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# MINUTES AND AGENDA FOR RESTORATION ADVISORY BOARD MEETING HELD 29 MARCH 2011 NSY PORTSMOUTH ME

03/29/2011

NAVFAC MID ATLANTIC

# RESTORATION ADVISORY BOARD MEETING
# PORTSMOUTH NAVAL SHIPYARD
# KITTERY TOWN HALL, KITTERY, MAINE
# March 29, 2011

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

- RAB Community members – Doug Bogen, Jon Carter, Michele Dionne, and Mary Marshall.
- Navy RAB members – Lisa Joy, Portsmouth Naval Shipyard (PNS), and Linda Cole, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Remedial Project Manager (RPM)
- Regulatory representative – Iver McLeod, Maine Department of Environmental Protection (MEDEP).

Absent RAB members included the following:

- RAB Community members – Peter Britz, Jack McKenna, Diana McNabb, Onil Roy, and Roger Wells.

Guests at the RAB included:

- Carl Baxter of New Hampshire Department of Environmental Services (NHDES)
- Matt Thyng of PNS
- Bill Deane and Fred Poulin from Shaw Environmental & Infrastructure, Inc. (Shaw E&I).
- Debbie Cohen, Matt Kraus, and Dan Witt from Tetra Tech NUS, Inc. (Tetra Tech).
- Carolyn Lepage, Technical Assistance Grant (TAG) technical advisor to Seacoast Anti-Pollution League (SAPL).

## INTRODUCTION

The meeting was opened by Doug Bogen (RAB Community 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. Lisa Joy (RAB Navy Co-Chair) encouraged continued open dialogue during RAB meetings.

**STATUS OF WORK AND REGULATOR UPDATES**

Linda Cole, NAVFAC Mid-Atlantic RPM, reviewed the update on the status of work at Operable Unit (OU) 1, OU2, OU3, OU4, OU7, OU9, and Site 30. The presentation is attached to the minutes.

The information on spending in Fiscal Year (FY) 2010, planned spending in FY11, and estimated cost-to-complete is the same as the information presented at the September 21, 2010, RAB meeting. Ms. Cole noted that the only change is that all FY11 funding has been obligated. Ms. Cole has been working on the preliminary FY12 spending plan. She is expecting full funding for FY12 activities that should include the remedial action for OU2 (Sites 6 and 29). In answer to a question about the estimated time for completion of remedial activities, Ms. Cole indicated that the goal is to have all response actions complete by FY2020; however, remedies that require long-term management and monitoring would continue past this date, based on the requirements that would be specified in the management and monitoring plans for the site.

The following are highlights of the updates on the OUs:

- OU1 (Site 10 - Former Battery Acid Tank No. 24): As indicated at the December 7, 2010, RAB, the Record of Decision (ROD) was signed in September 2010. The draft Remedial Action Work Plan was submitted in January 2011, and the draft Land Use Control Remedial Design (LUCRD) was submitted in December 2010. These documents are still under regulatory review/comment resolution. The long-term management plan for OU1 is being prepared. Ms. Cole indicated that the Navy is anticipating conducting the field work for the remedial action this summer.

- OU2 [Site 6 - Defense Reutilization and Marketing Office (DRMO) Storage Yard, Site 29 – Former Teepee Incinerator Site, DRMO Impact Area (Quarters S, N, & 68)]: The Navy completed resolution of regulatory comments on the Feasibility Study (FS) Report, and the document will be finalized in April 2011. The Navy is preparing the draft Proposed Remedial Action Plan (PRAP). After regulatory comments on the draft PRAP are resolved, a public comment period on the PRAP will be held, and the ROD will be prepared after the public comment period ends. The Navy is working toward a goal of finalizing the ROD in FY11 (September 2011). To meet this goal, the Navy would like to have the public comment period on the PRAP from mid-June to mid-July. Ms. Cole indicated that pre-design investigation sampling (to delineate the western boundary of contaminated soil at Site 6) is scheduled for April 2011. The DRMO Impact Area Removal Action work is progressing, and final site restoration is near completion. (After the status presentation, Ms. Cole showed photographs of the DRMO Impact Area after soil excavation activities were completed.)

- 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 & 7]: The Post-Remedial Operation, Maintenance, and Monitoring (OM&M) program continues. Round 10 sampling and inspection will be conducted in April 2011. The Round 10 sampling will support the next 5-year review. The Navy is resolving comments on the draft Round 1 to 9 data evaluation report and is anticipating finalizing the report shortly. The Navy and United States Environmental Protection Agency (USEPA) are continuing to resolve comments on the draft final LUCRD. Navy legal and USEPA legal need to resolve some final differences on standard Navy and USEPA LUCRD wording. It was noted that the Navy, with USEPA and MEDEP RPM input, continues to meet the intent of the LUCs for this site in the absence of a final LUCRD.

- OU4 (Site 5 – Former Industrial Waste Outfalls and Offshore Areas Potentially Impacted by PNS Onshore IRP Sites): The Interim Offshore Monitoring Program continues. Round 11 sampling will be conducted in April 2011. The draft FS Report is still under regulatory review/comment resolution. The interim remedy (monitoring) will continue until the final remedy for OU4 is implemented.

- OU7 (Site 32 – Topeka Pier Site): The draft Remedial Investigation (RI) Report was submitted in early October and regulatory comments are being resolved.

- OU9 (Site 34 – Former Oil Gasification Plant, Building 62): The draft RI Report was submitted in February 2011, and the document was presented at this RAB meeting. This document is still under regulatory review.

- Site 30 – Former Galvanizing Plant, Building 184: The draft removal action work plan is being prepared for removal of the tank vault within Building 184 at Site 30, in accordance with the December 2010 Action Memorandum. The Navy would like to have the removal action implemented this summer.

- Community Involvement Plan (CIP): The CIP is an update to the 1996 Community Relations Plan (CRP). As part of the update, the Navy conducted face-to-face interviews and telephone interviews in March 2011. The draft CIP will be provided for regulatory and RAB review, and the Navy anticipates finalizing the plan in August 2011. The Navy would like to provide a presentation on the CIP at the next RAB meeting. Facility CIPs are generally updated every 10 years and as needed based on changes in the status of a facility or community relations needs for a facility. The plan is used to assist the Navy in determining how best to provide information on environmental restoration to the community.

Ms. Cole showed photographs of the backyards of Quarters S and N where removal of contaminated soil was conducted. It was noted that there was a fence between the backyards of the quarters and the DRMO that was removed during the removal action. This fence will be replaced as part of the spring site restoration activities. In answer to a question about the Navy's future plans for the quarters, Ms. Cole indicated that the Navy has not determined whether to change the current use for the properties (military residences).

**REGULATOR UPDATE**

**USEPA** --- Matt Audet, USEPA RPM, was not able to attend the meeting.

**MEDEP** --- Iver McLeod indicated that MEDEP is reviewing various documents and responses to comments on documents. Comments have been submitted on the draft OU1 Remedial Action Work Plan. The one remaining comment on the draft final OU2 FS Report was resolved during the March 29, 2011, RPM call. MEDEP has no further comments on the responses to comments on the draft OU3 Rounds 1 to 9 Report. MEDEP is reviewing the responses to comments on the draft OU7 RI Report and is reviewing the draft OU9 RI Report. Mr. McLeod noted that based on Maine's remediation guidelines, OU9 soil concentrations do not represent a concern.

**MUNITIONS RESPONSE SITE PRIORITIZATION PROTOCOL**

Ms. Cole provided a presentation on the Munitions Response Site Prioritization Protocol. The presentation is attached to the minutes.

Ms. Cole began by explaining that as part of the Munitions Response Program (MRP), one site was identified at PNS. It was a small arms range that was closed when Building 357 was built. The evaluation of this site was conducted in the 2005 to 2006 time frame, and it was determined that no further action was needed for the site because it had been adequately closed as part of the construction of Building 357 over the former site. However, at the time the evaluation was conducted, the Navy did not provide the appropriate community participation activities, including a newspaper notice and presentation at a RAB meeting. Therefore, Ms. Cole is presenting this information to the RAB to meet this requirement. (The newspaper notice was provided in the March 22, 2011, legal notices in the Portsmouth Herald and Fosters Daily Democrat.)

Ms. Cole explained that the MRP addresses munitions and explosives of concern (MEC) at other-than-operational ranges and other sites such as munitions burial locations. The MRP separates sites into two categories, sites needing further investigation and areas that need no further action because they are

being addressed as part of the Installation Restoration (IR) program or that are determined not to have a munitions concern.

One MRP site, located where Building 357 is now standing, was identified at PNS. It was a small-caliber ammunitions range that was used infrequently by security personnel from 1964 to 1988. In the mid-1990s, in preparation for construction of Building 357 contaminated soil was removed from the range. The soil removal was conducted before the MRP program identified the site. An MRP evaluation was conducted in 2005, which indicated that the site had been adequately closed through the previous soil removal and recommended no further action for the site.

Ms. Cole explained the prioritization protocol that involves ranking sites to determine priorities for clean up based on relative risks. The ranking assigns relative priority for munitions response actions based on overall conditions. Ms. Cole indicated that a fact sheet and primer are available if any of the RAB members would like further information on the munitions response site prioritization. Ms. Cole reviewed the scoring process to determine the ranking and priority. For the MRP site at PNS, the original relative risk score was low, indicating that a munitions response action was required but had a low priority. The requirement for a response was because there was missing information on potential human health risks. An audit of the site was conducted in September 2010, and the audit results showed that adequate public notice or public briefing at a RAB meeting had not been provided. The site data and ranking were also reviewed during the audit. The hazard evaluation was rescored and indicated that there were no hazards for the site. Therefore, the priority was changed to not required, which is consistent with the original site assessment conclusions.

During discussion of the MRP site, Mr. McLeod noted that the MRP is a Department of Defense (DoD)-wide program and not just specific to Navy sites. In answer to a question regarding whether both ecological and human health risks are evaluated in the program, it was noted that both are evaluated. The program looks at offshore sites as well. Radiological concerns at MRP sites are also addressed under the program if such concerns are present at a site. The MRP site at PNS did not have any radiological concerns.

**DRAFT OU1 REMEDIAL ACTION WORK PLAN**

Mr. Bill Deane, Shaw E&I, provided a presentation on the draft Remedial Action Work Plan for OU1. The presentation is attached to the minutes. The draft work plan was submitted in January 2011; MEDEP comments have been received, and USEPA is still reviewing the document.

In accordance with the ROD for OU1 (Site 10), signed in September 2010, the remedial action for soil at OU1 focuses on the area beneath the former drain lines in the crawl space under Building 238. Because

the soil remediation work will be conducted in the crawl space, considerations for working in a confined space will be addressed in the work plan. The excavation in the two identified remediation areas will be conducted by hand, and a temporary conveyor system will be used to move the soil from within the crawl space to outside the building for transportation and disposal off site. The excavation will be conducted to three feet below ground surface in the two excavation areas. Confirmatory sampling of soil on the excavation sidewalls and floor will be conducted before site restoration. The confirmation samples will be composite samples used to verify that the remediation area with lead concentrations greater than remediation goal (2,000 mg/kg based on construction worker exposure) has been adequately removed. In answer to a question about what the composite results represent, Ms. Cohen explained that the remediation goal represents average exposure across the entire exposure unit, which is the entire crawl space. The remediation goal does not represent a maximum for exposure to a single point concentration. Compositing soil from a small area (sidewall or floor of the remediation areas) and comparing the results to the remediation goal is conservative to ensure that the remediation goal is met across the entire exposure unit. The remediation areas were developed based on lead characterization data for soil within the crawl space. The data show that lead concentrations outside of the two remediation areas are less than 2,000 mg/kg; concentrations only exceeded 2,000 mg/kg within the two remediation areas. The confirmation samples will be used to show that the two areas with lead concentration greater than 2,000 mg/kg have been adequately addressed.

As part of restoration activities, a geotextile barrier will be placed within the excavations before backfilling with virgin stone and restoring the ground surface to original grade. As part of remediation, the asphalt outside the building, at the southern end of OU1, will be milled and paved. There is asphalt there now; however, some portions of the asphalt need to be repaired to support appropriate land use controls. As part of project close out, a Construction Completion Report will be prepared to document all field activities conducted as part of the remediation.

The current status is that the Navy will prepare the draft final work plan after resolving MEDEP comments and receiving USEPA comments on the draft work plan. The Navy is anticipating finalizing the work plan and then mobilizing in summer 2011.

**DRAFT OU9 RI REPORT**

Mr. Matt Kraus, Tetra Tech, provided a presentation on the draft RI Report for Operable Unit 9 (Site 34 – Former Oil Gasification Plant). The presentation is attached to the minutes. The draft report was submitted for review and comment in February 2011.

OU9 consists of Site 34 – Former Oil Gasification Plant, Building 62, which generated ash from coal combustion that was deposited outside of Building 62. A Site Screening Investigation (SSI) was

conducted in 2003 and concluded that the majority of site risks were associated with ash in soil. A removal action to remove the majority of the ash and ash-contaminated soil was conducted in 2007 (based on SSI recommendations). An area around several large trees where some minor ash amounts were found was not included in the removal action. Subsequently, soil sampling to support the RI was conducted in August 2009. The 2009 sampling showed that no suspected contamination (ash or tar from past operations) was found under Building 62. However, residual ash was found in the subsurface outside Building 62 after the removal action that warranted further sampling. The additional sampling was conducted in September 2010, and the ash pockets were verified to be isolated and sporadic. There was also an elevated detection of lead in the 2009 samples not found in any of the 2010 samples. This elevated lead level was found to be an anomaly and not representative of lead concentrations at the site. The results of the additional sampling were presented at the December 2010 RAB meeting.

Mr. Kraus explained the change in the conceptual site model (CSM) based on the 2009 and 2010 sampling results, particularly that the 2007 removal action removed the majority of the ash but that thin isolated pockets of ash (and burnt material) were found in the subsurface below the fill material placed during the 2007 removal action. In the 2009 and 2010 soil samples, PAHs were most widely detected, with concentrations greater in subsurface than surface soils. The greatest PAH concentrations were associated with samples that contained ash or burnt material. Because the residual contamination is limited and in the subsurface (i.e., thin pockets of ash in subsurface), contaminant migration through erosion or surface runoff is not a current or future concern for the site. Overburden groundwater is not present at the site, so migration of contamination from soil to groundwater is also not a concern for the site. Based on the CSM, human exposure to contaminants in soil is the only potential risk, and the risks were evaluated in the human health risk assessment in the RI Report.

For the risk assessment, risks for exposure to site contaminants in soil were evaluated for the potential receptors. Three potential exposure point concentrations (EPCs) were calculated for OU9: (1) based on the protocol provided in the work plan (area-weighted EPC), (2) providing a conservative/typical risk assessment approach for EPC calculation (unweighted EPC), and (3) representing the most likely exposure for OU9 based on site conditions (ash/burnt material weighted EPC).

Risks were evaluated based on USEPA potentially unacceptable risk levels of incremental lifetime cancer risk (ILCR) greater than $1 \times 10^{-4}$ (or one in 10,000 increased chance of getting cancer) or hazard index (HI) for non-cancerous effects greater than 1. The results showed there were no unacceptable risks for surface soil under all three methods of estimating the EPCs. There were potentially unacceptable risks for a future recreational user, resident, or occupational user from exposure to PAHs in subsurface soil if the soil was excavated and placed on the surface of the site. Mr. McLeod indicated that the future child/lifetime resident exposed to surface soil had an ILCR risk of $2 \times 10^{-5}$, which is slightly greater than

MEDEP's cancer risk guideline (ILCR greater than 1 x $10^{-5}$ or 1 in 100,000 increased chance of getting cancer).

The conclusions and recommendations in the draft OU9 RI Report are as follows:

- The nature and extent of contamination has been delineated to support an FS.
- Offsite migration of remaining contamination does not pose a potential current or future risk.
- Potential unacceptable risks were identified only for future exposure to subsurface soil by recreational users, residents, and occupational workers. Potential risks were acceptable for exposure to surface soil for all receptors and for exposure to subsurface soil for construction workers.
- Preparation of an FS Report is recommended to address potential unacceptable human health risks for exposure to subsurface soil.

Comments on the draft OU9 RI Report are due in April 2011. The Navy will submit the draft FS Report after the RI Report is finalized.

**ISSUES**

Upon completion of presentations, Mr. Bogen asked if 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 May 17, 2011, as the next meeting. The planned agenda is an update on the CIP and presentations on the draft OU2 PRAP and Site 30 removal action work plan.

*Post-meeting note: The next RAB meeting is scheduled for May 17, 2011, and will be held in the meeting room at Kittery Town Hall, 200 Rogers Road, Kittery, Maine. Planned agenda items for the next RAB meeting are presentations on the CIP update, draft OU2 PRAP, draft Site 30 removal action work plan, and a general status update on the IR program.*

**ATTACHMENTS AGENDA AND PRESENTATIONS FROM MARCH 29, 2011**

# Portsmouth Naval Shipyard Restoration Advisory Board Meeting Agenda

**Date – March 29, 2011**

**Place – Kittery Town Hall, Kittery, ME**

**Time – 7 p.m. - 9 p.m.**

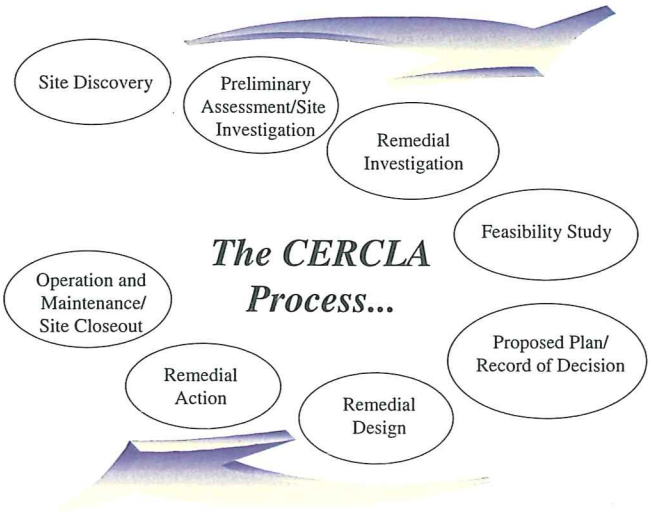
- **Introductions – Mr. Doug Bogen, Community RAB Co-chair**
- **Navy Co-chair Remarks – Ms. Lisa Joy, Navy**
- **Status of Work - Ms. Linda Cole, Navy**
- **Regulator Updates – Mr. Matt Audet, USEPA and Mr. Iver McLeod, MEDEP**
- **Munitions Response Site Prioritization Protocol - Ms. Linda Cole, Navy**
- **Draft OU1 Remedial Action Work Plan - Mr. Bill Deane, Shaw E&I**
- **Draft OU9 RI Report – Mr. Matt Kraus, Tetra Tech**
- **Other Issues as Required**

## Installation Restoration Funding History

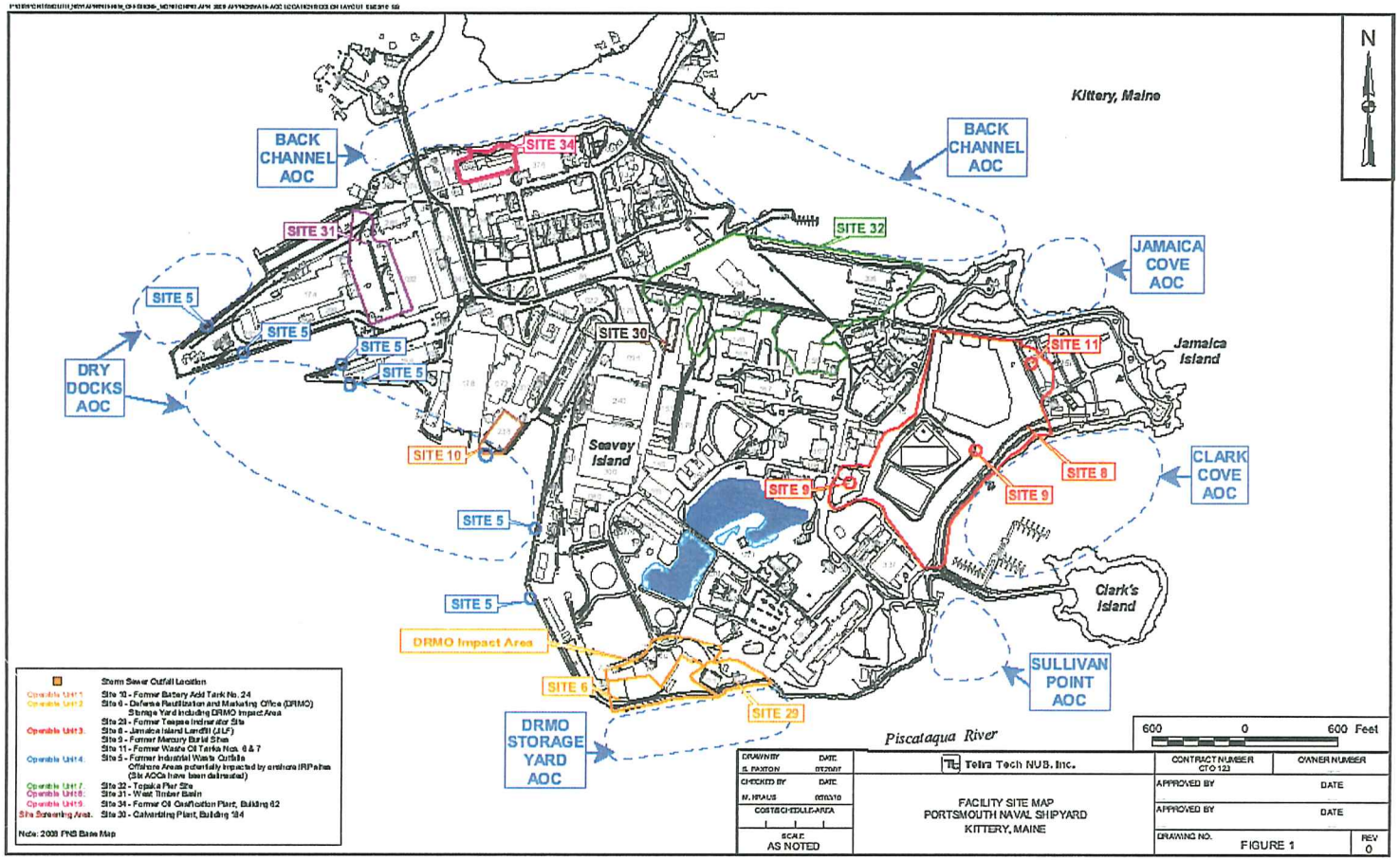
- Approximately $60 Million spent to date
- FY 2010 spent $1.0M (funded removal of tank vault in Bldg 184)
- FY 2011 spending plan $3.4M (will fund removal at OU1 and investigation at OU8)
- Estimated $31M for Cost-to-Complete



## CERCLA Process

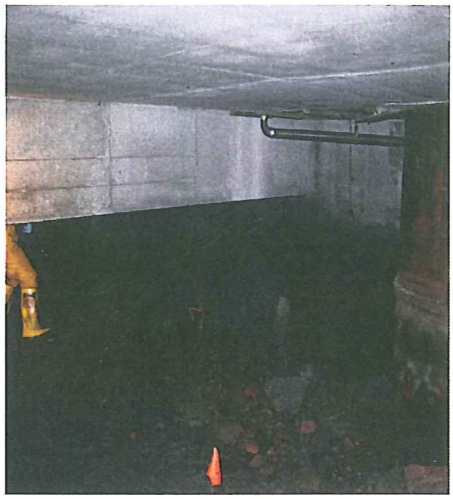


# IR Sites As Currently Defined



## OPERABLE UNIT 1 (Site 10)

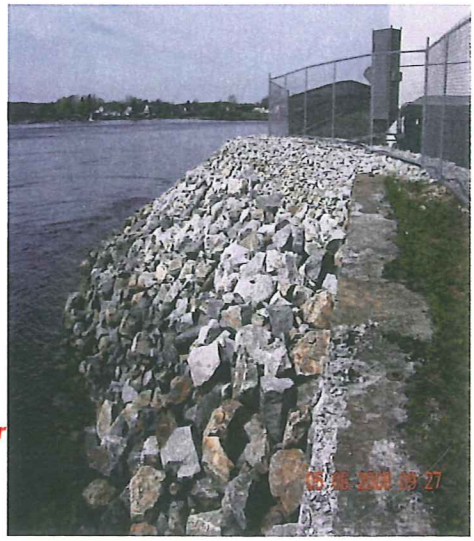
- Remedial Action Work Plan
  - –Draft Report issued Jan 11
  - –*Regulatory review/resolving regulatory comments*
- Land Use Control Remedial Design (LUC RD)
  - –Draft issued Dec 10 (within 90 days of signature of the ROD)
  - –*Regulatory review*
- Long Term Management Plan under development





## OPERABLE UNIT 2 (Sites 6 and 29 and the DRMO Impact Area)

- FS Report
  - –Draft Final issued Mar 11
  - –*Regulatory comment resolution complete*
  - –*Final planned for Apr 11*
- Draft PRAP to be issued within 90 days after Draft Final FS Report
- Draft ROD
  - –To be issued 30 days after end of public comment period
  - –FY11 goal (Final ROD)
- OU2 Pre-design Investigation
  - –Final Work Plan issued Nov 10
  - –*Field work planned for weeks of Apr 11 and 18, 2011*
- Remedial Design awarded



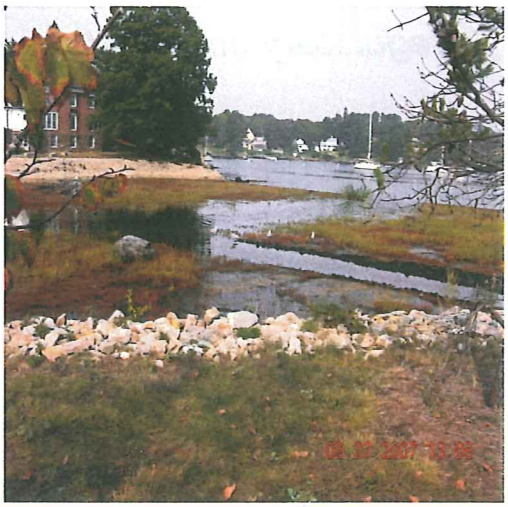
## Removal Action - DRMO Impact Area at Operable Unit 2

- First phase of archeological survey in Spring 2010
- Second phase of archeological survey in September 2010
- **Soil excavation completed**
- ***Site restoration activities being conducted***



## OPERABLE UNIT 3 (Site 8)

- Continue with Post-Remedial Action Operation, Maintenance, and Monitoring (OM&M)
- OM&M field work - Round 10 planned for week of Apr 18, 2011
- Land Use Control Remedial Design (LUCRD)
  - Draft Final issued March 2010
  - *Regulatory comment resolution*
- OM&M Plan Update
  - Draft Plan issued April 2009
  - *Regulatory review/comment resolution*
- OM&M Rounds 1 to 9 Report
  - Draft Report issued October 2010
  - *Regulatory comment resolution*
- Five Year Review
  - Start Jul/Aug 2011
  - Due Jun 2012



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

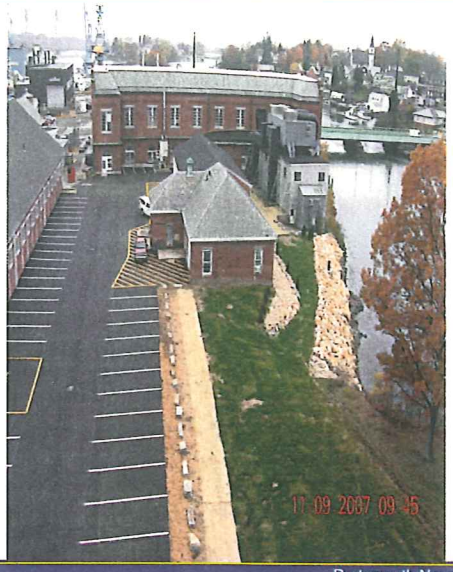
- FS Report
  - –Draft Report issued July 2010
  - –Regulatory review/resolving regulatory comments
- Interim Offshore Monitoring Plan (IOMP) Update
  - –Final Report issued November 2010
  - –Round 11 scheduled for week of Apr 18, 2011



## OPERABLE UNIT 7 (Site 32)

- **Draft RI issued in October 2010**
- ***Regulatory comment resolution***

## OPERABLE UNIT 9 (Site 34)




- Draft RI Report
  - -Draft Report issued Feb 11
  - -*Regulatory review*



## SITE 30 (Former Galvanizing Plant – Building 184)

- Revised EE/CA and Action Memorandum (Revision 2)
  - –Final EE/CA issued in October 2010
  - –Public comment period held November 3 to December 2, 2010
  - –Final Action Memorandum signed on December 7, 2010
- Removal Action Work Plan – draft to be submitted in April 2011

## Community Involvement Plan

- The Community Involvement Plan (CIP) is an update to the 1996 Community Relations Plan (CRP).
  - Face-to-face interviews were conducted the week of March 14, 2011
  - Telephone interviews are expected to be completed in March
  - The Draft CIP will be submitted for regulatory and RAB review

# NAVSHIPYD Portsmouth Munitions Response Site Prioritization Protocol

L. L. Cole, P.E.

March 29, 2011

## *Presentation Objectives*

- Inform the public of the Munitions Response Site Prioritization Protocol (MRSPP) process.
- Inform the public of a recent update in the MRSPP ranking for other-than-operational small arms range.



## *MRP Overview*

- The Munitions Response Program (MRP) addresses munitions and explosives of concern (MEC) at other-than-operational ranges and other sites, such as munitions burial locations.
- Sites are separated into two categories:
  - MRP sites needing further investigation, and
  - Areas of interest that either fall under the IR program investigations or are MRP ineligible and therefore need no further action.
- There is one MRP site at the Shipyard.

## *Small Arms Range Site History*

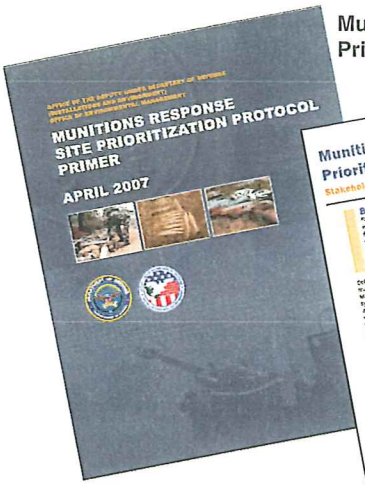
- Used infrequently by security personnel from 1964-1988 (only small caliber ammunitions used)
- Excavated and screened soil (mid-1990's) in preparation for construction of Bldg. 357 (Hazardous Waste Transfer Facility)
- Finalized Preliminary Assessment in April 2005
- Recommended No Further Action (NFA)



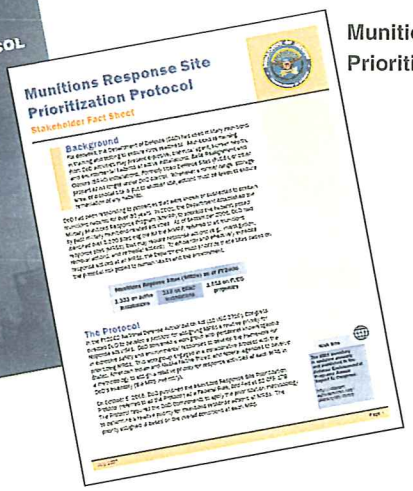
## *Munitions Response Site Prioritization Protocol*

- Provides a framework to determine the relative risks posed at each Munitions Response Site (MRS)
  - Unexploded Ordnance
  - Discarded Military Munitions
  - Munition Constituents
- Assigns relative priority for munition response actions based on overall conditions

# Documents Available to the Public




Munitions Response Site Prioritization Primer




Munitions Response Site Prioritization Fact Sheet



# Scoring Process

Evaluates explosive, chemical and human hazards to rank MRP sites for cleanup

**EHE Module**

Explosive Hazard
- Munitions Type
- Source of Hazard

Accessibility
- Location of Munitions
- Ease of Access
- Status of Property

Receptor
- Population Density
- Population Near Hazard
- Types of Activities/ Structures
- Ecological and/or Cultural Resources

**CHE Module**

CWM Hazard
- CWM Configuration
- Sources of CWM

Accessibility
- Location of CWM
- Ease of Access
- Status of Property

Receptor
- Population Density
- Population Near Hazard
- Types of Activities/ Structures
- Ecological and/or Cultural Resources

**HHE Module**

Contaminant Hazard
- Significant (H)
- Moderate (M)
- Minimal (L)

Migration Pathway
- Evident (H)
- Potential (M)
- Confined (L)

Receptor
- Identified (H)
- Potential (M)
- Limited (L)

**MRS Priority**

## Original Priority Ranking

- EHE Score of G – the lowest hazard evaluation
- CHE Score of No Known or Suspected Hazard
- Relative Risk Site Evaluation Score of Low – the lowest hazard evaluation
- Received lowest overall priority value of 8 (a munition response action required but a low priority)



## September 2010 Audit

- Reviewed hazard evaluations
- EHE score of No Hazard
- CHE score of No Hazard
- HHE score of No Hazard
- MRS Priority of Not Required

# Questions or Comments?

For additional information contact:

Linda Cole: 757-341-2011
linda.cole@navy.mil

# Draft Remedial Investigation Report for Operable Unit 9

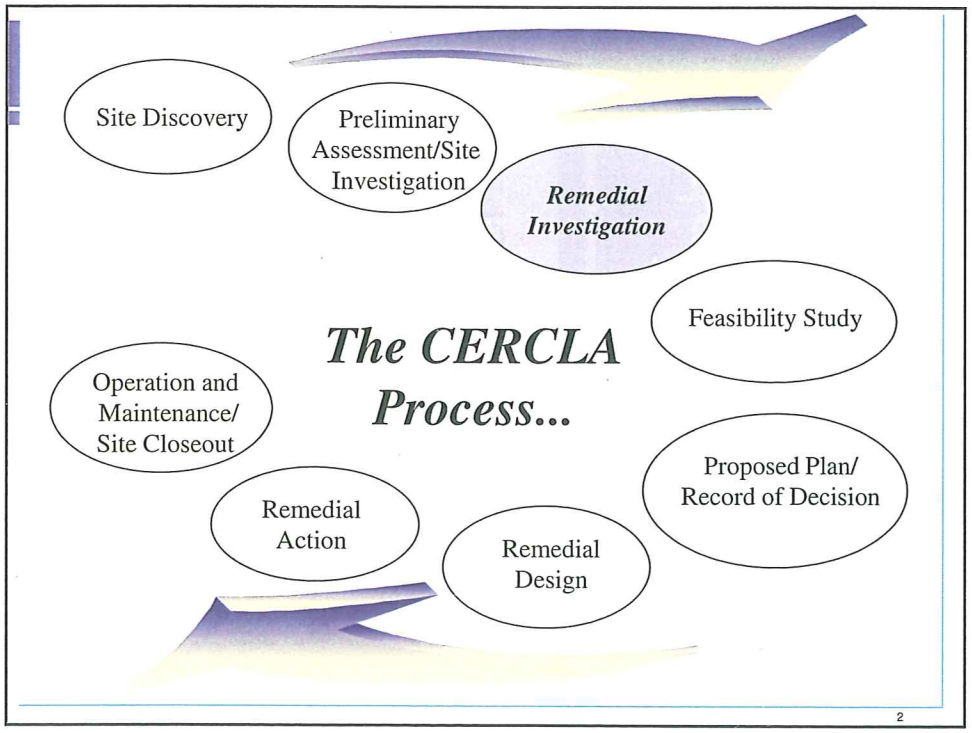
Portsmouth Naval Shipyard
Date: March 29, 2011

Presenter:
Matthew Kraus, Tetra Tech NUS, Inc.

## Purpose of Presentation

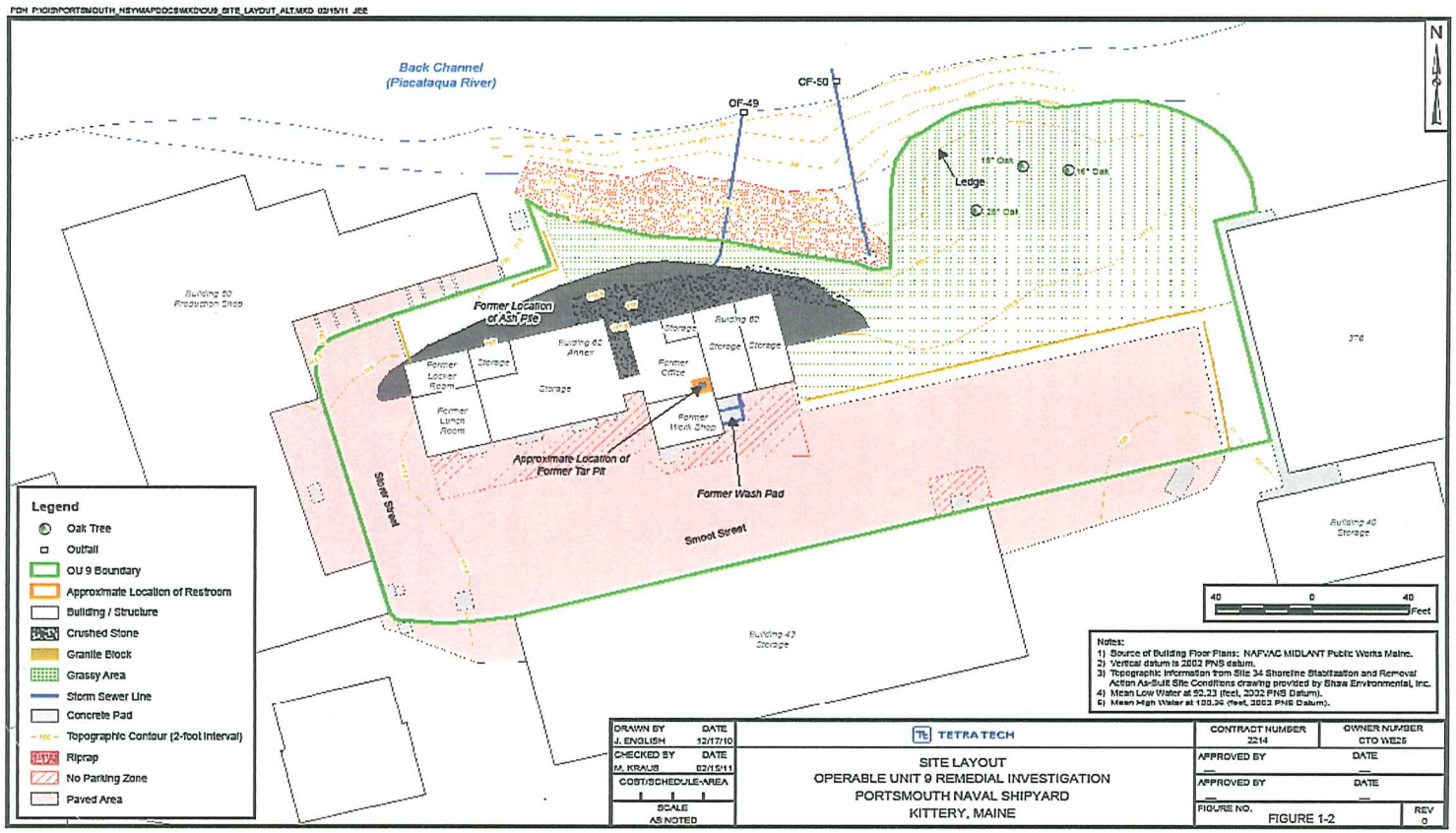
- Provide a summary of the history and background for Operable Unit (OU)9 (Site 34, former oil gasification plant).
- Present the nature and extent of contamination.
- Present the risk assessment results.
- Present the conclusions and recommendations.





# OU9 Vicinity Map

# OU9 Site Layout



## OU9 History and Background

- OU9 consists of Site 34 – Former Oil Gasification Plant
- Site 34 is located in the northwestern portion of PNS (Building 62)
- Primary source of contamination is ash from the Former Oil Gasification Plant (Building 62) operations.



## OU9 History

- 1870s to early 1900s: Coal was used for gasification operations that took place in Building 62.
- 1901 to 1912: The gasification plant in Building 62 was closed, all the machinery was removed, and a concrete floor was laid in the building at the time the plant was closed.
- 1915 to 1930: Building 62 was used as a blacksmith shop and gutted by a fire in 1919.
- 1930 to 1985: Building 62 was used for storage, including storage of pesticides, insecticides, and herbicides.
- 1985 to present: Building 62 and annex are used for the temporary storage of non-hazardous materials.

## OU9 Investigation Summary

- 1998 - Site 34 was identified as a potential Installation Restoration Program (IRP) site when ash was observed north of Building 62.
- 1999 - Limited excavation of the ash was conducted that terminated when the volume of ash exceeded two 55-gallon drums. [N00102.AR.001238 (Appendix A)]
- 2003 - The Site 34 Site Screening Investigation (SSI), concluded that by removing ash the majority of site risks would be addressed. An interim removal action was recommended before conducting a Remedial Investigation (RI). [N00102.AR.001389]



## OU9 Investigation Summary (continued)

- 2004 - An investigation was performed to determine the horizontal and vertical extent of ash. [N00102.AR.001495 (Appendix A)]
- 2005 - Engineering Evaluation/Cost Analysis (EE/CA) was completed to support a non-time critical removal action. [N00102.AR.001495]

The EE/CA recommended excavation and off-site disposal of the ash pile and ash exposed at ledge areas.

## OU9 Investigation Summary (continued)

- 2006 – Action Memorandum for the removal action was signed. [N00102.AR.001532]
- 2007 – The interim removal action was completed. [N00102.AR.001670]
- 2009 – The OU 9 RI Sampling and Analysis Plan (SAP) was finalized. [N00102.AR.001744]



## OU9 Remedial Investigation Summary

- 2009 – RI field work was conducted to support evaluation of the nature and extent of residual contamination and risks after the interim removal action.
  - Samples from soil in the unexcavated area, fill material placed in the excavated area as part of the 2007 removal action, and soil below the 2007 fill material were collected.
  - Borings were installed to determine whether ash and/or tar were present under the concrete floor in Building 62.
  - Thin isolated pockets of ash were discovered in the excavated area.
  - The conceptual site model (CSM) was updated based on this new information.

## OU9 RI Summary (continued)

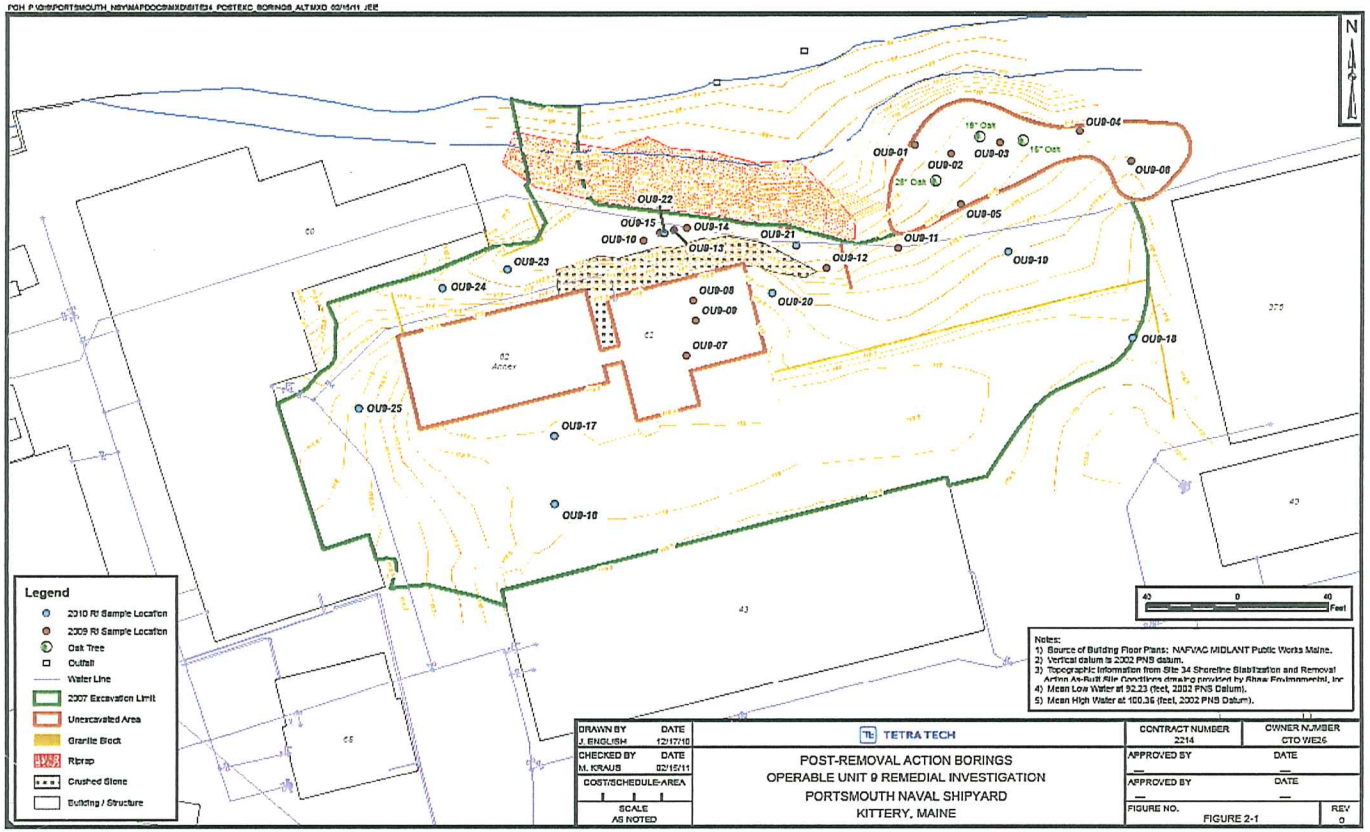
- 2010 – Additional sampling for the OU9 RI was conducted in September 2010 to better characterize the excavated area.
  - Ten soil borings were advanced to a depth of eight feet below ground surface or refusal.
  - Surface and subsurface soil samples were collected and analyzed for the site related contaminants antimony, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs).
  - Ash pockets were verified to be isolated and sporadic.



## Nature and Extent of Soil Contamination

- Antimony, lead, mercury and PAHs were detected in surface and subsurface soil.
- Contaminants with the most wide-spread detections are PAHs.
  - Concentrations in the subsurface soil samples were generally greater than in the surface soil samples.
  - The greater concentrations of PAHs are associated with samples that contain ash or burnt material.
  - Other PAH sample concentrations (e.g., fill) are similar to facility background.

# Post Removal Action Sample Locations



## Contaminant Fate and Transport

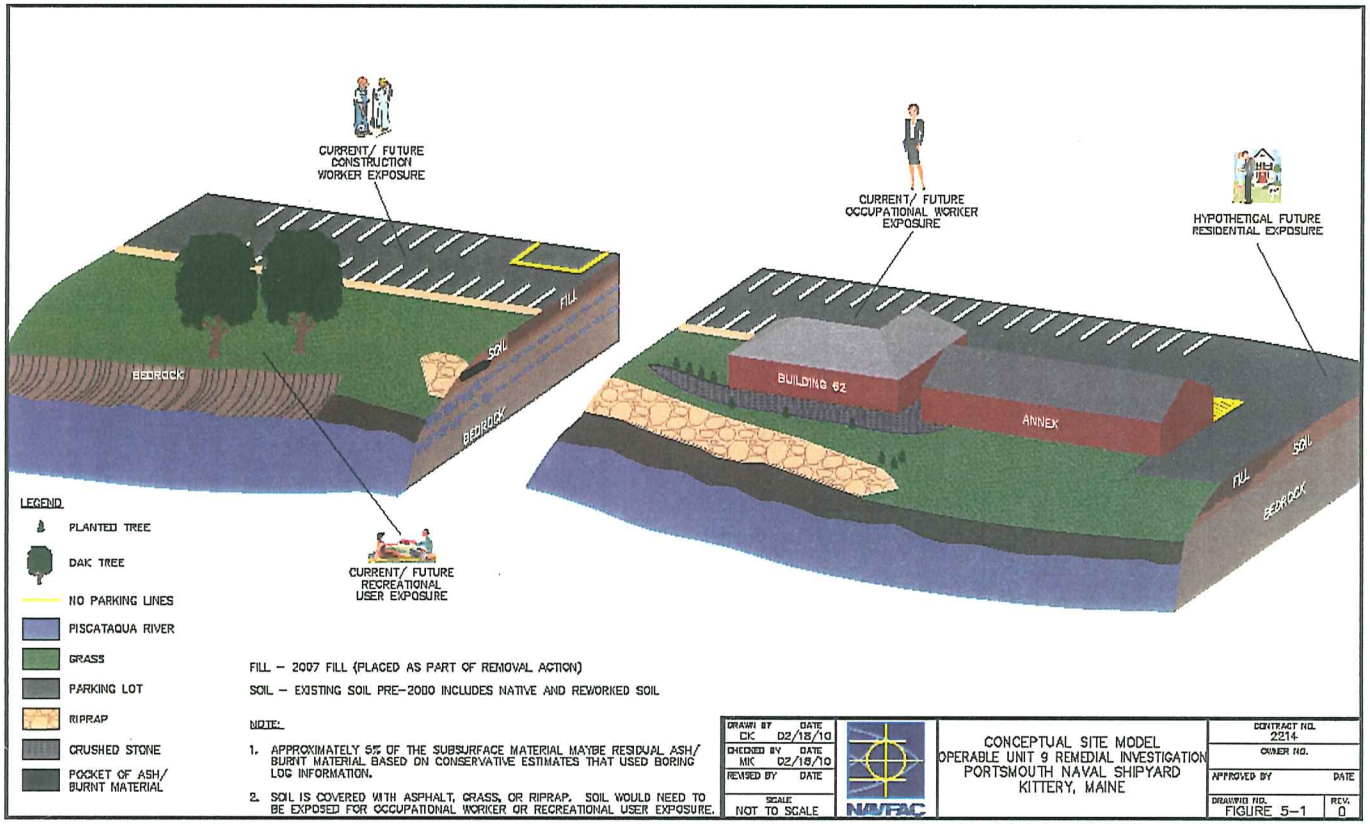
- Site is mostly covered with asphalt and buildings limiting mobilization of contaminants through runoff or infiltration of precipitation.
- No overburden groundwater is present at OU9 and all contamination is above overburden material; therefore, subsurface soil does not contact groundwater.
- PAHs are generally considered to be fairly immobile but persistent chemicals in the environment that adhere to soil particles.
  - Major transport mechanism is via surface water runoff.



## Contaminant Fate and Transport

- Metals (i.e., lead and mercury) are considered to be persistent chemical for which the major fate mechanisms are adsorption to the soil matrix and bioaccumulation.
  - Major transport mechanism is soil erosion and surface water runoff.
- The fate and transport of PAHs and inorganic contaminants (i.e., lead and mercury) are controlled at OU9 mainly by the mobility of soil particles.
- Offsite migration of remaining contamination in the subsurface is not expected under current or future site conditions because most of the site contamination was removed.

# OU9 Conceptual Site Model



## Potential Receptors

- Construction Worker - Exposure to surface soil and subsurface soil.
- Occupational Worker - Exposure to surface soil (if asphalt, lawn, or buildings removed).
- Recreational User - Exposure to surface soil (if asphalt, lawn, or buildings removed).
- Future Resident - Exposure to surface soil.



## Risk Assessment Results

- The HHRA evaluated risks for the entire site using three different sets of exposure point concentrations (EPCs) as follows:
  - Area Weighted EPC
    - 90% weight to samples in excavated area; 10% weight to samples in unexcavated area
    - As per approved SAP [N00102.AR.001744]
  - Un-weighted EPC
    - Entire site EPC not weighted (i.e., soil data sets were not weighted by sample location or sample type)
    - Most conservative EPC approach
  - Ash/Burnt Material Weighted EPC
    - 5% weight to samples containing ash/burnt material; 95% weight to remaining soil samples
    - Most representative EPC of site conditions based on updated CSM

## Risk Assessment Results (continued)

**Area Weighted EPC Risk Evaluation Conclusions**

- EPA Potentially Unacceptable Risks (ILCR > 1E-4 or HI > 1)
  - Surface soil = None
  - Subsurface soil = current/future child and lifetime recreational users, current/future occupational users, future residents (child, adult, and lifetime)



## Risk Assessment Results (continued)

**Un-weighted EPC Risk Evaluation Conclusions**

- EPA Potentially Unacceptable Risks (ILCR > 1E-4 or HI > 1)
  - Surface soil = None
  - Subsurface soil = current/future recreational users (child, adult, and lifetime), current/future occupational users, future residents (child, adult, and lifetime)

## Risk Assessment Results (continued)

**Ash/Burnt Material Weighted EPC Risk Evaluation Conclusions**

- EPA Potentially Unacceptable Risks (ILCR > 1E-4 or HI > 1)
  - Surface soil = None
  - Subsurface soil = current/future child and lifetime recreational users, current/future occupational users, future residents (child, adult, and lifetime)



## Risk Assessment Results (continued)

- Potentially unacceptable risks based on the ash/burnt material weighted EPC risk evaluation using EPA risk targets ranges were calculated for:
  - Current/future child and lifetime recreational users, future child, adult, and lifetime residents, and current/future occupational workers exposed to subsurface soil.
  - The main chemicals contributing to these risks are benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-CD)pyrene, and naphthalene.

## RI Conclusions and Recommendations

- Nature and extent of contamination was delineated.
- Offsite migration of remaining contamination in the subsurface is not expected under current or future site conditions because most of the site contamination was removed.
- Potentially unacceptable risks exist for current/future child and lifetime recreational users, future child, adult, and lifetime residents, and current/future occupational workers exposed to subsurface soil.
- Recommend that a Feasibility Study(FS) Report be prepared to address potentially unacceptable human health risks for exposure to subsurface soil.



## What's next?

- Comments on the draft OU9 RI Report are due by April 14, 2011
- The draft OU9 FS Report will be submitted after the OU9 RI Report is finalized

# Operable Unit #1, Site 10 Draft Remedial Action Work Plan

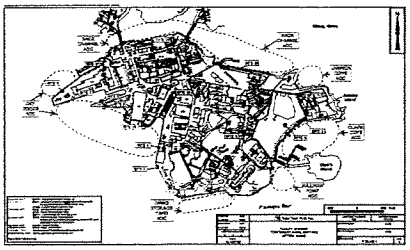
Portsmouth Naval Shipyard
Restoration Advisory Board
29 March 2011

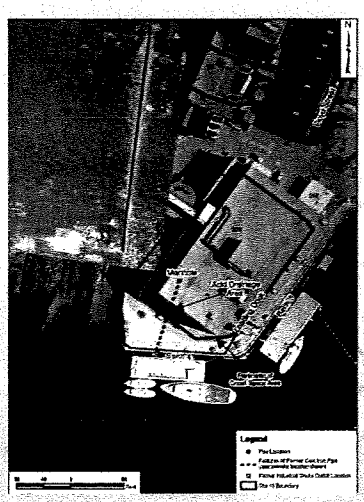
## Presentation Goals

Provide an Overview of the Draft Remedial Action Work Plan at OU #1, Site 10

- Site Background/Layout
- Work Plan Outline/Activities
- Confirmatory Sampling/Preliminary Remediation Goals
- Status and Schedule

# Site Layout





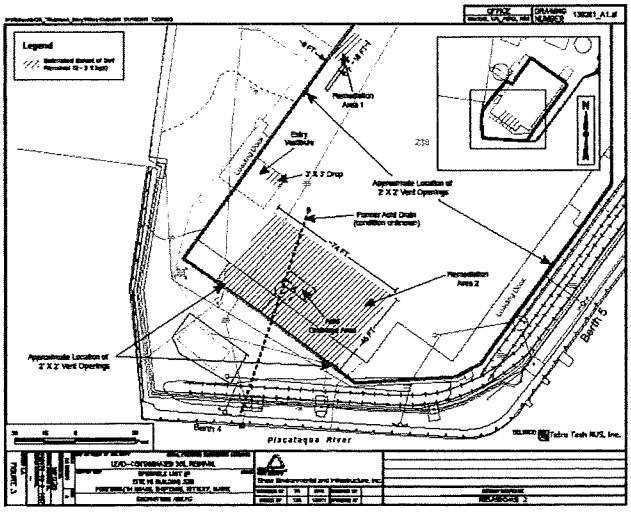
# Site Background

- Remedial Action focuses on areas beneath former drain lines from Building 238.
- 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

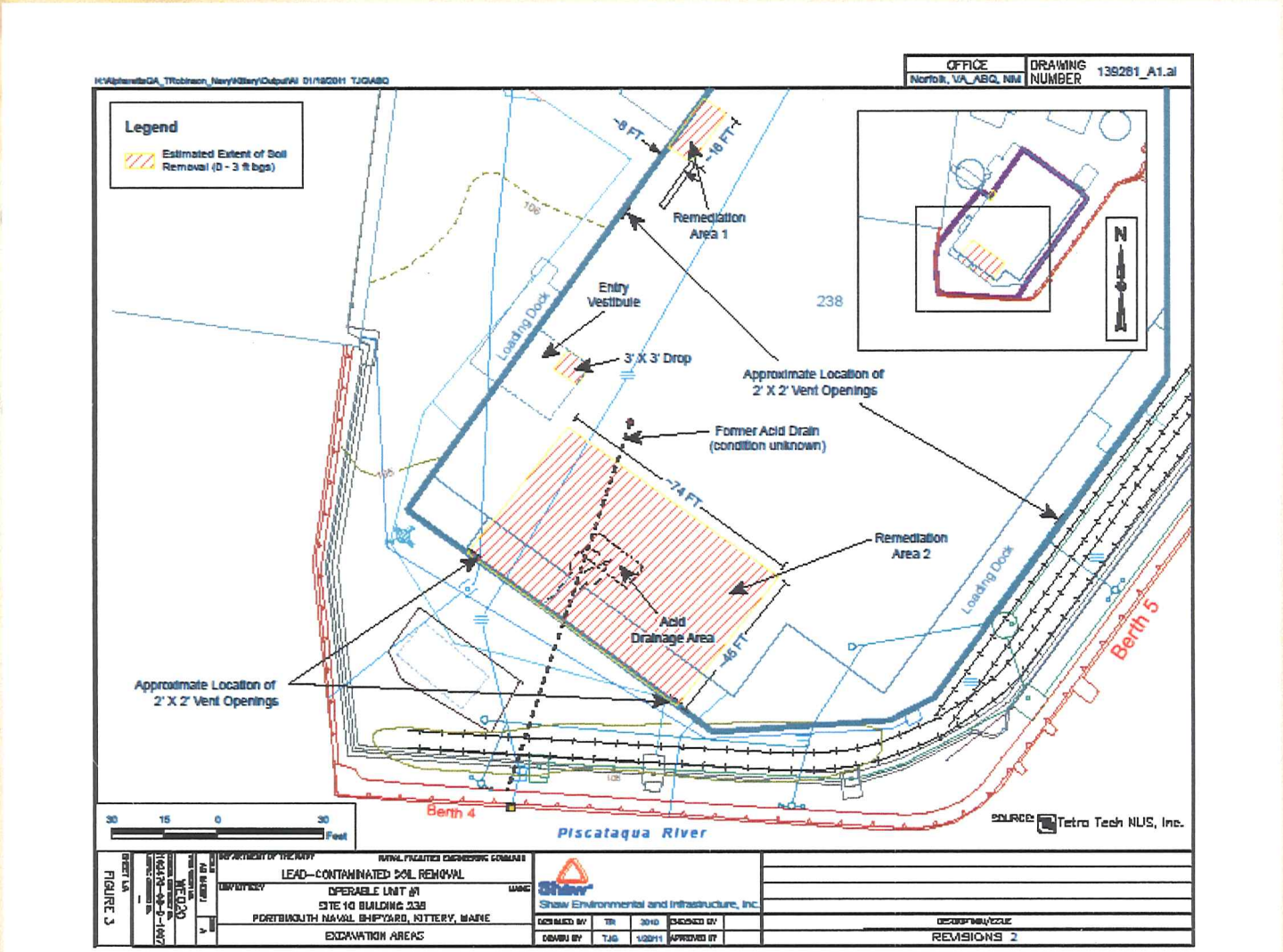
# Remedial Action Activities

- Installation of Project Safety Controls
- Installation of Temporary Conveyor System
- Excavation of Contaminated Soils
  - 3 foot excavations (per ROD, 2010)
- Transportation and Disposal of Contaminated Soils
- Confirmatory Sampling
- Backfill/Site Restoration

# Initial Excavation Limits



# Initial Excavation Limits



# Confirmatory Sampling

- One (1) four point composite sample per 20 linear feet of sidewall at a depth of 6 inches
- One (1) five point composite sample (four corners, one center) per 500 square feet of excavation floor

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

# Transportation and Disposal of Contaminated Soils

- Excavated soils will be paced in lined/covered roll-off containers and staged at PNS Building 357 (Hazardous Waste Facility)
- Soil will be sampled and analyzed against the selected facility's permitted regulations
- 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

## 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

## Status and Schedule

- Draft Workplan
  - MEDEP Comments Received, Awaiting USEPA Comments
- Draft Final Work Plan – 15 Days from Receipt of USEPA Comments
- Final Work Plan
  - 30 Day Review Navy, USEPA, MEDEP
  - Anticipated Submittal 45 Days from Submittal of Draft Final Work Plan

## Status and Schedule (cont'd)

- Mobilization - Summer 2011
- Construction Activities – Summer 2011
- Closure Report – Late Fall 2011

# Questions or Comments?

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