RESTORATION ADVISORY BOARD (RAB) MEETING SUMMARY 6 MARCH 2012 NSY PORTSMOUTH ME

3/6/2012

NSY PORTSMOUTH RESTORATION ADVISORY BOARD

RESTORATION ADVISORY BOARD MEETING
PORTSMOUTH NAVAL SHIPYARD
KITTERY TOWN HALL, KITTERY, MAINE
March 6, 2012

Restoration Advisory Board (RAB) members at the meeting included the following:

- RAB community members – Doug Bogen and Diana McNabb
- Navy RAB members – Lisa Joy, Portsmouth Naval Shipyard (PNS); Linda Cole, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Remedial Project Manager (RPM)
- Regulatory representatives – Matt Audet, United States Environmental Protection Agency (USEPA); Iver McLeod, Maine Department of Environmental Protection (MEDEP).

Absent RAB members included the following:

- RAB community members – Peter Britz, Michele Dionne, Mary Marshall, Jack McKenna, and Roger Wells.

Guests at the RAB included:

- Danna Eddy, Gary Hildreth, and Matt Thyng, PNS.
- Fred Poulin, Shaw Environmental & Infrastructure, Inc. (Shaw E&I).
- Matt Kraus and Debbie Cohen, Tetra Tech.
- Carolyn Lepage, Technical Assistance Grant (TAG) technical advisor to Seacoast Anti-Pollution League (SAPL).
- Ted Wolfe from MEDEP
- Carl Baxter and George Lombardo from New Hampshire Department of Environmental Services (NHDES)
- Paul Dombrowski from Resolution Consultants

INTRODUCTION

The meeting was opened by Doug Bogen, Community RAB Co-Chair. Mr. Bogen welcomed everyone to the RAB meeting and requested that attendees introduce themselves. The attendees introduced themselves and stated the organizations they represented. Linda Cole, Navy RPM, introduced Paul

Dombrowski, who will be taking over RAB support, including mailing RAB invites and preparation and submittal of meeting minutes.

Lisa Joy, Navy RAB Co-Chair mentioned that each year the Department of Defense (DoD) awards various levels of environmental awards. This year the Portsmouth Naval Shipyard Environmental Program was selected for a Chief of Naval Operations (CNO) Environmental Restoration Award. Winners of the CNO level award advance to the Secretary of Navy level competition, and winners of the Secretary of Navy level award advance to the Secretary of Defense level competition. CNO award winners will be honored at a ceremony in June held in Washington DC, at which the Shipyard Environmental Department will receive a plaque to acknowledge their accomplishments. The Secretary of Navy level award recipient will be selected in April 2012. Ms. Joy indicated that this was a team award and that the partnership among the Navy, regulators, and community plays an important role in the success of the Environmental Restoration program. Also, Matt Thyng was commended for assembling the submittal package nominating the Shipyard for the CNO level award.

[Post-meeting note: The CNO Environmental Awards Program is conducted annually to recognize Navy ships, installations, and people for outstanding performance in promoting environmental stewardship. Additional information can be found at http://www.navy.mil/search/display.asp?story_id=65483 (Fiscal Year 2011 CNO Environmental Award Winners Announced).]

STATUS OF WORK AND REGULATOR UPDATES

Ms. Cole reviewed the status updates for Installation Restoration Program (IRP) work at Operable Unit (OU) 1, OU2, OU3, OU4, OU7, OU9, and Site 30. The presentation is attached to the minutes.

Ms. Cole noted that the Fiscal Year (FY) 2012 spending information has not changed since September 2011. The Navy will update their database in March and April 2012 to support determination of the FY13 budget.

The following are update highlights on the OUs:

- OU1 (Site 10 – Former Battery Acid Tank No. 24): Remedial action is being conducted, including soil removal and a first round of post-remediation groundwater sampling. A status update presentation on the OU1 remedial action was provided at this meeting.

- OU2 [Site 6 – Defense Reutilization and Marketing Office (DRMO) Storage Yard, Site 29 – Former Teepee Incinerator Site, DRMO Impact Area (Quarters S, N, and 68)]: Remedial design documents for Sites 6 and 29 are being prepared. The draft Construction Completion Report (CCR) for the DRMO Impact Area was submitted in February 2012. Ms. Cole explained that the delay in submittal of the CCR was due to reporting requirements for the archeological activities

conducted during the removal action for the DRMO Impact Area. She also indicated that with the removal of contaminated soil, residual risks are at acceptable levels to allow for unlimited use and unrestricted exposure (UU/UE) so that no further action is required for this area.

- OU3 [Site 8 – Jamaica Island Landfill (JILF), Site 9 – Former Mercury Burial Sites (MBI and MBII), and Site 11 – Former Waste Oil Tanks Nos. 6 and 7]: The Post-Remedial Operation, Maintenance, and Monitoring (OM&M) program continues, including installation of a French drain system along the northeast corner of the Jamaica Island parking lot to facilitate drainage of water that was ponding in this area of the landfill. The draft Second Five-Year Review Report was submitted and a presentation on that report was provided at this meeting. Ms. Cole noted that Round 11 of the OM&M program is scheduled for April/May 2012.

- OU4 (Site 5 – Former Industrial Waste Outfalls and Offshore Areas Potentially Impacted by PNS Onshore IRP Sites): The Interim Offshore Monitoring Program continues. Round 12 sampling is anticipated to occur in spring 2013. The Navy is also resolving comments on the draft Feasibility Study (FS) Report.

- OU7 (Site 32 – Topeka Pier Site): The Remedial Investigation (RI) Report is final and preparation of the draft FS Report continues.

- OU9 (Site 34 – Former Oil Gasification Plant, Building 62): The Navy continued resolving regulatory comments on the draft RI Report.

- Site 30 – Former Galvanizing Plant, Building 184: The Navy completed removal action activities, including excavation of the fill material in the vault during fall 2011. A CCR and Decision Document are being prepared.

- Community Involvement Plan (CIP): The CIP is an update to the 1996 Community Relations Plan (CRP). The draft CIP was issued in February 2012. The Navy anticipates briefing the RAB on the document after receiving regulatory comments on the draft CIP.

During review of Site 30 status, Ms. Cole explained that changes were made to the originally planned removal action process because field conditions were different than anticipated. Ms. Cole reviewed the differences in field conditions, including that the vault fill material was cleaner, there was much less water in the vault, and the integrity of bricks lining the vault was better than anticipated. Ms. Cole explained that after cleaning all material from the vault, no water was observed in the vault, even after a heavy rain fall. The water removed during excavation of vault fill material and cleaning of the bricks lining the vault was tested for disposal, and chemical concentrations were acceptable for disposal as non-hazardous waste. Ms. Cole explained that the field conditions and proposed changes were discussed with USEPA and MEDEP RPMs and representatives of USEPA and MEDEP who visited the site during the removal action.

Based on regulatory agreement with the changes, the acid-proof brick and underlying concrete structure were left intact. The changes in the removal action were subsequently reported to the RAB at the December 2011 RAB meeting. The removal action process changes will be documented in the CCR.

Crystalline material was observed after the removal action. Originally (i.e., prior to the removal action) the vault fill material was suspected to be the source of the crystalline material. Based on field conditions and removal of the fill material from the vault, it appears that the fill was not the source of the crystalline material. Crystalline material on concrete that becomes damp is a common occurrence called efflorescence. The Navy tested the pH of the crystalline material found post-removal and pH results were greater than that observed prior to the removal action. The Navy is preparing a paper on the observation and testing of the crystalline material and its suspected source. This paper will be provided to the regulators.

Matt Audet, USEPA RPM, explained that the change in the conceptual site model will be reflected in the documents the Navy is preparing. He explained that, from USEPA perspective, the crystalline material is not a hazardous waste with respect to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and may be more of an Occupational Safety and Health Administration (OSHA) issue that the Shipyard has to address, rather than an environmental restoration issue.

Ms. Cole showed photographs of the dry, empty vault and of the crystalline material found post-removal along the eastern interior wall of Building 184. Ms. Cole also discussed the historical nature of the vault in Building 184, and the required archeological recordation that the State Historic Preservation Officer requested for their historical inventory. Because site conditions showed contamination was much less than expected and the bricks lining the vault were in such good condition, the Navy considered it better to retain the brick and underlying structure from a historical perspective.

REGULATOR UPDATE

USEPA --- Mr. Audet indicated that USEPA has been focused on the Site 30 removal action and OU1 remedial action activities. He visited the Shipyard several times to see the field work progress, including observing the excavation work in the crawl space under Building 238 at OU1. Mr. Audet indicated that the working conditions under the building are very difficult for the field crew. USEPA has also been reviewing the draft Second Five-Year Review Report to provide their comments in the next week.

MEDEP --- Iver McLeod indicated that MEDEP has been working on the same items as USEPA. Mr. McLeod commended Shaw on their work at OU1. MEDEP has also been reviewing the Navy's evaluation of the OU2 pre-design investigation data to delineate excavation areas in OU2. MEDEP has a concern that the results may be more heterogeneous than anticipated and is discussing the concern with the Navy.

DRAFT SECOND FIVE-YEAR REVIEW REPORT

Debbie Cohen, Tetra Tech, provided a presentation on the draft Second Five-Year Review Report. The presentation is attached to the minutes.

Ms. Cohen explained that the primary purpose of a five-year review is to evaluate whether implemented remedies that allow concentrations to remain above levels that allow for UU/UE continue to be protective of human health and the environment. There was discussion on how the five-year review can evaluate sites with signed Records of Decision (RODs) but where the remedies have not been implemented, as is the case with OU1 and OU2. Mr. Audet explained that USEPA guidance for conducting the five-year reviews require that sites with RODs be evaluated to determine whether there are any immediate concerns for exposure to or migration of contaminants.

The Second Five-Year Review included evaluation of OU1, OU2, and OU3, which have RODs, and OU4, which has an interim ROD. The evaluation reflects the status of the sites as of December 31, 2011. Ms. Cohen reviewed the conceptual site model and results of the Second Five-Year Review for each OU.

OU1 is where pre-1984 operations in Building 238 resulted in releases of lead contaminated wastewater to soil and groundwater at the site. Potential human exposure to lead in soil is the unacceptable risk identified in the OU1 RI. Lead concentrations in the crawl space under Building 238 are greater than acceptable levels for current industrial and future hypothetical recreational or residential land uses and lead concentrations outside Building 238 are greater than acceptable levels for future hypothetical residential land use. The ROD was signed in September 2010 and the components of the remedy include excavation and offsite disposal of contaminated soil around the drain lines within the crawl space of Building 238, implementation of land use controls (LUCs) to prevent future residential use of the site, and groundwater monitoring (for lead) to confirm that groundwater has not been adversely impacted by soil excavation activities. Based on current site conditions, continued planned industrial land use, and Shipyard policies, there is no current exposure to contaminated soil under the crawl space. Remedy implementation is anticipated to be complete in 2012.

OU2 consists of Sites 6, 29, and the DRMO Impact Area. The main source of contamination at Site 6 and the western portion of Site 29 (referred to as the DRMO area) is from past releases to soil from former storage of DRMO materials (e.g., batteries) and the main source of contamination in the remainder of Site 29 (referred to as the waste disposal area) is from past disposal of debris and other materials. Potentially unacceptable risks for Sites 6 and 29 include human exposure to contaminants in soil and soil erosion to the offshore if the contaminated soil is uncovered. With completion of the removal action for the DRMO Impact Area, there are no unacceptable risks for the DRMO Impact Area. The ROD was signed in September 2011 and the components of the remedy include excavation of contaminated soil that pose a potential industrial risk in the DRMO area and placement of a soil cover over the waste disposal area. LUCs and monitoring are also included for Sites 6 and 29 in the remedy. No further action is the selected

remedy for the DRMO Impact Area. Ms. Cohen indicated that asphalt, interim cap, shoreline controls, and other site features currently cover contaminated soil and, based on these current site conditions, continued planned industrial land use, and Shipyard policies, there is no current exposure to or migration of contaminated soil. Ms. Cole indicated that the remedial action documents will be prepared in 2012 and the Navy is anticipating that construction of the remedy can begin by April 2013.

OU3 consists of Sites 8, 9, and 11. The remedy for OU3 has been in place since 2004 and this is the second five-year review since implementation of the remedy. The multilayer cover and shoreline controls prevent exposure to and migration of wastes within JILF (Site 8). Groundwater and landfill gas monitoring and landfill cover system and LUC inspections are conducted as part of the long-term management program. As part of the five-year review, changes in regulations and criteria that could affect the remedy are evaluated. For OU3, there were some criteria updates that changed some of the groundwater monitoring action levels. None of these changes affected the protectiveness of the remedy because groundwater concentrations remained lower than the action levels. Landfill gas monitoring also showed that gas concentrations remained lower than acceptable levels. LUCs and landfill inspections indicated that the remedy is functioning as intended. One issue that was identified is that there are tilted gas vents; recent inspection and a topographic survey showed possible minor slope movement in a portion of the landfill. These observations do not indicate a current concern that affects protectiveness of the remedy for OU3. However, additional evaluation is necessary to confirm that there is not a future potential concern that could affect the integrity of the cover system in the future. There was further discussion at the RAB about the tilted gas vents. Ted Wolfe, MEDEP, indicated that tilting gas vents is not an uncommon problem at closed municipal landfills and recommended measuring the tilt during inspections. Fred Poulin, Shaw E&I, indicated that settling often occurs around the gas vents. Ms. Cohen mentioned that she visited the site today and took detailed photographs of the vents to assist in further evaluation.

OU4 consists of Site 5, Former Industrial Waste Outfalls, and six areas of concern (AOCs). The Navy is conducting an interim remedy for OU4 that consists of monitoring 14 stations that provide coverage of the offshore area for interim monitoring purposes. Offshore data from the interim monitoring program and from onshore OU investigations were used to support the development of the draft OU4 FS Report. The monitoring data show that no further action is required at nine of the stations because concentrations are at acceptable levels. Remedial alternatives are being evaluated at the five monitoring stations where concentrations remained greater than acceptable levels.

In the review of the base-wide protectiveness statement, the remedies for OU1 and OU2 are expected to be protective of human health and the environment upon implementation. Based on the technical assessment of OU3, the five-year review concluded that the remedy remains protective of human health and the environment. For OU4, the interim remedy is protective and expected to remain protective until a final remedy is implemented. The next five-year review will be in 2017 and will include all OUs that have signed RODs by 2016 that do not allow for UU/UE.

REMOVAL AND REMEDIAL ACTION PROCESS

Ms. Cole reviewed the CERCLA process for removal and remedial actions to provide a better understanding of the process because several removal and remedial actions are underway at PNS. The presentation is attached to the minutes.

Ms. Cole explained that removal actions can be conducted at any point during the CERCLA process. An Action Memorandum is prepared to let the Navy and Shipyard know that a removal action will be conducted. After a removal action, the next step will depend on where the site is in the CERCLA process. Sites in the Preliminary Assessment/Site Investigation (PA/SI) stage could go to no further action if risks have been adequately addressed. If further action is required, sites could go to the RI/FS or ROD stage, depending on the remaining concern. Sites that are already in the RI/FS stage, need a ROD to document the final remedy, whether it be no further action or further action. Ms. Cole reviewed three examples of removal actions for sites at the Shipyard.

The remedial action process begins after the ROD is signed. The documents prepared as part of the remedial action will depend on the complexity of the remedy; where more complex remedies may require a remedial design (such as OU3 cover system design) and less complex remedies may not (such as OU1 soil excavation).

Ms. Cole explained that during construction activities for a removal or remedial action, site conditions may require field changes, which are discussed with the regulators and documented in the CCR. The Site 30 removal action was used as an example where field changes occurred based on site conditions. To close, Ms. Cole reviewed a slide showing the Navy's Environmental Restoration Process with the various phases and milestones that a site may go through to reach closeout.

OU1 STATUS UPDATE

Fred Poulin, Shaw E&I, and Matthew Kraus, Tetra Tech, provided an update on the status of the remedial action at OU1. The presentation is attached to the minutes.

Mr. Poulin reviewed the status of the remedial action construction activities for OU1. Project safety controls were put into place to prevent unauthorized entry to the excavation area. Soil excavation in the crawl space was conducted to 3 feet below ground surface. Excavation was conducted by hand and electric hand tools had to be used to loosen soil material around large rocks (2 to 3 feet in diameter). Conveyor belts were used to move excavated material from the crawl space to a loader bucket outside the building. The excavated material was moved to a temporary storage area before offsite disposal. Mr. Poulin explained that, based on confirmatory sampling results, additional excavation (1 foot step outs) was conducted along some of the side walls. Ms. Cole mentioned that the results just came in for the last step out and initial review indicates acceptable levels. She will discuss the results with the regulators to see whether the Navy is done with excavation. Characterization sampling was conducted on excavated

material before transportation to the disposal facility located in Canada. Based on results, all of the excavated soil will be disposed at a hazardous waste disposal facility in Canada. Site restoration activities, including backfilling and repaving, will be conducted, after which, the CCR will be prepared to document the remedial action construction activities.

Mr. Kraus reviewed the post remedial groundwater monitoring program. The Sampling and Analysis Plan (SAP), finalized in January 2012, requires two rounds of monitoring for lead to confirm no adverse impacts to groundwater from the soil remedial action. The majority of soil excavation was completed by February 8, 2012, and the first round of sampling was conducted within 2 weeks (February 16, 2012). Preliminary results show that all lead concentrations in the seven on-site monitoring wells were low (less than the project action level). In answer to a question on what is the project action level, it was explained that it is a lead concentration used to determine frequency of sampling; if the first round of lead concentrations are greater than the action level, then the second round of sampling would be 3 months later; if the lead concentrations are less than the action level, the second round of sampling would be 9 months later. This project action level is much less than the level where there may be a potential risk to human health or the environment. Because the first round of lead results was less than the project action level, the second round of sampling is planned for 9 months (November 2012).

Mr. Audet asked whether any inspections of the seawall (quay wall) south of Building 238 were planned. Ms. Cole explained that Naval Sea Systems Command (NAVSEA) is responsible for any inspections of the seawall, but as part of our LUCRD inspections we will be confirming that inspections are being accomplished.

ISSUES

Upon completion of the presentations, Mr. Bogen asked whether there were any other issues that needed to be discussed. No other issues or topics were raised.

FUTURE MEETINGS

Ms. Joy indicated that the Navy was proposing the May timeframe for the next meeting.

Post-meeting note: The next RAB meeting is scheduled for May 29, 2012, and will be held in the meeting room at Kittery Town Hall, 200 Rogers Road, Kittery, Maine. Planned agenda items will be provided with the invitation to the next meeting.

ATTACHMENTS AGENDA AND PRESENTATIONS FROM MARCH 6, 2012

Portsmouth Naval Shipyard Restoration Advisory Board Meeting Agenda

Date – March 6, 2012

Place – Kittery Town Hall, Kittery, ME

Time – 7 p.m. - 9 p.m.

- **Introductions – Mr. Doug Bogen, Community RAB Co-Chair**
- **Navy Co-chair Remarks – Ms. Lisa Joy**
- **Status of Work – Ms. Linda Cole, Navy**
- **Regulator Updates – Mr. Matt Audet, USEPA and Mr. Iver McLeod, MEDEP**
- **Draft Second Five-Year Review – Ms. Debbie Cohen, Tetra Tech**
- **Remedial Action and Removal Action Process – Ms. Linda Cole, Navy**
- **OU1 Status Update – Mr. Fred Poulin, Shaw E&I and Mr. Matthew Kraus, Tetra Tech**
- **Other Issues as Required**


U.S.NAVY

Installation Restoration Funding History

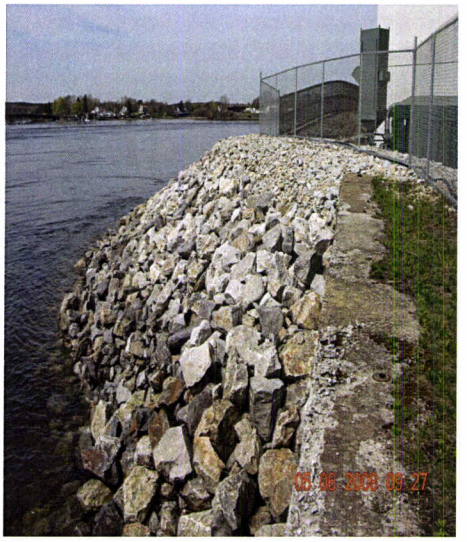
- Approximately $60 Million spent to date
- FY 2011 spent $1.9M
- FY 2012 spending plan $4.9M
- Estimated $24M for Cost-to-Complete

OPERABLE UNIT 1 (Site 10)

- Remedial Action (RA) Work Plan
  - *RA is underway*
- Land Use Control Remedial Design (LUC RD)
  - Finalized 04 Jan 2012
- Groundwater Monitoring Plan Component of Long Term Management Plan
  - Finalized 27 Jan 2012
  - First round of groundwater collected on 16 Feb 2012

OPERABLE UNIT 2 (Sites 6 and 29)

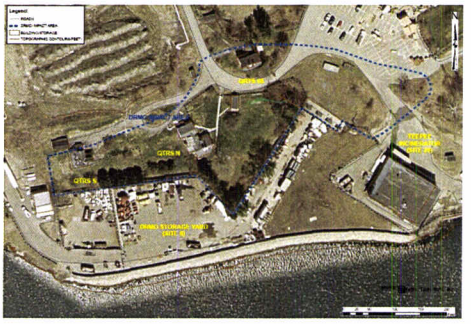
- OU2 Pre-design Investigation Tech Memo
  - –Under regulatory review
- Remedial Action
  - –Remedial Design (30%) is being reviewed by the Navy
- LUC RD
  - –Draft issued on 22 Dec 2012
  - –Regulatory concurrence received 28 Feb 2012
  - – Document to be finalized



Removal Action - DRMO Impact Area

Construction Completion Report

- Draft issued on 27 Feb 2012
- Regulatory comments due by 18 Apr 2012



OPERABLE UNIT 3 (Site 8)

- OM&M field work - Round 11
  - French drains installed in Jan 2012
  - Monitoring and inspection planned for Spring 2012
- OM&M Plan Update
  - Final Plan issued 09 Dec 2011
- Second Five Year Review
  - Draft issued 27 Jan 2012
  - Regulatory comments due 14 Mar 2012
  - Final Due Jun 2012

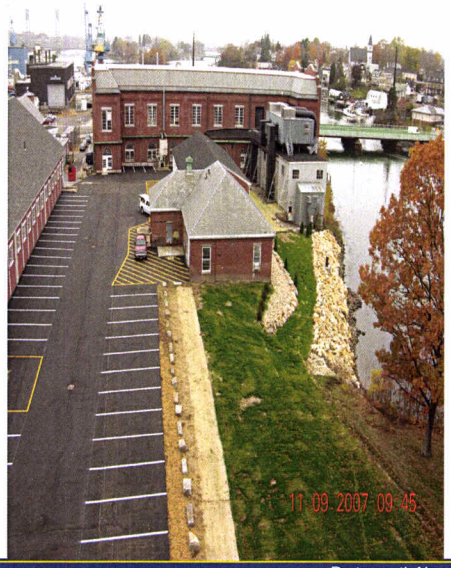
OPERABLE UNIT 4 (Site 5 and Offshore Areas of Concern)

- FS Report
  - Draft Report issued 9 Jul 2010
  - *Resolving regulatory comments*
- Interim Offshore Monitoring Plan (IOMP) Update
  - Finalized 15 Nov 10
  - Round 11 Data Package issued 21 Sep 11
  - Round 12 field work anticipated for spring 2013

OPERABLE UNIT 7 (Site 32)

- **RI Report**
  - –Finalized Nov 2011
- **FS Report**
  - –Being prepared

OPERABLE UNIT 9 (Site 34)



RI Report
-Draft Report issued 28 Feb 11
-Resolving regulatory comments

SITE 30 (Former Galvanizing Plant – Building 184)

Removal activities continued

- Welding booths and concrete floor slab removed
- Crystalline growth only found at perimeter slab expansion joints and along back wall
- All fill material removed and vault cleaned
- Excavation backfilled and floor slab was replaced
- Construction Completion Report and Decision Document will be prepared

Community Involvement Plan

The Community Involvement Plan (CIP)

- Draft CIP issued 24 Feb 2012
- Regulatory comments due 26 Mar 2012

Draft Second Five-Year Review

Portsmouth Naval Shipyard

March 6, 2012

Presenter:
Deborah Cohen, P.E., Tetra Tech

Presentation Objectives

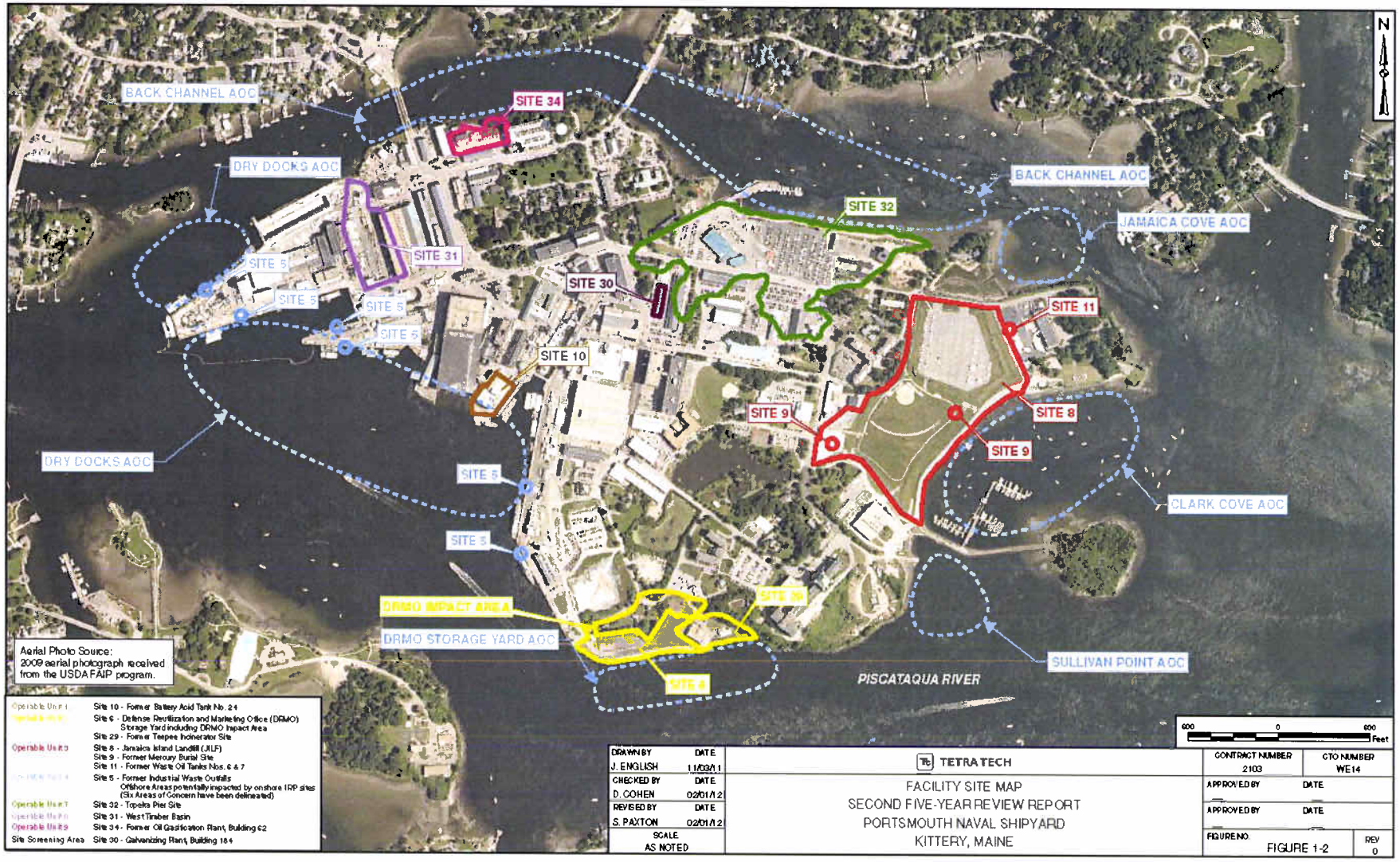
- Explain the purpose and scope of the Second Five-Year Review for PNS.
- Provide the results of the review for Operable Units (OUs) 1, 2, 3, and 4.
- Review the issues, recommendations, and required actions.
- Discuss remedy protectiveness.

Purpose and Scope of a Five-Year Review

- Primary purpose is to evaluate whether implemented remedies are protective of human health and the environment at sites where contamination remains above levels acceptable for unlimited use/unrestricted exposure (UU/UE).
- Second Five-Year Review conducted for OUs with Record of Decisions (RODs):
  - OU1, OU2, and OU3 have final RODs.
  - OU4 has an interim ROD.
- Review reflects the status of sites as of December 31, 2011.
- Trigger for first Five-Year Review was start of the OU3 remedy in 2002. The first Five-Year Review was completed in 2007.

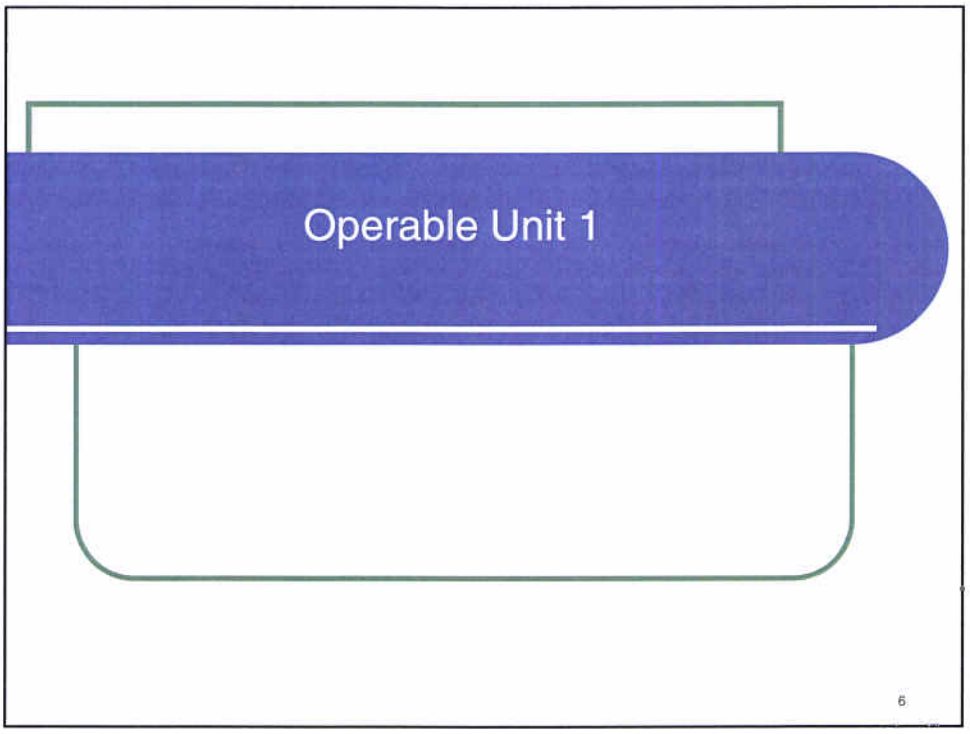
Five-Year Review Process

- Review items:
  - Relevant documents.
  - Applicable or Relevant and Appropriate Requirements (ARARs) and site-specific action level changes.
  - Site conditions (inspection).
- Technical assessment.
- Issues.
- Recommendations and follow-up actions.
- Protectiveness statement.

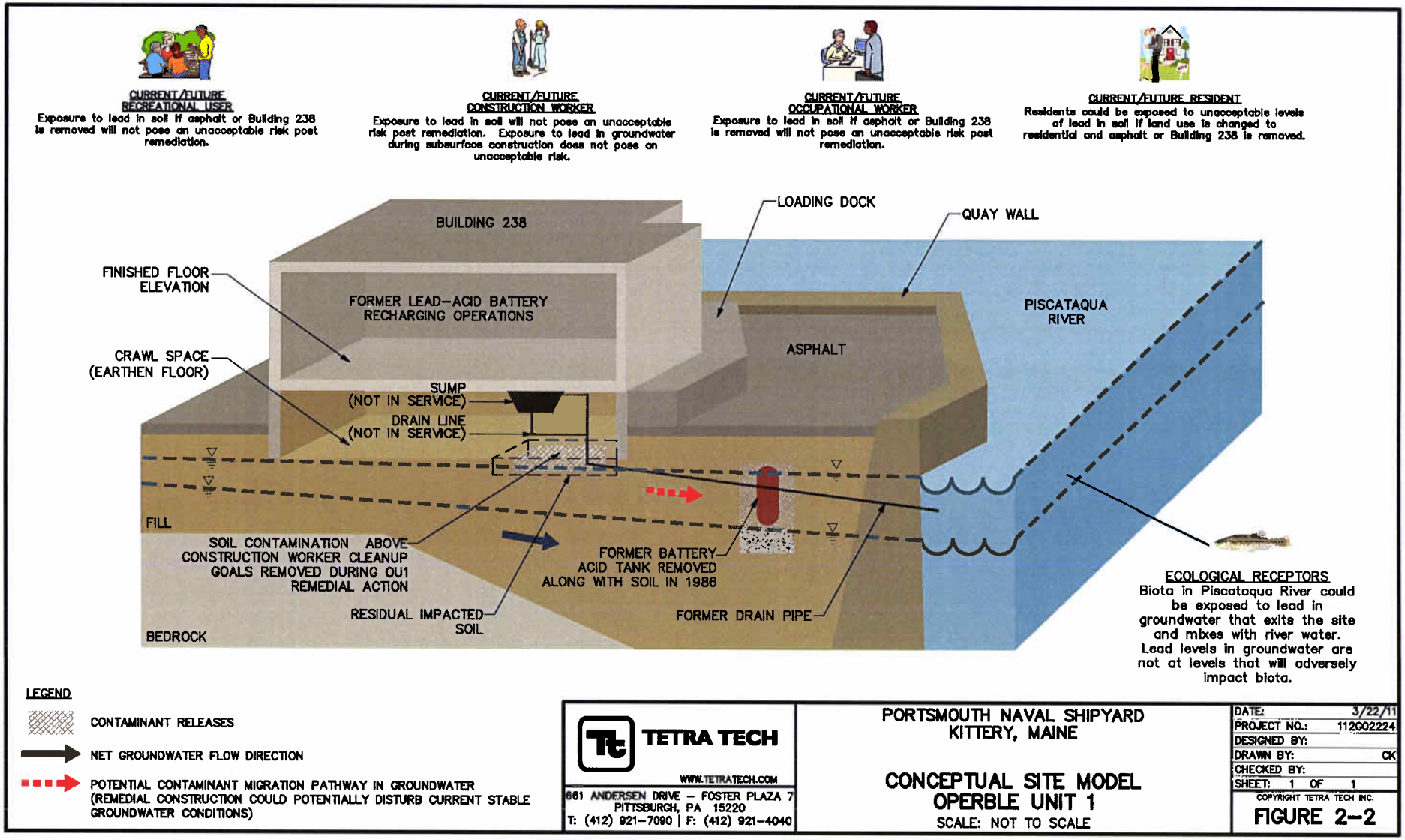

BACK CHANNEL AOC
SITE 34
DRY DOCKS AOC
BACK CHANNEL AOC
SITE 32
JAMAICA COVE AOC
SITE 31
SITE 5
SITE 30
SITE 11
SITE 10
SITE 9
SITE 8
DRY DOCKS AOC
CLARK COVE AOC
DRMO IMPACT AREA
DRMO STORAGE YARD AOC
SULLIVAN POINT AOC
PISCATAQUA RIVER
N
Aerial Photo Source:
2009 aerial photograph received from the USDA FAIP program.
Site 10 - Former Battery Acid Tank No. 2 4
Site 6 - Defense Reutilization and Marketing Office (DRMO) Storage Yard including DRMO Impact Area
Site 29 - Former Teepee Incinerator Site
Site 8 - Jamaica Island Landfill (JILF)
Site 9 - Former Mercury Burial Site
Site 11 - Former Waste Oil Tanks Nos. 6 & 7
Site 5 - Former Industrial Waste Outfalls
Offshore Areas potentially impacted by onshore IRP sites (Six Areas of Concern have been delineated)
Site 32 - Topeka Pier Site
Site 31 - West Timber Basin
Site 34 - Former Oil Gasification Plant, Building 62
Site 30 - Galvanizing Plant, Building 184
600 0 600
Feet
DRAWN BY J. ENGLISH DATE 11/03/11
CHECKED BY D. COHEN DATE 02/01/12
REVISED BY S. PAXTON DATE 02/01/12
SCALE AS NOTED
TETRA TECH
FACILITY SITE MAP
SECOND FIVE-YEAR REVIEW REPORT
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
CONTRACT NUMBER 2103
CTO NUMBER WE14
APPROVED BY DATE
APPROVED BY DATE
FIGURE NO. FIGURE 1-2
REV 0

Status of PNS Sites

Operable Unit (Site)	Current Status	Evaluated in Five-Year Review Report?
OU1 (Site 10)	Post-ROD Remedial Action Work Plan (RAWP) complete.	Yes
OU2 (Sites 6 and 29 and DRMO Impact Area)	ROD signed.	Yes
OU3 (Sites 8, 9, and 11)	Long-Term Management (LTMgt) ongoing.	Yes
OU4 (Site 5)	Feasibility Study (FS) in progress and interim remedy (Interim Offshore Monitoring) ongoing.	Yes
OU7 (Site 32)	Remedial Investigation (RI) completed and FS in progress.	No
OU8 (Site 31)	RI to be conducted.	No
OU9 (Site 34)	RI in progress.	No
Site 30 Screening Area	Removal Action in progress.	No


Operable Unit 1
6

Operable Unit 1 – Conceptual Site Model

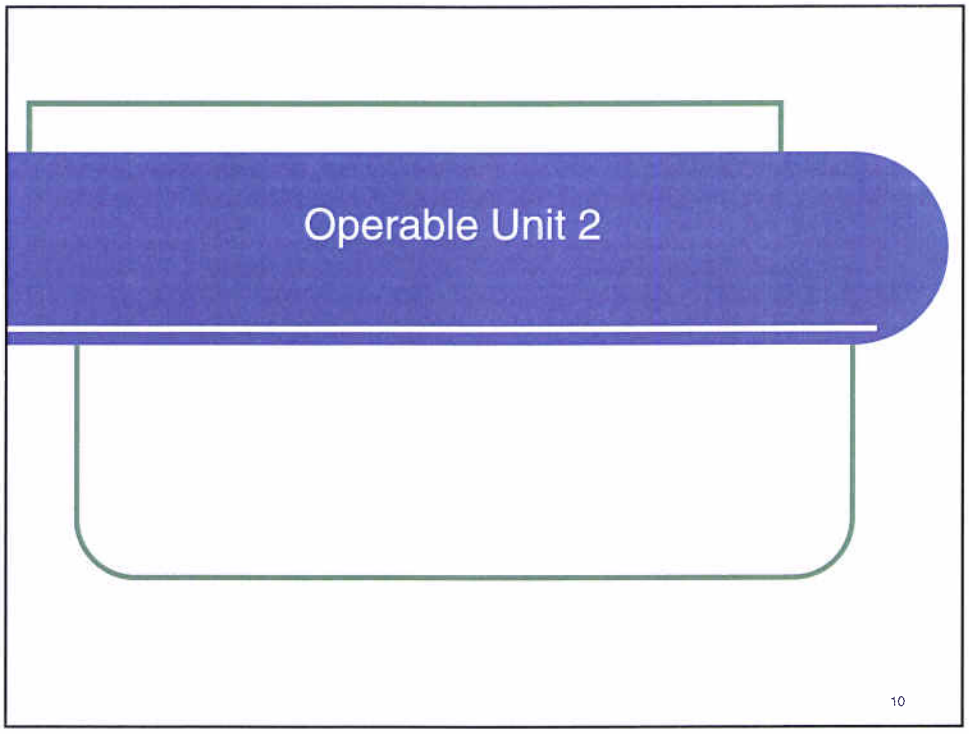


Operable Unit 1 Remedy as of Dec 2011

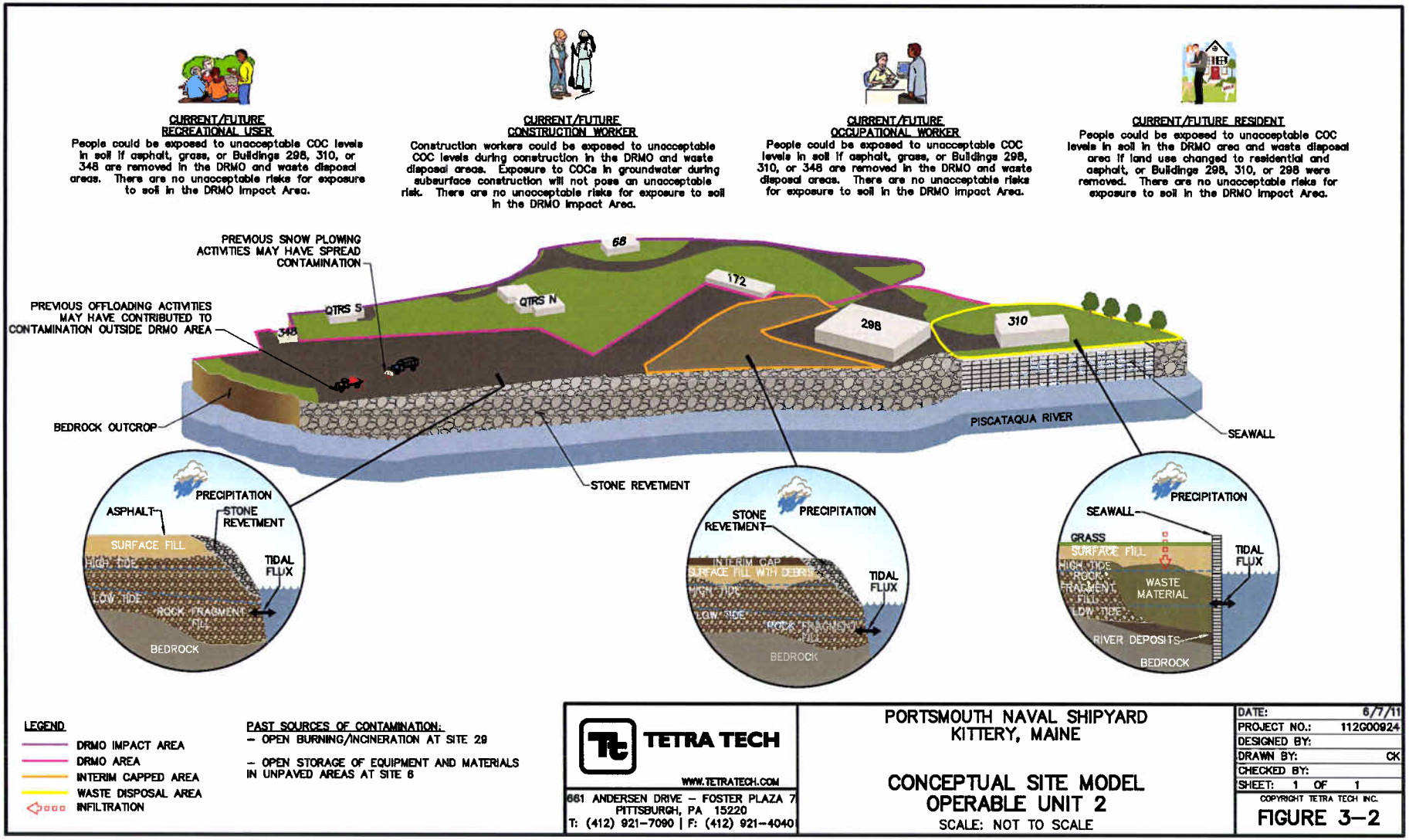
- ROD signed September 2010. Selected Remedy includes:
  - Excavation of lead-contaminated soil in crawl space.
  - Land use controls (LUCs).
  - Groundwater monitoring (limited, for lead).
  - Five-year reviews.
- Remedial action is being conducted:
  - Work Plan completed in October 2011; mobilized in November 2011.
  - Draft groundwater monitoring plan (August 2011).
  - Draft Final LUC Remedial Design (LUC RD) (November 2011).
- Final remedy to be implemented winter 2011-2012.

Five-Year Review for Operable Unit 1

- Review Items:
  - Documents reviewed included ROD and remedial action documents.
  - No change in ARARs or action levels.
  - Site inspection indicated no conditions presenting an immediate threat or current unacceptable risk.
- Technical Assessment, Issues, and Recommendations and Follow-up Actions:
  - There are no exposure concerns based on current site conditions, and no issues or recommendations/follow-up actions were identified.
- Protectiveness Statement:
  - The remedy at OU1 is expected to be protective upon completion.


Operable Unit 2

Operable Unit 2 – Conceptual Site Model

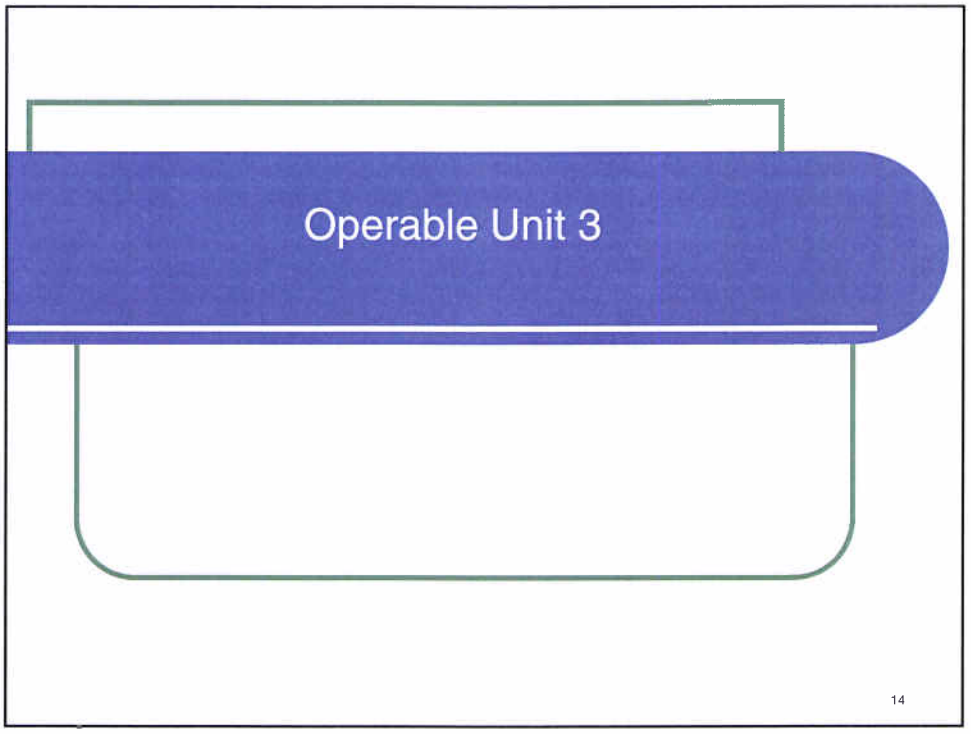


Operable Unit 2 Remedy

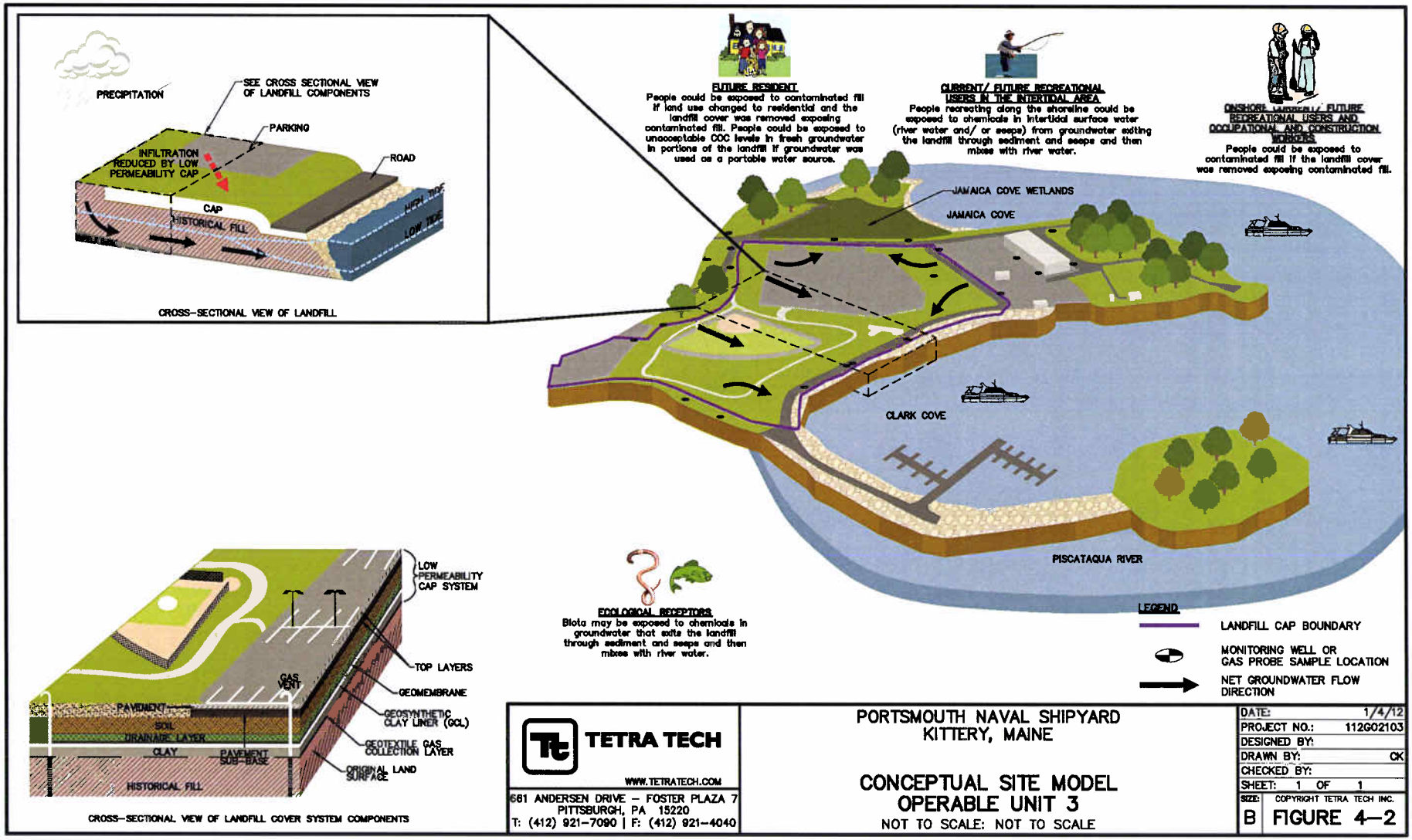
- ROD signed September 2011. Selected remedy includes:
  - Excavation and off-site disposal of surface soil and placement of a 2-foot-thick soil cover over remaining subsurface contaminated soil in the portion of Site 29 used for waste disposal.
  - Excavation and off-site disposal of contaminated soil posing a potential risk to industrial workers in the portion of Sites 6 and 29 excluding the waste disposal area.
  - LUCs for Sites 6 and 29.
  - Groundwater and sediment accumulation monitoring.
  - Five-year reviews for Sites 6 and 29.
  - No further action for the DRMO Impact Area.
- LUC RD and Remedial Design are being prepared.
- Remedy implemented planned for 2012 - 2013.

Five-Year Review for Operable Unit 2

- Review Items:
  - Documents reviewed included ROD.
  - No change in ARARs or action levels.
  - Site inspection indicated no conditions presenting an immediate threat or current unacceptable risk.
- Technical Assessment, Issues, and Recommendations and Follow-up Actions:
  - There are no exposure concerns based on current site conditions and no issues or recommendations/follow-up actions were identified.
- Protectiveness Statement:
  - The remedies at OU2 are expected to be protective upon completion.


Operable Unit 3

Operable Unit 3 – Conceptual Site Model



Operable Unit 3 Remedy

- ROD signed August 2001 and Explanation of Significant Difference Documents signed in September 2003 and October 2005. Selected remedy includes:
  - Excavation of fill material in portion of OU3 adjacent to Jamaica Cove and construction of a wetlands in the excavated area.
  - Multiple layer cover.
  - Shoreline controls.
  - LUCs and long-term monitoring and management.
  - Five-year reviews.
- Remedy implementation:
  - Construction conducted from 2002 to 2004.
  - LTMgt program began in 2006, and ten rounds have been conducted as of 2011.
  - First five-year review completed in 2007.

Five-Year Review for Operable Unit 3

Review Items:

- Documents reviewed included data evaluation reports, LTMgt plan update, and Round 10 Data Package.
- Changes in ARARs/criteria were used to update the human health and ecological action levels for the groundwater monitoring program
  - There were several action level updates.
  - None of these changes affect protectiveness.
- Site inspection was conducted on April 11, 2011 as part of Round 10 and made the following observations:
  - Land use remains unchanged.
  - Overall, site was in good condition and no major concerns.
  - Minor maintenance items were identified.
  - Ponding of water was observed in the soccer field.
  - Tilted gas vents and possible minor slope movement upslope of the eastern access road.

Five-Year Review for OU3 (cont.)

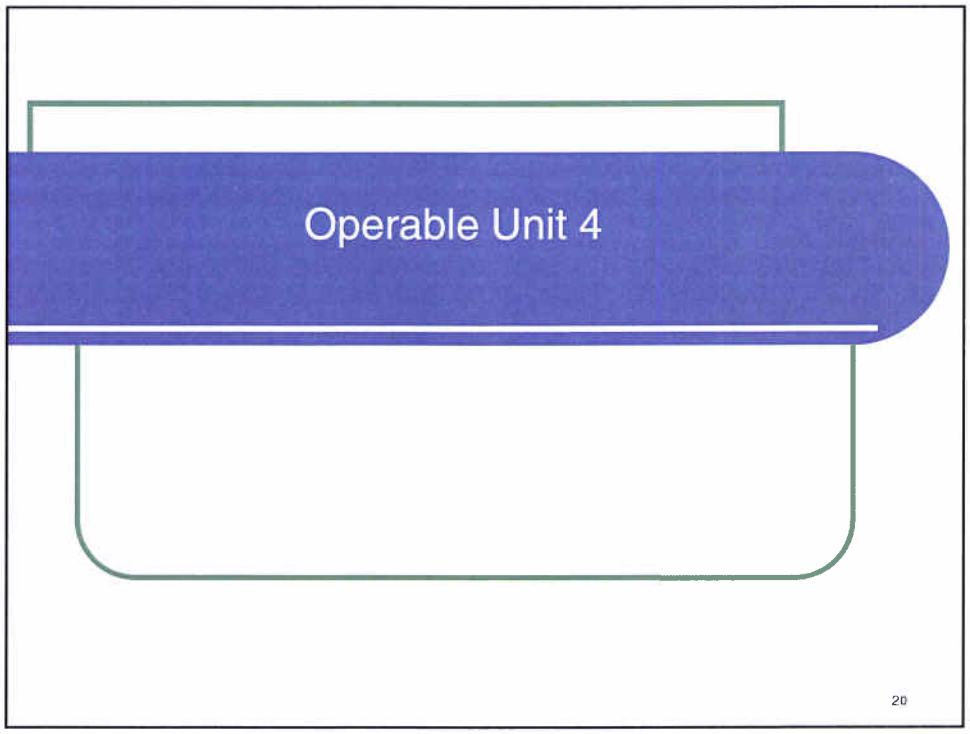
- The LUC RD was finalized in August 2011:
  - Included in the Navy's LUC Tracker.
  - Confirmed to be available at PNS and appropriate offices at Town of Kittery, Maine and City of Portsmouth, New Hampshire.
- Technical Assessment:
  - No deficiencies were determined.
  - Remedy is functioning as intended.
  - There have been no changes to exposure pathways, land uses, contaminants or contaminant sources.
  - Land fill gas and groundwater concentrations are at acceptable levels.
  - Gas vents on the northeast side of the cover, east of the JILF parking lot, were tilted and there is possible minor slope movement in this area.

18

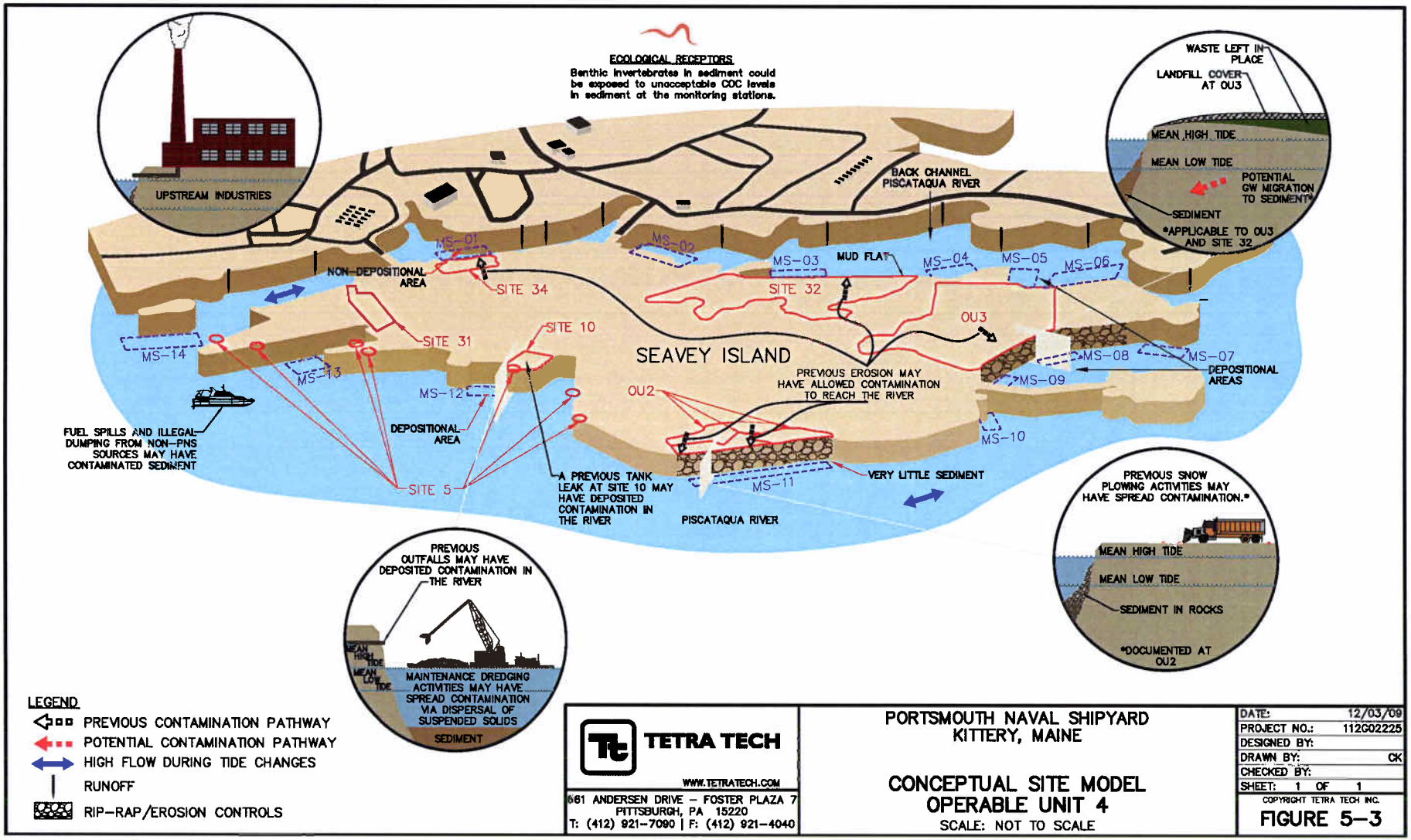
Five-Year Review for OU3 (cont.)

- Issues:
  - No current deficiencies or issues affecting protectiveness.
  - Tilting gas vents and possible minor slope movement may be indicators of potential landfill slope instability.
- Recommendations and Follow-up Action:
  - Investigate cause and condition of tilted gas vents and possible minor slope movement upslope of the east access road.
- Protectiveness Statement:
  - The OU3 remedy is currently protective of human health and the environment.

19


Operable Unit 4

Operable Unit 4 – Conceptual Site Model



Operable Unit 4 Interim Remedy

- Interim Record of Decision for Site 5 and six offshore Areas of Concern (AOCs) potentially impacted by onshore IR sites signed May 1999.
- Interim remedy includes monitoring of the offshore AOCs until a final remedy is implemented for OU4.
- Monitoring is being conducted in accordance with an interim offshore monitoring plan and specified data evaluation.
  - Rounds 1 through 10 in accordance with 1999 Rev 0.
  - Round 11 and subsequent in accordance with 2010 Rev 1.

Operable Unit 4 Interim Remedy (cont.)

- Eleven rounds of monitoring and two-phase additional scrutiny investigation were conducted as of December 2011.
  - Monitoring conducted at monitoring stations located within the various AOCs and at reference stations. Initially 14 monitoring stations and 4 reference stations included in program.
  - Modifications were made to the program based on evaluation of data after Rounds 4, 7, and 10.
  - After Round 7, additional scrutiny conducted at stations where additional investigation was needed to understand the nature and extent of contamination.
  - Results of Rounds 1 through 10 and additional scrutiny were used to prepare the draft FS for OU4 .

Operable Unit 4 Interim Remedy (cont.)

- Monitoring results were used to identify several onshore removal actions to reduce potential migration of contamination to the offshore areas.
- After Round 10, interim monitoring was eliminated at five monitoring stations (MS-2, -6, -10, -13, and -14) and all four reference stations prior to Round 11.
- The draft FS report, submitted in July 2010, has the following remedy considerations:
  - Remedial alternatives evaluated for five monitoring stations (MS-1, -3, -4, -11, and -12).
  - No further action for nine monitoring stations (MS-2, -5, -6, -7, -8, -9, -10, -13, and -14).

Five-Year Review for Operable Unit 4

Review Items:

- Documents reviewed included Rounds 1 through 10 data evaluation report, Interim Offshore Monitoring Plan Rev 1, and Round 11 Data Package.
- There were no changes in ARARs/criteria that affected the Interim Remediation Goals (IRGs).
- Site inspection indicated no conditions presenting an immediate threat or unacceptable risk.
  - Offshore of MS-3 and MS-4: Topeka Pier was removed in May 2011 and will be replaced in the future.
  - Construction for Building 178, onshore of MS-12, is planned.

Five-Year Review for OU4 (cont.)

- Technical Assessment
  - Interim remedy is functioning as intended.
  - Several monitoring locations do not require further interim monitoring and monitoring was discontinued after Round 10.
  - Portions of the offshore area requiring remedial action have been identified and the FS evaluates remedial options to support selection of a final remedy for OU4.
- Issues, Recommendations and Follow-up Action:
  - No issues were identified; therefore, there are no recommendations.
- Protectiveness Statement:
  - The interim remedy is protective of human health and the environment in the interim of a final remedy.

26

Base-Wide Protectiveness Statement

- OU1 and OU2:
  - Expected to be protective of human health and the environment upon implementation of the remedies.
  - There are no imminent threats to human health or the environment under the current land use scenarios.
- The OU3 remedy remains protective of human health and environment.
- The OU4 interim remedy is protective and is expected to remain protective of human health and the environment until a final remedy is selected.

27

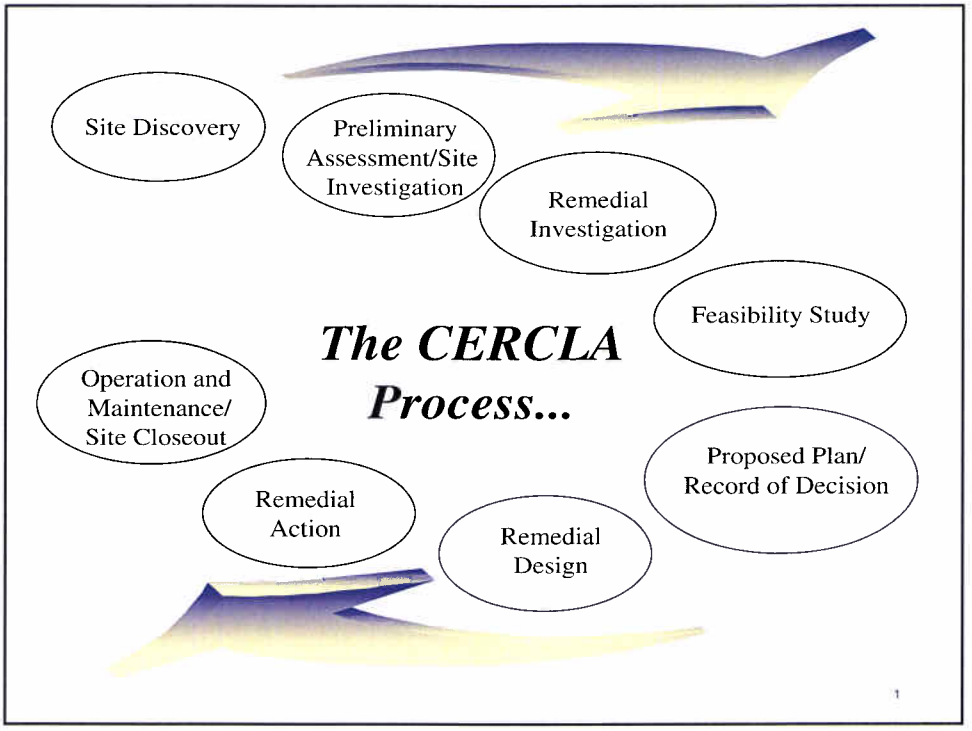
Next Review

- The next five-year review will be required within 5 years of the signature date of this review, June 2017.
- The next review will include OUs that have signed RODs by 2016 that do not allow for unlimited use and unrestricted exposure.
- The DRMO Impact Area was remediated to levels that allow for UU/UE so that five-year reviews are no longer required for this area.

Process for Removal and Remedial Actions

Portsmouth Naval Shipyard
Restoration Advisory Board Meeting
March 6, 2012

Presenter:
Linda Cole, NAVFAC Mid-Atlantic



Removal Action Process

- Conducted as a final remedy or interim action followed by a remedial action:
  - Time critical: planning period short and field work must be initiated within 6 months or less
  - Non-time critical: have at least 6 months planning period before initiating field work
- Documentation for Removal Actions:
  - Engineering Evaluation/Cost Analysis (EE/CA) (non-time critical only)
  - Action Memorandum
  - Removal Action Work Plan
  - Construction Completion Report, includes documentation of field changes

Removal Action Process - Continued

- For Sites in PA/SI stage:
  - Decision Document is prepared for No Further Action, or
  - If further action is necessary may require
    - RI/FS for further investigation
    - Record of Decision (ROD) for further action (e.g., long-term monitoring)
- For Sites in RI/FS stage:
  - ROD is prepared for no further action or further action

Removal Actions at PNS Sites

- Site 30 (PA/SI Stage):
  - Removal action conducted before determining NFA or RI/FS
  - Preliminary results indicate risks have been addressed to allow for unlimited use and unrestricted exposure (UU/UE)
  - The Navy is planning to prepare a Decision Document
- OU2 DRMO Impact Area (RI/FS Stage):
  - Removal action addressed risks to allow for UU/UE
  - OU2 ROD documents NFA for DRMO Impact Area
- OU9 Site 34 (RI/FS Stage):
  - Removal action address majority of site risks
  - RI/FS is being conducted before a ROD

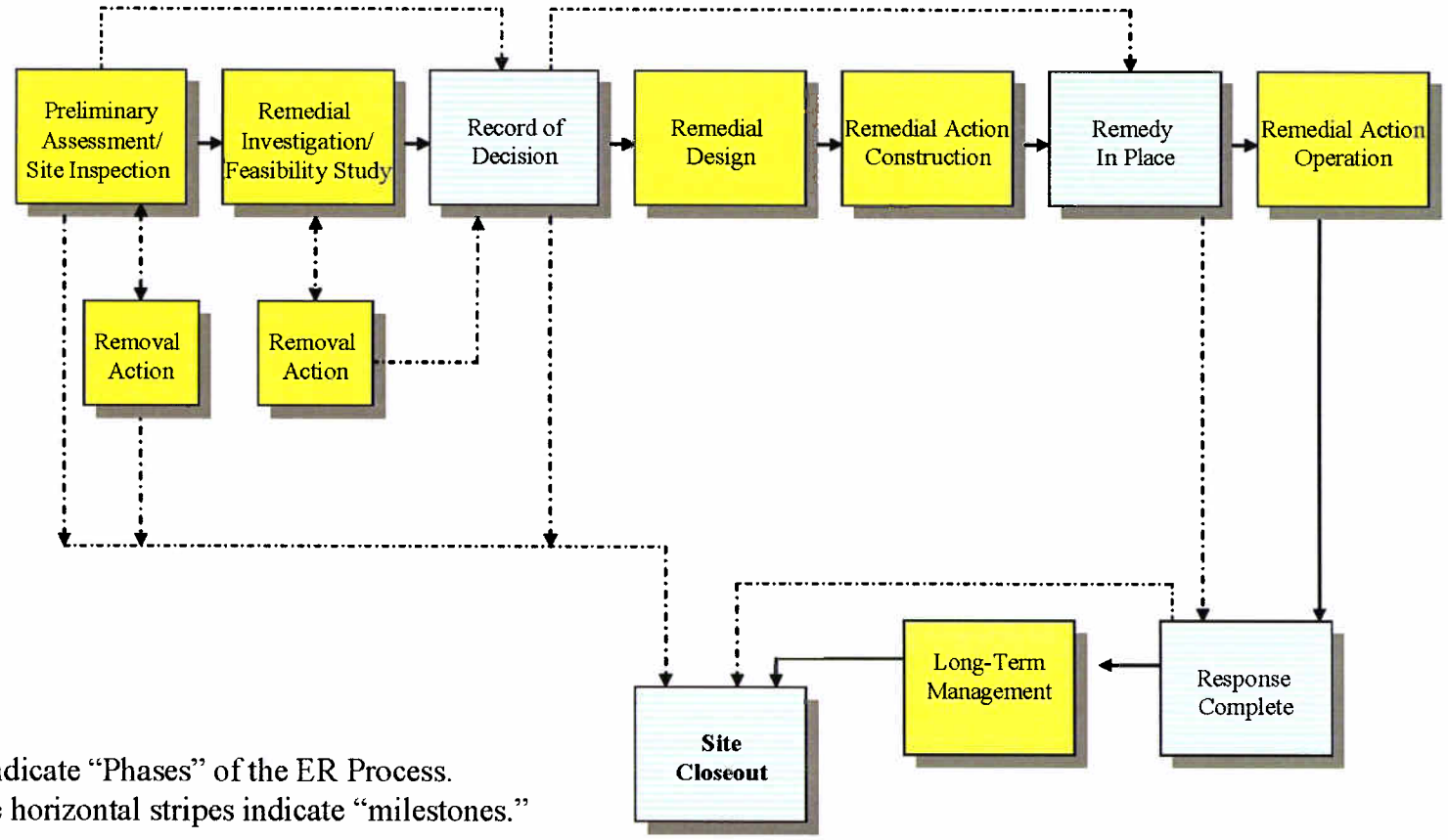
Remedial Action Process

- After Record of Decision is signed, remedial action documents are prepared to implement the remedy.
- Documentation may include:
  - Remedial Design
  - Remedial Action Work Plan
  - Construction Completion Report, includes documentation of field changes
  - Remedial Action Completion Report
  - Long-Term Management Plan
  - Five-Year Review Reports

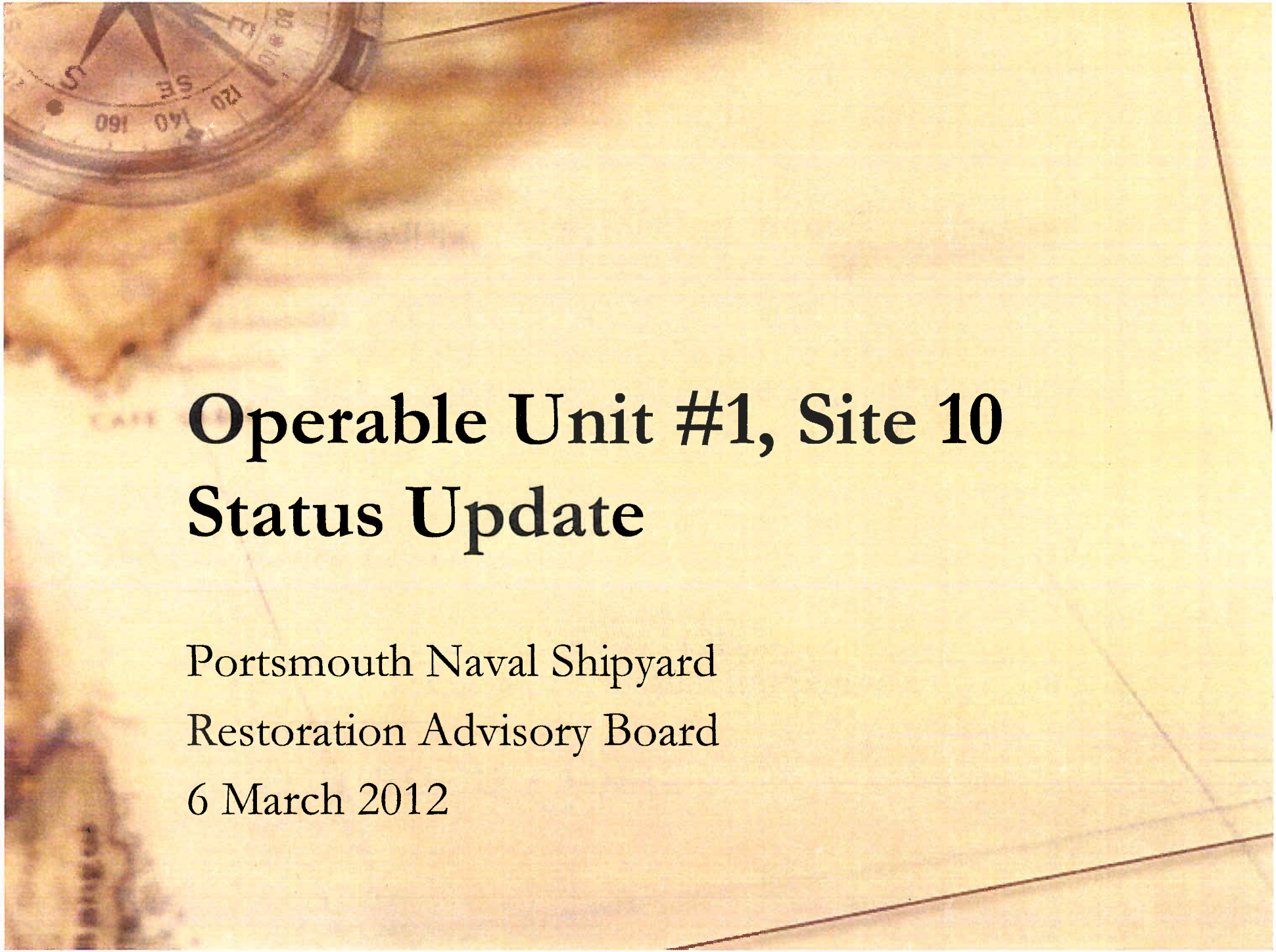
Reporting of Field Changes During Process

- Site conditions may require field changes from the work plan during removal and remedial actions
  - Change requests or other documentation prepared
  - Discussed with regulators
  - Reported as part of Construction Completion Report
- For example for Site 30 removal action
  - Field changes discussed with regulators and will be documented in Construction Completion Report
  - Decision Document will document that risks have been addressed

DON Environmental Restoration Process – Phases and Milestones



Notes:
Yellow boxes indicate "Phases" of the ER Process.
Boxes with blue horizontal stripes indicate "milestones."



Operable Unit #1, Site 10 Status Update

Portsmouth Naval Shipyard

Restoration Advisory Board

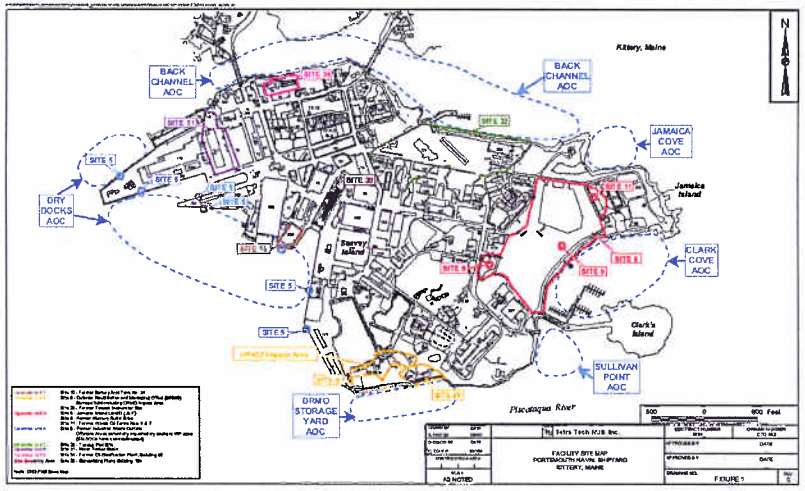
6 March 2012

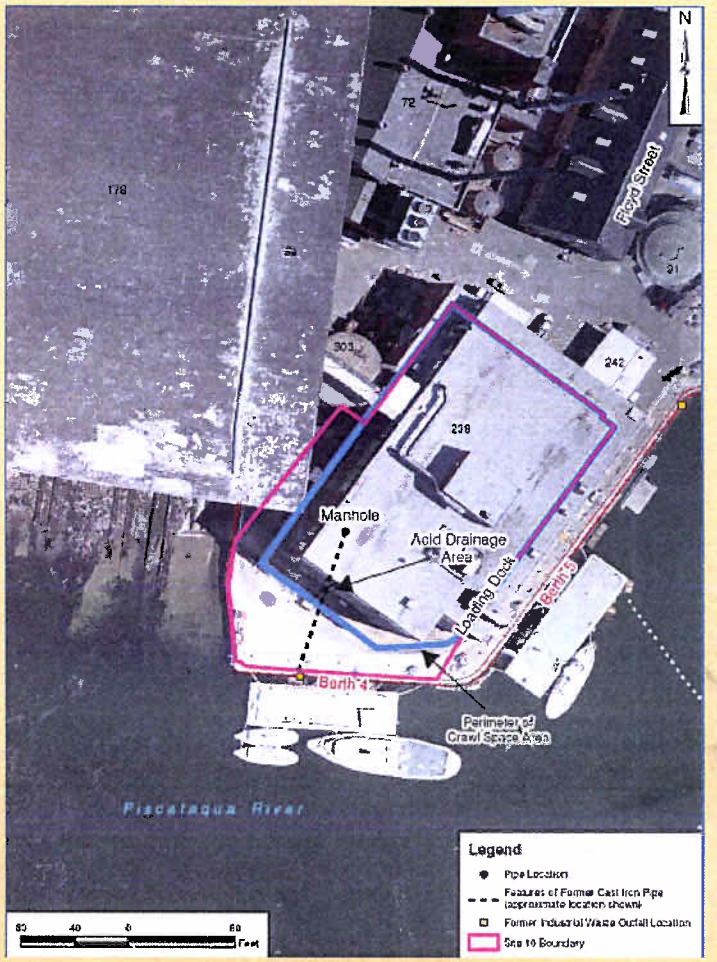
Presentation Goals

Provide an Overview of the Ongoing Remedial Action and Groundwater Monitoring at OU #1, Site 10

- Site Background/Layout
- Remedial Action Activities
- Confirmatory Sampling/Preliminary Remediation Goals
- Remedial Action Status and Schedule
- Post Remedial Groundwater Monitoring Update

Site Layout


Kittery, Maine
BACK CHANNEL AOC
BACK CHANNEL AOC
JAMAICA COVE AOC
DRY DOCKS AOC
CLARK COVE AOC
SULLIVAN POINT AOC
DRMO STORAGE YARD AOC
Piscataqua River
Jamaica Island
Clark's Island
Seavey Island
N
FACILITY SITE MAP
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
FIGURE 1


N
Floyd Street
Manhole
Acid Drainage Area
Loading Dock
Berth 3
Berth 4
Perimeter of Crawl Space Area
Piscataqua River
Legend
Pipe Location
Features of Former Cast Iron Pipe (approximate location shown)
Former Industrial Waste Outfall Location
Site 10 Boundary
80 40 0 80
Feet

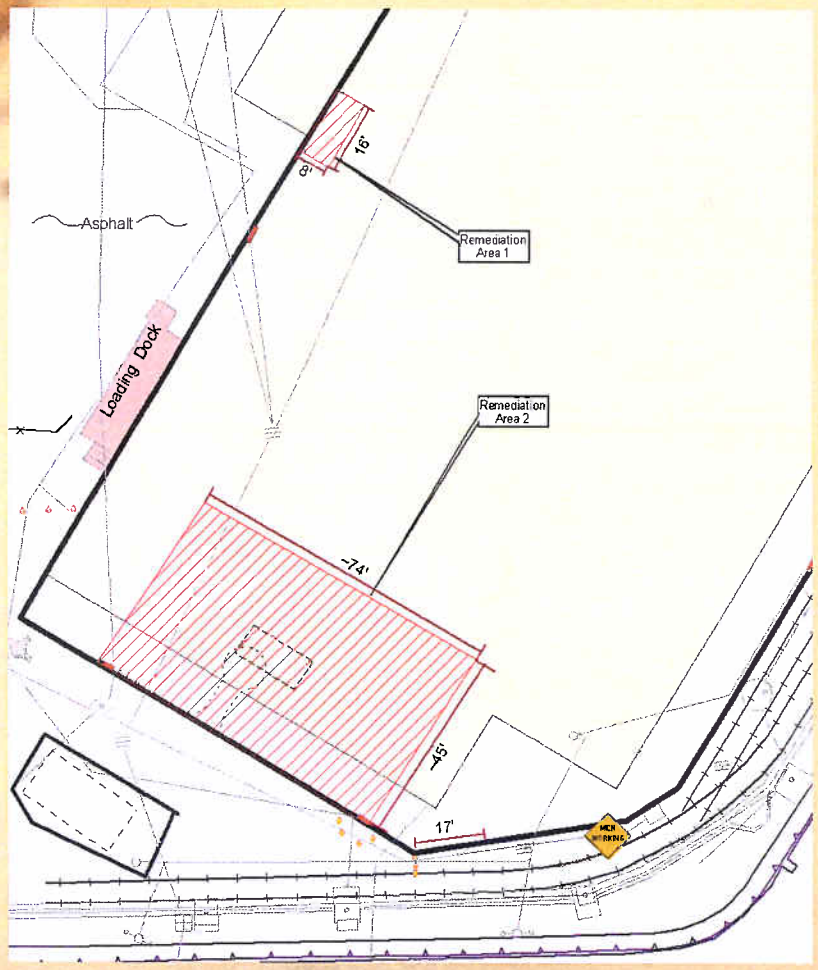
Site Background

- Remedial Action focuses on areas beneath former drain lines from Building 238.
- Previous Activities at OU#1, Site 10
  - Former Lead Battery Recharging Facility
  - Direct Discharge of Lead-Contaminated Acid Wastewater Through Industrial Outfall
  - Storage of Lead-Contaminated Acid Wastewater in a UST

Remedial Action Activities

- Installation of Project Safety Controls
- Excavation of Contaminated Soils
- Confirmatory Sampling
- Transportation and Disposal of Contaminated Soils
- Backfill/Site Restoration

Excavation of Contaminated Soils

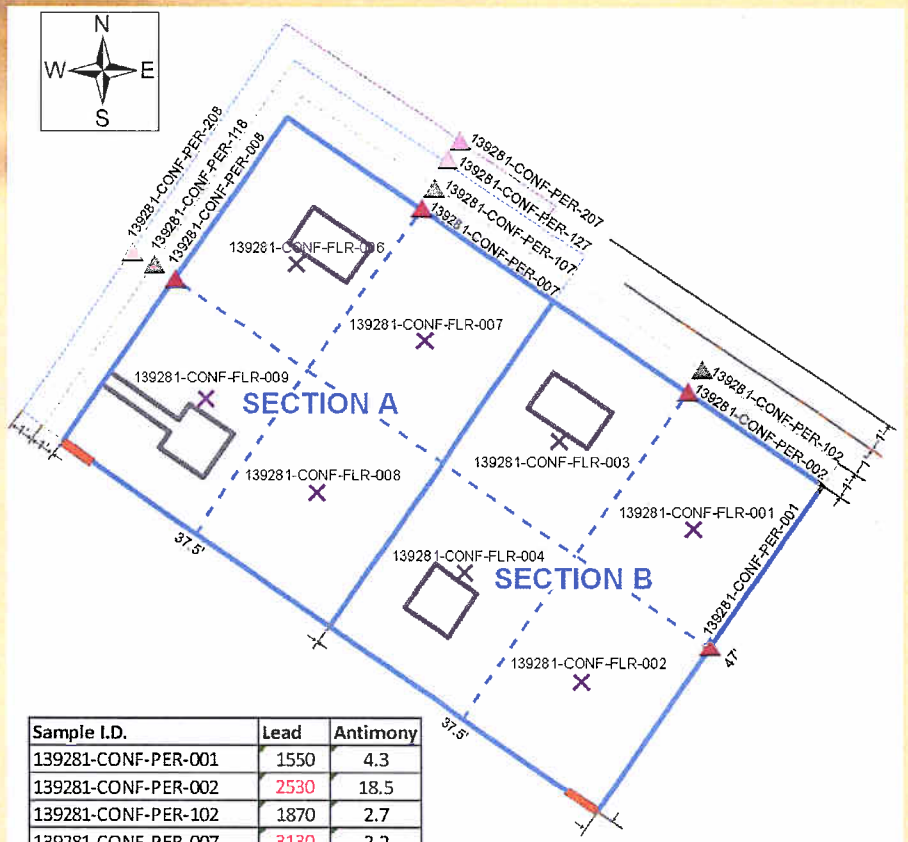


- Excavation to a depth of 3 feet b.g.s. as dictated by the ROD (Navy, 2010)
- Excavation was completed by hand utilizing electric hammers, shovels, and picks
- Material consisted of soil, degraded rock, and fragmented rock
- Material moved utilizing electric conveyors
- Material was transported utilizing a lined covered dump truck to the DRMO Storage Yard
- Material was stockpiled in 100 yard lined, secure cells for characterization

Confirmatory Sampling

- Sidewall samples collected per the Work Plan
  - Additional excavation based on sample results in 1 foot increments
  - Samples collected after additional excavations (see figure)
- Floor samples collected per the Work Plan
  - Large excavation 8 quadrants sampled
  - Small excavation 1 quadrant sampled

Contaminant	Surface Soil Remediation Goal (mg/kg)	Exposure Scenario
Lead	2,000	Construction Worker Exposure
Antimony	73	Future Resident Exposure



Sample I.D.	Lead	Antimony
139281-CONF-PER-001	1550	4.3
139281-CONF-PER-002	2530	18.5
139281-CONF-PER-102	1870	2.7
139281-CONF-PER-007	3130	2.2
139281-CONF-PER-107	9780	3.5
139281-CONF-PER-207	3430	3.4
139281-CONF-PER-008	5230	91.6
139281-CONF-PER-118	2770	75.2
139281-CONF-PER-208	1030	1.1
139281-CONF-PER-127	4680	10.5
139281-CONF-FLR-001	11300	43.6
139281-CONF-FLR-002	2040	6.8
139281-CONF-FLR-003	7390	23
139281-CONF-FLR-004	2430	5.1
139281-CONF-FLR-006	3230	4.9
139281-CONF-FLR-007	4980	11.8
139281-CONF-FLR-008	13200	12.1
139281-CONF-FLR-009	5650	11.6

ALL RESULTS REPORTED IN mg/kg

15 7.5 0 15 Feet

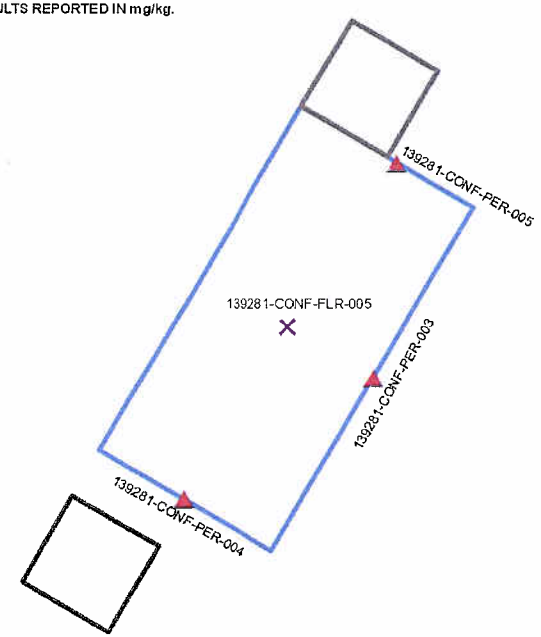
Step-out Sample Distances Not to Scale.

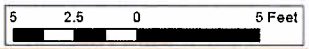
Legend:

- 5 Point Composite Floor Sample
- 5 Point Composite Sidewall Sample
- 5 Point Composite Sidewall Sample 1 Foot Out
- 5 Point Composite Sidewall Sample 2 Feet Out
- 5 Point Composite Sidewall Sample 3 Feet Out
- DIM
- 1-Foot Step Out
- 2-Foot Step Out
- 3-Foot Step Out
- Concrete Pier
- Quadrant
- Section
- Approximate Location of 2'x2' Vent Openings

Sample I.D.	Lead	Antimony
139281-CONF-PER-003	504	0.66
139281-CONF-PER-004	522	0.51
139281-CONF-PER-005	1210	2.6
139281-CONF-FLR-005	1840	2

ALL RESULTS REPORTED IN mg/kg.





Legend:

- 5 Point Composite Floor Sample
- 5 Point Composite Sidewall Sample
- Concrete Pier
- Section

Transportation and Disposal of Contaminated Soils

- Excavated soils currently staged at the DRMO Storage Yard in 100 cubic yard increments
- Total of 400 Cubic Yards (600 Tons)
- SoilEx – Selected Facility based on Lead Results <5,000 ppm
- Soils will be transported to disposal facility
- Soils will be disposed of at the approved facility

Site Restoration Activities

- Place geotextile barrier within excavations
- Place virgin stone into excavation, restoring to original grade
- Remove project safety controls
- Restore Building 238 crawl space vent structures to original conditions
- Mill and pave the area surrounding the southern End of OU #1 (LUC requirement of ROD)

Remedial Action Project Closeout

- Prepare Construction Completion Report: documents all field activities
  - Text with tables and figures
  - Copies of laboratory reports
  - Survey of Project areas
  - Photo documentation
  - Copies of disposal documentation
- Provide to Navy, USEPA, and MEDEP for review

Remedial Action Status and Schedule

- Remedial Action
  - Ongoing, Scheduled Completion 30 Days
- Completion Report
  - Draft Spring 2012
  - Draft Final Summer 2012
  - Final Summer 2012

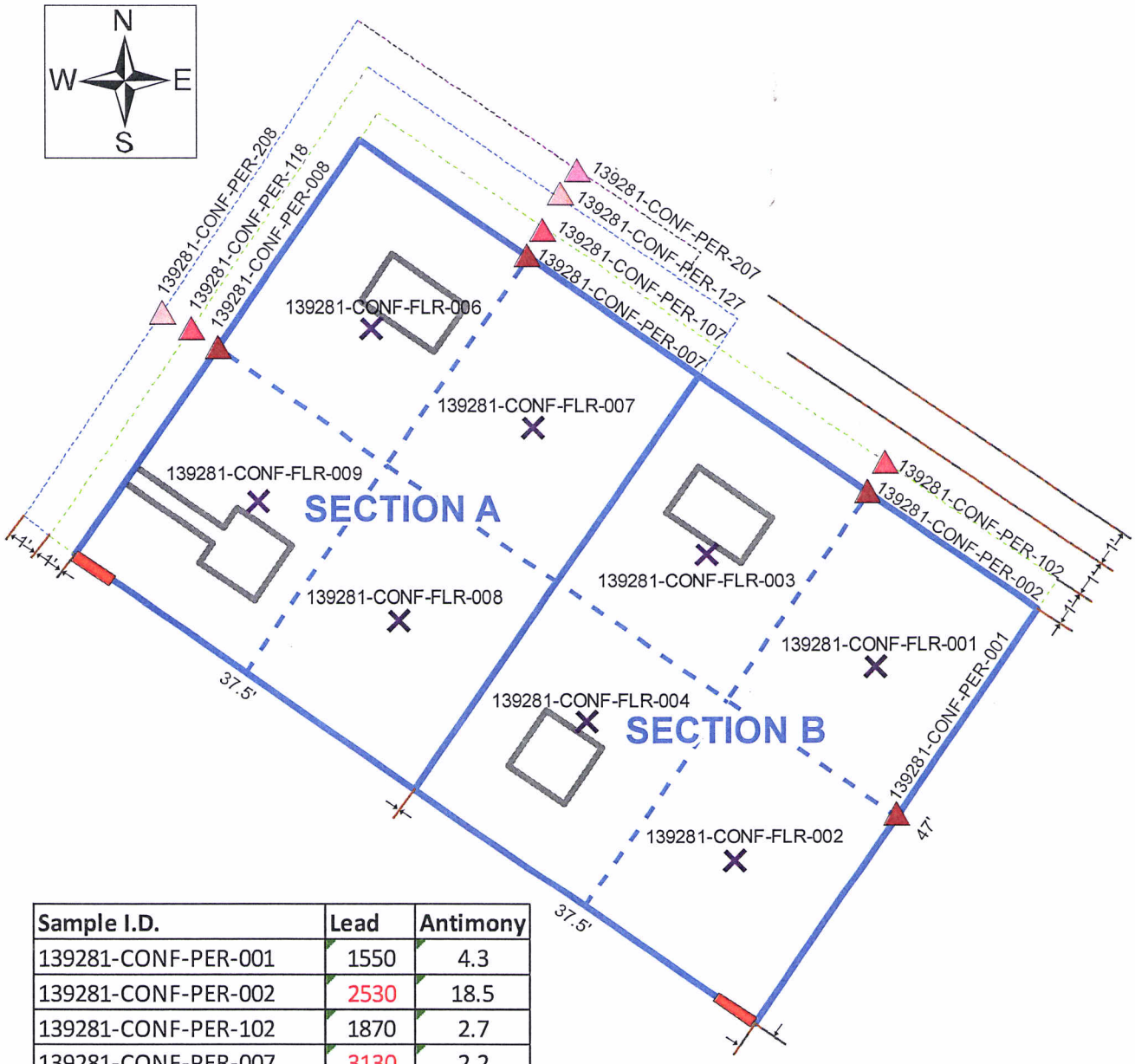
Post Remedial Groundwater Monitoring

- Post Remedial Groundwater Monitoring
  - Requirement of ROD to confirm lack of GW impacts from soil remedial action
    - Analysis of GW samples for total and dissolved lead
  - Two rounds of data collection required per OU1 SAP
    - First round one to two weeks after remedy completion
    - Second round approximately three to nine months after first round dependent upon results of first round
  - First round of samples collected on 16 Feb 2012
    - Preliminary results indicate all lead concentrations are less than PAL
    - Upon validation of preliminary results a data package will be prepared
    - Second round of sampling tentatively will occur in Nov 2012

Questions or Comments?

For additional information contact:

Linda Cole
NAVFAC Mid-Atlantic
9742 Maryland Avenue
Building Z-144, Code OPTE3-2
Norfolk, VA 23511
757-341-2011
linda.cole@navy.mil



Sample I.D.	Lead	Antimony
139281-CONF-PER-001	1550	4.3
139281-CONF-PER-002	2530	18.5
139281-CONF-PER-102	1870	2.7
139281-CONF-PER-007	3130	2.2
139281-CONF-PER-107	9780	3.5
139281-CONF-PER-207	3430	3.4
139281-CONF-PER-008	5230	91.6
139281-CONF-PER-118	2770	75.2
139281-CONF-PER-208	1030	1.1
139281-CONF-PER-127	4680	10.5
139281-CONF-FLR-001	11300	43.6
139281-CONF-FLR-002	2040	6.8
139281-CONF-FLR-003	7390	23
139281-CONF-FLR-004	2430	5.1
139281-CONF-FLR-006	3230	4.9
139281-CONF-FLR-007	4980	11.8
139281-CONF-FLR-008	13200	12.1
139281-CONF-FLR-009	5650	11.6

ALL RESULTS REPORTED IN mg/kg

15 7.5 0 15 Feet

Step-out Sample Distances Not to Scale.

Legend:

- 5 Point Composite Floor Sample
- 5 Point Composite Sidewall Sample
- 5 Point Composite Sidewall Sample 1 Foot Out
- 5 Point Composite Sidewall Sample 2 Feet Out
- 5 Point Composite Sidewall Sample 3 Feet Out
- DIM
- 1-Foot Step Out
- 2-Foot Step Out
- 3-Foot Step Out
- Concrete Pier
- Quadrant
- Section
- Approximate Location of 2'x2' Vent Openings

REV	1
06/23/2011	
UPDATED FOR PLANNING COMMITTEE	

REVISIONS

Shaw Environmental & Infrastructure, Inc.
500 East Main Street, Suite 1630
Norfolk, Virginia 23510

DESIGNED BY	JEW	02/23/2012	CHECKED BY	WLD	02/23/2012
DRAWN BY	TFR	02/23/2012	05/17/2011	FP	02/23/2012

DEPARTMENT OF NAVY
NAVAL FACILITIES ENGINEERING COMMAND
LEAD-CONTAMINATED SOIL REMOVAL
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
NAVFAC Naval Facilities Engineering Command
OPERABLE UNIT #1, SITE 10, BUILDING 238
SAMPLE LOCATIONS

SCALE:	SIZE:
AS SHOWN	1

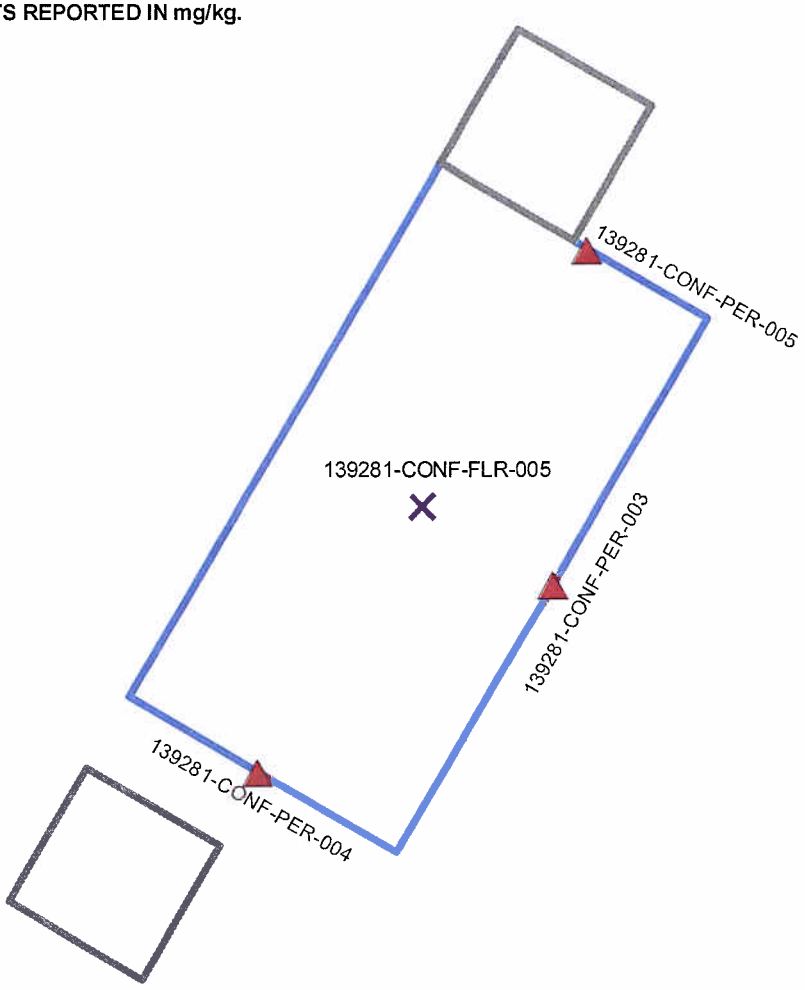
CONTRACT TASK ORDER: WE020
CONTRACT NO.: N62470-08-D-1007
NAVFAC DRAWING NO.

FIGURE -

N:\Maine\Kittery\GIS\bldg238\Site10_139281-Samples2.mxd Teresa.Robinson

Sample I.D.	Lead	Antimony
139281-CONF-PER-003	504	0.66
139281-CONF-PER-004	522	0.51
139281-CONF-PER-005	1210	2.6
139281-CONF-FLR-005	1840	2

ALL RESULTS REPORTED IN mg/kg.



Legend:

- 5 Point Composite Floor Sample
- 5 Point Composite Sidewall Sample
- Concrete Pier
- Section

5 2.5 0 5 Feet

REV	1	06/23/2011	UPDATED FOR PLANNING COMMITTEE

REVISIONS

Shaw Environmental & Infrastructure, Inc.
500 East Main Street, Suite 1630
Norfolk, Virginia 23510

DESIGNED BY	JEW	02/23/2012	CHECKED BY	WLD	02/23/2012
DRAWN BY	TFR	02/23/2012	05/17/2011	FP	02/23/2012

DEPARTMENT OF NAVY
NAVAL FACILITIES ENGINEERING COMMAND
LEAD-CONTAMINATED SOIL REMOVAL
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
NAVFAC Naval Facilities Engineering Command

OPERABLE UNIT #1, SITE 10, BUILDING 238
SAMPLE LOCATIONS

SCALE: AS SHOWN
SIZE: 1
CONTRACT TASK ORDER: WE020
CONTRACT NO.: N62470-08-D-1007
NAVFAC DRAWING NO.

FIGURE -