N60478.AR.001722
NWS EARLE
5090.3a

FINAL PROPOSED PLAN FOR OPERABLE UNIT 11 (OU 11) SITE 9 LANDFILL SOUTHEAST OF P BARRICADES NWS EARLE NJ

1/1/2014

TETRA TECH

Proposed Plan
for
Site 9 - Landfill Southeast of "P" Barricades
Operable Unit 11

Naval Weapons Station Earle
Colts Neck, New Jersey

Naval Facilities Engineering Command
Mid-Atlantic

Contract No. N62470-08-D-1001
Contract Task Order WE15

January 2014

TETRA TECH

Proposed Plan

Site 9 – Landfill Southeast of "P" Barricades
Operable Unit 11
Naval Weapons Station Earle, Colts Neck, New Jersey

The Proposed Plan

This **Proposed Plan** has been prepared, in accordance with federal law, to present the Navy's preferred approach for addressing soil at Site 9 - Landfill Southeast of "P" Barricades, which is located in the Waterfront Area at Naval Weapons Station (NWS) Earle, Colts Neck, New Jersey. After a thorough evaluation of site conditions and potential human health and ecological risks, the Navy, with concurrence from the United States Environmental Protection Agency (EPA) and New Jersey Department of Environmental Protection (NJDEP), is proposing No Action as the preferred remedy for this site. This remedy is preferred because no unacceptable risks to human or ecological receptors have been identified. This plan contains information about Site 9 including site characteristics and existing levels of contamination, and the process for selection of the final remedy.

This Proposed Plan is issued by the Department of Navy, the lead agency for Environmental Restoration Program and **Superfund** activities at NWS Earle, and by the EPA. The Navy and EPA, in consultation with the NJDEP, a support agency for Superfund activities at NWS Earle, will make a final decision on the remedial approach for Site 9 after reviewing and considering all information submitted during the 30-day **Public Comment Period.** The Navy and EPA may modify the preferred remedy based on new information or public comments. Therefore, the public is encouraged to review and comment on the Proposed Plan.

The Navy is issuing this Proposed Plan as part of its public participation responsibilities under Sections 113(k), 117(a), and 121(f) of the **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)**, as amended, 42 U.S.C. §§9613(k), 9617 (a), and 9621(f) and 40 C.F.R. §300.430(f)(2) and (3) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP).**

LET US KNOW WHAT YOU THINK

Mark Your Calendar!

Public Comment Period

January 13, 2014 to February 13, 2014

The Navy will accept comments on this Proposed Plan during this period. You do not have to be a technical expert to comment. To provide formal comments, you may offer oral comments during the public meeting or provide written comments at the public meeting or by mail. Send written comments postmarked no later than February 13, 2014 to:

Michael Brady, Public Affairs Officer
Building C-2
Naval Weapons Station Earle
201 Highway 34 South
Colts Neck, NJ 07722-5031

Public Meeting

Middletown Township Municipal Building
1 Kings Highway
Middletown, New Jersey 07748
January 28, 2014, 7:00 pm

The Navy invites you to attend a public meeting from 7:00 to 8:00 pm to learn more about the proposed remedy for Site 9. During the meeting, the Navy will present the Proposed Plan and receive formal comments from the public. An official transcript of the public meeting and any comments will be recorded.

For directions to the meeting location, please see the Middletown Township website at: http://www.middletownnj.org

Technical terms appearing in boldface throughout this Proposed Plan are defined in the Glossary of Terms on Page 10

Introduction

This Proposed Plan contains information on the preferred approach for addressing soil at Site 9 - Landfill Southeast of "P" Barricades, and provides the rationale for selection of the proposed remedy. This document is issued by the Navy as the lead agency for the Environmental Restoration Program and other ongoing CERCLA activities at NWS Earle, and by EPA, with the concurrence of NJDEP. The Navy and EPA, in consultation with NJDEP, will select the final remedy for Site 9 after reviewing and considering comments submitted during the 30-day public comment period. The proposed remedy may be modified based on new information received during the comment period; therefore, the public is encouraged to review and comment on the remedy presented in this Proposed Plan.

The Navy is issuing this Proposed Plan as part of its public participation responsibilities under Section 300.430(f)(2) of the NCP. The Proposed Plan summarizes information that can be found in greater detail in the **Remedial Investigation (RI)** and **Feasibility Study** (**FS)** for Site 9 and in other documents provided in the NWS Earle **Information Repository** located at the Monmouth County Library Eastern Branch, Route 35, Shrewsbury, New Jersey. The Navy and EPA encourage the public to review these documents to gain a more comprehensive understanding of the site and associated environmental activities. Please refer to the Next Steps section on Page 8 for location and contact information for individuals involved with the decision-making process for this site.

The purposes of this Proposed Plan are to:

- Provide basic background information about Site 9.
- Summarize the findings of the RI and FS and associated risk assessments.
- Identify the Navy's preferred remedy and explain the reasons for that preference.
- Provide information about how the public can be involved in the remedy selection process.
- Solicit and encourage public review of this Proposed Plan.

After the public has had the opportunity to review and comment on this Proposed Plan, the Navy will prepare a **Responsiveness Summary** that summarizes and responds to all significant comments received during the comment period. The Navy and EPA, in consultation with NJDEP, will carefully consider all comments received and will document the final remedy in a **Record of Decision (ROD)** for the site. The Responsiveness Summary will be issued with the ROD.

Scope and Role of the Response Action

In 1990, NWS Earle was placed on the **National Priorities List (NPL)**, which is a list of sites where uncontrolled hazardous substance releases may potentially present serious threats to human health and the environment. Federal and state environmental laws govern cleanup activities at federal facilities. A federal law called the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), better known as Superfund, provides procedures for investigation and cleanup of environmental problems. Under this law, the Navy is pursuing cleanup of designated sites at NWS Earle to return the property to a condition that protects the community, workers, and the environment.

Site 9 is one of several sites being addressed at NWS Earle under CERCLA. Each of the sites progresses through the CERCLA process independently of each other. To date, twenty-two sites at NWS Earle have remedies in place that the Navy, EPA, and NJDEP agreed upon. The Proposed Plan for this site is not expected to have an impact on the strategy or progress of cleanup at any of the other NWS Earle sites.

Site Background

NWS Earle is located in Monmouth County, New Jersey, approximately 47 miles south of New York City (Figure 1).

The Station consists of two areas, the 10,248-acre Main Base (Mainside area), located approximately 10 miles inland from the Atlantic Ocean at Sandy Hook Bay, and the 706-acre Waterfront area. The two areas are connected by a Navy-controlled right-of-way. The

Mainside area is located in Colts Neck Township and consists primarily of a large area developed specifically for ordnance handling operations, including production and storage. The Waterfront area is located in Middletown Township, which has a

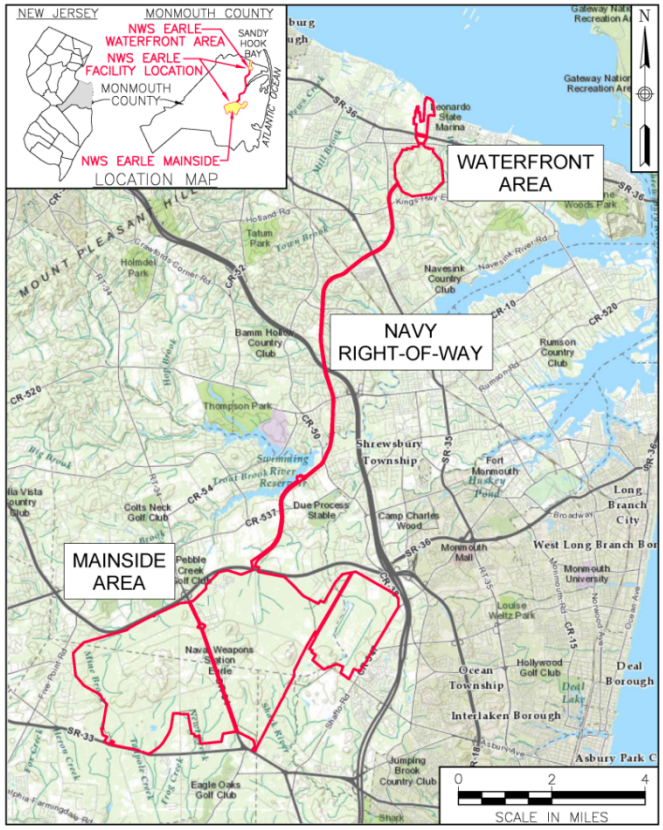

Figure 1. NWS Earle Facility Location Map

population of approximately 68,200 people. Land use in this area includes residences, office buildings, recreational areas, open space, and undeveloped land.

The facility was commissioned in 1943, and its primary mission has been to supply ammunition to the Atlantic Fleet. The current mission of NWS Earle is to operate and maintain a coastal ordnance handling and processing facility supporting the Atlantic Fleet, United States Coast Guard, and Department of Defense (DoD) requirements, while providing force protection, logistics support, and host services for facility personnel and home ported and visiting ships. An estimated 1,600 people work or live at NWS Earle.

Where is Site 9 located, how big is it, and how was it used?

Site 9, the Landfill Southeast of "P" Barricades, is an isolated site approximately 3 acres in size and is located in the Waterfront area of NWS Earle (Figure 2). From 1967 to 1972, the site was used for the disposal of dunnage lumber and construction debris. Dunnage is lumber that is used to secure and space a ship's cargo during transport. The waste lumber was stacked, burned (using a petroleum ignition source), and then covered with local soil. An estimated 4,500 to 7,500 cubic yards of lumber were disposed of in this manner.

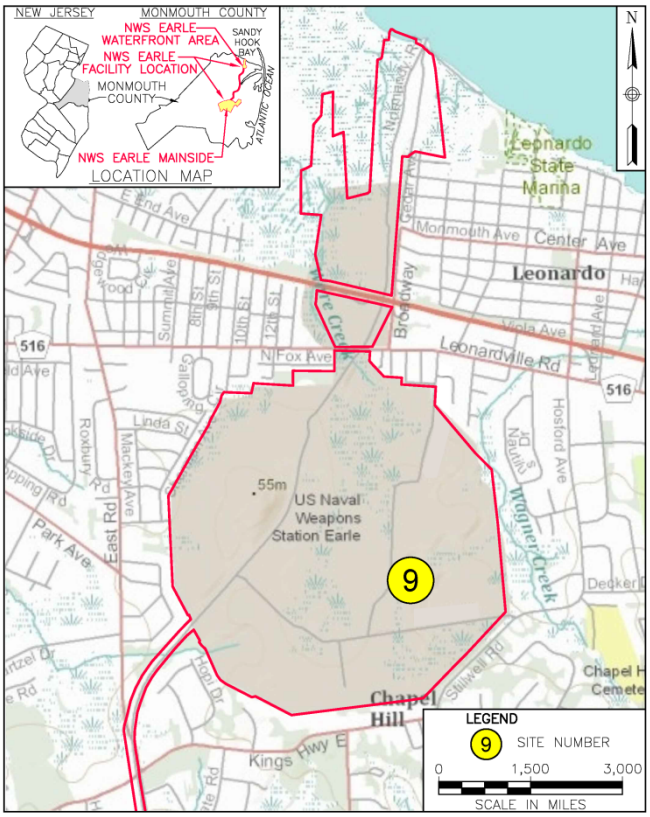

Figure 2. Site 9 Location Map

What is the current land use at Site 9?

Since 1972, the site has not been used by the Navy for any active operations, and because Site 9 is encumbered by **Explosive Safety Quantity Distance (ESQD)** arcs associated with nearby ordnance activities, any development of the site is unlikely. The Navy has no plans for closure or realignment of the

Waterfront Area that would result In Site 9 being considered for any future non-Navy uses.

Site Characteristics

What does the Site 9 look like?

Site 9 is located in a heavily wooded area within the Chapel Hill portion of the Waterfront Area. The site is accessed by a dirt road and is covered by pine trees and tall grasses (Figure 3).

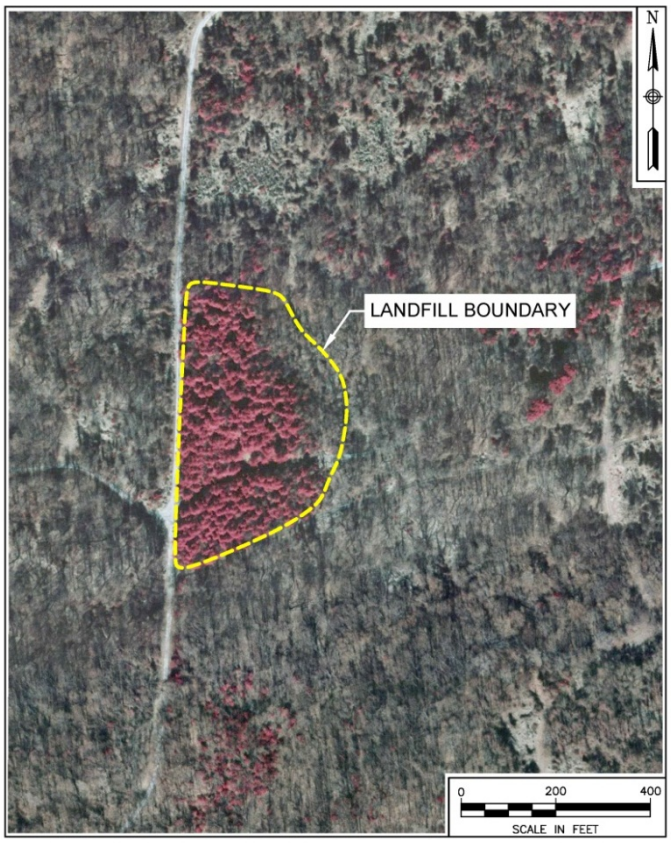

Figure 3. Aerial Photograph of Site 9

What were the investigation results?

During environmental studies performed at the site (see Environmental Investigations text box) soil, surface water and sediment samples were collected. These samples were analyzed for **metals**, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and **total petroleum hydrocarbons (TPH).** Further details are presented below.

Test Pit Soil

The soil sampling at Site 9 was limited to subsurface soil due to the lack of visible impacts to surface soil noted during the SI and RI test pit investigations. The Site 9 test pit soil samples were collected from depths ranging from 3 to 10 feet below ground surface (bgs). Table 1 summarizes the compounds and analytical results detected in soil samples collected as part of the 1992-1994 Site Investigation. The analytical data were compared to other NWS Earle subsurface and surface soil sample results obtained during the 1994 SI. Inorganics or metals detected in soil were aluminum, arsenic, chromium, copper, iron, lead, magnesium, manganese, potassium, silver, vanadium, zinc, and cyanide. Aluminum (2,320 milligrams per kilogram [mg/kg] to 9,220 mg/kg), potassium (non-detect to 4,120 mg/kg), and silver (non-detect to 2.7 mg/kg) were the only metals detected at concentrations that exceeded other background NWS Earle surface and subsurface soil concentrations. Two semivolatile compounds were detected, bis(2-ethylhexyl)phthalate at concentrations ranging from non-detect to 34J micrograms per kilogram (µg/kg) and di-n-butylphthalate at levels ranging from 21J µg/kg to 37J µg/kg. The "J" symbol means that the concentration value was estimated because it was below the analytical method quantitation level. Chloroform was detected in two samples at 1J µg/kg. The pesticides 4,4'-DDD (0.41J µg/kg), 4,4'-DDE (0.41J µg/kg to 1.2J µg/kg), 4,4'-DDT (0.41J µg/kg to 0.82J µg/kg) and methoxychlor (93 µg/kg) were each detected in at least one soil sample. Petroleum hydrocarbon levels ranged from non-detect to 4.7J mg/kg. None of the detected compounds exceeded NJDEP residential or non-residential soil remediation standards. During the 1995-1996 Remedial Investigation, no waste fill, dunnage lumber, or construction debris was encountered in the test pits that were excavated. Based on this visual evidence, no soil samples were collected or analyzed during the 1995-1996 Remedial Investigation.

Surface Water and Sediment

An intermittent stream/drainage ditch tributary to Wagner Creek is located approximately 300 feet south of Site 9. As noted in the Remedial Investigation report, the tributary is small and usually dry; water is present only after periods of heavy rainfall. Three surface water and three sediment samples were collected from the tributary as part of the 1995-1996 Remedial Investigation. Table 2 summarizes the

compounds and analytical results detected in surface water samples collected during the 1995-1996 Remedial Investigation. Table 3 summarizes the compounds and analytical results detected in sediment samples collected during the 1995-1996 Remedial Investigation. Twenty-three metals were detected in one or more surface water samples at levels greater than the mean or maximum concentrations detected in background surface water samples. No organic compounds were detected in any of the surface water samples. Twenty inorganics or metals were detected in one or more sediment samples at concentrations above the mean and/or maximum concentration detected in background sediment samples collected from other locations at NWS Earle. The organic compounds, di-n-butylphthalate (non-detect to 1,300 µg/kg), diethylphthalate (non-detect to 110J µg/kg), hexachloroethane (non-detect to 55J µg/kg), phenol (non-detect to 120J µg/kg), and tetrachloroethene (non-detect to 46 µg/kg) were detected in sediment sample WSSD20. These compounds are unrelated to Site 9 because only di-n-butylphthalate was detected in the Site 9 soil samples at estimated concentrations significantly below the concentration detected in sample WSSD20. Of the metals detected in the surface water and sediment samples collected from the Wagner Creek watershed, antimony, cadmium, mercury, nickel, selenium, and thallium were not detected in any of the Site 9 test pit soil samples.

Summary of Risks

The Navy completed a **human health risk assessment (HHRA)** to evaluate current and future effects of the compounds detected in Site 9 soil on human health. A screening level **ecological risk assessment (ERA)** was also conducted by the Navy.

The risk assessment methodology and results are discussed below.

Summary of Human Health Risk Assessment

The HHRA for Site 9 was performed in accordance with Superfund guidance to evaluate the baseline risk, which is the likelihood of health problems occurring if no cleanup actions were taken at the site or no institutional controls were put in place. To estimate the baseline risk for humans, a four-step process was used.

History of Site Environmental Investigations

1982 to 1983 – Initial Assessment Study (IAS)

Site 9 was initially identified in the facility-wide IAS as a potential area of concern. It was concluded in the 1983 IAS that further investigation was not necessary for this site because only waste lumber from dunnage disposal was present and the site did not pose a potential threat to human health or the environment.

1992 to 1994 – Site Investigation (SI)

In May 1992, as part of a facility-wide SI, test pits were excavated at Site 9 to define the general limits of former site operations and to collect soil samples for chemical analysis. Six test pits were excavated to depths ranging from 7 to 10 feet bgs. Construction debris, wood, trash, and metal debris were encountered in the test pits.

1995 to 1996 – Remedial Investigation (RI)

In December 1995, as part of the base-wide RI, two additional test pits were excavated at Site 9 and surface water and sediment samples were collected. The objective of the RI test pit investigation was to confirm the northern extent of the filled area. No waste or debris was encountered in either of the two test pits.

2011 to 2013 – Feasibility Study (FS)

In April 2013, the Navy completed a Feasibility Study. Based on the findings of the RI and FS, the Navy concluded that No Action is the preferred remedy for Site 9.

Step 1 – Identify Chemicals of Potential Concern (COPCs)

COPCs are chemicals or substances found at the site at concentrations greater than federal and state risk-based screening levels. Chemicals or substances with concentrations greater than these levels were further evaluated in the HHRA.

Four substances were identified as COPCs in Site 9 soils based on concentrations that exceeded risk based screening levels. The four COPCs are: aluminum, arsenic, chromium, and iron.

Step 2 – Conduct an Exposure Assessment

In this step, the ways that humans come into contact with soil at the site were considered. Both current and reasonably foreseeable future exposure scenarios were identified.

For Site 9, the potential exposure scenarios to site soils that were evaluated in the HHRA included the following receptors and routes of exposure: future recreational users exposed to site soils via ingestion, dermal absorption, and inhalation of fugitive dust; future residential child exposed to contact with soil via ingestion, dermal absorption and inhalation of fugitive dust; future residential adult via ingestion, dermal absorption, and inhalation of fugitive dust; future industrial worker via ingestion, dermal absorption, and inhalation of fugitive dust; and future construction worker exposed via ingestion, dermal absorption, and inhalation of fugitive dust.

The future recreational user was assumed to be an active duty serviceman stationed at NWS Earle or an adult member of a serviceman's immediate family who hunts for deer at Site 9 during the New Jersey regulated deer hunting season. The future residential child is a child aged 1 to 6 years old who resides at a hypothetical future residence located on-site or adjacent to the site. The future residential adults was assumed to be an adult (24-year exposure duration) who also resides at a hypothetical future residence located on-site or adjacent to the site. It should be noted that for both the future residential child and future residential adult, it was assumed that exposure to disturbed soils would be anticipated to occur only if subsurface soil were to be excavated and redistributed at the ground surface. For the future industrial worker, the HHRA assumed that contact with soil would occur while engaged in grounds keeping or other outdoor work that might be applicable if future development at the site were to occur. The exposure route for the future construction worker was assumed to be contact with subsurface soil during excavation work or while working in a utility trench.

Step 3 – Complete a Toxicity Assessment

Possible harmful effects (if any) from potential exposure to the individual COPCs were evaluated. Generally, these chemicals were separated into two groups: carcinogens (chemicals that may cause cancer) and non-carcinogens (chemicals that may cause adverse effects other than cancer).

The COPCs that were evaluated for cancer risks were arsenic and chromium, which are Class A carcinogens that were detected at concentrations similar to background levels based on statistical tests. Note that the arsenic maximum site concentration of 13.2 parts per million and the upper confidence limit of 10.3 parts per million were both less than the NJDEP residential direct contact soil remediation standard of 19 parts per million, which is based on natural background levels for arsenic in New Jersey soils. All of the COPCs were evaluated for non-cancer hazards

Step 4 – Characterize the Risk

The results of Steps 2 and 3 were combined to estimate overall risks from exposure to chemicals or substances at the site. For Site 9, cancer risks and non-cancer hazards were estimated based on assuming receptor activity patterns that would represent the highest exposure that is reasonably expected to occur for the predicted amount and duration of exposure to contaminants at the site, which is referred to as **Reasonable Maximum Exposure (RME).** The RME incremental cancer risks were estimated for exposures to soil COPCs for a residential child (8.4×10^{-5}), residential adult (1.8×10^{-5}), lifetime resident (1.0×10^{-4}), industrial worker (1.0×10^{-5}), construction worker (less than 1×10^{-6}), and a recreational user (less than 1×10^{-6}). All of the calculated risks fell within EPA's target acceptable risk range of 1×10^{-4} to 1×10^{-6} or a one-in-ten-thousand to a one-in-one-million chance for excess cancer risks. Based on this process, the HHRA for Site 9 indicated that unacceptable human health risks are not expected to occur for any substances for future child, adult or lifetime residents; future industrial workers; future construction workers; or future recreational users exposed to soils at the site.

The estimated RME **Hazard Index (HI)** for non-carcinogenic hazards exceeded the EPA goal of 1.0 for the residential child scenario. When HIs were grouped

according to target organ, no target organ-specific HIs exceeded EPA's goal of 1.0, which indicates that adverse non-cancer hazards are not expected from exposures to site soil. RME HIs were less than 1.0 for the residential adult, industrial worker, construction worker, and recreational user.

The text box on this page describes how risks are calculated.

Summary of Ecological Risk Assessment

The purpose of the Site 9 ERA was to determine whether adverse ecological impacts are potentially occurring from exposure to chemicals released to the environment as a result of historical operations at the site. The ERA was conducted by performing risk screening-level assessments as Tier 1 of the three-tiered approach in accordance with EPA and Navy guidance.

Based on the habitat present at Site 9, potentially exposed ecological receptors include a variety of terrestrial plants, invertebrates, mammals, and birds that may be exposed to chemicals in site soil. From the initial screening of the chemical data, several chemicals were initially selected as COPCs in soil. Chemicals that were initially selected as ecological COPCs in soil included aluminum, iron, lead, vanadium, zinc, cyanide, chloroform, and methoxychlor.

The initial set of soil COPCs was further evaluated by refining the conservative assumptions in order to focus the ERA process on the chemicals of greatest concern at a site. After this step, no chemicals were retained as COPCs in soil for risks to terrestrial plants, invertebrates, mammals, or birds. Based on the ERA, no site-related contaminants posed potential ecological concern and no risks to ecological receptors need to be addressed.at Site 9.

Remedial Action Goals and Objectives

The overall objective for the remediation of CERCLA sites is to protect human health and the environment from current or future risks posed by the site. Results from the baseline human health risk assessment for the future lifetime resident exposure scenario were within EPA's target acceptable risk range established

What Is Risk And How Is It Calculated?

Human Health Risk Assessment: A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the COPCs at the site in various media (i.e., soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants in air, water, soil, etc. that were identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other non-cancer health hazards, such as changes in the normal functions of organs within the body (e.g., changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one-in-ten thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to Site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one-in-ten thousand to a one-in-a-million excess cancer risk. For non-cancer health effects, a "hazard index" (HI) is calculated. The key concept for a non-cancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which non-cancer health hazards are not expected to occur. The goal of protection is to lower the cancer risk to less than 10^{-6} and an HI of 1 for a non-cancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at a site and are referred to as Chemicals of Concern, or COCs, in the final remedial decision or Record of Decision.

under the NCP for cancer risks ($1x10^{-4}$ to $1x10^{-6}$) and below EPA's goal of an HI less than or equal to 1 for non-cancer hazards. Therefore, the Navy and EPA, with concurrence from the NJDEP, have determined that a CERCLA remedial action is not warranted for Site 9.

REMEDIAL ALTERNATIVES CONSIDERED

The HHRA and ERA evaluated site risks under a no action alternative and the Navy, in agreement with the EPA and NJDEP, has determined that a CERCLA remedial action is not warranted at Site 9. Therefore, based on the findings made during the RI/FS process, No Action is proposed for Site 9.

COMMUNITY PARTICIPATION

The public is encouraged to participate in the decision-making process for Site 9 by reviewing and commenting on this Proposed Plan during the public comment period, which is January 13, 2014 to February 13, 2014.

In addition, the Navy will hold a public meeting during the comment period. At the public meeting, the Navy, with input from EPA, will present the Proposed Plan and request oral and written comments and questions. The public meeting is scheduled for 7:00 pm on January 28, 2014, in the *Public Meeting Room* at the Middletown Township Municipal Building, 1 Kings Highway, Middletown, New Jersey 07748.

What Do You Think?

You do not have to be a technical expert to comment. If you have a comment, the Navy would like to hear from you before deciding on the final remedy. The Navy, EPA, and NJDEP will consider all comments received during the comment period prior to deciding on the final remedy for the site. Your formal comments and the Navy's responses will both be documented in the Responsiveness Summary section of the ROD.

What is a Formal Comment?

Federal regulations make a distinction between "formal" comments received during the 30-day comment period and "informal" comments received outside this comment period. Although the Navy considers comments received throughout the CERCLA process in making site-specific decisions, formal comments submitted during the comment period require a response from the Navy. Both your comments and the Navy's responses will become part of the **Administrative Record** for the site.

How can I submit a Formal Comment?

Formal comments can be submitted in writing or made orally. To make a formal comment on the Proposed Plan, you may:

- Offer oral comments during the public meeting.
- Provide written comments at the public meeting or by mail.

To send written comments, contact:

Michael Brady, Public Affairs Officer
Building C-2
Naval Weapons Station Earle
201 Highway 34 South
Colts Neck, NJ 07722-5031

A tear-off mailer is provided at the end of this Proposed Plan for your convenience. All comments must be postmarked no later than February 13, 2014.

NEXT STEPS

Community acceptance of this Proposed Plan is the next step for the Site. The Navy will provide written responses to all formal comments received on the Proposed Plan. The responses to comments will be included in the Responsiveness Summary section of the ROD, which will document the final CERCLA remedy selected by the Navy and EPA, in consultation with NJDEP, for Site 9. After the ROD is signed, it will be made available to the public at the Information Repository.

Additional Information

The Proposed Plan was prepared to help the public understand and comment on the proposed CERCLA remedy for Site 9 – Landfill Southeast of "P" Barricades. For additional information, contact:

Roberto Pagtalunan, Remedial Project Manager
NAVFAC MIDLANT
Environmental Restoration
9742 Maryland Avenue
Norfolk, VA 23511-3095
Phone: (757) 341-2010
Email: roberto.pagtalunan@navy.mil

Jessica Mollin, Remedial Project Manager
Environmental Protection Agency, Region II
290 Broadway, 20th Floor
New York, NY 10007-1866
Phone: (212) 637-3921
Email: Mollin.Jessica@epa.gov

Or visit the Information Repository at:
Monmouth County Library Eastern Branch
Route 35
Shrewsbury, New Jersey 07702

Glossary of Terms

This glossary defines the bolded terms used in this Proposed Plan. The definitions in this glossary apply specifically to this Proposed Plan and may have other meanings when used in different circumstances.

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 CERCLA site. Information in the Administrative Record supports the selected remedy for the remedial actions and removal actions. The public has access to this material.

Chemicals of Potential Concern (COPCs): Chemicals of potential concern are chemicals found at the site at concentrations above federal and state risk-screening levels and therefore are included in the risk assessment evaluations.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): A federal law passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). These laws create a system and funding mechanism for investigating and cleaning up abandoned and/or uncontrolled hazardous waste sites. The Navy's cleanup of sites regulated by CERCLA/SARA is funded by the Department of Defense under the Defense Environmental Restoration Fund.

Ecological Risk Assessment (ERA): An evaluation of the potential for adverse effects on the environment from exposure to site contaminants.

Explosive Safety Quantity Distance (ESQD) Arcs: A restrictive design and land use criterion for military explosives safe handling and operational controls to ensure that personnel and facilities maintain sufficient separation from potential explosive hazards. Any development activities within an ESQD arc are restricted by the Navy.

Feasibility Study (FS): An engineering study of the potential cleanup alternatives for a site.

Hazard Index (HI): The sum of chemical-specific Hazard Quotients. An HI greater than 1 is considered to indicate the likelihood that adverse non-cancer health effects may occur.

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. Exceedance of a Hazard Quotient of 1 is associated with an increased level of concern about adverse non-cancer health effects.

Human Health Risk Assessment (HHRA): An evaluation of the current and future potential for adverse human health effects from exposure to site contaminants. The evaluation is typically conducted as a four-step process: identify chemicals of potential concern, conduct an exposure assessment, complete a toxicity assessment, and characterize the risk.

Information Repository: Collection of site information related to the response action at the site that is available to the public. This file is usually maintained in a place with easy public access, such as a library. Additional information is available in the glossary definition for Administrative Record.

Initial Assessment Study (IAS): A preliminary investigation usually consisting of review of available data and information on a site, interviews, and a non-sampling site visit to observe areas of potential waste disposal and migration pathways.

Metals: Metals are naturally occurring elements. Some metals, such as arsenic and mercury, can have toxic effects. Other metals, such as iron, are essential to the metabolism of humans. Metals are classified as inorganic because they are a mineral, and not of biological origin.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): More commonly called the National Contingency Plan; it is the federal

government's blueprint for responding to both oil spills and hazardous substance releases. Following the passage of Superfund (CERCLA) legislation in 1980, the NCP was broadened to cover releases at hazardous waste sites requiring emergency removal actions. A key provision involves authorizing the lead agency to initiate appropriate removal action in the event of a hazardous substance release.

National Priorities List (NPL): The list, compiled by EPA pursuant to CERCLA section 105, of uncontrolled or abandoned hazardous substance releases in the United States that are priorities for long-term remedial evaluation and response. The NPL is a compilation of sites scoring 28.5 or higher on the EPA HRS or HRS2. EPA is required to update the NPL at least once a year. A site must be on the NPL to receive money from the Trust Fund for remedial action.

Proposed Plan: A CERCLA document that summarizes the Navy's preferred cleanup remedy for a site and provides the public with information on how they can participate in the remedy selection process.

Public Comment Period: A time for the public to review and comment on various documents and actions taken by the Navy, EPA, or NJDEP. A minimum 30-day comment period is held to allow community members to review the Administrative Record and review and comment on the Proposed Plan.

Reasonable Maximum Exposure (RME): Human health risk assessment calculation approach using 90th percentile receptor risk behavior patterns to estimate a conservative expectation of receptor risk.

Record of Decision (ROD): An official public document that explains which cleanup alternative(s) will be used at NPL sites. The ROD is based on information and technical analysis generated during the RI/FS and consideration of public comments and community concerns. The ROD is a legal document and explains the remedy selection process and is issued by the Navy following the public comment period.

Reference Dose (RfD): An estimate with an uncertainty spanning an order of magnitude or greater of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a portion of a lifetime.

Remedial Investigation (RI): A step in the CERCLA process that is completed to gather sufficient information to support selection of a cleanup approach to a site. The RI involves site characterization or the collection of data and information necessary to characterize the nature and extent of contamination at a site. The RI also determines whether or not the contamination presents a significant risk to human health or the environment.

Responsiveness Summary: A summary of oral and/or written public comments received during a comment period on key documents and the response to those comments.

Site Investigation (SI): An on-site investigation to determine whether there is a release or potential release and the nature of the associated threats.

Superfund: The program operated under the legislative authority of CERCLA and the Superfund Amendment and Reauthorization Act (SARA) that funds and carries out EPA solid waste, emergency removal, and long-term remedial activities. These activities include investigating sites for inclusion on the NPL, determining their priority, and conducting and/or supervising the cleanup and other remedial actions.

Total Petroleum Hydrocarbons (TPHs): Laboratory analysis that measures petroleum-related compounds in total, rather than as individual compounds.

Use This Space to Write Your Comments or To Be Added to the Mailing List

Your input on the Proposed Plan for Naval Weapons Station Earle is important to the Navy, EPA, and NJDEP. Comments provided by the public are valuable in helping to select the remedy for this site.

Please use the space below to write your comments then fold and mail. Comments must be postmarked no later than February 13, 2014 and should be sent to the following address:

Michael Brady, Public Affairs Officer
Building C-2
Naval Weapons Station Earle
201 Highway 34 South
Colts Neck, NJ 07722-5031

Comments submitted by:

Mailing List Additions, Deletions, or Changes

I would like to:

- ☐ Join the site mailing list.
- ☐ Note a change of address.
- ☐ Unsubscribe from the mailing list.
- ☐ Obtain additional information.

Name: _____

Address: _____

_____

_____

***** Please check the appropriate box and fill in the correct address information above. *****

FOLD HERE

PLACE
STAMP
HERE

Michael Brady, Public Affairs Officer
Building C-2
Naval Weapons Station Earle
201 Highway 34 South
Colts Neck, NJ 07722-5031

TABLES

TABLE 1

SUMMARY OF 1994 SI TEST PIT DETECTED COMPOUNDS IN SOIL COMPARED TO BACKGROUND LEVELS
SITE 9 - LANDFILL SOUTHEAST OF "P" BARRICADES
NAVAL WEAPONS STATION EARLE

SAMPLE LOCATION	TP9-01	TP9-02	TP9-03	TP9-04	TP9-05	TP9-06	BACKGROUND							
SAMPLE NOMENCLATURE (RI)	09-001-T007	09-002-T010	09-003-T001	09-004-T001	09-005-T001	09-006-T008	SUBSURFACE				SURFACE			
SAMPLE DEPTH	4 - 7 feet bgs	6 -10 feet bgs	6 - 9 feet bgs	3 - 5 feet bgs	3 - 6 feet bgs	5 - 8 feet bgs								
DATA SOURCE	SI (Weston, 1994)	SI (Weston, 1994)	SI (Weston, 1994)	SI (Weston, 1994)	SI (Weston, 1994)	SI (Weston, 1994)	Frequency of Detection	Range of Detection	Mean or Geometric Mean	95% Upper Tolerance Limit	Frequency of Detection	Range of Detection	Mean or Geometric Mean	95% Upper Tolerance Limit
INORGANICS	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**		**mg/kg**	**mg/kg**	**mg/kg**		**mg/kg**	**mg/kg**	**mg/kg**
aluminum	2,320	9,070	6,090	7,350	6,280	9,220	8 / 8	675 - 5,310	2,690	5,870	4 / 4	1710 - 5310	3,080	7,510
arsenic	6	7.9	13.2	6.5	6.3	8.8	8 / 8	1.35 - 14.4	6.64	17.1	4 / 4	1.35 - 14.4	6.71	23
barium	5 B	13.5 B	7.7 B	20.4 B	31.8 B	10.1 B	8 / 8	0.92 - 31	8.96	29.50	4 / 4	1.85 - 31	11.30	47.1
beryllium	0.3 B	1.2 B	0.52 B	0.72 B	0.58 B	0.93 B	2 / 8	0.12 - 0.28	0.0738	1.22	1 / 4	0.28	0.112	5.55
calcium	110 B	242 B	141 B	750 B	799 B	89.5 B	8 / 8	28.6 - 799	289	864	4 / 4	40.1 - 519	144	6810
chromium, total	10.9	16.2	21	19.4	16.9	25.8	8 / 8	4.7 - 59.5	27.4	73.4	4 / 4	7.8 - 59.5	34.5	107
cobalt	2.1 B	4.3 B	2.3 B	4.6 B	3.9 B	4 B	4 / 8	0.75 - 5	1.38	4.73	2 / 4	0.75 - 5	1.58	7.61
copper	3 B	4.2 B	4.1 B	4.9 B	6.3	3.1 B	8 / 8	0.97 - 8.6	4.33	11.2	4 / 4	0.97 - 8.4	5.03	15.1
iron	8,580	36,300	22,300	33,300	27,600	26,600	8 / 8	3745 - 62,500	20,400	59,500	4 / 4	3745 - 62500	26,200	95,800
lead	5.5	5.6	9.9	12.7	17.4	6.9	8 / 8	1.4 - 39.4	12.2	39.5	4 / 4	1.8 - 39.4	11.4	397
magnesium	147 B	1,210 B	911 B	1,100	893 B	1,520	8 / 8	18.5 - 619	172	1,600	4 / 4	71.7 - 619	289	901
manganese	59.2	112	24.4	104	168	28.1	8 / 8	2.6 - 214	46.3	189	4 / 4	3.45 - 214	64.2	329
potassium	209 U	1,840	1,970	2,040	1,420	4,120	7 / 8	95 - 792	276	2,780	4 / 4	95 - 792	358	4,050
silver	1.87 U	2.7	1.97 U	2.5	2.2 B	2.01 U	2 / 8	0.37 - 0.67	0.256	0.622	2 / 4	0.37 - 0.67	0.345	0.967
sodium	42.6 B	52.8 B	47.8 B	50.5 B	36.5 B	51.3 B	8 / 8	17.5 - 94.8	39.7	103	4 / 4	-	39.2	123
vanadium	23.2	5.7 B	20.8	11	11.7 B	11.5 B	8 / 8	11.05 - 64	27.70	96.7	4 / 4	11.05 - 64	29.40	201
zinc	5.3	39.8	17.5	60.3	44.6	60.1	6 / 8	1.1 - 50.7	15.7	50.2	3 / 4	1.1 - 27.6	4.7	461
cyanide	1.17 U	1.31 U	1.27 U	1.07 U	1.21 U	1.57	-	-	-	-	-	-	-	-
SEMIVOLATILES	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**		**µg/kg**	**µg/kg**	**µg/kg**		**µg/kg**	**µg/kg**	**µg/kg**
bis(2-ethylhexyl)phthalate	390 U	35 J	440 U	410 U	26 J	34 J	-	-	-	-	-	-	-	-
di-n-butylphthalate	23 J	37 J	25 J	28 J	25 J	21 J	2 / 8	45 J - 48 J	46.5 J	-	2 / 4	45 - 48	46.5	-
VOLATILES	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**		**µg/kg**	**µg/kg**	**µg/kg**		**µg/kg**	**µg/kg**	**µg/kg**
chloroform	1 J	1 J	13 U	11 U	12 U	13 U	-	-	-	-	-	-	-	-
PESTICIDES	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**		**µg/kg**	**µg/kg**	**µg/kg**		**µg/kg**	**µg/kg**	**µg/kg**
4,4'-DDD	3.8 U	4.3 U	4.3 U	4.1 U	0.41 J	4.2 U	-	-	-	-	-	-	-	-
4,4'-DDE	3.8 U	4.3 U	4.3 U	0.41 J	1.2 J	4.2 U	2 / 8	16 J - 330	-	-	2 / 4	16 - 330	-	-
4,4'-DDT	3.8 U	4.3 U	4.3 U	0.82 J	0.41 JP	4.2 U	3 / 8	1.6 JN - 420	-	-	2 / 4	43 - 420	-	-
methoxychlor	19 U	22 U	22 U	93	20 U	21 U	-	-	-	-	-	-	-	-
MISCELLANEOUS	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**								
petroleum hydrocarbons	4.7 J	5.1 U	4.3 J	4.8 U	3.6 J	5.1 U	-	-		-	-	-		-

Notes:

	Shading indicates exceedance of 95% upper tolerance limit for subsurface soil only
	Shading indicates exceedance of 95% upper tolerance limit for surface soil only
	Shading indicates exceedance of 95% upper tolerance limit for subsurface and surface soil
NA	Not Sampled
J	Value is estimated because concentration is below the quantitation limit or because of exceedances of data validation quality control criteria.
JP	Value is estimated because concentration is below the quantitation limit or because of exceedances of data validation quality control criteria.
B	Analyte also detected in a the blank sample.
U	Compound or element was not detected. Value is the detection limit (inorganics) or quantitation limit (organics).

Sample Data Source:
Weston (Roy F. Weston, Inc.), 1994. Installation Restoration Program Site Investigation for 16 Sites at NWS Earle, Colts Neck, NJ. West Chester, PA. January.

TABLE 2

SUMMARY OF 1996 RI SURFACE WATER DETECTED COMPOUNDS COMPARED TO BACKGROUND LEVELS
SITE 9 - LANDFILL SOUTHEAST OF "P" BARRICADES
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameter		SAMPLE LOCATION										BACKGROUND		
		WS SW 17		WS SW 17 DUP		WS SW 18		WS SW 19		WS SW 20		Frequency of Detection	Range of Detection	Mean Concentration
INORGANICS		µg/L		µg/L		µg/L		µg/L		µg/L			µg/L	µg/L
aluminum		1,480	J	4,570	J	7,880	J	820	J	16600	J	3 / 3	265 - 409	353
antimony		2.8		4.4		2.5	U	2.5	U	2.5	U	not detected	-	-
arsenic		9.5		18.8	J	18.9		6.6		25.4		not detected	-	-
barium		39.0		79.9		89.0		41.1		133		3 / 3	16.3 - 34	26.9
beryllium		0.40		0.79		0.84		0.19		2.2		2 / 3	0.22 - 0.33	0.205
cadmium		0.17	U	0.17	U	0.34		0.17	U	0.17	U	1 / 3	0.18	0.115
calcium		5,970		6,490		4,640		9,930		9,640		3 / 3	462 - 10,100	4,564
chromium, total		3.4		10.1		14.0		2.1		37.5		3 / 3	0.72 - 2.6	1.36
cobalt		2.5		4.0		4.2		1.6		17.8		3 / 3	0.81 - 1.9	1.27
copper		18.7		25.4	J	28.7	J	14.4		31.7	J	2 / 3	1.1 - 9.8	3.70
iron		14,200	J	36,100	J	11,000		17,200		56,400		3 / 3	160 - 702	520
lead		14.2	J	33.9	J	50.4		5.5		49.0		1 / 3	4.4	1.72
magnesium		2,770		3,500		3,020		2,750		6,720		3 / 3	369 - 2,770	1,260
manganese		106		150		68.3		185		1,050		3 / 3	14 - 55.5	30
mercury		0.051		0.10		0.14		0.038		0.14		2 / 3	0.023 - 0.028	0.02
nickel		9.3		16.3		13.5		6.6		29.7		3 / 3	2.1 - 7.1	4.3
potassium		3,040		4,350		1,710		3,630		6,470		2 / 3	251 - 1,850	741
selenium		2.5	UJ	5.3	J	3.2	J	4.9	J	3.3	J	1 / 3	3.5	2.0
silver		0.63	U	0.63	U	0.74		0.63	U	0.63	U	1 / 3	0.86	0.495
sodium		11,900	R	13,100	R	10,500	R	11,900	R	15,100	R	3 / 3	3,060 - 3,890	3,520
thallium		4.1		3.0	U	3.0	U	3.0	U	4.3		2 / 3	3.5 - 5.5	3.5
vanadium		7.2		20.2		35.4		3.5		45.2		2 / 3	0.89 - 0.9	0.66
zinc		33.2	J	64.3	J	70.4	J	25.2	J	127.0	J	3 / 3	7.6 - 29.4	16.3
MISCELLANEOUS														
ammonia nitrogen	mg/L	0.30	J	0.40	J	0.70	J	1.0	U	0.3	J	NA	-	-
biochemical oxygen demand	mg/L	4.0		4.0		5.0		1.8	J	3		NA	-	-
chemical oxygen demand	mg/L	56.0	J	150	J	390		32.0		70.0		NA	-	-
chloride	mg/L	13.0		13.0		11.0		12.0		17.0		NA	-	-
nitrate nitrogen	mg/L	0.50	U	0.26	J	0.32	J	0.38	J	0.43	J	NA	-	-
total hardness	mg/L	18.0		17.0		19.0		6.0		27.0		NA	-	-
total organic carbon	mg/L	9.0		10.0		NA		NA		NA		NA	-	-
total phosphorus as PO4	mg/L	6.3	J	2.9	J	3.8		3.1		3.4		NA	-	-
turbidity	NTU	15.3		22.0		66.0		37.0		175.0		NA	-	-

Footnotes to sample results:

	Shading denotes exceedance of mean surface water background concentration (values for non-detects considered to be half the detection limit)
	Shading denotes exceedance of maximum surface water background concentration
NA	Not Sampled
J	Value is estimated because concentration is below the quantitation limit or because of exceedances of data validation quality control criteria.
R	Positive result is considered rejected based on exceedance of data validation quality control criteria.
U	Compound or element was not detected. Value is the detection limit (inorganics) or quantitation limit (organics).
UJ	Not detected. Detection limit or quantitation limit shown is considered estimated due to exceedance of data validation quality control criteria.

Sample Data Source:
Brown & Root Environmental. 1996. Remedial Investigation Report for Naval Weapons Station Earle, Colts Neck, New Jersey. Wayne, Pennsylvania. July.

TABLE 3

SUMMARY OF 1996 RI SEDIMENT DETECTED COMPOUNDS COMPARED TO BACKGROUND LEVELS
SITE 9 - LANDFILL SOUTHEAST OF "P" BARRICADES
NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY

Parameters		SAMPLE LOCATION										BACKGROUND		
		WS SD 17		WS SD 17 DUP		WS SD 18		WS SD 19		WS SD 20		Frequency of Detection	Range of Detection	Mean Concentration
INORGANICS		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**			**mg/kg**	**mg/kg**
aluminum		10,300	J	10,500	J	1,530		3,010		8,680		3 / 3	839 - 3,940	2,750
arsenic		32.9	J	26.2	J	3.2		12.2		11.7		2 / 3	2.4 - 6.2	3.0
barium		69.9	J	92.2	J	7.4		40.9		42.7		3 / 3	3.9 - 10.6	7.04
beryllium		1.2	J	1.3	J	0.21	U	0.64		1.3		1 / 3	0.57	0.335
calcium		765	J	927	J	143		638		821		3 / 3	197 - 518	343
chromium, total		47.5	J	41.2	J	4.4		7.9		25.8		3 / 3	4.3 - 56	21.6
cobalt		4.2	J	5.1	J	1.4	U	1.5		7.2		1 / 3	2.1	1.65
copper		20.7	J	21.5	J	2.4		1.5		7.6		3 / 3	1.5 - 13	6.24
iron		61,500	J	52,600	J	3,130		37,200		28,200		3 / 3	228 - 7,650	3,290
lead		46.3	J	55.9	J	9.6	J	6.6	J	19.3	J	3 / 3	4.6 - 34.3	15.3
magnesium		1,780	J	1,470	J	182		504		1780	J	3 / 3	60.7 - 256	153
manganese		56.9	J	73.8	J	4.7		74.6	J	172	J	3 / 3	4.6 - 9.2	6.9
mercury		0.11	J	0.14	J	0.0094	U	0.0086	U	0.032		1 / 3	0.068	0.03
nickel		8.3	J	10.9	J	2.3	U	2.9		12		2 / 3	2.1 - 6.0	4.0
potassium		3,960	J	2,620	J	317		1,140		3,850		2 / 3	86.1 - 681	295
selenium		5.4	J	5.6	J	0.73	U	1.8	J	1.4	J	not detected	-	-
sodium		120	J	79.8	J	13.9		36.8		63.2		3 / 3	26.6 - 116	57.6
thallium		3.4	J	1.9	J	0.87	U	0.79	U	0.92	U	not detected	-	-
vanadium		57.7	J	54.9	J	8.0		11.2		28.3		3 / 3	5.9 - 42.7	18.5
zinc		58.0	J	73.1	J	6.0	J	38.7	J	49.5	J	3 / 3	14.2 - 26.9	18.7
SEMIVOLATILES		**µg/kg**		**µg/kg**		**µg/kg**		**µg/kg**		**µg/kg**			**µg/kg**	**µg/kg**
butylbenzyl phthalate		900	UJ	97.0	J	480	U	440	U	510	U	not detected	-	-
di-n-butylphthalate		900	UJ	950	UJ	480	U	66.0	J	1300		not detected	-	-
diethylphthalate		900	UJ	110	J	480	U	45.0	J	52	J	1 / 3	44	44
fluoranthene		130	J	130	J	480	U	440	U	510.0	U	2 / 3	300 - 1800	1050
hexachloroethane		900	UJ	950	UJ	480	U	440	U	55	J	not detected	-	-
phenol		900	UJ	950	UJ	480	U	440	U	120	J	not detected	-	-
pyrene		900	UJ	110	J	480	UJ	440	UJ	510	UJ	2 / 3	350 - 1900	1125
VOLATILES		**µg/kg**		**µg/kg**		**µg/kg**		**µg/kg**		**µg/kg**			**µg/kg**	**µg/kg**
tetrachloroethene		27.0	UJ	24.0	J	14.0	UJ	13.0	UJ	46.0		2 / 3	3 - 50	26.5
toluene		27.0	UJ	28.0	UJ	2.0	J	13.0	U	15.0	U	1 / 3	480	480
MISCELLANEOUS														
ammonia nitrogen	mg/kg	300	J	400	J	100	U	100	U	100	J	NA	-	-
chloride	mg/kg	22.0	J	25.0	J	24.0	J	4.0	J	9.0	J	NA	-	-
nitrate nitrogen	mg/kg	1.2	J	1.5	J	0.9	J	1.2	J	0.8	J	NA	-	-
total organic carbon	mg/kg	27,000	J	47,000	J	NA		NA		NA		NA	-	-
total phosphorus as PO4	mg/kg	13,000	J	13,000	J	1,800		6,900		5,500		NA	-	-
moisture	%	62.8		64.9		31.3		24.3		NA		NA	-	-

Footnotes to sample results:

	Shading denotes exceedance of mean sediment background concentration
	Shading denotes exceedance of maximum sediment background concentration
J	Value is estimated because concentration is below the quantitation limit or because of exceedances of data validation quality control criteria.
R	Positive result is considered rejected based on exceedance of data validation quality control criteria.
U	Compound or element was not detected. Value is the detection limit (inorganics) or quantitation limit (organics).
UJ	Not detected. Detection limit or quantitation limit shown is considered estimated due to exceedance of data validation quality control criteria.

Sample Data Source:
Brown & Root Environmental. 1996. Remedial Investigation Report for Naval Weapons Station Earle, Colts Neck, New Jersey . Wayne, Pennsylvania. July.