430	9.8	9.8	9.8	5.8	7.8	**-4.2**	-4.2	14.0		PAHs, TPH, Pb	1,625	843
B12	SB431	11.1	11.1	11.1	3.1	9.1	**-0.9**	-0.9	12.0		TPH, Pb	1,050	467
												AREA 6 sub total	**13,266**
												Total	**50,347**

Notes:
Bolded bottom elevation: lowest fill or PRG exceddance elevation in that boring.
(1) elevations are presented as feet NGVD 1929 (MLW)
(2) Fill not present.

TABLE F-7
PROPOSED EXCAVATION TARGET VOLUME
SOIL PREDESIGN INVESTIGATION, APPENDIX E
OLD FIRE FIGHTING TRAINING AREA
NAVAL STATION NEWPORT, NEWPORT RHODE ISLAND

Grid Cell	Boring Number	Base Grade Elev. (1)	Water Table (2) Elevation	Fill Elevation	Target Excavation Elevation	Target Excavation Depth	Notes	Controlling depth	Area (sq ft)	Volume (CY)
AREA 1										
C1	SB415	8.0	2.4	7.3	2.4	5.6	4	Pb	3,675	762
C2	SB416	8.0		2.5	2.5	5.5		PAHs, TPH	9,350	1,905
C3	SB417	8.0		-0.5	2.4	5.6			7,675	1,592
	SB433	8.0		1.3	2.4	5.6	3			
C4	SB418	8.0		3.0	3.0	5.0		Pb	8,625	1,597
									AREA 1 sub total	**5,856**
AREA 2										
B2	SB405	7.0	2.4	-4.0	2.4	4.6	4	PAHs, TPH	3,525	601
B3	SB406	7.0		1.4	2.4	4.6		PAHs, TPH	4,650	792
B4	SB407	7.0		6.9	2.4	4.6	4	PAHs, TPH	7,500	1,278
									AREA 2 sub total	**2,671**
AREA 3										
B5	SB408	8.0	4.0	4.0	4.0	4.0	4,6	PAHs, TPH	10,000	1,481
B6	SB409	9.1		5.1	4.0	5.1	4,6	PAHs, TPH	10,000	1,889
B7	SB410	9.4		3.4	4.0	5.4	4,6	PAHs, TPH	10,000	2,000
C5	SB419	8.4		4.4	4.0	4.4	4,6	PAHs, TPH	9,675	1,577
	SB420	10.0		6.0	4.0	6.0	4,6	PAHs, TPH	10,000	2,185
C6	SB432	9.8		1.8	4.0	5.8	4,6	PAHs, TPH		
C7	SB421	10.8		6.8	4.0	6.8	4,6	PAHs, TPH	10,000	2,519
C8	SB422	11.8		9.8	7.8	4.0	6	PAHs, TPH	3,475	515
									AREA 3 sub total	**12,166**
AREA 4										
A5	SB400	7.3	3.2	-0.7	3.2	4.1	7	Surrounding Condition	5,175	786
	SB401	7.9		5.9	3.9	4.0	7	PAHs	10,850	1,828
A6	SB427	8.3		1.3	3.2	5.1	7	PAHs		
A7	SB402	8.4		0.4	3.2	5.2	4, 7	Pb	7,575	1,459
									AREA 4 sub total	**4,073**
AREA 5										
B8	SB411	10.5	4.3	10.0	8.7	1.8	3, 5	Average excavation depth sloping down from south (2') to north (8') in this area	10,000	667
B9	SB412	10.5		10.5	8.6	1.9	3, 5		10,000	704
	SB423	11.9		5.9	5.9	6.0	5		6,150	718
C9	SB434	11.5		--	11.2	0.3	3, 5			
C10	SB424	12.0		--	8.0	4.0	5		9,450	1,400
C11	SB425	12.1		--	6.8	5.3	5		10,000	1,963
C12	SB426	11.5		--	7.5	4.0	5		8,875	1,315
									AREA 5 sub total	**6,766**
AREA 6										
A8	SB403	9.4	2.5	-0.6	2.5	6.9	4, 8	PAHs, TPH	8,775	2,113
	SB429	8.6		2.6	2.5	6.1	4, 8	Pb		
A9	SB404	8.9		-3.1	2.5	6.4	4, 8	PAHs, TPH	5,675	1,345
B10	SB413	10.6		7.6	6.6	4.0	4, 8	PAHs, TPH	5,000	741
B11	SB414	10.7		--	2.5	8.2	4, 8	PAHs, TPH	6,400	1,944
A7	SB428	8.0		2.0	2.5	5.5	4, 8	PAHs, TPH	2,000	407
A10	SB430	9.8		5.8	2.5	7.3	4, 8	Pb	1,625	439
B12	SB431	11.1		3.1	2.5	8.6	4, 8	PAHs, TPH	1,050	334
									AREA 6 sub total	**7,323**
									Total	**38,854**

-- material not encountered in the boring
(1) elevations are presented as feet NGVD 1929 (MLW)
(2) water table averaged from 7/7/97 groundwater level measurement from wells on-site; MW-4S used for Areas 1 and 2
Water tables at areas 2, 4, and 6 could be controlled with portadam structure.
(3) No Detections above actionable PRGs in subsurface soils from PDI, Surface data may require some removal
(4) Target excavation depth adjusted to accommodate water table
(5) water table at area 5 was average from 7/7/97 groundwater measurement from wells; MW-1R, MW-8R, and MW-9R.
(6) water table at area 3 was taken from the 7/7/97 groundwater measurement from wells MW-3S, MW-7S. MW-101.
(7) water table at area 4 was taken from the 7/7/97 groundwater measurement from well MW-11S.
(8) water table at area 6 was taken from the 7/7/97 groundwater measurement from wells; MW-2D, MW-2S, MW-10S, MW-102.