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Naval Submarine Base New London

SITE 16 - HOSPITAL INCINERATORS AND
SITE 18 - SOLVENT STORAGE AREA SOIL - OPERABLE UNIT 11
- PROPOSED PLAN

Introduction

In accordance with Section 117 of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, the law more commonly known as Superfund, this **Proposed Plan** summarizes the Navy's preferred remedy for the soil at Site 16 – Hospital Incinerators and Site 18 - Solvent Storage Area (Building 33). Sites 16 and 18 are two of 25 sites at Naval Submarine Base - New London (NSB-NLON), Groton, Connecticut (Figure 1) being addressed by the Navy's **Installation Restoration (IR) Program.** The **IR Program** is being conducted to identify and clean up sites created by past operations that do not meet today's environmental standards. A total of 12 **Operable Units (OUs)** have been defined to date at NSB-NLON to address portions of the 25 IR Program sites.

The groundwater at Site 18 is a portion of the Basewide Groundwater **OU** 9. Site 18 groundwater and the remaining portions of **OU** 9 will be addressed in future decision documents. The soil at Sites 16 and 18 has been designated **OU** 11. The proposed remedy for **OU 11** is the first and final action.

Detailed descriptions of Sites 16 and 18 are provided in the **Basewide Groundwater Operable Unit Remedial Investigation (BGOURI)** Report. The document is available in the Information Repositories at the locations identified on Page 5.

This Proposed Plan recommends No Further Action (NFA) under **CERCLA** for Sites 16 and 18 soil. The **BGOURI** Report did not identify excessive risks to human health or the environment from contact with the soil at these sites.

The Cleanup Proposal...

After careful study, the Navy proposes NFA under **CERCLA** for:

- Sites 16 and 18 soil (OU 11)

What Do You Think?

The Navy is accepting public comments on this **Proposed Plan** from July 16, 2004 to August 17, 2004. You do not have to be a technical expert to comment. If you have a comment or concern, the Navy wants to hear it before making a final decision.

Technical terms shown in bold print are defined in the glossary on Page 6.

There are two ways to formally register a comment:

1. Offer oral comments during the July 28, 2004 public meeting, or
2. Send written comments postmarked no later than August 17, 2004 following the instructions provided at the end of the **Proposed Plan.**

To the extent possible, the Navy will respond to your oral comments during the July 28, 2004 public meeting and hearing. In addition, federal regulations [40 Code of Federal Regulations (CFR) §300.430(f)(3)(i)(F)] require the Navy to respond to all significant comments in writing. The Navy will review the transcript of the comments received at the meeting and all written comments received during the formal comment period before making a final decision and providing a written response to the comments in a document called a **Responsiveness Summary**. The **Responsiveness Summary** will be included in the **Record of Decision (ROD).**

Learn More About the Proposed Plan

The Navy will describe the **Proposed Plan** and hear your questions at an informational public meeting. A formal public hearing will immediately follow this meeting.

July 28

PUBLIC MEETING

Meeting: 6:30 pm
Hearing: 7:00 pm
Date: Wednesday July 28, 2004
Location: Best Western Olympic Inn, Route 12, Groton, Connecticut

For further information on the meeting, call Ms. Melissa Griffin at the NSB-NLON Environmental Department, (860) 694-5191

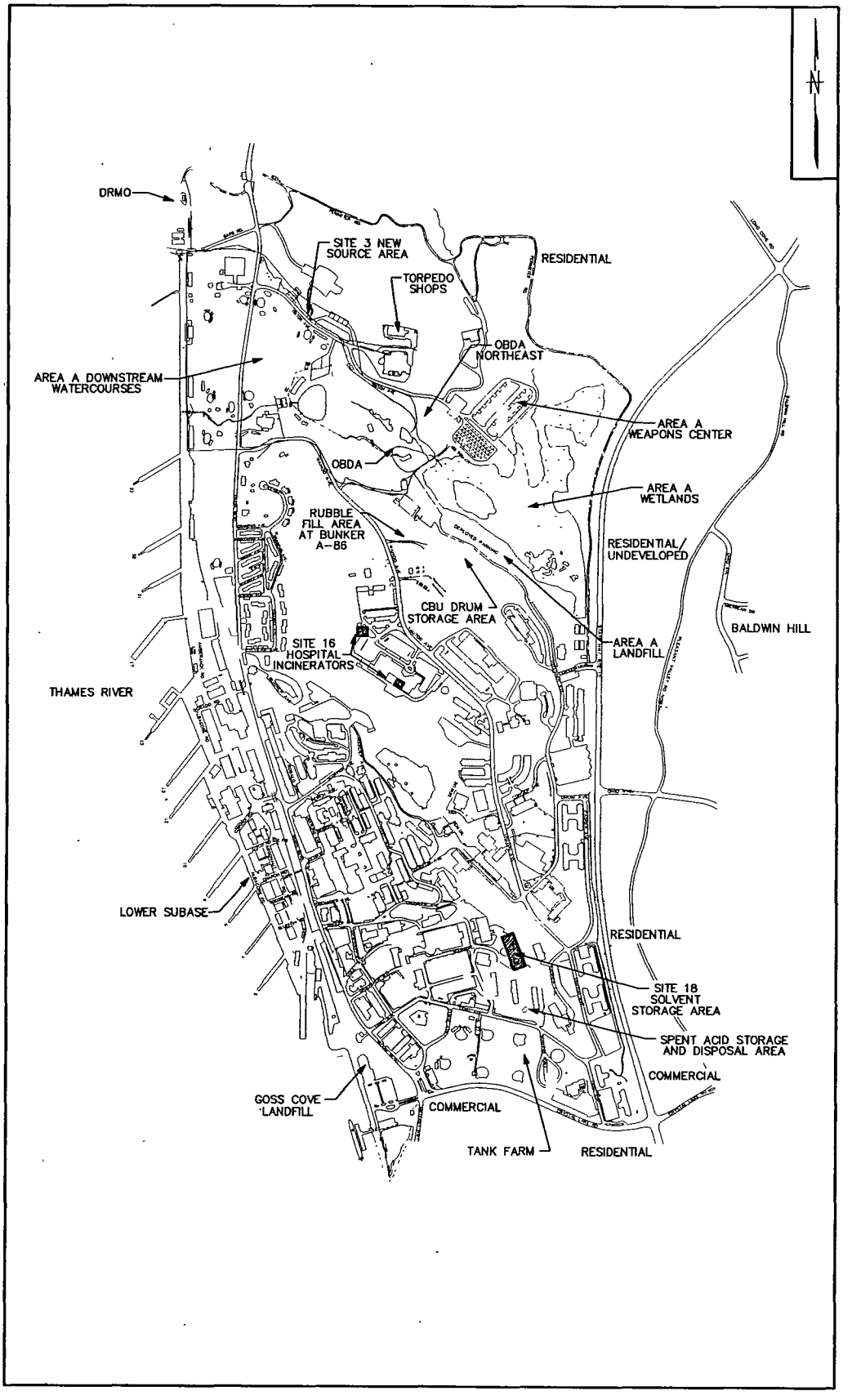

Figure 1. Site Location Map

History

Site 16 (see Figure 1) consists of the two locations where a mobile incinerator was used at Naval Hospital Groton. In the 1980s, the Naval Hospital Groton operated a skid-mounted waste incinerator at two sites adjacent to the hospital. The two sites (16A and 16B) are located west of Tautog Road, adjacent to Building 452 and Building 449, respectively (Figure 2). According to the Federal Facility Agreement (FFA) (1995), the incinerator was used to destroy medical records and medical waste contaminated with pathological agents. Ash generated by the waste incinerator was transferred to dumpsters for disposal at the municipal landfill.

Site 16 was evaluated during the Initial Assessment Study (IAS) conducted for NSB-NLON. No sampling activities were conducted as part of the study. The study's recommendation for this site was to not pursue further investigation of the site because, at the time of the IAS study, the site was still operational. As a result, no investigation of Site 16 was conducted during either of the early remedial investigations **(RIs)** conducted at NSB-NLON, i.e., the Phase I **RI** (1992) or Phase II **RI** (1997). The Navy subsequently ceased operation of the incinerator at the hospital and investigated the site during the **BGOURI** (2001) to determine the impact of the operation of the incinerator. Only soil samples were collected at the site during the **BGOURI** because of the shallow depth of competent bedrock, the lack of an overburden aquifer, the type contaminants, and the source of contaminants.

Site 18 consists of Building 33, the Solvent Storage Area. The location of Building 33 is shown on Figure 1 and Figure 3. This building has been used for the storage of gas cylinders and 55-gallon drums of solvents such as trichloroethene (TCE) and dichloroethene.

The Solvent Storage Area at Building 33 was identified during the IAS. The site was identified as Study Area F in the FFA and is now identified as Site 18 for the **IR Program**. Soil samples were collected from the site during the **BGOURI** (2002).

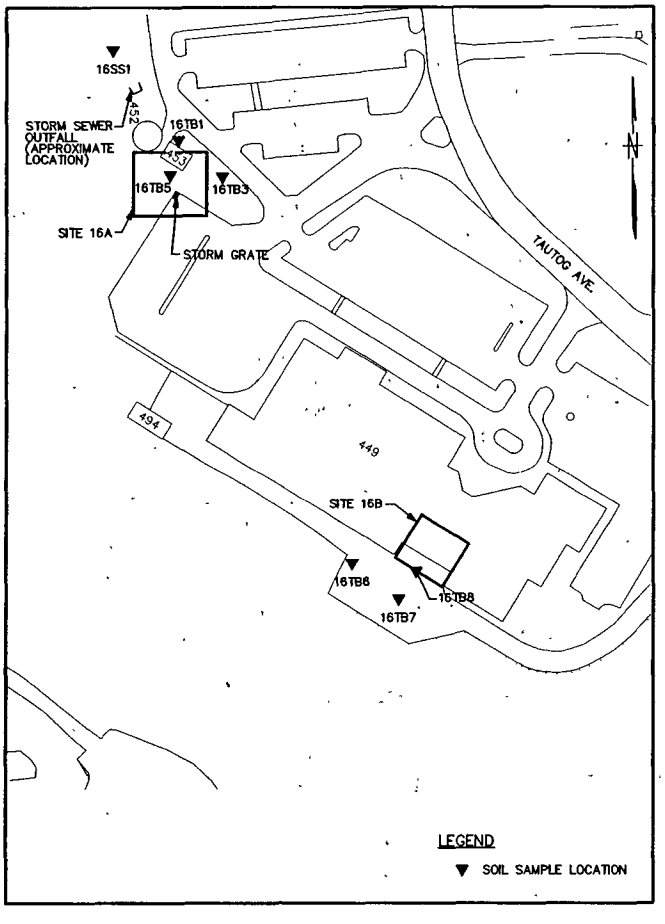

Figure 2. Site 16 Layout Map

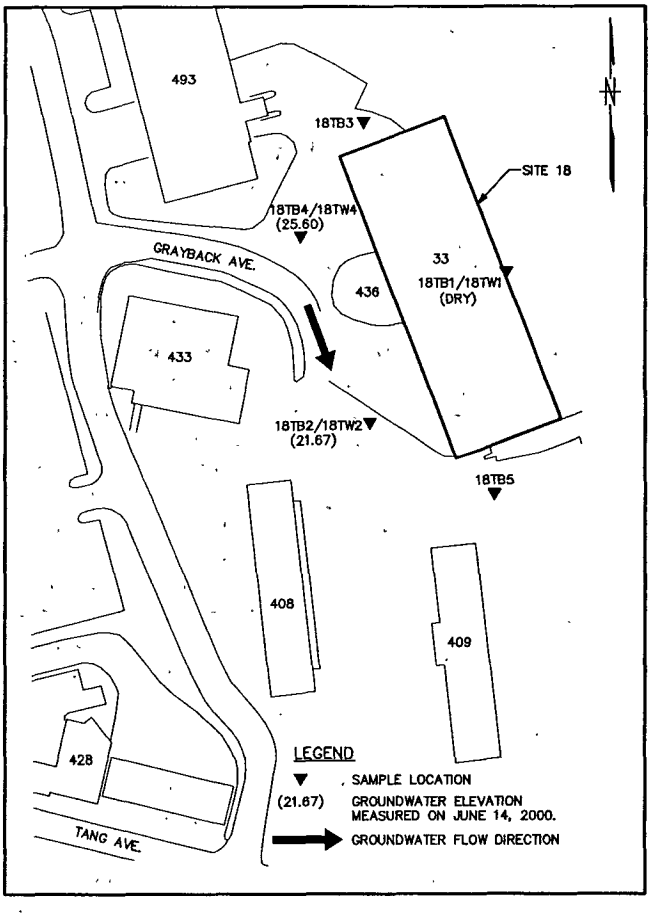

Figure 3. Site 18 Layout Map

Findings of the Field Investigations

At Site 16, the nature and extent of contamination and human health risk assessment (**HHRA**) results from the **BGOURI** indicated that the past operation of the skid-mounted incinerator did not significantly impact the surrounding soil and that site soils do not pose significant risks to any potential human receptors. The **HHRA** considered construction workers, full-time employees, older child trespassers, and future child and adult residents. All incremental cancer risks (ICRs) from exposure to soil at Site 16 (i.e., 5.2×10^{-7} for a construction worker to 7.8×10^{-6} for a future child resident) were less than or within United States Environmental Protection Agency's (EPA's) target risk range of 10^{-4} to 10^{-6} and less than Connecticut Department of Environmental Protection's (CTDEP's) acceptable level of 1×10^{-5} for cumulative exposures. Although all ICRs were less than CTDEP's target level for cumulative exposures, chemical-specific ICRs for arsenic (full-time workers, older child trespassers, child residents, and adult residents) and benzo(a)pyrene (child residents) exceeded CTDEP's target level of 1×10^{-6} for individual chemicals. However, the maximum detected concentrations of arsenic and benzo(a)pyrene were less than their respective CTDEP **Remediation Standard Regulations (RSRs)** for residential exposures which indicates that these risks are not significant. All Hazard Indices (HIs) for exposure to soil at Site 16 were less than EPA's and CTDEP's acceptable level of 1.0.

Several chemicals in Site 16 soil samples were identified as posing a potential contaminant migration concern because their concentrations exceeded screening criteria for contaminant migration from soil to groundwater. Additional information was available to show that these chemicals were not true contaminant migration concerns. For example, the concentrations of **dioxins/furans** that exceeded the pollutant mobility criteria were found to be consistent with background concentrations of dioxins/furans in soil in the State of Connecticut and across the United States. A **polychlorinated biphenyl** (**PCB**) and a **metal** were detected in Site 16 soil at concentrations that exceeded their respective mobility criterion; however, additional testing using the Synthetic Precipitation Leaching Procedure showed that these contaminants do not pose a significant migration issue. Site conditions would also reduce the potential for contaminant migration from the site. Asphalt pavement covers a majority of the site and limits infiltration through the soil and erosion of surface soil. In addition, relatively competent bedrock is very shallow at this site and it is likely that it would impede vertical contaminant migration.

At Site 18, the nature and extent of contamination and **HHRA** results from the **BGOURI** indicated that past storage of solvents at Building 33 (Site 18) did not significantly impact the surrounding soil and groundwater and that the site does not pose significant risks to any potential human receptors. The **HHRA** determined that health risks from exposure to soil at

What is Risk and How is it Calculated?

A **human health risk assessment** estimates "baseline risk." This is an estimate of the likelihood of health problems occurring if no cleanup action were taken at a site. To estimate baseline risk at a site, the Navy undertakes a four-step process:

Step 1: Analyze Contamination
Step 2: Estimate Exposure
Step 3: Assess Potential Health Dangers
Step 4: Characterize Site Risk

In Step 1, the Navy looks at the concentrations of contaminants found at a site as well as past scientific studies on the effects these contaminants have had on people (or animals, when human studies are unavailable). Comparisons between site-specific concentrations and concentrations reported in past studies help the Navy to determine which contaminants are most likely to pose the greatest threat to human health.

In Step 2, the Navy considers the different ways that people might be exposed to the contaminants identified in Step 1, the concentrations that people might be exposed to, and the potential frequency and duration of exposure. Using this information, the Navy calculates a "reasonable maximum exposure" (RME) scenario, which portrays the highest level of human exposure that could reasonably be expected to occur.

In Step 3, the Navy uses the information from Step 2 combined with information on the toxicity of each chemical to assess potential health risks. The likelihood of any kind of cancer resulting from exposure to a site is generally expressed as an upper bound probability; for example, a "1 in 10,000 chance." In other words, for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure to site contaminants. An extra cancer case means that one more person could get cancer than would normally be expected to from all other causes. For non-cancer health effects, the Navy calculated a "hazard index." The key concept here is that a "threshold level" (measured usually as a hazard index of less than 1) exists below which non-cancer health effects are no longer predicted.

In Step 4, the Navy determines whether site risks are great enough to cause health problems for people at or near the site. The results of the three previous steps are combined, evaluated, and summarized. The Navy adds up the potential risks from the individual contaminants to determine the total risk resulting from the site.

Site 18 were within target risk ranges. Potential receptors for exposures to soil at Site 18 included construction workers, full-time employees, older child trespassers, and future residents. All ICRs for exposures to soil at Site 18 were less than or within EPA's target risk range of 10^{-4} to 10^{-6} and less than CTDEP's acceptable level of $1x10^{-5}$ for cumulative exposures. Although all ICRs were less than CTDEP's target level for cumulative exposures, chemical-specific ICRs for arsenic (full-time workers, future child residents, and future adult residents) exceeded CTDEP's target level of 1×10^{-6} for individual chemicals. However, the maximum detected concentration of arsenic was less than its CTDEP **RSR** for residential exposures which indicates that this risk is not significant. All HIs for exposure to soil at Site 18 were less than EPA's and CTDEP's acceptable level of 1.0.

Site 16 is adjacent to a hospital and Site 18 is a storage building surrounded by a parking lot. Both sites are in well-developed portions of NSB-NLON. Neither of these sites or the areas near these sites represent habitats suitable for supporting a wildlife population. Based on the site conditions, it is unlikely that ecological receptors are at risk as a result of contaminants associated with Sites 16 and 18.

The Navy's Proposed Remedy

Based on the results of the **BGOURI**, it is the Navy's current judgment that NFA is required under **CERCLA** for the soil at Sites 16 and 18, which is designated as **OU** 11. These sites pose no current or future potential threats to human health or the environment; therefore, the Navy proposes that no treatment, engineering controls, or institutional controls be implemented at these sites. The EPA and CTDEP concur with the Navy's Proposed Remedy.

The Public's Role in Alternative Selection

Community input is integral to the selection process. The Navy, EPA, and CTDEP will consider all comments in selecting the remedy prior to signing the **ROD**. The public is encouraged to participate in the decision-making process.

This **Proposed Plan** for Sites 16 and 18 soil is available for review, along with supplemental documentation, at the:

Groton Public Library
52 Newtown Road
Groton, CT 06340
(860) 441-6750

Hours:
Mon. - Thur.: 9:00am - 9:00pm
Fri.: 9:00am - 5:30pm
Sat.: 9:00am - 5:00pm
Sun.: noon - 6:00pm

Bill Library
718 Colonel Ledyard Highway
Ledyard, CT 06339
(860) 464-9912

Hours:
Mon. - Thur.: 9:00am - 9:00pm
Fri. & Sat.: 9:00am - 5:00 pm
Sun.: 1:00pm - 5:00pm

For further information, please contact:

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Glossary of Technical Terms

Chemicals of Potential Concern (COPCs): Chemicals identified as potential concerns to human health or the environment through a screening-level assessment because their concentrations exceed regulatory criteria.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The act created a special tax that goes into a trust fund to investigate and clean up abandoned and uncontrolled hazardous waste sites.

Contaminants: Any physical, biological, or radiological substance or matter that, at a certain concentration, could have an adverse effect on human health and the environment.

Dioxins: A family of 75 organic compounds known chemically as polychlorinated dibenzo-p-dioxins. The individual compounds are technically referred to as congeners. Concern about them arises from their potential toxicity as **contaminants** and their hydrophobic nature and resistance towards metabolism. Dioxins are typically created and released into the air during combustion processes such as commercial or municipal waste incineration and from burning fuels (e.g., wood, coal, or oil). They can also be created in small quantities during certain types of chemical manufacturing and processing.

Feasibility Study: A Feasibility Study report presents the development, analysis, and comparison of remedial alternatives.

Furans: A family of 135 organic compounds known chemically as polychlorinated dibenzofurans. The individual compounds are technically referred to as congeners. Typically found with dioxins and having similar properties, concern about furans arises from their potential toxicity as **contaminants** and their hydrophobic nature and resistance towards metabolism.

Human Health Risk Assessment (HHRA): Scientific method to evaluate the effects on human receptors from exposure to contaminants in site-specific media.

Installation Restoration (IR) Program: The purpose of the IR Program is to identify, investigate, assess, characterize, and clean up or control releases of hazardous substances and to reduce the risk to human health and the environment from past waste disposal operations and hazardous material spills at Navy activities in a cost-effective manner.

Metals: Metals are naturally occurring elements in the earth. Some metals, such as arsenic and mercury, can have toxic affects. Other metals, such as iron, are essential to the metabolism of humans and animals.

Operable Unit (OU): Operable Units are site management tools that define discrete steps towards comprehensive actions as part of a Superfund site cleanup. They can be based on geological portions of a site, specific site problems, initial phases of action, or any set of actions performed over time or concurrently at different parts of the site.

Polychlorinated Biphenyls (PCBs): A family of 204 organic compounds, formerly used in the manufacture of plastics and in electrical transformers. They were used because they conducted heat well while being fire resistant and good electrical insulators. PCBs tend to bioaccumulate in fish and other animals and are probable human carcinogens. Studies also suggest non-cancer effects on humans and animals from these compounds.

Proposed Plan: A public participation requirement in which the lead agency summarizes for the public the preferred cleanup strategy and rationale for preference and reviews the alternatives presented in the detailed analysis of the Feasibility Study. The document is used to solicit public review and comment on all alternatives under consideration.

Record of Decision (ROD): An official document that describes the selected remedy for a site. The ROD documents the remedy selection process and is typically issued by the lead agency following the public comment period.

Remedial Investigation (RI): A Remedial Investigation report [e.g., Basewide Groundwater Operable Unit RI (BGOURI)] describes the site, documents the nature and extent of contaminants detected at the site, and presents the results of the risk assessment.

Remediation Standard Regulations (RSRs): Connecticut regulations (Sections 22a-133k-1 through -3 of the Regulations of Connecticut State Agencies) concerning the remediation of polluted soil and groundwater.

Responsiveness Summary: A summary of written and oral comments received during the public comment period, and the Navy's responses to these comments. The Responsiveness Summary is an important part of the **ROD**, highlighting community concerns for decision makers.

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the **Proposed Plan** for Sites 16 and 18 soil (OU 11) at Naval Submarine Base – New London is important to the Navy. Comments provided by the public are valuable in helping the Navy select the final remedy for these sites.

You may use the space below to write your comments, then fold and mail. Comments must be postmarked by August 17, 2004. Comments can be submitted via mail or e-mail and should be sent to either of the following addresses:

Mr. Mark Evans, Remedial Project Manager
Naval Facilities Engineering Command
Engineering Field Activity Northeast
10 Industrial Highway
Mail Stop 82, Code 1823/ME
Lester, Pennsylvania 19113-2090
Tel: (610) 595-0567 ext. 162
e-mail: Mark.Evans1@navy.mil

Ms. Melissa Griffin
Installation Restoration Manager
Naval Submarine Base - New London
Building 439
Groton, CT 06349-5039
Tel: (860) 694-5191
e-mail: griffinm@cnrne.navy.mil

If you have any questions about the comment period, please contact Mr. Mark Evans at (610) 595-0567 ext. 162.

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