PROPOSED PLAN FOR OPERABLE UNIT 7 (OU 7) NSY PORTSMOUTH ME

7/1/2013

NSY PORTSMOUTH

Proposed Plan

Operable Unit 7

Portsmouth Naval Shipyard, Kittery, Maine

The Cleanup Proposal

This Proposed Plan has been prepared, in accordance with federal law and the Federal Facility Agreement for Portsmouth Naval Shipyard (PNS), to present the Navy's preferred approach for addressing contaminated soil at Operable Unit (OU) 7, PNS, Kittery, Maine. OU7 includes Site 32 – Topeka Pier Site.

After careful study, the Navy, with concurrence from the United States Environmental Protection Agency (EPA) and Maine Department of Environmental Protection (MEDEP), proposes:

- Excavation and disposal of surface and subsurface soil in an area with elevated contaminant concentrations.
- Implementation of **land use controls (LUCs)**.
- Performance of five-year reviews to ensure continued protectiveness.

Removal of the contaminated soil located within a portion of the Former Timber Basin area within OU7 would reduce potential surface soil risks to acceptable levels for hypothetical future residential land use. It would also reduce potential subsurface soil risks to acceptable levels for current industrial land use. LUCs would prevent future residential exposure to subsurface soil and provide long-term maintenance of shoreline controls to prevent erosion of contaminated soil along the shoreline of the site.

This plan provides information on the remedial alternatives evaluated for impacted soil, the public comment period, the informational open house and public hearing, and how the final remedy for OU7 will ultimately be selected.

Let us know what you think

Mark Your Calendar!

Public Comment Period

July 16, 2013 to August 14, 2013

The Navy will accept comments on this Proposed Plan for OU7 during this comment period. You do not have to be a technical expert to comment. To provide formal comments, you may offer oral comments during the public hearing or provide written comments either at the informational open house, at the public hearing, or by fax or mail. Send written comments postmarked no later than August 14, 2013, to:

Ms. Danna Eddy Public Affairs Office (Code 100PAO)
Portsmouth Naval Shipyard,
Portsmouth, New Hampshire 03804-5000

Fax: (207) 483-1266

Informational Open House and Public Hearing

July 23, 2013

The Navy invites you to attend an informational open house from 7:00 pm to 7:30 pm to learn about the proposed OU7 cleanup plan and how it compares with other cleanup options for the site. The informational session will include posters describing the Proposed Plan and an informal question and answer session. A formal public hearing for OU7 will follow, from 7:30 to 7:50 pm, during which the Navy will receive comments on the Proposed Plan for OU7 from the public. It is at this formal hearing that an official transcript of the comments will be recorded. The above activities will be held at the Kittery Town Hall in Kittery, Maine.

*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 PNS to return the property to a condition that protects the community, workers, and the environment.*

Technical terms used throughout this Proposed Plan are explained in the Glossary of Terms on Page 14

INTRODUCTION

This Proposed Plan provides information on the preferred approach for addressing contaminated soil at OU7 and provides the rationale for this preference. In addition, this plan includes summaries of other cleanup alternatives evaluated for use at OU7. This document is issued by the Navy, as the lead agency for all investigation and cleanup programs ongoing at PNS, and EPA, with the concurrence of MEDEP. The Navy and EPA, in consultation with MEDEP, will select the final remedy for OU7 after reviewing and considering all information submitted during the 30-day public comment period and may modify the preferred alternative or select another response action presented in this plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives 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 **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. The Proposed Plan summarizes information that can be found in greater detail in the **Remedial Investigation (RI)**, **Feasibility Study (FS),** and other documents included in the PNS Information Repositories, located at the Rice Public Library in Kittery, Maine, and Portsmouth Public Library in Portsmouth, New Hampshire. 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 13 for location and contact information for these facilities.

The purposes of this Proposed Plan are to:

- Provide the public with basic background information about PNS and OU7. This information includes a description of the OU that was developed by reviewing past documents, investigating soil, groundwater, surface water, and sediment at OU7, and evaluating potential human and ecological impacts.
- Describe the cleanup options that were considered.
- Identify the Navy's preferred alternative for remedial action at OU7 and explain the reasons for that preference.
- Provide the public information on how the public can be involved in the remedy selection process.
- Solicit and encourage public review of the Proposed Plan.

After the public has had the opportunity to review and comment on this Proposed Plan, the Navy will summarize and respond to all significant comments received during the comment period in a Responsiveness Summary. The Navy and EPA, in consultation with MEDEP, will carefully consider all comments received and could even select a remedy different from that proposed in this plan after appropriate additional opportunity for comment. Ultimately, the selected remedy for OU7 will be documented in a **Record of Decision (ROD)**. The Responsiveness Summary will be issued with the ROD.

History of Site Investigations and Interim Actions

1994 through 1997: Environmental samples were collected at OU7 as part of various investigations including the **Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)** Data Gap Investigation in 1994, groundwater monitoring from 1996 to 1997, and **intertidal surface water and sediment** monitoring from 1996 to 1997.

1998 – Site Screening Investigation (SSI): Conducted to determine whether further action (e.g., an RI) or no further action was required for the site. Soil and groundwater samples were collected, and the SSI concluded that additional investigation was necessary for OU7. The results were used in the RI for OU7.

1998 – Multi-Sensor Towed-Array Detection System (MTADS): Conducted to generate geophysical maps of OU7 to identify drums that may have been used to dispose of materials. The survey indicated one potential drum location that was investigated further during the RI; however, no drums were found.

1999 through 2010 – Interim Offshore Monitoring for OU4: The results of sediment samples collected in the nearshore area of OU7 were used in the RI for OU7.

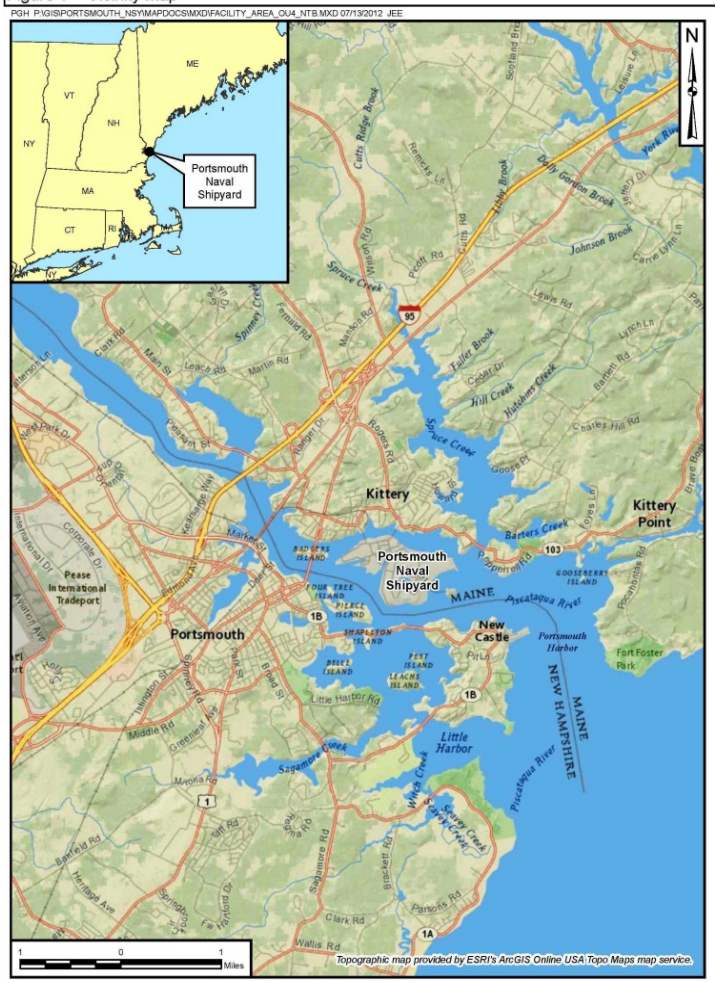
2003 and 2008 – Phase I and II RI Field Work: Soil, groundwater, and nearshore sediment and surface water samples were collected to support delineation of the nature and extent of contamination and evaluate potential risks to human receptors as part of the RI for OU7.

2006 - Shoreline Stabilization: In June 2006, the Navy conducted an emergency action to stabilize eroding debris along the OU7 shoreline. The Navy removed surface debris and placed a shoreline control structure (revetment) along the entire OU7 shoreline to prevent future erosion.

2011 – RI: Summarized the results of previous investigations for OU7, determined the nature and extent of contamination, evaluated potential risks to human receptors, and determined the potential for OU7 contamination to move or discharge to the offshore area. Sediment contamination from past releases to the offshore area is being addressed as part of OU4.

2012 – FS: Conducted to develop and evaluate potential cleanup alternatives for OU7.

Figure 1 - Vicinity Map



SITE BACKGROUND

PNS is a military facility with restricted access located on an island in the Piscataqua River. The Piscataqua River is a tidal estuary that forms the southern boundary between Maine and New Hampshire. PNS was established as a government facility in 1800 and served as a repair and building facility for ships during the Civil War. The first government-built submarine was designed and constructed at PNS during World War I. A large number of submarines have been designed, constructed, and repaired at this facility since 1917. PNS continues to service submarines as its primary military focus. Figure 1 shows the location of PNS, and Figure 2 shows the layout of OU7.

Where is OU7 within the Shipyard?

OU7 consists of Site 32 - Topeka Pier Site and is located on the northern boundary of PNS, along the Back Channel of the Piscataqua River.

For what was OU7 used?

OU7 is a tidal area that was filled from approximately 1900 to 1945 to allow use for various industrial activities in support of Shipyard operations. Past industrial activities included storing and milling of lumber, storing and seasoning wood (in the Former Timber Basin), storing coal, wood, and scrap iron, and storing combustibles including paints and oils. Materials used to fill the area consisted mostly of rock and soil, with some debris and scrap material. Disposal of combustible material (possibly paint and oil) in the Former Timber Basin area reportedly began in 1939. By 1945, all filling and possible disposal at OU7 had ceased. A boat pier (Topeka Pier) was constructed around 1905.

What is the current and future land use at the site?

The majority of OU7 has continued to be used for industrial activities since 1945. Current and future anticipated land use is industrial, with recreational use of the boat pier and launch (ramp). Current activities at OU7 include office parking, equipment storage, vehicle and rail car maintenance, transducer repair, boat launching, and a hotel (Building H23).

SITE CHARACTERISTICS

What does OU7 look like?

The OU7 site boundary has an irregular shape defined by the historical filling in this area. The site is relatively flat and is almost entirely covered with pavement or buildings, with some small areas of grass landscaping. The boat ramp provides access to the Back Channel of the Piscataqua River. Although the shoreline is not a recreational area, people can walk in the intertidal area (the portion of the shoreline exposed during low tide and submerged during high tide), which can be easily accessed from the boat ramp. Access to the intertidal area from other portions of OU7 is more difficult because of the steeper slope and rip rap along the mid- to high-tide portion of the shoreline, which is covered with shoreline controls.

The current shoreline and topography of OU7 were created by filling of the area. Fill material is encountered across OU7 to varying depths, ranging from the ground surface to approximately 23 feet below ground surface (bgs). The fill material is mostly rock and soil mixed with some debris. There are a few intermittent pockets of debris with little soil. In the area filled before 1910 in the vicinity of former Building 237, the fill material is mostly rock with some soil and no debris. The majority of fill material at OU7 is below the groundwater level at high tide. The conceptual site model for OU7 is shown on Figure 3.

What is the size of OU7?

OU7 is approximately 19 acres in size, including the intertidal area (exposed during low tide and under water at high tide) along the shoreline. The onshore portion (including parking areas and buildings) of OU7 is estimated to be 17 acres.

How much and what types of chemicals are present?

Soil contaminants identified at OU7 are **metals** (e.g., antimony, copper, iron, and lead), **dioxins/furans**, **polychlorinated**

TECHNICAL TERMS USED THROUGHOUT THIS PROPOSED PLAN ARE EXPLAINED IN THE GLOSSARY OF TERMS ON PAGE 14

biphenyls (PCBs), and carcinogenic **polycyclic aromatic hydrocarbons (PAHs)**. In general, chemical concentrations greater than conservative levels (i.e., residential risk-based screening levels) that indicate a potential for human health risks are found in areas filled after 1910. Concentrations were lower in the area filled before 1910 in the vicinity of former Building 237, where the fill material consisted mostly of rock and soil with no debris.

Chemical concentrations in surface soil were generally less than screening levels, whereas chemical concentrations in subsurface (i.e., over 2 feet bgs) soil across most of the areas filled after 1910 were greater than screening levels. Concentrations of metals and PAHs in subsurface soil were variable across the site. PCB and dioxin/furan concentrations were only elevated in subsurface soil within the Former Timber Basin area, where PCB concentrations of approximately 40 parts per million (ppm) and dioxin/furan concentrations of approximately 1 part per billion (ppb) were detected. PCB and dioxin/furan concentrations were less than 2 ppm and 0.04 ppb, respectively, in surface and subsurface soil elsewhere at OU7. Chemical concentrations in groundwater, surface water, and sediment were low (i.e., less than screening levels).

Figure 2 - Site Layout

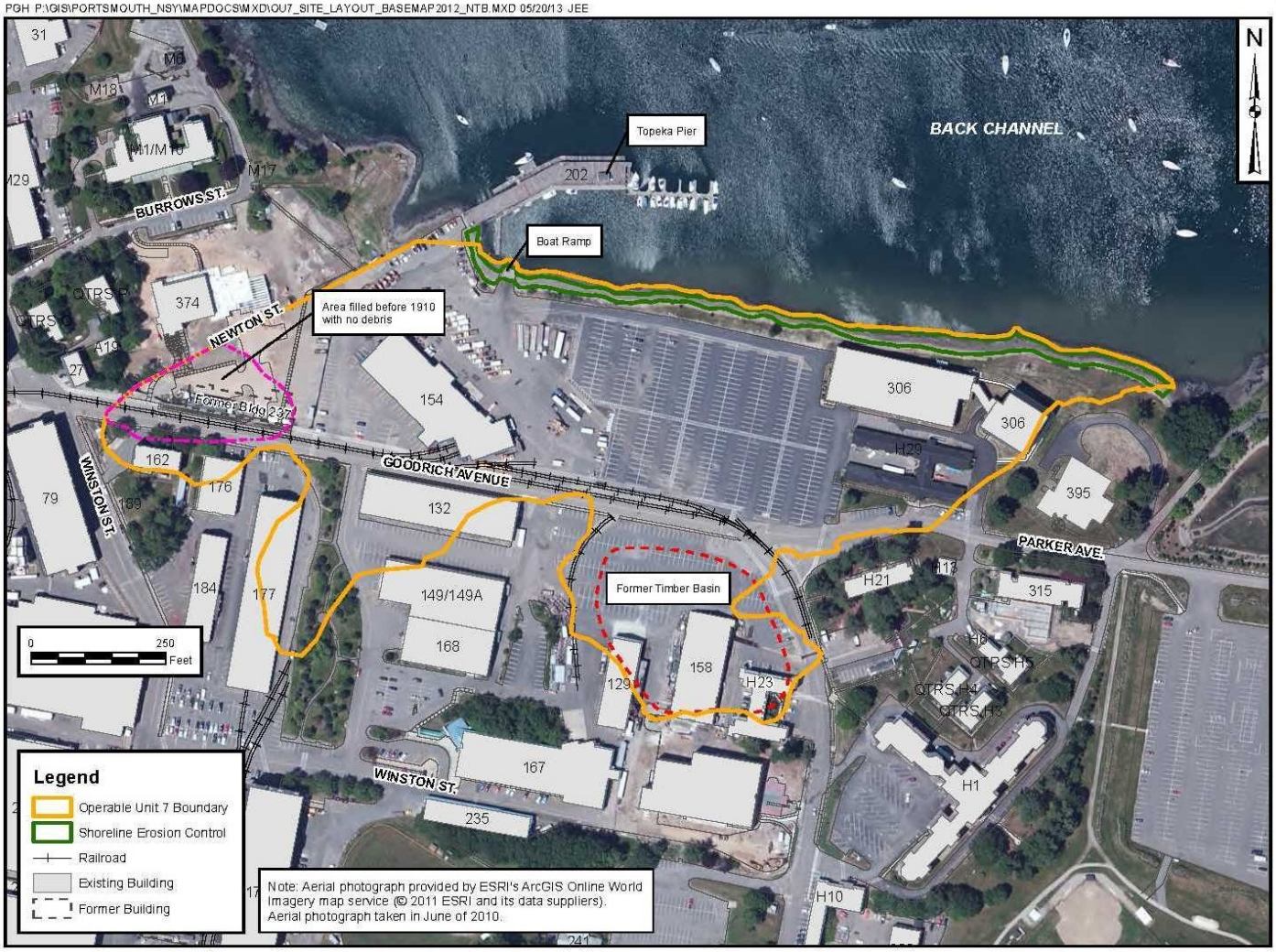
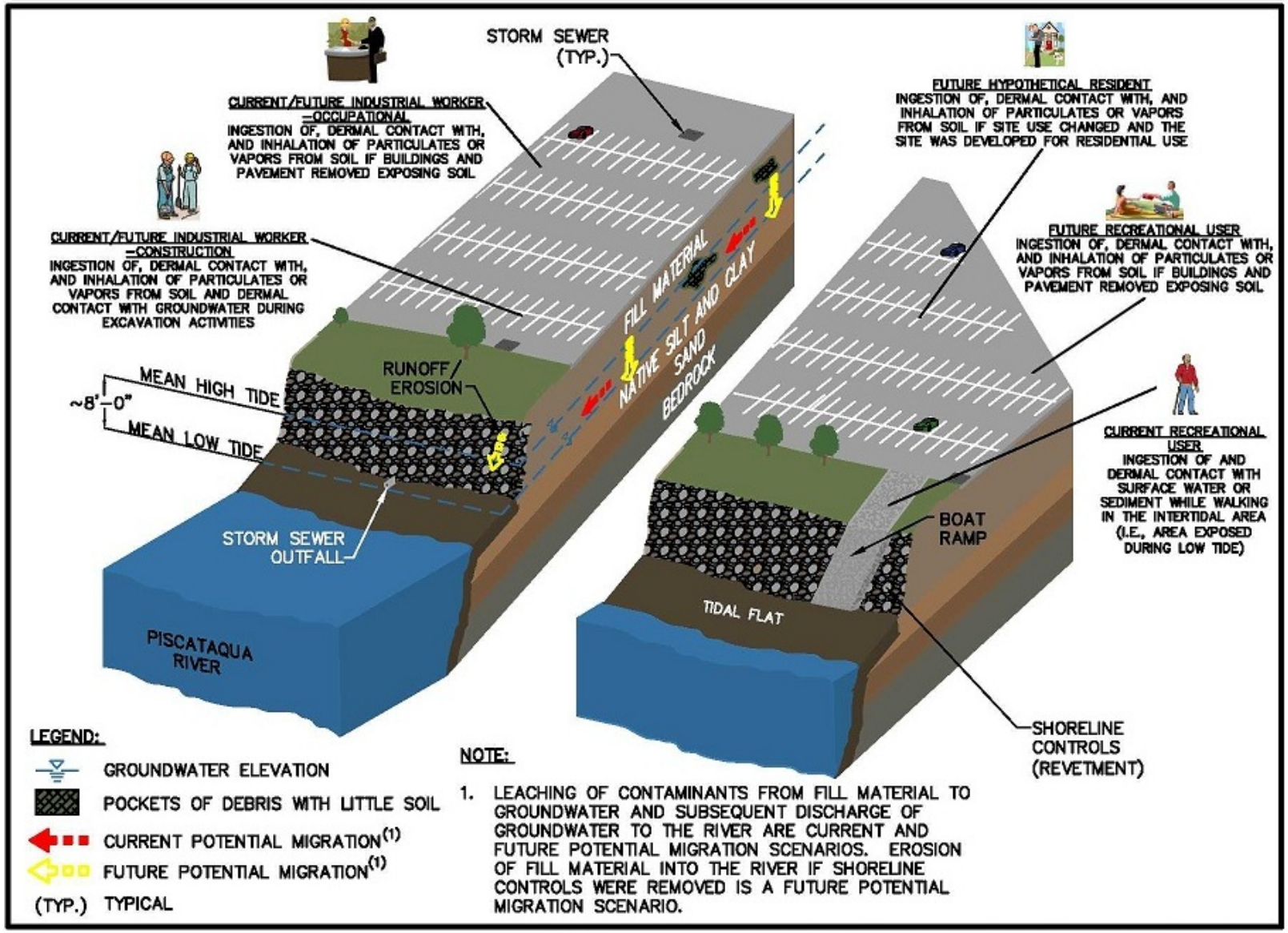


Figure 3 - Conceptual Site Model



Scope and Role of the OU7 Response Action

OU7 is one of several OUs at PNS identified for assessment and cleanup under CERCLA. Each of these OUs is undergoing the CERCLA cleanup process independently of the others. The Proposed Plan for OU7 is not expected to have an impact on the strategy or progress of cleanup for the other sites at PNS. Proposed Plans have been prepared and RODs have been signed for OU1, OU2, and OU3. A Proposed Plan has been prepared and a ROD will be signed for OU4. A Proposed Plan is being prepared for OU9. One OU (OU8) is under investigation.

Summary of Site Risks

As part of OU7 investigation activities, the Navy completed a risk assessment to evaluate current and future potential for adverse human health effects caused by exposure to site contaminants. The results of the risk assessment are described below. Potential for adverse ecological effects from exposure to site contaminants was not evaluated as part of a risk assessment because OU7 is currently and has historically been an industrial area with no significant habitats for ecological exposure. Current and future potential for contaminant migration from soil to the offshore (e.g., surface water and sediment) that could result in adverse human health and ecological effects was evaluated and is discussed in the text box, ***Is Contaminant Migration an Issue?***, on Page 7.

Human Health Risks

The **Human Health Risk Assessment (HHRA)** estimates the baseline risk, which is the likelihood of health problems occurring if cleanup actions were not taken at the site. The OU7 HHRA evaluated current and future potential for adverse human health effects from exposure to site contaminants in soil, groundwater, and intertidal sediment and surface water at OU7. For the OU7 HHRA, exposure to site contaminants in soil across the entire site and in soil in the area filled before 1910 (in the vicinity of former Building 237, see Figure 2) were both evaluated. To estimate the baseline risk for humans using the EPA HHRA methodology, a four-step process was used.

Step 1 – Identify Chemicals of Potential Concern (COPCs)

COPCs are chemicals found at the site at concentrations greater than risk-based screening criteria (and for select organic compounds and metals greater than facility **background** levels). The COPCs were further evaluated in Steps 2 through 4 of the risk assessment.

Step 2 – Conduct an Exposure Assessment

In this step, the many ways that people could come into contact with soil, groundwater, and intertidal surface water and sediment at OU7 were considered. Both current and future exposure scenarios were identified based on site conditions and uses. Commercial/industrial (construction and occupation workers), recreational, and hypothetical residential exposure scenarios were considered.

There is potential construction worker exposure to surface and subsurface soil during construction activities. Although there are current commercial/industrial activities at the site (i.e., vehicle and rail car maintenance, transducer repair, hotel activities), there are no current occupational exposures to soil because the site is almost totally covered by pavement and buildings, and there is no exposed soil in the limited grassy areas. Based on site conditions, there are also no current recreational activities (e.g., picnicking or walking) that would be result in exposures to soil. Occupational workers and recreational users might be exposed to surface and subsurface soil in the future if the buildings and pavement were removed from the site. Hypothetical future residential exposure to surface and subsurface soil at the site was considered if the site use changed and the site was developed for residential use. Exposure to soil for the HHRA was evaluated based on the assumption that people may come in contact with soil through touching (dermal contact), ingesting, and breathing in soil particles (as dust) or breathing vapors emanating from soil (inhalation).

Groundwater at OU7 is too saline (i.e., the salt content is too high) to be used as a drinking water supply; therefore, use of groundwater for drinking water by hypothetical future residents at the site was not evaluated in the OU7 HHRA. Construction worker exposure to groundwater was evaluated based on the assumption that workers may come into contact with groundwater through dermal (skin) contact and inhaling vapors from groundwater during subsurface excavation or utility line repair activities.

There is a current potential exposure pathway associated with people using the boat ramp to access the intertidal area (i.e., area exposed during low tide) and being exposed to sediment and surface water while walking in this area. This scenario was termed “recreational” exposure for purposes of the OU7 HHRA. Recreational exposure to surface water and sediment was evaluated based on the assumption that people may touch or ingest surface water and sediment while walking in the intertidal area.

Step 3 – Complete a Toxicity Assessment

At this step, possible harmful effects from exposure to the individual COPCs were evaluated. Generally, these chemicals are separated into two groups, carcinogens (chemicals that may cause cancer) and non-carcinogens (chemicals that may cause adverse effects other than cancer). Lead is not evaluated in the same manner as most other chemicals and therefore was assessed separately.

Step 4 – Characterize the Risk

The results of Steps 2 and 3 were combined to estimate the overall risk from exposure to chemicals at OU7. The terms used to define the estimated risk are explained in the text box, ***What is the Potential Risk to Me?***, below. **Chemicals of concern (COCs)** are identified based on the risk characterization.

The results of the OU7 HHRA for people potentially exposed to soil indicated that risks were acceptable for construction and occupational workers and recreational users exposed to surface soil; recreational users exposed to surface water and sediment; and construction workers exposed to groundwater. Risks were also acceptable for all people potentially exposed to soil in the area filled before 1910.

What is the Potential Risk to Me?

In evaluating risks to people, risk estimates for carcinogens (chemicals that may cause cancer) and non-carcinogens (chemicals that may cause adverse effects other than cancer) are expressed differently.

For carcinogens, risk estimates are expressed in terms of probability. For example, exposure to a particular carcinogenic chemical may present a 1 in 10,000 increased chance of getting cancer over an estimated lifetime of 70 years. This can also be expressed as $1x10^{-4}$. The EPA acceptable risk range for carcinogens is within $1x10^{-6}$ to $1x10^{-4}$ or a one in a million to a 1 in 10,000 increased chance of getting cancer. Cleanup would be considered for calculated risks greater than the acceptable risk range.

For non-carcinogens, exposures are first estimated and then compared to a reference dose (RfD). The RfD is developed by EPA scientists to estimate the amount of a chemical a person (including the most sensitive person) could be exposed to over a lifetime without developing adverse (non-cancer) health effects. This measure is known as a hazard index and is the ratio of daily intake of a chemical from onsite exposure divided by the RfD. A hazard index greater than 1 suggests that adverse effects are possible.

Exposure to lead is evaluated by using blood-lead concentration as a biomarker. Environmental exposures to lead are modeled using the EPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model and EPA's Technical Review Workgroup (TRW) Adult Lead Model to predict blood-lead levels associated with those exposures. The goal of the EPA is to limit the risk of exceeding a 10 microgram per deciliter (µg/dL) blood-lead concentration to 5 percent of the population.

Estimated non-cancer hazards were greater than EPA's acceptable level for construction and occupational workers and hypothetical future residents exposed to subsurface soil at OU7. Unacceptable non-cancer hazards were due mainly to dioxins/furans for construction and occupational workers and due mainly to dioxins/furans, PCBs, and three metals for hypothetical future residents. Estimated cancer risks were only greater than EPA's target risk range for hypothetical future residents exposed to subsurface soil at OU7. Unacceptable cancer risks in subsurface soil for hypothetical future residents were due mainly to carcinogenic PAHs, PCBs, and dioxins/furans. Adverse effects estimated for lead in surface and subsurface soil were greater than EPA's acceptable level for hypothetical future residential exposure only. Because concentrations of PCBs in subsurface soil in the Former Timber Basin area were much greater than concentrations in the rest of OU7, PCBs were also retained as a COC for construction and occupational workers exposed to subsurface soil.

Is Contaminant Migration an Issue?

Contaminant migration for OU7 was evaluated for leaching of contaminants from fill material to groundwater and from erosion of fill material.

Potential contaminant migration from fill material via leaching of contaminants to groundwater and subsequent discharge of groundwater to the river (transport of groundwater through intertidal surface water and sediment and through the storm sewer system) was evaluated. A computer model was used to predict future concentrations in groundwater, surface water, and sediment assuming OU7 soil contaminants were leaching to groundwater. The results were used to determine whether there could be adverse impacts to intertidal surface water and sediment from soil contaminant migration via groundwater transport. Based on comparison of current and future predicted chemical concentrations to risk-based screening criteria, site conditions (most of soil is in contact with groundwater), and history of the site (filled over 50 years ago), the evaluation concluded that potential contaminant migration from soil through groundwater transport is not having and would not have an adverse impact on intertidal surface water and sediment.

Shoreline stabilization (including placement of rip rap) was conducted in 2006 to cover fill material along the shoreline to prevent it from eroding to the offshore area. Current conditions indicate that no further erosion is occurring, and maintaining the shoreline controls will ensure that future erosion does not occur. Therefore, to address future potential contaminant migration from erosion, shoreline controls would need to be maintained in the long term.

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Why is action needed at the site?

As a result of past activities at OU7, dioxins/furans, carcinogenic PAHs, PCBs, antimony, copper, iron, and lead are present in soil at concentrations that could result in unacceptable human health risks if action is not taken to prevent exposure to contaminated soil. In addition, as long as contaminated fill is present along the shoreline of OU7, shoreline controls need to be maintained to ensure that future erosion of the contaminated fill does not occur and impact the offshore environment.

It is the current judgment of the Navy and EPA, in consultation with MEDEP, that remedial action is necessary to protect public health and welfare from actual or threatened releases of these hazardous substances into the environment, and that the preferred alternative is the appropriate remedial alternative for this purpose.

Remedial Action Objectives

Remedial action objectives (RAOs) are the goals that a cleanup plan should achieve. They are established to protect human health and the environment and to comply with all pertinent federal and state regulations. The following RAOs were developed for OU7 based on its current and reasonably anticipated future use:

- Prevent residential exposure through ingestion of, dust inhalation of, and dermal contact with surface soil containing lead and subsurface soil containing antimony, copper, dioxins/furans, iron, lead, carcinogenic PAHs, and PCBs concentrations exceeding residential **cleanup levels**.
- Prevent industrial worker (construction and occupational) exposure through ingestion of, dust inhalation of, and dermal contact with subsurface soil containing dioxins/furans and PCBs concentrations exceeding industrial cleanup levels.
- Protect the offshore environment from erosion of contaminated soil from the OU7 shoreline.

OU7 cleanup levels were developed in the FS for surface and subsurface soil. The proposed cleanup levels are listed in Table 1 and are based on average exposure. Cleanup levels for industrial workers are protective of construction and occupational workers. The lead cleanup level is a regulatory-based criterion. Cleanup levels for the other COCs are site-specific risk-based concentrations developed to meet the RAOs.

Dioxins/furans and PCBs concentrations in subsurface soil and lead concentrations in surface soil were only greater than cleanup levels in a portion of the Former Timber Basin area. For the other COCs, concentrations in subsurface soil were greater than cleanup levels throughout most of OU7, except for in the area filled before 1910 in the vicinity of former Building 237.

Table 1 OU7 Proposed Cleanup Levels

Receptor	Medium	COC	Cleanup Level (ppm)
Industrial Worker	Subsurface soil	Dioxins/Furans	0.0006
		Total PCBs	7.4
Residential	Surface Soil	Lead	400
	Subsurface Soil	Carcinogenic PAHs	0.5
		Dioxins/Furans	0.000051
		Total PCBs	7.3
		Antimony	31
		Copper	1,500
		Iron	27,000
		Lead	400

Summary of Remedial Alternatives

Remedial alternatives, or cleanup options, were identified in the OU7 FS to meet the RAOs. These alternatives are different combinations of plans to restrict access and to contain, remove, or treat contamination to protect human health and the environment. Alternatives were developed for OU7, based on types and concentrations of contaminants in soil. The alternatives evaluated for OU7 in the FS included:

- Alternative 1 – No Action
- Alternative 2 – LUCs and Long-Term Management of Shoreline Controls
- Alternative 3 – Limited Excavation in Former Timber Basin Area, Residential LUCs, and Long-Term Management of Shoreline Controls

No Action Alternative

A "no action" alternative, where no cleanup remedy would be applied at the site, was evaluated for OU7. This is required under CERCLA, and it serves as a baseline for comparison with other alternatives. OU7 would be left as it is today under the no action alternative.

LUCs and Long-Term Management of Shoreline Controls

Alternative 2 would consist of implementing LUCs (institutional or administrative controls and/or engineering or physical

TECHNICAL TERMS USED THROUGHOUT THIS PROPOSED PLAN ARE EXPLAINED IN THE GLOSSARY OF TERMS ON PAGE 14

controls) to prevent unacceptable human exposure to contaminated surface and subsurface soil and conducting long-term management of the shoreline controls. LUCs to prevent residential land use would protect hypothetical future residents from exposure to contaminated surface soil and subsurface soil, and LUCs for industrial workers would prevent unrestricted exposure to subsurface soil within a portion of the Former Timber Basin area. LUCs would also specify requirements for management of excavated soil as part of any future construction activities within the LUC boundary. Long-term management of shoreline controls would include inspection and maintenance of existing shoreline controls to ensure that contaminated soil does not erode from the shoreline and migrate to the offshore environment. Five-year reviews would be required.

Limited Excavation in Former Timber Basin Area, Residential LUCs, and Long-Term Management of Shoreline Controls

Alternative 3 would consist of excavation and offsite disposal of soil within a portion of the Former Timber Basin area to reduce surface soil risks to acceptable levels for hypothetical future residents and to reduce subsurface soil risks to acceptable levels for industrial workers. Following soil removal, the excavated areas would be restored using clean soil and pavement. LUCs would be implemented to prevent residential land use to protect hypothetical future residents from exposure to contaminated subsurface soil. LUCs would also specify requirements for management of excavated subsurface soil as part of any future construction activities within the LUC boundary. LUCs would not be required for industrial workers because contaminated soil associated with unacceptable industrial risks would be removed. Long-term management of shoreline controls would include inspection and maintenance of shoreline controls to ensure that contaminated soil does not erode from the shoreline and migrate to the offshore environment. Five-year reviews would be required.

Evaluation of Alternatives

EPA has established nine criteria for use in comparing the advantages/disadvantages of cleanup alternatives. These criteria fall into three groups, threshold criteria, primary balancing criteria, and modifying criteria. These nine criteria are explained in the text box, ***What are the Nine Evaluation Criteria?***, below. A detailed analysis of alternatives can be found in the FS. The evaluated alternatives are compared based on seven of the nine criteria in Table 2. The two modifying criteria, State Agency and Community Acceptance, are evaluated following the public comment period.

What are the Nine Evaluation Criteria?

The following is a summary of the nine criteria used to evaluate the remedial alternatives. The first two criteria are considered threshold criteria, and any alternative selected must meet them. The next five criteria are the balancing criteria. The last two criteria, state (MEDEP) and community acceptance, will be addressed after the public comment period on this Proposed Plan.

1. ***Overall Protection of Human Health and the Environment*** determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.
2. ***Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)*** evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.
3. ***Long-Term Effectiveness and Permanence*** considers the ability of an alternative to maintain protection of human health and the environment.
4. ***Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment*** evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
5. ***Short-Term Effectiveness*** considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
6. ***Implementability*** considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
7. ***Cost*** includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over the time in terms of today's dollar value. The alternative should provide the necessary protection for a reasonable cost. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
8. ***State/Support Agency Acceptance*** considers whether the state agrees with EPA's analyses and recommendations, as described in the FS and Proposed Plan.
9. ***Community Acceptance*** considers whether the local community agrees with the Navy and EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

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TABLE 2 COMPARISON OF OU7 REMEDIAL ALTERNATIVES			
CRITERION	**ALTERNATIVE 1**	**ALTERNATIVE 2**	**ALTERNATIVE 3**
Estimated Time Frame (months)			
Designing and Constructing the Alternative	NA	12	12
Achieving the Cleanup Objectives	NA	12	14
Criteria Analysis			
Threshold Criteria			
Protects Human Health and the Environment ➢ Will it protect you and the animal life on and near the site?	○	●	●
Meets federal and state regulations ➢ Does the alternative meet federal and state environmental statutes, regulations, and requirements?	NA	●	●
Primary Balancing Criteria			
Provides long-term effectiveness and is permanent ➢ Will the effects of the cleanup last?	○	◘	●
Reduces mobility, toxicity, and volume of contaminants through treatment ➢ Are the harmful effects of the contaminants, their ability to spread, and the amount of contaminated material present reduced?	○	○	○
Provides short-term protection ➢ How soon will the site risks be reduced? ➢ Are there hazards to workers, residents, or the environment that could occur during cleanup?	NA	●	●
Can it be implemented ➢ Is the alternative technically feasible? ➢ Are the goods and services necessary to implement the alternative readily available?	NA	●	◘
Cost ($) ➢ Upfront costs to design and construct the alternative (capital costs) ➢ Operating and maintaining any system associated with the alternative (O&M costs) ➢ Periodic costs associated with the alternative ➢ Total cost in today's dollars (**Net Present Worth [NPW]** cost)	$0	$15,000 capital 30-year NPW: $381,000	$760,000 capital 30-year NPW: $1,127,000
Modifying Criteria			
State Agency Acceptance ➢ Does MEDEP agree with the Navy's recommendation?	To be determined after the public comment period on the Proposed Plan		
Community Acceptance ➢ What objections, suggestions, or modifications does the public offer during the comment period?	To be determined after the public comment period on the Proposed Plan		
Relative comparison of the nine balancing criteria and each alternative: ● – Good, ◘ – Average, ○ – Poor, NA – Not applicable			

PREFERRED ALTERNATIVE

Based on information available at this time, the Navy recommends Alternative 3 as the preferred alternative to address contaminated soil at OU7 and to provide long-term risk reduction. The Navy believes that Alternative 3 meets the threshold criteria and provides the best balance of tradeoffs among the balancing criteria (see Table 2). The Navy proposes that this be the final remedy for OU7.

The Navy expects the preferred alternative to satisfy the following statutory requirements of CERCLA Section 121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; and (4) utilize permanent solutions to the maximum extent practicable. The Navy may decide to change its preferred alternative in response to public comments or new information. After the end of the public comment period on this Proposed Plan, the Navy, with the concurrence of EPA and after consultation with MEDEP, will document its selected remedy in a ROD.

The proposed alternative would include excavating contaminated soil, implementing residential LUCs, performing long-term management of shoreline controls, and conducting five-year reviews.

Excavation of contaminated soil would be conducted in two areas within the Former Timber Basin area to reduce dioxin/furan and PCB concentrations in subsurface to industrial worker cleanup levels. The excavation would also reduce lead concentrations in surface soil to residential cleanup levels. The approximate excavation areas are shown on Figure 4. The excavated soil would be disposed of in an offsite landfill, and the excavation areas would be restored to pre-construction conditions. Activities, including confirmation sampling, would be conducted in accordance with a remedial action work plan.

LUCs would be implemented to prevent hypothetical future residential exposure to subsurface soil by restricting residential land use. LUCs would also specify requirements for management of excavated subsurface soil as part of any future construction activities within the LUC boundary. LUCs would be implemented via a LUC Remedial Design (RD) to document the LUCs, identify inspection requirements, and document responsible parties. LUCs would be required as long as COC concentrations in subsurface soil exceed levels that allow for unlimited use and unrestricted exposure.

Long-term management of existing shoreline controls would be conducted in accordance with a work plan that would specify inspection and maintenance requirements for the shoreline controls and document responsible parties.

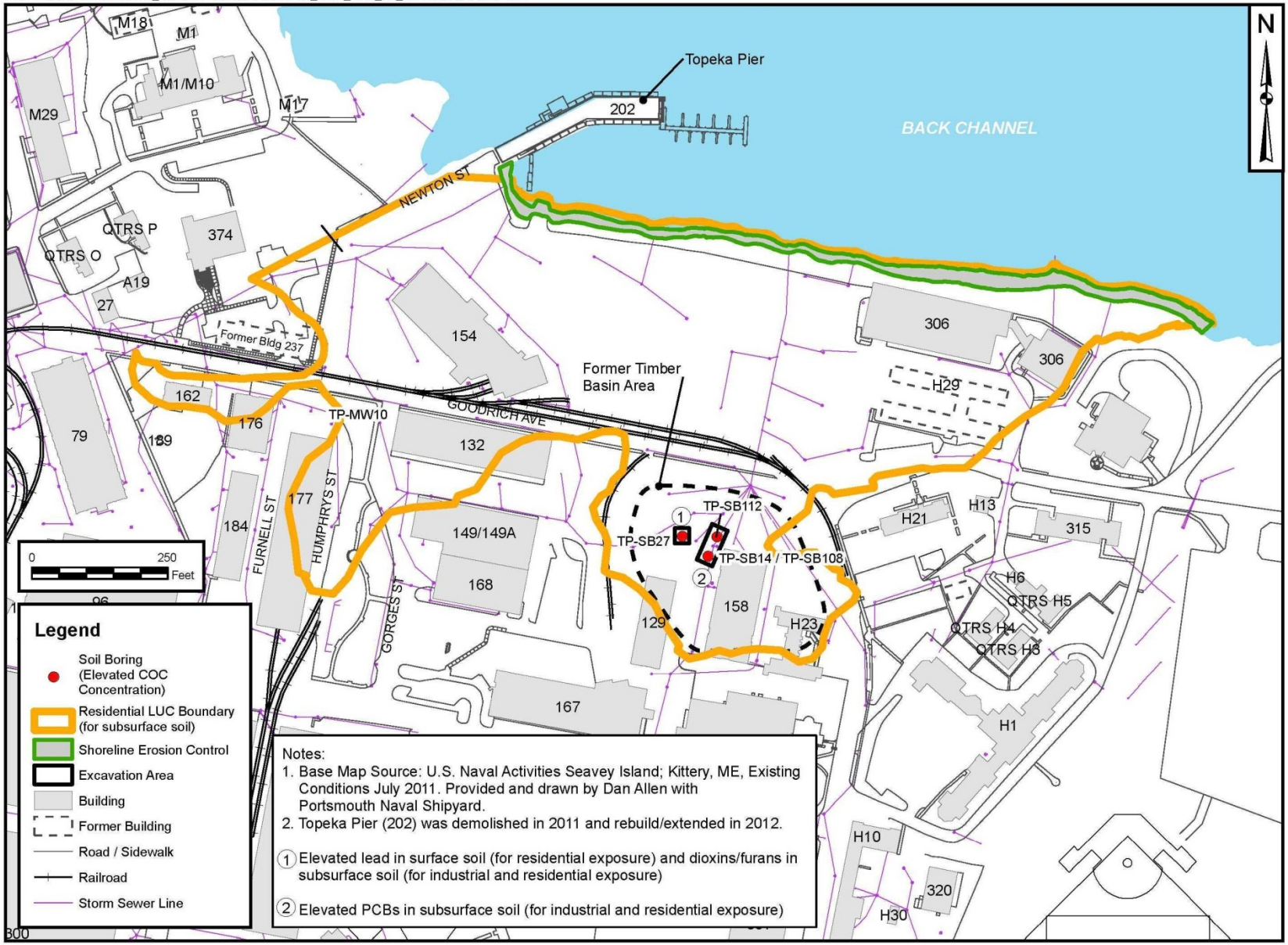
Reviews would be conducted every 5 years to ensure that the remedy remains protective.

Alternative 3 is preferred over Alternative 2 (LUCs only) because it would remove soil contamination and allow unrestricted industrial exposure rather than relying only on institutional or administrative controls to restrict industrial exposure, as provided under Alternative 2. Removal of the surface soil contamination would allow for unlimited use and unrestricted exposure for surface soil. LUCs would prevent future hypothetical residential exposure to subsurface soil, and inspection and maintenance of shoreline controls would ensure that these controls are maintained in the long term. Alternative 3 would achieve a positive balance between long-term effectiveness for current and planned future industrial use of the site, implementability, and cost.

FIVE-YEAR REVIEW REQUIREMENTS

Because contamination would remain at OU7 in excess of levels that allow for unlimited use and unrestricted exposure, reviews of the continued protectiveness of the remedy would be needed every 5 years as part of the preferred remedy. Five-year reviews would confirm that the remedy remains protective of human health and the environment. Five-year reviews would be needed as long as COC concentrations at the site exceed levels that allow for unlimited use and unrestricted exposure.

Figure 4 - Alternative 3 Excavation and Residential LUCs Boundaries



TECHNICAL TERMS USED THROUGHOUT THIS PROPOSED PLAN ARE EXPLAINED IN THE GLOSSARY OF TERMS ON PAGE 14

COMMUNITY PARTICIPATION

The public is encouraged to participate in the decision-making process for the cleanup of OU7 by reviewing and commenting on this Proposed Plan during the public comment period, which is from July 16, 2013 to August 14, 2013.

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 it before beginning the cleanup.

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 uses comments throughout the cleanup process to help make cleanup decisions, it is required to respond to formal comments.

Your formal comments will become part of the official record for OU7. This is a crucial element in the decision-making process for the site. The Navy will consider all significant comments received during the comment period prior to making the final cleanup decision for the site. Written comments will be included in the Responsiveness Summary contained in the ROD.

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

- Offer oral comments during the public hearing on July 23, 2013.
- Provide written comments at the informational open house, at the public hearing, or by fax or mail. Comments must be postmarked no later than August 14, 2013.

A tear-off mailer is provided as part of this document for your convenience.

NEXT STEPS

The Navy will consider and address all significant public comments received during the comment period. The responses to comments will be included in the Responsiveness Summary in the ROD, which will document the final CERCLA remedy selected by the Navy and EPA, in consultation with MEDEP, for OU7. After the ROD is signed, it will be made available to the public on the public website and at the Information Repositories.

To Comment Formally:

Send Written Comments postmarked no later than August 14, 2013, to:

Ms. Danna Eddy
Public Affairs Office (Code 100PAO)
Portsmouth Naval Shipyard
Portsmouth, NH 03804-5000

Fax Comments by August 14, 2013, to the attention of:

Ms. Danna Eddy
Public Affairs Office (Code 100PAO)
Portsmouth Naval Shipyard
Fax: (207) 438-1266

For More Detailed Information, You May Go to the Public Information Repositories or Public Website

The Proposed Plan was prepared to help the public understand and comment on the preferred cleanup alternatives for this site and provides a summary of a number of reports and studies.

Information Repositories

Rice Public Library
8 Wentworth Street
Kittery, Maine 03904
Telephone: (207) 439-1553

Portsmouth Public Library
175 Parrott Avenue
Portsmouth, New Hampshire 03801
Telephone: (603) 427-1540

Public Website

http://go.usa.gov/vvb

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 circumstance

Applicable or Relevant and Appropriate Requirements (ARARs): The federal, state, and local environmental rules, regulations, and criteria that must be met by the selected cleanup action under CERCLA.

Background: Concentrations of chemicals that would be found in the environment even if there had been no man-made sources or releases of chemicals at the site.

Chemical of Concern (COC): Chemicals of potential concern (COPCs) that through further evaluation in human health risk assessments are determined to present a potential adverse effect on human health and the environment.

Cleanup Level: A numerical concentration agreed upon by the Navy and EPA, in consultation with MEDEP, as having to be reached for a certain COC to meet one or more of the RAOs. A cleanup level may be regulatory-based criterion, a risk-based concentration, or even a background value.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law also known as "Superfund." This law was passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Dioxins/furans: Dioxins and furans are a family of toxic substances that share a similar chemical structure. Most dioxins and furans are created during the production of other chemicals or when products are burned. Dioxins and furans are highly persistent in the environment and can accumulate in the fatty tissues of animals.

Feasibility Study (FS): A report that presents the description and analysis or evaluation of potential cleanup alternatives for a site. The report also provides other remedial options screened out in the FS because they were not considered to be applicable for the site conditions.

Human Health Risk Assessment (HHRA): An evaluation of current and future potential for adverse human health effects from exposure to site contaminants.

Intertidal surface water and sediment: Water and sediment in the offshore area exposed during low tide and submerged during high tide. Intertidal surface water includes groundwater exiting in the intertidal area and mixing with river water.

Land use controls (LUCs): Engineered and non-engineered measures formulated and enforced to regulate current and future land use options. Engineered measures include fencing and posting. Non-engineered measures typically consist of administrative restrictions that prohibit residential land use and/or groundwater use.

Metals: Metals are naturally occurring elements. Some metals, such as lead, can have toxic effects. Other metals, such as iron, are essential to the metabolism of humans. Metals are classified as inorganic because they are of a mineral 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.

Net Present Worth (NPW): A cost evaluation technique that expresses the total of initial capital expenditure and long-term operation and maintenance costs in terms of present-day dollars.

Polychlorinated biphenyls (PCBs): A class of organic compounds with 1 to 10 chlorine atoms attached to a biphenyl, which is a molecule composed of two benzene rings. PCBs were widely used for many applications, especially as dielectric fluids in transformers, capacitors, and coolants. Due to PCB's toxicity and classification as a persistent organic pollutant, PCB production was banned by the United States Congress in 1979.

Polycyclic aromatic hydrocarbons (PAHs): High molecular weight, relatively immobile, and moderately toxic solid organic chemicals that include multiple benzene (aromatic) rings in their chemical formula. PAHs are normally formed during the incomplete combustion of coal, oil, gas, garbage, or other organic substances. Typical PAHs include anthracene, phenanthrene, and benzo(a)pyrene.

Record of Decision (ROD): An official document that describes the selected cleanup action for a specific site. The ROD documents the cleanup selection process and is issued by the Navy following the public comment period.

Remedial action objective (RAO): A cleanup objective agreed upon by the Navy and EPA, in consultation with MEDEP. One or more RAOs are typically formulated for each environmental site.

Remedial Investigation (RI) or Resource Conservation and Recovery (RCRA) Facility Investigation (RFI): An in-depth study designed to gather data needed to determine the nature and extent of contamination and risks at a Superfund or RCRA site. Information supports establishing site cleanup criteria, identifying preliminary alternatives for remedial action, and technical and cost analyses of alternatives.

Use This Space to Write Your Comments

Your input on the Proposed Plan for contamination at OU7 at Portsmouth Naval Shipyard is important to the Navy, EPA, and MEDEP. Comments provided by the public are valuable in helping to select the remedy for this site.

You may use the space below to write your comments, then fold and mail. Comments must be postmarked by August 14, 2013. Comments can be submitted via mail or fax and should be sent to the following address:

Ms. Danna Eddy
Public Affairs Office (Code 100PAO)
Portsmouth Naval Shipyard
Portsmouth, NH 03804-5000

Fax: (207) 438-1266

Name:
Address:
City:
State: Zip Code:
Telephone:

FOLD HERE

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PLACE
STAMP
HERE

Ms. Danna Eddy

Public Affairs Office (Code 100PAO)

Portsmouth Naval Shipyard

Portsmouth, NH 03804-5000