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INSTALLATION RESTORATION PROGRAM MEETING AGENCY UXO 32, SITES 66 AND 1  
14 OCTOBER 2010 NSWC INDIAN HEAD  
10/14/2010  
RESTORATION ADVISORY BOARD

**NAVAL SUPPORT FACILITY INDIAN HEAD  
INSTALLATION RESTORATION (IR) PROGRAM  
RESTORATION ADVISORY BOARD (RAB) MEETING AGENDA**

October 14, 2010

- |                       |  |
|-----------------------|--|
| <b>5:00 - 5:05 pm</b> | <b>ARRIVAL/WELCOME</b><br>Mr. Joseph Rail<br>Naval Facilities Engineering Command, Washington (NAVFACWASH)<br>Remedial Project Manager |
| <b>5:05 – 5:30 pm</b> | <b>MRP MAIN INSTALLATION SITE INVESTIGATION UPDATE</b><br>Mr. Joseph Rail  |
| <b>5:30 – 5:45 pm</b> | <b>UXO 32 (SCRAP YARD) UPDATE</b><br>Mr. Nick Carros   |
| <b>5:45 – 6:00 pm</b> | <b>SITE 66 RI FIELDWORK</b><br>Mr. Nate Delong   |
| <b>6:00 – 6:15 pm</b> | <b>SITE 1 &amp; SITE 19/27 EE/CAs and ACTION MEMORANDUMS</b><br>Mr. Nate Delong  |
| <b>6:15 – 6:30 pm</b> | <b>FY 11 BUDGET/SCHEDULE</b><br>Mr. Joseph Rail  |
| <b>6:30 pm</b>        | <b>ADJOURN</b>   |



*NAVAL SUPPORT FACILITY,  
INDIAN HEAD*



*Main Installation MRP SI Update*

*Joseph Rail  
NAVFAC Washington*

*October 14, 2010*



## *SI Objectives*



- *Complete Site Investigations based on Preliminary Assessment recommendations*
- *Provide a brief overview of the 7 land sites and 5 water sites identified under the Navy Munitions Response Program (MRP)*
- *Determine presence or absence of munitions and explosives of concern (MEC) and/or munitions constituents (MC)*
- *Update conceptual site models*
- *Determine path forward for each site:*
  - *Perform a critical or non-time-critical removal action*
  - *Proceed to RI or other investigation*
  - *Recommend no further action*



## *MRP SI Sites*



### *Land Sites*

- *UXO 6: NG Slums Burning Ground*
- *UXO 9: Single Base Propellant Grains Spill Area*
- *UXO 11: The Valley*
- *UXO 13: FDR Skeet Range*
- *UXO 20: Safety Thermal Treatment Point*
- *UXO 29: Southwestern Pistol Range*
- *UXO 30: Gate 3 Burning Ground*

### *Water Area Munition Sites (WAMS)*

- *UXO 18: Battle Range Firing Area*
- *UXO 19: Igniter Area*
- *UXO 27: Sonar Training Area*
- *UXO 31: Pope's Creek*
- *UXO 33: Water Impact Area*



## *UXO 6: NG Slums Burning Ground*



- *0.3-acre land site*
- *Located on the southeastern shore of the Main Installation adjacent to Mattawoman Creek*
- *Reportedly used as OB ground for Nitroglycerin (NG) slums (excess NG mixed with sawdust for stabilization)*
- *Operated from late 1940s to approx. 1953*





## *UXO 6: NG Slums Burning Ground (cont'd)*



- *3 surface soil, 6 subsurface soil, and 3 groundwater samples taken at 3 locations*
- ***Surface Soil***
  - *No exceedances of detected PAHs*
- ***Subsurface Soil***
  - *No detections of PAHs/No exceedances of detected explosives*
- ***Groundwater***
  - *One PAH detected at location DP-1, but did not exceed RSL*
  - *Several explosives detected at each sampling location*
  - *Location DP-1 had the most detected compounds and highest concentrations*
  - *No background values exist for compounds exceeding RSL, so a comparison to background wasn't possible*



# UXO 6: NG Slums Burning Ground (cont'd)





## *UXO 6: NG Slums Burning Ground (cont'd)*



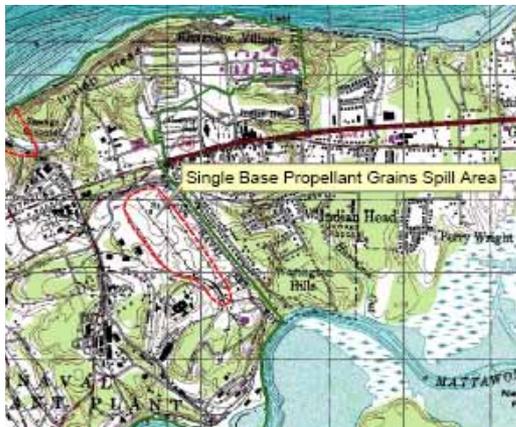
- ***Conclusions and Recommendations***
  - *Residual NG or byproducts from burning activities have potentially migrated through soil into underlying groundwater*
  - *No further investigation for surface and subsurface soil based on low concentrations that don't exceed RSLs*
  - *RI for groundwater*
  - *NFA for MEC*



## *UXO 9: Single Base Propellant Grains Spill Area*

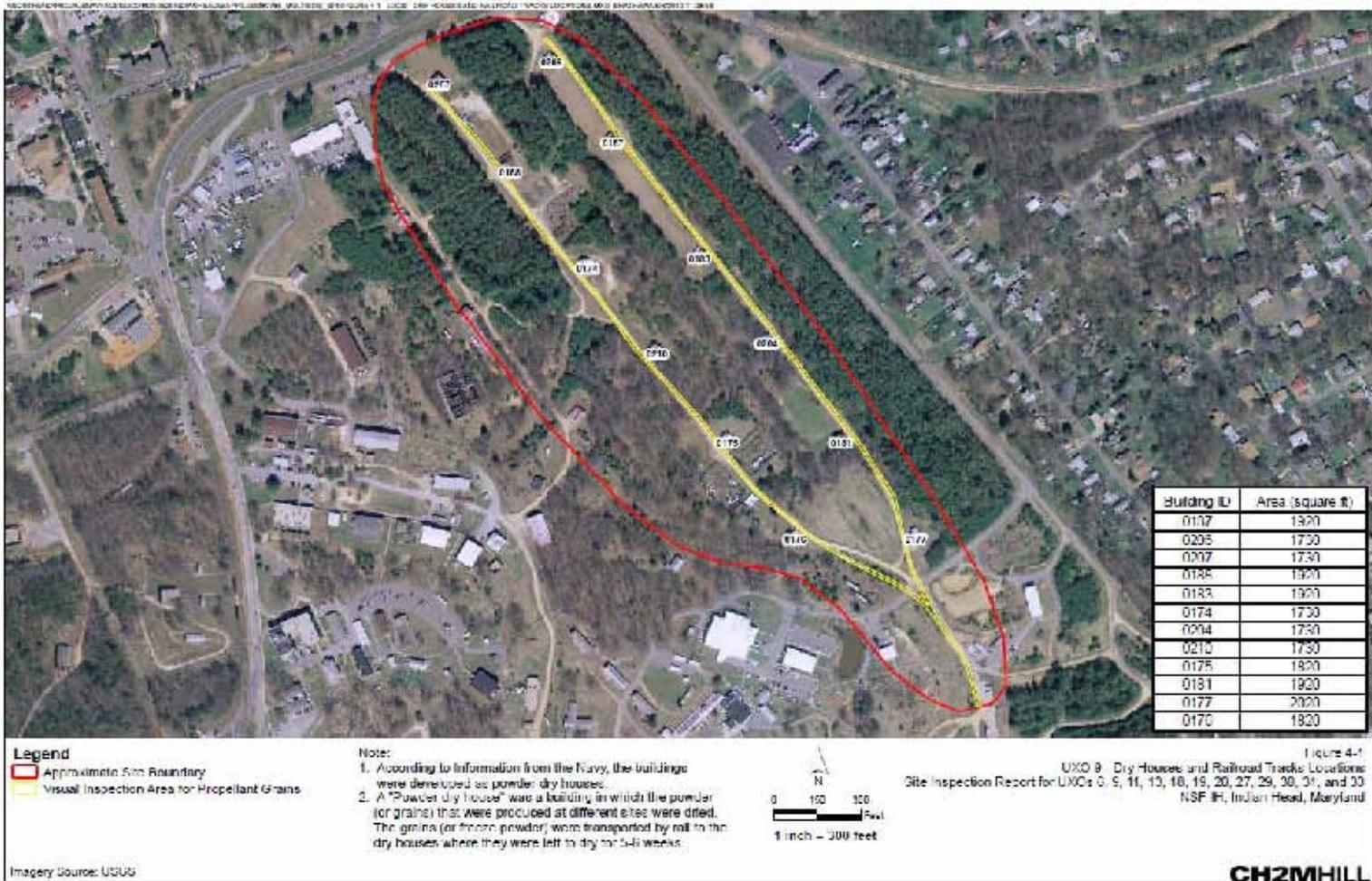


- *52-acre land site*
- *Located in the northeastern portion of the IH peninsula*
- *Site consists of an area where propellant grains were spilled during transportation of the propellant by rail at the installation*
- *Transportation of grains started between 1927 and 1942 and ended in the late 1980s*





# UXO 9: Single Base Propellant Grains Spill Area (cont'd)





## *UXO 9: Single Base Propellant Grains Spill Area (cont'd)*



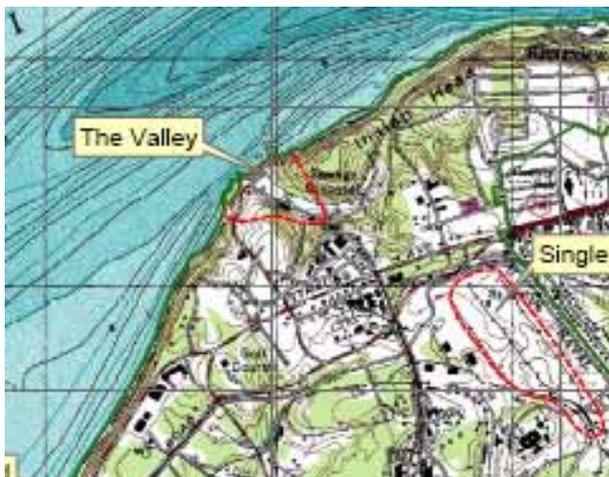
- *MEC inventory completed through visual inspection in areas of railroad tracks and former dry houses*
- *No soil or groundwater samples taken*
- ***Conclusions and Recommendations***
  - *Propellant grains are widely distributed around building entranceways, walkways, loading docks, crawl spaces, and down spouts*
  - *Complete a non-time critical removal action around buildings and tracks*
  - *Proceed to RI for MC in soil and groundwater*



## *UXO 11: The Valley*



- *21-acre land site*
- *Located adjacent to the Potomac River on the northwest portion of the Main Installation*
- *Prior to the 1980s, it was a tidal marshland; ideal for testing guns because of the hills on each side (absorb shots and potential explosions of gun barrels)*
- *Used for developing and testing numerous ordnance items from 1891 to 1921*
- *Used for jet propulsion research from 1940 through 1944*





## *UXO 11: The Valley (cont'd)*



- *MC and MEC investigation completed through sampling and digital geophysical mapping (DGM)*
- *25 surface soil/subsurface soil and 2 groundwater samples taken*
- ***DGM Survey***
  - *4,748 individual anomalies were identified*
  - *Survey did not differentiate between MEC or non-munitions debris*
  - *Linear subsurface anomalies appear to be underground utilities*
- ***Surface Soil***
  - *Explosives detected at each sampling location, but none exceeded RSLs*
  - *Metals (Al, Sb, As, Cr, Co, Cu, Fe Pb, Mn, Hg, Ni, V) detected at all locations and several exceeded RSLs*



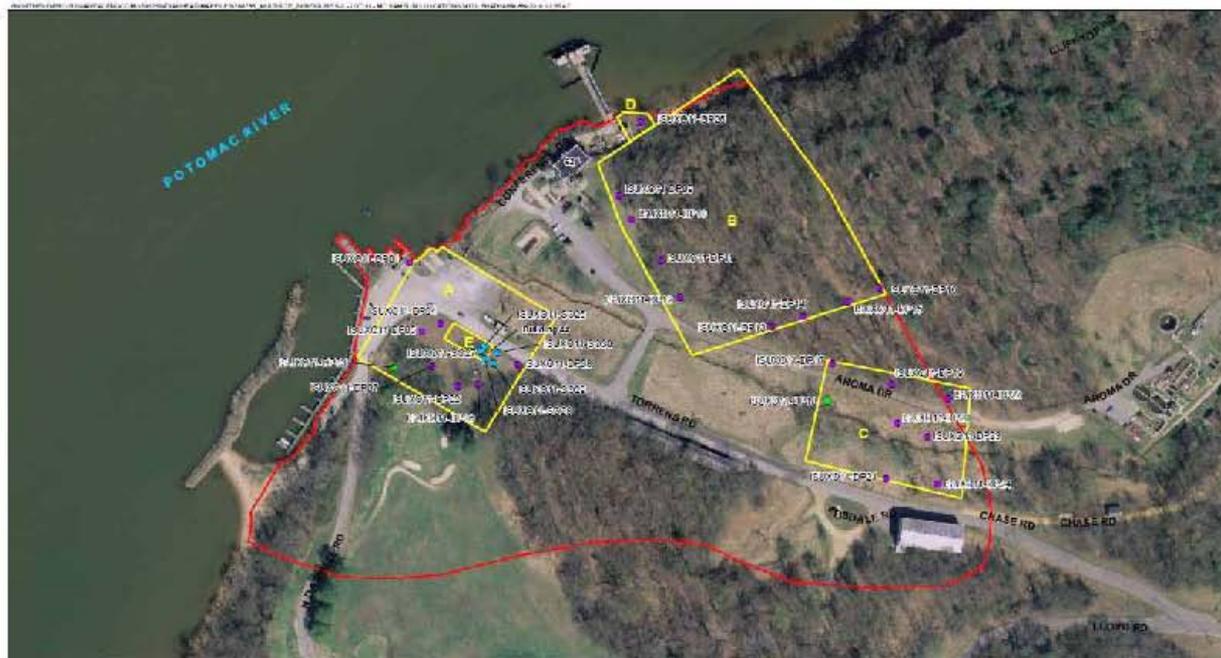
## *UXO 11: The Valley (cont'd)*



- ***Subsurface Soil***
  - *NG and 3-nitrotoluene exceeded RSLs at two locations*
  - *Several metals exceeded RSLs at each location*
  - *Prevalent metals were Ar, Cr, Co, and Fe*
  - *Pb, Mn, Ni, and V also saw some exceedences of RSLs*
- ***Groundwater***
  - *One or more explosives detected at each sampling location*
  - *1,3-dinitrobenzene, 2,4-dinitrotoluene, 3-nitrotoluene, nitrobenzene, NG, nitroguanidine, and RDX exceeded RSLs at location DP18*
  - *RDX exceeded RSL and background concentration at DP18*
  - *Total and dissolved metals were detected and RSL exceedences were similar to soil and subsurface soil*



# UXO 11: The Valley (cont'd)



- Legend**
- Surface Soil, Subsurface Soil, and in situ Groundwater Sample Locations
  - Surface and Sub-Low Tens Soil Sample Locations
  - Surface Soil Sample Locations
  - Investigation Areas for MEC and MC
  - Approximate Site Boundary

**Notes:**

1. Sample locations were based on historical aerial photography, site visit conducted on November 28, 2006 and April 22, 2008, and location walkout with the Navy and M&E on April 10, 2011.
2. Notes 1 through 5 were based on historical information presented in the Photos provided by Mr. James Deigh (Navy Historian).
3. Area B contains Building 44, view of three low-rise areas identified by Mr. Deigh.



Figure 5.3  
 UXO 11 - MC Sampling Locations  
 Site Inspection Report for UXOs 6, 8, 11, 13, 18, 19, 26, 27, 28, 30, 31, and 33  
 NSF IH, Indian Head, Maryland

imagery courtesy: USGS/USFWS





## *UXO 11: The Valley (cont'd)*



- ***Conclusions and Recommendations***
  - *Further MEC investigation needed based on visual evidence of munition debris*
  - *Proceed to RI for MEC and MC in soil and groundwater*



## *UXO 13: FDR Skeet Range*



- *34-acre land site*
- *Site is in the southwestern portion of IH; adjacent to Mattawoman Creek*
- *Reportedly used as recreational skeet range between the 1940s and 1960s*
- *Based on reported information, it is assumed that the area's use was limited to shot gun ammunition and clay targets*





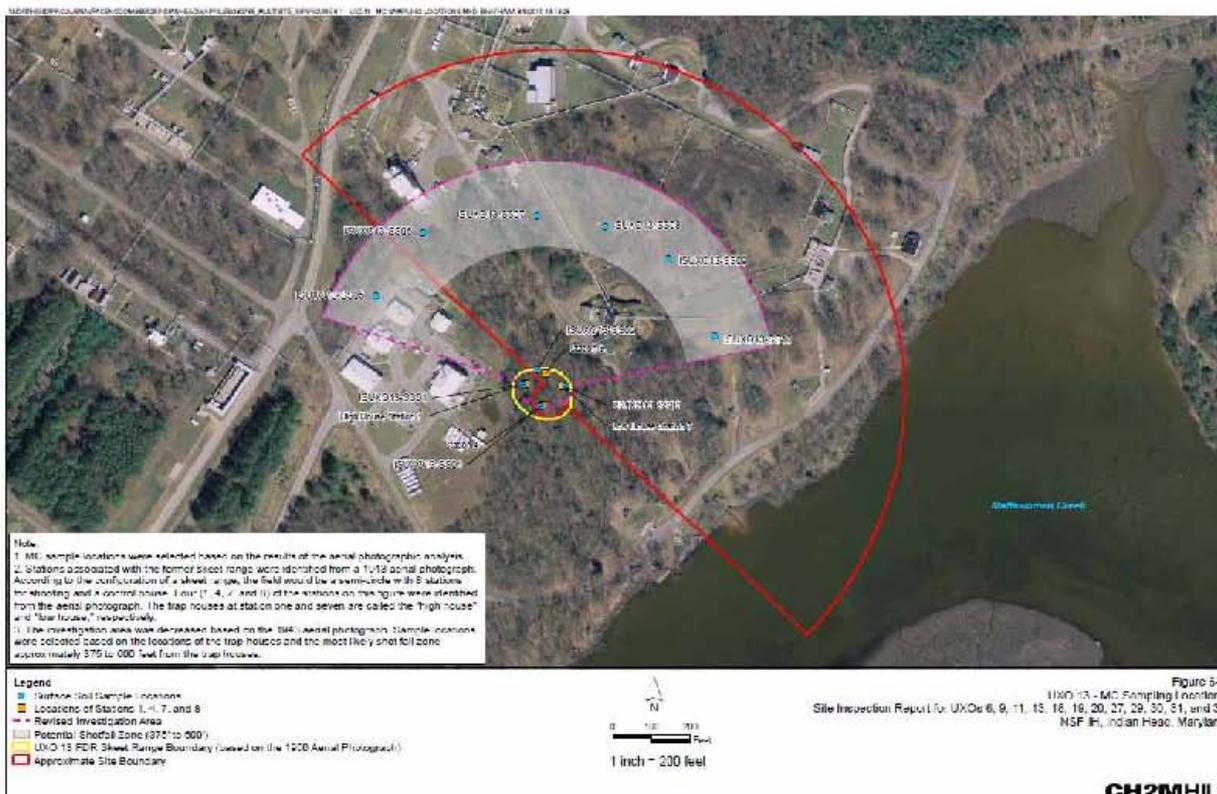
## *UXO 13: FDR Skeet Range (cont'd)*



- *Sampling objective was to determine if PAHs and metals were present in surface soil at concentrations that exceed RSLs*
- *Surface soil samples taken at 10 locations*
- *Chemical concentrations that exceeded RSLs were further evaluated by comparing to site background concentrations*
- ***Surface Soil***
  - *PAHs detected at all sampling locations*
  - *Several metals detected at all locations*
  - *Al, Ar, Cr, Co, Fe, and Mn exceeded RSLs at some locations*



# UXO 13: FDR Skeet Range (cont'd)





## *UXO 13: FDR Skeet Range (cont'd)*



- ***Conclusions and Recommendations***
  - *No further action for MEC*
  - *Several PAHs and metals exceed RSLs, especially around trap houses*
  - *No exceedence of background values in shot fall zone; NFA is recommended in this area*
  - *Complete RI for surface soil around trap house*



## *UXO 20: Safety Thermal Treatment Point*



- *1.6-acre land site*
- *Located at the end of a peninsula that extends southwest from the Main Installation into Mattawoman Creek*
- *Reportedly used for OB/OD and testing of projectiles, bulk propellant, bulk high explosives, demolition charges, CAD/PADs, primers, less sensitive explosives, and various other pyrotechnics*
- *Operated from late 1940s to 1988*





## *UXO 20: Safety Thermal Treatment Point (cont'd)*



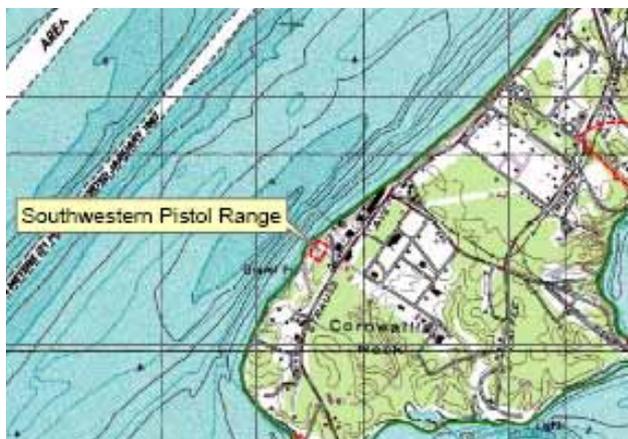
- *No sampling or DGM completed*
- *Items are present that may be contaminated with explosives*
- *An Explosive Safety Submission (ESS) is required for additional investigation*
  
- ***Conclusions and Recommendations***
  - *RI for MEC and MC in soil and groundwater*



## *UXO 29: Southwestern Pistol Range*



- *1.26-acre land site*
- *Located at the western end of the Main Installation*
- *Reportedly used for small arms training*
- *Dates of use are unknown; it was identified on a 1942 installation map as a “target area”*





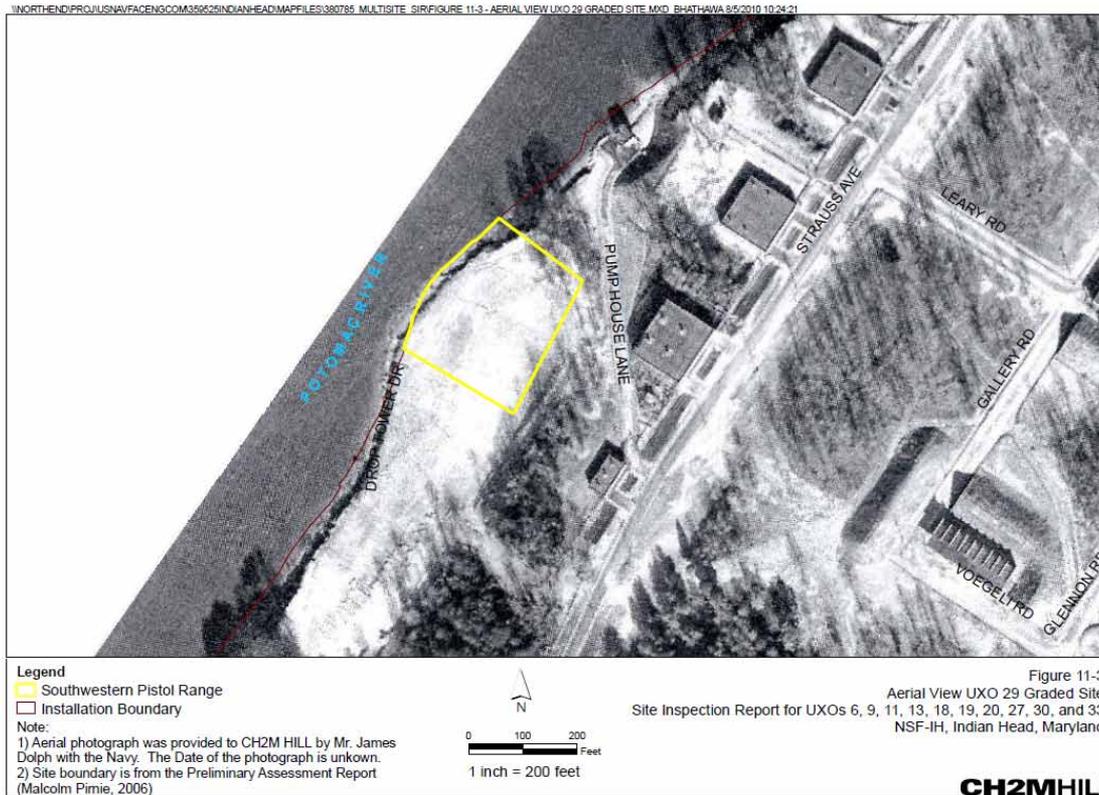
## *UXO 29: Southwestern Pistol Range (cont'd)*



- *No sampling completed*
- *Review of historical maps and current site conditions indicate severe grading with no evidence of the pistol range*
- *Sampling not considered necessary because soil at the site wouldn't be representative of past conditions*
- ***Conclusions and Recommendations***
  - *NFA for MEC and MC*



# UXO 29: Southwestern Pistol Range (cont'd)

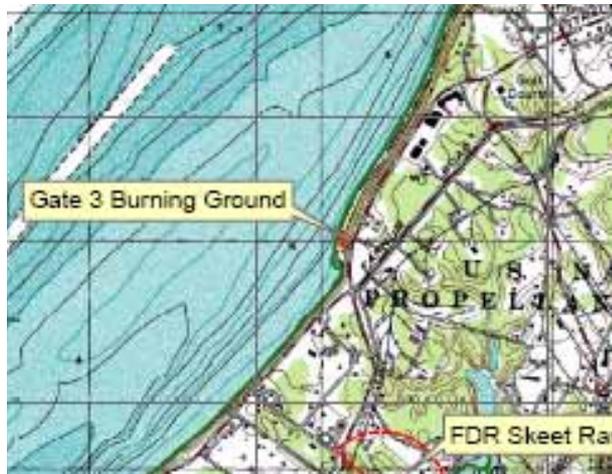




## *UXO 30: Gate 3 Burning Ground*



- *0.23-acre land site*
- *Located along the shoreline of the Potomac River*
- *Within the estimated firing fan from The Valley site; therefore, it is a suspected MEC area (potential for munitions associated with The Valley)*
- *Reported to have been in operation from 1955 to 1961*
- *Explosives may have been brought to the site for burning; types and quantities of explosives are unknown*





## *UXO 30: Gate 3 Burning Ground (cont'd)*



- *MC and MEC investigation completed through sampling and digital geophysical mapping (DGM)*
- *12 surface soil/subsurface soil and 3 groundwater samples taken*
- ***DGM Survey***
  - *122 individual anomalies were identified*
  - *Survey did not differentiate between MEC or non-munitions debris*
- ***Surface Soil (sampled for PAHs, explosives, & metals)***
  - *Several PAHs detected at each sampling location that exceeded RSLs*
  - *Several explosives detected; only 1,3-dinitrobenzene exceeded RSL*
  - *Metals (Al, As, Cr, Co, Fe, Mn, V) detected at all locations; 3 or more exceeded RSLs at each location*
  - *Only Fe and V exceeded 95% UTL background concentration*



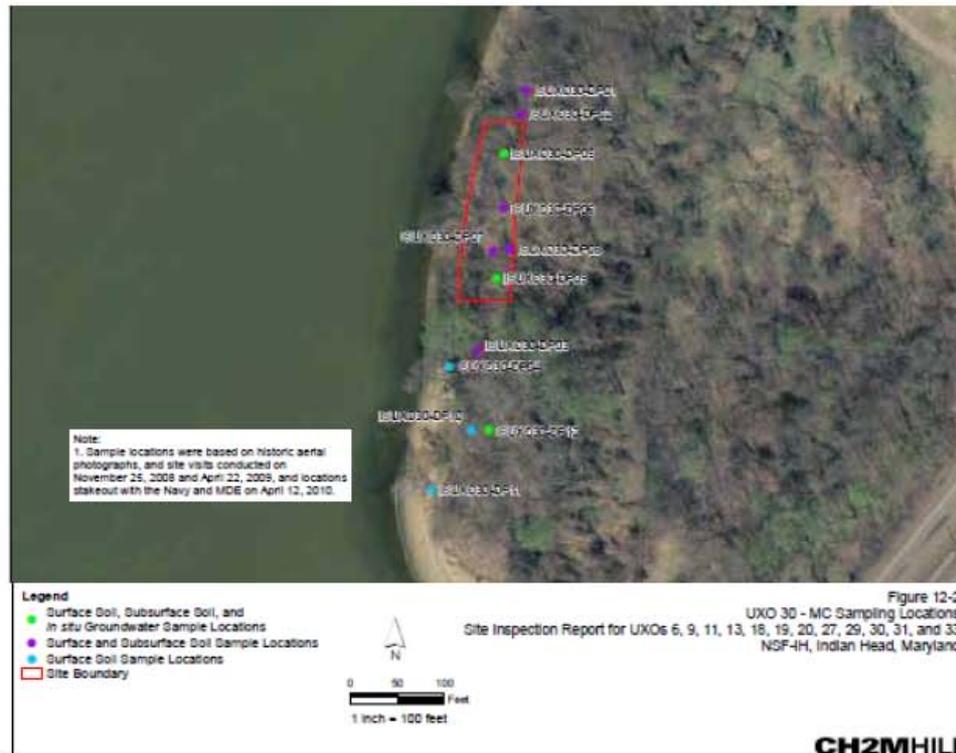
## *UXO 30: Gate 3 Burning Ground (cont'd)*



- ***Subsurface Soil***
  - *Several PAHs detected that exceeded RSLs and background*
  - *Several explosives detected; none exceeded RSLs*
  - *Several metals exceeded RSLs but not background concentrations at each location*
  - *Prevalent metals were Al, Fe, and Mn*
  - *As, Cr, Co, and V also saw some exceedences of RSLs*
- ***Groundwater***
  - *5 PAHs exceeded RSLs at sampling location DP05 and DP12*
  - *One or more explosives detected at each sampling location*
  - *RDX exceeded RSL and background concentration at DP05*
  - *Total and dissolved metals were detected and RSL exceedences were similar to soil and subsurface soil*



# UXO 30: Gate 3 Burning Ground (cont'd)





## *UXO 30: Gate 3 Burning Ground (cont'd)*



- ***Conclusions and Recommendations***

- *Based on DGM results, complete further investigation to determine whether MEC is present or not*
- *Presence of PAHs and metals suggest that burning took place at the site*
- *Explosives may have been burned, but concentrations are low*
- *Complete an RI for soil and groundwater*



## *UXO 18: Battle Range Firing Area*



- *340-acre water site*
- *Located in the north-central section of Stump Neck Annex and extends from the Potomac River to the north bluff along the shoreline of the Mattawoman Creek.*
- *Approximately 184 acres of the site is overlapped by the Water Impact Area*
- *Overlapped area is MEC area; therefore, remaining 156 acres is suspected to be MEC area*
- *No evidence of MC during the visual survey; limited historical documentation to support MC*





## *UXO 18: Battle Range Firing Area (cont'd)*



- *No sampling completed*
- *No MEC observed during visual survey and historical documentation doesn't indicate that the area was a target for firing*
- ***Conclusions and Recommendations***
  - *Potential munitions items present have likely been buried by sediment deposition*
  - *Incomplete pathway exists to human receptors (recreational) from MEC items and MC*
  - *Recommend that NOAA maps and Danger Zone Areas be updated to include the potential impact area from UXO 18*
  - *Restrict or monitor intrusive activities (anchoring & dredging) via institutional controls*



## *UXO 19: Igniter Area*



- *0.01-acre water site*
- *Located along the southeastern shoreline of the Main Installation peninsula; in a small promontory known as “Thieves Point.”*
- *A small pile of igniters, the origin of which are unknown, was found at this site during an extremely low tide in 1996 or 1997*
- *Known MEC area because of items found*





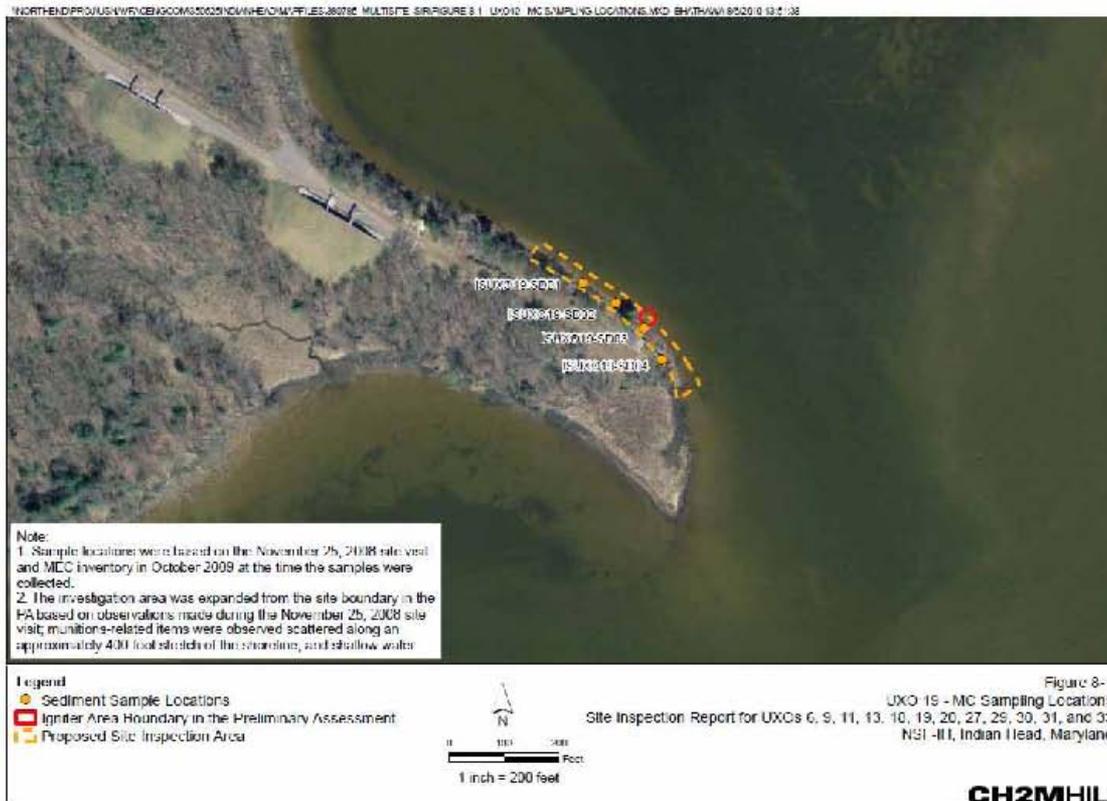
## *UXO 19: Igniter Area (cont'd)*



- *SI objective was to determine if explosives and metals that exceeded RSLs were present in sediment*
- *4 sediment samples taken along shoreline using anomaly avoidance*
- ***Sediment (sampled for explosives & metals)***
  - *One explosive (2-amino-4,6-dinitrotoluene) was detected at one location but did not exceed the RSL*
  - *Several metals were detected, only As and Cr exceeded RSL but neither exceeded 95% UTL background concentration*



## UXO 19: Igniter Area (cont'd)





## *UXO 19: Igniter Area (cont'd)*



- ***Conclusions and Recommendations***
  - *Perform a removal action for MEC*
  - *Results show that explosives are not of concern at the site*
  - *Metals concentrations are below background levels*
  - *NFA for sediment*



## *UXO 27: Sonar Training Area*



- *2.10-acre water site*
- *1.5 acres is located within the Potomac River and 0.6 acres is located on the adjacent shoreline of the Stump Neck Annex*
- *It is encompassed within the boundaries of the Water Impact Area*
- *Reportedly used for sonar training by Navy divers during the 1980s to mid 1990s.*
- *MEC and MC may be present because of observed non-inert items*





## *UXO 27: Sonar Training Area (cont'd)*



- *No sampling completed*
- *Objective of SI was to determine presence or absence of MEC*
- *DGM Survey*
  - *Covered a total of 5.1 acres between two separate areas*
  - *277 and 245 anomalies were identified at UXO 27 & the Dive Locker Pier, respectively*
  - *Survey did not differentiate between MEC or non-munitions debris*



# UXO 27: Sonar Training Area (cont'd)





# UXO 27: Sonar Training Area (cont'd)

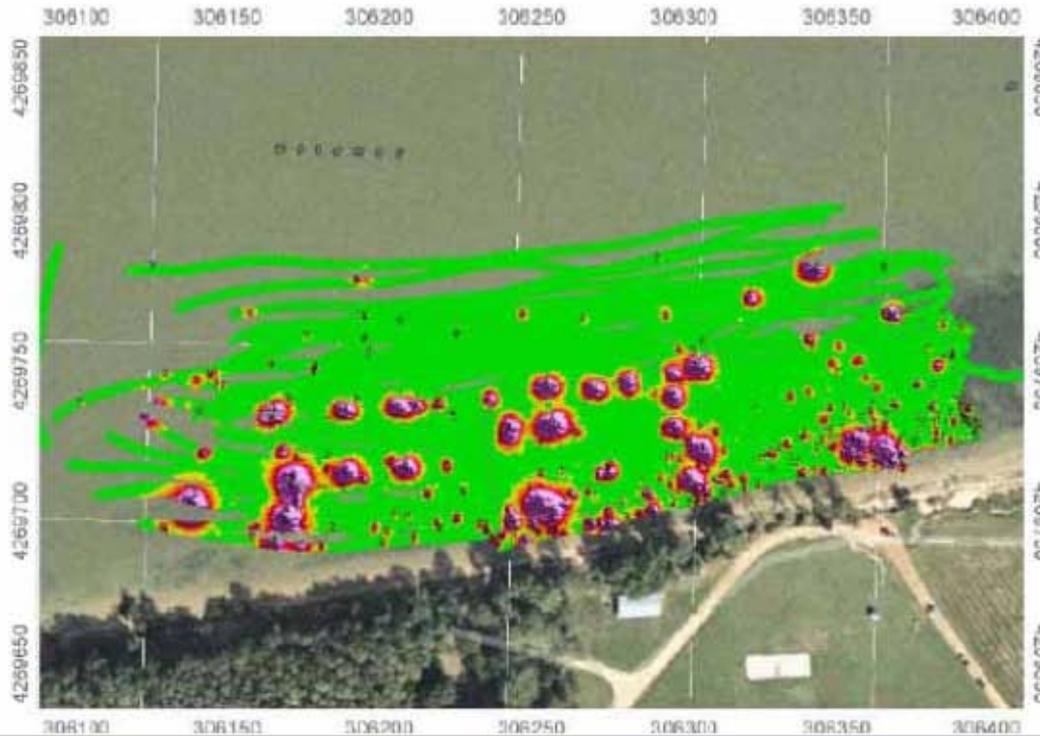


Figure 10-2  
UXO 27 - DGM Coverage Map  
Site Inspection Report for UXOs 6, 9, 11, 13, 18, 19, 20, 27, 29, 30, 31, and 33  
NSF-IH, Indian Head, Maryland

Note:  
Figure is taken from the Geophysical Survey Report  
(ARM 2010), which is provided as Appendix B.





## UXO 27: Sonar Training Area (cont'd)

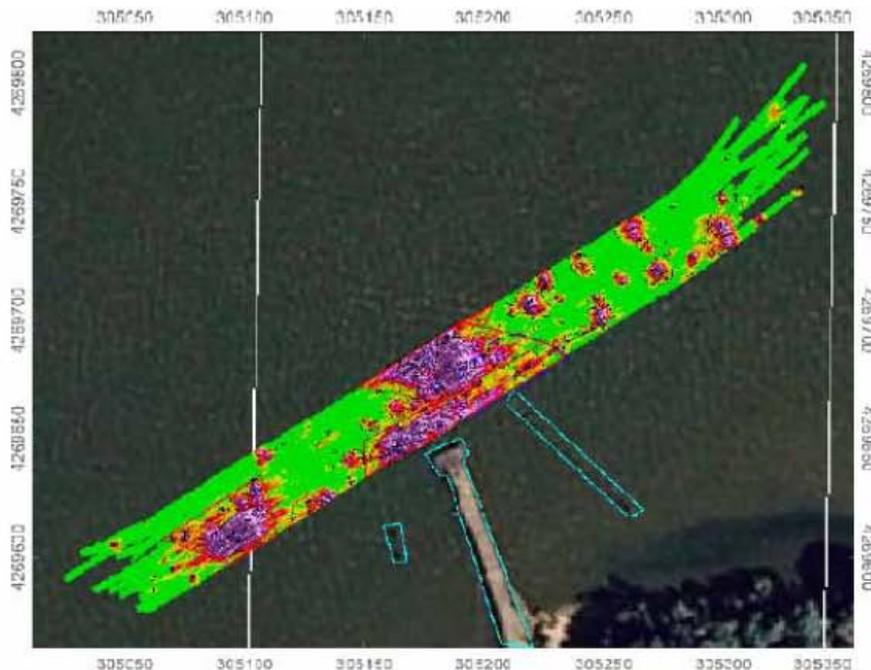


Figure 10-3  
Dive Locker Pier - DGM Coverage Map  
Site Inspection Report for UXOs 6, 9, 11, 13, 18, 19, 20, 27, 29, 30, 31, and 33  
NSF-IH, Indian Head, Maryland

Note:  
Figure is taken from the Geophysical Survey Report  
(ARM 2010), which is provided as Appendix B.

**CH2MHILL**



## *UXO 27: Sonar Training Area (cont'd)*



- ***Conclusions and Recommendations***

- *Potential pathways to MEC are incomplete for all receptors because no intrusive activities (dredging) are planned for the site*
- *Recommend that NOAA maps and Danger Zone Areas be updated to include UXO 27 and Dive Locker Pier*
- *Restrict or monitor intrusive activities (anchoring & dredging) via institutional controls*



## *UXO 31: Pope's Creek*



- *841-acre water site (includes 44 acre testing area)*
- *Located off-site of the installation; SE of NSF-IH within the Potomac River in the town of Pope's Creek, Maryland*
- *According to a public notice issued in the late 1940's, the Pope's Creek Site was used for underwater testing of demolition charges, and/or explosive material.*
- *Entire site is suspected MEC area*





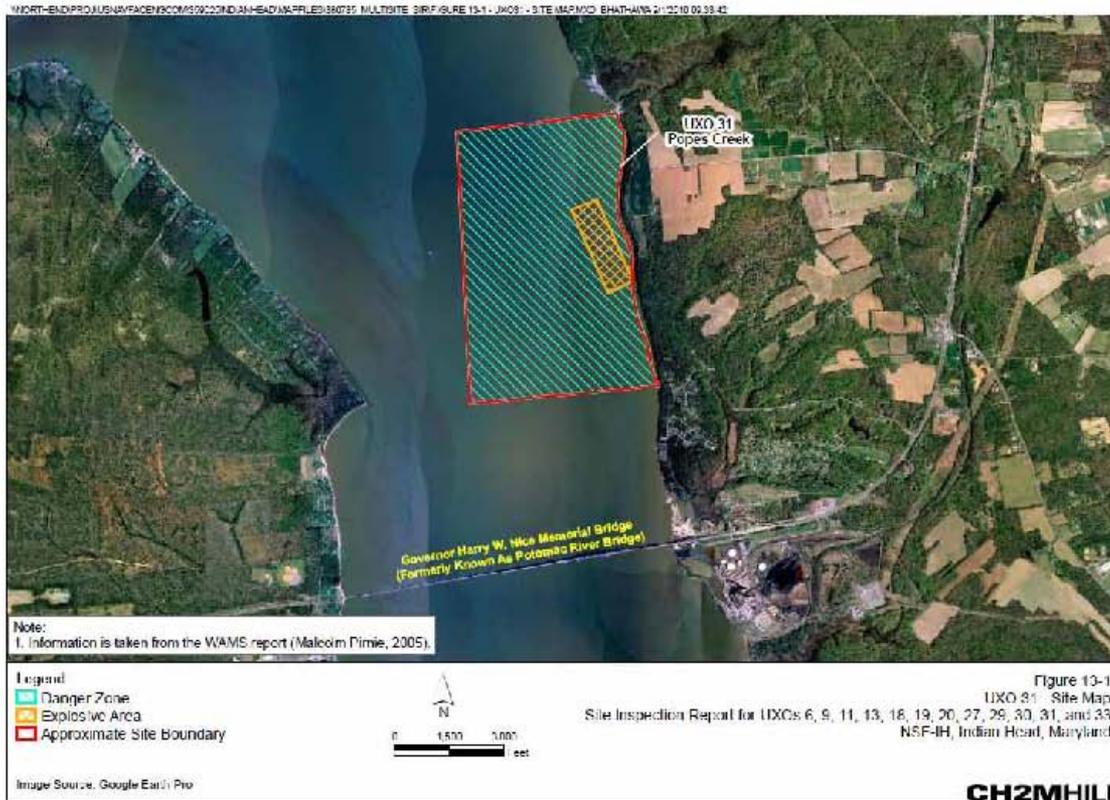
## *UXO 31: Pope's Creek*



- *No sampling completed at site*
- *Research indicated that the area was used for explosives testing on the eastern shore of the Potomac River*
- *Past testing was conducted in the deepest portion of the navigation channel (up to 78 feet deep)*
- *The channel appears to migrate eastward; the westward portion is filled with sediment*
- *Results of a risk analysis indicate that UXO 31 is a large area where MEC may or may not exist and due to siltation, bottom conditions have changed over time*



# UXO 31: Pope's Creek





## *UXO 31: Pope's Creek*



- ***Conclusions and Recommendations***

- *Given the last time that munitions were used at the site (1947), potential MEC has likely been buried by sediment deposition*
- *Potential pathways to MEC are incomplete for all receptors because no intrusive activities (dredging) are planned for the site*
- *Recommend that NOAA maps and Danger Zone Areas be updated to include potential impacts from UXO 31*
- *Restrict or monitor intrusive activities (such as anchoring & dredging) unless UXO avoidance procedures are used*



## *UXO 33: Water Impact Area*



- *12,296-acre water site*
- *Located between Chapman's Point, MD and the mouth of the Chopawamsic Creek*
- *Reportedly used for battleship gun testing in the late 1800's and the early 1900's and rockets were fired into this area from a dock firing station at the Valley until 1946 or 1947.*
- *Underwater explosions were reported to have occurred in the Water Impact Area in 1961*
- *Entire site is classified as a suspect MEC area because of historical information*





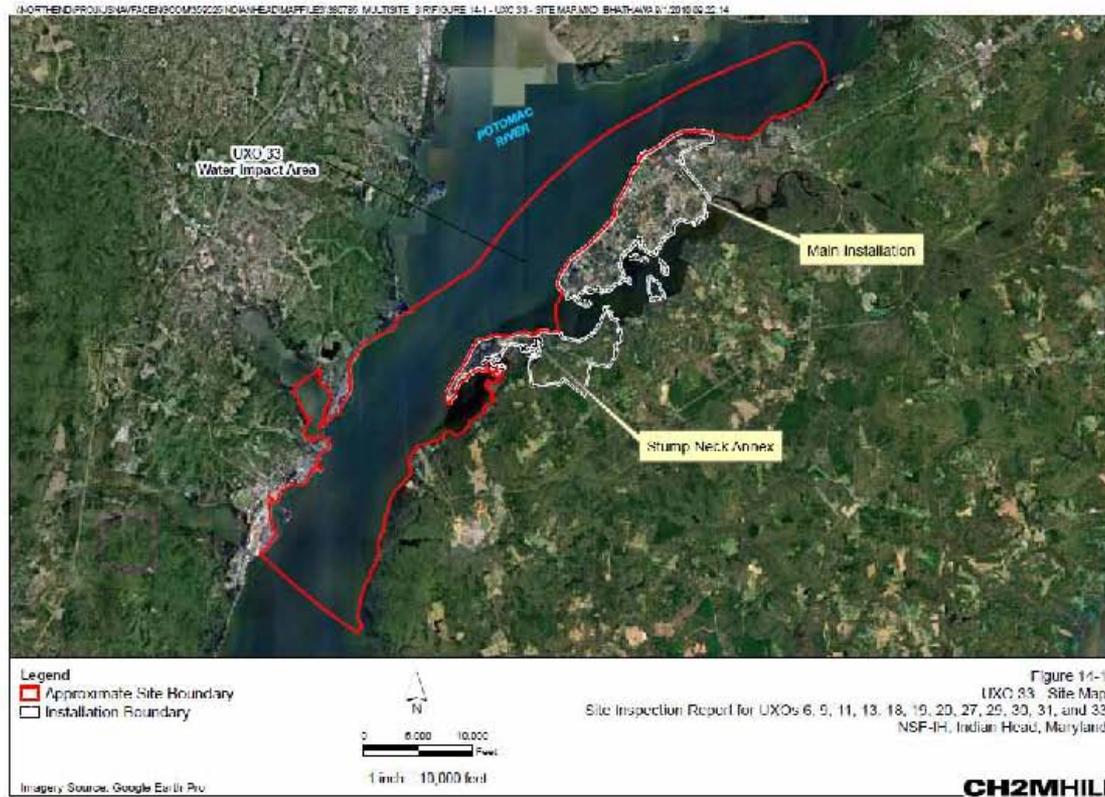
## *UXO 33: Water Impact Area (cont'd)*



- *No sampling completed at site*
- *A Danger Zone was established in the Potomac River near Indian Head and was later cancelled in November 1922*
- *Sediment dynamics study noted that UXO 33 includes shallow flats to deep portions of the river channel (includes dredged navigation channel off NSH-IH)*
- *MEC items from gun firing and underwater explosion testing may have been buried by a combination of sediment deposition and sinking into soft bottom sediments*
- *Results of a risk analysis indicate that UXO 33 is a large area where MEC may or may not exist and due to siltation, bottom conditions have changed over time*



## UXO 33: Water Impact Area (cont'd)





## *UXO 33: Water Impact Area (cont'd)*



- ***Conclusions and Recommendations***

- *UXO 33 may have been affected by munitions since 1891 (strayed ordnance from testing at UXO 11-The Valley)*
- *Potential MEC has likely been buried by sediment deposition in the deep navigation channel*
- *Potential pathways to MEC/MC are incomplete for all receptors*
- *Recommend that NOAA maps and Danger Zone Areas be updated to include potential impacts from UXO 33*
- *Restrict or monitor intrusive activities (such as anchoring & dredging) unless UXO avoidance procedures are used*



*NAVAL SUPPORT FACILITY,  
INDIAN HEAD*



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*Main Installation MRP SI Update*

*QUESTIONS?*



## **UXO 32 – Scrap Yard Remedial/Removal Action Progress Update**

**Presented to:  
Restoration Advisory Board  
October 14, 2010**



### **Topics Covered in this Update**

- **Concrete Pad Soil and Debris Removal**
- **CADs/PADs Removal from Scrap Yard**
- **Second Controlled Detonation Chamber Event**
- **Scrap Yard Northern Slope Hot Spot Removal**
- **Excavation of Removal Area Adjacent to Scrap Yard**
- **Railroad Track Removal**
- **Status of Scrap Yard Concrete Pad**
- **Path Forward**





### Pad Soil Removal Process Screening



•Manually investigated soil is being processed through a mechanical screener fit with a grizzly cage and two screening decks.

•Top screening deck spacing is 1.5 inches. Second deck spacing is 0.75 inches; within the spacing limits detailed by the Explosives Safety Submission (ESS).



3 of 18



### Concrete Pad Soil and Debris Removal

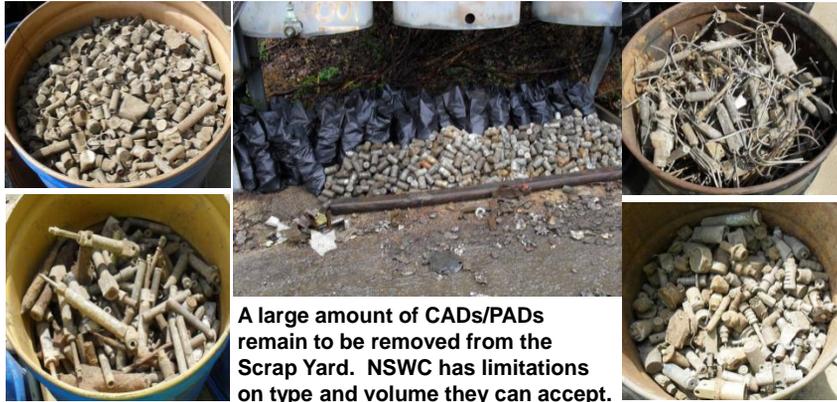


Continued sorting through screener reject debris. All reject debris which was non-ordnance and non-metallic was disposed of with the screened soil.

4 of 18



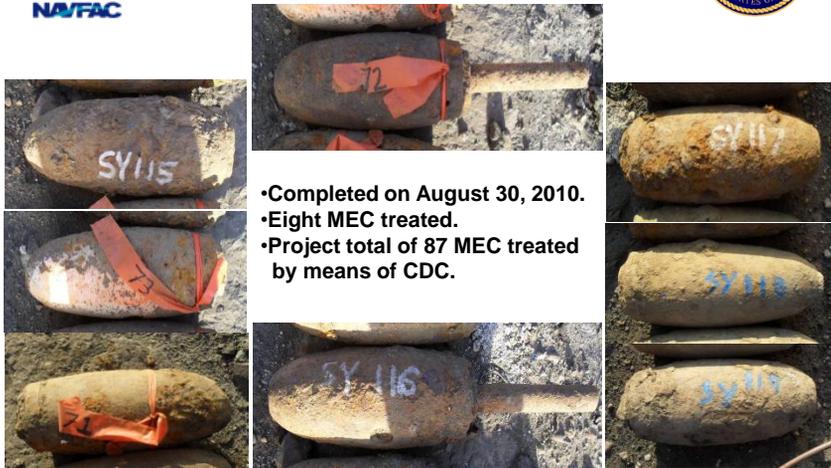
## CADs/PADs Removal from Scrap Yard



A large amount of CADs/PADs remain to be removed from the Scrap Yard. NSWC has limitations on type and volume they can accept.



## Second Controlled Detonation Chamber Event



- Completed on August 30, 2010.
- Eight MEC treated.
- Project total of 87 MEC treated by means of CDC.



### Excavation of Removal Area Adjacent to Scrap Yard



18 inch deep removal has been completed in the removal area adjacent to the Scrap Yard.

7 of 18



### Excavation of Removal Area Adjacent to Scrap Yard



10'x10'x8' removal area highlighted above in red. Majority of area covered in concrete. Completed excavation to 5.5' when groundwater was encountered.

8 of 18



## Excavation of Removal Area Adjacent to Scrap Yard



A temporary containment cell was constructed within the footprint of the removal area adjacent to the Scrap Yard. The cell was used to hold soil removed from the adjacent excavation area that did not require screening.



9 of 18



## Railroad Track Removal



Rails and ties were pulled up from adjacent removal area. Rails were cut into 30 foot sections for T&D to recycling facility.

10 of 18



## Railroad Track Removal



Railroad ties staged in Grid 001 awaiting T&D.

11 of 18



## Transportation and Disposal



12 of 18



### Status of Scrap Yard Concrete Pad



13 of 18



### Current Conditions Inside Fence Line



14 of 18



### Current Conditions Outside the Fence line



15 of 18



### Current Conditions Outside the Fence line



16 of 18



## The Next Steps



- **Continue movement of suspect materials to on-base treatment**
- **Collect additional samples inside and outside of fence line**
- **Enact Additional removal action, if necessary**
- **Restore site to original surface level**
- **Vegetation restoration**

17 of 18



## Discussion and Questions



18 of 18



**NAVAL SUPPORT FACILITY  
INDIAN HEAD**



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*Site 66*

*Turkey Run Disposal Area*

*Remedial Investigation Field Work Update*

*Nathan Delong  
NAVFAC Washington*

*October 14, 2010*



## *Site 66 RI Field Work Update*



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### *OUTLINE*

- *Site Background and SI Conclusion*
- *RI Field Work*
- *Next Steps*
- *Questions*



## *Site 66 RI Field Work Update*



- *Site Background*
  - *Discovered during a site visit in 2003*
  - *Officially designated an IR site in late 2004*
  - *Unregulated dump area*
    - *Construction debris, metal scrap, lead flooring, laboratory bottles, etc.*
  
- *SI Conclusions*
  - *Surface water and ash*
    - *No further evaluation warranted*
  - *Surface soil, subsurface soil, groundwater, and sediment*
    - *Further evaluation for human health and/or ecological risks*



## Site 66 RI Field Work Update





## *Site 66 RI Field Work Update*





## *Site 66 RI Field Work Update*



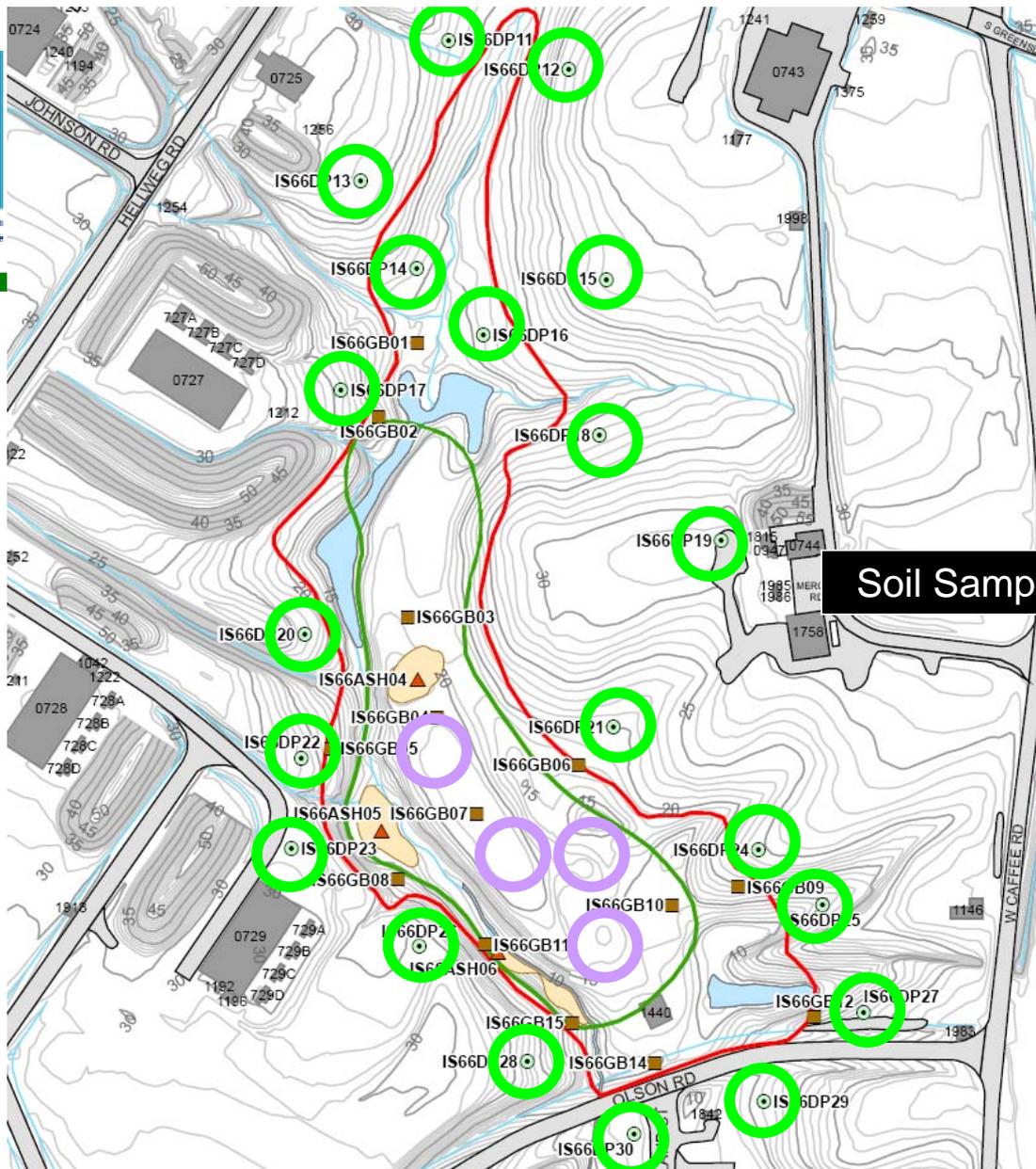
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### *Remedial Investigation Objectives*

- *What is the nature and extent of contamination in the surface and subsurface soil (including ash) within and outside the current Site 66 boundary?*
- *What is the nature and extent of contamination in the shallow groundwater at Site 66?*
- *What is the extent of sediment contamination within and downstream of the Site 66 boundary?*
- *What is the extent and thickness of the buried waste material within and outside the current Site 66 boundary?*
- *Do the concentrations of constituents detected in the soil, groundwater, sediment, or ash material present unacceptable human health or ecological risk?*
- *Do the constituent concentrations in the soil, groundwater, sediment, or ash material warrant further action?*



- 24 samples
- VOC's
- SVOC's
- Pesticides and PCB's
- Metals
- Dioxins and Furans
- Explosives
- Perchlorate

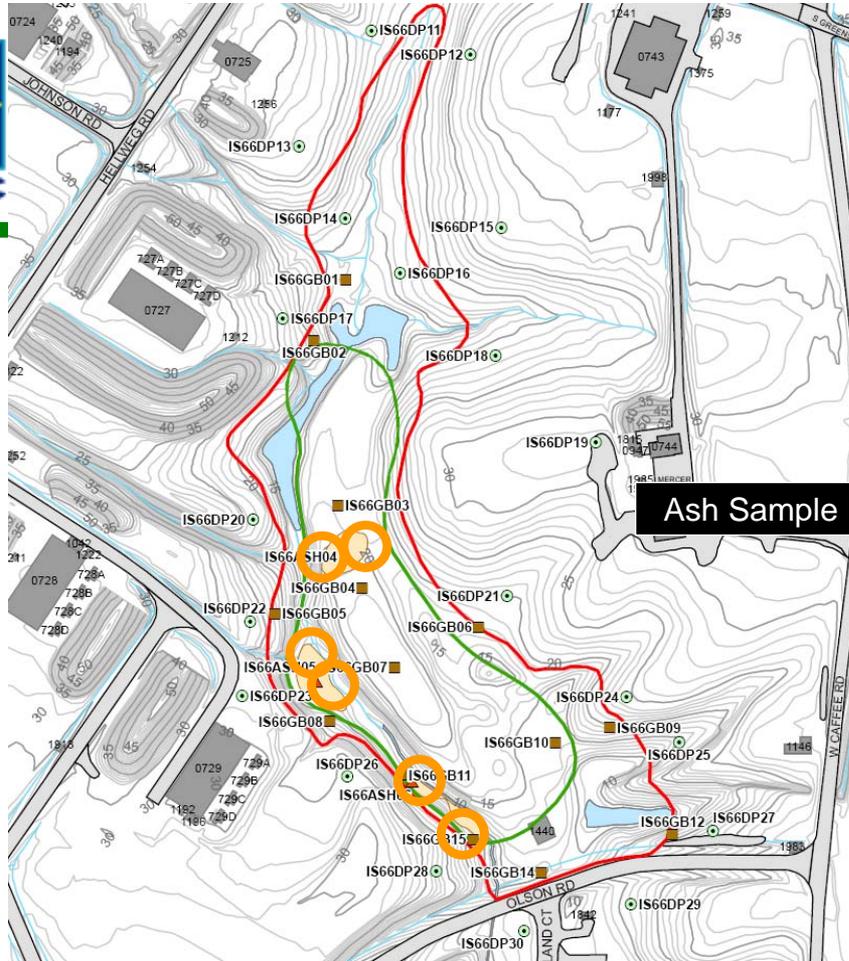


Soil Sample Locations





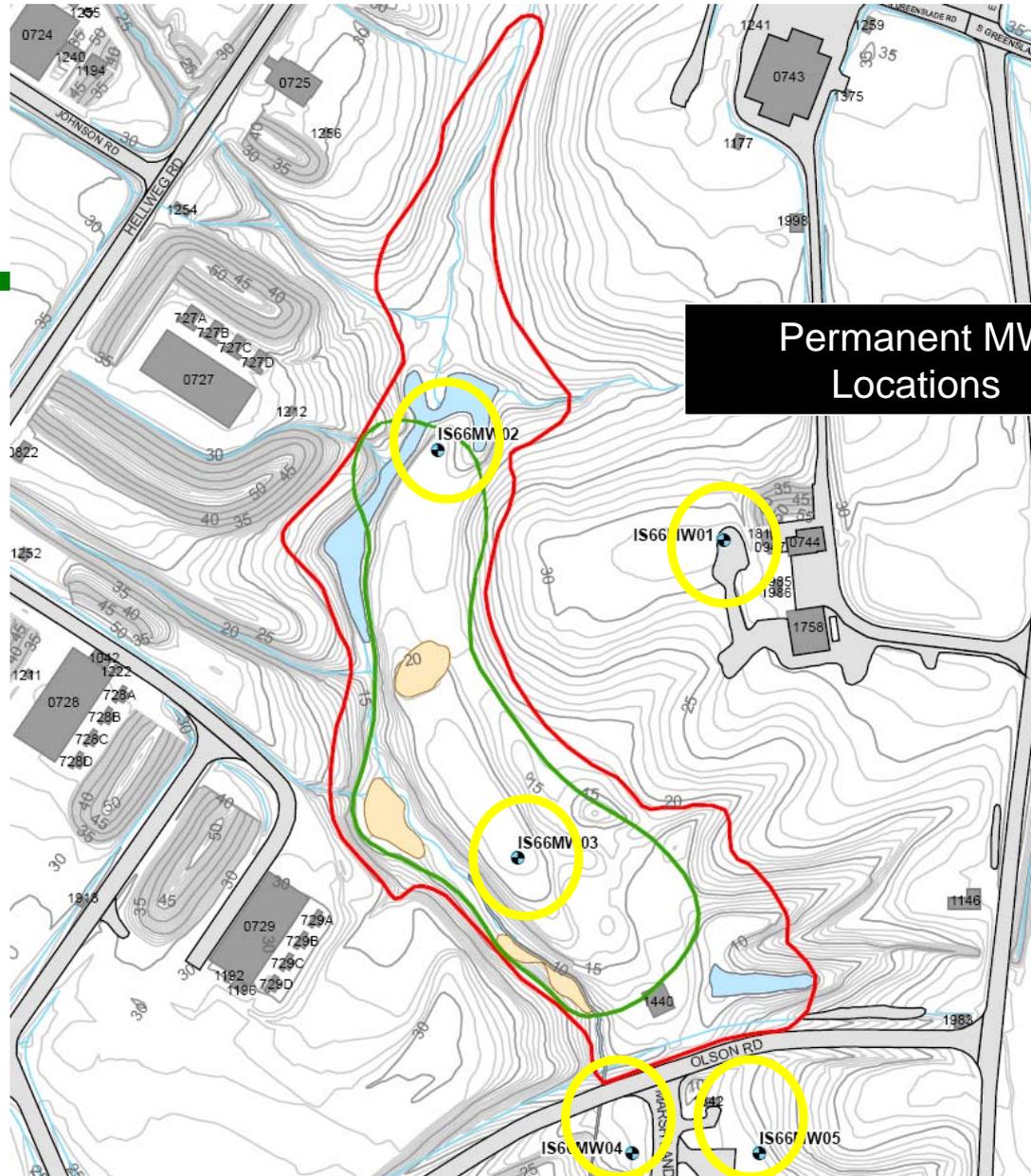
- 6 samples
- Inorganics
- Dioxins and Furans



Ash Sample Locations



- 5 samples
- VOC's
- SVOC's
- Pesticides and PCB's
- Metals
- Dioxins and Furans
- Explosives
- Perchlorate

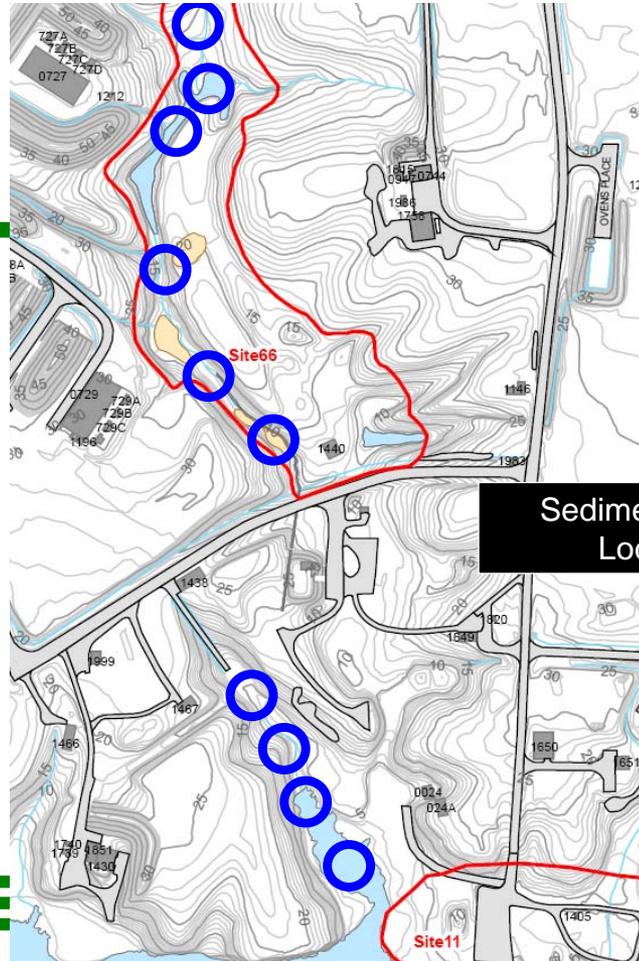


Permanent MW Locations



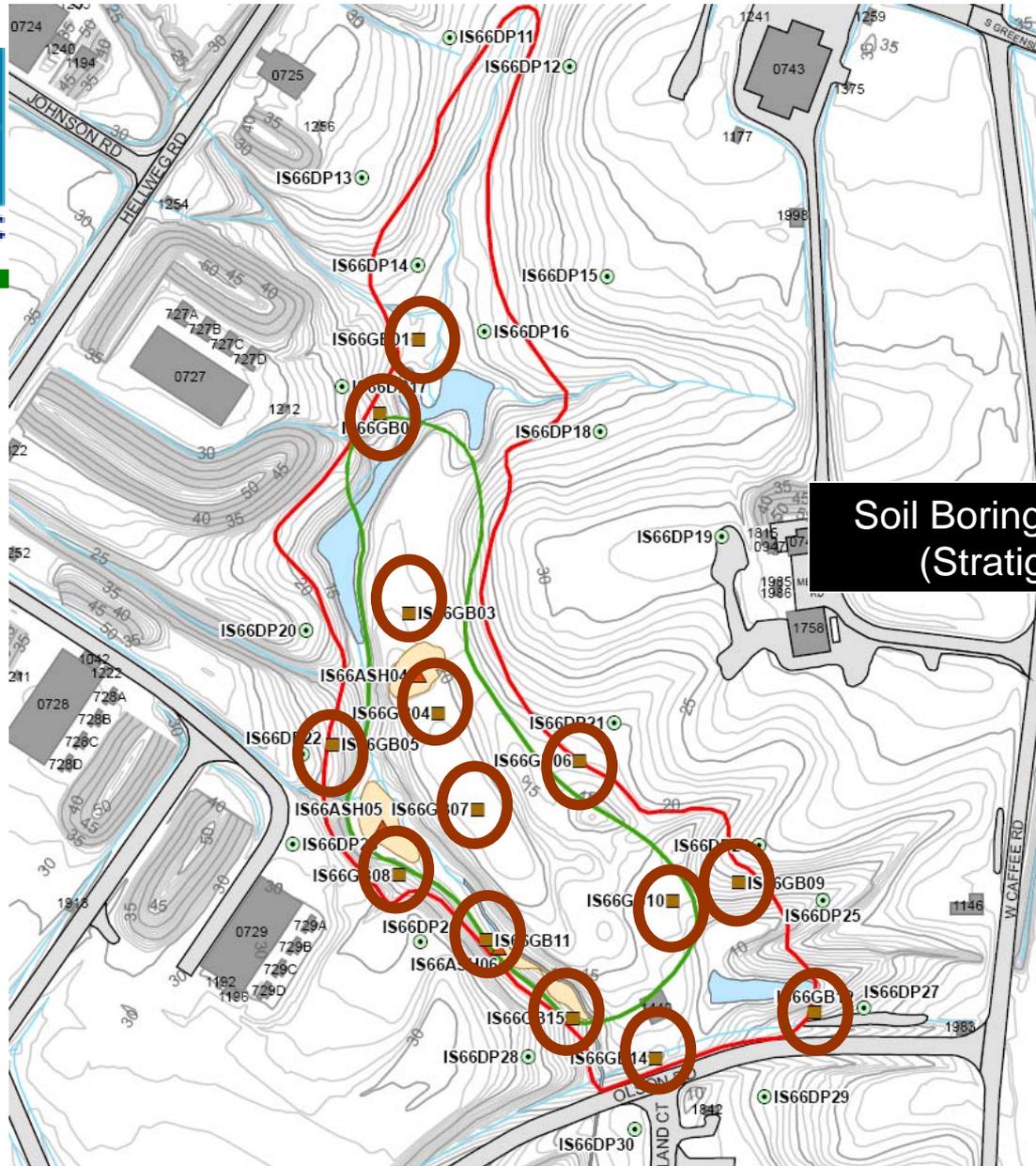


- 10 samples
- VOC's
- SVOC's
- Pesticides and PCB's
- Metals
- Dioxins and Furans
- Explosives
- Perchlorate





- 14 locations
- Soil classification



Soil Boring Locations (Stratigraphy)





## *Site 66 RI Field Work Update*



- *Began September 7, 2010*
- *Ended October 1, 2010*
- *Delays*
  - *OSHA course (week of September 13)*
  - *Base access issues*
  - *Work stoppages*
  - *Difficult subsurface conditions*



## *Site 66 RI Field Work Update*



- *Path Forward*
  - *Sampling results*
    - *Validated data expected back late November, 2010*
  - *Perform Risk Assessments*
    - *Human Health*
    - *Ecological*
  - *Complete RI report (summer 2011)*
  - *Begin Feasibility Study*
    - *Analyze potential remedies*



## *Site 66 RI Field Work Update*



*Questions?*



*NAVAL SUPPORT FACILITY  
INDIAN HEAD*



*Site 1, 19, and 27*

*EE/CA's and Action Memorandums*

*Nathan Delong  
NAVFAC Washington*

*October 14, 2010*



## *Site 1, 19, and 27 Update*



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### *OUTLINE*

- *Site Background*
  - *Site 01 – Thorium Spill*
  - *Site 19 – Catch Basins at Chip Collection Houses*
  - *Site 27 – Thermal Destructor 1*
- *EE/CA and Action Memorandum Updates*
- *Path Forward*
- *Questions*



## *Site 1, 19, and 27 Update*



- *Site 01 – Thorium Spill*

- Area is approximately 60 x 135 feet located between Building 1662 and Strauss Ave
- Used as area for radiation training exercises beginning in 1962
  - Thorium ore was spread over the site
- RASO cleared site for unlimited use in 1976 after radiological survey
- In 1983, 2 drums containing Thorium material, dirt and gravel discovered during Building 1662 construction
- Building 1662 used for electrical and satellite communications
- SSP Report completed in May 2009
  - Contaminant of concern was Thorium-232
  - Recommended IRA for surface and subsurface soils at select locations



## *Site 1, 19, and 27 Update*

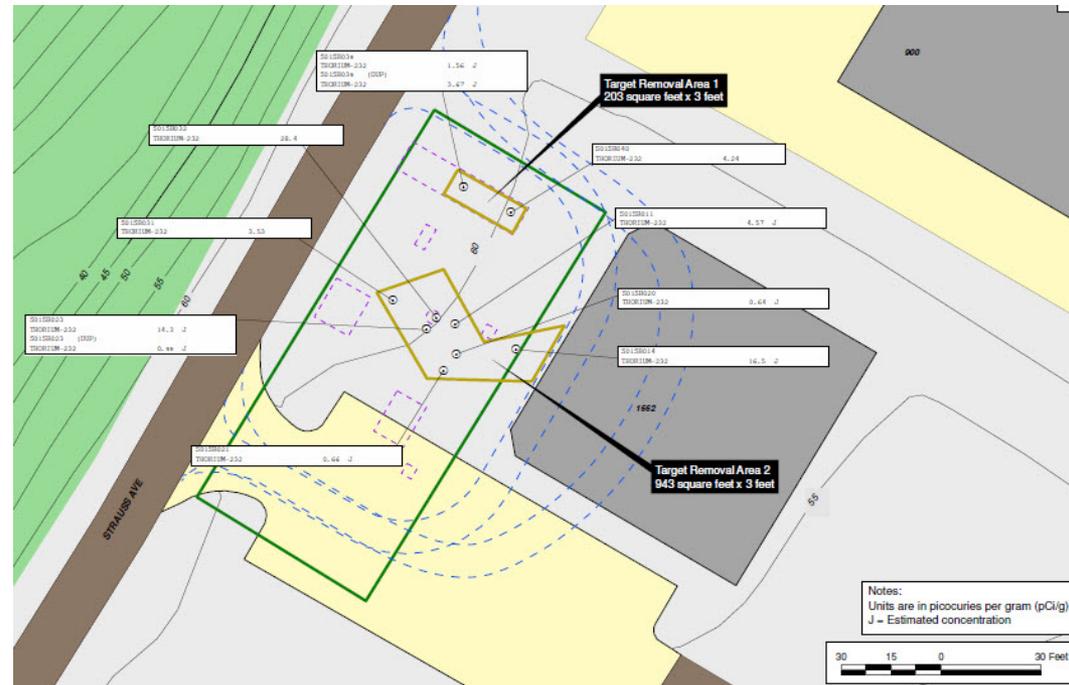




# Site 1, 19, and 27 Update



- EE/CA completed in September 2010
- Recommends soil removal (0-3 feet) and offsite disposal
  - Approx. 120 cubic yards to be removed
  - Materials with radioactive activity above criteria to be disposed of at NRC-licensed facility
- Post excavation sampling not needed
- Backfill with clean soil
- Action Memorandum completed in September 2010





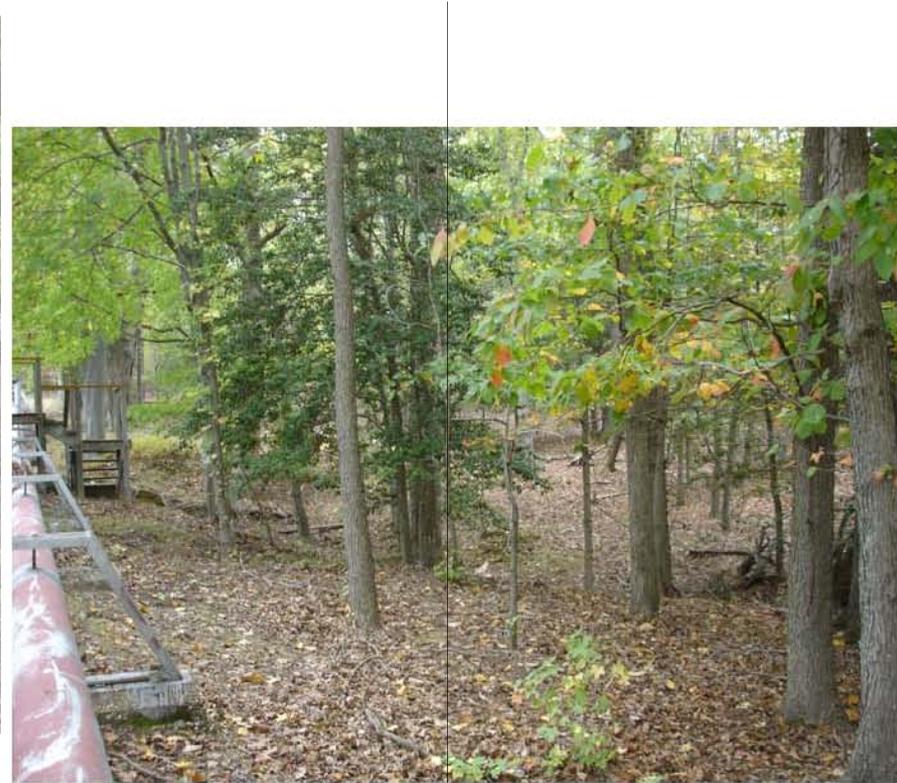
## *Site 1, 19, and 27 Update*



- *Site 19 – Catch Basins at Chip Collection Houses*
  - Consists of drainage areas leading from two chip collection houses, Buildings 785 and 1051
  - Releases from catch pad outfalls may have contaminated stream sediments
  - Only Building 785 remains in operation
  - Wastewater is now recycled rather than discharged to swales
  - SSP Report completed in June 2009
    - Contaminants of concern are lead and nitroglycerin in the surface and subsurface soil
    - Recommended IRA for surface and subsurface soil (groundwater will be looked at separately)



# *Site 1, 19, and 27 Updates*

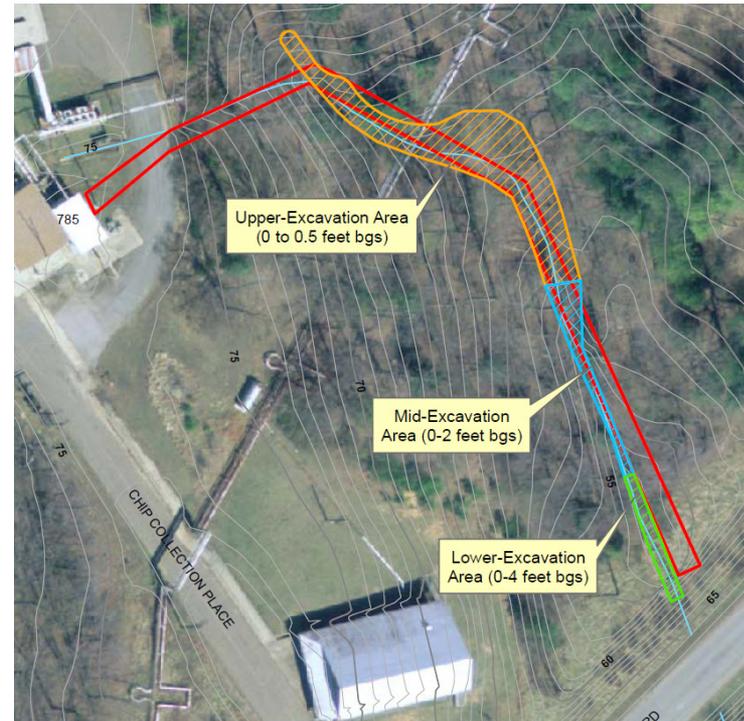




## Site 1, 19, and 27 Updates



- EE/CA completed in September 2010
  - Recommends soil removal and offsite disposal
    - 0-6 inches in orange section
    - 0-2 feet in blue section
    - 0-4 feet in green section
  - Approx. 216 cubic yards to be removed
  - Post excavation sampling not needed
  - Backfill with clean soil
- Action Memorandum completed in September 2010





## *Site 1, 19, and 27 Updates*



- *Site 27 – Thermal Destructor 1*
  - Site is located north of Hershey Road and 400' from the Mattawoman Creek
  - Former destructor was located on concrete pad (Building 1584)
  - The incinerator operated from 1976-1979 and burned hydrazine-containing fuel and UDMH-contaminated wastewater
  - Potential spills from operations may have contaminated soils surrounding concrete pad
  - SSP Report was completed in June 2009
    - Contaminant of concern is Arsenic and Chromium
    - Recommended IRA for surface soil



## *Site 1, 19, and 27 Updates*





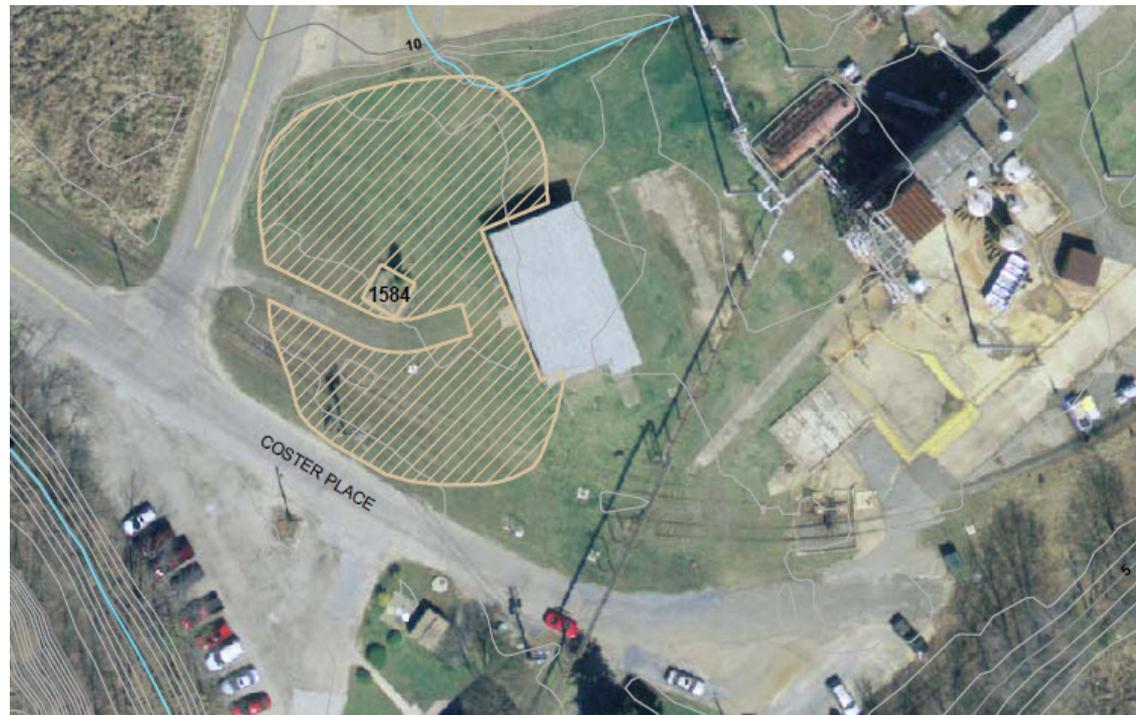
## *Site 1, 19, and 27 Updates*



- EE/CA completed in September 2010

- Recommends surface soil removal (0-6 inches) and offsite disposal
- Approx. 299 cubic yards to be removed
- Post excavation sampling not needed
- Backfill with clean soil

- Action Memorandum completed in September 2010





## *Site 1, 19, and 27 Updates*



- *Path Forward*
  - *Site 01*
    - *IRA to be awarded to RASO in December 2010*
    - *Complete IRA in summer 2011*
  - *Site 19*
    - *IRA contract awarded in September 2010*
    - *Work Plans are underway*
    - *Complete IRA in February 2011*
  - *Site 27*
    - *IRA contract awarded in September 2010*
    - *Work Plans are underway*
    - *Complete IRA in February 2011*



## *Site 1, 19, and 27 Updates*



*Questions?*



**NAVAL SUPPORT FACILITY,  
INDIAN HEAD**



**FY11 Budget & Schedule Update**

*Joseph Rail  
NAVFAC Washington*

*October 14, 2010*



***FY11 Budget & Schedule Update***



• ***Approximate budget for FY 2010-***

*\$4.6 mil for IRP*

*\$440K for MRP*

***Planned work includes:***

- Preliminary Assessment (PA)/Site Inspection (SI)*
- Remedial Investigation (RI)/Feasibility Study (FS)*
- Remedial Design (RD)*
- Proposed Plan (PP)*
- Record of Decision (ROD)*
- Remedial Action (RA or IRA)*
- Long-Term Monitoring (LTM)*



## *FY11 Budget & Schedule Update*



- ***PA/SI for:***
  - *Site 69- Building 1018*
  
- ***RI/FS for:***
  - *SWMU 14- Photographic Lab Septic Tank System*
  - *UXO 19- Igniter Area*
  
- ***RD for:***
  - *Site 38- Rum Point Landfill*

3



## *FY11 Budget & Schedule Update*



- ***PP/ROD for:***
  - *Site 38- Rum Point Landfill*
  
- ***RA for:***
  - *Site 1- Thorium Spill Area*
  - *Site 8- Mercury Contamination from Building 766*
  - *Site 14- Lab Area*
  - *Site 21- Bronson Road Landfill*
  - *UXO 32- Scrap Yard*

4



## *FY10 Budget & Schedule Update*



- *LTM for:*
  - *Site 11- Caffee Road Landfill*
  - *Site 14- Lab Area*
  - *Site 21- Bronson Road Landfill*
  - *Site 28- Original Burning Ground*
  - *Site 57- Building 292 TCE Contamination*



## *FY10 Budget & Schedule Update*



*Questions?*

# INSTALLATION RESTORATION PROGRAM



NAVAL SUPPORT FACILITY,  
INDIAN HEAD  
101 STRAUSS AVENUE  
INDIAN HEAD, MARYLAND  
20640-5035



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## RESTORATION ADVISORY BOARD (RAB) MEETING COMMENTS, QUESTIONS AND ANSWERS

October 14, 2010

### Arrival/Welcome

No questions were asked nor comments made during this topic.

### MRP Main Installation Site Investigation Update

Question: Where are the sites in the presentation located?

Answer: All of the sites discussed in the presentation are located on the main installation adjacent to the town of Indian Head.

Question: Is the Pope's Creek site in Maryland or Virginia?

Answer: This site is in the waters of Maryland, and approximately 30 miles downstream and southeast of NSF-IH within the Potomac River and south of Pope's Creek near the town of Pope's Creek, Maryland.

Question: How were anomalies detected during this phase of work?

Answer: Anomalies were detected by using instruments such as electromagnets and magnetometers that can detect ferrous metals and by completing a Digital Geophysical Mapping (DGM) survey. To complete a DGM survey, personnel walked a site on predetermined transect lines to record data and detect potential anomalies.

Question: Does a DGM survey ever identify foundations or remains of buildings that we were never aware of?

Answer: It is possible that certain instruments could detect this, but in this case only ferrous metal objects

were detected. Furthermore, foundations containing metal rebar would have been detected.

Question: What does PAH stand for?

Answer: PAH stands for polycyclic aromatic hydrocarbons which are commonly found in clay birds at skeet ranges.

### **UXO 32 (Scrap Yard) Update**

Question: Where is the site located?

Answer: The site is located along Mattawoman Creek in the northern portion of the base near the intersection of Hersey and Benson roads.

Question: What does beneficial use mean?

Answer: Beneficial use means that the site will be useable for a base function. These functions could be anything from a process building or storage area to a wildlife area.

Question: Is there any chance that contamination has gotten through the concrete to the soil below?

Answer: The potential exists and we are performing sampling to determine this possibility.

### **Site 66 Remedial Investigation Fieldwork**

Question: Is there any visual evidence of waste or junk at the site?

Answer: Yes, there is visual evidence of glass bottles, tires, lead flooring, etc.

### **Site 1 & Site 19/27 EE/CAs and Action Memorandums**

Question: How much nitroglycerin was used at Site 19 and what was it used for?

Answer: Building 785 (located near Site 19) used metallic salts in processing explosives. Currently, the volume of nitroglycerin historically used in the buildings is not known.

Question: Have we seen any sites with chromium issues?

Answer: There are other sites on NSF Indian Head in which chromium is a potential contaminant of concern. However, chromium is not the main driver for environmental remediation at these sites.

Question: What is RASO and do they do cleanups?

Answer: RASO is a Navy agency known as the Radiological Affairs Support Office. They manage the cleanup of sites with radiological contamination through specialized services provided by the U.S. Army.

### **FY11 Budget/Schedule**

Question: What does SWMU stand for?

Answer: SWMU stands for Solid Waste Management Unit.

Question: Does mercury contamination exist within Building 766?

Answer: Not to our knowledge, but Safety will be notified of the concern so they may determine the best course of action.

Question: Where is Site 28?

Answer: Site 28 is located at the southeast corner of NSF-IH on the Mattawoman Creek and next to Slavin's dock.

Question: Does FY11 have the highest annual amount of funding?

Answer: The annual amount of funding for Indian Head's IR program usually varies from \$2 to \$5 million. Given that \$4.6 million is budgeted for FY11, this is a year with higher funding.

Question: What are the future budgeting costs for Indian Head?

Answer: The following budgeting targets exist for Indian Head for the next five fiscal years: IR sites (FY12-\$4 mil, FY13-\$2 mil, FY14-\$2 mil, FY15-\$750K, FY 16-\$3.5 mil) MRP sites (FY12-\$2.7 mil, FY13-\$3.3 mil, FY14-\$4.2 mil, FY15-\$1.75 mil, FY 16-\$6.2 mil.) Note that these amounts are just estimates and are affected by many factors. The needs of other bases and priority of Navy-wide sites affects the amount of funds available each year. The targets for Indian Head are just projections and may change over time.

**NAVAL SUPPORT FACILITY INDIAN HEAD  
INSTALLATION RESTORATION (IR) PROGRAM  
RESTORATION ADVISORY BOARD (RAB) DRAFT MEETING AGENDA**

April 14, 2011

- |                       |  |
|-----------------------|--|
| <b>5:00 - 5:05 pm</b> | <b>ARRIVAL/WELCOME</b><br>Mr. Joseph Rail<br>Naval Facilities Engineering Command, Washington (NAVFACWASH)<br>Remedial Project Manager |
| <b>5:05 – 5:15 pm</b> | <b>UXO 32 (SCRAP YARD) UPDATE</b><br>Mr. Joseph Rail   |
| <b>5:15 – 5:30 pm</b> | <b>SITE 11 REMEDIAL ACTION</b><br>Mr. Joseph Rail  |
| <b>5:30 – 5:45 pm</b> | <b>SITE 17 REMEDIAL ACTION</b><br>Mr. Nick Carros  |
| <b>5:45 – 6:00 pm</b> | <b>LAB AREA REMEDIAL ACTION</b><br>Mr. Nate Delong   |
| <b>6:00 – 6:15 pm</b> | <b>SITE 57 REMEDIAL ACTION</b><br>Mr. Nick Carros  |
| <b>6:15 – 6:30 pm</b> | <b>SITE 66 RI SAMPLING RESULTS</b><br>Mr. Nate Delong  |
| <b>6:30 – 7:30 pm</b> | <b>PUBLIC MEETING???</b>   |
| <b>7:30 pm</b>        | <b>ADJOURN</b>   |

**2011 TENTATIVE RAB MEETING DATES:**

**THURSDAY, APRIL 14, 2011**

**THURSDAY, OCTOBER 13, 2011**

# INSTALLATION RESTORATION PROGRAM



NAVAL SUPPORT FACILITY,  
INDIAN HEAD  
101 STRAUSS AVENUE  
INDIAN HEAD, MARYLAND  
20640-5035



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## RESTORATION ADVISORY BOARD (RAB) MEETING

**Date of Meeting:** October 14, 2010, 5:00 pm

**Restoration Advisory Board (RAB) Member Participants:**

Mr. Curtis DeTore (S)	Mr. Elmer Biles (C)
Mr. Joseph Rail (N)	Mr. Jeff Bossart (N)
Mr. Nathan Delong (N)	Mr. Nicholas Carros (N)

**RAB Members Not in Attendance:**

Mr. Jerry Hamrick (L)  
Mr. Vincent Hungerford (C)  
Mr. Dennis Orenshaw (F)

**Additional Attendees:**

Mr. Douglas King (N)	Ms. Becky Marquis (N/C)
Ms. Susan Yates (N/C)	Mr. Daniel Bragunier (N/C)
Mr. Kevin Campbell (N/C)	Mr. Rick McArdle (N/C)

**C** = Community  
**F** = Federal Official  
**K** = Contractor  
**L** = Local Official  
**N** = Navy Official  
**R** = Newspaper Reporter  
**S** = State Official

## **Major Issues Discussed/Accomplished:**

### 1. Arrival/Welcome

Mr. Joseph Rail of the Naval Facilities Engineering Command, Washington (NAVFAC Washington) began the meeting by introducing himself and welcoming everyone to the Indian Head Senior Center. Mr. Rail then presented the meeting agenda, which is included in Attachment A.

### 2. MRP Main Installation Site Investigation Update

Mr. Rail began the presentation by discussing the objectives of the site investigation, followed by listing the subject sites of the investigation, which includes UXO's 6, 9, 11, 13, 18, 19, 20, 27, 29, 30, 31, and 33. For each site, Mr. Rail showed the site locations as well as representative pictures of the current conditions. Each site was discussed with respect to the contaminants of concern, sampling that occurred, and recommendations for a path forward.

A copy of Mr. Rail's presentation (including photographs) is provided in Attachment B.

### 3. UXO 32 (Scrap Yard) Update

Mr. Carros began the presentation by providing a summary of the recent cleanup activities. The presentation then conveyed each phase of the cleanup from the explosive removal to the soil screening and removal. The current site conditions and the path forward were then discussed.

A copy of Mr. Carros's presentation (including pictures) is provided in Attachment C.

### 4. Site 66 RI Fieldwork

Mr. Delong began the presentation by discussing the site background and conclusions of the previous investigation. The Remedial Investigation objectives were discussed. Mr. Delong then showed several maps conveying the sampling points, contaminants to be sampled for, and discussing the rationale for their placement. Following the discussion of the RI activities, the timeline for the investigation and path forward were discussed.

A copy of Mr. Delong's presentation (including pictures and shoreline schematics) is included in Attachment D.

5. Site 1 & Site 19/27 EE/CAs and Action Memorandums

Mr. Delong's presentation discussed the sites in question with respect to their backgrounds, current conditions, layouts, planned removal limits, and status of action memorandums. The presentation was concluded with a discussion of the expected removal timeframes and steps leading up to completion of the interim removal of soil from the sites.

A copy of Mr. Delong's presentation (including pictures) is provided in Attachment E.

6. FY 11 Budget/Schedule

Mr. Rail began the presentations by talking about the anticipated budget and level of work planned for the Installation Restoration & Munitions Response Programs. The work included specific focuses for IR sites 1, 8, 11, 14, 21, 28, 57, 38, 69, SWMU 14, and UXO 32.

A copy of Mr. Rail's presentation (including pictures) is provided in Attachment F.

7. Comments, Questions, and Answers

Numerous comments were made and questions asked during the meeting. These comments, questions, and answers are provided in Attachment G.

8. Conclusion of Formal Presentations

Mr. Rail presented the tentative agenda for the next RAB meeting, which is scheduled for April 14, 2011. A copy of the agenda is included in Attachment H.

Mr. Rail then concluded the formal portion of the meeting and thanked all in attendance.