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DEPARTMENT OF THE NAVY  
PORTSMOUTH NAVAL SHIPYARD  
PORTSMOUTH, N. H. 03804-5000

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NSY PORTSMOUTH  
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IN REPLY REFER TO:

January 27, 2004

MEMORANDUM

**FOR THE MEMBERS OF THE RESTORATION ADVISORY BOARD (RAB) CERCLA  
REMEDIAL ACTION PROGRAM, PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

The next RAB meeting will be held on Thursday, February 12, 2004 beginning at 7 p.m. at the Best Western Wynwood Suites on the Route 1 Bypass in Portsmouth, NH. The presentation will be on the Draft Site 32 (Topeka Pier) Remedial Investigation Phase I Evaluation results.

Your participation is greatly appreciated. If you are unable to attend the meeting, please contact me at (207) 438-3830. I look forward to seeing you at the RAB meeting.

Sincerely,

Ken Plaisted  
Navy Co-Chairman  
Restoration Advisory Board

Distribution:

Doug Bogen  
Michele Dionne  
Alan Davis  
Roger Wells

Jeff Clifford  
Mary Marshall  
Jack McKenna  
Carolyn Lepage

Onil Roy  
James Horrigan  
Diana McNabb  
Peter Britz

EPA Region I (M. Audet)  
MEDEP (I. McLeod)  
NOAA (K. Finkelstein)  
MEDMR (D. Card)  
NHFG (C. McBane)  
USFWS (K. Munney)  
EFANE (F. Evans)  
COMSUBGRU TWO (A. Stackpole)  
Portsmouth Naval Shipyard (Codes 106, 106.3, 106.3R, 100PAO, 105, 105.5, NRRO)



**DEPARTMENT OF THE NAVY**  
PORTSMOUTH NAVAL SHIPYARD  
PORTSMOUTH, N. H. 03804-5000

IN REPLY REFER TO:

April 1, 2004

**MEMORANDUM**

**FOR THE MEMBERS OF THE RESTORATION ADVISORY BOARD (RAB), INSTALLATION  
RESTORATION PROGRAM, PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

Enclosed please find the draft minutes from the February 12, 2004 Restoration Advisory Board meeting for your review and comment.

Comments are requested by April 15, 2004. You may provide your comments to me at (207) 438-3830.

Sincerely,

A handwritten signature in black ink, appearing to read "Ken".

Ken Plaisted  
Navy Co-Chairman  
Restoration Advisory Board

Distribution:

D. Bogen  
P. Britz  
J. Clifford  
A. Davis  
M. Dionne  
J. Horrigan  
Carolyn Lepage  
M. Marshall  
J. McKenna  
D. McNabb  
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R. Wells  
EPA (M. Audet)  
MEDEP (I. McLeod)  
MEDMR (D. Card)  
USFWS (K. Munney)  
NHF&G (C. McBane)  
NOAA (K. Finkelstein)  
EFANE (F. Evans)  
COMSUBGRU TWO (A. Stackpole)  
TTNUS (D. Cohen)  
PNS (Codes 106, 106.3, 106.3R, 100PAO, 105, 105.5, NRRO)

**RESTORATION ADVISORY BOARD MEETING  
PORTSMOUTH NAVAL SHIPYARD  
BEST WESTERN, PORTSMOUTH, NH  
February 12, 2004**

The meeting began at approximately 7:00 p.m. and ended at 8:30 p.m. Restoration Advisory Board (RAB) members at the meeting included the following:

- RAB community members – Doug Bogen, Peter Britz, Jim Horrigan, Diana McNabb, Onil Roy and Roger Wells.
- Natural Resource Trustee Don Card (DMR).
- Navy RAB members- Fred Evans and Ken Plaisted
- Regulatory representatives- Matt Audet (USEPA) and Iver McLeod (MEDEP)
- Community members Jeff Clifford, Alan Davis, Michele Dionne, Jack McKenna, and Mary Marshall were absent.

Guests at the RAB included:

- Marty Raymond and Earl Chabot from Portsmouth Naval Shipyard
- Carl Baxter and Paul Heitzler from New Hampshire Department of Environmental Services (NHDES)
- Larry Dearborn from MEDEP
- Carolyn Lepage [Technical Advisory Grant (TAG) consultant for the Seacoast Anti-Pollution League (SAPL)] and Peter Vandermark from SAPL
- Debbie Cohen, JP Kumar, Kayleen Jalkut, and Tracy Dorgan from Tetra Tech NUS, Inc. (TINUS)
- Rich Bianculli from the National Environmental Trust

## **INTRODUCTION**

Ken Plaisted, Navy RAB Co-chair began the meeting by indicated that SAPL would like to videotape a portion of the RAB and asked if there were any objections. All were silent. Mr. Plaisted asked everyone to introduce him or herself. The topic for the RAB is the Site 32 Remedial Investigation Phase I Evaluation Results that are presented in the draft Technical Memorandum with the Recommendations Regarding Phase II of the Remedial Investigation for Site 32.

## **STATUS OF WORK**

At the previous RAB, Ms. Lepage asked if the Navy would provide an overview of the status of the Installation Restoration Program (IRP) sites at PNS. Fred Evans gave the status of each site which included what is the next step in the CERCLA process and when that step is scheduled.

A RAB member asked why the ENCAPCO treatability study, previously planned for OU2, was discontinued. Mr. Evans explained that the intent of the treatability study was to see whether the technology could be used to recycle the materials at the site. EPA's definition of recycling is that material could be reused without restrictions (i.e. monitoring). The PCB concentrations at one location at OU2 are above 50 parts per million (ppm), the site soil is considered a TSCA waste. TSCA regulations do not allow recycling of the material on site without substantial additional testing; therefore, the material could not be recycled and the study was discontinued.

## **REGULATOR UPDATES**

**USEPA** --- Matt Audet indicated the USEPA as an agency is trying to figure out how to handle dioxins and coplanar PCBs. The USEPA also submitted comments on the draft Site Screening Investigation (SSI) for Site 34.

**MEDEP** --- Iver McLeod indicated the January technical meetings were productive. The MEDEP submitted comments on the draft SSI for Site 34 and began reviewing the Site 32 evaluation. Mr. McLeod mentioned that the investigation at the former CDC did not indicate a very high concentration of lead; however, the MEDEP provided a letter to the Navy indicating that land use controls should be considered for the area. He also mentioned that an agreement between Navy, USEPA, and MEDEP was signed to make sure the appropriate documents are available regarding design changes and the MEDEP is satisfied with how things are working under the agreement.

### **Draft Site 32 Remedial Investigation Phase I Evaluation Results**

JP Kumar of Tetra Tech NUS, Inc. (TtNUS) provided a presentation on the results of the evaluation of the Phase I remedial investigation (RI) for Site 32 that is presented in the draft Technical Memorandum providing the Recommendations Regarding Phase II of the Remedial Investigation for Site 32.

The technical memorandum provides the evaluation of the data for Site 32 to determine whether there are adequate data to proceed with the risk assessment and RI report. The data package for the Phase I investigation was submitted along with the draft technical memorandum.

The presentation focused on the following:

- Providing a summary of the investigation activities at Site 32
- Summarizing the evaluation of the Site 32 data to identify additional RI data needs
- Providing the recommendations of the additional RI data needs (i.e., Phase II)

### **Summary of Site 32 Investigation Activities**

Mr. Kumar noted Site 32 is in the remedial investigation stage under CERCLA. The Site Screening Investigation (SSI) for Site 32 was conducted in 1998 and based on the SSI data, an RI was recommended. The Quality Assurance Project Plan (QAPP) for the Site 32 RI was completed in March 2003 and the first phase of the RI was conducted in April-May 2003.

Using the aerial photograph of PNS, Mr. Kumar indicated the site location and features. Site 32 is located in the northern portion of the Shipyard along the back channel of the Piscataqua River. It is mainly an occupational/industrial area, with 90 percent of the site covered by buildings and asphalt. There is a boat launch and dock (Topeka Pier) on the northern shore. Most of the site is used for parking or offices.

The site history dates back to the 1900, when materials excavated as part of the construction of Dry Dock 2 were placed in a portion of what is now Site 32. Filling at the site continued until approximately 1945. From the 1910s to the 1920s a portion of the site was used as a timber basin and lumber yard which were associated with the building of ships at PNS. Many of the current buildings at the site were constructed in the 1940s. Mr. Kumar mentioned that he has been reviewing the historical maps to determine whether there is a pattern for the filling of the site between 1900s and 1945. Early on the material used for fill was excavated material from other areas of the Shipyard and later on, it appears that more construction waste, foundry slag, and other inert (non-burnable) material were used as fill material.

Investigation of the site began in 1998 as part of the SSI investigation. The SSI focused on determining whether the activities (pre-1980) at the site have impacted environmental media at the site (e.g., soil, groundwater, sediment). Sampling as part of the site screening investigation targeted locations most likely to show a potential impact. The RI targets characterizing the site to support understanding of the nature and extent, contaminant fate and transport, and risk assessment. Other investigations such as the interim off shore monitoring program have been conducted that included portions of Site 32. The data from and results of these investigations were considered during the development of the Site 32 RI QAPP and will be used as appropriate as part of the RI for Site 32.

Fill material at Site 32 has been observed to be about 15 feet thick and the fill material overlies natural deposits. Slag material, observed in the fill material, was also observed in the intertidal area of the site. As part of the Phase I RI, slag mapping activities were conducted to visually identify the presence of slag across the intertidal area. The groundwater at the site is brackish/saline, near the shore the salinity is typically in the range of 19 to 28 parts per thousand (ppt). The site is tidally influenced and the surface water entering the site mixes with groundwater and exits the site through the intertidal area and the groundwater/surface water enters the storm water system and exits through the outfalls. The outfalls with the highest flow rates (OF60, OF61, and OF63) were targeted for sampling as part of the RI. The salinity of the water exiting the outfalls and the nearby surface water was around 22 to 26 ppt. During the Phase I RI, the flow rates at the outfalls were estimated.

#### Evaluation Summary

Groundwater Evaluation: The groundwater data for Site 32 were evaluated to see if there are sufficient data for the RI. SSI and Phase I RI groundwater data were combined and compared to risk screening levels. Organic chemicals were either not detected in groundwater or were detected at low concentrations (less than risk screening levels). Inorganic chemicals were detected at concentrations greater than the risk screening levels and were evaluated further to determine whether additional data were needed. The evaluation showed that there are sufficient data for most inorganic chemicals; however, additional data are needed for arsenic, lead, and thallium. The variability of the data for these three inorganic chemicals was evaluated to determine whether additional spatial data (more wells) or temporal data (another sampling round at existing wells) were needed. The evaluation showed that additional temporal data are needed for these three inorganic chemicals. Although there are some uncertainties regarding the data for arsenic, lead, and thallium in groundwater at the site, an additional round of total and filtered metals data will provide additional support for decision-making for groundwater at the site. Mr. Kumar explained the uncertainty with the arsenic results is that some of the risk screening levels are less than typical regional concentrations of arsenic. For lead, currently the screening level for human health is based on a drinking water standard; the groundwater at Site 32 is brackish/saline and is not potable water. The thallium evaluation was based on one detection of thallium in 1998 and thallium was not detected in any other 1998 sample or in the 2003 samples.

Outfall/Surface Water Evaluation: Groundwater at Site 32 is entering the storm water drainage system and exiting through the outfalls and mixing with nearby surface water. The evaluation focused on whether there were exceedances of surface water screening levels that may suggest that surface water further away from the site (past the mixing zone) may be impacted. The evaluation focused on inorganic chemicals because organic chemicals were not detected in the outfall or surface water samples. Barium concentrations exceeded the ecological screening level. Concentrations of the other inorganic chemical did not exceed the screening levels. Mr. Kumar explained the barium concentrations were similar to typical concentrations in surface water in the United States and the screening level available was very conservative. Therefore, the outfall and near-shore surface water concentrations are considered acceptable and further sampling of outfall/surface water is not necessary to evaluate if surface water criteria are exceeded.

Mr. McLeod asked why the reporting limits for the pesticides in the outfall and surface water samples were 10 times higher than the ecological criteria and that the targeted detection limits were less than the achieved detection limits. Ms. Cohen indicated that she would check with the project chemist and provide an explanation in the RAB minutes.<sup>1</sup>

Soil Evaluation: As part of the RI sampling program, Site 32 was divided into fourteen one-acre areas to represent hypothetical residential areas referred to as decision units (DUs) to make sure the data for the site is distributed across the site and the Navy can evaluate potential risks across the DUs. The SSI and Phase I soil data were combined and the distribution of the data was evaluated to see whether there was any noticeable pattern. This evaluation showed that volatile organic chemical (VOCs) and pesticide concentrations were low across the site. Metals and polycyclic aromatic hydrocarbon (PAHs) concentrations exceeded residential screening levels throughout most of the site. Polychlorinated biphenyls (PCBs) concentrations were generally low or non-detected with the exception of two locations. Metal and PAH concentrations were further evaluated for distribution to see if there were any areas with higher or lower concentrations. This evaluation showed that most areas (DU) were generally similar; however there were three DUs that appeared to have different metal and/or PAH concentrations than the rest of the areas. Further evaluation of these three DUs indicated DU2 chemical concentrations and fill material were sufficiently similar to the rest of site so this DU should be considered with the rest of the site. DU5 had lower concentrations except at one location within the DU where the highest PCB concentrations were detected. DU14 had generally lower concentrations than the rest of the site. This portion of Site 32 was filled in the early 1900s (as part of the Dry Dock 2 construction) and has always had non-industrial type uses (a grassy area until the Public Works Department building was constructed).

Mr. Kumar explained that PAHs are typically associated with incomplete combustion of fuels, which is consistent with the history of the site. He also explained that based on the variability of the PAH and metal concentrations across Site 32, estimation of the number of samples to have statistical confidence to distinguish between industrial screening levels and the site concentrations showed that thousands of samples would be needed. The Navy believes it is better to use the presence of waste materials to indicate the extent of the site because it is more likely that where waste materials are present at Site 32 the area will have elevated chemical concentrations (generally PAHs and metals). Therefore, the Navy does not recommend additional sampling of soil across the site to support the risk assessment; however, additional sampling in specific areas will help to understand the extent of potentially high chemical concentrations. These are as follows:

- At soil boring SB42: A very high arsenic concentration was noted in the duplicate sample from the soil boring. The arsenic concentrations in the original and duplicate samples were 12 ppm and 2,800 ppm, respectively. Additional sampling for arsenic at this location is necessary to determine if there is a hot spot of arsenic.
- At soil boring SB14: High PCB concentrations were observed in this boring. The surrounding borings had low or non-detected concentrations of PCBs and generally lower concentrations of

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<sup>1</sup> Post-meeting note: Based on MEDEP Comment No. 16 on the draft Technical Memorandum, the Navy believes the concern is that the electronic file in the Site 32 data package provides method detection limits much greater than the targeted detection limits. Review of the data and the hard copy deliverables from the laboratory (Form Is) show the laboratory reported down to the method detection limits for the aqueous samples. Therefore, the lowest possible detections were achieved. However, the electronic data deliverable (EDD) from the laboratory, which was entered in the data base and shown in the electronic file in the Site 32 data package provided the incorrect units on the method detection limits. The actual method detection limits (shown on the Form Is) are lower and the nondetected results in the data base are based on the correct method detection limits. Although the nondetected results for many of the pesticides are greater than the ecological screening level without consideration of mixing, it was recognized during the QAPP preparation that the screening level was less than the detection limit; however, none of the detection limits for pesticides were greater than the ecological screening level with consideration of dilution.

other chemicals. Additional information on the extent of PCBs at this location is necessary to determine if there is a hot spot area of PCBs.

- At soil boring SB36: A weathered petroleum product was noted in the saturated soil at this boring located near the Transportation Building. No floating free product was noted and the groundwater data for the site does not show an impact from the petroleum. If there is any groundwater impact it is believed to be localized. Additional information on the extent of the petroleum product in soil in this area is necessary to determine if there may be a localized groundwater impact.

Mr. Kumar explained that the dioxin/furan data for the site was evaluated separately. As provided in the QAPP, select soil samples were analyzed for dioxin/furans. Mr. Kumar indicated that a total of 15 soil samples were analyzed for dioxin/furans and the remaining soil samples were put on hold at the laboratory pending direction from the Navy. The evaluation of the dioxin/furan results for these 15 soil samples showed that the concentrations were generally similar to background and most were less than screening levels. Evaluation of whether there were enough data points showed that there was not much variability in the data and there generally are enough data. However, two samples had slightly higher levels than the rest of the sample and the concentrations of dioxin/furans exceeded the industrial screening level (by about two times). Although generally there are enough data for a risk assessment, the evaluation showed that a few more samples would give a better level of confidence for the risk assessment. Generally 10 or more data points are recognized to provide better statistical power for risk assessment and the data set currently includes five surface soil and ten subsurface soil samples. Therefore, the Navy has selected seven additional surface soil and three additional subsurface soil samples for dioxin/furan analyses to provide more surface soil data and more data at the two locations with the slightly higher levels of dioxins/furans.

Sediment Evaluation: Mr. Kumar showed the grid sampling for sediment in the intertidal area and pointed out the areas where slag was noted. The sediment sampling data from 1996/1997, the Interim Offshore Monitoring Program (Monitoring Stations 3 and 4), and the 2003 grid sampling were evaluated to determine if the extent of high copper and nickel concentrations was bounded. The sampling showed the elevated copper and nickel concentrations (above the screening levels) were near areas with slag and the concentrations were lower further away from the slag. The grid sampling helped to bound the horizontal extent of the elevated copper and nickel concentrations and additional sampling for horizontal extent is not required.

#### Recommendation for Phase II

Based on the evaluation of the Site 32 data, the following summarizes the Navy's recommendation for Phase II sampling:

- One round of groundwater sampling for all site wells for total and filtered TAL metals.
- Additional soil sampling for PCBs around soil boring SB14 (which had elevated concentrations)
- Additional soil sampling at soil boring SB42 to determine if high concentrations of arsenic are present.
- Soil borings to determine the visual extent of petroleum in the saturated soil in the vicinity of soil boring SB36.
- Analysis of ten soil samples for dioxins/furans
- No further outfall/surface water sampling is recommended or needed for the RI
- No further sediment is recommended or needed for the RI

Mr. Kumar indicated that the technical memorandum was submitted on January 15, 2004 and that comments were due by March 1, 2004.

#### Questions asked following the presentation:

- The horizontal extent of copper and nickel in the sediment was bounded, but what about the vertical extent? The samples went down to one foot below ground surface. Where slag was observed, the concentrations tended to be elevated; however, the vertical extent was not necessarily bounded. The need to further bound the vertical extent would be dependent on the remedy selected.
- Were the outfall samples only collected at high flow conditions? The samples were collected at low tide when the outfall would likely have the greatest contribution from groundwater. The outfalls sampled generally always flow. The other outfalls or seeps had no flow or very low flow (trickles). Ken Plaisted mentioned that during the video camera of the storm drain system that goes to Outfall 60, water could be seen flowing through the joints.
- If concentrations are so variable in the soil at the site is it appropriate to assume that the soil is contaminated just because waste material is present? Where waste materials were observed in the fill, the soil typically had some chemicals with higher concentrations (above the industrial screening level). The variability observed is likely because of the heterogeneity of the materials placed at the site. While the evaluation shows that generally there are sufficient data to understand potential risks, additional data may be needed for the selected remedy for the site. Collection of additional data to support the selected remedy would likely require a predesign investigation that would focus on obtaining the data needed for the selected remedy.
- What happens if the PNS becomes a BRAC site? Fred Evans explained that the government proposes a list of BRAC facilities. If a facility is selected as a BRAC site, the remedial process does not go away; however, the remedial process is greatly accelerated.

#### **FUTURE MEETINGS**

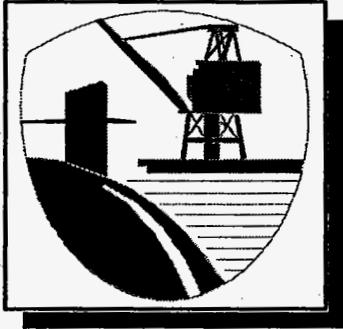
Ms. Raymond mentioned with Phil McCarthy retiring, there is a vacancy on the RAB. Before going through the process of finding a new member, Marty will be sending out a letter asking current RAB members if they are interested in another two year term on the RAB so the Navy can have an idea of how many vacancies would need to be filled.

With the proposed alternating of days for the RAB, the next RAB should be on a Tuesday. Ms. Raymond indicated that the proposed data for the next RAB was either May 11 or May 18, 2004 and the proposed topic is the draft Rounds 1 through 7 Report for the Interim Offshore Monitoring Program. Most RAB members did not have a preference for data. [Post meeting note: A RAB member indicated a preference for May 18; however, the RAB member contacted PNS indicating that May 11, 2004 was the better date for the RAB meeting.]

In reply to a question on whether the minutes from the January 2004 technical meetings have been submitted, the Navy indicated that the action item list would be submitted shortly and then the minutes would be submitted. [Post-meeting note: The action item list was submitted via email on February 23, 2004 and the minutes were submitted on March 1, 2004 (letter dated February 27, 2004).]

The RAB had no additional questions or topics for discussion. The meeting was adjourned at 8:30 p.m.

**Post meeting note: The next RAB will be held at the Portsmouth Courtyard Marriot on Tuesday, May 11, 2004 starting at 7 pm.**



**Portsmouth Naval Shipyard  
Installation Restoration  
Program  
Agenda**

**Date – February 12, 2004**

**Place – Best Western, Portsmouth, NH**

**Time – 7 p.m.- 9 p.m.**

**Introductions**

**Status of Work**

**Regulator Updates**

**Draft Site 32 Remedial Investigation  
Phase I Evaluation Results**

**Other Issues as Required**

**CURRENT STATUS  
OF  
PORTSMOUTH NAVAL SHIPYARD  
INSTALLATION RESTORATION  
PROGRAM SITES**

Portsmouth Naval Shipyard  
Restoration Advisory Board Meeting  
February 12, 2004

## Current Status of IRP Sites

- OU1 (Site 10): Remedial Investigation - 2004/2005
- OU2 (Sites 6 and 29): Feasibility Study – 2004/2005
- OU3 (Sites 8, 9, 11 Source Area): Remedy Construction -2005; Operations, Maintenance & Monitoring Plan – 2004/2005
- OU4 (Offshore Areas): Interim Offshore Monitoring Rounds 1 - 7 Report – 2004
- OU6 (Sites 8, 9, 11 Management of Migration): Decision tree regarding additional investigation work plan - 2004

## Current Status of IRP Sites

- OU7 (Site 32): Remedial Investigation – 2004/2005
- OU8 (Site 31): Remedial Investigation - 2010/2011
- Site 30: Revised Engineering Evaluation/Cost Analysis - 2004
- Site 34: Site Screening Investigation - 2004;  
Engineering Evaluation/Cost Analysis - 2004

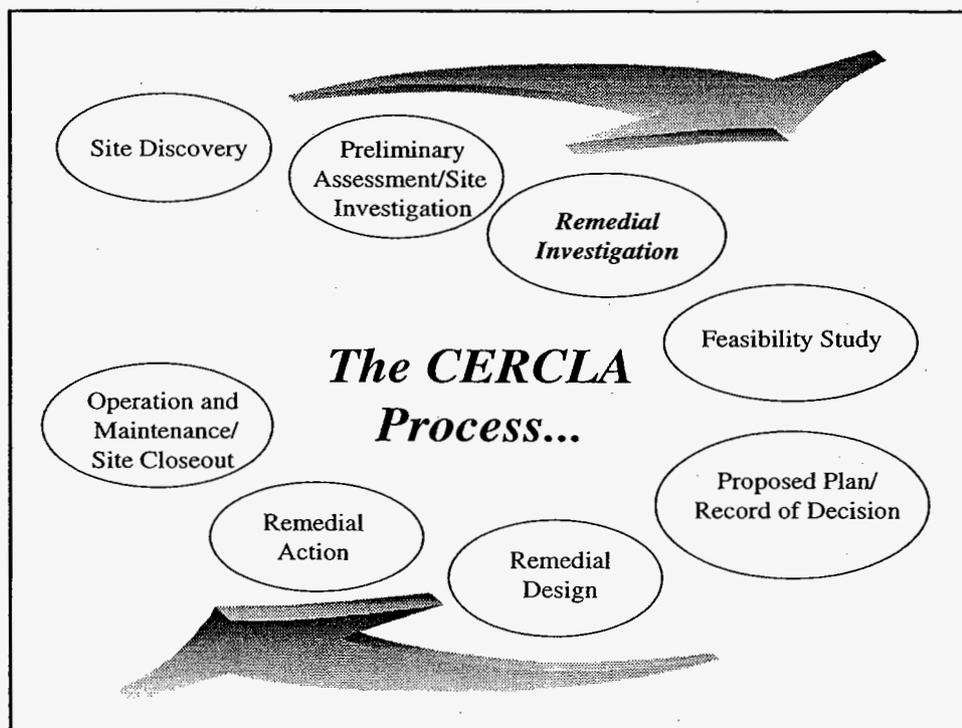
# **SITE 32 REMEDIAL INVESTIGATION PHASE 1 EVALUATION RESULTS**

Portsmouth Naval Shipyard  
Restoration Advisory Board Meeting  
February 12, 2004

Presented by JP Pradeep Kumar, Tetra Tech NUS, Inc.

## Presentation Objectives

- Provide a summary of the investigation activities at Site 32 – Topeka Pier Site
- Discuss the evaluation of the Site 32 data to identify additional remedial investigation (RI) data needs
- Present the recommendations for the additional RI data needs (i.e. Phase II)



## Site 32- Location and Description

- Located in the northern portion of Shipyard, along the back channel of the Piscataqua River
  
- Mainly occupational/industrial area – 90 percent of site covered by buildings and asphalt
  
- Boat launch leads down to the water and the intertidal area along the northern shore of the site

## Site 32 History

- Site 32 is area that was filled from 1900 to approximately 1945
  - 1900 to 1910: material excavated/dredged for Dry Dock 2 was deposited in mudflat and Topeka Pier was constructed
  - 1910s to 1920s: Timber Basin and Lumber Yard was constructed
  - 1941 to 1945: Several industrial buildings were constructed on top of the filled area
  
- Inert and non-burnable construction wastes were filled in the low lying areas

## Site 32 Investigation Summary

- Site Screening Investigation (1998): Soil and groundwater was investigated for chemical releases
- Phase I RI (2003):
  - Soil and groundwater investigation for risk assessment
  - Slag mapping and sediment sampling for extent of contamination
  - Outfall and near-shore surface water sampling for evidence of contamination
- Other investigations
  - Ecological risk assessment (1991-1993) - Back Channel Area of Concern
  - 1996/1997 groundwater and intertidal seep and sediment monitoring
  - Geophysical survey (1998)
  - Interim Offshore Monitoring – MS03 and MS04

## Field Observations

- Fill material is approximately 15 feet thick, overlying natural (silt clay) deposits
- Groundwater is brackish/saline (except near upgradient well TP-MW01) and is tidally influenced near the shoreline
- Intertidal area has slag
  - Majority of slag is present in the coarse-grained sediment, in mid-tide to high tide zone
  - Minor amounts of slag is present in fine-grained sediment, in mid to low tide zone
- Outfall/Near-shore Surface water:
  - Outfall discharge flow rates were estimated to be greater than 100 gpm
  - Outfall and surface water (6 feet from discharges) salinity readings ranged from 22 to 26 parts per thousand

## Groundwater Evaluation

- Maximum detected inorganic concentrations exceeded screening levels
- Organics were not detected or detected at low concentrations
- Statistical testing showed the need for additional data for arsenic, lead, and thallium
- Temporal variability was more significant compared to spatial variability
- One additional round of groundwater sampling for inorganic analysis (total and filtered) is recommended

## Outfall/Surface Water Evaluation

- Groundwater exiting through outfalls and mixing with surface water was sampled and analyzed:
  - Outfalls 60, 61, and 63 at discharge
  - Surface water approximately 6 feet down stream of outfall discharges
- Evaluation focused on inorganics  
(Organics were not detected)
- Only barium concentrations exceeded screening level
  - Concentrations were similar to US surface water concentrations
  - Uncertainty in the conservative ecological screening level
- No further outfall/surface water sampling is recommended to evaluate if surface water criteria are exceeded

## Soil Evaluation

- SSI and Phase I RI data were evaluated
- Preliminary observation of chemical distribution showed 3 areas exhibited generally lower concentrations
- Evaluation of Decision Units 2, 5, and 14 showed:
  - DU2 was more similar to the remainder of the site
  - DU5 had little evidence of waste, but needs additional investigation at one location
  - DU14 had low concentrations and little evidence of waste material
- Remainder of site showed waste material as an indicator of concentrations exceeding screening levels

## Soil Evaluation – Cont'd

- Recommended additional soil sampling and analysis:
  - At DU5 to determine extent of elevated PCBs around TP-SB14
  - At TP-SB42 to verify high arsenic noted in duplicate sample at this location
- Recommended additional borings to determine extent of weathered petroleum noted southwest of Transportation Building (Building 154) at TP-SB36
  - Groundwater at site does not show an apparent impact
  - Visual delineation to determine whether a localized groundwater impact may exist

## Soil Evaluation – Cont'd

- Dioxin/furan evaluation:
  - 15 Phase I RI samples were analyzed, others put on hold at laboratory
  - Site concentrations were generally less than risk screening levels and facility background concentrations
  - Evaluation of number of samples shows adequate number; however, additional samples will give better statistical confidence
  - Recommended analysis of 7 additional surface soils and 3 additional subsurface soils currently on hold at laboratory

## Sediment Evaluation

- Slag was mapped and a grid was laid for determining the extent of copper and nickel contamination
- Concentrations compared with ecological screening levels
- Horizontal extent of copper and nickel contamination appears bounded in all directions
- No further sediment sampling is recommended to determine the horizontal extent of slag or slag-impacted sediment

## Summary of Recommendations For Phase II

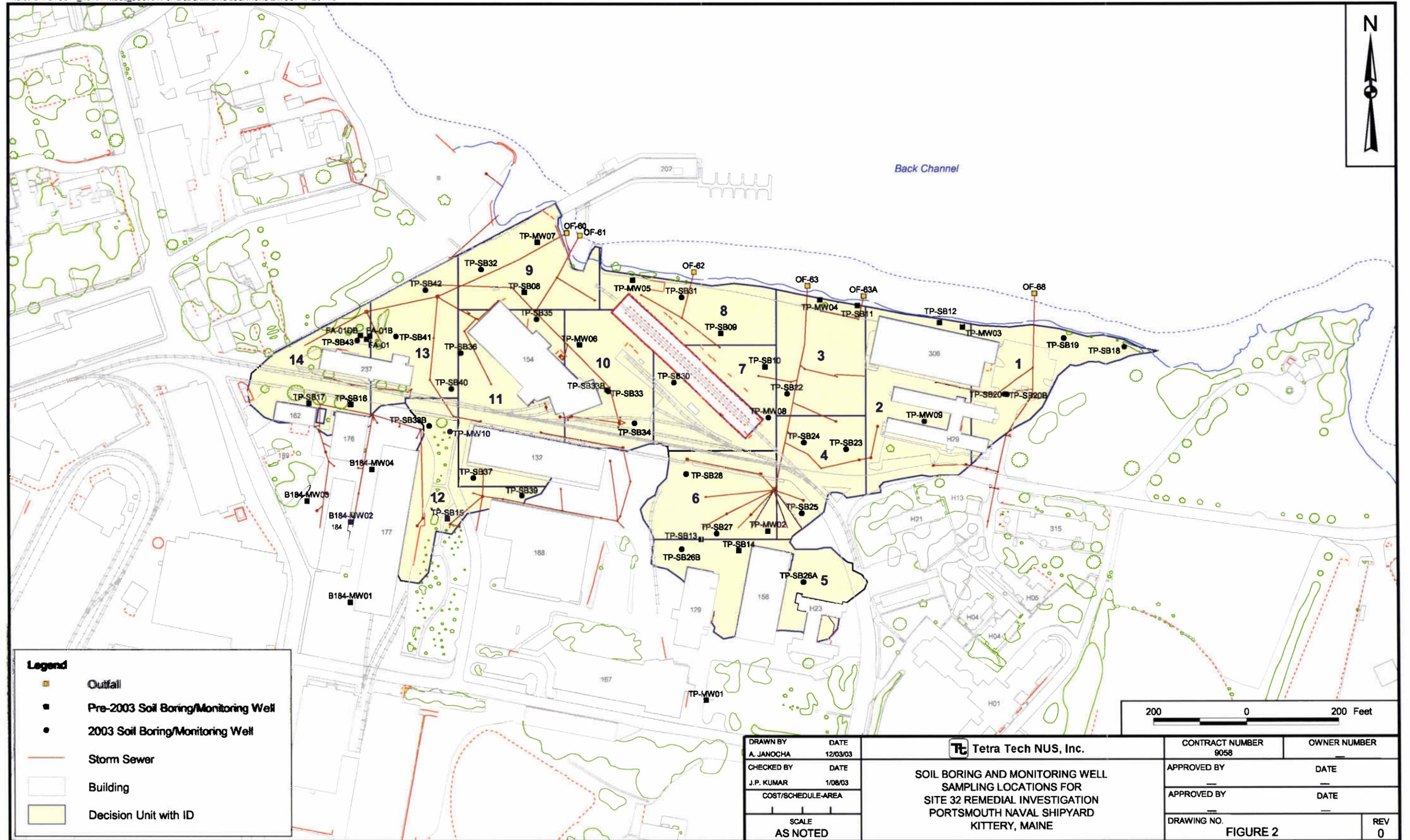
- One additional round of groundwater sampling for total and filtered inorganics (TAL metals)
- Additional soil sampling for PCBs around TP-SB14
- Additional soil sampling at TP-SB42 for arsenic
- Borings for visual extent of petroleum contamination in saturated zone soil around TP-SB36
- Additional analysis of 10 soil samples for dioxin/furans

## Summary of Recommendations (Cont'd.)

- No further sampling of outfall discharge or surface water is recommended
- No further sampling of sediment is recommended

## What is Next?

- Draft Technical Memorandum was submitted on January 15, 2004 (along with Phase I RI Data Package)
- Regulator/RAB comments on the draft Technical Memorandum are due by March 1, 2004
- Final Technical Memorandum is scheduled for submittal in August 2004



Legend	
	Outfall
	Pre-2003 Soil Boring/Monitoring Well
	2003 Soil Boring/Monitoring Well
	Storm Sewer
	Building
	Decision Unit with ID

DRAWN BY A. JANOCHA	DATE 12/03/03
CHECKED BY J.P. KUMAR	DATE 1/08/03
COST/SCHEDULE-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.	
SOIL BORING AND MONITORING WELL SAMPLING LOCATIONS FOR SITE 32 REMEDIAL INVESTIGATION PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	

CONTRACT NUMBER 9058	OWNER NUMBER
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV 0





NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY	DATE	Tetra Tech NUS, Inc.		CONTRACT NUMBER	OWNER NUMBER
							A. JANOCHA	12/30/03	SEDIMENT AND OUTFALL SAMPLE LOCATIONS FOR 2003 SITE 32 (TOPEKA PIER) SHORELINE PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE		9058	CTO 0850
							CHECKED BY	DATE			APPROVED BY	DATE
							J.P. KUMAR	1/07/04			APPROVED BY	DATE
							COST/SCHEDULE-AREA		DRAWING NO.	FIGURE 3	REV	0
							SCALE AS NOTED					

PORTSMOUTH NAVAL SHIPYARD  
INSTALLATION RESTORATION PROGRAM  
STATUS OF WORK  
February 12, 2004

**SITE STATUS**

**OU 1** (SITES 10, Battery Acid Tank, & 21, Acid/Alkaline Tank #28)

Risk Assessment	May 2004
Feasibility Study	2006
Proposed Plan and Record of Decision	2007

Note: The Navy has requested an extension to obtain additional data before doing the risk assessment.

**OU 2** (SITES 6, DRMO, & 29, Incinerator Site)

Feasibility Study	2004/2005
Proposed Plan	2005
Record of Decision	2006

**OU 3** (SITES 8, Jamaica Island Landfill, 9, Mercury Burial Vaults, & 11, Waste Oil Tanks)

Operations/Maintenance and Monitoring Plan	July 2004
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**OU 4** (Areas off-shore that were potentially impacted by on-shore IRP sites and Site 5)

Draft Rounds 1-7 Report	May 2004
Feasibility Study	2006/2007
Proposed Plan/Record of Decision	2007/2008

**OU 6** (Site 8, Management of Migration)

**OU 7** (Site 32)

Draft Remedial Investigation Phase II Recommendations	January 2004
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**OU 8** (Site 31)

Remedial Investigation Work Plan	2010/2011
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**Site Screening Areas:**

Site 30, Galvanizing Plant (Building 184)

Revised draft EE/CA Action Memorandum	April 2004 2004
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Site 34, Oil Gasification Plant (Building 62)

Site Screening Report	December 2003
Draft Engineering Evaluation/Cost Analysis	June 2004
Action Memorandum	2004/2005

PORTSMOUTH NAVAL SHIPYARD  
INSTALLATION RESTORATION PROGRAM  
STATUS OF WORK  
February 12, 2004

DOCUMENT SCHEDULE

<u>Amended Site Management Plan</u> Submit final FY04 SMP	February 2004
<u>Operable Unit 1 (Site 10, Building 238 )</u> Submit Draft QAPP for additional investigation	April 30, 2004
<u>Operable Unit 2 (Sites 6, DRMO, and 29, Teepee Incinerator)</u>  Submit draft Feasibility Study	November 2004
<u>Operable Unit 3 (Sites 8, 9 and 11)</u> Former CDC Submit draft Investigation Report Regulatory comments due	February 2004 March 2004
OU3 Monitoring and Operations and Maintenance Program DQOs Received comments on draft DQOs Submitted Responses to Comments	October 22, 2003 December 2003
<u>Operable Unit 4 Interim Monitoring</u> Submit Data package for Round 7 Submit draft Rounds 1-7 Report	February 27, 2004 May 5, 2004
<u>Operable Unit 6 (management of migration OU for Site 8)</u> Data Quality Objectives Submitted draft DQOS Received comments on DQOS Submit final DQOs	December 10, 2002 January 2003 TBD
<u>Operable Unit 7 (Site 32, Topeka Pier)</u> Conducted field work Submitted RI Phase I data package Receive comments on Phase II Recommendations	April-May 2003 January 14, 2004 March 1, 2004
<u>Site 30, Building 184, former Galvanizing Plant</u> Site 30 revised Engineering Evaluation/Cost Analysis Submit revised draft EE/CA	April 28, 2004
<u>Site 34, Building 62 former Oil Gasification Plant</u> Site 34 Site Investigation Submitted field investigation report Received comments on draft report	December 2003 February 2004
<u>MRP site</u> Conducted Preliminary Assessment	August 2003