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PITT-10-9-066

October 29, 2009

Project Number 112G00904

Reference: Contract No. N62467-04-D-0055 (CLEAN)
Contract Task Order No. 443

MEMORANDUM

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

On behalf of the U.S. Navy, Tetra Tech NUS, Inc. is pleased to provide the draft minutes from the September 15, 2009 Restoration Advisory Board meeting for your review and comment.

Comments are requested by November 19, 2009. You may provide your comments to Lisa Joy at (207) 438-6618.

Sincerely,

Deborah J. Cohen, P.E.
Project Manager

DJC/clm
Enclosure

DISTRIBUTION:
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RESTORATION ADVISORY BOARD MEETING
PORTSMOUTH NAVAL SHIPYARD
KITTERY TOWN HALL, KITTERY, MAINE
September 15, 2009

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

- RAB community members – Doug Bogen, Peter Britz, Jon Carter, Diana McNabb, and Onil Roy.
- Navy RAB members – Linda Cole, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, and Lisa Joy, Portsmouth Naval Shipyard (PNS).
- Regulatory representatives – Matt Audet, United States Environmental Protection Agency (USEPA), and Ted Wolfe (representing Iver McLeod), Maine Department of Environmental Protection (MEDEP).
- Community members Alan Davis, Michele Dionne, Jack McKenna, and Roger Wells were absent.

Guests at the RAB included:

- Jeff Hoyt, Matt Thyng, and Debbie White from PNS.
- Debbie Cohen and Tim Smith from Tetra Tech NUS, Inc. (TtNUS).
- Carolyn Lepage, Technical Assistance Grant (TAG) technical advisor to Seacoast Anti-Pollution League (SAPL).
- Carl Baxter and George Lombardo, New Hampshire Department of Environmental Services (NHDES).

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.

STATUS OF WORK AND REGULATOR UPDATES

Debbie Cohen provided an update on the status of work at Operable Unit (OU) 1, OU2, OU3, OU4, OU7, OU8, OU9, and Site 30. The following are highlights of the update:

- OU1 – A technical meeting was held on July 28, 2009, to discuss Navy responses to technical comments on the draft Feasibility Study (FS) Report. The Navy is resolving regulatory comments. After the FS is finalized, a Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) will be prepared.

- OU2 – USEPA comments on the draft Supplemental Remedial Investigation (RI) Report were discussed during the July 28, 2009, technical meeting. The Navy is resolving regulatory comments. After the RI and FS are finalized, a PRAP and ROD will be prepared. The DRMO Impact Area Removal Action work is progressing; the 30-day public comment period on the draft final Engineering Evaluation/Cost Analysis (EE/CA) for the removal action ends on September 16, 2009. The Action Memorandum and EE/CA will be finalized in October 2009, and the draft Removal Action Work Plan will be submitted in October 2009. Finalization of the Work Plan is anticipated in November 2009, and implementation is scheduled for spring 2010.

- OU3 – The post-remedial operation, maintenance, and monitoring (OM&M) program continues. The most recent maintenance work was conducted in August 2009, and the next round of sampling is scheduled for October 2009. The Navy is resolving regulatory comments on the draft revised Land Use Controls Remedial Design. In addition, the Navy is updating the OM&M Plan and submitted a draft of the update in August 2009.

- OU4 – The Interim Offshore Monitoring Program continues. The draft Rounds 1 through 10 Report was submitted in July 2009, and the Navy is waiting for regulatory comments. Work on the OU4 FS has begun, and the anticipated date for submittal of the draft FS report is early 2010.

- OU7 – The Phase II RI data package was submitted in June 2009 with the draft Phase II Technical Memorandum. Regulatory comments on the Technical Memorandum are being resolved. The Navy is preparing the draft RI Report, which is scheduled for submittal in January 2010.

- OU9 – The final RI Sampling and Analysis Plan (SAP) was approved in July 2009, field activities were conducted in August 2009, and laboratory analysis, data validation, and data management will occur through the remainder of 2009. The Data Package and Technical Memorandum will be submitted in early 2010.

- OU8 – The presentation indicated that the OU8 (Site 31) RI is scheduled for 2012. The Navy also indicated that although the SAP is scheduled for funding in 2012, the Navy is trying to get funding for 2011.

- Site 30 – The Navy is determining the path forward and schedule for Site 30.

In answer to a question of whether draft final versions of the RI and FS Reports will be prepared before finalization of the documents, the Navy indicated that draft final versions of RI and FS reports will be prepared.

REGULATOR UPDATE

USEPA --- Matt Audet indicated that USEPA is currently experiencing problems with obtaining legal comments, and he is working towards meeting the identified schedules.

MEDEP --- Ted Wolfe indicated that MEDEP is continuing document reviews.

UPDATE ON FIELD ACTIVITES

Ms. Cohen provided general information related to the field work to support the RI for OU9 (Site 34 – Former Oil Gasification Plant) that was conducted in August 2009. The presentation included a review of site conditions, chemicals of concern, previous removal actions, and sampling objectives. Field activities were conducted from August 24 through 26 and included installation of soil borings, collection of soil samples, and collection of sediment samples. Laboratory analysis of soil samples will provide data to evaluate residual contaminant concentrations in soil at the site after the 2006 removal action conducted to remove ash mixed with soil. The ash was generated as part of past site operations and deposited on the ground around the Former Oil Gasification Plant (Building 62). Sediment samples were collected to determine the extent of sediment impacted by past migration of contaminants in the ash to the offshore area. Ms. Cohen indicated that the laboratory data from the August field activities should be available in September 2009, data validation and data management would occur in October 2009, and report preparation would begin in November 2009. The sediment data will be used to support the OU4 FS Report, and the soil data will be used to support the Site 34 evaluation.

Questions and discussions during the presentation included the following:

- Were trees removed during the investigation? There is no need to remove trees from the site at this time. The Navy will not be removing trees from the area if remediation is not required.

- Was there any information on the location of a tar pit? Ms. Cohen explained that a historical document identified a tar pit within Building 62 in a figure showing oil gasification operations. A boring was advanced as close to the identified location of the tar pit as possible, and no evidence of the tar pit was found.

- Why were samples taken from the previously excavated area? The backfill material used during the removal action was not adequately characterized at the time of backfilling although the soil came from a state-certified borrow pit. It had since been determined that the state certification process was not as stringent as the Navy's backfill characterization process, so samples were collected from this soil to close this data gap.

- How were the borings installed? Direct-push technology (DPT) was used. Ms. Lepage explained that she was concerned that DPT may not be a reliable method to determine whether ash is present because at another site she works at, ash was found during soil excavation in an area that DPT borings had not shown the presence of ash. Ms. Cohen indicated that during the investigation of extent of ash conducted before the removal action at OU9 (Site 34), DPT borings showed clear evidence of layers of ash in the soil. The observation of ash in the DTP borings was consistent with the observation of ash during soil excavation as part of the removal action.

- Was any coal tar found during the Site 34 investigations? Also, how deep was the ash indentified? Coal was used as a fuel source and was not used in the gasification process; therefore, coal tar is not a by-product of the process. No coal tar has been found at Site 34. The ash layer (burned material mixed with fine coal) was found a few feet below ground surface before the ash was removed in 2006. During the 2009 investigation, thin layers of ash were found a few feet below ground surface in one location in the unexcavated area.

- Was sediment sampling performed using cores? Surface sediment samples were grab samples (not collected with cores), and the sediment samples from 1 to 2 foot below the sediment surface were collected using cores.

Ms. Cohen's presentation continued with a discussion of OU3 field activities. In August 2009, as part of the post-remedial OM&M program for OU3 at PNS, the Navy installed a new groundwater monitoring well (JW-7A) to replace a well that was damaged. The damaged well (JW-7) was intended to monitoring groundwater conditions upgradient of OU3. Another well (JW-19), identified to provide groundwater level information was also found to be damaged during implementation of the OM&M program. The two wells will be abandoned in October 2009 in conjunction with the Round 8 OM&M sampling and inspection activities. The well installation information and well abandonment information will be provided in the

Round 8 data package. The Navy will reseed portions of the OU3 cap system in spring 2010. The area to be reseeded is near the drainage ditches and not by the sports fields. There was no clear reason as to why there are areas with vegetation loss. Mr. Wolfe (MEDEP) indicated that vegetation loss is common on landfill covers due to the depletion of organic material over time. Mr. Wolfe indicated that revegetation should be accompanied with fertilization.

SITE 30 REMOVAL ACTION

Ms. Cohen provided the RAB with a brief description of past activities associated with Site 30 (Building 184) including past investigations, planned removal action activities, implemented actions and deviations from the plans, and the current status of Site 30. Site 30 consists of a former acid tank vault below the ground in a portion of Building 184. When use of the tank vault discontinued, the Shipyard filled in the vault, and covered it in concrete. The area of the building is currently the Shipyard's welding school. As the Navy has discussed at previous RAB meetings, the Shipyard is in the process of moving Shipyard critical activities (including the welding school) from Building 184 to another building at the Shipyard. With the removal of the welding school, the area will be accessible for removal of the tank vault and its contents.

Because of concerns for disturbance of the welding school, the original removal action recommendation in the 2002 EE/CA for removal of the former acid tank vault had to be changed to an action that would not disturb welding school operations. The 2005 EE/CA provided a new recommendation that would provide temporary action to protect human health and the environment without disturbing the welding school. The Navy is proposing to implement the original removal action recommendation in the 2002 EE/CA for removal of the former acid tank vault to provide a final action for Site 30. However, the proposed removal action alternative will be updated (in a revised EE/CA) to reflect new information and additional data evaluation to address concerns raised since 2002. The original costs in the 2002 EE/CA will also be updated. The presentation was concluded by indicating that the welding school is scheduled to move out of Building 184 in early 2010 and preparation of documents to support the removal action (revised EE/CA and Action Memorandum) will begin by the end of 2009.

There was some discussion about the historical significance of Building 184 and consideration of the historical significance in the planning for the removal action. The building was designated as a historical building based on the building design and architectural style it represents. The State Historic Preservation Officer (SHPO) will be informed of the planned work at Building 184. The SHPO is generally concerned with any action that could affect the appearance of the building. Removal of the concrete floor over the tank vault would not likely be a concern; however, if removal of the concrete walls of the tank vault could affect the structure of the building, the SHPO may be concerned. It was noted that the SHPO could not prevent environmental cleanup if the cleanup action is necessary to protect human health and

the environment. Mr. Wolfe asked the Navy to keep MEDEP informed of any issues that the SHPO may have with the work at Site 30 and indicated that on a regulatory level MEDEP could help make sure that consultation with the SHPO does not delay the project.

There was also general conversation concerning the crystalline material presence, the makeup of the crystalline material, and the hazards associated with the crystalline material. The Navy indicated that the hazard associated with the crystalline material is associated with the material's low pH (1 or 2). Therefore, the hazard associated with the crystals was for skin contact; there are no issues with breathing in contaminants.

Other questions during the presentation included the following:

- When did the Shipyard decide to move the welding school? The decision to move the school was based on a footprint consolidation effort that is underway at the Shipyard.

- Is the Navy planning to lift the vault out of the ground or demolish in place? The actual process used to remove the vault will depend on what is found and how conditions are tied to the structural features of the building.

- Is the Shipyard considering potential removal of the building? Not at this time. The intent of the removal action is to have no residual contamination and be able to close the site out under a No Further Action document. Therefore, the Navy is looking at removal of the tank vault contents and the concrete structure.

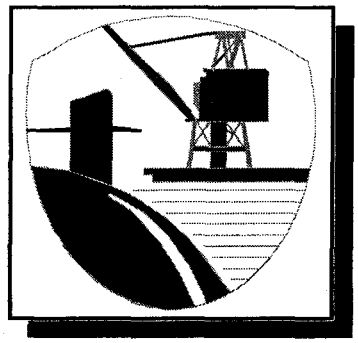
OTHER ISSUES

Upon completion of presentations, Mr. Bogen asked if there were any other issues that needed to be discussed. There were none.

FUTURE MEETINGS

The RAB discussed the date for the next meeting. The Navy proposed either Tuesday, December 1, 2009, or Tuesday, December 8, 2009, for the next RAB meeting. The RAB preferred December 8, 2009. The next RAB meeting will be held on Tuesday, December 8, 2009, and will be held in the meeting room at Kittery Town Hall, 200 Rogers Road, Kittery, Maine. Discussion topics will include an update on the status of work, sediment sample results for the offshore area of OU9, the Removal Action Work Plan for the DRMO Impact Area, and updates on OU1 and OU2 comment resolution.

ATTACHMENTS AGENDA AND SEPTEMBER 15, 2009 PRESENTATIONS



Portsmouth Naval Shipyard Restoration Advisory Board Meeting Agenda

Date – September 15, 2009

Place – Kittery Town Hall, Kittery, ME

Time – 7 p.m. - 9 p.m.

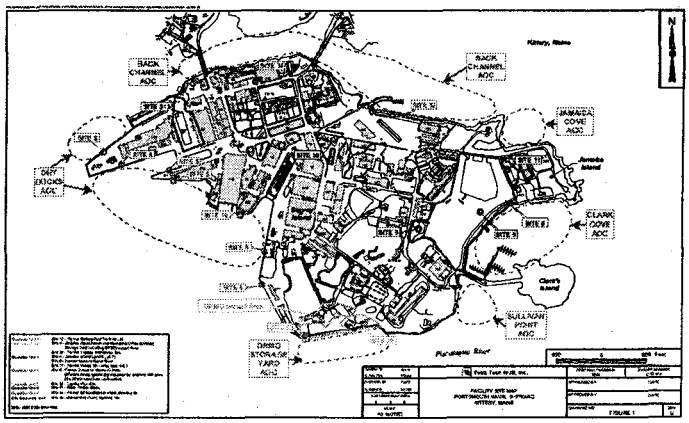
- Introductions
- Status of Work
- Regulator Updates
- Update on Field Activities at OU9 (Site 34) and OU3
- Status of Site 30 Removal Action
- Other Issues as Required

Status of Installation Restoration Sites

Portsmouth Naval Shipyard
Restoration Advisory Board Meeting
September 15, 2009

Presenter:
Debbie Cohen, Tetra Tech NUS, Inc.

Facility Site Map



Operable Unit 1 (Site 10)

- Feasibility Study (FS) Report
  - April 2008 – Draft Report
  - July 2009 – Technical discussion
  - *Resolving regulatory comments*
- The Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) will be prepared after the FS Report

-2

Operable Unit 2 (Sites 6, 29, DRMO Impact Area)

- Supplemental RI Report
  - September 2008 – Draft Report
  - November 2008 – Technical discussion
  - July 2009 – Technical discussion
  - *Resolving regulatory comments*
- Feasibility Study Report
  - November 2008 – Draft Report
  - *Responding to comments/resolving regulatory comments*
- PRAP and ROD to be prepared after the FS Report
- OU2 Pre-design Investigation
  - August to December 2009 – Data Quality Objectives and Draft Work Plan preparation

-3

Operable Unit 2 (continued)

- DRMO Impact Area Removal Action
  - June 2009 – Draft Action Memorandum (AM) with Engineering Evaluation/Cost Analysis (EE/CA)
  - *August 18 to September 16, 2009 – Public Comment Period on draft final EE/CA*
  - September 2009 – Draft Work Plan
  - October/November 2009 – Final AM and EE/CA
  - November 2009 – Final Work Plan

-4

Operable Unit 3 (Site 8)

- Continue with Post-Remedial Operation, Maintenance, and Monitoring (OM&M)
  - July 2009 – Final Round 1 to 4 Report
  - August 2009 – Round 7 data package
  - *August 2009 – Round 8 maintenance activities*
  - October/November 2009 – Round 8 OM&M
- Land Use Control Remedial Design (RD)
  - April 2009 – Revised draft LUC RD
  - July 2009 – Technical meeting
  - *Resolving regulatory comments*
- OM&M Plan Update
  - August 2009 – Draft Plan update (Revision 1)
  - *September/October 2009 – Technical discussions/meeting*
  - October 2009 – Comments due
  - Implement plan update after Round 9

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Operable Unit 4 (Site 5 and Offshore Area)

- Interim Offshore Monitoring
  - December 2008 – Round 10
  - July 2009 – Draft Rounds 1 to 10 Report
  - *August 2009 – Waiting for regulatory comments on draft*
- Feasibility Study Report
  - 2010 – Draft Report (schedule dependent on availability of results of OU9 sediment sampling from August 2009)

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Operable Unit 7 (Site 32)

- Remedial Investigation
  - June 2009 – Phase II RI data package and draft technical memorandum
  - *August 2009 – Regulatory comments/waiting on regulatory comments*
  - *September 2009 – Resolving comments*
  - October 2009 – Final technical memorandum
  - January 2010 – Draft RI Report

-7

Operable Unit 9 (Site 34)

- Remedial Investigation
  - July 2009 – Final RI Sampling and Analysis Plan (SAP)
  - August 2009 – Field Work
  - *September to November 2009 – Data analysis, validation, database management*
  - 2010 – Data Package and Technical Memorandum

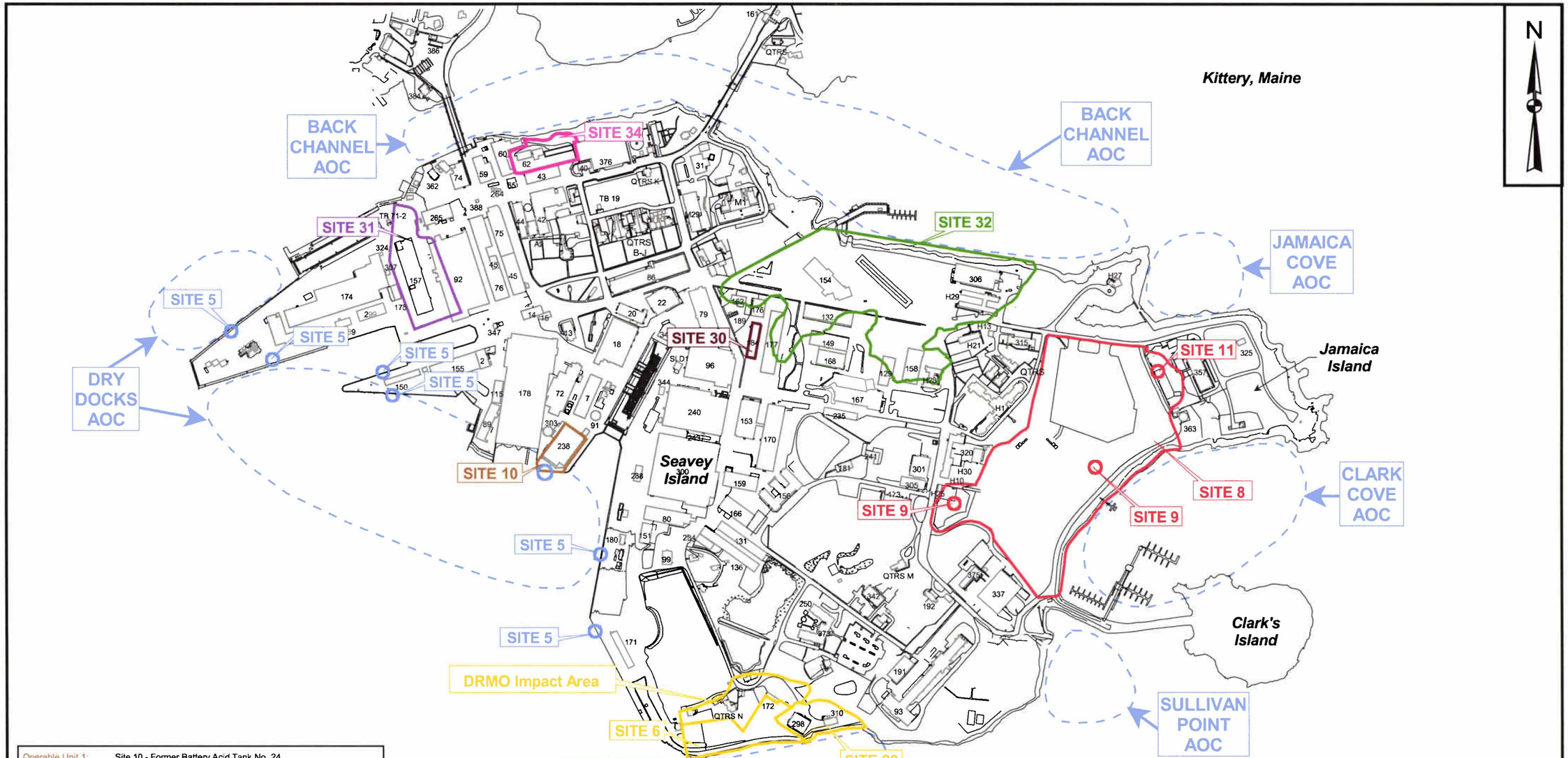
-8

Operable Unit 8 (Site 31) and Site 30

- OU8 (Site 31) Remedial Investigation
  - 2012 – RI SAP
- Site 30 Removal Action
  - 2007 – Removal action for crystalline growth and storm water drainage
  - September 2009 - Determine path forward
  - 2009/2010 – Planning documents for removal action

-9

P:\GIS\PORTSMOUTH_NS\YAPR\INTERIM_OFFSHORE_MONITORING.APR UPDATED APPROXIMATE AOC LOCATIONS COLOR LAYOUT 5/27/08 SP



Operable Unit 1:	Site 10 - Former Battery Acid Tank No. 24
Operable Unit 2:	Site 6 - Defense Reutilization and Marketing Office (DRMO) Storage Yard including DRMO Impact Area
	Site 29 - Former Teepee Incinerator Site
Operable Unit 3:	Site 8 - Jamaica Island Landfill (JILF)
	Site 9 - Former Mercury Burial Sites
	Site 11 - Former Waste Oil Tanks Nos. 6 & 7
Operable Unit 4:	Site 5 - Former Industrial Waste Outfalls Offshore Areas potentially impacted by onshore IRP sites (Six AOCs have been delineated)
Operable Unit 7:	Site 32 - Topeka Pier Site
Operable Unit 8:	Site 31 - West Timber Basin
Operable Unit 9:	Site 34 - Former Oil Gasification Plant, Building 62
Site Screening Area:	Site 30 - Galvanizing Plant, Building 184

Note: 2006 PNS Base Map

DRAWN BY S. PAXTON	DATE 7/20/07	Tetra Tech NUS, Inc.	CONTRACT NUMBER 0904 / OWNER NUMBER CTO 443
CHECKED BY D. COHEN	DATE 5/27/08	FACILITY SITE MAP PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV 0

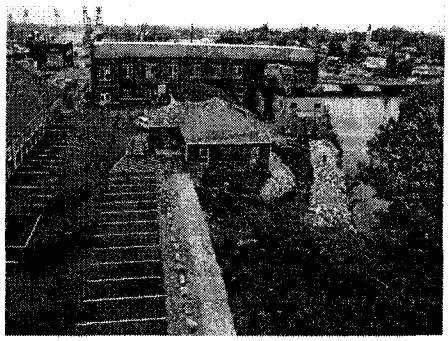
Status of Field Activities

Portsmouth Naval Shipyard
Restoration Advisory Board Meeting
September 15, 2009

Presenter:
Debbie Cohen, Tetra Tech NUS, Inc.

Operable Unit 9 (Site 34)

- 2007 Removal action of ash material
  - Removal action performed before Remedial Investigation (RI)
  - Approximately 2,300 tons of ash material removed



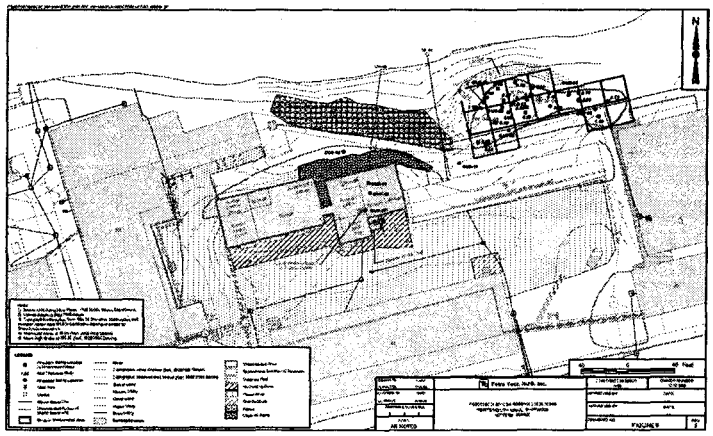
-11

OU9 RI Sampling and Analysis Plan (SAP) – July 2009

- The RI is being conducted to determine the nature and extent of residual soil contamination and assess risks associated with residual contamination
  - Three borings in Building 62 for visual identification of wastes (tar or ash), if present
  - Soil samples from six borings in the unexcavated area will be analyzed for polycyclic aromatic hydrocarbons (PAHs), antimony, lead, and mercury (OU9 chemicals of concern)
  - Soil samples from two borings in the excavated area will be analyzed for PAHs, antimony, lead, and mercury
- The RI includes sampling to support the evaluation of the extent of sediment contamination in the area offshore of Site 34 (MS-01)
  - Sediment samples will be analyzed for PAHs

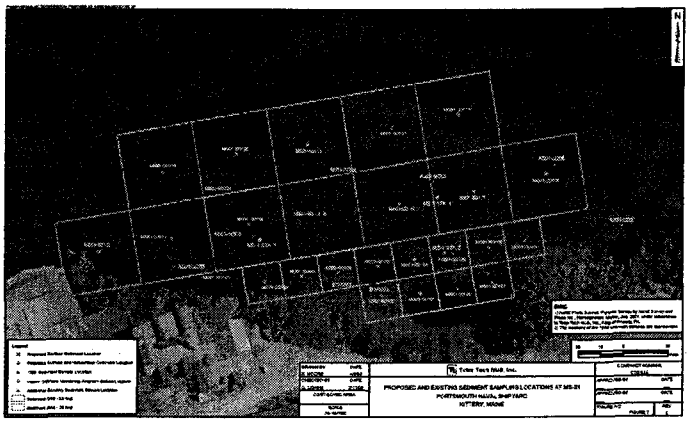
-12

OU9 RI: Proposed Boring Locations



-13

OU9 RI: Proposed Sediment Sampling Locations



-14

OU9 - Soil Sampling Observations

- Boring installation and soil sampling was conducted on August 24 and 25, 2009
- No tar or ash was observed in the borings in the building
- Ash was observed in thin (less than 3 inches) layers in one boring in the unexcavated area
- Ash was observed in a thin layer in one boring in the excavated area
  - A burnt material (ash) mixed with fine coal was found at approximately 7 feet below ground surface, beneath soil underlying backfill soil
  - Additional borings installed, one 5 feet east and one 5 feet west to get indication of extent of ash
  - Ash does not appear to be a continuous layer

-15

OU9 - Sediment Sampling Observations

- Sediment sampling conducted August 24 to 26, 2009
- It was difficult to collect the deeper sediment samples because:
  - Sediment was loosely compacted sand with some gravel and would not stay in the sampling core
  - Shallow refusal at depth (rocky conditions)
  - Strong river currents made it difficult to retrieve samples
- Many subtidal surface sample locations had high (50-75%) volume of shell fragments
- Three locations were moved:
  - Two subtidal locations (MS01-SD125 and MS01-SD112) were moved north (35 and 30 feet, respectively), away from rocky (riprap) portion of shoreline where finer-grained sediment was present
  - One intertidal location (MS01-SD124) was moved ~6 ft north due to refusal (3 efforts) at 1 foot below the sediment surface
- Less rocky material was present at the sediment surface ~40 feet and further from shoreline
- No debris was found in samples except for one small piece of glass in MS01-SD116-0102

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Next Step

- OU9
  - Laboratory analytical results area expected by the end of September 2009
  - Data validation and data base management will be conducted in October 2009
  - Report preparation will begin in November 2009
    - Sediment data will be used to support the OU4 FS Report
    - Soil data will be used to support the Site 34 evaluation

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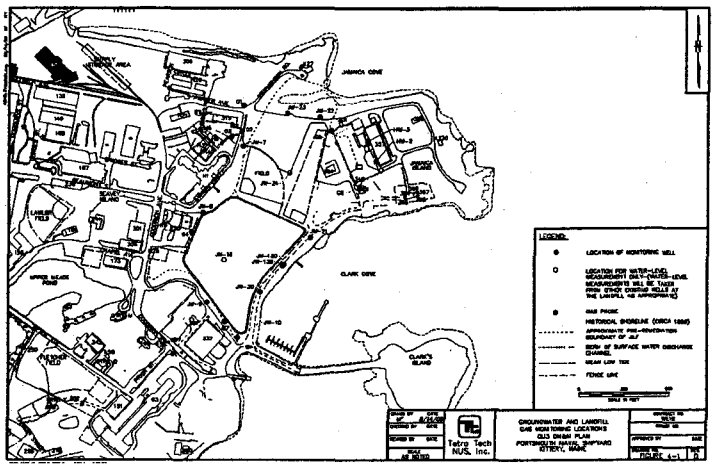
OU3 Post-Remedial Monitoring Locations



-18

Operable Unit 3 – Maintenance Activities

- JW-7 was replaced
  - After Round 1 of the OU3 post-remedial OM&M, upgradient well JW-7 was found to be damaged
  - Based on regulatory review of the Rounds 1 to 4 Report, the Navy agreed to abandon JW-7 and install a new well
  - The new well (JW-7A) was installed
  - JW-7 has not been abandoned because after removal of the concrete pad a concrete-filled steel pipe was found around the well riser pipe that could not be readily removed as planned
- Based on the conditions observed at JW-7, abandonment of the other well (JW-19) was not conducted

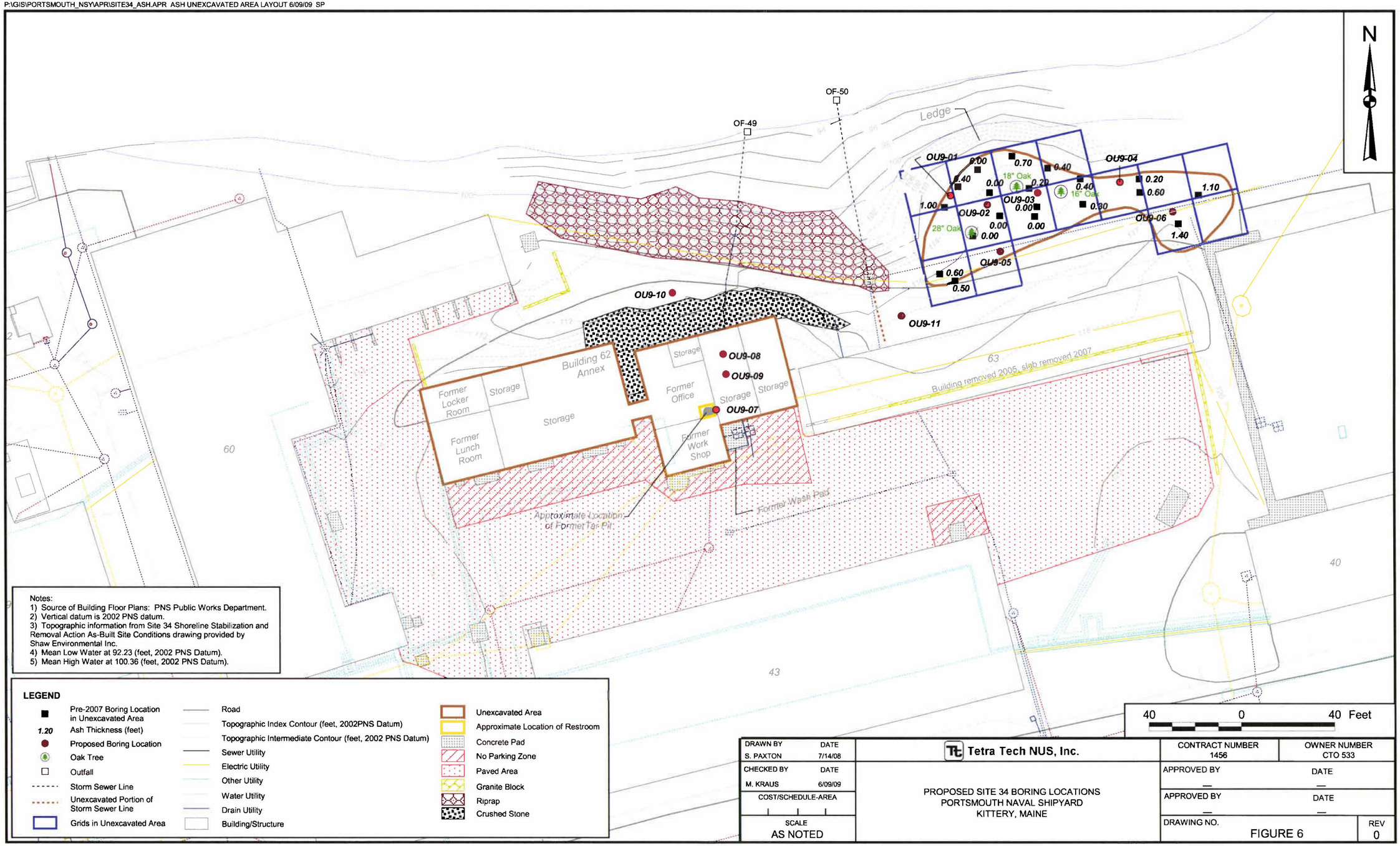
-19

Next Step

- OU3
  - Well installation information will be provided in the data package for Round 8
  - Further evaluation of methods for well abandonment of JW-7 and JW-19 will be conducted and a revised method and schedule will be proposed
  - Large-area reseeding is planned for spring 2010 (Round 9) when local landscaping subcontractors are readily available to conduct the work

-20

P:\GIS\PORTSMOUTH_NSY\APR\SITE34_ASH.APR ASH UNEXCAVATED AREA LAYOUT 6/09/09 SP



Notes:
1) Source of Building Floor Plans: PNS Public Works Department.
2) Vertical datum is 2002 PNS datum.
3) Topographic information from Site 34 Shoreline Stabilization and Removal Action As-Built Site Conditions drawing provided by Shaw Environmental Inc.
4) Mean Low Water at 92.23 (feet, 2002 PNS Datum).
5) Mean High Water at 100.36 (feet, 2002 PNS Datum).

LEGEND

- Pre-2007 Boring Location in Unexcavated Area
- 1.20 Ash Thickness (feet)
- Proposed Boring Location
- Oak Tree
- Outfall
- Storm Sewer Line
- Unexcavated Portion of Storm Sewer Line
- Grids in Unexcavated Area
- Road
- Topographic Index Contour (feet, 2002PNS Datum)
- Topographic Intermediate Contour (feet, 2002 PNS Datum)
- Sewer Utility
- Electric Utility
- Other Utility
- Water Utility
- Drain Utility
- Building/Structure
- Unexcavated Area
- Approximate Location of Restroom
- Concrete Pad
- No Parking Zone
- Paved Area
- Granite Block
- Riprap
- Crushed Stone

40 0 40 Feet

DRAWN BY S. PAXTON	DATE 7/14/08	Tetra Tech NUS, Inc.	CONTRACT NUMBER 1456 / OWNER NUMBER CTO 533
CHECKED BY M. KRAUS	DATE 6/09/09	PROPOSED SITE 34 BORING LOCATIONS PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	APPROVED BY — / DATE —
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 6 / REV 0

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MS01-SD123
MS01-SD122
MS01-SD120
MS01-SD121
MS01-SD119
AS01-SD04
AS01-SD06
AS01-SD05
MS01-SD118
MS01-SD124
MS01-SD117
MS-1 STA. 1
MS01-SD116
MS01-SD115
MS01-SD114
AS01-SD07
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MS01-SD113
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MS01-SD109
AS01-SD02
MS01-SD107
MS01-SD108
MS01-SD105
MS01-SD106
MS01-SD125
BC-6202
BC-6201
MS01-SD103
MS01-SD104
MS01-SD102
MS01-SD100
MS01-SD101

Notes:

1) Aerial Photo Source: Fly-over Survey by Aerial Survey and Photo Inc., Norridgewock, Maine, July 2001, under subcontract to Tetra Tech NUS, Inc., King of Prussia, PA.
2) The locations of the 1998 sediment samples are approximate.

Legend

- Proposed Surface Sediment Location
- Proposed Surface and Subsurface Sediment Location
- 1998 Sediment Sample Location
- Interim Offshore Monitoring Program Station Location
- Additional Scrutiny Sediment Sample Location
- Sediment Grid - 50 feet
- Sediment Grid - 25 feet

30 15 0 30 Feet

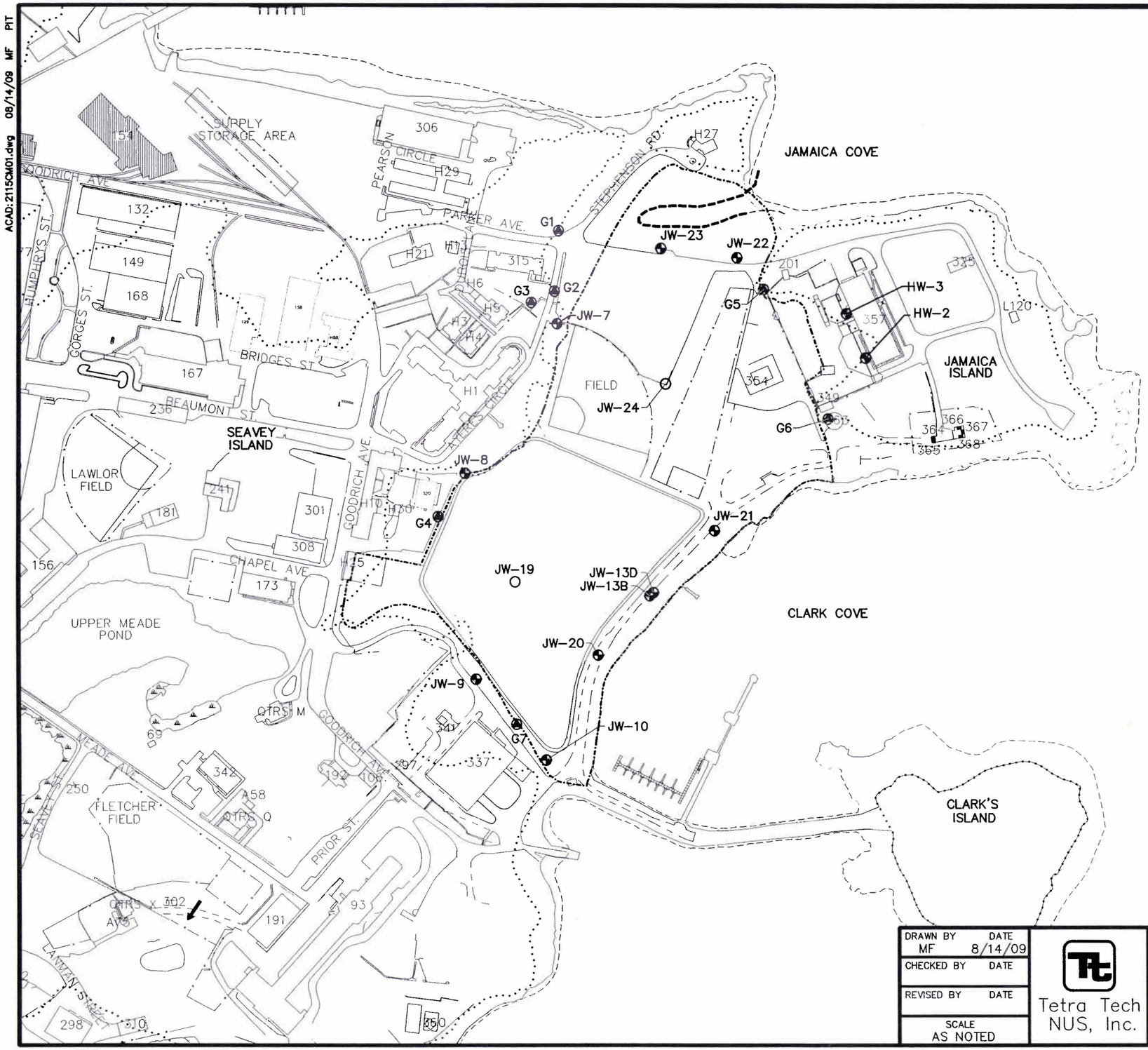
DRAWN BY / DATE	K. MOORE 4/9/08
CHECKED BY / DATE	D. COHEN 2/11/09
COST/SCHED AREA	
SCALE	AS NOTED

Tetra Tech NUS, Inc.

PROPOSED AND EXISTING SEDIMENT SAMPLING LOCATIONS AT MS-01
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

CONTRACT NUMBER	CTO 533
APPROVED BY / DATE	
APPROVED BY / DATE	
FIGURE NO.	FIGURE 7
REV	0

ACAD: 2115GM01.dwg 08/14/09 MF PIT



LEGEND:

- LOCATION OF MONITORING WELL
- LOCATION FOR WATER-LEVEL MEASUREMENT ONLY-(WATER-LEVEL MEASUREMENTS WILL BE TAKEN FROM OTHER EXISTING WELLS AT THE LANDFILL AS APPROPRIATE)
- GAS PROBE
- HISTORICAL SHORELINE (CIRCA 1880)
- APPROXIMATE PRE-REMEDIATION BOUNDARY OF JILF
- BERM OF SURFACE WATER DISCHARGE CHANNEL
- MEAN LOW TIDE
- FENCE LINE

0 300 600
SCALE IN FEET

DRAWN BY MF DATE 8/14/09	Tetra Tech NUS, Inc.	GROUNDWATER AND LANDFILL GAS MONITORING LOCATIONS OU3 OM&M PLAN PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE
CHECKED BY DATE		
REVISED BY DATE		
SCALE AS NOTED		

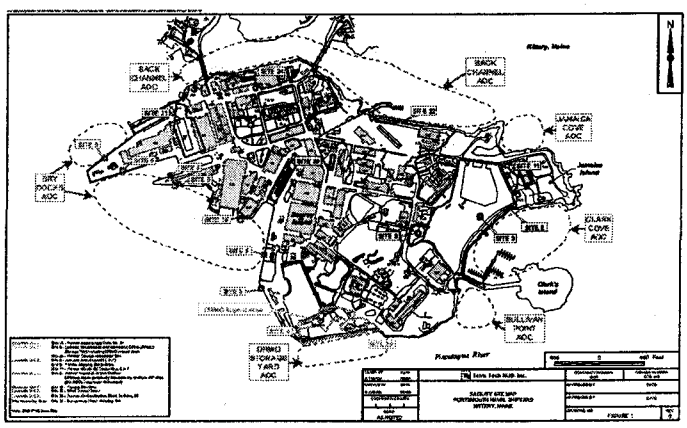
CONTRACT NO. WE18	
OWNER NO.	
APPROVED BY	DATE
DRAWING NO. FIGURE 4-1	REV. 0

Site 30 Removal Action Status

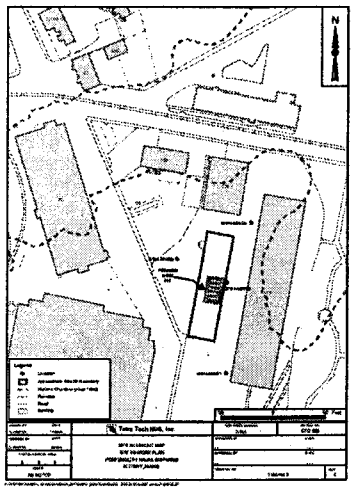
Portsmouth Naval Shipyard
Restoration Advisory Board Meeting
September 15, 2009

Presenter:
Deborah Cohen, Tetra Tech NUS, Inc.

Facility Site Map



Site 30 Layout Map

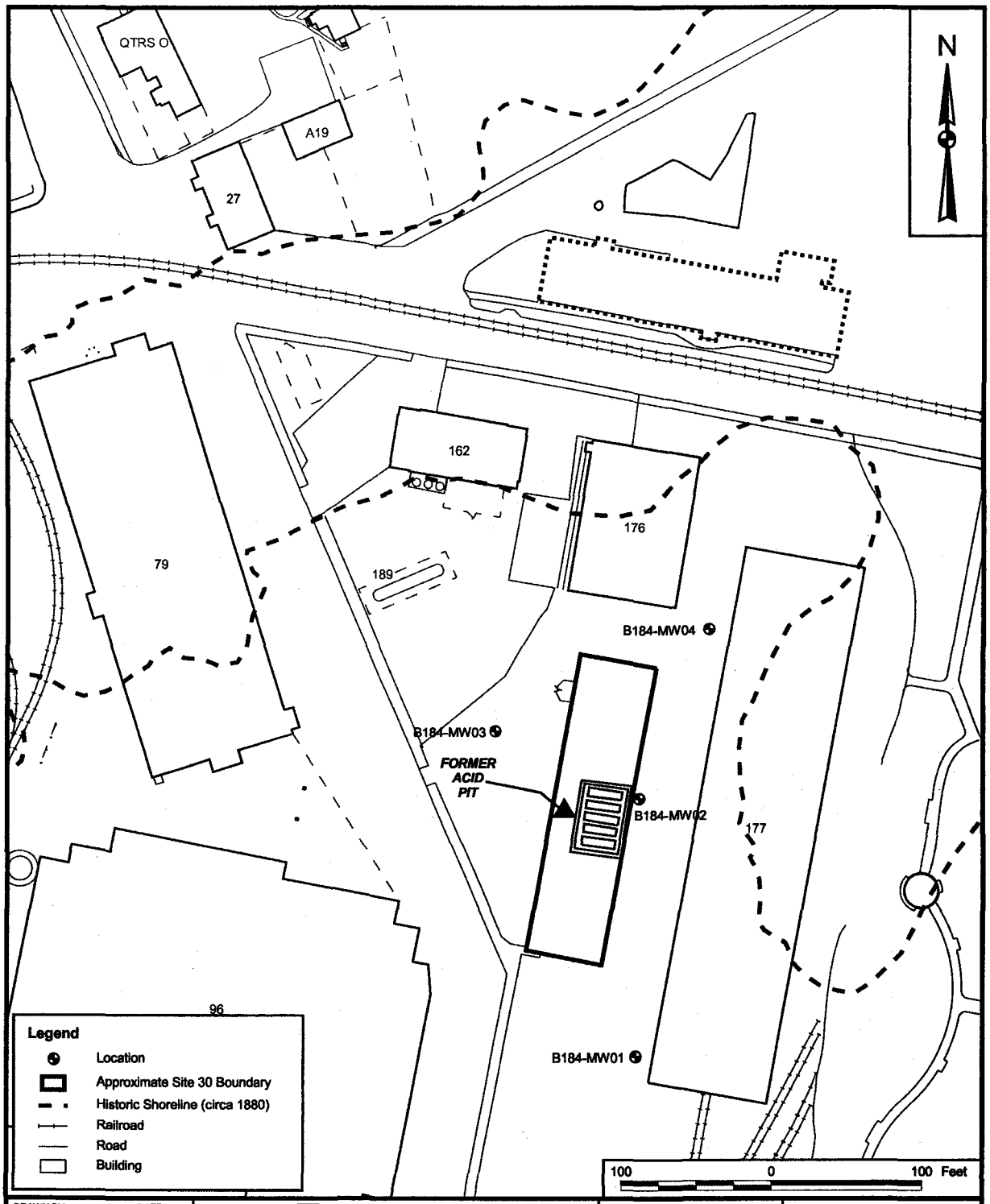


-2

Site 30 (Building 184) History

- Building 184 was constructed in 1943 as a galvanizing plant and used as such until 1946 and contains a vault lined with acid-proof brick that was used to contain pickling tanks used by the galvanizing plant
- From 1946 to the mid-1950s, the building was used as Shipyard's Electrical Testing Laboratory and the tank vault was covered over during this period
- From the mid-1950s to early 1960s, the building was used as a Clean Room and the tank vault was uncovered and tanks within the vault were used for cleaning metal components during this period
- In the early 1960s the building was converted to a Welding School and the tank vault was filled in and covered over at this time
- The Shipyard began a 3-phase relocation of operations from Building 184 to another building with the final phase anticipated to be complete by second quarter FY10 (Jan – March 2010)
- Building 184 was determined to be a contributing element to a National Register-eligible historic district, which needs to be considered for any action that may affect the structure of the building

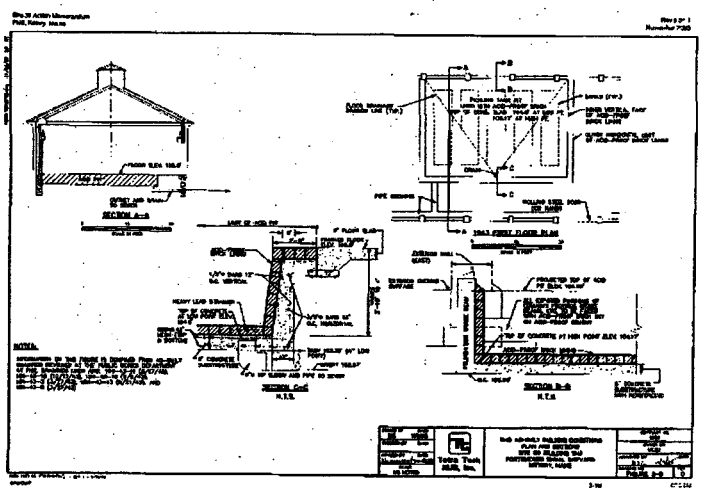
-3



DRAWN BY: S. PAXTON — DATE: 10/30/06	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 0383	OWNER NO.: CTO 055
CHECKED BY: S. WARINO — DATE: 6/30/06	SITE 30 LAYOUT MAP SITE 30 WORK PLAN PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	APPROVED BY: — DATE: —	
COST/SCHEDULE-AREA		APPROVED BY: — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE 2	REV: 0

P:\GIS\PORTSMOUTH_NSY\APR\INTERIM_OFFSHORE_MONITORING.APR SITE 30 SITE MAP LAYOUT 6/30/06 SP

1943 As-Built Conditions Figure

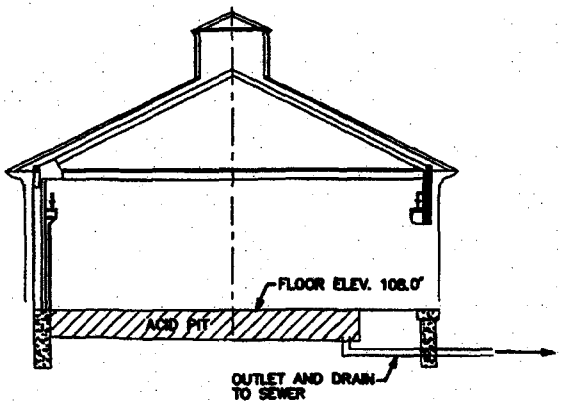


-4

Site 30 Description

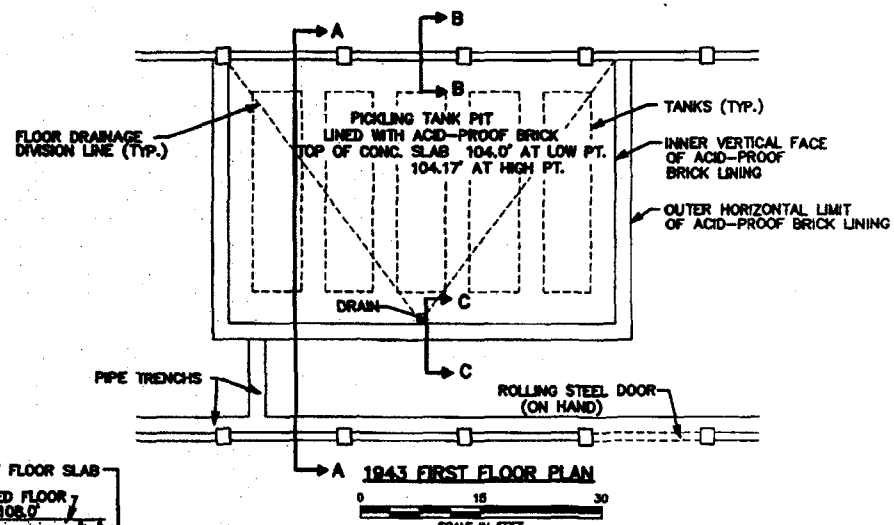
- Former tank vault (focus of investigations/actions) is 52 feet x 35 feet x 4 feet deep and is located in approximate center of Building 184
- The tank vault is constructed of concrete with acid-proof cement and lined with acid-proof brick
- The bottom of the tank vault is sloped with drain in the center
- During galvanizing operations (1943 – 1946), tanks contained within the vault included Flux Tank, Water Tank, Acid Tank, and Caustic Tank (used for industrial cleaning operations)
- Materials used when Building 184 served as a Clean Room (mid-50s to early-60s) included sulfuric acid and trisodium phosphate

-5



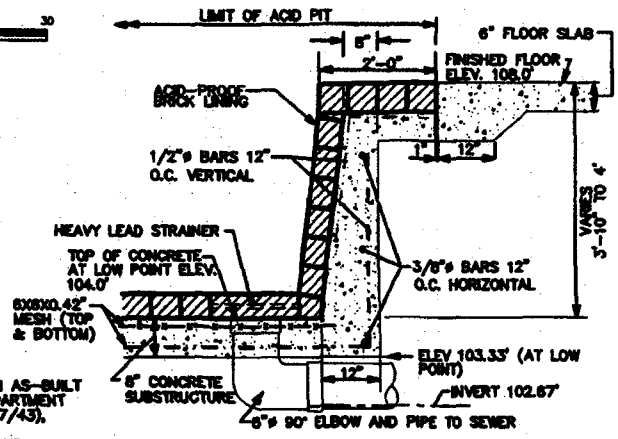
SECTION A–A

SCALE IN FEET 0 15 30



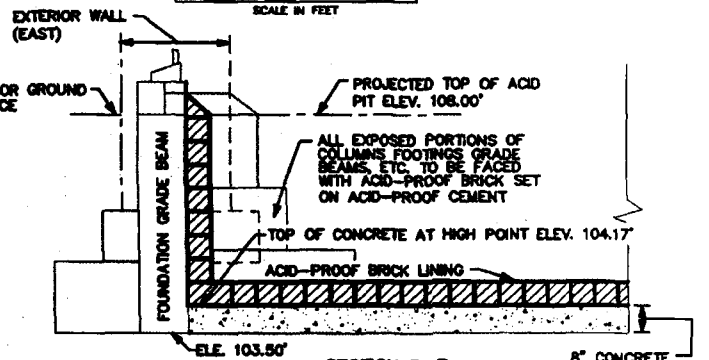
1943 FIRST FLOOR PLAN

SCALE IN FEET 0 15 30



SECTION C–C

N.T.S.



SECTION B–B

N.T.S.

NOTES:

INFORMATION ON THIS FIGURE IS COMPILED FROM AS–BUILT DRAWINGS REVIEWED AT THE PUBLIC WORKS DEPARTMENT AT PNS. DRAWINGS USED ARE: 184–43–11 (6/17/43), 184–43–18 (10/12/43), 184–43–10 (6/5/43), 184–43–3 (3/27/43), 184–43–13 (6/21/43), AND 184–43–2 (3/27/43)

DRAWN BY DM DATE 11/2/05	Tetra Tech NUS, Inc.	1943 AS-BUILT BUILDING CONDITIONS PLAN AND SECTIONS SITE 30 (BUILDING 184) PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	CONTRACT NO. 1291
CHECKED BY DATE			OWNER NO. 0022
REVISED BY DATE			APPROVED BY DJC DATE 11/9/05
SCALE AS NOTED			DRAWING NO. FIGURE 2-3 REV. 0

Site 30 Previous Investigations

- Crystalline substance noticed in 1973, 1994, 1996, and 1997
- Crystalline substance sampled in 1994 and 1996
  - Low pH (classifies material as hazardous – corrosive)
  - Material composed of sulfur compounds
  - Material contains metals including Mg, Al, Fe, Na, Zn, Mn, Ni, Cu, Cr
  - TCLP analysis showed the material was non hazardous; metals detected were at concentrations less than RCRA TCLP criteria

-6

Site 30 Previous Investigations (continued)

- Site Screening Investigation in 1998
  - Surface soil, subsurface soil, and groundwater sampled outside building
  - No significant contamination noted outside building
  - The Navy recommended additional investigation beneath the former tank vault within Building 184
- Test Pitting Investigation in 2001
  - Samples of crystalline material, tank vault fill material, and water in the former tank vault were collected
  - Sulfates, Al, Fe, and Mg at high concentrations noted in crystals, fill material, and water samples
  - pH of crystals posed only concern based on corrosivity
  - Water in the tank vault is not expected to be hydraulically connected to groundwater
  - Based on the results, the Navy recommended a non-time critical removal action for the former tank vault

-7

Site 30 Removal Action History – EE/CA Rev 0

EE/CA submitted December 2002

- RAOs identified as:
  - Minimize potential unacceptable risk to current and future site users from exposure to crystal growth with low pH
  - Minimize the potential for future release of contaminants to the groundwater beneath the former tank vault
  - Minimize costs for long-term monitoring, operations, and maintenance
- Alternatives evaluated included:
  - Alternative 1: No Action
  - Alternative 2: In-Situ Flushing
  - Alternative 3: Excavation and Off-site Disposal

-8

EE/CA Rev 0 – December 2002 (continued)

Recommended Alternative – Excavation and Off-Site Disposal

- Initial pre-construction investigation to determine the actual source(s) of water, confirmation of suspected mechanisms of crystalline material growth, and configuration of the physical layout and conditions of the sewer system associated with the former tank vault
- Removal of all equipment and facilities located within the footprint and adjacent areas of the former tank vault
- Removal of the concrete floor over the former tank vault
- Excavation, sampling, and disposal of all water, fill, and other materials within the former tank vault
- Removal of all original acid-proof brick lining materials

-9

EE/CA Rev 0 – December 2002 (continued)

Recommended Alternative – Excavation and Off-Site Disposal (continued)

- Cleaning of the concrete substructure behind the acid-proof brick lining
- Visual inspection of the condition of the concrete substructure (walls and floor) and drain outlet structure and Navy recommendation on a course of action to address that concrete substructure
- Loading, transportation, and proper disposal of all excavated materials
- Backfilling of the excavation with selected aggregate or suitable soil materials

-10

EE/CA Rev 0 – December 2002 (continued)

Recommended Alternative – Excavation and Off-Site Disposal (continued)

- Restoration of the floor with concrete to pre-remediation conditions
- Restoration of the building facilities and installation of equipment to pre-remediation conditions
- Preliminary inspections, removal of any crystal growth, and replacement of the herculilte cover within the building will be performed as necessary at intervals of 6-months prior to the implementation of the remedial activities
- Prepare a Close-Out Report at the completion of the removal action

-11

EE/CA Rev 0 – December 2002 (continued)

Public Comment Period on EE/CA held January 21 to February 19, 2003 resulted in the following comments:

- Need for Monitoring Following Removal Action – comments expressed the need for monitoring for recurrence of crystal growth and monitoring of groundwater to ensure contamination from the vault has not migrated to the environment
- General Remedial Selection Process - one comment requested that the Navy give more weight to the public health and environment concerns than economic analysis in the selection of a clean-up alternative
- Source and Nature of Vault Water – comments requested further information regarding the source of the vault water, one comment also mentions that the pH of the vault water is also of concern
- Inspection of Concrete Substructure – comments request further information regarding the inspection of the concrete substructure

-12

Site 30 Removal Action History – Draft AM

- Draft Action Memorandum submitted March 2003
- USEPA, MEDEP, and RAB identified several issues in comments on Draft Action Memo
  - Impact of former tank vault on downgradient groundwater not fully defined
  - Extent of contaminated material in the former tank vault not fully defined
  - Monitoring of groundwater and crystalline material following implementation of removal action is needed

-13

Draft AM – March 2003 (continued)

- The Navy determined that the recommended alternative could not be implemented (could not move the Welding School) and proposed submittal of revised EE/CA and Action Memo (July 25, 2003)
- USEPA, MEDEP, and RAB agreed to Navy's Proposal for a revised EE/CA and Action Memo

-14

Site 30 Removal Action History – EE/CA Rev 1

Revised EE/CA submitted August 2005

- RAOs identified as
  - Minimize potential unacceptable risk to current and future site users from exposure to crystal growth with low pH
  - Minimize the potential for future release of contaminants to the groundwater beneath the former tank vault
  - Select a removal action that will attain the primary RAOs while minimizing the interruption of the mission-critical activities within Building 184.
- Alternatives evaluated included:
  - Alternative 1: No Action
  - Alternative 2: In-Situ Flushing
  - Alternative 3: Interim Periodic Crystal Removal and Vault Dewatering followed by Excavation and Off-Site Disposal
  - Alternative 4: Long-Term Periodic Crystal Removal, Minimization of Water Entering Vault, and Vault Dewatering

-15

EE/CA Rev 1 – August 2005 (continued)

Recommended Alternative – Long-Term Periodic Crystal Removal, Minimization of Water Entering Vault, and Vault Dewatering

- Survey of building drains and blocking of appropriate portions to minimize water from entering the former tank vault through drains
- Providing a surface sealant and grading the parking area outside the building to minimize storm water outside the building wall adjacent to the former tank vault from leaking into it
- Removal of crystals and dewatering of the former tank vault until a CERCLA decision is determined for the site (assumed to be 6 years for costing purposes)
- Preparation of a Removal Action report

- Public Comment Period on revised EE/CA held September 20 to October 18, 2005
  - No comments were received during the Public Comment Period

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Site 30 Removal Action History – AM

- The revised Action Memorandum was submitted in January 2006 and signed in June 2006 with no outstanding issues identified, although EPA, MEDEP, and the RAB expressed concerns regarding groundwater monitoring at the site as part of the removal action
- Crystalline material was removed from Building 184 in June 2006 and a cover was installed to act as barrier should additional crystalline growth occur
- Regrading of area outside Building 184 to direct storm water away from former tank vault and area of crystal growth was conducted as part of the Site 34 removal action in 2007
- An internal draft Work Plan for dewatering the former tank vault was prepared in June 2008 – information provided in Letter Work Plan included 2008 water level information and well inspection information for Site 30 and Site 32 wells

-17

Site 30 Additional Investigation Activities

As part of Site 32 RI , groundwater data collected that will also assist in addressing groundwater concerns for Site 30

- Two monitoring wells at Site 32 installed that will monitoring groundwater downgradient of Site 30 - TP-MW10 (installed during Phase I RI) and TP-MW12 (installed during Phase II RI)
- Groundwater levels were measured in June and December 2008 from Site 32 and Site 30 wells to understand groundwater flow gradients in the area
- Site 32 and Site 30 wells were sampled and analyzed in December 2008; Site 30 wells were analyzed for metals
- Potentiometric maps were prepared for the June 2008 data and provided in the Site 32 QAPP (Revision 1) and potentiometric maps for the December 2008 data are being prepared for the Site 32 RI Report

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Site 30 Current Status and Recommendations

- Welding School relocation is expected to be completed by March 2010 with completion of the relocation contingent on refurbishing the new location for the Welding School
- The Navy recommends conducting a removal action that includes complete removal of the former tank vault, contingent on
  - Completion of relocation of the Welding School so that the vault area is accessible for complete removal
  - Consultation with and approval from the State Historic Preservation Officer for conducting complete removal of the vault

-19

Site 30 Recommendations (continued)

The Navy recommends preparation of a revised EE/CA for Site 30 (Revision 2) that would include complete removal of the former tank vault to provide the following:

- Evaluation of additional groundwater data from 2008 for Site 30 wells and downgradient wells at Site 32 to address groundwater concerns
- Evaluation of additional removal action components necessary based on public comments on the December 2002 EE/CA
- Updated costs and ARARs from the December 2002 EE/CA (which recommended complete removal)

-20