

**PROPOSED PLAN  
OPERABLE UNIT 4 (OU-4)**

**for**

**NAVAL WEAPONS STATION EARLE  
Colts Neck, New Jersey**



**Northern Division  
Naval Facilities Engineering Command  
Contract No. N62472-90-D-1298  
Contract Task Order 300**

**APRIL 1998**



**BROWN & ROOT ENVIRONMENTAL**

DEPARTMENT OF THE NAVY



PROPOSED REMEDIAL ACTION PLAN FOR OU-4

Naval Weapons Station (NWS) Earle  
Colts Neck, New Jersey

APRIL 1998

**PURPOSE OF PROPOSED PLAN**

This Proposed Plan briefly describes the investigations, response actions, and proposal and rationale for no further action at the following sites at Naval Weapons Station Earle (NWSE): Mercury Spill Area (Site 14), Grit Blasting Area (Site 20), Paint Chip Disposal Area (Site 22), Paint Disposal Area (Site 23), Closed Pistol Range (Site 24), Closed Pistol Range (Site 25), Projectile Refurbishing Area (Site 27), and PCB Spill Site (Site 29). These sites are collectively known as Operable Unit - 4 (OU-4).

This Proposed Plan was developed by the U.S. Navy in consultation with the United States Environmental Protection Agency (EPA) and the New Jersey Department of Environmental Protection (NJDEP). The Navy is issuing the Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. §§9601 *et seq.*, and Section 300.430(f) of the National

Contingency Plan (NCP), 40 C.F.R. Part 300. The information summarized here is described in detail in the remedial investigation report, which should be consulted for a more detailed description.

This Proposed Plan is being provided to inform the public of the Navy's preference for no further action at these sites and to solicit public comments. Changes to the preferred remedy or a change from the preferred remedy to another remedy may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selected remedy will be made after the Navy has taken into consideration all public comments.

**COMMUNITY ROLE IN SELECTION PROCESS**

The Navy relies on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the remedial investigation (RI) report, the Proposed Plan, and

supporting documentation have been made available to the public in the Administrative Record at the Monmouth County Library (Eastern Branch), Shrewsbury, New Jersey. A public comment period begins on May 4, 1998 and concludes on June 12, 1998.

A public meeting will be held during the public comment period on May 14, 1998 at 7:00 pm at NWSE to present the conclusions of the RI, to elaborate further on the reasons for recommending the preferred remedial alternative, and to receive public comments.

Comments received at the public meeting, as well as written comments, will be documented in a Responsiveness Summary Section of the Record of Decision (ROD), the document that formalizes the selection of the remedy. All written comments should be addressed to: John Kolicius, Remedial Project Manager, Department of the Navy - Northern Division, 10 Industrial Highway, Mail Stop #82, Lester, Pennsylvania 19113-2090.

## **BACKGROUND**

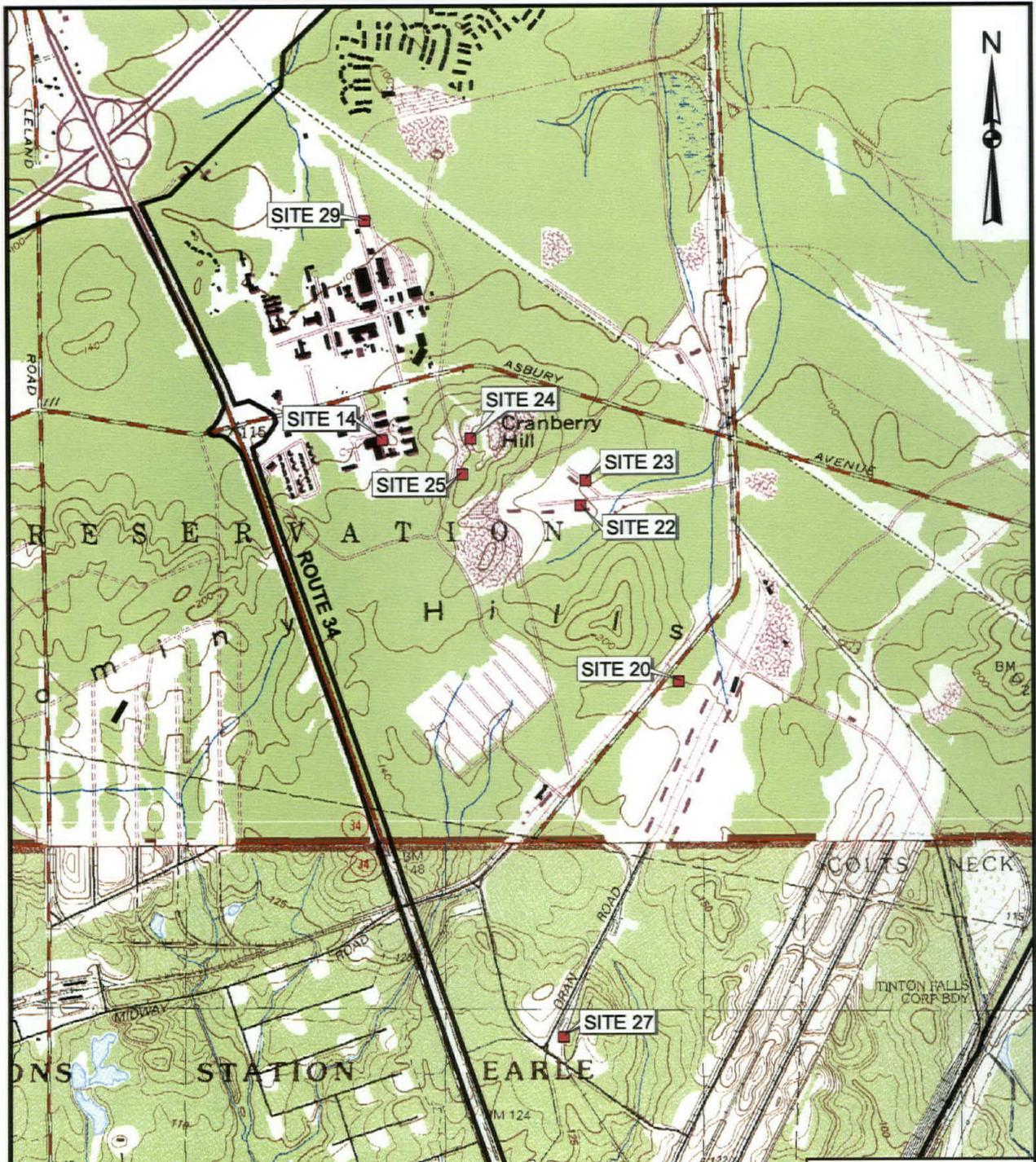
Sites 14, 20, 22, 23, 24, 25, 27, and 29 are all located on the 10,248-acre Mainside area of NWSE in Colts Neck, Monmouth County (Figure 1). Colts Neck has a population of approximately 6,500 people. Approximately 2,500 people live or work at NWSE. The Mainside area of NWSE consists of a large, undeveloped section associated with ordnance

operations, production, and storage. Other land use includes residences, offices, workshops, warehouses, recreational space, and undeveloped land. NWSE is surrounded by agricultural land, vacant land, and low-density housing.

The U.S. Navy has handled, stored, renovated, and transferred munitions at NWSE since 1943. The operations involve preserving and maintaining ammunition, missile components, and explosives; rendering safe unserviceable and/or dangerous ammunition and explosives; and providing support to the Fleet Mine Facility. NWSE also conducts or has conducted nonordnance activities, radiological operations, materials storage, and waste disposal operations.

## **REGULATORY HISTORY**

The U.S. Navy's Installation Restoration Program (IRP) identifies environmental concerns and remediates contamination at U.S. Navy and Marine Corps facilities. The IRP is similar to EPA's Superfund process. Study sites undergo a preliminary assessment (PA), site investigation (SI), remedial investigation (RI), and remedial action (RA). Based on the results of PA/SI work conducted by the U.S. Navy in 1982 and 1986, NWSE was proposed to the Superfund National Priorities List (NPL) on October 15, 1984. The NPL is EPA's list of uncontrolled hazardous substance releases in the United States that are priorities for long-term remedial evaluation and



LEGEND	
<span style="color: red;">■</span>	SITE LOCATION
<span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	FACILITY BOUNDARY

DRAWN BY S. TABLER	DATE 4/28/98	<b>Brown &amp; Root Environmental</b>	CONTRACT NUMBER —	OWNER NO. —
CHECKED BY <i>RST</i>	DATE <i>4/30/98</i>	<b>OU-4 SITE LOCATIONS NWS EARLE COLTS NECK, NEW JERSEY</b>	APPROVED BY —	DATE —
COST/SCHEDULE-AREA			APPROVED BY —	DATE —
SCALE AS NOTED			DRAWING NO. <b>FIGURE 1</b>	REV <b>0</b>

response. On August 30, 1990, NWSE was added to the NPL.

Between May and December 1995, RI field work was conducted at 27 sites at NWSE. This document reflects the results of the RI at the eight sites that make up OU-4.

### **SUMMARY OF THE REMEDIAL INVESTIGATION, REMOVAL ACTIONS, AND RISKS AT OU-4 SITES**

#### Site 14: Mercury Spill Area

One to several ounces of mercury were spilled on a concrete floor within a warehouse in 1970. The spill was reportedly cleaned up with a vacuum at the time of the spill. Floor sweeping samples were consolidated and analyzed during the RI. Mercury was detected at 8.6 mg/kg, which is below the State of New Jersey Residential Direct Contact Soil Cleanup Criterion of 14 mg/kg. The corresponding EPA residential level, a Hazard Index of 1, is approximately equal to the concentration that was found and would therefore be considered protective of human health. The investigation found no evidence of wider environmental contamination or risk to human health.

It is apparent from the investigation that a spill that occurred two decades ago was cleaned up using good housekeeping procedures. There is no current threat to human health or the environment from this spill.

#### Site 20: Grit Blasting Area

Spent material (grit and paint chips containing lead and zinc) from the blasting of paint off ordnance was dumped in an open pile. A field in this area was also reportedly used for leaching unknown liquid waste. This area also contains an operating septic tank.

Removal of the pile was executed in two stages. In December 1994, the Navy excavated approximately 300 cubic yards of tainted soils. Additional excavation work to meet state of New Jersey residential surface soil clean-up standards was carried out in March 1995.

During the 1995 RI, samples were obtained from surface soil, subsurface soil, and sediment in the area, as well as from the septic tank. The results of the RI are as follows:

Surface Soil - There were slightly elevated levels of beryllium in two of five samples (2.7 mg/kg and 1.4 mg/kg). The New Jersey Residential Contact Cleanup Criterion for beryllium is 1.0 mg/kg. Other metals and semivolatiles were below the New Jersey Cleanup Criteria.

Subsurface Soil - There were no elevated levels of inorganics, semivolatiles, or volatiles in comparison to the New Jersey Residential Contact Cleanup Criteria.

Sediment - There were no elevated levels of inorganics, semivolatiles, or volatiles in comparison to the Sediment Ecological Toxicity Threshold Values. Note that, although below the Sediment Ecological Toxicity Threshold Values, the sediment sample taken where a drainage depression exits the site did have low levels of inorganics and organics. That particular sample was taken to ascertain whether there was any off-site migration into the wetlands. The presence of these low levels is indicative of such transport. However, since the waste pile has been removed, future off-site migration should be negligible.

Septic Tank - There was no sludge in the tank, only aqueous waste. The sample showed low levels of semivolatiles (1 ug/L to 140 ug/L) and metals (.025 ug/L to 43.2 ug/L). It is believed that the septic tank and associated leach field (no longer used) at one time may have contributed to the low level of metals and organic compounds (below the New Jersey Residential Contact Cleanup Criteria) in the subsurface soils.

The contents of the septic tank are periodically pumped out for disposal in the NWS Earle wastewater treatment plant (WWTP). This tank is used for temporary holding of municipal-type waste for disposal at the regulated WWTP. There is no current or anticipated risk to human health or the environment anticipated from the proper use of this tank.

After removal action under CERCLA, the cancer risks associated with the future residential and current industrial exposure scenarios were estimated to be within the mid-range of the target risk range. The noncarcinogenic Hazard Indices were less than 1.0, indicating no adverse noncarcinogenic effects. Ecological risk assessment screening concluded that potential ecological risks from the site appear to be low, not requiring further activities.

#### Site 22: Paint Chip Disposal Area at Building D-2

This area was formerly used as a sand blast and paint disposal area. Contaminants of concern included cadmium, lead, petroleum hydrocarbons, 1,1,1-trichloroethane, 4,4-DDT, and two phthalates. Due to the presence of elevated levels of the aforementioned contaminants, a removal action was conducted in December 1996.

Human health risk assessment estimated RME risks for the future resident exposure scenario at the upper end of the EPA target acceptable risk range. Ecological risk assessment screening concluded that PAHs and metals at concentrations above ecological toxicity threshold values could migrate with surface water. The Navy, with EPA and NJDEP concurrence, opted to use removal response authority suggested under CERCLA.

Approximately 250 tons of contaminated soil were excavated and disposed off site.

Confirmatory sampling demonstrated that levels were below NJDEP Residential Direct Contact, Non-Residential Direct Contact, and Impact to Groundwater Standards.

Site 23: Paint Disposal Area at Building D-5

This area was reportedly used to dispose of paint from the repainting and stenciling of torpedoes, aerial bombs, and other large ordnance.

Human health risk assessment estimated RME risks for the future industrial worker and future resident exposure scenarios above the upper end of the EPA target acceptable risk range for metals. Ecological risk assessment screening concluded that potential risks to ecological receptors from compounds found at site was low. Based on the results of human health risk assessment, the Navy, with EPA and NJDEP concurrence, opted to use removal response authority suggested under CERCLA.

Approximately 86 tons of contaminated soil (chemicals of concern included lead and chromium) were excavated and disposed of off site via a removal action in December 1996. The excavation depth was approximately 3 feet. Confirmatory sampling demonstrated that post-removal levels were below NJDEP Residential Direct Contact, Non-Residential Direct Contact, and Impact to Groundwater Standards, except for thallium. Thallium was present in four of eight samples within the same order of

magnitude as the direct contact standard (2 mg/kg). Such soil is currently covered and not a direct contact threat since the area was covered with several feet of clean fill. EPA deemed the removal action to be satisfactory and complete on March 27, 1997.

Sites 24 and 25: Closed Pistol Ranges

Lead- and copper-jacketed bullets were fired into 70-foot berms (natural sand banks) as part of target practice exercises.

Human health risk assessment estimated RME risks for the future resident exposure scenario near the middle of the EPA target acceptable risk range. Ecological risk assessment screening concluded that there were no significant contamination pathways to potential receptors and that potential risk to ecological receptors was insignificant. Human health and ecological risk assessment concluded no further action would be required. However, based on the volume of bullets present and good housekeeping policy, the Navy, with EPA and NJDEP concurrence, decided to perform a cleanup action in 1996.

Approximately 10 tons of metal bullets were mechanically removed from the soil and the soil itself was washed. Approximately 1,500 tons of soil were processed during this action. The recovered bullets were sold to a local metal recycler. Lead-containing sludge from the soil washing system was sent to an asphalt batch

plant for recycling. The washed soils were backfilled at each site and the wash water was discharged to the base's wastewater treatment plant for final processing. Confirmatory soil samples collected after the excavation was complete demonstrated residual lead levels were below New Jersey Residential Direct Contact Soil Cleanup Criteria.

Site 27: Projectile Refurbishing Area at Building E-14

Oil-contaminated rags, paint chips, and spent sandblasting shot were disposed in this area, which was used for the refurbishing (shot-blasting, repainting, and restenciling) of projectiles. Contaminants of concern included metals, PCBs, and semivolatiles.

Human health risk assessment estimated RME risks for the future resident exposure scenario above the upper end of the EPA target acceptable risk range. Ecological risk assessment screening concluded that metals at concentrations above ecological toxicity threshold values were present in site soils that pose significant risk to ecological receptors. The Navy, with EPA and NJDEP concurrence, opted to use removal response authority suggested under CERCLA.

Approximately 54 tons of contaminated soil were excavated and disposed off site during a 1996 removal action. Subsequent to the initial removal, additional soil was excavated because

of lead in the confirmation samples at concentrations above the NJDEP soil cleanup criterion.

After removal activities, the area was covered with clean soil. EPA deemed the removal action to be satisfactory and complete on March 27, 1997.

Site 29: PCB Spill Site

An unknown quantity of PCBs spilled from a transformer in a storage yard in 1981. Within 5 days of the spill, the Navy had excavated and disposed off site over 120 cubic yards of discolored soil. Surface soil and subsurface soil only showed trace levels of pesticides, PCBs, and total petroleum hydrocarbons (TPH), with the exception of one elevated level of TPH (28,000 mg/kg). No PCBs were detected in sediment samples or groundwater. Any residual PCBs, pesticides, and petroleum hydrocarbons are not expected to significantly migrate via overland runoff or infiltration nor is there evidence that they may have migrated before they were removed.

Human health risk assessment estimated RME risks for the future resident exposure scenario above the upper end of the EPA target acceptable risk range. Ingestion of iron from groundwater was the primary contributor to the human health risk. Further assessment of potential human health risks, following EPA guidelines, resulted in the conclusion that the

iron in the groundwater was not, in itself, sufficient justification to require remediation of local groundwater. Ecological risk assessment screening concluded that potential ecological risks from the site appear negligible.

No further action is being recommended.

### **GROUNDWATER SUMMARY**

Potential groundwater impacts from each of the study sites was considered during the RI planning phases. Generally, considering site-specific characteristics, if there was potential for site contaminants to have migrated to groundwater, then monitoring wells were installed and sampled. In other cases, no groundwater samples were collected at the site, but data from nearby monitoring wells (installed primarily to evaluate another site) were inspected to confirm no impact to groundwater. The Navy and EPA, with NJDEP concurrence, concluded that, based on the available data, no further action to groundwater at OU-4 sites is recommended.

### **OU-4 SUMMARY**

No further action at each of the OU-4 sites is recommended because either the remedial investigation data demonstrated that there is no unacceptable risk posed to human health and the environment from the site under current and planned land use, or such risks have already been addressed through site clean-up activities.

The current Navy master plan does not indicate any residential development on or near any of the OU-4 sites. None of these sites are suitable for residential development as currently configured. Any area where confirmation sampling and analysis showed metals in subsurface soil at concentrations exceeding the corresponding NJDEP direct contact soil cleanup criterion will be noted in the NWSE master plan. In the future, if any part of NWSE Earle property containing any OU-4 site were to be transferred, an environmental baseline study (EBS) would be performed and risks to future land users would be reevaluated in a formal manner.

Based on available information, the Navy and EPA believe that no further action is required for OU-4 sites.

**The Navy solicits written comments from the community on the plan for no further action at the OU-4 sites.** The Navy has set a public comment period from May 4, 1998 through June 12, 1998 to encourage public participation in the decision process for OU-4 sites.

The Navy will hold a public meeting during the comment period. At the public meeting, the Navy, along with EPA, will present the Proposed Plan, answer questions, and solicit both oral and written questions. **The public meeting is scheduled for 7:00 p.m. on May 14, 1998 in Building C-54 at NWSE.**

Comments received during the public comment period will be summarized and responses will be provided in a Responsiveness Summary section of the ROD. The ROD is the document that will present the Navy's decision for the OU-4 sites.

To send written comments or to obtain further information, contact

Commanding Officer  
Naval Weapons Station Earle  
Code 043  
201 Highway 34 South  
Colts Neck, New Jersey 07722-5014

For further information, contact John Kolicius,  
Remedial Project Manager

Phone: (610) 595-0567 ext. 157

**Please note that all comments must be submitted and postmarked on or before June 12, 1998.**

## TERMS USED IN THE PROPOSED PLAN

**Administrative Record:** An official compilation of site-related documents, data, reports, and other information that are considered important to the status of and decisions made relative to a Superfund site. The public has access to this material.

**Carcinogenic:** A type of risk resulting from exposure to chemicals that may cause cancer in one or more organs.

**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 trust fund, known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous substance facilities.

**Groundwater Quality Standards (GWQS):**

New Jersey promulgated groundwater quality requirements, N.J.A.C. 7:9-6.

**Hazard Index (HI):** The sum of chemical-specific Hazard Quotients (HQs). A Hazard Index of greater than 1 is associated with an increased level of concern about adverse non-cancer health effects.

**Hazard Quotient (HQ):** A comparison of the level of exposure to a substance in contact with the body per unit time to a chemical-specific Reference Dose to evaluate potential non-cancer health effects. Exceedence of a Hazard Quotient of 1 is associated with an increased level of concern about adverse non-cancer health effects.

**Noncarcinogenic:** A type of risk resulting from the exposure to chemicals that may cause systemic human health effects.

**National Contingency Plan (NCP):**

The National Contingency Plan is the basis for the nationwide environmental restoration program known as Superfund and is administered by EPA under the direction of the U.S. Congress.

**National Priorities List (NPL):** EPA's list of the nation's top priority hazardous substance disposal facilities that may be eligible to receive federal (EPA) money for response under CERCLA. As a federal facility, NWS Earle is not eligible for EPA funding.

**No Further Action (NFA):** Determination for a site based on compliance with applicable regulatory guidelines for cleanup. If the results of remedial investigations and/or remedial

actions determine that contamination levels are below regulatory guidelines, a NFA declaration is prepared.

**Polychlorinated Biphenyls (PCBs):** Class of chlorinated aromatic compounds (typically used as cooling fluids in electrical transformers) which are strongly adsorbed on solid particles.

**RCRA Subtitle D Facility:** Municipal-type waste disposal facility (landfill) regulated by the Resource Conservation and Recovery Act (RCRA).

**Record of Decision (ROD):** A legal document that describes the remedy selected for a Superfund facility, why the remedial actions were chosen and others not, how much they are expected to cost, and how the public responded.

**Remedial Investigation (RI):** Study that determines the nature and extent of contamination at a site.

**Site Inspection (SI):** Sampling investigation with the goal of identifying potential sources of contamination, types of contaminants, and potential migration of contaminants. The SI is conducted prior to the RI.

**Semivolatile Organic Compounds (SVOCs):** Organic chemicals [e.g., phthalates or polycyclic aromatic hydrocarbons (PAHs)] that do not readily evaporate under atmospheric conditions.

**Total Petroleum Hydrocarbons (TPH):** Analysis to measure petroleum-related compounds in total, rather than as individual chemicals

**Volatile Organic Compounds (VOCs):** Organic liquids [e.g., vinyl chloride or trichloroethylene (TCE)] that readily evaporate under atmospheric conditions.

**FOR FURTHER INFORMATION**

**MAILING LIST**

If you did not receive this Proposed Plan in the mail and wish to be placed on the mailing list for future information pertaining to this site, please fill out, detach, and mail this form to:

Commanding Officer  
Naval Weapons Station Earle  
Code 043  
201 Highway 34 South  
Colts Neck, New Jersey 07722-5014

Name: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: ( ) \_\_\_\_\_