

**ENGINEERING FIELD ACTIVITY, NORTHEAST  
NAVAL FACILITIES ENGINEERING COMMAND  
ENVIRONMENTAL MULTIPLE AWARD CONTRACT**

**INSTALLATION RESTORATION (IR) SITE 09-OLD FIREFIGHTING TRAINING AREA  
NAVAL STATION NEWPORT  
NEWPORT RHODE ISLAND**

**EXCAVATION, TRANSPORTATION AND DISPOSAL SERVICES**

**STATEMENT OF WORK**

997

**1.0 INTRODUCTION**

This Statement of Work (SOW) is being provided to solicit services for the excavation, transportation and disposal activities required to initiate soil removal actions at the Old Firefighting Training Area, located at the Naval Station Newport, in Newport Rhode Island.

This contract will be fixed-price with indefinite quantity portions on T&D soil disposal.

**1.1 Project Description**

This section is for informational purposes only.

The Naval Station Newport (NAVSTA) is located in Newport Rhode Island. The Old Firefighting Training Area (OFFTA) is located at the northern section of Coasters Harbor Island.

Coasters Harbor Island is connected to Newport mainland by two bridges. One bridge has a posted weight restriction of 15 tons. The second bridge is a primary entrance/exit to the island, with a bridge live load rating of AASHTO HS20. Major transportation routes are State routes 138 and 114, west and north.

The OFFTA Site is located approximately one half mile north of Gate 1 at NAVSTA. The OFFTA Site occupies approximately 5.5 acres, and was used for a recreational facility from 1974 through 1998. The site was used as a fire training ground between the 1940s and 1972. The surface of the site is grass and trees, with the exception of a temporary gravel parking lot located at the central section of the site.

The site is occupied by three mounds of soil and debris that were constructed of what is believed to be soil and demolition debris from demolition of fire training structures and buildings in 1972. The estimated combined volume of the three mounds is 10,500 cubic yards (compacted, in place). The rest of the site is relatively level, sloping from a high elevation of 11 feet (MSL) on the south edge of the site to approximately 8 feet at the shoreline. This level ground has been identified as the base elevation for the site.

The Navy has committed to removing soils and debris from the site that exceed project action limits (defined elsewhere). It has been determined that the soils and debris in the mounds all exceed these action limits, and therefore must be removed prior to excavation below the base grade. Therefore, this SOW has been prepared to direct the removal of the mounds.

This initial removal effort will include:

- Prepare work plan/Health and Safety Plan to be submitted for regulatory review
- Excavation of the mounds, segregating the soil and debris into 500-cubic yard stockpiles of like materials
- Characterization of each stockpile
- Loading, transportation, and disposal of each stockpile
- Site Cleanup
- Site Restoration (Grading and Seeding)

Attachment A (Mound Summary Report, TtNUS January 2004) provides a description of the mounds, including soil borings, soil samples, cross sections, approximate volumes of materials present, limited chemical analysis of soils, base grade of the site, excavation limits, and other pertinent information. Any and all costs for gathering any other information required for completion of the work described in this SOW will be the responsibility of the Contractor.

Attachment B of this SOW presents a separate scope of work for grading and seeding disturbed areas following the completion of the soil removal actions.

## **1.2 Definitions**

The term "Contractor" shall mean the person, persons, partnership, corporation, or business organization engaged on behalf of the Department of Navy and specifically, Engineering Field Activity, Northeast (EFA Northeast) pursuant to a contract for performance of work described in this SOW.

## **2.0 SCOPE OF WORK**

### **2.1 General**

The Contractor shall provide the following services and all required equipment, materials, and manpower to perform these services under this statement of work. The timeframes for which these services are to be provided are provided in the following subsections.

The Contractor shall conduct all work in accordance with all pertinent state, local and federal regulations and the approved work plan. The Contractor shall at all times provide adequate protection of underground and overhead utilities including storm drains that transect the site underground.

The Contractor's work areas and activities at the site will be subject to inspection without announcement by the Navy, their representatives, as well as representatives from the US EPA and Rhode Island Department of Environmental Management.

The Contractor shall provide a full-time site superintendent to act as the single point of contact for the project to communicate and interact with Navy personnel and their representatives. It will be required that this person be on-site at all times during normal working hours, and be available to attend scheduled meetings as necessary.

## **2.2 Work Plan and Health and Safety Plan**

The Contractor shall prepare and submit to the Navy for regulatory approval, a written Work Plan to detail the approach for conduct of the work described in this SOW. No on-site work shall begin until the Navy provides written approval of this work plan or its revisions. At a minimum, the Work Plan will describe the manner in which materials will be removed from the mounds, staged, tested, and transported for off-site disposal. The work plan shall include the following:

- Laboratory(ies) proposed to be used for waste characterization, required detection limits, and the contracted turnaround time for sample analysis.
- Disposal facilities proposed to be used for 1) soil and non-contaminated debris to be disposed of as solid waste, 2) contaminated soil and construction debris suitable for disposal at a RCRA D facility, and 3) RCRA – hazardous soil and debris (additional approvals on disposal facilities are required in Paragraph (u) of this Section).
- A plan to segregate the soil and debris into 500-yard stockpiles of like materials.
- A plan to stockpile material in a manner that will prevent wind and water erosion of soil away from the work area.
- A plan to handle items not anticipated (drums, tanks, compressed gas cylinders, asbestos materials) if encountered.
- A plan for erosion control from work areas, particularly protection of the adjacent shoreline (wetlands) during all site activities.
- A detailed schedule for completion of the work described in this SOW.
- A spill prevention and response plan.
- A decontamination plan for vehicles exiting the site.
- A Traffic Plan to direct transportation activities within an acceptable timeframe, to control site working hours, to comply with security inspection requirements and to minimize disturbance to local residents.
- A site plan, illustrating proposed work areas, including loading areas, decon areas, staging areas, site traffic patterns, and equipment lay down areas.
- A Site Health and Safety Plan (SHSP) that conforms to the requirements set forth by OSHA and 29 CFR 1910.120 (HAZWOPER), specific to the anticipated site activities, approved by a Certified Industrial Hygienist.

The Contractor shall submit 12 copies of the Work Plan in Draft form to the Navy for distribution to the USEPA and RIDEM. USEPA and RIDEM will review the Work Plan and provide comments to the Work Plan. The Contractor will be required to provide written responses to the comments and to modify the work plan accordingly. The Contractor shall submit 12 copies of the Final Work Plan after revisions are made in accordance with the comments.

The Contractor shall submit the Draft Work Plan no later than 15 days following the contract award. Comments will be provided by the regulatory parties approximately 45 days from Contractor's submittal of the work plan. The Contractor shall submit the final work plan 15 days from receipt of regulatory comments.

### **2.3 Permits**

The Contractor shall acquire permits from State, local and federal agencies necessary for the completion of this work, including, but not limited to Rhode Island Coastal Resource Management Council, Rhode Island Department of Environmental Protection, and Newport Conservation Commission for working adjacent to and within 100 feet of coastal wetland resource areas.

The Contractor shall assure that haulers used carry all permits required for transportation of materials described in this SOW and Attachment A.

The Contractor will be responsible for ensuring that all trucks leaving the property are in compliance with all Federal and State(s) vehicle weight limits. The Contractor must comply with all Federal Motor Carriers Safety Requirements (FMCSR) and must have current permits and licenses, as required by federal, state, and local authorities.

The carrier must have a current DOT MC Safety Rating of "Satisfactory" and the Navy's approval of their safety record. All transportation shall be performed by licensed, insured, and permitted solid and/or hazardous carriers.

A copy of each permit must be provided to the Navy prior to commencing any related work.

### **2.4 Staging Area Setup**

The Contractor shall set up a staging area, decontamination areas and appropriate entrances and exits to the site. The staging area must be adequate in size to accommodate the amount of soil anticipated to be staged in separate 500 cubic-yard piles, as stated in the Final Work Plan. The staging area must be provided with adequate containment of possible runoff and erosion during the anticipated period of staging. Any areas used and damaged will require repair to original condition at completion of the project at no cost to the Government.

The Contractor shall provide equipment and materials at the site to conduct the work as described in this SOW. This shall include provision of equipment and materials necessary to overpack or secure any drums or compressed gas cylinders as well as other materials described in this SOW and attachments that are encountered during the conduct of this work. Encounter of asbestos-containing materials, drums, tanks, or compressed gas cylinders is not anticipated, however, the Contractor shall be prepared to react appropriately if these items are encountered.

### **2.4 Site Preparation**

The Contractor shall remove trees and stumps within the work areas, and any other areas necessary to complete the work described in this Scope of Work. Cut trees shall be removed from the site

entirely, either chipped or in whole. Stumps and root balls will be segregated and handled in the same manner as the other excavated debris.

The Contractor shall remove fencing material as needed for completion of the work described in this SOW. The Contractor shall restore any fencing removed at the completion of the project to the original extent and condition prior to removal.

## **2.5 Erosion Control**

The Contractor shall construct adequate erosion control at any location necessary to prevent runoff or erosion of soil or debris from any excavated soil, stockpiled soil, and worked surfaces.

Erosion control structures shall be adequate to sustain weather damage and degradation and shall be maintained by the Contractor until site restoration has provided new vegetation or permanent structures adequate to stabilize remaining soils in-place on the surface of the ground which has been worked by the Contractor.

The Contractor shall adhere to all requirements of the laws and permits described elsewhere in this SOW pertaining to work within and near coastal wetland resource areas.

## **2.6 Excavation**

The Contractor shall excavate the material that make up the mounds as described in Attachment A, in portions small enough to stage, test and dispose of off site in an organized manner without mixing the staged materials after it has been tested. The Contractor shall excavate the mounds to a depth of approximately one foot below the base grade elevation as described in Attachment A.

## **2.7 Staging of Soil**

The contractor shall segregate and stage soils and debris on site in stockpiles based on the type of material and anticipated disposal route. Stockpiles shall not exceed 500 cubic yards each. Material to be stockpiled consists of soils, root balls, demolition debris, concrete, brick, wood, metal, asphalt and building rubble. The Contractor shall crush or reduce large size debris to manageable sizes for transportation and disposal as needed.

The contractor shall cover stockpiles at all times to prevent intrusion of rain, and to prevent erosion by precipitation and wind. The contractor shall maintain covering systems intact at all times.

Some of this material may be contaminated with oil and oily waste. Material may also contain lead and other metals from paints or other sources. Analytical results from soil samples collected from the mounds are provided in Attachment A. These results indicate that much of the soil and debris exceeds RIDEM Direct Exposure Criteria for lead, arsenic, oil and PAHs, as well as other materials.

## **2.8 Testing**

The Contractor shall conduct the following sampling at a minimum. The Contractor shall conduct other sampling as required by the disposal facilities.

The following sampling approach shall be used: Each 500 yard stockpile will be divided into four quadrants. A sub sample will be collected from at least four areas within each quadrant and composited as a representative sample of that quadrant.

The Contractor shall collect a minimum of four soil/solids samples per 500 cy stockpile and analyze the samples for for Toxicity Characteristic Leaching Procedure (TCLP) Volatile Organic Compounds (VOCs), TCLP Semi-Volatile Organic Compounds (SVOCs), TCLP Pesticides/Herbicides, TCLP Metals, Polychlorinated Biphenyls (PCBs), Total Petroleum Hydrocarbons (Total C9-C36 hydrocarbons) and any other analyses required to facilitate disposal. If asbestos is suspected in excavated building debris, analysis for Asbestos Containing Material (ACM) will be performed at the same frequency, following notification to the Navy.

The Contractor's analytical laboratories shall provide results to the Navy within five days of collection. The Contractor shall retain copies of all sample results on site until the completion of the project.

The Contractor shall profile the material into the disposal facilities based on laboratory analytical data that they generate.

The Contractor shall also test segregated debris, concrete and metal as needed for characterization for disposal.

## 2.9 Transportation and Disposal

### 2.9.1 Quantities and Materials

Approximately 21,255 tons (14,000 cubic yards excavated volume) of soil and debris will require transportation and offsite disposal. The specific quantities of each type of material to be disposed are unknown. All disposal quantities are estimated quantities subject to change based on analytical results of the material reported by the Contractor. For bidding purposes, the Contractor shall provide lump sum and unit prices for the work items listed on Table 1. Please note that estimated amounts could vary significantly. The unit prices will be used if additional material is encountered up to 15% over the stated bid quantities. NOTE TO NAVY: Does this need to be stated? This language should be in the standard contract language.

The following material may require transportation and disposal:

- Soil containing metals and PAHs in excess of Rhode Island Direct Exposure Criteria.
- Material that is characterized as RCRA hazardous.
- Demolition debris that contains Asbestos Containing Material (ACM). **Encountering ACM is not anticipated.** However, the Navy is requesting pricing for ACM disposal in the event that ACM is discovered. If ACM is discovered, that material is to be segregated and contained in covered, roll-off containers, and will be scheduled for transportation and disposal after issuance

of a negotiated change order for ACM disposal based on the unit price provided in this cost quote.

- Recyclable metal debris.
- Root balls from trees cut as described elsewhere in this SOW.
- Demolition debris including concrete, asphalt, brick and rubble, wood, glass, and other foreign matter.
- Oily and oil-contaminated soil and construction debris.
- Decontamination fluids and solids generated as described in Section 2.11 of this SOW.

### 2.9.2 Traffic and Haul Routes

The Contractor shall provide an appropriate number of off-site disposal trucks and during shipping periods in accordance with the Traffic Plan described in the Work Plan (Section 2.2 of this SOW) to ensure that disposal activities are completed within the project schedule. Disposal vehicles will only arrive and leave the site between site working hours (as described in the Traffic Plan) to comply with security inspection requirements and to minimize disturbance to local residents.

### NAVY TO STATE ANY LOCAL RESTRICTIONS, WORKING HOURS, AND TRAFFIC HOURS THAT ARE REQUIRED

The Traffic Plan provided in the Work Plan shall require entrance of empty transportation vehicles through Gate 10, and exiting the site (loaded) through Gate 1.

The Contractor shall adhere to off-site haul routes as described in the Traffic Plan (Section 2.2 of this SOW).

### 2.9.3 Liners and Tarps

The Contractor shall ensure that all off-site disposal trucks are equipped with appropriate appurtenances (e.g. liners and tarps) in acceptable working condition. All loads must be tarped prior to departure. Liners will be required if truck beds do not properly seal when closed. The Contractor shall ensure that all liners and tarps are properly secured and that the vehicles are not leaking or releasing any waste constituents.

Drivers of the off-site disposal trucks must not come in physical contact with the contaminated material while tarping the load or preparing it for transport. The Contractor shall load off-site disposal trucks in an area designated in the work plan, and clearly marked at the site.

#### 2.9.4 Documentation

The Contractor will be responsible for providing and carrying waste manifests, bills of lading, placards, labeling, markings, licensing, and any other transportation/disposal documentation as required by federal, state, and local regulations.

A representative of the Navy will sign completed shipping manifests and bills of lading.

The Contractor shall provide the Navy with a minimum of 48 hour notice prior to shipping waste materials from the site.

#### **2.10 Site Restoration**

Upon completion of excavation of each mound, the Contractor shall restore the excavated areas as described in Attachment B to this SOW, Grading and Seeding.

The Contractor shall provide watering equipment for a duration necessary to assure growth of the new seed placed.

The Contractor shall assure adequate growth after six months to hold worked surfaces at the site and re-seed as necessary.

#### **2.11 Decontamination**

The Contractor will ensure that there is no visible material on the sides or tires of any vehicle leaving the site, or leaving the staging area. The Contractor shall construct and use decontamination procedures as described in the Final Work Plan to remove soil or debris from the outsides of the vehicles if necessary to assure soil is not tracked beyond designated work areas onto surrounding roadways.

Decontamination fluids and solids will be captured daily, and stored on site then characterized and disposed of as appropriate in accordance with requirements stated in this SOW.

#### **2.12 Demobilization**

The Contractor shall demobilize all equipment, supplies, materials and facilities brought to the site during their work no later than 30 days following the completion of removal of the stockpiled soils.

As a part of demobilization, any areas used and damaged will require repair to original condition at completion of the project at no cost to the Government.

### **3.0 SUBMITTALS**

#### **3.1 Bid Submittals**

The Contractor shall submit with their quote the following documentation regarding transportation and disposal of the material at the disposal facilities.

Contractor:

NAVY to please identify these per their contract requirements. There should be standard language for this category in the EMAC program.

- Insurance Certificates?
- Bond Certificates?
- Others per EMAC provisions – Navy to please describe or identify through reference

Carrier:

- USDOT motor carrier safety rating (if available).
- A list of any and all notices of violations in the last 3 years.
- Solid and hazardous waste transportation permits as appropriate for each state in which the material will be transported.
- Overweight permits, as appropriate, for each state in which the material will be transported.

Disposal Facilities:

- Type of Facility.
- Location of facility (address).
- EPA ID Number
- Facility Point of Contact and Phone Number
- Facility hours of operation
- State and/or federal agency point of contact.
- A list of any and all notices of violations in the last 3 years.
- Date of last inspection.
- Copies of all environmental permits.
- Copies of the facility's weight scale certificate.
- Analytical requirements and frequencies for each facility.

Note that CERCLA NPL-listed or state-equivalent-listed facilities will not be approved.

### **3.2 Prior to Mobilization**

The Contractor shall submit Health and Safety Medical Surveillance, and Training Records for all on-site workers (where required). The Contractor shall submit OSHA HAZWOPER training records (original and refresher) for all site workers. The Contractor shall submit certificates of supervisory training for the site superintendent as described elsewhere in this SOW.

The Contractor Shall submit a Draft Work Plan, Response to USEPA and RIDEM Comments, and Final Work Plan as described in Section 2.2 of this SOW.

The Contractor shall provide the name and contact information for a full-time site superintendent to act as the single point of contact for the project on-site at all times during normal working hours.

### **3.3 Submittals During Construction**

#### **3.3.1 Waste Disposal Documentation**

Before Transportation - The Contractor shall submit bills of lading, manifests and other appropriate shipping and disposal documents for the handling of wastes to the Navy a minimum of five days prior to shipping the wastes off-site. All transportation documentation shall be submitted to the Navy for review, approval, and signature prior to shipment.

After Transportation - The return manifests or bills of lading that have been signed by the disposal facility, along with certified weight slips, shall be submitted to the Navy within 10 days of waste delivery. Certified weight slips shall contain, at a minimum, the gross truck weight, truck tare weight, the net weight of the material, cumulative daily weight, date of delivery, facility name, signature of person receiving the load of material, and the numerical load number for the day. Weight slips shall also contain transportation company name, and plate numbers for both the tractor and trailer if applicable. Copies of any discrepancy reports or exception reports shall also be submitted.

#### **3.3.2 Daily Summary Reports**

The Contractor shall submit daily summary reports that detail the quantities, types and classification of materials removed from the project each day. The report shall include the manifest number, transporter, and disposal facility where the material was disposed. Daily summary reports shall be submitted to the Navy on the following business day.

#### **3.3.3 Certificates of Treatment/Disposal**

The Contractor shall submit Certificates of Treatment/Disposal from the final disposal facility. If waste is accepted at one facility and disposed of at another, the certificates shall be from the final disposal facility. If waste is treated at one facility and the remains of the waste are sent to a second facility, The Navy must receive a Certificate of Treatment from the first facility and a Certificate of Disposal from the final facility. Certificates of Treatment/Disposal shall include the number of the manifest, date when the waste was transported off-site, and a description of the waste as reported on the manifest. Certificates must be received within 10 days of final waste disposal. These Certificates shall be received separately and prior to invoicing.

#### **3.3.4 Analytical reports**

The Contractor's analytical laboratories shall provide a minimum of two hard copy data reports to the Navy for each sample or sample group within five days of collection. The Contractor shall retain copies of all sample results on site until the completion of the project. Fax reports are acceptable to meet this requirement.

### **3.4 Post-Construction Deliverables**

The Contractor shall prepare and submit a Project Close-Out Report. The Close Out Report shall contain, at a minimum:

- A statement that the work was conducted in accordance with the Work Plan, with any exceptions noted.
- A summary of volumes of material shipped and disposed of at each location.
- A summary of volumes of each type of material shipped and disposed of.
- Copies of analytical reports from characterization of stockpiled materials
- Copies of the Manifests/bills of lading, and certified weight slips as described above.
- Copies of Certificates of Treatment/Disposal as described above
- Other Items in accordance with EMAC Contract (identify through reference)

The Contractor shall submit 12 copies of the Closeout Report within 30 days of completion of demobilization efforts.

## **4.0 OTHER REQUIREMENTS**

### **4.1 Site Access / Security**

Access to all necessary locations will be provided by the Navy prior to commencement of work..

All personnel entering Navy property will be required to acquire security pass to the NAVSTA Base, and to carry this security pass at all times while on Navy property. To acquire Contractor passes, each employees must provide full legal name, SSN, date of birth, and location of birth. Contractor passes require renewal periodically.

Each vehicle accessing NAVSTA will require a vehicle pass. To acquire a vehicle pass, statement of insurance, registration and ownership will be required. Vehicle passes require renewal periodically.

All vehicles will be searched when arriving at the NAVSTA property. All empty waste transport trucks shall enter at Gate 10. Vehicles over 15 tons GVW arriving at the site will be required to report to Gate 10 for inspection then wait to be escorted to Gate 1 for entry to the base.

### **4.2 Temporary Facilities**

The Contractor will be required to provide any and all temporary services required by their activities, including telephone, storage, office facilities, power and portable toilets.

Water is available from NAVSTA through a metering system, and hydrants are located within 500 feet of the project site.

The Contractor shall be responsible for the safety and security of their equipment and materials at all times.

## **5.0 SCHEDULE**

This contract is to be awarded by ~~March 31, 2004~~. Start date will be considered the date of the contract award. Submittals described elsewhere in this SOW will be required prior to breaking ground.

Completion date for the project shall be no later than November 30, 2004. Completion will require that grading and seeding at the excavation areas is completed (Attachment B), the stockpiled soils have been removed from the site in their entirety, adequate erosion control structures are in place (Section 2.5 of this SOW) site restoration has been completed (Section 2.10 of this SOW), and the Contractor's facilities are completely demobilized (Section 2.12 of this SOW).

## **6.0 CODES AND STANDARDS**

Services furnished will be in accordance with the general conditions outlined in this SOW. Changes may be implemented by mutual consent in writing between the Contractor and the Navy. In addition to these conditions and specifications, the Contractor shall comply with all applicable federal, state and local ordinances, laws, and regulations. In the event of any apparent conflict among codes, standards, or this specification, the Contractor shall refer the conflict to the Navy for written resolution.

AGAIN – IS THERE STANDARD CONTRACT LANGUAGE THAT APPLIES TO THE EMAC THAT CAN BE INCORPORATED BY REFERENCE...?

## **7.0 HEALTH AND SAFETY**

All Contractor and subcontractor personnel working on-site shall comply with the Site Health and Safety Plan (SHSP) as described elsewhere in this SOW. The SHSP will be provided to the Navy for review prior to initiating work. The Contractor shall provide any and all personal protective equipment, as required by the SHSP, in order for the Contractor's personnel to complete the work. Prior to the start of work, all Contractor personnel shall attend a one-time Site Safety and Health Orientation. The Contractor shall conduct all work activities in a safe manner and in compliance with the SHSP. The Navy and their representatives will have the authority to audit and terminate the Contractor's field operations if the Site Health and Safety Officer (SHSO) judges that the operations violate the SHSP, or if work practices are being conducted in an unsafe manner.

**TABLE 1**  
**ENGINEERING FIELD ACTIVITY, NORTHEAST**  
**NAVAL FACILITIES ENGINEERING COMMAND**  
**ENVIRONMENTAL MULTIPLE AWARD CONTRACT**

**INSTALLATION RESTORATION (IR) SITE 09-OLD FIREFIGHTING TRAINING AREA**  
**NAVAL STATION NEWPORT**  
**NEWPORT RHODE ISLAND**

**EXCAVATION, TRANSPORTATION AND DISPOSAL SERVICES**  
**COST QUOTE PRICING FORM A**  
**FIRM FIXED PRICE PORTION**

Item No.	Description	Approximate Quantity <sup>(1)</sup>	Unit	Unit Price	Extended Price
1	Mobilization, demobilization, staging area setup & breakdown, Site preparation, work plans, permits, erosion control	1	Lump Sum	\$	\$
2	Excavation, sorting, staging, decontamination, testing and characterization for disposal	21,715	Ton	\$	\$
3	Site restoration of excavated areas (Attachments A&B)	1	Lump Sum	\$	\$
4	Loading, transportation and disposal of material at a RCRA Subtitle C facility.	1,084	Ton	\$	\$
5	Loading, transportation and disposal of material at a RCRA Subtitle D facility	20,630	Ton	\$	\$
6	Loading, transportation and disposal of vegetation waste (trees).	40	CY	\$	\$
<b>Total Price <sup>(2)</sup></b>					\$

(1) Quantities are approximate.

(2) Total payments will be based on the quantities disposed and may be less than the Total Price.

**TABLE 2**  
**ENGINEERING FIELD ACTIVITY, NORTHEAST**  
**NAVAL FACILITIES ENGINEERING COMMAND**  
**ENVIRONMENTAL MULTIPLE AWARD CONTRACT**

**INSTALLATION RESTORATION (IR) SITE 09-OLD FIREFIGHTING TRAINING AREA**  
**NAVAL STATION NEWPORT**  
**NEWPORT RHODE ISLAND**

**EXCAVATION, TRANSPORTATION AND DISPOSAL SERVICES**  
**COST QUOTE PRICING FORM B**  
**INDEFINITE QUANTITY PORTION**

Item No.	Description	Approximate Quantity <sup>(3)</sup>	Unit	Unit Price	Extended Price
1	Loading, transportation and disposal of material at a RCRA Subtitle C facility.	1,084	Ton	\$	\$
2	Loading, transportation and disposal of Construction material that contains ACM.	20	CY	\$	\$
3	Loading, transportation and disposal of material at a RCRA Subtitle D facility	1,084	Ton	\$	\$
4	Loading, transportation and disposal of metal debris to be recycled	20	Ton	\$	\$
<b>Total Price <sup>(4)</sup></b>					<b>\$</b>

(3) Quantities are approximate.

(4) Total payments will be based on the quantities disposed and may be less than the Total Price.

# **Mound Summary Report**

**for**

**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**

**January 2004**

**MOUND SUMMARY REPORT**

**FOR**

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

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

**Submitted to:  
Northern Division  
Environmental Branch, (Code EV2)  
Environmental Field Activity, Northeast  
Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop # 82  
Lester, Pennsylvania 19113-2090**

**Submitted by:  
Tetra Tech NUS, Inc.  
600 Clark Avenue, Suite 3  
King of Prussia, Pennsylvania 19406-1433**

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

**January 2004**

**PREPARED UNDER THE DIRECTION OF:**

**APPROVED FOR SUBMISSION BY:**

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KING OF PRUSSIA, PENNSYLVANIA**

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## **1.0 INTRODUCTION**

This report presents the results of the pre-design investigation (PDI) for three soil/debris mounds at the Old Firefighting 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 included acquiring 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 will remove debris and soil contained in the mounds, above the base grade elevation of the Site. The contaminated soil and debris located below the base grade of the site (subsurface material) will be addressed by a separate, future removal action. This report provides an evaluation of the data specific to the removal of the mounds in the first action.

Preliminary remediation goals (PRGs) were identified for the soil at the Site in the FS. Soil PRGs are concentrations of chemicals that, if allowed to remain in the soil, are not anticipated to pose an increased risk of adverse effects to human health or the environment. Soil that contains contaminant concentrations exceeding PRGs were identified and used to delineate the areas that may require removal. The estimated volume of soil and construction debris in the mounds is approximately 11,100 cubic yards (compacted in-place). The FS estimated the volume of contaminated soil and debris below the base grade at the site under the mounds at approximately 37,600 cubic yards (TtNUS, September 2002). Contaminant levels in soil samples collected from the mounds are generally lower than the levels found in the subsurface soil samples.

This pre-design investigation included advancing soil borings and collecting soil samples across the site to further define the extent of debris and soil contamination. This data was used to refine estimates of the mound soil and debris volumes that will be removed under a separate action prior to the removal of contaminated subsurface soil and debris below the base grade elevation.

This report includes four sections and six appendices:

Section 1.0 – Introduction (this section);

Section 2.0 – Background Information provides an expanded site background discussion and a summary of previous studies and findings;

Section 3.0 – Site investigation Activities describes the PDI activities; and

Section 4.0 – Investigation Findings presents the results of the RI and PDI specific to the mounds.

## 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 the 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 Central Mound, rising approximately 20 feet above the base grade, is the largest mound and is located in the center of the Site. The other two mounds are referred to as Mound No. 1 and Mound No. 2, are smaller, and located in the west area of the Site with Mound No. 1 being the furthest west.

Mounds 1 and 2 abut the shoreline and have been partially eroded by wave action. 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 the temporary parking lot located in the center portion of the site formerly occupied by a baseball field. A one-story concrete block building (Building 144), used for recruiting offices, is located along the southern side of the Site. Recreational equipment has been removed. Access to the Site is restricted by a chain link fence along its eastern, southern, and western sides.

#### 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 conglomerate with quartz pebbles. The Rhode Island Formation has been mapped in the area and 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 (T1NUS 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 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.
- Pesticides were detected at low concentrations in surface soils and subsurface soils across the Site, and in storm water, marine sediments, and biota samples. Only one pesticide, endrin was detected in groundwater. All pesticide concentrations were low.
- Polychlorinated biphenyls (PCBs) were detected infrequently in surface and subsurface soils at concentrations below 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 bgs.

Petroleum contamination was observed visually in the central portion of the Site in soils sampled immediately above the water table.

### **3.0 MOUND PRE-DESIGN INVESTIGATION ACTIVITIES**

This section discusses the procedures and methodologies employed during the implementation of the mound-related 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 Site PDI is to provide data to assess the horizontal and vertical extent of construction debris, and the extent of contamination in soil across the site. The resulting data will be evaluated to determine the volume of the debris and soil within the mounds and in the subsurface below the base grade that will be considered for removal. This section presents a summary of the mound investigation activities, which were conducted as part of the OFFTA Site PDI. The resulting data is presented in this report and will support the development of the mound removal remedial action plans.

The PDI included advancing 30 soil borings across the site, including the mounds, 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 MOUND FIELD INVESTIGATIONS**

Mound field investigation tasks included: mobilization/demobilization, soil boring advancement and soil sample collection; and surveying. The Work Plan for Soil Pre-Design Investigation (TINUS, November 2003) describes the objectives and tasks for the PDI.

##### **3.1.1 Mobilization/Demobilization**

As part of mobilization activities, technical specifications for drilling, surveying, and analysis subcontracts were prepared and issued. Required field equipment and supplies were ordered and mobilized to the site. Field team members reviewed the work plan, and health and safety (provided under separate cover), applicable standard operating procedures (SOPs) and applicable subcontract specifications. A field team orientation meeting was conducted prior to initiating the fieldwork to familiarize the field team and subcontractor personnel with site health and safety requirements and the scope of the field activities. The mobilization date was coordinated with the Navy project representatives.

### 3.1.2 Mound Soil Boring Advancement and Soil Sampling

Soil borings were advanced to evaluate the existing subsurface conditions and to collect soil samples to further characterize the mound contents. A total of eight soil borings were advanced within the mounds:

#### Central Mound

- SB411 located at the center
- SB412 located in the eastern section

#### Mound No. 1

- SB415 located in the western section
- SB416 located in the eastern section

#### Mound No. 2

- SB406 located in the northern section
- SB407 located in the northeastern section
- SB418 located in the southeastern section
- SB433 located at the center

Continuous samples were collected from each of the eight borings from 2-foot intervals above the base grade elevation. Representative samples were selected for laboratory analysis of volatile organic compounds (VOCs), SVOCs, pesticides/PCBs and (Target Analyte List) TAL metals. Soils more than two feet below the base grade elevation were presumed to be below the extent of the mounds, and are not described in this Mound Summary Report.

All soil samples were collected using a conventional hollow-stem auger rig equipped with a split-spoon sampler by TtNUS's drilling subcontractor, Geosearch Inc., under the supervision of a TtNUS geologist. 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 TtNUS SOPs. A log of each boring was maintained by the field geologist (Appendix B). Any foreign materials (brick, asphalt, concrete, glass etc.) present was described and noted in the geologic log.

Soil not containing debris, as described above, was collected and 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 this same manner. If two consecutive intervals provide no recovery in the split barrel sampler, a second boring was advanced to acquire samples at the missed interval(s). All samples were labeled and placed on ice immediately after collection and shipped with a chain-of-custody to the analytical laboratory.

The drill rig was also decontaminated by stream cleaning before starting the drilling program, and after completion of each boring. All non-disposable sampling equipment was decontaminated in accordance with the procedures identified in work plan.

**3.1.3            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 TtNUS's surveying subcontractor, Louis Federici and Associates. Additional topographic survey along the shoreline between the top of slope to mean low water was also performed by the land surveyor. The survey data was used to update the site base map. The soil boring location survey data is presented in Appendix C.

**3.2                SAMPLE ANALYSIS AND DATA REVIEW**

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

<u>Analytes</u>	<u>Method</u>
VOCs	USEPA SW-846 Method 8260B
SVOCs	USEPA SW-846 Method 8270C
PAHs	USEPA SW-846 GCMS Selected Ion Monitoring (SIM)
Pesticides/PCBs	USEPA SW-846 Method 8081A/8082
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 C9-C36 Hydrocarbons

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.

**3.3 FIELD DATA REDUCTION**

Field data reduction activities consisted of the following activities:

- Preparation of final soil boring logs (transcribing field logs)
- Updating the site base map by incorporating soil boring locations and shoreline topography
- Comparison of analytical data with PRGs to determine exceedances
- Preparation of mound cross sections
- Calculation of mound volumes above the base grade

## 4.0 INVESTIGATION FINDINGS

Section 4.0 presents a summary of the findings of the OFFTA mound investigations. The following subsections summarize the physical, geological, and analytical results from testing conducted at the mounds. Table 4-1 provides a list of the soil samples collected during these efforts and the analyses conducted on these samples. Complete RI and PDI analytical results from mound samples are provided in Appendix D.

Figure 4-1 through 4-3 present site topography, boring locations, and cross sections of the mounds described in this summary report.

### 4.1 MOUND NO. 1 FINDINGS

Mound No. 1, smallest of the three mounds, is located in the far west portion of the Site. It is a low, rounded, grass-covered feature approximately 4 to 6 feet higher than the surrounding base grade (8 to 10 feet above MLW), with a maximum elevation of 13.7 feet above MLW. The mound's volume is approximately 600 cubic yards (See Appendix E), and it covers an area of approximately 6,000 square feet with side slopes at approximately 15 percent. The western edge of the mound has been eroded by wave action, as it is in contact with Narragansett Bay.

Mound No. 1 is characterized from evaluation of three soil borings, consisting of one boring advanced during the 1993 RI (B-10) and two borings advanced during the PDI (SB415 and SB416). Mound No. 1 boring and sample details, along with jar headspace screening results, are provided in Table 4-2. Borings SB415 and B-10 are located on the western side and the eastern side of the mound center, respectively. SB416 is located on the eastern slope near the perimeter. The borings show that the material encountered in these borings above the base grade elevation consists of fill. The fill material consists of fine to coarse sand, silt and gravel mixed with construction debris (asphalt, concrete fragments, and brick pieces), with organic material encountered in the surface sample.

A total of six samples were collected in the three borings from intervals above and just below the base grade elevation at Mound No. 1. A list of contaminants in each sample that exceed the PRGS is presented in Table 4-3. No analytes were detected above the PRGs in the sample from B-10 sample (0.0 to 1.0 feet bgs). The table below provides a summary of the analyte detections exceeding PRGs.

## Mound No. 1 PRG Exceedance Summary

Parameter	No. Samples above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)pyrene	4/6	440 – 820 µg/kg	400 µg/kg
Benzo(b)fluoranthene	2/6	1,100 – 1,100 µg/kg	900 µg/kg
Chrysene	4/6	450 – 890 µg/kg	400 µg/kg
Arsenic	5/6	10.7 – 23.6 mg/kg	6.2 mg/kg
Beryllium	4/6	0.42 – 0.63 mg/kg	0.4 mg/kg
Lead	2/6	168 – 182 mg/kg	150 mg/kg
Manganese	1/6	570 mg/kg	390 mg/kg

## 4.3 MOUND NO. 2 FINDINGS

Mound No. 2 is located in the west portion of the Site. The second largest mound of the three, it is bordered on the north by the shoreline for approximately 350 feet. This northern edge has been eroded by wave action from contact with Narragansett Bay. Mound No. 2 is a rounded, grass-covered feature approximately 9 feet higher than the surrounding base grade, with a maximum elevation of 17.7 feet above MLW. The volume of Mound No. 2 above the base grade elevation is approximately 3,500 cubic yards (See Appendix E). The mound base covers approximately 19,000 square feet and the side slopes range from are approximately 14 to 22 percent. Large ornamental cedar trees currently grow on Mound No. 2.

Mound No. 2 is characterized from evaluation of one surface soil sample and six soil borings. The surface soil sample (SS-5) was collected from the top of the mound during the RI. The borings consist of two borings advanced during the RI (B-8 and B-9) and four borings advanced during the PDI (SB406, SB407, SB418 and SB433). Boring and sample details, along with jar headspace screening results, are provided in Table 4-4. Borings SB433 and B-9 are located on the western side and the eastern side of the mound center, respectively. SB406 is located on the northern slope. SB407 and B-8 are located in the northeastern section of the mound and SB418 is located in the southeastern section of the mound. The borings show that the material encountered in these borings above the base grade elevation consists of fill consisting of fine to coarse sand, silt and gravel mixed with construction debris (asphalt, concrete fragments, and brick pieces). Topsoil was encountered in the surface sample.

A total of nine samples were collected at Mound No. 2 from intervals above and just below the base grade elevation. A list of contaminants in each sample that exceed the PRGS is presented in Table 4-5. No analytes were detected above the PRGs in one of the samples collected from SB433 (6.0 to 8.0 feet bgs). The table below provides a summary of the analyte detections exceeding PRGs.

## Mound No. 2 PRG Exceedance Summary

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)anthracene	2/9	1,000 J – 1,000 J µg/kg	900 µg/kg
Benzo(a)pyrene	4/9	460 – 1,000 J µg/kg	400 µg/kg
Benzo(b)fluoranthene	3/9	910 J – 1,400 J µg/kg	900 µg/kg
Chrysene	4/9	510 – 980 J µg/kg	400 µg/kg
Arsenic	5/9	6.3 J – 10.6 mg/kg	6.2 mg/kg
Beryllium	5/6	0.43 – 0.64 mg/kg	0.4 mg/kg
Lead	3/9	192 – 268 mg/kg	150 mg/kg
Manganese	4/9	417 – 450 mg/kg	390 mg/kg

### 4.3 CENTRAL MOUND FINDINGS

The Central Mound, largest of the three mounds, is located in the center of the OFFTA Site. It is a steeply sloped, three-sided pyramid shape structure approximately 21 feet higher than the surrounding base grade. With a maximum elevation of 31.0 feet above MLW, the Central Mound is the Site's highest topographic feature. The mound base covers an area of approximately 23,000 square feet and the side slopes range from 30 to 45 percent. The volume of the Central Mound was calculated at 7,000 cubic yards based on an average base elevation of 11 feet above MLW. Calculations are provided in Appendix E. The Central Mound is vegetated with grass and several large ornamental cedar trees that range up to 20 feet in height with canopy spans of 20 to 30 feet.

The Central Mound was characterized from evaluation of soil samples from surface soil, soil borings, and test pits shown on Figure 4-1. Central Mound soil boring and sample details, including jar headspace screening results, are provided in Table 4-6.

Six surface soil samples were collected during the RI; three samples (SS-3, SS-25 and SS-26, were collected from the side slopes and an additional three surface soil samples (SS-11, SS-325 and SS-326) were collected from the base.

Four soil borings were advanced through the Central Mound, consisting of B-14 and B-15 as part of the RI, and SB411 and SB412 as part of the PDI. B-14 and SB411 were located near the center, while B-15 and SB412 were located in the eastern section. The borings show that the material encountered in these borings above the base grade elevation consists of fill. Central Mound cross-sections based on the borings are presented in Figure 4-2. The fill material consists of fine to coarse sand, silt and gravel mixed with construction debris (asphalt, concrete fragments, and brick pieces), with topsoil or organic material encountered in the surface samples.

Two test pits, TP2 and TP3, were excavated on the side slope of the Central Mound just above the base. TP2 was excavated on the west side on the mound and TP3 was excavated on the north side. In TP2 construction debris was encountered throughout from the surface to a depth of 7 feet. A strong petroleum odor was noted and PID readings of 1200 ppm were recorded at the 7 to 8-feet bgs interval. In TP3 construction debris was also encountered throughout from the surface to a depth of 7 feet and black staining and a petroleum odor was noted in soils at 8 feet bgs.

A total of 23 samples were collected at Central Mound from intervals above and just below the base grade elevation. A list of contaminants in each sample that exceed the PRGS is presented in Table 4-7. No analytes were detected above the PRGs in the surface soil samples collected at SS-25 and SS-26 (both 0.0 to 0.5 feet bgs). The table below provides a summary of the analyte detections exceeding PRGs.

**Central Mound PRG Exceedance Summary**

Parameter	No. Samples Above PRG/No. Samples	Range of PRG Exceedance	Soil PRG
Benzo(a)anthracene	6/22	930 – 3600 µg/kg	900 µg/kg
Benzo(a)pyrene	10/22	410 – 2,900 µg/kg	400 µg/kg
Benzo(b)fluoranthene	3/22	1,100 – 3,900 µg/kg	900 µg/kg
Benzo(g,h,i)perylene	3/22	1,300 J – 1,700 J µg/kg	800 µg/kg
Benzo(k)fluoranthene	2/22	1,400 J – 2,500 J µg/kg	900 µg/kg
Chrysene	13/22	460 J – 3,300 J µg/kg	400 µg/kg
Dibenzo(a,h)anthracene	2/22	600 J – 780 J µg/kg	400 µg/kg
Indeno(1,2,3-cd)pyrene	3/22	1,100 J – 1,700 J µg/kg	900 µg/kg
Antimony	1/23	21.2 mg/kg	10 mg/kg
Arsenic	12/23	7 – 16.3 mg/kg	6.2 mg/kg
Beryllium	8/23	0.41 – 0.55 mg/kg	0.4 mg/kg
Lead	5/23	186 – 3,090 J mg/kg	150 mg/kg
Manganese	9/23	409 – 419 J mg/kg	390 mg/kg

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## TABLES

**TABLE 4-1**  
**MOUND SOIL SAMPLE ANALYSIS**  
**DRAFT MOUND SUMMARY REPORT**  
**OLD FIRE FIGHTING TRAINING AREA**  
**NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Location	Event	Date	Surface Elevation (ft MLW)	Sample ID	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Analysis							
									VOC	SVOC	PAH	Pest/PCBs	TAL Metals	Cyanide	TPH	GRO
<b>Mound No. 1</b>																
B-10	RI (Ph II)	11/23/1993	13.7	B101-112393	0.0	1.0	13.7	12.7	X	X	--	X	X	X	--	--
SB415	PDI	11/18/2003	13.3	SB-415-0002	0.0	2.0	13.3	11.3	X	X	--	X	X	--	X	--
				SB-415-0204	2.0	4.0	11.3	9.3	X	X	--	X	X	--	X	--
				SB-415-0608	6.0	8.0	7.3	5.3	--	--	X	--	X	--	X	X
SB416	PDI	11/19/2003	11.5	SB-416-0002	0.0	2.0	11.5	9.5	X	X	--	X	X	--	X	--
				SB-416-0406	4.0	6.0	7.5	5.5	--	--	X	--	X	--	X	X
<b>Total</b>									<b>4</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>1</b>	<b>5</b>	<b>2</b>
<b>Mound No. 2</b>																
SS-5	RI (Ph I)	4/11/1990	17.5	SS-05	0.0	0.5	17.5	17.0	X	X	--	X	X	--	--	--
B-8	RI (Ph II)	11/22/1993	11.5	B81-112293	0.0	1.0	11.5	10.5	X	X	--	X	X	X	--	--
B-9	RI (Ph II)	11/23/1993	17.7	B91-112393	0.0	1.0	17.7	16.7	X	X	--	X	X	X	--	--
SB406	PDI	12/3/2003	11.4	SB-406-0002	0.0	2.0	11.4	9.4	X	X	--	X	X	--	see Notes	--
SB407	PDI	12/1/2003	12.9	SB-407-0002	0.0	2.0	12.9	10.9	X	X	--	X	X	--	X	--
				SB-407-0204	2.0	4.0	10.9	8.9	X	X	--	X	X	--	X	--
SB418	PDI	12/3/2003	10.0	SB-418-0002	0.0	2.0	10.0	8.0	X	X	--	X	X	--	X	--
SB433	PDI	11/26/2003	17.3	SB-433-0204	2.0	4.0	15.3	13.3	X	X	--	X	X	--	X	--
				SB-433-0608	6.0	8.0	11.3	9.3	X	X	--	X	X	--	X	--
<b>Total</b>									<b>9</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>9</b>	<b>2</b>	<b>5</b>	<b>0</b>
<b>Central Mound</b>																
SS-3	RI (Ph I)	4/11/1990	24	SS-03	0.0	0.5	24.0	23.5	X	X	--	X	X	--	--	--
SS-11	RI (Ph I)		12	SS-11	0.0	0.5	12.0	11.5	--	--	--	--	X	--	--	--
SS-25	RI (Ph II)	11/4/1993	19.5	SS25-110493	0.0	0.5	19.5	19.0	--	X	--	X	X	--	--	--
SS-26	RI (Ph II)	11/4/1993	22.5	SS26-110493	0.0	0.5	22.5	22.0	--	X	--	X	X	--	--	--
SS-325	RI (Ph III)	11/19/1998	12	SS-325-0001	0.0	1.0	12.0	11.0	X	X	--	--	X	--	--	--
SS-326	RI (Ph III)	11/19/1998	11	SS-326-0001	0.0	1.0	11.0	10.0	X	X	--	--	X	--	--	--
TP2	RI (Ph II)	1/11/1994	13	TP23	2.0	2.0	11.0	11.0	X	X	--	X	X	X	--	--
TP3	RI (Ph II)	1/11/1994	17	TP33	3.0	3.0	24.6	24.6	X	X	--	X	X	X	--	--
				TP32	7.0	7.0	20.6	20.6	X	X	--	X	X	X	--	--
				TP31	7.0	8.0	20.6	19.6	X	X	--	X	X	X	--	--
									--	--	--	--	--	--	--	--
B-14	RI (Ph II)	12/13/1993	30.7	B141-121393	0.0	1.0	30.7	29.7	X	X	--	X	X	X	--	--

**TABLE 4-1 (cont.)  
MOUND SOIL SAMPLE ANALYSIS  
DRAFT MOUND SUMMARY REPORT  
OLD FIRE FIGHTING TRAINING AREA  
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND  
PAGE 2 OF 2**

Location	Event	Date	Surface Elevation (ft MLW)	Sample ID	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Analysis							
									VOC	SVOC	PAH	Pest/PCBs	TAL Metals	Cyanide	TPH	GRO
				B142-121393	15.0	17.0	15.7	13.7	X	X	--	X	X	X	--	--
B-15	RI (Ph II)	12/13/1993	27.6	B151-121393	0.0	1.0	27.6	26.6	X	X	--	X	X	X	--	--
				B152-121393	10.0	12.0	17.6	15.6	X	X	--	X	X	X	--	--
				B153-121393	15.0	17.0	12.6	10.6	X	X	--	X	X	X	--	--
SB411	PDI	11/24/2003	31.0	SB-411-0204	2.0	4.0	29.0	27.0	X	X	--	X	X	--	X	--
				SB-411-0608	6.0	8.0	25.0	23.0	X	X	--	X	X	--	X	--
				SB-411-1012	10.0	12.0	21.0	19.0	X	X	--	X	X	--	X	--
				SB-411-1416	14.0	16.0	17.0	15.0	X	X	--	X	X	--	X	--
				SB-411-2022	20.0	22.0	11.0	9.0	--	--	X	--	X	--	X	X
SB412	PDI	11/25/2003	24.5	SB-412-0204	2.0	4.0	22.5	20.5	X	X	--	X	X	--	X	--
				SB-412-0608	6.0	8.0	18.5	16.5	X	X	--	X	X	--	X	--
				SB-412-1012	10.0	12.0	14.5	12.5	X	X	--	X	X	--	X	--
Total									19	21	1	19	23	9	8	1

Notes:

- X indicates that specified analysis was conducted.
- Sample SB-406-0002 not analyzed for TPH due to low sample volume
- ft MLW        feet above mean low water
- ft bgs        feet below ground surface
- 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

**TABLE 4-2  
MOUND No. 1 SOIL SAMPLE SUMMARY  
DRAFT MOUND SUMMARY REPORT  
OLD FIRE FIGHTING TRAINING AREA  
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Location/ Date	Surface Elevation (ft MLW)	Sample Depth (ft bgs)	Sample Elevation (ft MLW)	Sample ID	OVA (ppm)	PID (ppm)	FID (ppm)	Description
B-10	13.7	<b>0.0</b> 2.0	<b>13.7</b> 12.7	<b>B101-112393</b>	0 0	ND	na	Fill material consisting of fine sand and gravel mixed with construction debris. Sample B101-112393 collected from 0.0 - 1.0 ft bgs. Refusal at 7 ft bgs.
		2.0 4.0	11.7 9.7		0 0	ND	na	
		4.0 6.0	9.7 7.7		NR	NR	na	
		6.0 8.0	7.7 5.7		0.0	ND	na	
SB415	13.3	<b>0.0</b> 2.0	<b>13.3</b> 11.3	<b>SB-415-0002</b>	na	0 0	0 0	Fill material consisting of fine to coarse sand, silt and gravel mixed with construction debris.
		<b>2.0</b> 4.0	<b>11.3</b> 9.3	<b>SB-415-0204</b>	na	0.0	0 0	
		4.0 6.0	9.3 7.3		na	0.0	0.0	
		<b>6.0</b> 8.0	<b>7.3</b> 5.3	<b>SB-415-0608</b>	na	0.0	0 0	
SB416	11.5	<b>0.0</b> 2.0	<b>11.5</b> 9.5	<b>SB-416-0002</b>	na	0.6	0 0	Fill material consisting of silty fine to coarse sand, silt and gravel mixed with construction debris.
		2.0 4.0	9.5 7.5		na	0.9	0 0	
		4.0 6.0	7.5 5.5		na	0.9	0 0	

Notes:

See boring logs for detailed description

Bold number indicates the soil sample was collected from that depth interval

ft bgs            feet below ground surface

ft MLW         feet above mean low water

FID             flame ionization detector

ND              not detected

OVA            organic vapor analyzer

ppm            parts per million (above background readings)

PID             photoionization detector

**TABLE 4-3**  
**MOUND No. 1 SOIL CONCENTRATIONS EXCEEDING PRGs**  
**DRAFT 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	ug/kg	400
					Chrysene	450	ug/kg	400
					Arsenic	11 5	mg/kg	6.2
					Beryllium	0 63	mg/kg	0 4
		SB-415-0204	2 0 4 0	11 3 9 3	Benzo(a)pyrene	800	ug/kg	400
					Benzo(b)flouranthene	1100	ug/kg	900
					Chrysene	880	ug/kg	400
					Arsenic	11 1	mg/kg	6 2
		SB-415-0608	6 0 8 0	7 3 5 3	Arsenic	23 6	mg/kg	6 2
					Lead	182	mg/kg	150
					Benzo(a)pyrene	480	ug/kg	400
					Chrysene	520	ug/kg	400
SB416	11.5	SB-416-0002	0 0 2 0	11 5 9 5	Arsenic	10.7	mg/kg	6.2
					Beryllium	0.53	mg/kg	0 4
					Lead	168	mg/kg	150
					Benzo(a)pyrene	820	ug/kg	400
		SB-416-0406	4 0 6 0	7 5 5 5	Benzo(b)flouranthene	1100	ug/kg	900
					Chrysene	890	ug/kg	400
					Arsenic	11.8	mg/kg	6.2
					Beryllium	0.43	mg/kg	0 4
					Manganese	570	mg/kg	390

**Notes:**

Soil preliminary remediation goals (PRGs) from OFFTA Feasibility Study, TtNUS September 2002

ft bgs feet below ground surface

ft MLW feet above mean low water

ID identifier

µg/kg microgram per kilogram

mg/kg milligram per kilogram

**TABLE 4-4  
MOUND No. 2 SOIL SAMPLE SUMMARY  
DRAFT MOUND SUMMARY REPORT  
OLD FIRE FIGHTING TRAINING AREA  
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Location/ Date	Surface Elevation (ft MLW)	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Sample ID	OVA (ppm)	PID (ppm)	FID (ppm)	Description
SS-5	17.5	0.0	0.5	17.5	17.0	SS5-411	na	na	na	Fine sand, some silt
B-8	11.5	0.0	2.0	11.5	9.5	B81-112293	0.0	0.0	na	Fill material consisting of fine sand, silt and gravel mixed with construction debris Sample B81-112293 collected from 0.0 -1 0 ft bgs.
		2.0	4.0	9.5	7.5		0.0	0.0	na	
		4.0	6.0	7.5	5.5		NR	NR	na	
		6.0	8.0	5.5	3.5		0.0	6.0	na	
B-9	17.7	0.0	2.0	17.7	16.7	B91-112393	0.0	0.0	na	Fill material consisting of fine sand, silt and gravel mixed with construction debris Sample B91-112293 collected from 0.0 -1 0 ft bgs.
		2.0	4.0	15.7	13.7		NR	NR	na	
		4.0	6.0	13.7	11.7		NR	NR	na	
		6.0	7.0	11.7	10.7		NR	NR	na	
		7.0	9.0	10.7	8.7		0.0	0.0	na	
		9.0	11.0	8.7	6.7		0.0	0.0	na	
SB406	11.4	0.0	2.0	11.4	9.4	SB-406-0002	na	0.0	20.6	Fill material consisting of fine to coarse sand, silty sand, silt and gravel, brick and asphalt, with topsoil at surface.
		2.0	4.0	9.4	7.4		na	0.9	0.0	
		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	
SB407	12.9	0.0	2.0	12.9	10.9	SB-407-0002	na	0.0	0.0	Fill material consisting of sand, sandy and gravelly silt and gravel, concrete, brick and asphalt, with topsoil at surface.
		2.0	4.0	10.9	8.9	SB-407-0204	na	0.0	0.0	
		4.0	6.0	8.9	6.9		na	0.0	0.0	
		6.0	8.0	6.9	4.9		na	0.0	0.0	
SB418	10	0.0	2.0	10.0	8.0	SB-418-0002	na	3.2	2.1	Fill material consisting of fine to medium sand, silt and gravel, concrete, brick and asphalt, with topsoil at surface
		2.0	4.0	8.0	6.0		na	4.1	0.0	
		4.0	6.0	6.0	4.0		na	4.1	3.9	
SB433	17.3	0.0	2.0	17.3	15.3		na	NR	NR	Fill material consisting of silty fine to medium sand, sandy silt with gravel, brick pieces
		2.0	4.0	15.3	13.3	SB-433-0204	na	0.0	0.0	
		4.0	6.0	13.3	11.3		na	0.0	0.0	
		6.0	8.0	11.3	9.3	SB-433-0608	na	20.0	38.0	
		8.0	10.0	9.3	7.3		na	17.1	34.0	
		10.0	12.0	7.3	5.3		na	0.0	0.0	

Notes:

- See boring logs for detailed description.
- Bold number indicates the soil sample was collected from that depth interval.
- ft bgs      feet below ground surface
- ft MLW     feet above mean low water
- FID        flame ionization detector
- NR         No reading
- na         not applicable
- OVA       organic vapor analyzer
- ppm       parts per million (above background readings)
- PID        photoionization detector

**TABLE 4-5**  
**MOUND No. 2 SOIL CONCENTRATIONS EXCEEDING PRGs**  
**DRAFT 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	ug/kg	400
					Chrysene	510	ug/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
SB407	12.9	SB-407-0002	0 2	12.9 10.9	Benzo(a)anthracene	1000 J	ug/kg	900
					Benzo(a)pyrene	860 J	ug/kg	400
					Benzo(b)fluoranthene	1100 J	ug/kg	900
					Chrysene	930 J	ug/kg	400
					Lead	217	mg/kg	150
					Manganese	445	mg/kg	390
		SB-407-0204	2 4	10.9 8.9	Benzo(a)anthracene	1000 J	ug/kg	900
					Benzo(a)pyrene	1000 J	ug/kg	400
					Benzo(b)fluoranthene	1400 J	ug/kg	900
					Chrysene	980 J	ug/kg	400
					Arsenic	6.9	mg/kg	6.2
					Lead	192	mg/kg	150
SB418	10.0	SB-418-0002	0 2	10 8	Manganese	424	mg/kg	390
					Arsenic	8.4	mg/kg	6.2
SB433	17.3	SB-433-0204	2 4	15.3 13.3	Beryllium	0.64	mg/kg	0.4
					Benzo(a)pyrene	620 J	ug/kg	400
					Benzo(b)fluoranthene	910 J	ug/kg	900
					Chrysene	640 J	ug/kg	400
					Arsenic	10.6	mg/kg	6.2
					Beryllium	0.49	mg/kg	0.4
		Manganese	417	mg/kg	390			
SB-433-0608	6 8	11.3 9.3	No PRG exceedances					

**Notes**

Soil preliminary remediation goals (PRGs) from OFFTA Feasibility Study, TINUS September 2002

ft bgs      feet below ground surface  
ft MLW     feet above mean low water  
ID          identifier  
µg/kg      microgram per kilogram  
mg/kg      milligram per kilogram  
J          quantation approximate

**TABLE 4-6  
CENTRAL MOUND SOIL SAMPLE SUMMARY  
DRAFT MOUND SUMMARY REPORT  
OLD FIRE FIGHTING TRAINING AREA  
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND**

Location/ Date	Surface Elevation (ft MLW)	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Sample ID	OVA (ppm)	PID (ppm)	FID (ppm)	Description
SS-3	24.0	0.0	0.5	24.0	23.5	SS3-411	na	na	na	Fine sand and silt, trace organics
SS-11	12.0	0.0	0.5	12.0	11.5					Not available
SS-25	19.5	0.0	0.5	19.5	19.0	SS25-110493	NR	NR	NR	Fill consisting of fine sand and organics, some silt, little rock fragments
SS-26	22.5	0.0	0.5	22.5	22.0	SS26-110493	NR	NR	NR	Fill consisting of fine sand and organics, trace medium sand and gravel
SS-325	12.0	0.0	1.0	12.0	11.0	SS-325-0001				
SS-326	11.0	0.0	1.0	11.0	10.0	SS-326-0001				
TP2	13.0	0.0	3.0	13.0	10.0	TP23	NR	NR	na	Fill consisting of fine to medium sand, silt, cobbles and rock fragments mixed with construction debris
		3.0	6.0	10.0	7.0		NR	NR	na	
TP3	17.0	0.0	4.0	17.0	13.0	TP33	NR	NR	na	Fill consisting of fine to medium sand and rock fragments mixed with construction debris
		4.0	4.5	13.0	12.5		NR	NR	na	
		4.5	7.0	12.5	10.0	TP32	NR	NR	na	
		7.0	8.0	10.0	9.0	TP31	NR	NR	na	
B-14	30.7	0.0	2.0	30.7	28.7	B141-121393	0.0	0.0	na	Fill consisting of fine to medium sand, silt, gravel, cobbles and rock fragments mixed with construction debris
		5.0	7.0	25.7	23.7		0.0	0.0	na	
		7.0	9.0	23.7	21.7		0.0	0.0	na	Sample B141-121393 collected from 0.0 - 1.0 ft bgs
		9.0	11.0	21.7	19.7		0.0	0.0	na	
		15.0	17.0	15.7	13.7	B142-121393	0.0	0.0	na	
		17.0	19.0	13.7	11.7		0.0	0.0	na	
		20.0	22.0	10.7	8.7		NR	NR	na	
B-15	27.6	0.0	2.0	27.6	25.6	B151-121393	0.0	0.0	na	Fill consisting of fine to medium sand, silt, gravel, cobbles and rock fragments mixed with construction debris
		2.0	4.0	25.6	23.6		0.0	0.0	na	
		4.0	6.0	23.6	21.6		0.0	0.0	na	Sample B151-121393 collected from 0.0 - 1.0 ft bgs
		8.0	10.0	19.6	17.6		0.0	0.0	na	
		10.0	12.0	17.6	15.6	B152-121393	0.0	0.0	na	
		15.0	17.0	12.6	10.6	B153-121393	0.0	0.0	na	
		17.0	19.0	10.6	8.6		NR	NR	na	

**TABLE 4-6  
CENTRAL MOUND SOIL SAMPLE SUMMARY  
DRAFT MOUND SUMMARY REPORT  
OLD FIRE FIGHTING TRAINING AREA  
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND  
PAGE 2 OF 2**

Location/ Date	Surface Elevation (ft MLW)	Sample Depth (ft bgs)		Sample Elevation (ft MLW)		Sample ID	OVA (ppm)	PID (ppm)	FID (ppm)	Description
SB411	31.0	0.0	2.0	31.0	29.0		na	na	0.0	Fill material consisting of sand, silt and gravel, mixed with construction debris with topsoil at surface
		<b>2.0</b>	<b>4.0</b>	<b>29.0</b>	<b>27.0</b>	<b>SB-411-0204</b>	na	na	0.0	
		4.0	6.0	27.0	25.0		na	na	0.0	
		<b>6.0</b>	<b>8.0</b>	<b>25.0</b>	<b>23.0</b>	<b>SB-411-0608</b>	na	na	72.8	
		8.0	10.0	23.0	21.0		na	na	94.1	
		<b>10.0</b>	<b>12.0</b>	<b>21.0</b>	<b>19.0</b>	<b>SB-411-1012</b>	na	na	0.0	
		12.0	14.0	19.0	17.0		na	na	574.0	
		<b>14.0</b>	<b>16.0</b>	<b>17.0</b>	<b>15.0</b>	<b>SB-411-1012</b>	na	na	201.9	
		16.0	18.0	15.0	13.0		na	na	489.0	
		18.0	20.0	13.0	11.0		na	na	NR	
20.0	22.0	11.0	9.0		na	na	0.0			
SB412	24.5	0.0	2.0	24.5	22.5		na	NR	NR	Fill material consisting of silty sand and gravel, mixed with construction debris with topsoil at surface
		<b>2.0</b>	<b>4.0</b>	<b>22.5</b>	<b>20.5</b>	<b>SB-412-0204</b>	na	123.0	25.0	
		4.0	6.0	20.5	18.5		na	0.0	7.2	
		<b>6.0</b>	<b>8.0</b>	<b>18.5</b>	<b>16.5</b>	<b>SB-412-0608</b>	na	51.6	33.0	
		8.0	10.0	16.5	14.5		na	0.0	8.3	
		<b>10.0</b>	<b>12.0</b>	<b>14.5</b>	<b>12.5</b>	<b>SB-412-1012</b>	na	19.7	8.8	
		12.0	14.0	12.5	10.5		na	38.9	103.3	
		<b>14.0</b>	<b>16.0</b>	<b>10.5</b>	<b>8.5</b>	<b>SB-412-1416</b>	na	50.3	137.3	
16.0	18.0	8.5	6.5		na	63.0	132.6			

## Notes.

Bold number indicates the soil sample was collected from that depth interval.

ft bgs feet below ground surface

ft MLW feet above mean low water

FID flame ionization detector

NR No reading

na not applicable

OVA organic vapor analyzer

ppm parts per million (above background readings)

PID photoionization detector

**TABLE 4-7  
CENTRAL MOUND SOIL CONCENTRATIONS EXCEEDING PRGs  
DRAFT 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		
					Arsenic	9.2	mg/kg	6.2		
		B142-121393	15.0 17.0	15.7 13.7	Chrysene	460 J	ug/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	ug/kg	900		
					Benzo(a)pyrene	2600	ug/kg	400		
					Benzo(b)fluoranthene	3900	ug/kg	900		
					Benzo(g,h,i)perylene	1300 J	ug/kg	800		
					Chrysene	2400	ug/kg	400		
		B152-121393	10.0 12.0	17.6 15.6	Indeno(1,2,3-cd)pyrene	1100 J	ug/kg	900		
					Manganese	506 J	mg/kg	390		
					Benzo(a)anthracene	1200	ug/kg	900		
		B153-121393	15.0 17.0	12.6 10.6	Benzo(a)pyrene	730	ug/kg	400		
					Benzo(b)fluoranthene	1300	ug/kg	900		
					Chrysene	1100	ug/kg	400		
					Benzo(a)anthracene	1300	ug/kg	900		
					Benzo(a)pyrene	760	ug/kg	400		
					Benzo(b)fluoranthene	1400	ug/kg	900		
		TP2	13.0	TP23	2.0 2.0	11.0 11.0	Chrysene	1100	ug/kg	400
							Lead	292	mg/kg	150
		TP3	17.0	TP33	3.0 3.0	14.0 14.0	Manganese	419 J	mg/kg	390
Benzo(a)pyrene	460 J						ug/kg	400		
TP3	17.0	TP32	7.0 7.0	10.0 10.0	Chrysene	580 J	ug/kg	400		
					Benzo(a)pyrene	630 J	ug/kg	400		
		TP32	7.0 7.0	10.0 10.0	Chrysene	640 J	ug/kg	400		
					Benzo(a)anthracene	2400 J	ug/kg	900		
					Benzo(a)pyrene	2900 J	ug/kg	400		
					Benzo(b)fluoranthene	2300 J	ug/kg	900		
					Benzo(g,h,i)perylene	1700 J	ug/kg	800		
					Benzo(k)fluoranthene	2500 J	ug/kg	900		
					Chrysene	2500 J	ug/kg	400		
					Dibenz(a,h)anthracene	780 J	ug/kg	400		
		TP31	7.0 8.0	10.0 9.0	Indeno(1,2,3-cd)pyrene	1700 J	ug/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	ug/kg	400		
Lead	3090 J				mg/kg	150				

TABLE 4-7 (cont.)  
CENTRAL MOUND SOIL CONCENTRATIONS EXCEEDING PRGs  
DRAFT MOUND SUMMARY REPORT  
OLD FIRE FIGHTING TRAINING AREA  
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND  
PAGE 2 OF 2

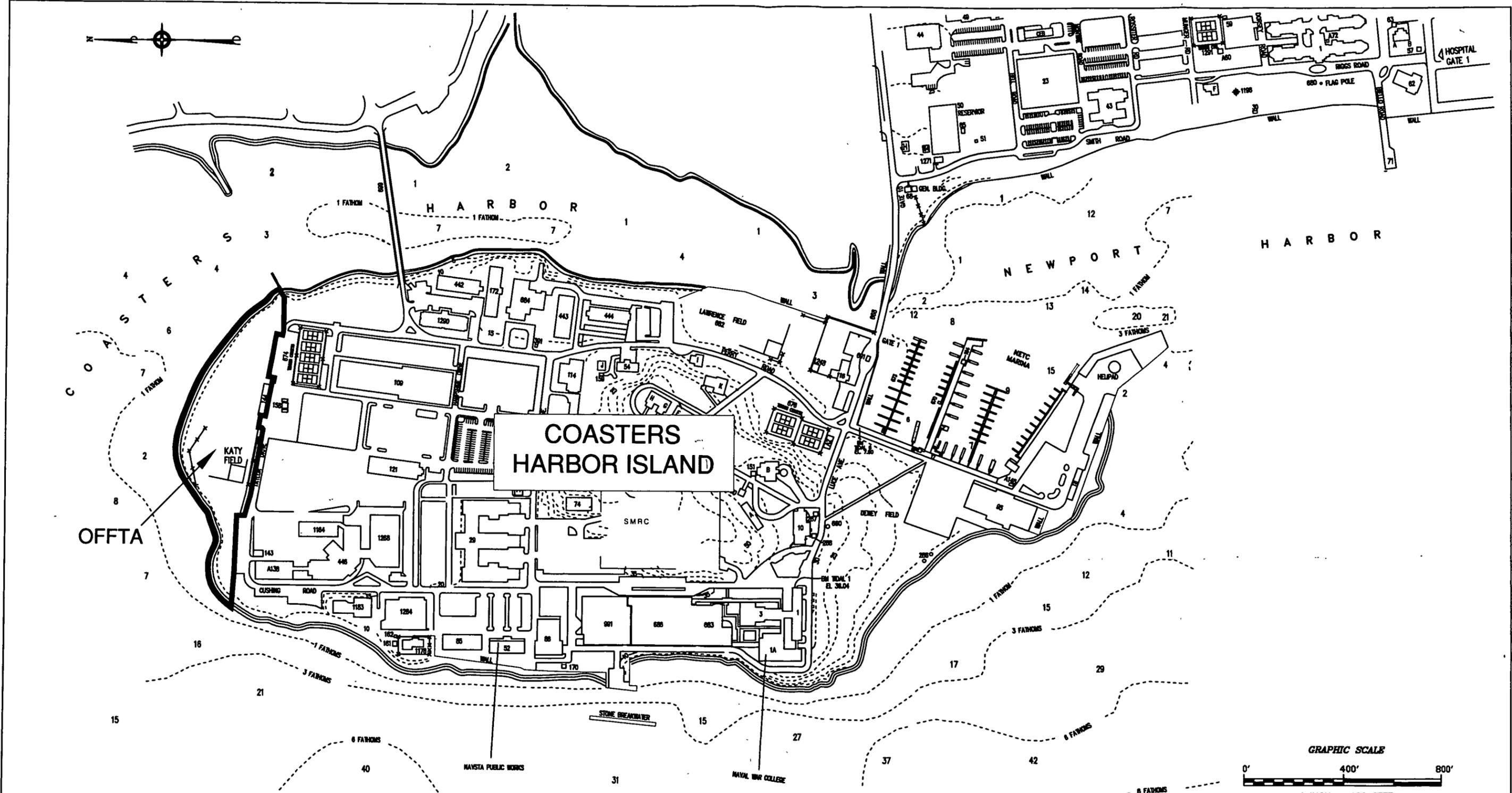
Location	Surface Elevation (ft bgs)	Sample ID	Sample Depth (ft bgs)	Sample Elevation (ft MLW)	Parameter	Concentration	units	Soil PRG	
SB411	31.0	SB-411-0204	2.0 4.0	29.0 27.0	Benzo(a)pyrene	410	ug/kg	400	
					Chrysene	480	ug/kg	400	
					Arsenic	7.8	mg/kg	6.2	
					Manganese	491	mg/kg	390	
		SB-411-0608	6.0 8.0	25.0 23.0	Chrysene	490	ug/kg	400	
					Arsenic	12.8	mg/kg	6.2	
					Beryllium	0.54	mg/kg	0.4	
					Manganese	557	mg/kg	390	
		SB-411-1012	10.0 12.0	21.0 19.0	Benzo(a)anthracene	930	ug/kg	900	
					Benzo(a)pyrene	610	ug/kg	400	
					Benzo(b)fluoranthene	1100	ug/kg	900	
					Chrysene	970	ug/kg	400	
					Arsenic	8.8	mg/kg	6.2	
					Beryllium	0.5	mg/kg	0.4	
					Manganese	424	mg/kg	390	
		SB-411-1416	14.0 16.0	17.0 15.0	Benzo(a)anthracene	3600	ug/kg	900	
					Benzo(a)pyrene	2900	ug/kg	400	
					Benzo(b)fluoranthene	3300	ug/kg	900	
					Benzo(g,h,i)perylene	1700 J	ug/kg	800	
					Benzo(k)fluoranthene	1400 J	ug/kg	900	
Chrysene	3300				ug/kg	400			
Dibenzo(a,h)anthracene	600 J				ug/kg	400			
Indeno(1,2,3-cd)pyrene	1500 J				ug/kg	900			
Arsenic	9.5				mg/kg	6.2			
Beryllium	0.46				mg/kg	0.4			
Lead	559				mg/kg	150			
SB-411-2022	20.0 22.0				11.0 9.0	Manganese	409	mg/kg	390
SB412	24.5				SB-412-0204	2.0 4.0	22.5 20.5	Arsenic	11.5
		Beryllium	0.55	mg/kg				0.4	
		Manganese	574	mg/kg				390	
		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	
		SB-412-1012	10.0 12.0	14.5 12.5	Benzo(a)pyrene	590	ug/kg	400	
					Chrysene	680	ug/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						

## Notes:

Soil preliminary remediation goals (PRGs) from OFFTA Feasibility Study, TINUS September 2002

ft bgs feet below ground surface  
ft MLW feet above mean low water  
ID identifier  
µg/kg microgram per kilogram  
mg/kg milligram per kilogram  
na not applicable  
J quantation approximate

## FIGURES



**NOTES:**  
 BASE MAP FROM PLAN BY DEPT. OF NAVY, "COASTERS HARBOR ISLAND AND NAVAL HOSPITAL EXISTING CONDITIONS MAP", DATED: 9/88, NETC DWG NO.: 31058-307, CODE ID NO.: 80091, SCALE: 1"=200'.

NARRAGANSETT BAY

<b>OFFTA LOCATION MAP</b>	
<b>OLD FIRE FIGHTING TRAINING AREA</b>	
<b>NAVSTA NEWPORT — NEWPORT, RHODE ISLAND</b>	
DRAWN BY: D.W. MACDOUGALL	REV.: 0
CHECKED BY: D. BAXTER	DATE: JANUARY 23, 2004
SCALE: 1" = 400'	FILE NO.: DWG\4152\1400\FIG_2-1.DWG

FIGURE 2-1

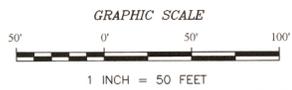


55 Jonspin Road  
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LEGEND	
	CATCH BASIN
	FENCE
	EXISTING CONTOUR
	SOIL BORING LOCATION WHERE SURFACE AND SUBSURFACE SOIL SAMPLES WERE COLLECTED
	MONITORING WELL LOCATION WHERE SURFACE AND SUBSURFACE SOIL SAMPLES WERE COLLECTED
	STORM SEWER
	TEST PIT LOCATION WHERE SUBSURFACE SOIL SAMPLE(S) WERE COLLECTED (B&R, 6/97)
	TEST PIT LOCATION WHERE SUBSURFACE SOIL SAMPLE(S) WERE COLLECTED (TRC, 1/94)
	PROPOSED BORING AND IDENTIFIER
	SUBSURFACE SOIL SAMPLE LOCATION WHERE CRITERIA* EXCEEDED
	LOCATIONS (INCLUDING TEST PITS & BORINGS) WHERE PETROLEUM WAS OBSERVED ON SUB-SURFACE SOILS
	RIDEM RESIDENTIAL DIRECT EXPOSURE CRITERIA EXCEPT FOR ARSENIC (PROPOSED 6.2 MG/KG BACKGROUND LEVEL WAS USED)
	INTERPRETED BASE OF MOUND

- NOTES AND REFERENCES:**
- 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.
  - HORIZONTAL DATUM BASE ON THE RI STATE PLANE COORDINATE SYSTEM NAD 1927. VERTICAL DATUM BASED ON NAVAL BASE MEAN LOW WATER.
  - ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
  - PLAN NOT TO BE USED FOR DESIGN.

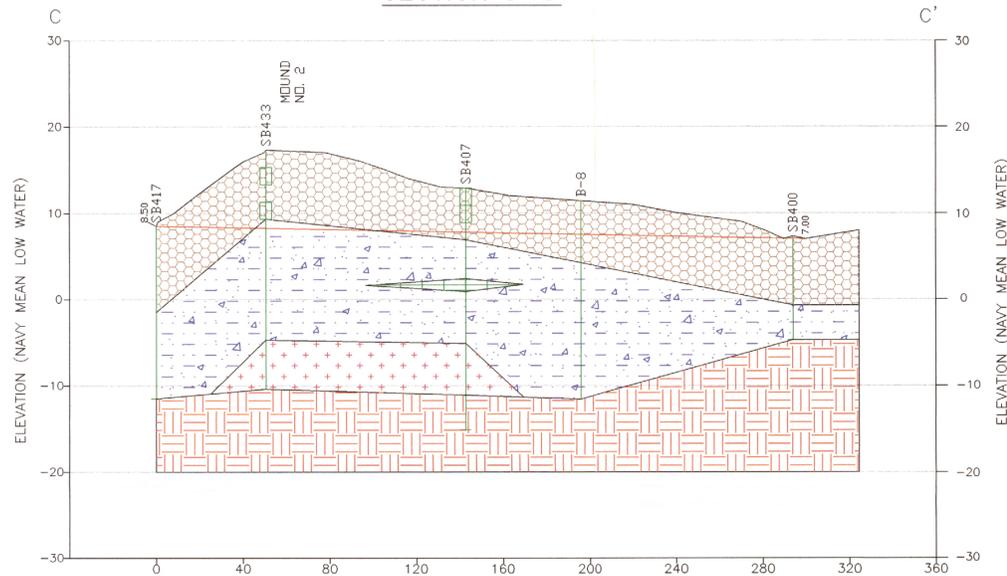


DRAWN BY: D.W. MACDOUGALL	TITLE: SOIL BORING LOCATIONS
PREPARED BY: D. HARTIGAN	PRE-DESIGN INVESTIGATION, SOIL REMOVAL
CHECKED BY: S. PARKER	OLD FIRE FIGHTING TRAINING AREA
	NAVAL STATION NEWPORT, RHODE ISLAND
	SOURCE: BASE PLAN BY SEE NOTES.
PROJECT MANAGER: S. PARKER	SCALE: 1" = 50'
PROGRAM MANAGER: J. TREPANOWSKI	DATE: JANUARY 23, 2003
	PROJ. NO: 4152
	DRAWING NO: FIGURE 4-1
	ACFILE NAME: DWG\4152\1401\FIG_4-1.DWG
	REV: 0

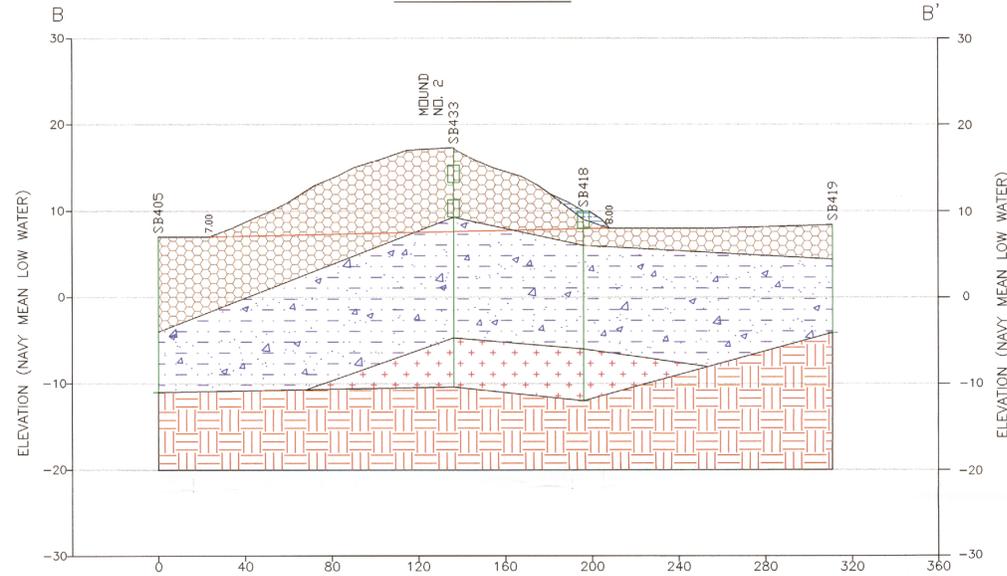
**TETRA TECH NUS, INC.**

55 JONSPIN ROAD  
WILMINGTON, MASSACHUSETTS 01887  
(978)658-7899

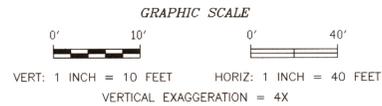
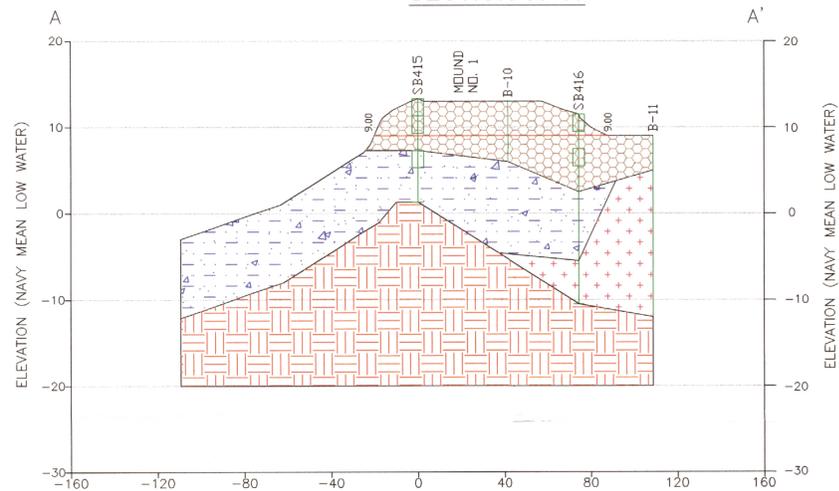
**SECTION C - C'**



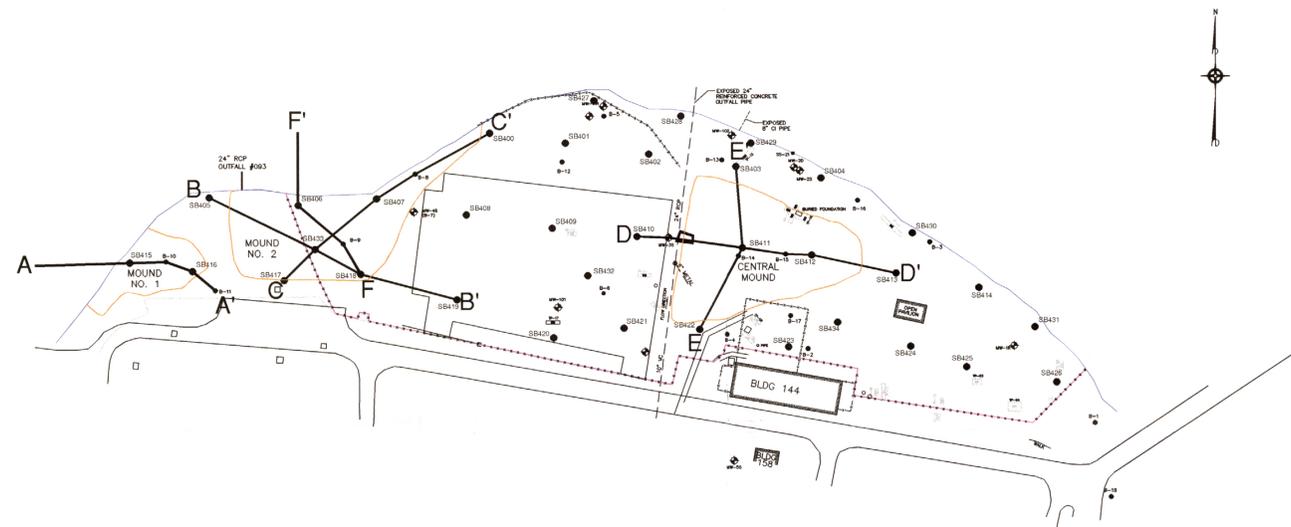
**SECTION B - B'**



**SECTION A - A'**



**X-SECTION LOCATION MAP**  
(NOT TO SCALE)



**LEGEND**

- 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 ROCK FRAGMENTS AND SEASHELL FRAGMENTS
- PEAT - PEAT WITH VARYING AMOUNTS OF SAND AND SILT
- TOP SOIL
- TILL - DENSE SILT WITH FINE TO MEDIUM SAND, GRAVEL AND ROCK FRAGMENTS
- BEDROCK - CONGLOMERATE WITH QUARTZITE COBBLES

SOIL ABOVE THIS LINE TO BE REMOVED  
NUMBER IS ELEVATION AT END OF LINE IN FEET

**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. WELL SCREEN WIDTHS ARE NOT TO SCALE.
3. 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 MINUS 1.6 FEET).
4. BASE PLAN BY GEURRIERE AND HALNON, INC., JULY 1997, DATED NOVEMBER 10, 1997, PROJ. NO. 7578 CTO 288, BY BROWN AND ROOT ENVIRONMENTAL.
5. GROUND ELEVATIONS WERE BASED ON BORING LOGS PROVIDED BY TRC.
6. ELEVATIONS OF SUBSURFACE CONTACTS WERE GENERALIZED FROM BORING LOGS BY TRC AND TTUS.
7. BASED ON THE SEISMIC REFRACTION SURVEY RESULTS, THE ESTIMATED ACCURACY OF DEPTH OF BEDROCK IS +/- 15 PERCENT OR 2 FEET, WHICHEVER IS GREATER. THE DEPTHS DETERMINED FOR BEDROCK ARE DEPTHS OF COMPETENT ROCK; DEEPLY WEATHERED ROCK MAY OCCUR AT SHALLOWER DEPTHS.
8. PRESUMPTION MADE THAT APPROXIMATELY 1-2 FEET OF TOPSOIL (FILL) LIES BETWEEN THE MOUNDS AND ACROSS THE EASTERN PORTION OF THE SITE, UNLESS OTHERWISE SPECIFIED.
9. BEDROCK ELEVATIONS ARE BASED ON THE DEPTH TO BEDROCK OBSERVED IN TEST PITS AND BORINGS. SEISMIC REFRACTION SURVEY RESULTS WERE USED TO SUPPLEMENT THESE DATA. IF A REFUSAL WAS NOTED IN A BORING THE TOP OF BEDROCK WAS 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.
10. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
11. PLAN NOT TO BE USED FOR DESIGN.

**LEGEND**

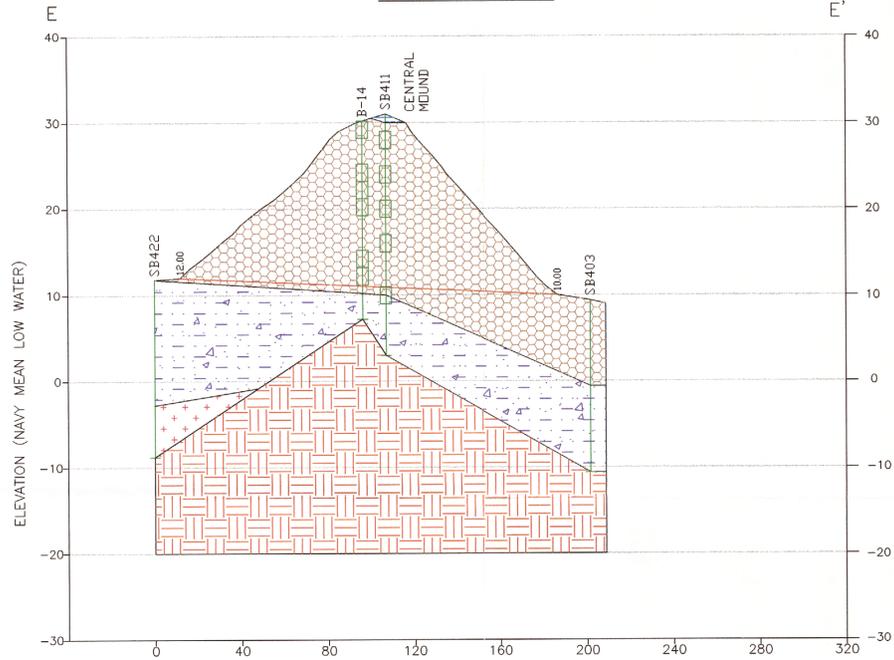
- BORING NUMBER
- SOIL SAMPLE COLLECTED
- SOIL BORING
- END OF BORING

DRAWN BY: D.W. MACDOUGALL		TITLE: GEOLOGICAL CROSS SECTIONS A-A', B-B' AND C-C'	
PREPARED BY: D. HARTIGAN		OLD FIRE FIGHTING TRAINING AREA	
CHECKED BY: S. PARKER		NAVSTA NEWPORT - NEWPORT, RHODE ISLAND	
		SOURCE: BASE PLAN BY SEE NOTES	
PROJECT MANAGER: S. PARKER	SCALE: AS SHOWN	DATE: JANUARY 23, 2003	PROJ. NO: 4152
PROGRAM MANAGER: G. GARDNER	DRAWING NO: FIGURE 4-2	ACFILE NAME: DWG\4152\1401\FIG_4-2.DWG	REV: 0

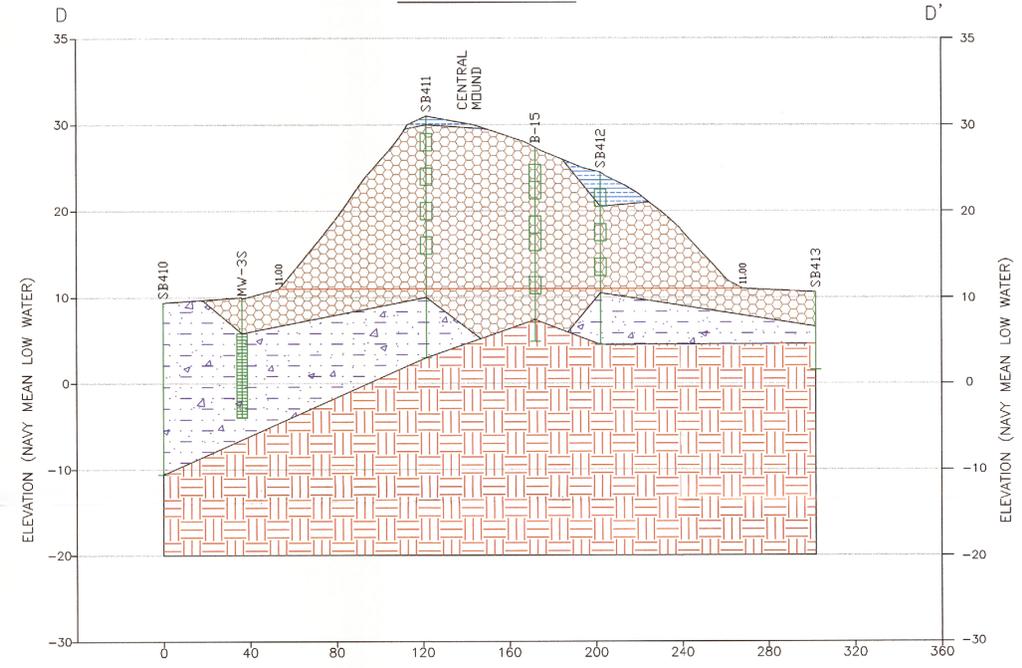


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(978)658-7899

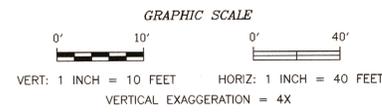
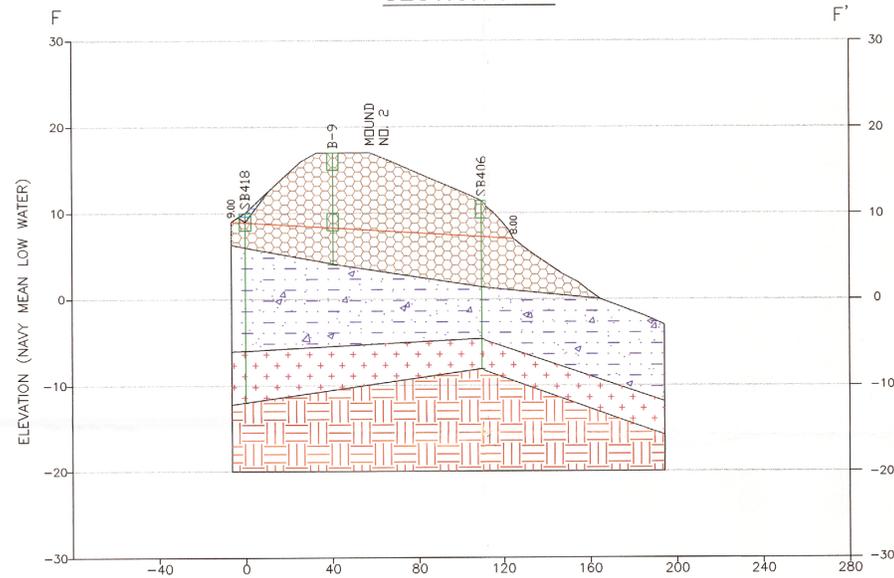
**SECTION E - E'**



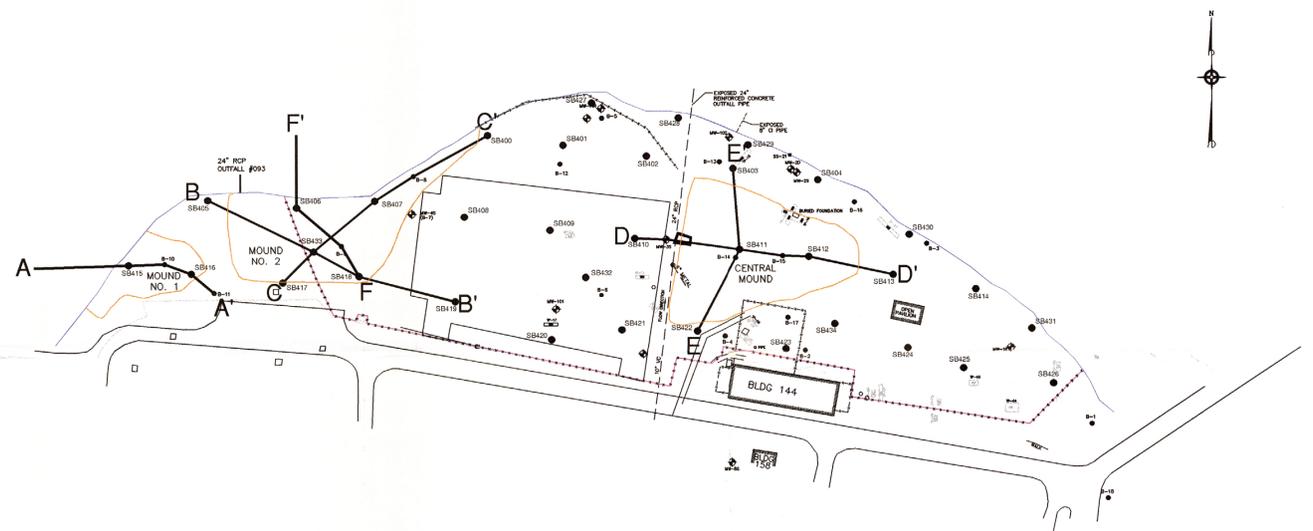
**SECTION D - D'**



**SECTION F - F'**



**X-SECTION LOCATION MAP**  
(NOT TO SCALE)

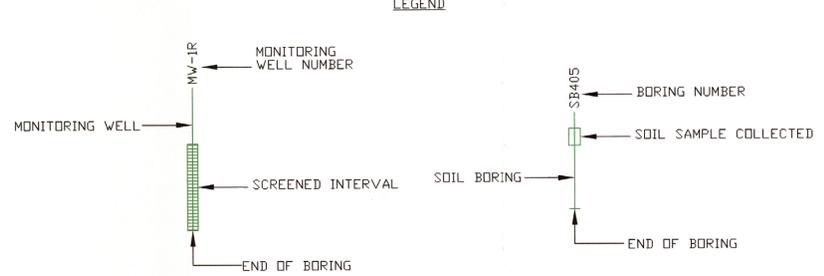


**LEGEND**

	<b>FILL</b> - 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
	<b>SILTY SAND AND GRAVEL</b> - FINE TO MEDIUM SAND, SILT AND GRAVEL, WITH VARYING AMOUNTS OF ROCK FRAGMENTS AND SEASHELL FRAGMENTS
	<b>PEAT</b> - PEAT WITH VARYING AMOUNTS OF SAND AND SILT
	<b>TOP SOIL</b>
	<b>TILL</b> - DENSE SILT WITH FINE TO MEDIUM SAND, GRAVEL AND ROCK FRAGMENTS
	<b>BEDROCK</b> - CONGLOMERATE WITH QUARTZITE COBBLES

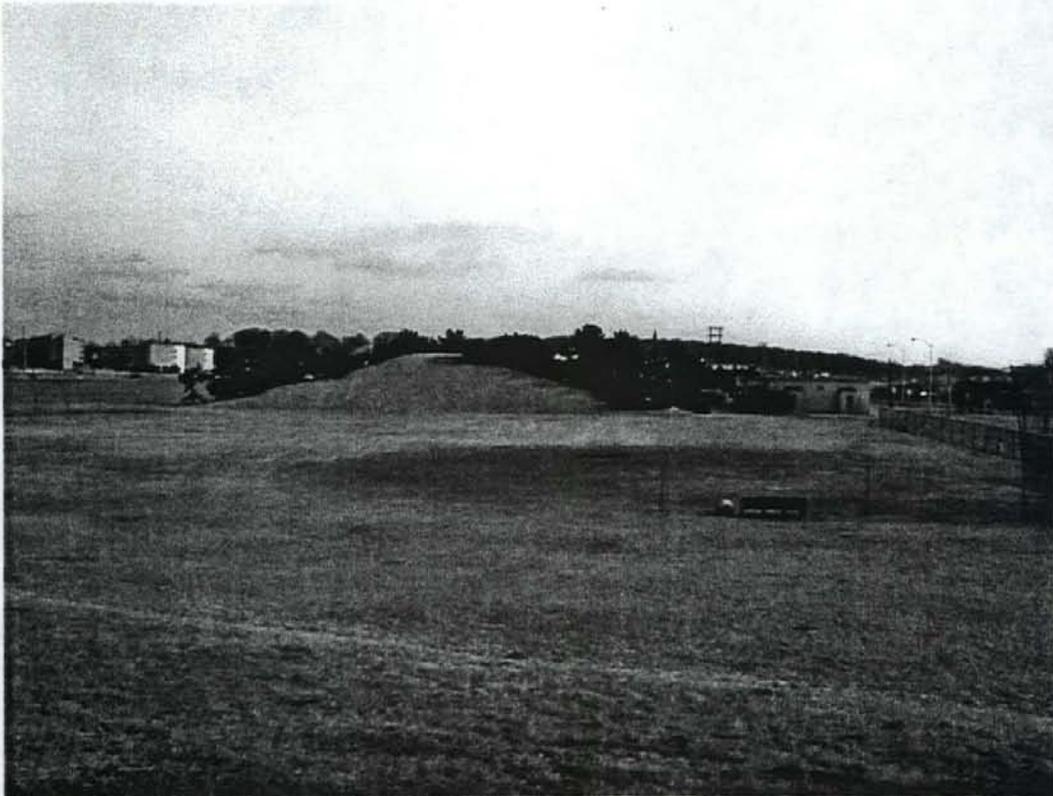
8.00  
SOIL ABOVE THIS LINE TO BE REMOVED  
NUMBER IS ELEVATION AT END OF LINE IN FEET

- 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. WELL SCREEN WIDTHS ARE NOT TO SCALE.
  3. 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 MINUS 1.6 FEET).
  4. BASE PLAN BY GEURRIERE AND HALNON, INC., JULY 1997, DATED NOVEMBER 10, 1997, PROJ. NO. 7578 CTO 288, BY BROWN AND ROOT ENVIRONMENTAL.
  5. GROUND ELEVATIONS WERE BASED ON BORING LOGS PROVIDED BY TRC.
  6. ELEVATIONS OF SUBSURFACE CONTACTS WERE GENERALIZED FROM BORING LOGS BY TRC AND TTNUS.
  7. BASED ON THE SEISMIC REFRACTION SURVEY RESULTS, THE ESTIMATED ACCURACY OF DEPTH OF BEDROCK IS +/- 15 PERCENT OR 2 FEET, WHICHEVER IS GREATER. THE DEPTHS DETERMINED FOR BEDROCK @ ARE DEPTHS OF COMPETENT ROCK; DEEPLY WEATHERED ROCK MAY OCCUR AT SHALLOWER DEPTHS.
  8. PRESUMPTION MADE THAT APPROXIMATELY 1-2 FEET OF TOPSOIL (FILL) LIES BETWEEN THE MOUNDS AND ACROSS THE EASTERN PORTION OF THE SITE, UNLESS OTHERWISE SPECIFIED.
  9. BEDROCK ELEVATIONS ARE BASED ON THE DEPTH TO BEDROCK OBSERVED IN TEST PITS AND BORINGS. SEISMIC REFRACTION SURVEY RESULTS WERE USED TO SUPPLEMENT THESE DATA. IF A REFUSAL WAS NOTED IN A BORING THE TOP OF BEDROCK WAS 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.
  10. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
  11. PLAN NOI TO BE USED FOR DESIGN.



DRAWN BY: D.W. MACDOUGALL	TITLE: GEOLOGICAL CROSS SECTIONS D-D', E-E' AND F-F'		
PREPARED BY: D. HARTIGAN	OLD FIRE FIGHTING TRAINING AREA		
CHECKED BY: S. PARKER	NAVSTA NEWPORT - NEWPORT, RHODE ISLAND		
	SOURCE: BASE PLAN BY SEE NOTES		
	SCALE: AS SHOWN	DATE: JANUARY 26, 2003	PROJ. NO: 4152
PROJECT MANAGER: S. PARKER	DRAWING NO: 4-3	ACFILE NAME: DWG\4152\1401\FIG_4-3.DWG	REV: 0
PROGRAM MANAGER: G. GARDNER			

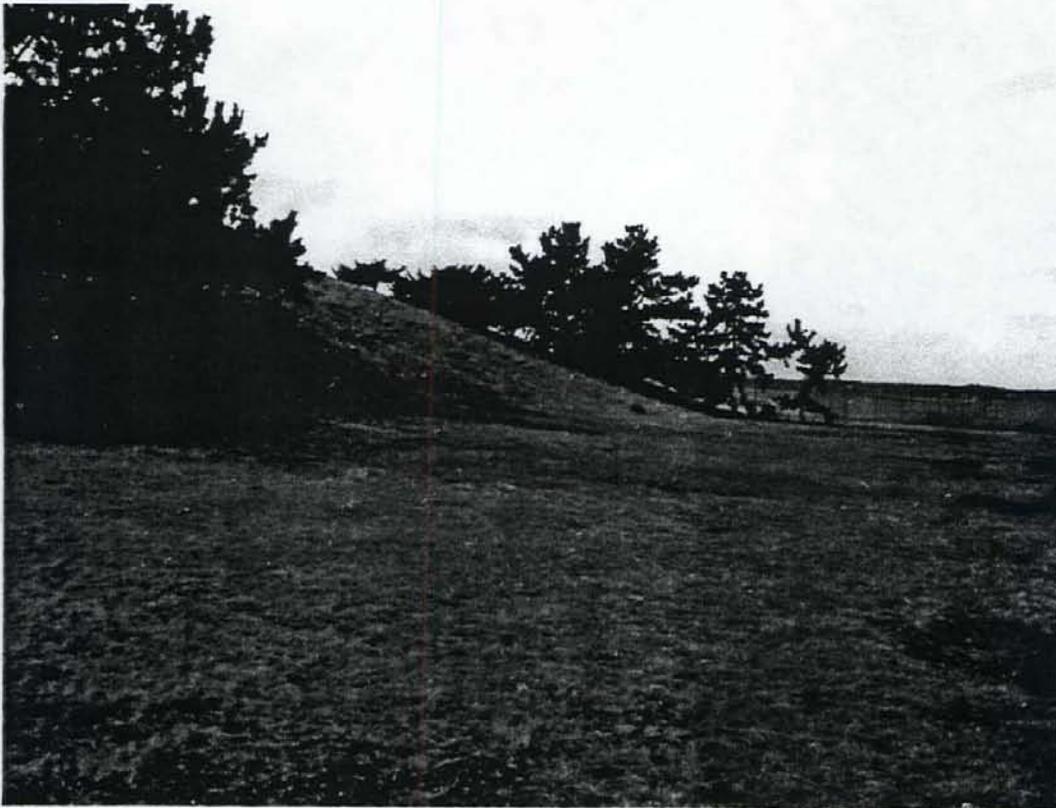
**APPENDIX A**  
**SITE PHOTOGRAPHS**



Photograph 1                      OFFTA Site, NAVSTA Newport, RI                      January 2001  
Central Mound viewed from west (prior to construction of temporary parking lot)



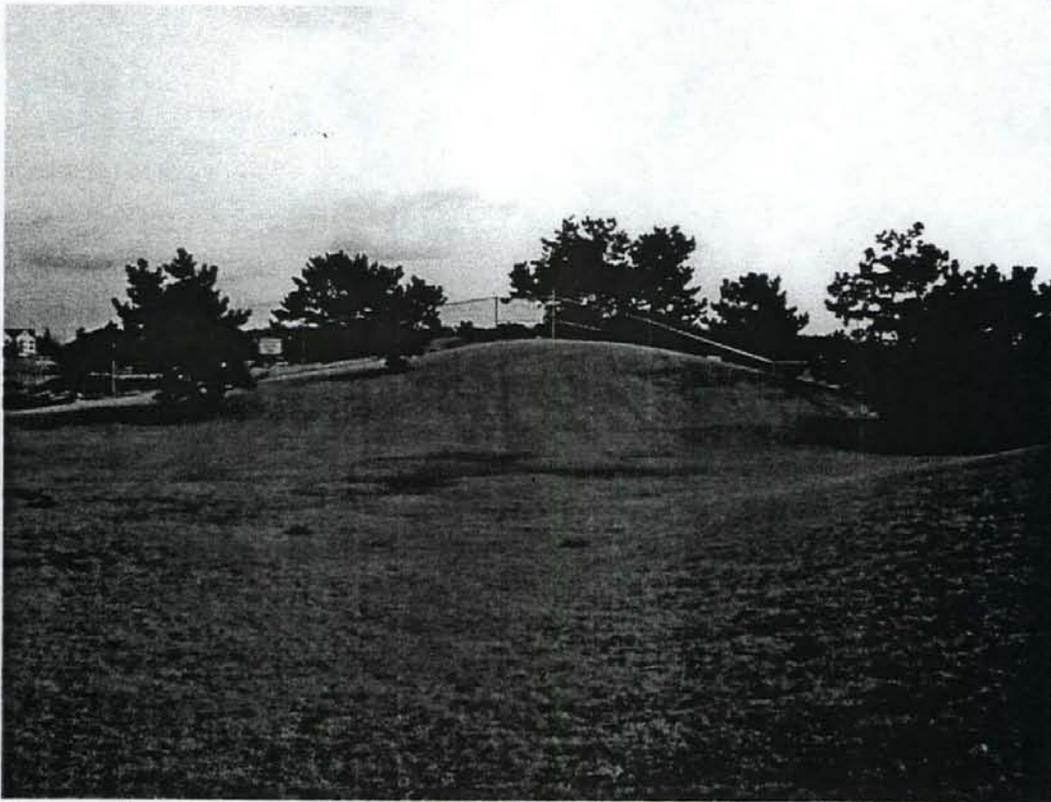
Photograph 2                      OFFTA Site, NAVSTA Newport, RI                      January 2001  
Central Mound viewed from southeast



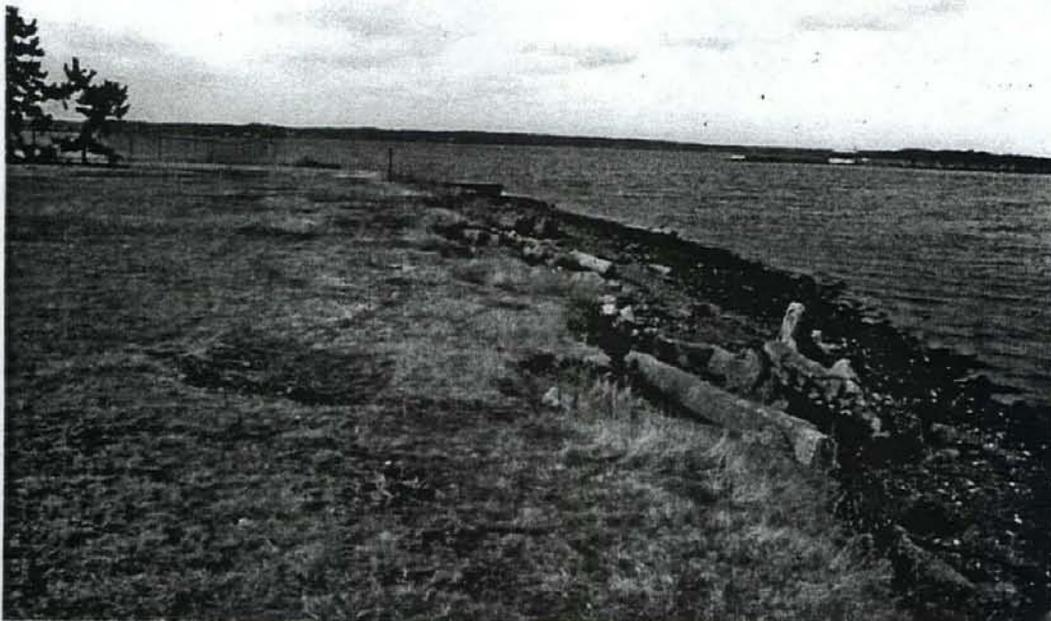
Photograph 3                      OFFTA Site, NAVSTA Newport, RI                      January 2001  
Central Mound viewed from northeast



Photograph 4                      OFFTA Site, NAVSTA Newport, RI                      January 2001  
Mound No. 2 viewed from east (prior to construction of temporary parking lot)



Photograph 5 OFFTA Site, NAVSTA Newport, RI January 2001  
Mound No. 2 viewed from west; Mound No. 1 is to the right of the frame



Photograph 6 OFFTA Site, NAVSTA Newport, RI January 2001  
OFFTA shoreline viewed from east

**APPENDIX B**  
**FIELD LOGS**

- RI Surface Sample Descriptions
- RI Test Pit Logs
- RI Soil Boring Logs
- PDI Soil Boring Logs

## **RI Surface Sample Descriptions**

### **Surface Sample ID**

SS-3

SS-5

SS-25

SS-26

SS-325

SS-326

SS-11 (No Description available)

B8

B9

B-10

B-11

B14

B15

SITE 09 – OLD FIREFIGHTING TRAINING AREA  
SURFACE SOIL SAMPLE LOG

SAMPLE NUMBER	DATE	ANALYSES	SOIL DESCRIPTION
<del>SS-01</del>	<del>4/11/90</del>	<del>TCL, TAL, -DIOXIN (ARCHIVED)</del>	<del>SILT AND FINE SAND, MEDIUM DENSE, BROWN</del>
<del>SS-02</del>	<del>4/11/90</del>	<del>TCL, TAL, -DIOXIN (ARCHIVED)</del>	<del>FINE SAND, SOME SILT, TRACE GRAVEL, DARK BROWN *(SAMPLE SPLIT WITH EPA)</del>
SS-03	4/11/90	TCL, TAL, DIOXIN (ARCHIVED)	FINE SAND AND SILT, TRACE ORGANICS, BROWN
<del>SS-04</del>	<del>4/11/90</del>	<del>TCL, TAL, -DIOXIN (ARCHIVED)</del>	<del>FINE SAND, SOME SILT, BROWN</del>
SS-05	4/11/90	TCL, TAL, DIOXIN (ARCHIVED)	FINE SAND, SOME SILT, BROWN
<del>SS-06</del>	<del>4/11/90</del>	<del>TCL, TAL, -DIOXIN (ARCHIVED)</del>	<del>0-6" LOOSE PEBBLES AND SHELLS; 6-12" COARSE SAND AND GRAVEL, SOME COBBLES, TRACE ASPHALT, BROWN</del>

TABLE 2-3  
NETC - NEWPORT  
U.S. NAVY - NORTHERN DIVISION  
SITE 09 - OLD FIRE FIGHTING TRAINING AREA  
SURFACE SOIL SAMPLE DESCRIPTIONS

Sample I.D.	Date Sampled	Time Sampled	Soil Description
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Surface Soil Samples

<del>FF-SS12</del>	<del>11/3/93</del>	<del>0850</del>	<del>Brown F-M SAND &amp; ORGANICS, little gravel &amp; rock fragments, dry, no odor, 0" to 9"</del>
FF-SS13	11/3/93	0915	Brown F SAND & ORGANICS, some M sand, trace gravel & rock fragments, dry, no odor, 0" to 10".
FF-SS14	<del>11/3/93</del>	0930	<del>Brown F SAND &amp; ORGANICS, little silt, dry, no odor, 0" to 10"</del>
FF-SS15	11/3/93	1005	Brown F SAND & ORGANICS, trace rock fragments, dry, no odor, 0" to 10".
FF-SS16	11/3/93	<del>1035</del>	<del>Tan F SAND &amp; ORGANICS, 0" to 3". Brown F SAND, little silt &amp; organics, dry, no odor, 0" to 10"</del>
FF-SS17	11/3/93	1100	<del>Brown F SAND &amp; ORGANICS, little silt &amp; rock fragments, dry, no odor, 0" to 11"</del>
FF-SS18	11/3/93	1120	<del>Brown F SAND, some organics, little silt &amp; rock fragments, 0" to 7"</del>
FF-SS19	11/3/93	1200	<del>Brown FILL, F sand &amp; organics, little silt &amp; gravel, dry, no odor, 0" to 12"</del>
FF-SS20	11/3/93	1215	<del>Brown FILL, F sand &amp; rock fragments, little organics &amp; silt, trace brick &amp; asphalt, dry, no odor, 0" to 10"</del>
FF-SS21	11/4/93	0805	<del>Brown FILL, F-M sand &amp; organics, some rock fragments, trace gravel &amp; glass, dry, no odor, 0" to 9"</del>
FF-SS22	<del>11/4/93</del>	0830	<del>Brown FILL, F sand &amp; organics, some rock fragments, trace M sand &amp; silt, dry, no odor, 0" to 10"</del>
FF-SS23	11/4/93	0850	Brown F SAND & ORGANICS, little silt, trace gravel & rock fragments, dry, no odor, 0" to 10".
<del>FF-SS24</del>	<del>11/4/93</del>	<del>0905</del>	<del>Brown F SAND &amp; ORGANICS, little silt &amp; rock fragments, dry, no odor, 0" to 9"</del>
FF-SS25	11/4/93	0925	Brown FILL, F sand & organics, some silt, little rock fragments, dry, no odor, 0" to 9".
FF-SS26	11/4/93	0950	Brown FILL, F sand & organics, trace M sand & gravel, dry, no odor, 0" to 9".
<del>FF-SS27</del>	<del>11/4/93</del>	<del>1220</del>	<del>Brown F SAND &amp; ORGANICS, trace gravel &amp; rock fragments, dry, no odor, 0" to 12"</del>
FF-SS28	11/4/93	1020	<del>Brown F SAND &amp; ORGANICS, trace rock fragments, dry, no odor, 0" to 8"</del>
FF-SS29	11/4/93	1040	<del>Brown F SAND &amp; ORGANICS, some rock fragments, trace M sand, dry, no odor, 0" to 10"</del>
FF-SS30	11/4/93	1125	<del>Brown F SAND &amp; ORGANICS, some silt, dry, no odor, 0" to 9"</del>
<del>FF-SS31</del>	<del>11/4/93</del>	<del>1200</del>	<del>Brown F SAND &amp; ORGANICS, some rock fragments, trace gravel &amp; M sand, dry, no odor, 0" to 10"</del>

TABLE 2-3  
NETC - NEWPORT  
U.S. NAVY - NORTHERN DIVISION  
SITE 09 - OLD FIRE FIGHTING TRAINING AREA  
SURFACE SOIL SAMPLE DESCRIPTIONS

Sample I.D.	Date Sampled	Time Sampled	Soil Description
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Soil Boring Surface Soil Samples

FF-B81	11/22/93	0935	Brown FILL, F sand & organics, trace gravel & silt, 0" to 7" Grey FILL, F sand, brick, dry, no odor, 7 to 18"
FF-B91	11/23/93	0840	Brown FILL, F sand & organics, some rock fragments, dry, no odor, 0" to 12".
FF-B101	11/23/93	1420	Brown FILL, F sand & organics, some rock fragments, little asphalt & concrete, dry, no odor, 0" to 12"
FF-B111	11/24/93	0800	Brown FILL, F sand & organics, some rock fragments & gravel, dry, no odor, 0" to 12".
<del>FF-B121</del>	<del>11/24/93</del>	<del>0812</del>	<del>Brown F SAND &amp; SILT, some gravel, dry, no odor, 0" to 12".</del>
<del>FF-B131</del>	<del>11/23/93</del>	<del>1300</del>	<del>Brown FILL, F sand &amp; brick fragments, dry, no odor, 0" to 12".</del>
FF-B141	12/13/93	0910	Brown FILL, F sand & organics, trace rock fragments, dry, no odor, 0" to 12".
FF-B151	12/13/93	1315	Brown FILL, F sand & organics, some rock fragments, trace brick fragments, dry, no odor, 0" to 12"
<del>FF-B161</del>	<del>11/23/93</del>	<del>0930</del>	<del>Brown F SAND &amp; SILT, some organics, M sand, &amp; gravel, dry, no odor, 0" to 11".</del>
<del>FF-B171</del>	<del>11/24/93</del>	<del>0717</del>	<del>Brown F SAND, some silt &amp; M-C gravel, trace cobbles, dry, no odor, 0" to 12".</del>
<del>FF-B181</del>	<del>11/23/93</del>	<del>0840</del>	<del>Brown F SAND, trace silt, dry, no odor, 0" to 12".</del>

Well Boring Surface Soil Samples

<del>FF-M61</del>	<del>11/30/93</del>	<del>0755</del>	<del>Brown TOPSOIL, 0" to 6". Brown F SAND, some silt, little gravel, trace asphalt, dry, no odor, 6" to 12".</del>
<del>FF-M71</del>	<del>11/29/93</del>	<del>1311</del>	<del>Brown F SAND, little cobbles, trace silt, 0" to 12".</del>
<del>FF-M81</del>	<del>11/30/93</del>	<del>1319</del>	<del>Brown TOPSOIL, 0" to 3". Brown F SAND, little cobbles, trace silt, dry, no odor, 3" to 12".</del>
<del>FF-M91</del>	<del>12/01/93</del>	<del>0715</del>	<del>Brown TOPSOIL, 0" to 6". Brown SILT &amp; ROCK fragments, little F sand, dry, no odor, 6" to 12".</del>
<del>FF-M101</del>	<del>11/29/93</del>	<del>0825</del>	<del>Brown FILL, topsoil, 0" to 6". Brown FILL, F sand &amp; silt, little brick fragments, dry, no odor, 6" to 12".</del>
<del>FF-M111</del>	<del>11/29/93</del>	<del>1020</del>	<del>Brown FILL, F sand &amp; plastic, 0" to 3". FILL, black charred wood, little asphalt &amp; concrete, dry, no odor, 3" to 12".</del>



TETRA TECH NUS, INC.

SAMPLE LOG SHEET - SOLID PHASE

Site Name: OFFTA Site 09  
 Sample ID: OFF-SS-325-0001

Tetra Tech, NUS Job No./PMS 5278-1020  
 QC Information: NA (if applicable)

Sample Method: Collected w/ sharp-shooter shovel (steel) + trowel  
 Depth Sampled: 0.5 feet bgs (voc) composite (0-9 inches - metals + SVOC)  
 Sample Date & Time: 11/19/98 0855 hours Dup NA hours  
 Sampler(s): Coran, McKenna, Parker, Pillion, Jalikut (circle applicable)

TYPE OF SAMPLE: (Check all that apply)

- Soil
- Sediment
- Lagoon/Pond
- Grab Grab (voc)
- Composite (metals/SVOC)
- Trip Blank\*
- Rinsate Blank\*
- Field Duplicate collected
- Other (Specify): \_\_\_\_\_

Data Recorded By: K Jalikut Signature

FID  
 PID/OVA Monitor Reading: No FID readings ppm

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) Brown, organic-rich silty soil, very gravelly. No visible stains.

SAMPLE DATA/REMARKS: Refused @ 9 inches (NO. 75 ft bgs). Attempted several spots - could not get below 9 inches. Composted 0 to 9 inches from sidewalks for metals + SVOCs.

ANALYSIS	BOTTLE LOT NO.	NOTES/SKETCH:
TCL VOCs	3x 5g Enviro sampler	✓ * Did not split samples
TCL SVOCs	7x 16oz jar	✓ * Edge of central mound - near playground
TAL Metals		* No dioxin analysis
Dioxin	→ NA	
	LOTS:	
	16oz jar = 6254010	
	Enviro = EN0050005	



TETRA TECH NUS, INC.

## SAMPLE LOG SHEET - SOLID PHASE

Site Name: OFFTA Site 09  
 Sample ID: OFF-SS-326-0001

Tetra Tech, NUS Job No./PMS 5278-1020  
 QC Information: NA (if applicable)

Sample Method: Collected w/ shovel + trowel  
 Depth Sampled: 0.5 feet bgs (VOC) Composite 0-12 inches  
 Sample Date & Time: 11/19/98 12:15 hours Dup NA hours  
 Sampler(s): Coran, McKenna, Parker, Pillion, Jalkut (circle applicable)

TYPE OF SAMPLE: (Check all that apply)

Soil  Trip Blank\*  
 Sediment  Rinsate Blank\*  
 Lagoon/Pond  Field Duplicate collected  
 Grab Grab VOC  Other (Specify):  
 Composite (metals/svoc)

Data Recorded By: K Jalkut Signature

FID  
 PID/OVA Monitor Reading: No FID readings ppm

Description: (Sand, Clay, Muck, Peat, Dry, Moist, Wet, Etc.) Brown silty sand; few to little gravel. At 1' bgs - soil was transitioning

SAMPLE DATA/REMARKS: Able to advance to 1' bgs. Composites from sidewalls 0-12 inches bgs. Collected VOC fraction from middle of sidewall - approx 6 inches bgs.

ANALYSIS	BOTTLE LOT NO.	NOTES/SKETCH:
TCL VOCs	3x 5g Enviro sampler	* No dioxin sample (G-P) * Did not split sample w/ Gannett-Fleming. G-F collected ms/msd at this location * Located W-N-W of TTNUS test pit 13
TCL SVOCs	1x 16oz um jar	
TAL Metals		
Dioxin	→ NA	
	LOTS:	
	16oz jar = 10254010	
	Enviro = EN250005	

**RI Test Pit Logs**

Test Pit ID

TP2

TP3

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 McMorro & 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.

**RI Soil Boring Logs**

Soil Boring/Monitoring Well ID

B-8

B-9

B-10

B-11

B-14

B-15

MW-3S

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		Soil Description	Lithology
			OVA (ppm)	HNu (ppm)		
0-2	3	24	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	ND	ND	0-8" FILL, brown/grey F sand, some silt & rock fragments, little gravel, trace glass.	
4-6	50/4"		NR	NR	8-10" FILL, brick. 10-12" FILL, brown F sand & silt, some gravel, dry, no odor. FILL, grey shale fragments, dry. Recovery = 1".	
6-8	33	12	ND	6	FILL, brown/grey F sand & rock fragments, some silt & gravel. Piece of brick in tip, moist, no odor. Recovery = 12".	
8-10	11	42	ND	7	FILL, brown/grey F-M sand & rock fragments, some gravel, little silt, asphalt, & brick fragments, moist, no odor. Recovery = 16".	
10-12	22	28	NR	NR	FILL, Brick & rock fragments.	
12-14	42	45	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	39	50/5"	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'	

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		Soil Description	Lithology
		OVA (ppm)	HNu (ppm)		
0-2	4 37 40 28 47 50/5"	ND	ND	0-6" FILL, brown F sand & organics, little rock fragments. 6-12" FILL, brown F sand, some rock fragments. 12-14" FILL, rock fragments, some F sand, dry, no odor.	
2-4		NR	NR	No Recovery	
4-6	50/5"	NR	NR	No Recovery	
6-7	100/5"	NR	NR	No Recovery	
7-9	13 11 9 50/5"	ND	ND	0-2" FILL, rock fragments. 2-10" FILL, brown F sand & silt, some rock fragments & gravel. 10-12" FILL; asphalt chunks, dry, no odor.	
9-11	67 35 29 48	ND	ND	0-2" FILL, brown F-M sand, some rock fragments, trace brick. 2-6" FILL, asphalt 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"	

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		Soil Description	Lithology
			OVA (ppm)	HNu (ppm)		
0-2	4	16	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.	
2-4	21	17	ND	ND	FILL, brown F sand, some rock fragments & gravel, little concrete fragments, dry, no odor. Recovery = 14".	
4-6	3	4	NR	NR	No Recovery	
	5	8				
6-8	33	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.	
	50/1"				Auger refusal at 7 feet.	
<p>Sample FF-B101-112393 collected from 0-1'.</p> <p>Notes: NR = No Reading          ND = Not Detected</p>						

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		Soil Description	Lithology
			OVA (ppm)	HNu (ppm)		
0-2	3	10	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.	
2-4	26	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	40	28	ND	ND	Brown F-M SAND, some gravel & rock fragments, moist, no odor. Recovery = 18". Tip of spoon appears wet.	
6-8	12	11	ND	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	8	15	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	4	13	1	ND	Black/grey TILL, silt, some F sand & rock fragments, little gravel, wet, no odor. Recovery = 15".	
12-14	21	19	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	5	11	ND	ND	Black/grey TILL, silt, some rock fragments & gravel, trace F sand, wet, no odor. Recovery = 14".	
16-18	12	16	ND	ND	Black/grey TILL, silt, some rock fragments & gravel, trace F sand, wet, no odor. Recovery = 12".	
18-20	9	16	ND	ND	Black/grey TILL, silt, some rock fragments & gravel, trace F sand, wet, no odor. Recovery = 8".	
20-22	33	37	ND	ND	0-6" Black/grey TILL, silt, some rock fragments & gravel, trace F sand. 6-12" Highly weathered BEDROCK, wet, no odor.	
22-24	7	9	ND	ND	Brown/grey weathered BEDROCK, wet, no odor. Recovery = 12".	
25-27	19	25	ND	ND	Brown/grey weathered BEDROCK, wet, no odor. Recovery = 8".	
	19	23				
	12	13				
	12	25				
	35	40				
	50/4"					

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

Note: 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. Junta & 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		Soil Description	Lithology
			OVA (ppm)	HNu (ppm)		
0-2	5	5	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.	
5-7	7	9	ND	ND	FILL, brown F-M sand, some gravel & rock fragments, little concrete & asphalt, trace brick fragments, dry, no odor. Recovery = 18".	
7-9	16	30	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	27	30	ND	ND	FILL, brown/grey F-M sand, some rock fragments & cobbles, little concrete & gravel, trace asphalt & brick fragments, dry, no odor. Recovery = 2".	
	27	34				
15-17	61	120/4"	ND	ND	FILL, grey/black silt, little F sand & rock fragments, trace gravel, moist, no odor. Recovery = 18".	
17-19	9	7	ND	ND	0-8" FILL, grey/black silt, little F sand & rock fragments, trace gravel.	
	8	6				
	9	13	ND	ND	8-18" FILL, brown F sand, little cobbles, trace wood & brick, moist, no odor.	
	25	10				
20-22	120/4"		NR	NR	FILL, concrete fragments. Recovery = 1".	
25-27	50/1"		NR	NR	No Recovery	
<p>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.</p>						
<p>Sample FF-B141-121393 collected from 0-1".            Sample FF-B142-121393 collected from 15-17".</p>						
<p>Notes: NR = No Reading            ND = Not Detected</p>						

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

Drilling Company: Soil Explorations  
 Drillers: G. Junta & 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		Soil Description	Lithology	
			OVA (ppm)	HNu (ppm)			
0-2	14	14	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.		
2-4	7	6	ND	ND			
	11	9	ND	ND	FILL, brown F-M sand, some rock fragments & cobbles, little gravel, trace concrete, asphalt & brick, dry, no odor. Recovery = 18".		
	9	11					
4-6	11	9	ND	ND	FILL, brown F-M sand & rock fragments, some cobbles & gravel, trace brick & concrete, dry, no odor. Recovery = 12".		
	100/3"						
8-10	20	65	ND	ND	FILL, brown/gray M-F sand & gravel, some rock fragments & cobbles, little concrete & asphalt, trace brick & glass, dry, no odor. Recovery = 14".		
	67	62					
10-12	13	19	ND	ND	FILL, grey F-M sand, some rock fragments & cobbles, little concrete & asphalt, trace brick, dry, slight petroleum odor. Recovery = 18".		
	34	100/4"					
15-17	9	12	ND	ND	FILL, brown F sand & silt, some gravel & cobbles, little rock fragments & concrete, trace brick, moist, no odor. Recovery = 12".		
	18	26					
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		
<p>Augered to refusal at 22.5 feet - did not reach water table.          Bedrock estimated to be approximately 20 feet below grade.</p>							20.0
<p>Sample FF-B151-121393 collected from 0-1".          Sample FF-B152-121393 collected from 10-12".          Sample FF-B153-121393 collected from 15-17".</p>							22.5
<p>Notes: NR = No Reading          ND = Not Detected</p>							

BORING NO.:	MW-3	CONTRACTOR:	CDS	DATE STARTED:	4/24/90
PROJECT NO.:	6760-NB1	DRILLERS:	GAYLORD/QUINN	DATE COMPLETED:	4/24/90
OBJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	GLEZEN/MCMORROW	WATER TABLE LEVEL:	6 FT.
CITY:	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)	BLWS	HWU (PPM)	SOIL DESCRIPTION (RECOVERY)	LITHOLOGY	WELL CONSTRUCTION
0 - 2	3 10	13.8	FILL, FINE SAND, SOME SILT, BROWN (14")	<p>The diagram shows two vertical columns representing lithology and well construction. The lithology column on the left shows soil layers with varying textures and colors. The well construction column on the right shows a casing with a grout seal at the top, a bentonite seal, a screen with 10 slots, and a sand pack at the bottom. Key depths are marked: 0.0 (FLUSH MOUNT), 1.0 (BENTONITE SEAL), 2.0 (TOP OF SAND), 4.0 (TOP OF SCREEN), and 14.0 (BOTTOM OF WELL).</p>	
	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				

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.

**PDI Soil Boring Logs**

Soil Boring/Monitoring Well ID

SB400

SB403

SB405

SB406

SB407

SB410

SB411

SB412

SB413B

SB415

SB416

SB417

SB418

SB419

SB422

SB433

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J.DANIELI / J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BIERHOLM  
 GRD. SURFACE ELEVATION: 7.3' (MLW)

BORING NO.: SB-400  
 START DATE: 12/01/03  
 COMPLETION DATE: 12/01/03  
 MON. WELL NO.: --  
 CHECKED BY: JL  
 TRANSCRIBED BY: MES  
 ELEVATION FROM: \_\_\_\_\_

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	0.6 / 2.0'	1300 OFF-SB-400-0002	Fill	Medium Dense	Gray-Brown	0.0-0.4' = fine to coarse sand, some silt, trace gravel	SW	Dry	PID = 0.0	
	5						Light Brown	0.4-1.6' = Silty fine to coarse SAND, some gravel (rounded)		SM	FID = 0.0
2	6										
	9										
	15	0.4' / 0.5'	No sample			Very Dense		Silty fine to coarse SAND, trace gravel		Dry Note: caught on a piece of riprap - will move over	PID = 0.0
	100/2"										
4			No sample					Auger from 0-4' - no samples collected			
			No sample								
0			No sample								
			No sample								
2			No sample								
			No sample								
4			No sample								
	17	1.2' / 2.0'	No sample		Very Dense	Tap	0.0-0.3' = Fine sand 0.3-0.9' = Fine to coarse SAND, some silt, some gravel	SP SW	Moist Brick fragments, trace coal, slag fragments	PID = 6.8	
	19										
	33								0.9-1.2' = Cobble	--	FID = 9.4
6	120/3"		No sample				0.0-0.4' = Cobble 0.4-1.1' = Fine to coarse sand, some silt, some gravel bottom 0.5'	-- SW	Piece of plastic at 6' bgs Trace brick - no manmade materials after 7'		
	50	1.1' / 1.5'	No sample				very dense				
	44										
	60/3"										
8	60/3"		No sample								
	60/2"	0.0' / 2.0'	1340 OFF-SB-400-0810								
									No recovery		
10											

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  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J.DANIELI / J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BIERHOLM  
 GRD. SURFACE ELEVATION: 7.3' (MLW)

BORING NO.: SB-400  
 START DATE: 12/01/03  
 COMPLETION DATE: 12/01/03  
 MON. WELL NO.: --  
 CHECKED BY: JL  
 TRANSCRIBED BY: MES  
 ELEVATION FROM: \_\_\_\_\_

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	EOB (refusal)	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			No sample		↓					
0			No sample				Auger to 2' - no samples collected from 0-2'			
2			No sample							
4	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	
6										
8			No sample				No sample collected - see attempt 2			
10	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/block, boulder due to reverberations from spoon	
12	70/1"						No recovery, material all slough, angular fragments, no manmade material		Spoon and auger refusal - borehole complete	

TYPE OF DRILLING RIG: Track mounted	 <b>Tetra Tech NUS, Inc.</b>	
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-400	PAGE: 2 OF 2

BORING LOG FOR:  
 PROJECT NO.:  
 LOGGED BY:  
 DRILLED BY (Company/Driller):  
 GRD. SURFACE ELEVATION:

CTO 833 - OFFTA - SITE 09  
 4152-0552  
 J. LAMBERT  
 AMERICAN DRILLING / RODNEY DEAN  
 9.4' (MLW)

TRANSCRIBED BY: MES  
 ELEVATION FROM:

BORING NO.: SB-403  
 START DATE: 11/24/03  
 COMPLETION DATE: 11/25/03  
 MON. WELL NO.:  
 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							Auger to 2' bgs - no sample collected				
2	5	1.5 / 2	1600 (11/24/03) OFF-SB-403-0204	Fill	Medium Dense	Brown	0-0.6' = SILT, some fine sand, trace angular gravel	ML	Moist (Angular gravel)	PID = 188	
	10					Dark brown	0.6-0.9 = similar to above, some black staining			FID = 0.0	
	8					Orange brown	0.9-1.5 = SILT, some fine sand, some gravel				
4	10	1.2 / 2	No sample			Gray-orange	0-0.4' = SILT, some angular gravel	Fill	Wet (Mottled)	PID = 101	
	6					Red-black	0.4-0.7' = Frtable fill material - SLAG?			FID = 79.1	
	10					-	0.7-0.8 = GLASS layer				
	14					Red-black	0.8-1.2' = SLAG (gravel - fine sand (?))				
6	16	0.8 / 2	1615 (11/24/03) OFF-SB-403-0608			Black	Fine to coarse SAND, some silt, some gravel, trace glass → oil-saturated soils, ceramic	SW	Wet Petroleum odor Sheen on water in split spoon	PID = 215	
	7						Similar to above			FID = 540.0	
	8										
8	9	0.6 / 2	No sample						Wet	PID = 34.3	
	4									FID = 170.1	
	7						Dark Gray	Fine SAND, trace shell fragments	SP	Wet	
	8										
12	4	1.0 / 2	1630 (11/24/03) OFF-SB-403-1012			Very Loose	-	No recovery (slough)	-		PID = 35.6
	3										FID = 158
	2										
	1	0.0 / 2	No sample								
14	2				Medium Dense	Dark Gray	0-0.4' = Fine SAND, trace shell fragments	SP		PID = 14.0	
	9										
	4										
	8	0.6 / 2	1645 (11/24/03) OFF-SB-403-1416				0.4-0.6' = Sandy (fine sand) SILT	ML		FID = 24.3	
16	8										

Tetra Tech NUS, Inc.



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:

BORING NO.: SB-403

PAGE: 1 OF 2



BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 7.0' (MLW)

BORING NO.: SB-405  
 START DATE: 11/18/03  
 COMPLETION DATE: 11/18/03  
 MON. WELL NO.: -  
 CHECKED BY: JL  
 TRANSCRIBED BY: MES  
 ELEVATION FROM: \_\_\_\_\_

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 samples collected from 0-2'			
2				Fill ↓						
	19	1.0' / 2'	1320 OFF-SB-405-0204		Medium Dense	Light Brown	Fine to coarse SAND and GRAVEL	SW	Dry Brick fragments at 4'	PID = 0.0
	15				FID = 0.0					
4	15	0.1' / 2'	No sample		Dense		Spoon blocked by cobble			PID = 0.0
	17				FID = 0.0					
6	20	1.0' / 2'	1340 MS/MSD OFF-SB-405-0608		Medium Dense	Brown	Fine to coarse SAND, some gravel mixed with brick fragments throughout	SW	Moist Piece of copper wire in sample	PID = 0.0
	21				FID = 0.0					
	20	0.5' / 2'	No sample				Gravelly SILT, angular brick fragments throughout	ML	Moist	PID = 0.0
	10				FID = 0.0					
8	3	1.0' / 2'	1410 = OFF-SB-405-1012 1415 = OFF-SB-Dup02				0-0.4' = Similar to above 0.4-1.0' = Fine to coarse SAND and SILT, some gravel (very Dense-potential till)	SM	Saturated	PID = 0.0
	10				FID = 0.0					
	7	0.9' / 1.5'	No sample		Very Dense		0-0.5' = Gravelly fine to coarse SAND, gravel = angular → subangular 0.5-0.9' = Similar to above but more consolidated - saprolite or till	SW		PID = 0.0
	5				FID = 0.0					
10	6	1.0' / 1.5'	1430 OFF-SB-405-1416				Silty gravelly SAND (fine to coarse sand), angular gravel - (till)		Auger refusal at 16' very hard at 15', will try a split spoon	PID = 0.0
	6				FID = 0.0					
12	10									
	7									
	5									
	11									
	19									
	24									
14	120/4"									
	17									
	53									
16	120/5"									

TYPE OF DRILLING RIG	CME - Track mounted	<b>Tetra Tech NUS, Inc.</b> 
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      PAGE 1 OF 2



BORING LOG FOR:  
 PROJECT NO.:  
 LOGGED BY:  
 DRILLED BY (Company/Driller):  
 GRD. SURFACE ELEVATION:

CTO 833 - OFFTA - SITE 09  
 4152-0552  
 J.DANIELI  
 AMERICAN DRILLING / CARL BEIRHOLM  
 11.4' (MLW)

TRANSCRIBED BY: MES  
 ELEVATION FROM:

BORING NO.: SB-406  
 START DATE: 12/03/03  
 COMPLETION DATE: 12/03/03  
 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				Fill						
4	4	0.8 / 2.0'	1455 OFF-SB-406-0002	↓	Dense	Brown	Fine silty SAND with roots, topsoil 1.0-0.2'	SM	Dry	FID = 20.6
5	5				Loose		0.2-0.6' = fine to coarse SAND, trace silt			
6	6						0.6-0.8' = piece of boulder, some rounded gravels			
13	13	1.0 / 1.2'	No sample		Loose	White	0.0-0.2' = pieces of cobble, concrete?	ML	Dry	FID = 0.0
25	25				Dense	Olive	0.2-1.2' = SILT with trace sand and sub-angular gravel, pieces of			
60/2"	60/2"				(Compact)	Gray	Brick and asphalt			
20	20	1.1 / 2.0'	No sample						Dry	FID = 0.0
12	12									
12	12									PID = 1.8
8	8	0.3 / 0.3'	1530 OFF-SB-406-0608		Loose	Dark Gray	Silty SAND with some gravel, pieces of cobble / concrete?	SM	Dry	FID = 0.0
60/4"	60/4"									
										PID = 3.8
20	20	1.0 / 2.0'	No sample		Loose	Dark Gray	Piece of concrete (0.3-0.5')		Dry Wet - 9' bgs	FID = 1.3
12	12									
17	17						Dark Brown	Piece of brick (0.9-1.0')		PID = 3.7
6	6	0.7 / 2.0'	1550 (& grain size) OFF-SB-406-1012				Gravelly SILT, trace sand	ML	Wet Soupy	FID = 5.2
7	7									
7	7								PID = 2.7	
7	7	1.0 / 2.0'	No sample	Dense	Dark	0.0-0.8' = fine to medium SAND, well sorted	SP	Wet	FID = 0.0	
8	8									
6	6						Brown	0.8-1.0' = SILT with sand		PID = 1.6
12	12	1.4 / 2.0'	1610 (Dup 1615) OFF-SB-406-1416	Dense	Dark Gray	SILT, trace rounded gravels and sand	ML	Wet	FID = 0.8	
6	6									
8	8								PID = 3.5	
7	7									
5	5									

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: - 9' bgs  
 OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.



BORING NO. SB-406      PAGE: 1 OF 2



BORING LOG FOR:  
 PROJECT NO.:  
 LOGGED BY:  
 DRILLED BY (Company/Driller):  
 GRD. SURFACE ELEVATION:

CTO 833 - OFFTA - SITE 09  
 4152-0552  
 J. DANIELI  
 AMERICAN DRILLING / CARL BEIRHOLM  
 12.9' (MLW)

TRANSCRIBED BY: MES  
 ELEVATION FROM:

BORING NO.: SB-407  
 START DATE: 12/01/03  
 COMPLETION DATE: 12/01/03  
 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														
2	29	1.6' / 2.0'	1020 Dup 1030 OFF-SB-407-0002	Fill	Topsoil	Brown	Topsoil with roots 0-6'		Dry	FID = 0.0				
	42				Dense		SAND and GRAVEL with pieces of brick, fill	SW/GW		PID = 0.0				
4	6	1.3' / 2.0'	1040 MS/MSD OFF-SB-407-0204		Natural Materials	Loose				Dry	FID = 0.0			
	10					Dense	Dark Brown	Sandy and gravelly SILT	ML		PID = 0.0			
	12													
6	16	1.5' / 2.0'	No sample						Large pieces of concrete 0.5' long, pieces of brick and asphalt		Dry	FID = 0.0		
	17												PID = 0.0	
	13													
8	16	0.6' / 2.0'	No sample						Light Brown	Pieces of cobble at nose of spoon Sandy SILT - trace gravel	ML	Dry	FID = 0.0	
	5													PID = 0.0
	6													
10	9	1.0' / 2.0'	1103 OFF-SB-407-0810						White/Pink	Broken up cobble - 0.5' long		Dry	FID = 0.0	
	13				Loose			Dark Brown	Silty SAND and GRAVEL	SW/GM	PID = 0.0			
	10													
12	16	0.9' / 2.0'	No sample						Brown	Fine to medium SAND, trace silt and gravel	SM	Wet	FID = 0.0	
	5					Loose		Dark Brown	Sandy silt with layers of brown peat and roots	ML	PID = 0.0			
	5													
14	11	0.9' / 2.0'	1120 OFF-SB-407-1214					Dense	Olive Gray	Silty SAND with gravel, soupy, saturated with oil	SM	Wet Sheen noted	FID = 29.2	
	17													PID = 19.1
	17													
16	9	2.0' / 2.0'	No sample						Olive Gray	Soupy, saturated with oil, SILT with sand and gravel	ML	Wet Sheen noted	FID = 1.1	
	13			Dense				Brown	0.5' - fine silty SAND	SM	PID = 0.1			
	11													

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:

BORING NO.: SB-407

Tetra Tech NUS, Inc.



PAGE: 1 OF 2

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 12.9' (MLW)

TRANSCRIBED BY: MES  
 ELEVATION FROM: \_\_\_\_\_

BORING NO.: SB-407  
 START DATE: 12/01/03  
 COMPLETION DATE: 12/01/03  
 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))	
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					Olive Gray	0.5' long - mixture, SILT with sand and gravel - till?	ML		FID = 4.7	
18	33						Dense	Olive Gray	SILT with sand and gravel - till?	Orange staining Wet	PID = 3.8
	20	0.9' / 2.0'	No sample			Olive Gray	Pieces of weathered rx - orange staining	ML		FID = 6.9	
	4							Gray			
	5										
20	5	1.4' / 2.0'	1215 Dup 1220 OFF-SB-407-2022			Gray	Piece of wire-copper SILT with gravel and trace sand		Wet	PID = 2.1	
	6										FID = 4.8
	11										
22	5	0.7' / 1.5'	No sample				Orange staining - rx- phyllite?		Wet	PID = 0.0	
	9										FID = 0.0
	47										
24	120/2'	0.2' / 1.0'	No sample Weathered rx Low recovery			Gray	Weathered broken rx - phyllite?	Broken rock	Wet	PID = 0.0	
											FID = 0.6
26	120/2'						EOB @ 24' 2"				

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

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 9.4'

TRANSCRIBED BY: MES  
 ELEVATION FROM: NGVD 1929 (MLW)

BORING NO.: SB-410  
 START DATE: 11/20/03  
 COMPLETION DATE: 11/21/03  
 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							Hollow stem auger to 2' - no sample collected		Dry	
2				Fill						
	10	1.0 / 2	1540 (11/20/03) OFF-SB-410-0204		Dense	Light Brown	Fine to coarse SAND, trace gravel (angular - rounded)	SW	Dry	PID = 0.0
4	11						0 0-0.2' = Stained material, similar to above 0 2-0.4' = Dry friable manmade material - no reaction to acid			FID = 1.5
	7	0.8 / 2	No sample		Medium Dense	Red Tan		Fill	Petroleum odor Moist	PID = 127
6	8			Oil - Impacted Soil		Black	0.4-0 8' = Stained, gravelly SILT, some sand	ML		FID = 122.5
	5									
	2	1.2 / 4	1600 (11/20/03) OFF-SB-410-0608		Loose		Similar to above - very strong petroleum odor, free product		Wet	PID = 52.0
8	3									FID = 1438
	2	0 / 4.2	No sample			Black	Slough material to above, sheen on water in spoon		Wet	PID = 88.7
10	2									FID = 107.6
	2									
	3	1.1 / 4.2	MS/MSD 1615 (11/20/03) OFF-SB-410-1012		Medium Dense		0.0-0 4' = same as above 0.4-1.0' = fine to coarse SAND, trace gravel (angular - subangular) 1.0-1.1' = coarse SAND	SW	Wet	PID = 60.0
12	6									FID = 61.6
	8									
	9	1.7 / 4.2	No sample			Dark Gray	Fine to coarse SAND and SILT, trace fine gravel	SM	Very slight odor	PID = 5.3
14	13									FID = 0.0
	13									
	18									
	5	1.1 / 2.0	0725 (11/21/03) OFF-SB-410-1416				Fine silty SAND, trace coarse sand, trace fine gravel (rounded)		Petroleum odor slight sheen on wash water	
16	10									
	11									
	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:

BORING NO.: SB-410

Tetra Tech NUS, Inc.  
  
 PAGE 1 OF 2



BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 31.0'

BORING NO.: SB-411  
 START DATE: 11/24/03  
 COMPLETION DATE: 11/25/03  
 MON. WELL NO.: --  
 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 PROFL	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			No sample No split spoon auger to 2' bgs	Fill ↓						
	7	1.4 / 2.0'	1440 OFF-SB-411-0204			Brown	0-0 6" = Topsoil with grass and roots 0.6-2 0' = SAND and GRAVEL - Fill -	GW/ SW	2-4' used 140 lb Hammer Dry	FID = 0.0
	9									
4	8	1.5 / 2.0'	No sample			Brown				
	12					Dark	SAND and GRAVEL - some silt Pieces of asphalt - Fill -	GW/ SW	Dry	FID = 0.0
	10					Brown				
6	16	0.5 / 1.0'	1520 OFF-SB-411-0608							
	19									
	35					Dense	Gray	Silty sand with gravel Pieces of brick - Fill -	SM	Moist
8	18	0.4 / 2.0'	No sample							
	130/5"									
	8									
10	12	1.1 / 2.0'	1535 OFF-SB-411-1012							
	22									
	45									
	30	1.4 / 2.0'	No sample							
	15				Dense	Gray	SAND and GRAVEL with silt - Fill -	GW/ SW	Moist	FID = 0.0
	10									
12	9	1.3 / 2.0'	1600 OFF-SB-411-1416							
	13				Dense	Gray/ Black	Silty SAND and GRAVEL - pieces of brick, pieces of asphalt - Fill -	GW/ SW		FID = 574
	11									
14	11	1.3 / 2.0'	1600 OFF-SB-411-1416							
	14									
	12				Dense	Gray/ Black	Sandy SILT with pieces of asphalt, piece of green plate, rock phyllite? Compact, fill	ML	Moist	FID = 201
16	11									
	10									
	100								FID = 0.0	

TYPE OF DRILLING RIG:	Track mounted CME	
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:	Use 140 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  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 31.0'

BORING NO.: SB-411  
 START DATE: 11/24/03  
 COMPLETION DATE: 11/25/03  
 MON. WELL NO.: -  
 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))
16'	130	0.2 / 0.5'	NO SAMPLE		Dense	Gray	Sandy SILT, piece of boulder at base of split spoon	ML	Moist	FID = 489 PPM
	FOR 6"						Fill			
18'	130	NO RECOVERY / 0.33'	NO SAMPLE				No recovery (18-20')			-
	FOR 4"									
20'	39	1.1 / 1.8'	1650	Fill		Gray	Sandy SILT with asphalt fill	ML	Moist	FID = 0.0 PPM
	42		OFF-SB-411-2022				Natural Materials			
22'	39	0.4 / 0.4'	0735		Loose	Brown	Fine to medium SAND with gravel, pieces of boulder/cobble (rounded edges)	SP	Dry	FID = 0.0 PPM
	130/4"		OFF-SB-411-2224							
24'	27	0.3 / 0.3'	NO SAMPLE		Loose	Olive Gray		SP	Dry	FID = 0.0 PPM
	130/4"									
26'	120/2"	0.1 / 0.16'	0830		Dense/ Compact	Dark Gray	Silty SAND with gravel (rounded)	SM		
	130/2"		OFF-SB-411-2628				Loose			
28'		0.1 / 0.16'	NO SAMPLE			Light Gray	Wet mixture of powder with pieces of rock		Auger refusal @ 27.5' - send split spoon down	
									Only drives down and then 2" and 0.1' recovered	

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

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 24.5'

BORING NO.: SB-412  
 START DATE: 11/25/03  
 COMPLETION DATE: 11/25/03  
 MON. WELL NO.: -  
 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/ CONSI. 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			No sample No split spoon Auger to 2' bgs							
4	10 56 65 90	0.55 / 2.0	1050 OFF-SB-412-0204 1055 Dup	Topsoil	Dense	Brown	Silty SAND with roots Topsoil	SM	Moist	FID = 25 PID = 123
6	12 31 36 48	1.5 / 2.0	No sample	Fill	Loose	Dark Brown Red Brick	Fill, SAND and GRAVEL with boulder piece (0.5' in length) Pieces of red brick	SW/ GW	Dry	FID = 7.2 PID = 0.0
8	31 130/5 5"	1.5 / 1.5	1120 OFF-SB-412-0608				Smaller pieces of boulder	SW/ GW		FID = 33 PID = 51.6
10	13 13 16 6	1.3 / 2.0	No sample		Loose	Olive Gray	SAND with gravel - fill - pieces of brick	SW	Dry	FID = 8.3 PID = 0.0
12	5 7 7 8	1.2 / 2.0	1145 OFF-SB-412-1012		Dense	Light gray Dark gray	Boulder (0.2' long) SILT with sand, shell, asphalt and brick	ML	Moist	FID = 8.8 PID = 19.7
14	4 7 12 37	1.2 / 2.0	No sample	Fill			Silty SAND and gravel, fill Pieces of asphalt and brick, orange staining	SW/ GW		
16	30 130/3"	0.2 / 0.25	1230 OFF-SB-412-1416	Natural Material	Loose	Olive Gray	Fine to medium SAND with gravel, trace silt, pieces of boulder - dark gray platy rock	SP	Dry	FID = 137.0 PID = 50.3

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



BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 10.6'

BORING NO.: SB-413B  
 START DATE: 12/04/03  
 COMPLETION DATE: 12/04/03  
 MON. WELL NO.: --  
 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 PROFL	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 4' bgs, no sample			
2			No sample							
4										FID = 7.1 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							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	65/1"	0.1 / 0.1'	No sample							
						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  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 13.3'

BORING NO.: SB-415  
 START DATE: 11/18/03  
 COMPLETION DATE: 11/19/03  
 MON. WELL NO.: -  
 CHECKED BY: DH  
 TRANSCRIBED BY: MES  
 ELEVATION FROM: NGVD 1929

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)	OL	Asphalt, brick, concrete fragments in sample	PID = 0.0	
	5		OFF-SB-415-0002		Dense	Brown					FID = 0.0
2	7		1535 (11/18)					0.7-1.5 - silty fine to coarse SAND		SM	
	14	OFF-SB-415-DUP03					No recovery - will retrieve sample from 2 <sup>nd</sup> borehole				
	4	0 / 2.0'	No sample								
	6										
4	8										
	15										
	11	1.4 / 2.0'	No sample			Dense	Black	0-0.2' - Asphalt (prob. Reason for poor recovery)	-	Moist	PID = 0.0
	13		0.2-0.6' - Fine to coarse SAND and GRAVEL		SW						
6	22		0.6-0.8' - Brick	-							
	20		0.8-1.4' - Fine to coarse SAND and GRAVEL	SW							
	14	1.2 / 2.0'	1550 (11/18)		Medium		Silty fine to coarse SAND, some angular gravel, some orange molting from oxidation	SM	Moist	PID = 0.0	
	15		OFF-SB-415-0608	Dense						FID = 0.0	
8	10						Minimal recovery - slough				
	15										
	19	0.2 / 2.0'	No sample								
	13										
10	8										
	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	PID = 0.0	
	20		OFF-SB-415-1012	Dense				SW		FID = 0.0	
12	120/4"		Grain size								
				EOB			EOB @ 12' bgs - both auger and split spoon refusal, no indications of fill or contamination				
	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 *	Dense	Dark		0.5-1.0' - fine to coarse SAND, some gravel, trace silt	SW			
4	36				Brown						
	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 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
PAGE: 1 OF 1	

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 11.5'

BORING NO.: SB-416  
 START DATE: 11/19/03  
 COMPLETION DATE: 11/19/03  
 MON. WELL NO.: --  
 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											
	5		MS/MSD	Fill	Medium Dense	Dark Brown	0.0-0.4' = Grass and roots 0.4-1.8' = silty fine to coarse sand, some coarse rounded gravel	SM	PID/FID = 0.0 on sample Damp	PID = 0.6	
	10	1.8 / 2.0'	0850 OFF-SB-416-0002								FID = 0.0
2	15										
	6		No sample			Very Dense	Brown Red	0-0.2' = silty fine to coarse sand, some gravel 0.2-0.6' = brick fragments	--	Damp	PID = 0.9
	9	1.1 / 2.0'					White Brown	0.6-0.8' = concrete 0.8-1.1' = silty fine sand, trace gravel	--		FID = 0.0
4	70										
	34					Medium Dense	Light Brown	Fine to coarse sand, some gravel (angular to subrounded)	SW	Damp Small pieces of slag and concrete	PID = 0.0
	7	0.8 / 2.0'	0910 OFF-SB-416-0406								FID = 0.0
6	11										
	8		No sample					0.0-0.7' = sandy silt (fine to medium sand)	ML	0.3' - non-native gravel	PID = 0.0
	6	1.2 / 2.0'									
	8						Black	0.7-0.9' = Possible burn zone (slag and charcoal) 0.9-1.2' = Silty fine to coarse sand, some gravel	SM		FID = 0.0
8	9						Light Brown	0.0-0.2' = Fine to coarse sand, brick particles, slag, ash, some silt	SW	Wet PID = 72.7 at ~ 0.6' in the sample, saturated at bottom	PID = 1.3
	10	1.1 / 2.0'	0925 OFF-SB-416-0810				Olive / Red	0.2-1.1' = Densely packed fine SAND, generally olive colored, orange - red mottled oxidation	SP		FID = 0.0
10	11						Light Brown	Silt, some rounded gravel, trace clay (gravel rounded - subrounded), mottled blue gray spots	ML	PID = 1.0 ppm at 10.5' in the sample	PID = 0.8
	4	1.5 / 2.0'	No sample								FID = 0.0
12	9										
	17										
	14										
	14				Very Dense				Wet	PID = 1.8	
	40	1.7 / 2.0'	0940 OFF-SB-416-1214				Gravelly silt, some fine to coarse sand, gravel is angular to subrounded			FID = 0.5	
14	41										
	42										
	6				Dense		0.0-0.8' = gravelly, sandy silt (sand - medium to coarse sand, trace fine sand) - very dense		Wet	PID = 0.9	
	12	1.2 / 2.0'	No sample								
16	27										
	32					Red				FID = 0.0	

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: \* - 0.8-1.2' = similar to above, less silt

Tetra Tech NUS, Inc.



BORING NO.: SB-416      PAGE: 1 OF 2

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 11.5'

BORING NO.: SB-416  
 START DATE: 11/19/03  
 COMPLETION DATE: 11/19/03  
 MON. WELL NO.: --  
 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 PROFL	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	ML		PID = 1.5
18	120				Red Brown	0 6-1.3' - gravelly sandy silt, possible till (gravel = fine to coarse angular to subangular)	FID = 3 0			
20	45	1 0 / 1 3'	1042 OFF-SB-416-1820				Partially consolidated gravelly silt, some medium to coarse sand (till)			PID = 0.6
22	120/3"				No sample			No recovery - cobble in the nose of the spoon - broken face		FID = 11.4
	120/2"	0.0 / 2.0'								
				EOB						
				Spoon Refusal						

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

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 8.5'

BORING NO.: SB-417  
 START DATE: 11/19/03  
 COMPLETION DATE: 11/19/03  
 MON. WELL NO.: --  
 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 PROFL	SOIL DENSITY/ CONSI/ 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 sample collected from 0-2'				
2											
	8	0.0 / 2.0'	No sample			Medium Dense		No recovery			
	11										
	7	1.3 / 2.0'	1340 OFF-SB-417-0406			Loose	Brown	Silty sand (fine to coarse sand)	SM	Moist Wet - bottom 0.5'	PID = 122
4	9								Oxidized above 0.5', petroleum staining and odor		FID = 10.9
	8	1.0 / 2.0'	1400 OFF-SB-417-0608			Medium Dense	Black	Oil stained fine to coarse SAND 0.4' = white gray material surrounding a hard white center -	SW	PID = 10.3 ppm in sample	PID = 7.0
	4								Possibly grout, inorganic or tile, At 0.6' = Off-white material, possible grout		
6	5	0.9 / 2.0'	No sample				Black	0-0.5' - oil stained material, shell in spoon			PID = 11.0
	7								Dark Gray	0.5-0.9' - fine sand, some olive green mottling	SP
8	8	1.0 / 2.0'	1415 OFF-SB-417-1012					Similar to above, fine sand		Wet	PID = 1.0
	8										
	7	0.8 / 2.0'	No sample			Dense		0.0-0.4' = fine sand, trace silt in lower portions		Wet	PID = 0.3
12	8								0.0-0.8' = dropstone with varves bent around it		
	12	1.2 / 2.0'	1430 OFF-SB-417-1416								
	11										
14	23							SM	Wet Cobble at 16'	PID = 0.6	
	21										
	18						Silty fine sand, some gravel, pockets of heavily oxidized (dark red) material			FID = 0.0	
16	20										

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 NO.: SB-417 PAGE: 1 OF 2



BORING LOG FOR:  
 PROJECT NO.:  
 LOGGED BY:  
 DRILLED BY (Company/Driller):  
 GRD. SURFACE ELEVATION:

CTO 833 - OFFTA - SITE 09  
 4152-0552  
 J. LAMBERT  
 AMERICAN DRILLING / CARL BEIRHOLM  
 10.0'

TRANSCRIBED BY: MES  
 ELEVATION FROM: NGVD 1929 (MLW)

BORING NO.: SB-418  
 START DATE: 12/03/03  
 COMPLETION DATE: 12/03/03  
 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				Topsoil			0.0-0.5 = Fine to medium SAND with silt - topsoil		Dry	FID = 2.1
2	7	1.7 / 2.0'	1120 OFF-SB-418-0002	Fill	Loose	Brown	Fine to medium SAND with gravel Intermittent pieces of dense/compact silt, trace brick	SW	Fill	PID = 3.2
	18									
	17									
4	12	1.1 / 2.0'	No sample	Fill	Loose Dense	White Brown	Piece of cobble 0-0.2' SILT with sand and gravel - large piece of asphalt (0.3') long and	ML	Dry	FID = 0.0
	24									
	30									
6	46	1.2 / 2.0'	1140 OFF-SB-418-0406	Native			Sandy SILT, trace gravel	ML	Dry	FID = 3.9
	5									
	5									
8	6	1.1 / 2.0'	No sample		Dense Compact	Dark Gray	Silty SAND with gravel layers of silt Orange staining & pieces of black goo, piece of cobble (0.1' long)	SM	Moist	PID = 151
	6									
	10									
10	10	1.1 / 2.0'	1205 OFF-SB-418-0810				SILT with sand and gravel	ML	Wet Saturated with oil Strong oil odor	FID = 23.5 PID = 139
	12									
	13									
12	5	1.1 / 2.0'	No sample			Dark Gray	SILT - trace sand and gravel	ML	Wet Strong petroleum odor	FID = 5.2
	7									
	7									
14	9	1.1 / 2.0'	1220 OFF-SB-418-1214			Olive Gray	Sandy silt with gravels - layers of fine silty sand (brown)		Wet Saturated in oil Petroleum odor	FID = 1.8 PID = 25.0
	9									
	8									
16	7	1.1 / 2.0'	No sample		Dense Compact	Olive Gray	SILT with sand, trace gravel (rounded)	ML	Wet Petroleum odor	FID = 1.7
	12									
	12									
	15						Interbedded with fine sand brown Orange staining			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  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 10.0'

BORING NO.: SB-418  
 START DATE: 12/03/03  
 COMPLETION DATE: 12/03/03  
 MON. WELL NO.: --  
 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))						
16	17	11 / 2.0	1310 = Sample 1315 = Dup13 OFF-SB-418-1618		Loose	Dark Brown	Silty SAND with gravel - piece of weathered rx - orange staining - till?	SW/ SM	Wet	FID = 0.0						
	21															PID = 3.6
	34															
18	46	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						
	18															PID = 11.5
	49															
20	80/2"	No Recovery No Penetration	No sample				No recovery - piece of rx in nose of spoon - phyllite? EOB @ 20' bgs			FID = NR						
	60/0"															PID = NR
22																

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

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. LAMBERT  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / RODNEY DEAN  
 GRD. SURFACE ELEVATION: 8.4'

BORING NO.: SB-419  
 START DATE: 11/18/03  
 COMPLETION DATE: 11/18/03  
 MON. WELL NO.: --  
 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 PROFL	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' = Oxidized silty fine to coarse SAND, some gravel	SW	Moist Petroleum odor Brick fragments	PID = 59.9
	10									
4	17	2.0' / 2.0'	No sample	↓		Dark Gray	1.0' - Geotech fabric 1.0-2.0' - Similar to above, slightly stained	SW	Moist	PID = 277
	15									
6	4	1.8' / 2.0'	0800 OFF-SB-419-0608	↓			Silty fine to coarse SAND	SM	Petroleum odor	PID = 294
	16									
	18	2.0' / 2.0'	0810 OFF-SB-DUP01	↓	Very Dense		Crumbly silty fine to coarse SAND in sample PID = 310 ppm in sample	SW	Wet Sheen on water in spoon	PID = 23.3
	26									
8	46	1.5' / 2.0'	No sample	↓			0-0.8' = Crumbly fine to coarse SAND, some gravel	SM	Spoon refusal at 11.5' - light petroleum odor	PID = 27.7
	55									
	85	2.0' / 2.0'	0820 OFF-SB-419-1012	↓		Red-Gray	0.6' = Silty fine to coarse SAND, some clay, trace gravel		Petroleum odor	PID = 52.6
	10									
10	40	1.2' / 2.0'	No sample	↓			0.8-1.2' = Silty fine to coarse SAND		Saprolitic rock - possible conglomerate with oxidized coarse sand sized pieces	
	25									
	20	2.0' / 2.0'	No sample	↓			0-0.6' = Silty fine to coarse SAND, some clay, trace gravel		Saprolitic rock (more dense)	
	6									
12	10	1.0' / 2.0'	0820 OFF-SB-419-1012	↓			0.6-1.0' = Saprolitic rock (more dense)		Saprolitic rock - possible conglomerate with oxidized coarse sand sized pieces	
	35									
	120/5"			↓			Saprolitic rock - possible conglomerate with oxidized coarse sand sized pieces		Petroleum odor	PID = 52.6
	120/4"									
14				EOB 12.5' Spoon Refusal						

TYPE OF DRILLING RIG:	<u>CME 75</u>	
METHOD OF ADVANCING BORING:	<u>4.25" ID hollow stem auger</u>	
METHOD OF SOIL SAMPLING:	<u>3" split spoon driven with 300 lb. hammer and dropped 18"</u>	
METHOD OF ROCK CORING:	<u>N/A</u>	
GROUNDWATER LEVELS:	<u>Augers started pulling up water and saturated soils @ 10'.</u>	
OTHER OBSERVATIONS:	<u>Only manmade material to 4' - the rest is most likely native</u>	BORING NO.: <u>SB-419</u>
		PAGE: <u>1</u> OF <u>1</u>





BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 17.3'

TRANSCRIBED BY: MES  
 ELEVATION FROM: NGVD 1929 (MLW)

BORING NO.: SB-433  
 START DATE: 11/26/03  
 COMPLETION DATE: 11/26/03  
 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	Fill ↓ Native Materials			No split spoon - auger to 2' bgs				
2											
	9	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
	8										
4	5	1.0' / 2.0'	No sample			Dense		Sandy SILT with gravel, pieces of brick	ML	Moist	PID = 0.0
	6										Wet V - 5.5'
6	5	1.0' / 2.0'	0900 OFF-SB-433-0608								PID = 20.0
	5										
8	3	1.0' / 2.0'	No sample				Dark Brown	SILT with sand, trace gravel, trace roots		Wet	PID = 17.1
	3										
10	5	0.9' / 2.0'							ML	Wet	PID = 0.0
	6										
12	2	1.0' / 2.0'	0920 OFF-SB-433-1214					Pieces of boulder (0 8' long)		Wet	PID = 24.6
	2										
14	2	0.8' / 2.0'	No sample (14.0'-14.25')					Silty SAND and GRAVEL, trace brick pieces	SW/ GW	Wet	PID = 116.0
	2										
16	130/3"						Auger refusal at 14.5'				

TYPE OF DRILLING RIG:	Track mounted CME	<b>Tetra Tech NUS, Inc.</b> 
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		PAGE: 1 OF 2

BORING LOG FOR: CTO 833 - OFFTA - SITE 09  
 PROJECT NO.: 4152-0552  
 LOGGED BY: J. DANIELI  
 DRILLED BY (Company/Driller): AMERICAN DRILLING / CARL BEIRHOLM  
 GRD. SURFACE ELEVATION: 17.3'

TRANSCRIBED BY: MES  
 ELEVATION FROM: NGVD 1929 (MLW)

BORING NO.: SB-433  
 START DATE: 11/26/03  
 COMPLETION DATE: 11/26/03  
 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)]
16	130/1*	0.15' / 0.16'	No sample Spoon only 14.5'-14.9'				0.15' in length Piece of concrete - move auger to 14.5' - try to send spoon down		(Recover 0.15' - Concrete)	FID = --
18							Move south ~ 5' to auger to 16' & taken 16-18' spoon			PID = --
16	14	0.9' / 2.0'	1050 OFF-SB-433-1618		Dense	Brown	Silty fine to medium SAND with gravel	SW	Wet (Second hole)	PID = 0.4 FID = 0.0
18	11								Wet	PID = 1.0 FID = 0.0
	9									
	11	1.5' / 2.0'	No sample		Dense	Dark Gray	SILT with trace sand and gravel	ML	Wet	FID = 8.0
20	14									PID = 5.4
	17									
	4	2.0' / 2.0'	1140 OFF-SB-433-2022						Wet Rock - brittle breaks apart easily	FID = 0.0
	4									
22	8		1145 Dup09				SILT - less sand and gravel Sandy SILT with gravels (20 - 21.5')	ML		PID = 0.0
	17									
	90	1.5' / 2.0'	No sample		Dense	Brown	SILT with trace sand and gravels (21.5 - 22.0')	ML	Wet	FID = 0.0
	53									
24	79						SILT, weathered rock Orange staining, pieces of gravel, till - soupy	ML		PID = 1.6
	29									
	24	1.5' / 2.0'	1215 OFF-SB-433-2426				Soupy - silty, sandy - GRAVEL with weathered rock, orange staining, till	GM	Wet	FID = 0.0
	26									
26	31		1220 Dup10							PID = 0.1
	38									
	130/4*	0.9' / 2.0'	No sample				Trace clay Auger refusal @ 27.5' bgs	GC GM	Wet	FID = 0.0
28						Light Brown	Soupy, silty, sandy GRAVEL with weathered rock, orange staining - till	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 that is 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:		BORING NO.: SB-433
		PAGE: 2 OF 2

**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 1928 (M.W.)

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	547158.9	10.0
2002	SB-419	156842.2	547045.4	8.4
2003	SB-408	156840.5	547056.3	8.0
2004	SB-409	156824.8	547155.3	9.1
2005	SB-410	156814.8	547253.2	9.4
2006	SB-402	157010.8	547268.8	8.4
2007	SB-432	156869.9	547188.4	9.8
2008	SB-401	157023.8	547170.1	7.9
2009	SB-400	157035.5	547083.8	7.3
2010	SB-428	157054.9	547304.0	8.0
2011	SB-403	156898.3	547387.7	9.4
2012	SB-429	157023.8	547385.7	8.8
2013	SB-404	156882.7	547465.7	8.9
2014	SB-430	156818.5	547570.9	9.8
2018	SB-427	157072.7	547203.9	8.3
2182	SB-415	156886.6	546888.1	13.3
2182	SB-416	156875.4	546740.3	11.5
2232	SB-426	156745.8	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	547562.2	10.8
2238	SB-412	156893.2	547454.8	24.5
2239	SB-411	156901.8	547375.0	31.0
2240	SB-434	156815.2	547484.7	11.5
2245	SB-423	156789.8	547428.2	11.9
2247	SB-422	156807.2	547325.4	11.8
2248	SB-414	156855.1	547647.8	10.7
2249	SB-431	156809.4	547712.1	11.1
2277	SB-433	156900.7	546881.8	17.3
2278	SB-406	156851.9	546862.8	11.4
2279	SB-407	156859.5	546952.7	12.9
2289	SB-418	156871.9	546934.3	10.0
2285	SB-417	156864.9	546848.1	8.5
2282	SB-405	156961.0	546759.8	7.0

EC 35  
OK

*Louis Federici*  
1/6/04  
RI Reg. Number 1648

**APPENDIX D**  
**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  
 PAGE 1 OF 2

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.....								
CELOROPFORM.....								
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.....								N/A
NAPHTHALENE.....@						480 J		N/A
2-METHYLNAPHTHALENE.....@								N/A
ACENAPHTHYLENE.....@								N/A
ACENAPHTHENE.....@						940 J		N/A
DIBENZOFURAN.....						650 J		N/A
FLUORENE.....@						1200 J		N/A
PHENANTHRENE.....@	83 J	350 J		250 J	100 J	7200		N/A
ANTHRACENE.....@						1500 J		N/A
DI-N-BUTYLPHTHALATE.....								N/A
FLUORANTHENE.....@	97 J	250 J	44 J	290 J	180 J	8000		N/A
PYRENE.....@	160 J	480		300 J	190 J	5700 J*		N/A
BUTYLBENZYLPHTHALATE.....								N/A
BENZO(a)ANTHRACENE.....@@		150 J		130 J	76 J	3300		N/A
CHRYSENE.....@@		170 J		110 J	78 J	2800		N/A
BIS(2-ETHYLHEXYL)PHTHALATE.....	590 *	450 U**		340 U*				N/A
BENZO(b)FLUORANTHENE.....@@		130 J		120 J	65 J	2800		N/A
BENZO(k)FLUORANTHENE.....@@		91 J		110 J		3100		N/A
BENZO(a)PYRENE.....@@		130 J		120 J	61 J	2700		N/A
INDENO(1,2,3-cd)PYRENE.....@@								N/A
DIBENZO(a,h)ANTHRACENE.....@@								N/A
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  
 PAGE 2 OF 2

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		N/A
AROCLOL-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	1.7	9.3	20		
CHROMIUM.....	15.9	6.8	18.8	9.8	16.7	16.4		
COPPER.....	27.1	11.2	16.8	15.4	23	41.3		
IRON.....	17400	10100	14500	10300	17800	35500		
MERCURY.....				0.17				
POTASSIUM.....	261	229	247	442	503	424		
MAGNESIUM.....	1480	917	1530	7340	1920	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	26.7	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	5.9	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.....	76.1	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

		FF-SS24-110493 031390-0004-SA 04 NOV 93			FF-SS25-110493 031390-0005-SA 04 NOV 93			FF-SS26-110493 031390-0006-SA 04 NOV 93			FF-SS27-110493 031390-0007-SA 04 NOV 93		
Compound	Units	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting 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	J	4.1	10	J	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	J	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	J	4.1	17	J	3.5	9.4	J	3.9	ND	R	4.1
Methoxychlor	ug/kg	ND	U	2.1	3.8	J	1.8	ND	U	2.0	ND	R	2.1
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	J	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

Compound	Units	FF-SS24-110493 031390-0004-SA 04 NOV 93			FF-SS25-110493 031390-0005-SA 04 NOV 93			FF-SS26-110493 031390-0008-SA 04 NOV 93		
		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
1,3-Dichlorobenzidine	ug/kg	ND	U	420	ND	U	350	ND	U	390
1-Dichlorophenol	ug/kg	ND	U	420	ND	U	350	ND	U	390
Dimethyl 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	48	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
Total PAHs		140			114			49		
Total Carcinogenic PAHs		46			36			0		
Total SVOCs		140			114			49		

NOTE: "J" 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

		FF-SS24-110493 031390-0004-SA 04 NOV 93			FF-SS25-110493 031390-0005-SA 04 NOV 93			FF-SS26-110493 031390-0006-SA 04 NOV 93			FF-SS27-110493 031390-0007-SA 04 NOV 93		
Analyte	Units	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	18		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
CHLOROETHANE	4 U	5 U	8 U	5 U	5 U	5 U	5 U
CHLOROETHENE	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 (R)	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-TRICHLOROENZENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
1,2-DICHLOROENZENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
1,3-DICHLOROENZENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
1,4-DICHLOROENZENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
2,2-OXYBIS(1-CHLOROPROPANE)	350 UJ	380 UJ	1800 UJ	870 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	380 U	1800 U	870 U	400 U	1900 U	390 U
2,4-DICHLOROPHENOL	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
2,4-DIMETHYLPHENOL	350 U	380 U	1800 U	870 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	380 U	1800 U	870 U	400 U	1900 U	390 U
2,6-DINITROTOLUENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
2-CHLORONAPHTHALENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
2-CHLOROPHENOL	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
2-METHYLNAPHTHALENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
2-METHYLPHENOL	350 U	380 U	1800 U	870 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	380 U	1800 U	870 U	400 U	1900 U	390 U
3,3'-DICHLOROBENZIDINE	350 U	380 U	1800 UJ	870 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	380 U	1800 U	870 U	400 U	1900 U	390 U
4-CHLORO-3-METHYLPHENOL	350 U	380 U	1800 U	870 U	140 J	1900 U	390 U
4-CHLOROANILINE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
4-CHLOROPHENYL-PHENYLETHER	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
4-METHYLPHENOL	350 U	380 U	1800 U	870 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 UJ	4700 UJ	980 U
ACENAPHTHENE	350 U	380 U	1800 UJ	870 U	400 U	240 J	390 U
ACENAPHTHYLENE	350 U	380 U	1800 U	870 U	400 U	1900 U	390 U
ANTHRACENE	350 U	380 U	1800 U	85 J	400 U	1800 J	390 U
BENZO(A)ANTHRACENE	350 U	380 U	1800 U	300 J	400 U	2500	390 U
BENZO(A)PYRENE	350 U	380 U	1800 U	300 J	400 U	1900	390 U
BENZO(B)FLUORANTHENE	350 U	380 U	210 J	400 J	400 U	2400	45
BENZO(G,H,I)PERYLENE	350 U	380 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	380 U	1800 U	170 J	400 U	830 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	1800 U	390 U
CHRYSENE	350 U	360 U	1800 U	270 J	400 U	2300 U	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 U	670 U	400 U	1900 U	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 U	78
FLUORENE	350 U	360 U	1800 U	670 U	400 U	370 J	390 U
HEXACHLOROENZENE	350 U	360 U	1800 U	670 U	400 U	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	180 J	400 U	1700 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	4800 U	1700 U	1000 U	4700 U	980 U
PHENANTHRENE	350 U	360 U	1800 U	440 J	400 U	4700 U	41
PHENOL	350 U	360 U	1800 U	670 U	400 U	1900 U	390 U
PYRENE	41 J	380 U	270 J	690 U	400 U	4700 U	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	11/19/88	11/19/88	11/19/88	11/20/88	11/20/88	11/18/88	11/18/88	11/20/88
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	11400	10400	10600
ANTIMONY	1.1 U	0.58 U	0.58 J	0.55 U	0.55 UJ	0.57 UJ	0.58 UJ	0.58 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 J	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	16.8	8.8 J	13.6	13.5	14	7.6	12.2	17.4
IRON	20200	18100	18000	21000	16100 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	198	282	305	226 J	226	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	280 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	4.2
SODIUM	84.9 U	99.1 U	108 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	18.3	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. Pass. Conc.

TABLE L1.A  
NETC NEWPORT - PHASE II RI  
SITE 09 - OLD FIRE FIGHTING TRAINING AREA  
SURFACE SOIL SAMPLES  
SUMMARY OF VOLATILE ORGANIC COMPOUNDS

		FF-SS31-110493 031390-0012-SA 04 NOV 93			FF-B81-112293 031806-0005-SA 22 NOV 93			FF-B91-112393 031806-0008-SA 23 NOV 93			FF-B101-112393 031813-0008-SA 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	U	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

		FF-B111-112493 031813-0001-SA 24 NOV 93			FF-B121-112493 031813-0003-SA 24 NOV 93			FF-B131-112393 031808-0009-SA 23 NOV 93			FF-B141-121393 32184-01-SA 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	U	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
<b>Total VOCs</b>		<b>3</b>			<b>6</b>			<b>0</b>			<b>21</b>		

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= Sample Designation= Sample Collection Date=	FF-B151-121393 32184-03-SA 13 DEC 93	FF-B161-112393 031806-0011-SA 23 NOV 93	FF-B164-112393 (Dup of B161) 031806-0014-SA 23 NOV 93	FF-B171-112493 031813-0005-SA 24 NOV 93									
Compound	Units	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting 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.B**  
**NETC NEWPORT - PHASE II RI**  
**SITE 09 - OLD FIRE FIGHTING TRAINING AREA**  
**SURFACE SOIL SAMPLES**  
**SUMMARY OF SEMIVOLATILE ORGANIC COMPOUNDS**

Compound	Units	FF-B141-121393 32184-01-SA 13 DEC 93			FF-B151-121393 32184-0003-SA 13 DEC 93			FF-B161-112393 081806-0011-SA 29 NOV 93		
		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	U	370	2400	U	1400
Benzo(a)pyrene	ug/kg	ND	U	390	240	J	370	2600	U	1400
Benzo(b)fluoranthene	ug/kg	ND	U	390	440	U	370	3900	U	1400
Benzo(g,h,i)perylene	ug/kg	ND	U	390	120	J	370	300	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	U	370	2400	U	1400
Di-n-butyl phthalate	ug/kg	ND	U	390	ND	J	370	ND	J	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	3500
2,4-Dinitrophenol	ug/kg	ND	U	950	ND	U	900	ND	U	3500
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	J	370	3200	J	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	U	370	3300	U	1400
Phenol	ug/kg	ND	U	390	ND	U	370	ND	U	1400
Pyrene	ug/kg	ND	U	390	800	U	370	4600	U	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			28770		
Total Carcinogenic PAHs		0			1837			14050		
Total SVOCs		0			4130			27010		

NOTE: "ND" 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 83	23 NOV 83	23 NOV 83

Compound	Units	Sample FF-B81-112293			Sample FF-B91-112393			Sample FF-B101-112393		
		Value	Qual	Reporting Limit	Value	Qual	Reporting Limit	Value	Qual	Reporting Limit
Acenaphthene	ug/kg	82	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	J	380	350	J	380	240	J	360
Benzo(a)pyrene	ug/kg	1200	J	380	310	J	380	220	J	360
Benzo(b)fluoranthene	ug/kg	1700	J	380	540	J	380	440	J	360
Benzo(g,h,i)perylene	ug/kg	420	J	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	J	380	380	J	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	J	380	740	J	380	430	J	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
Hexachlorocyclopentadiene	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	J	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	J	380	640	J	380	210	J	360
Phenol	ug/kg	ND	U	380	ND	U	380	ND	U	360
Pyrene	ug/kg	2300	J	380	710	J	380	490	J	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
<b>Total PAHs</b>		<b>13822</b>			<b>4390</b>			<b>2550</b>		
<b>Total Carcinogenic PAHs</b>		<b>6950</b>			<b>1949</b>			<b>1352</b>		
<b>Total SVOCs</b>		<b>14134</b>			<b>4504</b>			<b>2749</b>		

NOTE: "U" 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

		FF-SS31-110493 031390-0012-SA 04 NOV 93			FF-B81-112293 031806-0005-SA 22 NOV 93			FF-B91-112393 031806-0008-SA 23 NOV 93			FF-B101-112393 031813-0008-SA 23 NOV 93			
Sample Location=	Sample Designation=	Sample Collection Date=												
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	92	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*	2.0	ND	UJ	1.9	1.4	NJ	1.9	ND	UJ	1.9	
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
Sample Designation=	031813-0001-SA	031813-0003-SA	031806-0009-SA
Sample Collection Date=	24 NOV 93	24 NOV 93	23 NOV 93

FF-B141-121393  
32184-0001-SA  
13 DEC 93

Compound	Units	FF-B111-112493			FF-B121-112493			FF-B131-112393			FF-B141-121393		
		Sample Value	Qual	Reporting Limit									
alpha-BHC	ug/kg	ND	U	2.0	0.048	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	J	3.8	0.41	J	3.7	ND	UJ*	7.4	2.0	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	J	3.8	7.2	J	3.7	ND	UJ	7.4	34	J	3.9
Methoxychlor	ug/kg	ND	U	2.0	5.4	J	1.9	ND	UJ*	5.4	ND	U	2.0
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*	1.2	ND	UJ*	3.2	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= Sample Designation= Sample Collection Date=		FF-B151-121393 32184-0003-SA 13 DEC 93	FF-B161-112393 031806-0011-SA 23 NOV 93	FF-B164-112393 (Dup of B161) 031806-0014-SA 23 NOV 93	FF-B171-112493 031813-0005-SA 24 NOV 93								
Compound	Units	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit
alpha-BHC	ug/kg	ND	U	19	ND	UJ	92	ND	UJ	1.9	ND	U	1.9
beta-BHC	ug/kg	ND	U	1.9	ND	UJ	92	ND	UJ	1.9	ND	U	1.9
delta-BHC	ug/kg	ND	U	1.9	ND	UJ	92	ND	UJ	1.9	ND	U	1.9
gamma-BHC (Lindane)	ug/kg	0.21	J	1.9	ND	UJ	92	ND	UJ	1.9	ND	UJ*	4.7
Heptachlor	ug/kg	ND	U	1.9	ND	UJ	92	ND	UJ	1.9	ND	U	1.9
Aldrin	ug/kg	ND	U	1.9	ND	UJ*	92	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	94	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	37
4,4'-DDE	ug/kg	33	J	3.7	ND	UJ	18	ND	UJ	3.7	15	J	3.7
Endrin	ug/kg	13	J	37	74	J	18	25	J	3.7	ND	U	37
Endosulfan II	ug/kg	36	J	3.7	25	NJ	18	6.5	J	3.7	ND	UJ*	3.7
4,4'-DDD	ug/kg	ND	U	37	17	J	18	47	J	37	ND	U	37
Endosulfan sulfate	ug/kg	1.7	J	37	33	J	18	11	J	37	ND	U	37
4,4'-DDT	ug/kg	ND	U*	28	ND	UJ	18	96	J	37	36	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	37	ND	U	37
Endrin aldehyde	ug/kg	6.8	NJ	37	ND	UJ	18	ND	UJ	37	3.9	NJ	37
alpha-Chlordane	ug/kg	ND	U*	19	ND	UJ	9.2	ND	UJ	19	ND	U	1.9
gamma-Chlordane	ug/kg	ND	U*	19	35	J	9.2	ND	UJ	19	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=	<del>FF-SS31-110493</del>	<u>FF-B81-112293</u>	<u>FF-B91-112393</u>	<u>FF-B101-112393</u>
Sample Designation=	<del>031390-0012-SA</del>	<u>031806-0005-SA</u>	<u>031806-0008-SA</u>	<u>031813-0008-SA</u>
Sample Collection Date=	<del>04 NOV 93</del>	<u>22 NOV 93</u>	<u>23 NOV 93</u>	<u>23 NOV 93</u>

Analyte	Units	Sample	Reporting										
		Value	Qual	Limit	Value	Qual	Limit	Value	Qual	Limit	Value	Qual	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									
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= Sample Designation= Sample Collection Date=		FF-TP11-011194 9401L245-001 11 JAN 94			FF-TP12-011194 9401L245-002 11 JAN 94			FF-TP13-011194 9401L245-003 11 JAN 94			FF-TP21-011194 9401L245-004 11 JAN 94		
Compound	Units	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting 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	U	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
<b>Total VOCs</b>		<b>0</b>			<b>0</b>			<b>2</b>			<b>0</b>		

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

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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	Reporting Qual Limit	Sample Value	Reporting Qual Limit	Sample Value	Reporting Qual Limit	Sample Value	Reporting Qual 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	ND	U 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
<b>Total VOCs</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>1</b>	

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

Page 3 of 3

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	Reporting Qual Limit	Sample Value	Reporting Qual Limit	Sample Value	Reporting Qual 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
<b>Total VOCs</b>		<b>0</b>		<b>0</b>		<b>0</b>	

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

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Sample Location#	FF-TP21-011194	FF-TP22-011194	FF-TP23-011194							
Sample Designation#	8401L245-004	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**

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Sample Location#	FF-TP31-011184	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	17000	ND	UJ	1800	ND	UJ	370
2,4,5-Trichlorophenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2-Chloronaphthalene	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
2-Nitroaniline	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Dimethylphthalate	ug/kg	ND	UJ	6700	380	J	700	ND	UJ	370
Acenaphthylene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
2,6-Dinitrotoluene	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
3-Nitroaniline	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Acenaphthene	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
2,4-Dinitrophenol	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
4-Nitrophenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
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	17000	ND	UJ	1800	ND	UJ	930
4-Nitroaniline	ug/kg	ND	UJ	17000	ND	UJ	1800	ND	UJ	930
4,6-Dinitro-2-methylphenol	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
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	17000	ND	UJ	1800	ND	UJ	930
Pentachlorophenol	ug/kg	6300	J	6700	1300	J	700	730	J	370
Phenanthrene	ug/kg	480	J	6700	520	J	700	200	J	370
Anthracene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Carbazole	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	370
Di-n-butylphthalate	ug/kg	ND	UJ	6700	3000	J	700	1200	J	370
Fluoranthene	ug/kg	ND	UJ	6700	3100	J	700	880	J	370
Pyrene	ug/kg	ND	UJ	6700	ND	UJ	700	ND	UJ	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	480	J	370
Benzo(b)fluoranthene	ug/kg	430	J	6700	2300	J	700	570	J	370
Benzo(k)fluoranthene	ug/kg	850	J	6700	2500	J	700	630	J	370
Benzo(a)pyrene	ug/kg	ND	UJ	6700	2900	J	700	400	J	370
Indeno(1,2,3-cd)pyrene	ug/kg	ND	UJ	6700	1700	J	700	130	J	370
Dibenz(a,h)anthracene	ug/kg	ND	UJ	6700	780	J	700	440	J	370
Benzo(g,h,i)perylene	ug/kg	ND	UJ	6700	1700	J	700	440	J	370
Total PAHs		9250			25080			6980		
Total Carcinogenic PAHs		2470			16780			3870		
Total SVOCs		9250			25080			6980		

NOTE: "J" 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

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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	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting Qual	Reporting Limit	Sample Value	Reporting 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	97	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	1.8	ND	U	1.6	ND	UJ	2.0	ND	UJ	3.6
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: "J" 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

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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			Reporting		
		Value	Qual	Limit	Value	Qual	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	1.9	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: "ND" 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									
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: "N" 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

Page 2 of 3

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									
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

Page 3 of 3

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	081896-0012-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 FF-B142-121393			Sample FF-B152-121393			Sample FF-B153-121393			Sample FF-B162-112393		
		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	UJ*	11	ND	UJ	11
2-Butanone	ug/kg	ND	U*	13	ND	U*	11	ND	U	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	UJ	11	ND	UJ	11
2-Hexanone	ug/kg	ND	U	13	ND	U	11	ND	U	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
<b>Total VOCs</b>		<b>16</b>			<b>6</b>			<b>1</b>			<b>6</b>		

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

Compound	Units	FF-B132-112393			FF-B142-121393			FF-B152-121393		
		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	88	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	380	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
<b>Total PAHs</b>		<b>1124</b>			<b>4080</b>			<b>12214</b>		
<b>Total Carcinogenic PAHs</b>		<b>1744</b>			<b>1910</b>			<b>5210</b>		
<b>Total SVOCs</b>		<b>4266</b>			<b>4570</b>			<b>12864</b>		

NOTE: "U" 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 SEMI-VOLATILE ORGANIC COMPOUNDS**

Sample Location#	Sample Designation#	Sample Collection Date#	Sample Depth#	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	
	FF-B153-121393	32184-05-SA	13 DEC 93				FF-B162-112393			FF-B172-112493			
		32184-05-SA	13 DEC 93				031806-0012-SA			031813-0006-SA			
		17-19'					23 NOV 93			24 NOV 93			
							2-4'			2-4'			
Compound	Units	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit	Sample Value	Qual	Reporting Limit
Acenaphthene	ug/kg	340	J	370	290	J	730	ND	U	360	ND	U	360
Acenaphthylene	ug/kg	120	J	370	78	J	730	ND	U	360	ND	U	360
Anthracene	ug/kg	570	J	370	480	J	730	ND	U	360	ND	U	360
9H-Carbazole	ug/kg	220	J	370	120	J	730	ND	U	360	ND	U	360
Benzo(a)anthracene	ug/kg	1300	J	370	1200	J	730	ND	U	360	ND	U	360
Benzo(a)pyrene	ug/kg	760	J	370	1200	J	730	ND	U	360	ND	U	360
Benzo(b)fluoranthene	ug/kg	1400	J	370	1900	J	730	47	J	360	ND	U	360
Benzo(g,h,i)perylene	ug/kg	360	J	370	510	J	730	ND	U	360	ND	U	360
Benzo(k)fluoranthene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
4-Bromophenyl phenyl ether	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
Butyl benzyl phthalate	ug/kg	120	J	370	ND	U	730	ND	U	360	ND	U	360
4-Chloroaniline	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
bis(2-Chloroethoxy)-methane	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
bis(2-Chloroethyl) ether	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
bis(2-Chloroisopropyl) ether	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
2-Chloro-3-methylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
2-Chloronaphthalene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
2-Chlorophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
4-Chlorophenyl phenyl ether	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
Chrysene	ug/kg	1100	J	370	1400	J	730	ND	U	360	ND	U	360
Di-n-butyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Dibenz(a,h)anthracene	ug/kg	200	J	370	170	J	730	ND	U	360	ND	U	360
Dibenzofuran	ug/kg	200	J	370	ND	U	730	ND	U	360	ND	U	360
1,2-Dichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
1,3-Dichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
1,4-Dichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
1,2-Dichlorobenzidine	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
2,4-Dichlorophenol	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Diethyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
2,4-Dimethylphenol	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Dimethyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
4,6-Dinitro-2-methylphenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880	ND	U	880
2,4-Dinitrophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880	ND	U	880
2,4-Dinitrotoluene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
2,6-Dinitrotoluene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Di-n-octyl phthalate	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
bis(2-Ethylhexyl) phthalate	ug/kg	ND	U*	370	ND	U*	730	58	J	360	ND	U	360
Fluoranthene	ug/kg	2200	J	370	2100	J	730	39	J	360	ND	U	360
Fluorene	ug/kg	370	J	370	260	J	730	ND	U	360	ND	U	360
Hexachlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Hexachlorobutadiene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Hexachlorocyclo-pentadiene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Hexachloroethane	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
Indeno(1,2,3-cd)pyrene	ug/kg	380	J	370	500	J	730	ND	U	360	ND	U	360
Isophorone	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
2-Methylnaphthalene	ug/kg	160	J	370	110	J	730	ND	U	360	ND	U	360
2-Methylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
4-Methylphenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
Naphthalene	ug/kg	79	J	370	ND	U	730	ND	U	360	ND	U	360
2-Nitroaniline	ug/kg	ND	U	900	ND	U	1800	ND	U	880	ND	U	880
3-Nitroaniline	ug/kg	ND	U	900	ND	U	1800	ND	U	880	ND	U	880
4-Nitroaniline	ug/kg	ND	U	900	ND	U	1800	ND	U	880	ND	U	880
Nitrobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
2-Nitrophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
4-Nitrophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880	ND	U	880
N-Nitrosodiphenylamine	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
N-Nitroso-di-n-propylamine	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
Pentachlorophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880	ND	U	880
Phenanthrene	ug/kg	1800	J	370	2200	J	730	38	J	360	ND	U	360
Phenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
Pyrene	ug/kg	1800	J	370	3000	J	730	70	J	360	ND	U	360
1,2,4-Trichlorobenzene	ug/kg	ND	U	370	ND	U	730	ND	U	360	ND	U	360
1,2,4,5-Trichlorophenol	ug/kg	ND	U	900	ND	R	1800	ND	U	880	ND	U	880
1,2,3-Trichlorophenol	ug/kg	ND	U	370	ND	R	730	ND	U	360	ND	U	360
<b>Total PAHs</b>		<b>12939</b>			<b>15958</b>			<b>194</b>					
<b>Total Carcinogenic PAHs</b>		<b>5500</b>			<b>6880</b>			<b>47</b>					
<b>Total SVOCs</b>		<b>13478</b>			<b>15478</b>			<b>250</b>					

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'	2-3'

Compound	Units	Sample			Sample			Sample			Sample		
		Value	Qual	Reporting Limit									
alpha-BHC	ug/kg	ND	U	2	ND	U	19	ND	U	19	ND	UJ	37
beta-BHC	ug/kg	ND	U	2	ND	U	1.9	ND	U	1.9	ND	UJ	37
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	37
Heptachlor	ug/kg	ND	U	2	ND	U	1.9	14	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	33	NJ	1.9	3.4	J	3.7
Endosulfan I	ug/kg	ND	U	2	ND	U	1.9	43	NJ	19	4	J	3.7
Dieldrin	ug/kg	15	NJ	39	ND	UJ*	30	ND	UJ*	21	ND	UJ*	47
4,4'-DDE	ug/kg	44	J	39	ND	U*	19	7.2	J	37	ND	UJ	7.2
Endrin	ug/kg	63	J	39	ND	UJ*	40	ND	U	37	43	J	7.2
Endosulfan II	ug/kg	25	J	39	ND	U	37	ND	U	37	13	J	7.2
4,4'-DDD	ug/kg	9.1	J	39	ND	U	37	10	J	37	93	J	7.2
Endosulfan sulfate	ug/kg	1.1	NJ	39	ND	U	37	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	39	ND	U	3.7	ND	U	3.7	ND	UJ	7.2
Endrin aldehyde	ug/kg	2.2	UJ	39	ND	UJ*	73	14	J	3.7	ND	UJ	7.2
alpha-Chlordane	ug/kg	1.3	U	2	ND	U	19	ND	U	1.9	ND	UJ	37
gamma-Chlordane	ug/kg	ND	U	2	1.9	J	19	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

Page 2 of 4

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			Reporting			Sample			Reporting		
		Value	Qual	Limit	Value	Qual	Limit	Value	Qual	Limit	Value	Qual	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  
OFFTA PDI 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
Data 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	Soil Direct Exposure Residential	None	Field Dup OFF-SB-412-0204						
<b>Volatile Organic Analysis (UG/KG)</b>									
1,1-Dichloroethane	920000	8 U	6 U	5 U	9 U	6 U	5 U	1 J	6 U
2-Butanone	10000000	8 U	6 U	5 U	10 U	7 U	5 U	8 U	6 U
2-Hexanone		8 U	6 U	5 U	9 U	6 U	5 U	6 U	6 U
Acetone	7800000	39 B	18 U	15 U	240 J*	960 *	260 U	240 J*	480 *
Benzene	2500	8 U	6 U	5 U	9 U	6 U	5 U	6 U	6 U
Methylene Chloride	45000	14 U	11 U	7 U	21 U	9 U	8 U	12 U	18 U
Tetrachloroethane	12000	8 U	6 U	5 U	9 U	6 U	5 U	6 U	6 U
Toluene	190000	8 U	6 U	5 U	9 U	6 U	5 U	6 U	6 U
Total Xylenes	110000	8 U	6 U	5 U	4 J	6 U	1 J	6 U	6 U
Trichloroethene	13000	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
<b>Semivolatile Organic Analysis (UG/KG)</b>									
2-Methylnaphthalene	123000	410 U	1800 U	1800 U	42 J	52 J	170 J	1900 U	410 U
Acenaphthene	43000	63 J	1800 U	1800 U	36 J	76 J	110 J	330 J	410 U
Acenaphthylene	23000	69 J	1800 U	1800 U	91 J	77 J	120 J	330 J	410 U
Anthracene	35000	190 J	270 J	290 J	170 J	190 J	380 J	1300 J	410 U
Benzaldehyde		71 J	1800 U	1800 U	360 U	390 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	510	2000	410 U
Benzo(b)fluoranthene	900	510	1100 J	1400 J	460	520	1130	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	46000	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	960 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	20000	990	1700 J	1700 J	690	870	1800	7900	86 J
Fluorene	28000	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	54000	410 U	1800 U	1800 U	360 U	54 J	130 J	210 J	410 U
Phenanthrene	40000	740	1300 J	1400 J	460	670	1400	5600	410 U
Pyrene	13000	990	2200	2500	900	960	1900	7400	75 J
<b>Pesticide/PCB Analysis (UG/KG)</b>									
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	1 1 P
4,4'-DDT		4 0 U	5 0 P	1 1 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		4 0 U	3 6 U	3 6 U	3 6 U	3 8 U	3 6 U	4 00	4 1 U
Aroclor-1260		4 0 U	3 6 U	5 3 P	3 6 U	3 8 U	3 6 U	3 8 U	4 1 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
<b>TAL Metal Analysis (MG/KG)</b>									
Aluminum		12100	12300	10900	9820	12200	11300	9680	13200
Antimony		10	0 84 BN*	1 1 N*	7 8 N	9 6 N	7 4 N	8 2 N	6 6 N
Arsenic		1 7	6 7	5 8	6 9	7 8	12 8	8 8	11 5
Barium		5500	49 3	60 6	43 3	26 9	36 1	40 1	35 9
Beryllium		0 4	0 56	0 27	0 19 B*	0 36	0 54	0 50	0 54
Cadmium		39	0 035 U	0 38	0 48	0 16 B	0 28	0 29	0 018 U
Calcium		1790	1800	10600	3610	3490	14900	13000	1660
Chromium		1400	16 2	13 2	14 9	13 2	17 2	14 3	24 7
Cobalt		8 6	E	11 5	9 2	9 1	9 2	7 8	8 6
Copper		3100	29 1	67 3 N*	29 0 N*	35 5	37 7	59 3	54 3
Iron		23900	29900	40000	25700	29800	24800	25700	21800
Lead		150	268 E	217	192	83 4	88 8	143	559
Magnesium		3260	3550	3460	3330	3420	3500	4000	2380
Manganese		390	450 E	445	424	491	557	424	321
Mercury		23	0 076	0 027 B	0 043	0 039	0 18	0 14	0 063
Nickel		1000	21 4 E	20 2	20 0	18 8	18 7	19 3	14 4
Potassium		560	341	331	503	434	617	873	378
Selenium		390	2 6	0 14 UN	0 16 UN	0 23 U	0 27 U	0 25 U	0 27 U
Silver		200	0 040 U	2 5	2 9	0 033 U	0 037 U	0 036 U	0 038 U
Sodium		69 7	83 4	103	48 6	70 7	234	560	76 9
Thallium		5 5	2 6	0 090 UN	0 11 UN	3 4	4 2	3 5	3 1
Vanadium		550	38 1	31 6	57 7	21 8	34 0	17 3	19 9
Zinc		8000	207	139	190	111 E	119 E	130 E	147 E

Black Background = Criteria Exceeded, U - Not detected, UJ - Detection limit approximate, J - Quantitation approximate, R - Rejected, NA - Not Analyzed

**ANALYTICAL RESULTS  
OFFTA PDI 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	5 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	Soil Direct Exposure Residential	Field Dup OFF-SB-412 0204	None	None	Field Dup OFF-SB-415 0002	Field Dup OFF-SB-415 0002	None	None
<b>Volatile Organic Analysis (UG/KG)</b>								
1,1-Dichloroethane	920000	6 U	NA	6 U	6 U	7 U	7 U	6 U
2-Butanone	10000000	5 J	NA	13	11	6 U	7 U	6 U
2-Hexanone		6 U	NA	6 U	1 J	6 U	7 U	6 U
Acetone	7800000	580 *	NA 3600 *	230	450	25	23	46 B
Benzene	2500	6 U	NA	4 J	6 U	6 U	7 U	6 U
Methylene Chloride	45000	17	NA	14	19	13	17	10
Tetrachloroethene	12000	6 U	NA	6 U	6 U	2 J	13	7 U
Toluene	190000	6 U	NA	3 J	6 U	6 U	7 U	6 U
Total Xylenes	110000	6 U	NA	6 U	6 U	6 U	7 U	6 U
Trichloroethane	13000	6 U	NA	6 U	6 U	6 U	2 J	7 U
Trichlorofluoromethane		6 U	NA	6 U	6 U	1 J	7 U	6 U
<b>Semivolatile Organic Analysis (UG/KG)</b>								
2-Methylnaphthalene	123000	410 U	NA	130 J	390 U	390 U	39 J	370 U
Acenaphthene	43000	410 U	NA	100 J	42 J	400 U	120 J	72 J
Acenaphthylene	23000	410 U	NA	84 J	89 J	110 J	44 J	96 J
Anthracene	35000	410 U	NA	410	160 J	140 J	220 J	180 J
Benzaldehyde		410 U	NA	370 U	390 U	390 U	340 U	370 U
Benzo(a)anthracene	900	42 J	NA	740	480	470	840	510
Benzo(a)pyrene	400	410 U	NA	590	420	440	800	460
Benzo(b)fluoranthene	900	51 J	NA	780	540	580	1100	620
Benzo(g,h,i)perylene	800	410 U	NA	450	300 J	310 J	540	370 J
Benzo(k)fluoranthene	900	410 U	NA	310 J	210 J	190 J	400	230 J
bis(2-Ethylhexyl)phthalate	46000	280 J	NA	610	41 J	390 U	40 J	370 U
Butylbenzylphthalate		410 U	NA	370 U	390 U	390 U	340 U	370 U
Carbazole		410 U	NA	370 U	60 J	390 U	150 J	69 J
Chrysene	400	44 J	NA	680	450	450	880	520
Dibenzo(a,h)anthracene	400	410 U	NA	93 J	77 J	80 J	140 J	100 J
Dibenzofuran		410 U	NA	78 J	390 U	390 U	55 J	370 U
Fluoranthene	20000	72 J	NA	1300	1000	970	2100	930
Fluorene	28000	410 U	NA	150 J	50 J	390 U	74 J	47 J
Indeno(1,2,3-cd)pyrene	900	410 U	NA	350 J	260 J	270 J	480	320 J
Naphthalene	54000	410 U	NA	100 J	390 U	390 U	59 J	370 U
Phenanthrene	40000	50 J	NA	1100	590	430	1200	560
Pyrene	13000	93 J	NA	1900	950	980	1600	910
<b>Pesticide/PCB Analysis (UG/KG)</b>								
4,4'-DDD		1.3 JP	NA	14 P	5.8 P	5.0 P	3.4 U	2.7 J
4,4'-DDE		10	NA	4.3 P	20 P	21 P	24 P	3.7 U
4,4'-DDT		6.6 P	NA	3.7 U	16	16	14	12
alpha-Chlordane		2.1 U	NA	1.9 U	2.0 U	2.0 U	1.6 J	1.9 U
Aroclor-1254		40 U	NA	85	39 U	40 U	34 U	37 U
Aroclor-1260		40 U	NA	37 U	39 U	40 U	34 U	37 U
beta-BHC		2.1 U	NA	1.9 U	2.0 U	2.0 U	2.4	1.9 U
Endrin Ketone		4.0 U	NA	3.7 U	3.9 U	4.0 U	3.4 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
<b>TAL Metal Analysis (MG/KG)</b>								
Aluminum		14000	12000	8860	11200	11700	5850	10100
Antimony	10	6.2 N	9.6 N	21.2 N	5.7 N	4.8 N	5.0 N	6.7 N
Arsenic	1.7	11.1	8.9	11.6	10.6	11.5	11.1	10.7
Barium	5500	35.4	38.2	44.3	32.6	35.0	26.7	38.8
Beryllium	0.4	0.55	0.44	0.38	0.55	0.63	0.42	0.55
Cadmium	39	0.018 U	0.24 B	1.5	0.016 U	0.016 U	0.015 U	0.016 U
Calcium		1640	3860	15200	2400	2690	3550	5080
Chromium	1400	15.2	25.6	35.4	14.2	17.3	10.2	14.4
Cobalt		7.4	9.3	4.4	8.7	7.3	6.1	8.5
Copper	3100	14.7	40.0	104	21.8	19.8	516	38.9
Iron		21900	41000	75400	22300	19800	14400	28000
Lead	150	28.6	118	183	77.4	63.8	50.3	156
Magnesium		2820	4070	3160	2770	2680	1790	2620
Manganese	390	339	574	536	303	260	243	343
Mercury	23	0.13	0.097	0.20	0.066	0.069	0.39	0.076
Nickel	1000	16.1	23.0	34.3	17.6	17.1	13.8	20.6
Potassium		365	500	826	423	440	344	369
Selenium	390	0.30 U	0.25 U	0.25 U	0.27 U	0.26 U	0.28 U	0.28 U
Silver	200	0.042 U	0.036 U	0.035 U	0.038 U	0.037 U	0.036 U	0.039 U
Sodium		68.5	122	350	52.3 B	56.0	67.7	67.4
Thallium	5.5	2.6	4.3	8.0	2.5	2.0	1.9	2.9
Vanadium	550	20.3	26.0	18.8	20.3	21.2	16.9	21.5
Zinc	6000	77.0 E	124 E	180 E	78.2	67.3	90.2	119

Black Background = Criteria Exceeded, U - Not detected, UJ - Detection limit approximate, J - Quantitation approximate, R - Rejected, NA - Not Analyzed

**ANALYTICAL RESULTS  
OFFTA PDI 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	Soil Direct Exposure Residential	None		None	
<b>Volatile Organic Analysis (UG/KG)</b>					
2-Butanone	1000000	6		5	U
Acetone	7800000	120		440	*
Benzene	2500	3	J	5	U
Methylene Chloride	45000	12		12	
Toluene	190000	2	J	5	U
<b>Semivolatile Organic Analysis (UG/KG)</b>					
Anthracene	35000	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	20000	1200	J	270	J
Indeno(1,2,3-cd)pyrene	900	210	J	1800	U
Phenanthrene	40000	1000	J	190	J
Pyrene	13000	1500	J	520	J
<b>Pesticide/PCB Analysis (UG/KG)</b>					
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
<b>TAL Metal Analysis (MG/KG)</b>					
Aluminum		12300		8120	
Antimony	10	7 4	N	7 3	N
Arsenic	1.7	10.6		5.7	
Barium	5500	50 4		27 0	
Beryllium	0.4	0 49		0 35	
Cadmium	39	0 28		0 12	B
Calcium		7490		7350	
Chromium	1400	17 4		26.4	
Cobalt		9 3		6 8	
Copper	3100	41 8		33 4	
Iron		28000		24800	
Lead	150	150		96 6	
Magnesium		3250		2930	
Manganese	390	417		318	
Mercury	23	0 076		0 049	
Nickel	1000	18 8		21.2	
Potassium		585		577	
Selenium	390	0 27	U	0 26	U
Silver	200	0 038	U	0 036	U
Sodium		56 8		70 5	
Thallium	5.5	3 3		2 8	
Vanadium	550	22 8		28 8	
Zinc	6000	165	E	89 3	E

Black Background = Criteria Exceeded, U - Not detected, UJ - Detection limit approximate, J - Quantitation approximate,  
R - Rejected, NA - Not Analyzed

**ANALYTICAL RESULTS  
OFFTA PDI 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	Soil Direct Exposure Residential	None		None		None	
<b>Low Concentration PAH (SIM) Analysis (UG/KG)</b>							
2-Methylnaphthalene	123000	24	U	3.6	U	18	U
Acenaphthene	43000	24	U	3.6	U	35	
Acenaphthylene	23000	24	U	3.6	U	40	
Anthracene	35000	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	20000	67		30		1000	
Fluorene	28000	24	U	3.6	U	26	
Indeno(1,2,3-cd)pyrene	900	24	U	8.8		370	
Naphthalene	54000	24	U	3.6	U	18	U
Phenanthrene	40000	47		15		440	
Pyrene	13000	94		36		1200	
<b>Gasoline Range Organic Analysis (UG/KG)</b>							
Gasoline Range Organics		2900	U	2500	U	3300	U
<b>TAL Metal Analysis (MG/KG)</b>							
Aluminum		7650	E	8070		9630	
Antimony	10	0.76	BN	7.5	N	6.2	N
Arsenic	1.7	4.3	*	23.6		11.8	
Barium	5500	20.3	*	10.0	B	17.6	
Beryllium	0.4	0.081	B	0.35		0.43	
Cadmium	39	0.013	U	0.016	U	0.014	U
Calcium		1520	E	948		1840	
Chromium	1400	7.5	*	7.7		12.6	
Cobalt		7.3	E	3.7		10.2	
Copper	3100	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	23	0.023	U*	0.064		0.081	
Nickel	1000	12.7	E	13.1		18.8	
Potassium		616	*	215		389	
Selenium	390	0.20	U	0.26	U	0.24	U
Silver	200	2.3	E	0.036	U	0.034	U
Sodium		317	*	41.4	B	71.5	
Thallium	5.5	0.13	U	2.9		2.6	
Vanadium	550	12.1	E	10.9		16.8	
Zinc	6000	54.5	E	30.8		119	
<b>Total Petroleum Hydrocarbon Analysis (MG/KG)</b>							
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

**APPENDIX E**  
**CALCULATIONS**

**Mound Volume Calculations  
OFFTA Site  
NAVSTA Newport, RI**

1/23/2004

**Central Mound**

E1	A1	E2	A2	Aavg	E2-E1	Vol (sf)	Vol (CY)
11	26,794	12	23,254	25,024	1	25,024	927
12	23,254	13	20,909	22,082	1	22,082	818
13	20,909	14	18,780	19,845	1	19,845	735
14	18,780	15	16,733	17,757	1	17,757	658
15	16,733	16	14,977	15,855	1	15,855	587
16	14,977	17	13,292	14,135	1	14,135	524
17	13,292	18	11,744	12,518	1	12,518	464
18	11,744	19	10,352	11,048	1	11,048	409
19	10,352	20	9,041	9,697	1	9,697	359
20	9,041	21	7,857	8,449	1	8,449	313
21	7,857	22	6,752	7,305	1	7,305	271
22	6,752	23	5,708	6,230	1	6,230	231
23	5,708	24	4,728	5,218	1	5,218	193
24	4,728	25	3,815	4,272	1	4,272	158
25	3,815	26	3,000	3,408	1	3,408	126
26	3,000	27	2,280	2,640	1	2,640	98
27	2,280	28	1,688	1,984	1	1,984	73
28	1,688	29	1,107	1,398	1	1,398	52
29	1,107	30	530	819	1	819	30
30	530	30.7	-	265	0.7	186	7
						<b>Total</b>	<b>7,032</b>

**Mound No. 1**

E1	A1	E2	A2	Aavg	E2-E1	Vol (sf)	Vol (CY)
9	7,211	10	5,498	6,355	1	6,355	235
10	5,494	11	3,962	4,728	1	4,728	175
11	3,962	12	2,494	3,228	1	3,228	120
12	2,494	13	1,317	1,906	1	1,906	71
13	1,317	13.7	-	659	0.7	461	17
						<b>Total</b>	<b>618</b>

**Mound No. 2**

E1	A1	E2	A2	Aavg	E2-E1	Vol (sf)	Vol (CY)
8	22,334	9	19,286	20,810	1	20,810	771
9	19,286	10	16,703	17,995	1	17,995	666
10	16,703	11	13,933	15,318	1	15,318	567
11	13,933	12	10,706	12,320	1	12,320	456
12	10,706	13	8,314	9,510	1	9,510	352
13	8,314	14	6,238	7,276	1	7,276	269
14	6,238	15	4,275	5,257	1	5,257	195
15	4,275	16	2,612	3,444	1	3,444	128
16	2,612	17	1,062	1,837	1	1,837	68
17	1,062	17.7	-	531	0.7	372	14
						<b>Total</b>	<b>3,487</b>

**TOTAL 11,136**