



*EXPLANATION OF SIGNIFICANT DIFFERENCE FOR THE
RECORD OF DECISION FOR OPERABLE UNIT 3
Portsmouth Naval Shipyard
Kittery, ME*

Summary of Explanation of Significant Difference (ESD)

The Navy will change the remedy for Operable Unit 3 (OU3) as documented in the Record of Decision (ROD) for OU3. Based on the reduction in the area on which to install the landfill cover, the remedy will now include the following:

- *Excavation of the contaminated soil/waste from an approximately 2.6-acre area bounded by Parker Avenue, Stephenson Road, and Jamaica Cove;*
- *Consolidation of the excavated material within the limits of the Jamaica Island Landfill south of Parker Avenue; and*
- *Construction of wetlands within the excavated area.*

Other minor changes to the remedy as documented in the ROD for OU3, relate to the placement of shoreline erosion controls, minor removal and consolidation of landfill material above the water table, and the OU6 items that were incorporated into the OU3 ROD.

The altered remedy remains protective of human health and the environment, complies with federal and state requirements, and remains cost-effective.

INTRODUCTION

In 1994, Portsmouth Naval Shipyard (PNS) was placed on the National Priorities List. Currently, there are 12 areas within PNS that have been, or are being, investigated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The cleanup of these sites is being conducted under the Department of Defense (DOD) Installation Restoration Program (IRP) and meets the requirements of CERCLA and the Superfund Amendments and Reauthorization Act. The Navy is the lead agency for performing cleanup with oversight by the U.S. Environmental Protection Agency (USEPA) and Maine Department of Environmental Protection (MEDEP).

In August 2001, the Navy and USEPA, with concurrence from the MEDEP, signed a Record of Decision (ROD) (Navy, August 2001) that presents the selected final remedial action for Operable Unit 3 (OU3), soil and groundwater within the boundary of the Jamaica Island Landfill (JILF).

STATUTORY BASIS FOR ISSUANCE OF THE EXPLANATION OF SIGNIFICANT DIFFERENCE

The lead agency for a Superfund site may determine that a significant change to the selected remedy, as described in a ROD, is necessary after the ROD has been issued. A change to the ROD can be made under CERCLA section 117(a), the National Contingency Plan (NCP) section 300.435(c), and USEPA guidance (Office of Solid Waste and Emergency Response Directive 9355.3-02).

USEPA guidance categorizes post-ROD changes as a *non-significant or minor change*, a *significant change* to a component of the remedy, or a *fundamental change* to the overall remedy. The Navy, as lead agency for PNS, has determined that a *significant change* to a component of the remedy (the area of the landfill on which to install a hazardous waste landfill cover) will be made. A significant change involves a change to a component of the remedy that does not fundamentally alter the overall cleanup approach. Where changes represent a *significant but not a fundamental*

change to the ROD, the Navy, as lead agency, must publish an Explanation of Significant Differences (ESD) as set forth in NCP section 300.435(c)(2)(i). The Navy is also required to publish a notice of availability and a brief description of the ESD in a major local newspaper.

In accordance with section 300.435(c) of the NCP, this ESD and supporting information will be placed in the Administrative Record File for PNS and will also be included in the PNS Information Repository. The PNS Information Repository is available for public review at the Kittery Town Hall, 200 Rogers Road Ext., Kittery, Maine and the Portsmouth Public Library, 8 Islington Street, Portsmouth, New Hampshire.

PORTSMOUTH NAVAL SHIPYARD DESCRIPTION

PNS is located in Kittery, Maine, on an island in the Piscataqua River, at the mouth of the Great Bay Estuary (commonly referred to as Portsmouth Harbor). The Piscataqua River is a tidal estuary that forms the southern boundary between Maine and New Hampshire. PNS is engaged in the conversion, overhaul, and repair of submarines for the Navy. The long history of shipbuilding in Portsmouth Harbor dates back to 1690. PNS was first established as a government facility in 1800. Service of submarines has been the primary military focus at PNS from 1917 to present. PNS is located on approximately 276 acres of land.

SITE DESCRIPTION AND HISTORY

OU3 is approximately 25 acres in size and it consists of the soil (including landfill material) and groundwater within the following three sites:

- Site 8 – the JILF. The Navy used the JILF, previously tidal mudflats, as a disposal area from 1945 to 1978 for general refuse, trash, construction rubble, dredged sediment, and various industrial wastes. The boundary of OU3 is defined by the boundary of this landfill.

- Site 9 – the Former Mercury Burial Sites (MBI and MBII). Mercury burial vaults were placed in two locations within the landfill in the 1970s and then removed (intact) and disposed off site in the 1990s/early 2000.
- Site 11 – the Former Waste Oil Tanks Nos. 6 and 7. The tanks at Site 11 were used from 1943 to 1989 and were removed (intact) in 1989. However, spills during filling of the tanks appeared to have occurred.

The site locations are shown on Figure 1. The layout of OU3 is shown on Figure 2. A more detailed description of the OU can be found in Section 1.0 of the Feasibility Study Report for Operable Unit 3 (TtNUS, November 2000).

ENFORCEMENT AND REMEDIAL ACTION HISTORY

Investigations of hazardous waste contamination at PNS began in 1983. Investigations under the authority of the Resource Conservation and Recovery Act (RCRA) began in 1985. With the inclusion of PNS on the National Priorities Lists in 1994, subsequent studies have been conducted under the authority of CERCLA, commonly known as Superfund. The sites at PNS have been grouped based on similar characteristics or proximity into OUs. Currently, five OUs (OU1, OU2, OU3, OU7 and OU8) and 2 site screening areas (Sites 30 and 34) address onshore contamination from IRP sites, whereas OU4 addresses offshore contamination from the IRP sites. OU6 addresses management of migration of groundwater from OU3. An Interim ROD has been signed for OU4 (Navy, May 1999) and a ROD has been signed for OU3 (Navy, August 2001). A more detailed description of enforcement and remedial action history for PNS can be found in the OU3 ROD (Navy, August 2001) and the Amended Site Management Plan (Navy, January 2003).

For OU3, the Navy investigated site hydrogeology, assessed the nature and extent of contamination, and performed risk assessments during the RCRA Facility Investigation (RFI) that started in 1989. Remedial action objectives and alternatives

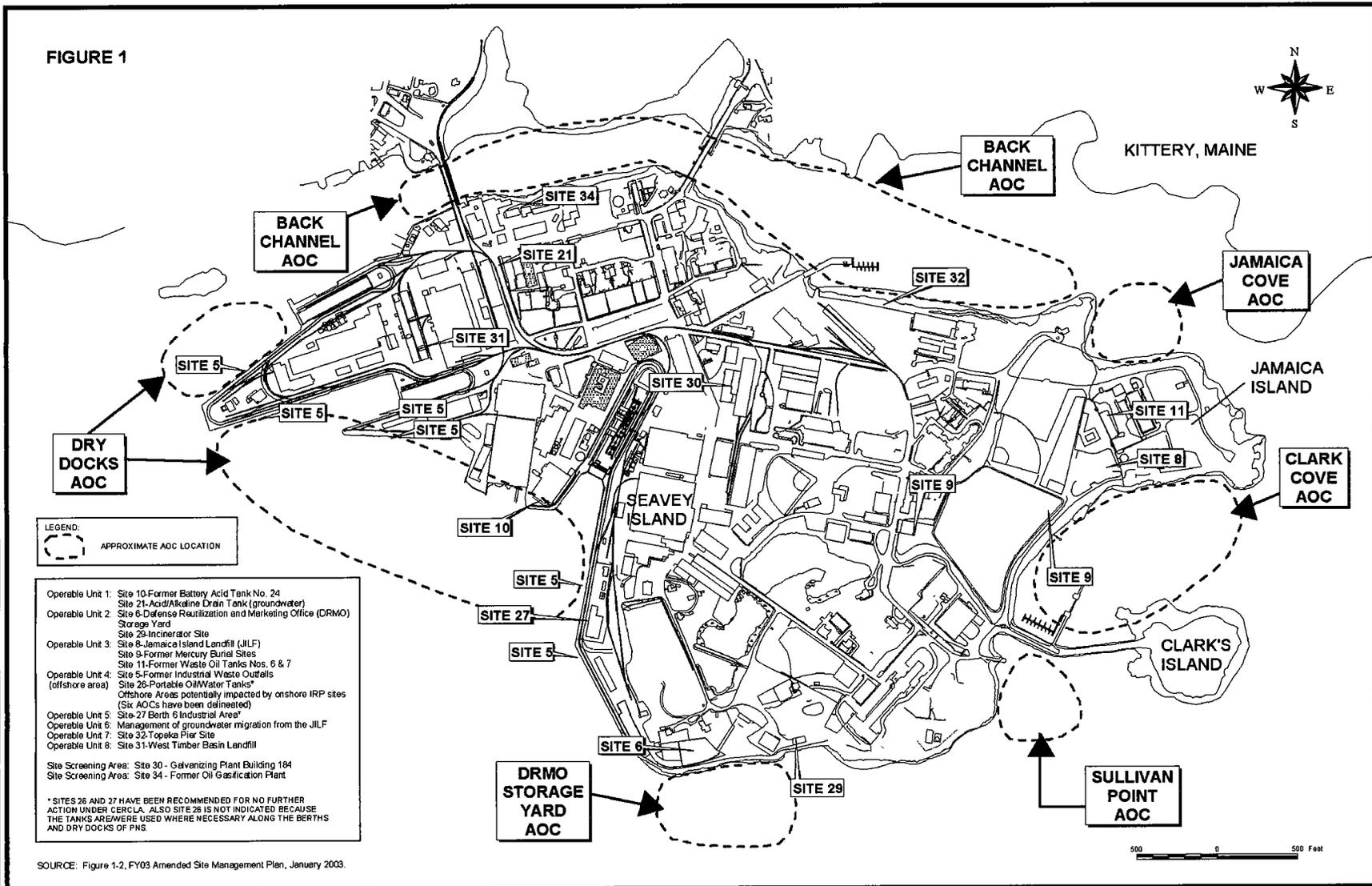


Figure 1: PNS Site Locations

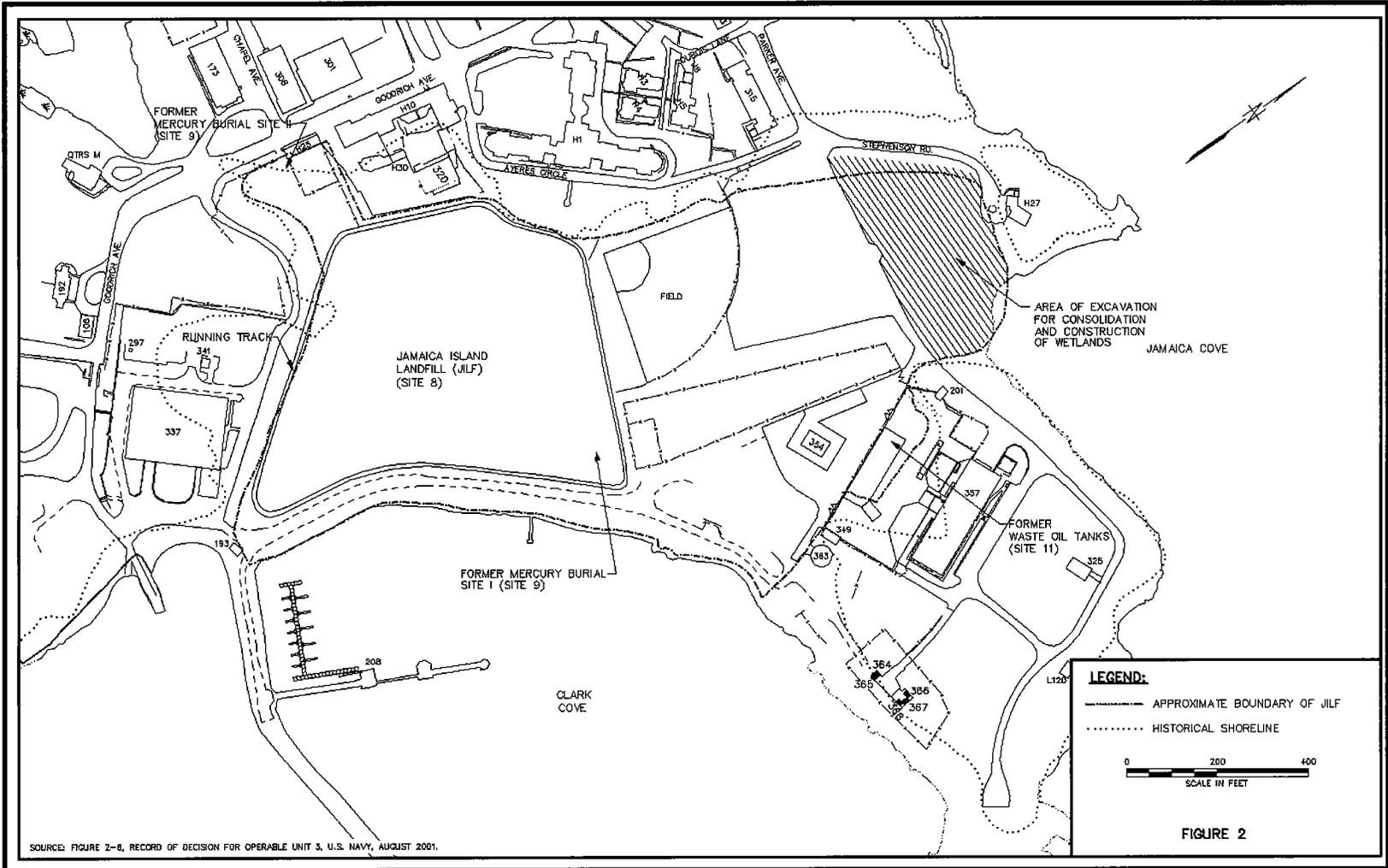


Figure 2: OU3 Layout

were developed and screened in the OU3 Feasibility Study (FS) (TtNUS, November 2000). The preferred remedy is a combination of a hazardous waste landfill cover, institutional controls, erosion controls, and monitoring and was formally documented in the ROD for OU3 (August 2001). The selected remedial action addresses source control for the JILF (i.e., soil and groundwater within the boundary of the JILF). Management of migration of groundwater from within the JILF boundary to the offshore is being addressed as part of OU6. A more detailed description of the investigations and evaluations and of the selected remedy for OU3 can be found in the OU3 FS (TtNUS, November 2000) and OU3 ROD (Navy, August 2001), respectively.

Other significant response actions taken at or near OU3:

- At Site 8, JILF. Forty-one drums containing non-hazardous material were located, 40 of which were removed from one location and disposed offsite. The remaining drum, containing a Portland cement-type material from another location, was replaced in the landfill (TtNUS, October 2000).
- At Site 9, MBI and MBII. The concrete vaults have been removed (portions of MBI in 1994 and the rest in 1997 and MBII in 2000) (TtNUS, November 2000).
- At Site 11, Waste Oil Tanks. In 1989, the tanks and 332 tons of contaminated soil were removed (TtNUS, November 2000).
- In August 1999, Interim Offshore Monitoring for OU4 began which includes four monitoring stations adjacent to the JILF (TtNUS, July 2002).
- In July 2002, the Baseline Report for Interim Offshore Monitoring was completed which includes the evaluation of the first four rounds of data for the four monitoring stations adjacent to the JILF (TtNUS, July 2002).

SUMMARY OF THE NAVY'S RECORD OF DECISION AND REMEDIAL ACTION DESIGN

The ROD for OU3 required the following elements:

- A multiple layer cover over the landfill surface that would prevent receptors on the surface from coming in contact with contaminated soil and/or waste and minimize infiltration of water through the cover to the landfill material. Portions of the JILF that have buildings and structures will not be covered with the hazardous waste landfill cover. The specific cover components will be determined as part of the cover design, based on pre-design investigation, as necessary.
- Institutional controls to restrict land and fresh water groundwater uses within the JILF boundary to prevent unacceptable human exposure to site contaminants. Institutional controls will also be used to prevent unrestricted disturbance of the hazardous waste landfill cover, shoreline erosion controls, and buildings and structures within the boundary of the JILF.
- Shoreline erosion controls, including rip-rap and/or wetlands placed along the shoreline, to minimize the potential for washing away soil and/or waste materials from the edge of the JILF.
- Monitoring of site media to assess the effectiveness of the remedy over the long term. The appropriate media for monitoring, frequency, testing protocol, and evaluation criteria will be determined as part of the monitoring program development and will be documented in the monitoring plan.
- Routine inspections and maintenance of the cover, shoreline erosion controls, and institutional controls to ensure that the cover, erosion controls, and site controls remain effective. An operation and maintenance plan will be developed. The operation and maintenance plan will include identification of verification

activities to determine whether the buildings and structures within the JILF boundary are still in place.

- Five-year site reviews to confirm that remedial action objectives (RAOs) are being achieved and that the remedy remains protective.

In addition, the offshore areas potentially impacted by PNS onshore sites, which include the area adjacent to OU3 in the estuary, are being addressed as part of OU4. However, based on comments received from the MEDEP on the schedule for OU6 and the concerns raised by the public during the comment period on the Proposed Remedial Action Plan (PRAP) for OU3, the Navy, in consultation with the USEPA and MEDEP, agreed to incorporate the following activities related to OU6 into the ROD for OU3:

- Initiate development of a work plan for the additional investigation for OU6 by holding a Data Quality Objective (DQO) meeting within 60 days of signing of the ROD for OU3.
- Complete the work plan for the additional investigation for OU6 by the time the JILF cap construction is complete.
- Evaluate the possibility of wetlands construction specifically for water quality improvement to address groundwater migration from the JILF.

BASIS FOR THIS EXPLANATION OF SIGNIFICANT DIFFERENCE

The basis for this ESD is the Navy's decision in the OU3 ROD to re-evaluate the feasibility of consolidating waste material removed from the Jamaica Cove area and the vicinity of the former location of the MBII into the existing landfill. In accordance with this decision, an evaluation was conducted. The report entitled "Evaluation of Jamaica Cove Options" (US Army, June 2002a) recommended the consolidation of landfill material from and construction of wetlands in the Jamaica Cove area. This approach meets the goals of

establishing wetlands and removing waste from groundwater contact without disturbing a significant area of existing wetlands. The disturbance of approximately 400 square feet of wetlands is necessary to allow the new wetland area to drain fully during each tidal cycle. The area disturbed is below the minimum area that requires a permit under State of Maine and federal regulations. Consolidation of waste from MBII area was not recommended (US Army, June 2002b).

Other minor changes to the Navy's decision in the OU3 ROD relate to the shoreline erosion control placement, minor removal and consolidation of landfill material above the water table, and the work plan for the additional investigation for OU6, as discussed herein. The Remedial Design (US Army, June 2002c; US Army, November 2002) provides for shoreline erosion controls within the boundary of the existing landfill instead of outside the boundary of the landfill as originally proposed to minimize impact to existing natural resources.

The landfill waste material in the area of Building 320 (Automotive Hobby Shop) will be excavated to the depth of the water table, backfilled with clean material, and paved with asphalt. This area will not be included under the landfill cover.

During development of the OU6 DQOs, the Navy (Navy, November 2002), with agreement of the USEPA (USEPA, December 2002) and the MEDEP (MEDEP, January 2003), will prepare a decision tree that will be followed to initiate preparation of a work plan. The rationale for the preparation of a decision tree in lieu of a work plan at this time is as follows:

- Excavation of the waste north of Parker Avenue and backfilling of clean fill has already significantly reduced the flow from the two seeps of concern;
- Construction of the OU3 landfill cap, scheduled for completion in Fall of 2005, will also affect (reduce) the flow rates in the OU6 seeps; and

- Preparation of a decision tree to initiate preparation of the OU6 work plan will ensure the work plan takes into account the sample collection methods, laboratory analysis methods, and other current information available at that time for generation of the work plan.
- Consolidation of the excavated material within the limits of the JILF south of Parker Avenue; and
- Construction of wetlands within the excavated area.

DESCRIPTION OF THE SIGNIFICANT DIFFERENCE

This ESD documents a modification to the OU3 ROD that significantly changes, but does not fundamentally alter, the selected remedy. Minor changes to the OU3 ROD are also documented under the discussion of the basis for the ESD. The change to the remedy for the OU3 does not alter the decision to install a hazardous waste landfill cover, implement institutional controls, erosion controls, and monitoring. The only significant difference between the remedy selected in the ROD and the proposed remedy is the area over which these actions will be implemented. A portion of the landfill that was intended to be placed under a hazardous waste landfill cover in situ, has been excavated and placed on the remainder of the landfill, which will be under the landfill cap. The outcome of this change has been the removal of a portion of the waste coming in contact with the groundwater as well as the provision of a clean downgradient area for installation of sentry monitoring wells along the Jamaica Cove shoreline. The excavation of waste material in the vicinity of Jamaica Cove removes waste material from a tidally influenced area and provides an area for construction of wetlands.

The significant difference will not alter the long-term monitoring and five-year review components of the remedy as stated in the OU3 ROD.

The following is a summary of the elements of the significant difference:

- Excavation of the contaminated soil/waste from an approximately 2.6-acre area bounded by Parker Avenue, Stephenson Road, and Jamaica Cove;

The Navy completed the excavation and consolidation of the contaminated soil/waste in September 2002 and plans to complete the construction of the wetlands between April and July 2003. The implementation of this change in the remedy will have a minimal impact on the total duration to achieve RAOs for OU3.

UPDATED COST ESTIMATE

The current, fully funded cost estimate to implement the OU3 ROD, including the remedy refinements outlined above, is \$17.804 million (includes fully funded construction cost estimate of \$16.285 million plus present worth for future O&M costs), using 2003 price levels. The ROD's estimated present-worth cost, \$11.676 million, was based on 1999 price levels in the OU3 FS. Present worth is the amount required to fund a project assuming that amount can be invested at the start of the project for a given rate of return as the project progresses. Present-worth estimates help evaluate various options on an equal basis, but they do not represent the actual funding levels that will be required for a project of this type. The fully funded estimate, on the other hand, reflects the total of the actual annual funding levels required to implement the project. In addition, the ROD cost estimate is based strictly on a conceptual (rather than a detailed) project design; therefore, USEPA guidance acknowledges that actual project costs could be up to 50 percent higher than the cost estimate developed for the ROD (USEPA, July 1999).

The following table shows the comparative process used by the Navy to evaluate whether the current fully funded present-worth estimate of \$17.804 million is within the initial, present-worth estimate of \$11.676 million included in the ROD, after adjustment for inflation.

Type of Cost Estimate	\$ - in millions
Costs at October 1999 price level, as presented in the ROD, present worth	11.676
Costs presented in the ROD, at 2003 price level, adjusted for inflation ¹	12.002
2003 price level, acceptable upper limit (\$12.002 million times 1.5 per EPA guidance)	18.004

¹Based on change in Producer Price Index (PPI) from November 1999 to January 2003. PPI data is available from <http://www.bls.gov/ppi/home.htm>

The Navy believes that the remedy with the refinements discussed above has been maintained within the acceptable range of the original ROD cost estimate, because the current, fully funded estimate of \$17.804 million is less than the \$18.004 million threshold.

SUPPORT AGENCY COMMENTS

USEPA and MEDEP reviewed the ESD and provided comments that the Navy has incorporated into this document. A MEDEP letter of concurrence on the ESD was issued on July 23, 2003.

AFFIRMATION OF THE STATUTORY DETERMINATIONS

The proposed changes to the selected remedy described in the August 2001 ROD for OU3 will continue to satisfy all statutory requirements of CERCLA and the NCP. The altered remedy remains protective of human health and the environment, complies with federal and state applicable or relevant and appropriate requirements, and remains cost-effective.

PUBLIC PARTICIPATION

The Navy, USEPA and MEDEP meet regularly with site stakeholders to keep the community up to date on the site's cleanup status, including the issues described above in "Description of the Explanation of Significant Difference". For example, the Navy, USEPA, and MEDEP meet approximately every 2 months with the PNS Restoration Advisory Board (RAB). Additional meetings occur as necessary to successfully implement the cleanup program. The technical information related to this ESD was presented at the PNS RAB meeting on February 7, 2002. Also, the correspondence, technical memoranda, and design documents and drawings related to this ESD were provided to USEPA, MEDEP, and PNS RAB members for review and comment.

FOR MORE INFORMATION

If you have questions about the ESD for the PNS OU3 ROD, or if you would like further information, please contact:

Ms. Debbie White
Public Affairs Office
Code 100PAO
Portsmouth Naval Shipyard
Portsmouth, NH 03804-5000
Phone: (207) 438-1525
Fax: (207) 438-1266

Mr. Matthew Audet, Remedial Project Manager
U.S. Environmental Protection Agency,
Region 1
1 Congress Street, Suite 1100 (HBT)
Boston, MA 02114-2023
Phone: (617) 918-1449
Fax: (617) 918-1291

Mr. Iver McLeod, Remedial Project Manager
Maine Department of Environmental
Protection
17 State House Station
Augusta, ME 04333-0017
Phone: (207) 287-8010
Fax: (207) 287-7826

REFERENCES

- MEDEP (Maine Department of Environmental Protection), January 2003. Correspondence from I. McLeod, MEDEP to F. Evans, Navy dated January 6, 2003.
- Navy (Department of Navy), May 1999. Interim Record of Decision for Operable Unit 4, Portsmouth Naval Shipyard, Kittery, Maine.
- Navy, August 2001. Record of Decision for Operable Unit 3, Portsmouth Naval Shipyard, Kittery, Maine.
- Navy, November 2002. Correspondence from F. Evans, Navy to M. Barry, USEPA and I. McLeod, MEDEP dated November 25, 2002.
- Navy, January 2003. Amended Site Management Plan for FY03.
- TtNUS (Tetra Tech NUS, Inc.), October 2000. "Test Pitting Investigation Report Jamaica Island Landfill - February/March 2000 Activity, Portsmouth Naval Shipyard, Kittery, Maine." TtNUS, King of Prussia, PA.
- TtNUS, November 2000. "Feasibility Study (FS) Report for Operable Unit 3, Portsmouth Naval Shipyard, Kittery, Maine." TtNUS, King of Prussia, PA.
- TtNUS, July 2002. "Baseline Interim Offshore Monitoring Report for Operable Unit 4, Portsmouth Naval Shipyard, Kittery, Maine." TtNUS, King of Prussia, PA.
- US Army, June 2002a. "Evaluation of Jamaica Cove Options for Operable Unit 3, Portsmouth Naval Shipyard, Kittery, Maine." US Army Corps of Engineers, Omaha and New England Districts; Omaha, NE; and Concord, MA.
- US Army, June 2002b, "Evaluation of MBII Waste Consolidation for Operable Unit 3, Portsmouth Naval Shipyard, Kittery, Maine." US Army Corps of Engineers, Omaha District, Omaha, NE.
- US Army, June 2002c. "Final Operable Unit 3 Phase I Remedial Design Specifications and Plans for Portsmouth Naval Shipyard, Kittery, Maine." US Army Corps of Engineers, Omaha District; Omaha, NE.
- US Army, November 2002. "Final Phase II, Operable Unit 3 Remedial Design Analysis Report including drawings and specifications for Operable Unit 3, Portsmouth Naval Shipyard, Kittery, Maine." US Army Corps of Engineers, Omaha District; Omaha, NE.
- USEPA (US Environmental Protection Agency), July 1999. Guide to Preparing Superfund Proposed Plan, Record of Decision, and Other Remedy Selection Decision Documents, EPA 540-R-98-031.
- USEPA, December 2002. Correspondence from M. Barry, USEPA to F. Evans, Navy dated December 5, 2002.

DECLARATION

The issuance of this Explanation of Significant Difference for the OU3 Record of Decision at Portsmouth Naval Shipyard, Kittery, Maine is concurred with and recommended for immediate implementation:



U.S. Department of the Navy:

Kevin M. McCoy 9/9/03

Kevin M. McCoy
Captain, USN
Commander
Portsmouth Naval Shipyard, Kittery, Maine

Date

U.S. Environmental Protection Agency:

Susan Studlien 9-17-03

Susan Studlien
Acting Director
Office of Site Remediation and Restoration
USEPA New England
Boston, Massachusetts

Date

