

INSTALLATION RESTORATION PROGRAM



NAVAL SUPPORT FACILITY
INDIAN HEAD
3838 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5133



RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES

Date of Meeting: October 17, 2019, 6:00 pm

RAB Member Attendees:

Mr. Joseph Rail (N) *
Mr. Alex Scott (N)
Mr. Curtis Detore (S)

Additional Attendees:

Mr. Russell Ashley (S)	Ms. Andrea Hornung (N)
Mr. Andrew Louder (N)	Ms. Tarell Taylor (N)
Ms. Tara Meadows (N)	Ms. Jeron Hayes (N)
Mr. Robert Thomson (F)	

RAB Members Not in Attendance:

Ms. Karen Wigen (L)
Mr. Fred Pinkney (F)

* Co-chair

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

Topics Discussed:

1. Arrival/Welcome

Mr. Joseph Rail of the Naval Facilities Engineering Command, Washington (NAVFAC Washington) began the meeting by conducting introductions and welcoming everyone to the Indian Head Senior Center. Copies of RAB presentations and the agenda were offered to anyone in attendance. Mr. Rail then presented the meeting agenda, which is included in Attachment A.

2. RAB Presentations

Presentations and updates were given by Mr. Rail and Mr. Scott of NAVFAC Washington and Mr. Louder of Naval Support Facility Indian Head. Mr. Rail presented the FY20 Budget Update, the Stump Neck Small Arms/Skeet

Range Removal Action Update, and the Site 67 EE/CA & Action Memo Update. Mr. Louder presented the Site 38 LTM and UXO 30 RI Fieldwork updates. Mr. Scott presented the Basewide PFAS/PFOA Overview and Basewide Arsenic Study Update. Copies of all presentations are included in Attachment D.

3. Comments, Questions and Answers

Any comments made or questions asked during the meeting were noted. These comments, questions and answers are provided in Attachment B. Additional correspondence concerning the Installation Restoration Program (IRP) or the Munitions Response Program (MRP) at the facility can be directed to:

Public Affairs Officer
Naval Support Facility South Potomac
Attn: Public Affairs Officer, Code 00P
6509 Sampson Rd.
Dahlgren, VA 22448-5108
PHONE: (540) 284-0129
FAX: (540) 653-4269
Email: jeron.hayes@navy.mil

4. Meeting Adjourn

Mr. Rail presented the tentative agenda for the next RAB meeting, which is scheduled for October 15, 2020. A copy of the draft agenda is included in Attachment C. Mr. Rail then concluded the meeting at 7:30 pm and thanked everyone in attendance.

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

October 17, 2019

6:00 - 6:05 pm	ARRIVAL/WELCOME Mr. Joseph Rail Naval Facilities Engineering Command, Washington (NAVFACWASH) Remedial Project Manager
6:05 – 6:10 pm	<u>FY20 BUDGET UPDATE</u> Mr. Joseph Rail
6:10 – 6:25 pm	<u>STUMP NECK SMALL ARMS/SKEET RANGE REMOVAL ACTION UPDATE</u> Mr. Joseph Rail
6:25 – 6:35 pm	<u>SITE 38-RUM POINT LANDFILL LTM RESULTS</u> Mr. Andrew Louder
6:35 – 6:45 pm	<u>UXO 30- GATE 3 BURNING GROUND REMEDIAL INVESTIGATION FIELDWORK UPDATE</u> Mr. Andrew Louder
6:45 – 7:00 pm	<u>SITE 67-HOG-OUT FACILITY EE/CA & ACTION MEMO UPDATE</u> Mr. Joseph Rail
7:00 – 7:15 pm	<u>BASEWIDE PFAS/PFOA OVERVIEW</u> Mr. Alex Scott
7:15 – 7:30 pm	<u>BASEWIDE ARSENIC STUDY</u> Mr. Alex Scott
7:30 pm	ADJOURN

Attachment A

INSTALLATION RESTORATION PROGRAM



NAVAL SUPPORT FACILITY-
INDIAN HEAD
3838 STRAUSS AVENUE
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20640-5133



RESTORATION ADVISORY BOARD (RAB) MEETING COMMENTS, QUESTIONS AND ANSWERS October 17, 2019

Arrival/Welcome

No questions were asked nor comments made during this topic.

FY20 BUDGET UPDATE

No questions were asked nor comments made during this topic.

STUMP NECK SMALL ARMS/SKEET RANGE REMOVAL ACTION UPDATE

No questions were asked nor comments made during this topic.

SITE 38-RUM POINT LANDFILL LTM RESULTS

No questions were asked nor comments made during this topic.

UXO 30-GATE 3 BURNING GROUND REMEDIAL INVESTIGATION FIELDWORK UPDATE

No questions were asked nor comments made during this topic.

SITE 67-HOG-OUT FACILITY EE/CA & ACTION MEMO UPDATE

Question: When do you plan on starting the Site 67 soil removal project?

Answer: The project is scheduled to be awarded in the fall of 2019 and fieldwork is expected to begin by the summer of 2020.

BASEWIDE PFAS/PFOA OVERVIEW

No questions were asked nor comments made during this topic.

Attachment B

BASEWIDE ARSENIC STUDY

No questions were asked nor comments made during this topic.

Attachment B

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

October 15, 2020

6:00 - 6:05 pm	ARRIVAL/WELCOME Mr. Joseph Rail Naval Facilities Engineering Command, Washington (NAVFACWASH) Remedial Project Manager
6:05 – 6:20 pm	<u>UXO 14 & 15 STUMP NECK SMALL ARMS/SKEET RANGE REMOVAL ACTION UPDATE</u> Mr. Andrew Louder
6:20 – 6:30 pm	<u>SITE 43 FEASIBILITY STUDY UPDATE</u> Mr. Andrew Louder
6:30 – 6:45 pm	<u>SITE 47 MNA EVALUATION UPDATE</u> Mr. Alex Scott
6:45 – 7:00 pm	<u>SITE 57-BUILDING 292 TCE CONTAMINATION VAPOR INTRUSION (VI) EVALUATION</u> Mr. Alex Scott
7:00 – 7:15 pm	<u>SITE 67-HOG-OUT FACILITY NON-TIME-CRITICAL REMOVAL ACTION UPDATE</u> Mr. Joseph Rail
7:15 – 7:30 pm	<u>SITE 68-FORMER BUILDING 259 CONTAMINATION EE/CA & ACTION MEMO UPDATE</u> Mr. Joseph Rail
7:30 – 7:45 pm	<u>SITE 69-BUILDING 1018 REMEDIAL INVESTIGATION/FEASIBILITY STUDY UPDATE</u> Mr. Joseph Rail
7:45 – 8:00 pm	<u>STUMP NECK MRP SITE FEASIBILITY STUDY UPDATE</u> Mr. Andrew Louder
8:00 pm	ADJOURN

Attachment C

Attachment D- RAB Presentations



FY20 BUDGET & SCHEDULE UPDATE

Presented By
Joseph Rail
Naval Facilities Engineering Command (NAVFAC)
Washington

10/17/19

FY20 Budget & Schedule Update



Approximate budget for FY 2020:

- \$1.3 mil for Installation Restoration Program (IRP)
- \$1.6 mil for Munitions Response Program (MRP)

Planned work includes:

- Remedial Investigation/Feasibility Study (RI/FS)
- Proposed Plan (PP)/Record of Decision (ROD)/Remedial Design (RD)
- Interim Removal Action (IRA)
- Remedial Action (RA)
- Long-Term Monitoring (LTM)

FY20 Budget & Schedule Update



- **RI/FS for:**
 - Site 71 - PFAS Area of Concern
- **PP/ROD/RD for:**
 - UXO 13 – FDR Skeet Range
- **IRA for:**
 - Site 68 – Former Building 259 Contamination
 - UXO 11 – The Valley
- **RA for:**
 - SWMU 14 – Photographic Lab Septic Tank System
- **LTM for:**
 - Site 42 - Olsen Road Landfill

Contacts and Questions

Points of Contact:

- **NAVFAC Washington:** Joseph Rail
- **NAVFAC Washington (Base RPM):** Andrew Louder

Questions ?

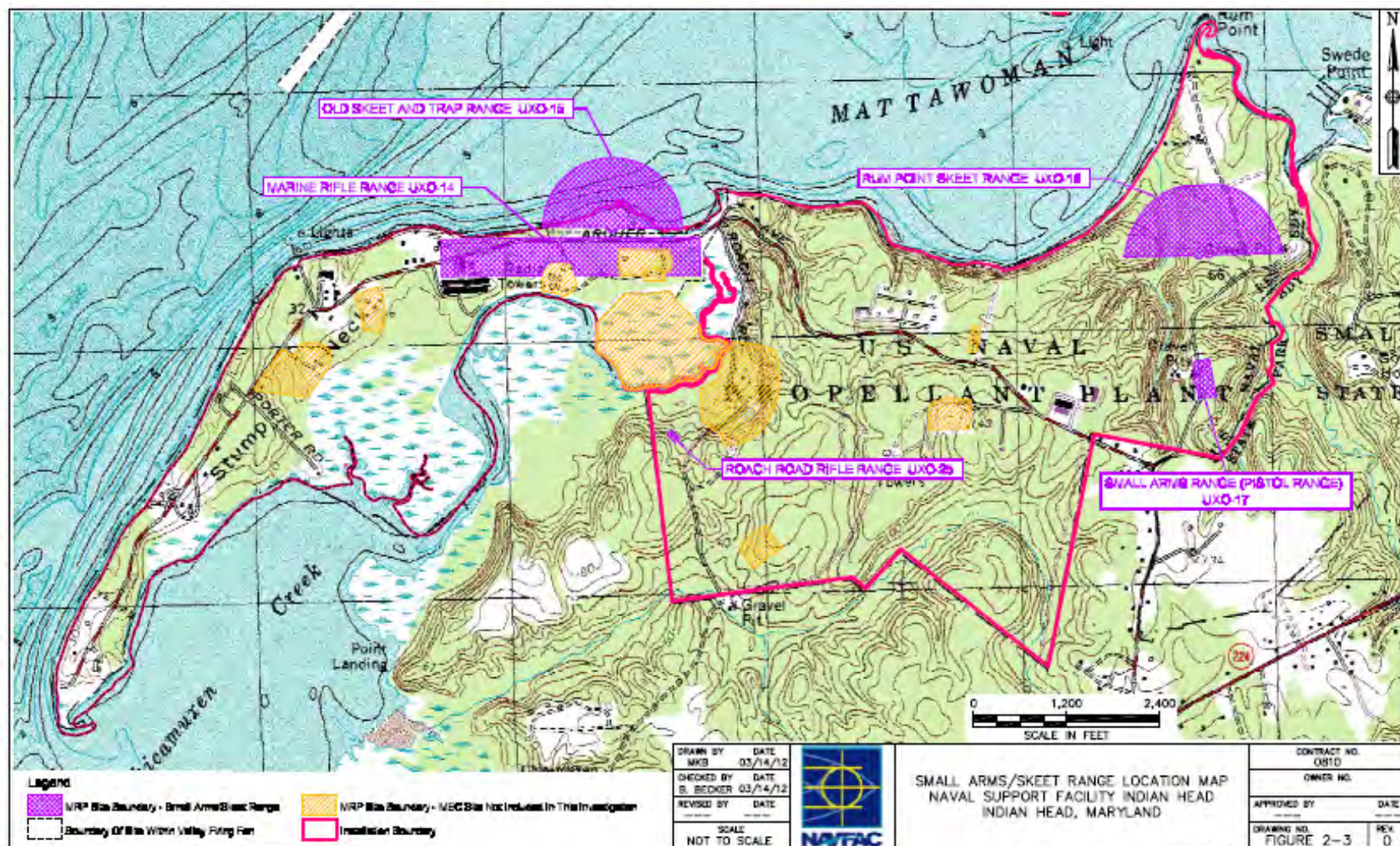


STUMP NECK SMALL ARMS/SKEET RANGE REMOVAL ACTION UPDATE

Presented By
Joseph Rail
Naval Facilities Engineering Command (NAVFAC)
Washington

10/17/19

Small Arms/Skeet Range Locations



Site Background



UXO 14- Marine Rifle Range- 30.4 acres, used from 1911 to 1918 for rifle training, includes multiple firing lines, two target berms, and hillside impact area.

UXO 15- Old Skeet and Trap Range- 29.3 acres, used from 1967 to 1991 for small arms recreational activity, includes two firing points and associated impact area.

UXO 16- Rum Point Skeet Range- 33.5 acres, used from 1991 to 2001 for small arms (shotgun) recreational activity, includes two firing pads and associated shot fall areas.

UXO 17- Small Arms (Pistol) Range- 2 acres, used from mid-1980s to 1991 for small arms training, includes three firing lines, a target area, and hillside impact area.

UXO 25- Roach Road Rifle Range- 0.3 acres, used from 1967 to 1986 for small arms (rifle and pistol) training, included eight firing stands, six targets, and impact area.

Contaminants of Concern



Site	Subarea	COC ¹	
		Surface Soil	Subsurface Soil
MRR - UXO 14	Hillside Impact Area	Lead	Lead
OSTR - UXO 15	Firing Points/Target Area	PAHs	—
	NW Shot Fall Area	Lead	—
	NE Shot Fall Area	Lead	—
RPSR - UXO 16	Firing Points/Target Area	PAHs	—
SAPR - UXO 17	Firing Line Area	Nitroglycerin	—
	Target Area	Lead ²	—
RRRR - UXO 25	Target Area	Lead	—

¹ COCs include contaminants that are present at concentrations that pose unacceptable risks to potential human health and ecological receptors. Contaminants discussed in the text as ecological COCs are not included on this list of COCs, but are addressed in Section 3.4 and Appendix E. Addressing human health risk in soil at the site(s) also will address ecological risks.

² Due to the visible evidence of soil sloughing from the face of the backstop berm in the UXO 17 Target Area, "surface soil" was considered to be soil from 0 to 4 feet bgs along the base of the berm.

Removal Action Objectives Include:

- Mitigate potential human health risks due to direct exposure to lead, PAHs, and nitroglycerin contamination in soil;
- Mitigate the potential erosion of contaminated soil, transport of contaminants, and subsequent exposure; and
- Ensure that post-removal action conditions provide an acceptable level of protection for ecological receptors against direct exposure and exposure via the food chain to lead, nitroglycerin, and PAHs in soil.

Removal actions took place between 7/12/18 through 3/14/19.

UXO 14 & 15:

- **Due to discovery of potential munitions items (57mm projectile), work was halted at UXO 14 & 15 and an Explosive Safety Submission (ESS) was prepared and submitted to NOSSA for review.**
- **Work will resume once the ESS is approved (tentatively in Summer 2020.)**

UXO 16, 17, & 25:

- **Excavation and restoration has been completed and no further response actions are needed to protect human health and the environment.**

Site Summary



UXO 16:

- PAH: 4,787 tons excavated from 6-18 inches below grade.

UXO 17:

- Lead: 1,234 tons excavated from 12 to 48 inches below grade.
- Nitroglycerin: 634 tons excavated to 12 inches below grade.

UXO 25:

- Lead: 233 tons excavated to 18 inches below grade.

In September 2019, a Removal Action Completion Report (RACR) was finalized for UXO 16, 17 & 25 and a Close-Out Document was signed by Navy, EPA, & NSFIH.

A separate RACR and Close-Out Document are planned for UXO 14 & 15.

UXO 14-Marine Rifle Range



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UXO 15-Old Skeet & Trap Range



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UXO 16-Rum Point Skeet Range



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UXO 17-Small Arms (Pistol) Range



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UXO 25-Roach Road Rifle Range



U.S. Navy



U.S. Navy



U.S. Navy

Contacts and Questions



Points of Contact:

- **NAVFAC Washington:** Joseph Rail
- **NAVFAC Washington (Base RPM):** Andrew Louder

Questions ?



SITE 38– RUM POINT LANDFILL GROUNDWATER LTM UPDATE

Presented By
Andrew Louder-IR/MRP Manager
Naval Facilities Engineering Command (NAVFAC)
Washington

10/17/2019

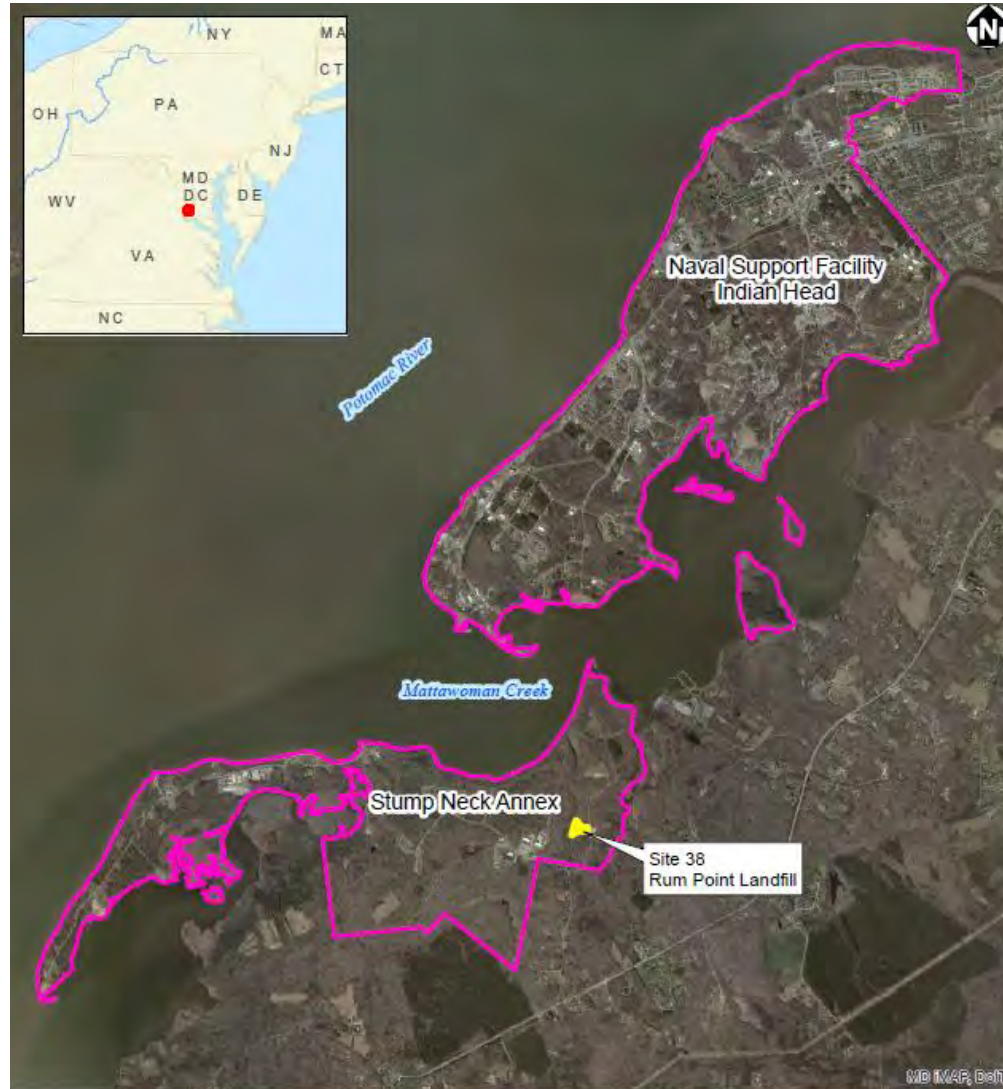
Presentation Objectives



Objective:

- Discuss recent Groundwater LTM results
 - Background of Rum Point Landfill
 - Fieldwork Conducted
 - Path Forward

Site 38 Location



Site 38 Background

- Installation Restoration (IR) Site 38 was a closed unlined landfill located on approximately 2.2 acres in the eastern portion of the Stump Neck Annex west of Rum Point Road. The landfill was intended for disposal of biodegradable waste and was inactive after December 1989. The date when waste disposal began was not known, and little was known about the site history.
- No action for sediment and surface water.
- Landfill waste and soils excavated. Action completed. RACR completed.
- Groundwater LTM Action ongoing.
 - MDE Solid Waste ARAR requires three LTM events prior to site closeout following removal of landfill.
 - Groundwater Evaluation required to conclude if COC (manganese) is from site or from upgradient source, per ROD.

Site 38 Groundwater COC/LTM Analyses



- Manganese groundwater cleanup level is 320 µg/L based on HI=1 from ROD (March 2014).
- Note a current value based on HI=1 is 430 µg/L (not adjusted), because RSL changed to 430 µg/L in May 2014.
- FYI EPA Lifetime Health Advisory is 300 µg/L
- Groundwater LTM sample analyses:
- Manganese (Groundwater COC)
 - Maryland RCRA I & II tables parameters (ARAR for closed landfill), including VOCs, all metals, and several wet chemistry parameters.
 - Explosives and SVOCs at EPA's request (via comment on 2017 LTM Plan) based on wastes encountered during landfill excavation.



Site 38 Groundwater LTM Program



- Eleven monitoring wells in LTM Program.
- Three planned sampling events followed by evaluation of risk
 - Event No. 1: Completed in July 2018. Data report complete.
 - Event No. 2: Completed in June 2019. Data report forthcoming after data validation is complete.
 - Event No. 3: Scheduled for Jan 2020

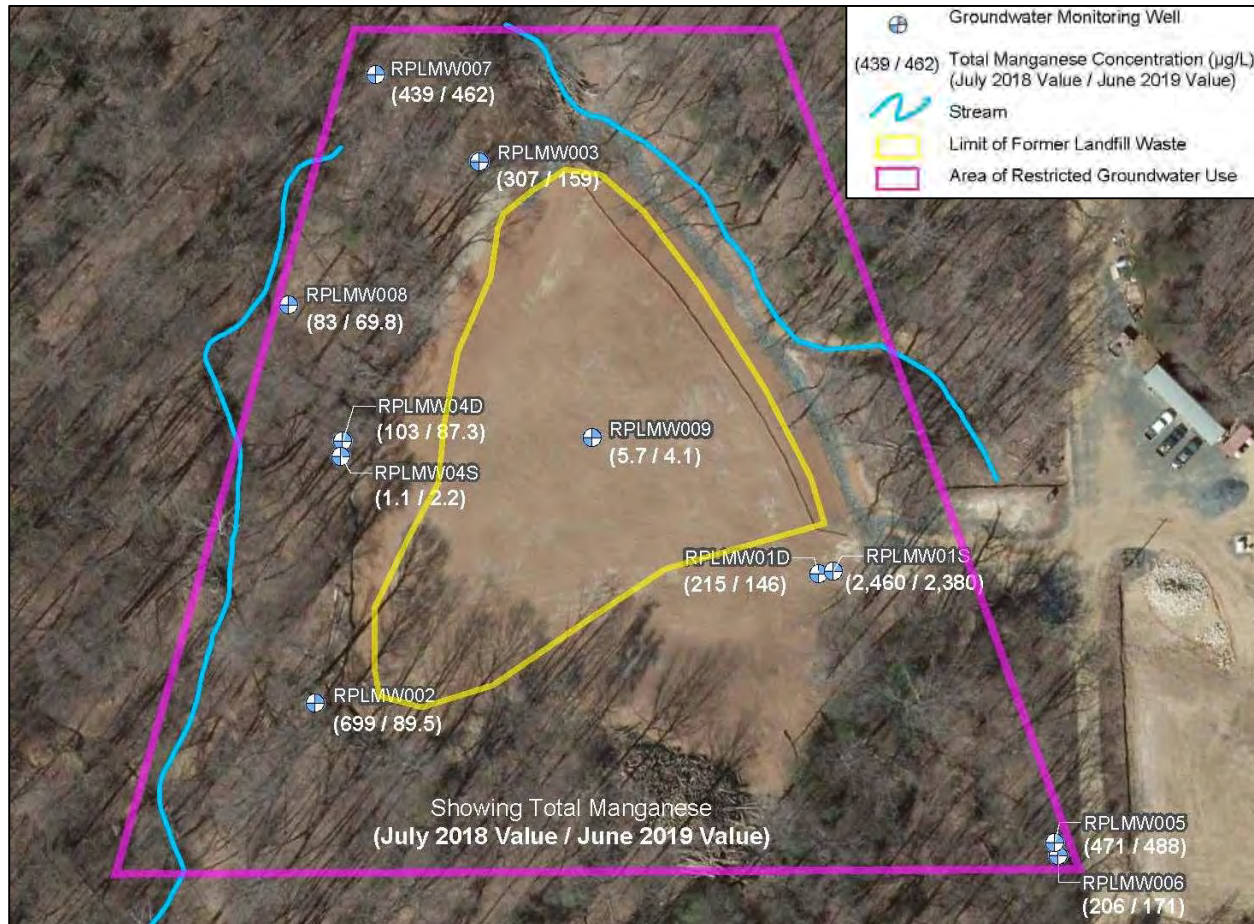
Site 38 Groundwater LTM Results



- No issues with groundwater LUCs implementation.
- VOCs, SVOCs, PAHs, and explosives were not detected (same as July 2018 results)
- Total Manganese exceeded the 320 µg/L cleanup level (and 430 µg/L RSL) in three monitoring wells:
 - MW01S (upgradient) at 2,380 µg/L
 - MW05 (upgradient) at 488 µg/L
 - MW07 (downgradient) at 462 µg/L
- Manganese confirmed above cleanup level upgradient of the former landfill (same as July 2018 results)

Site 38 Groundwater LTM Results

- Event #1 (July 2018) and Event #2 (June 2019)



Site 38 Groundwater Schedule



- Sept 2019: LTM Data Report No. 2
- Jan 2020: LTM Event No. 3 Fieldwork
- June 2020: Draft Groundwater Evaluation Report
 - Demonstrate elevated manganese upgradient
 - Show lack of increasing trends on MDE RCRA I & II parameters
 - Reevaluate risks as needed to demonstrate no issue.
 - Recommend no further action based on upgradient manganese and completing the three statutory LTM events.
- March 2021: Site close-out / Complete RACR for groundwater.

Contacts and Questions



Points of Contact:

- **NAVFAC Washington PM:** Joe Rail
- **Indian Head PM:** Andrew Louder

Questions ?



UXO 30- Gate 3 Burning Ground

Presented By
Andrew Louder-IR/MRP Manager
Naval Facilities Engineering Command (NAVFAC)
Washington

10/17/2019

Presentation Objectives



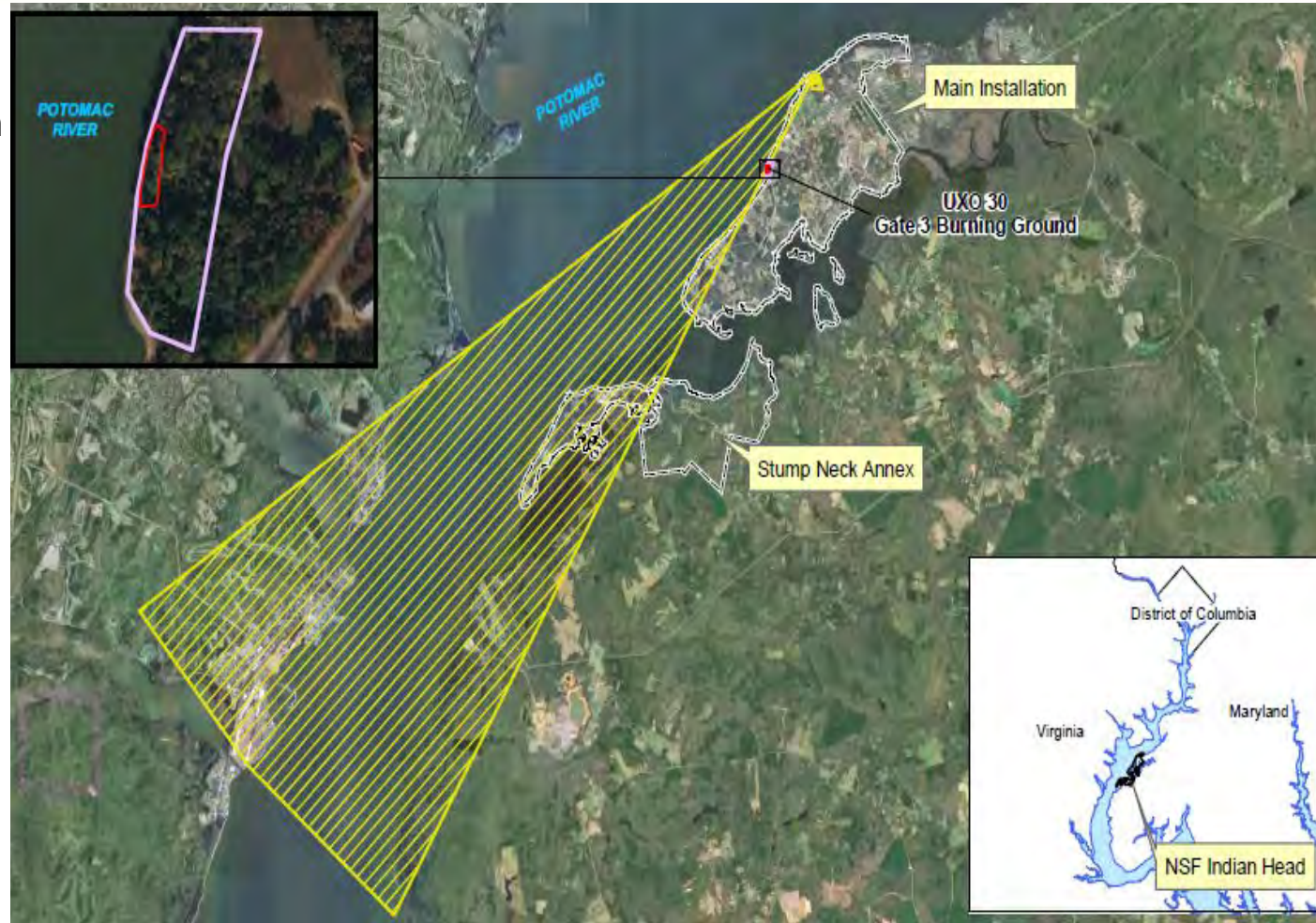
Objective:

- Update the field work at UXO 30
 - Background of UXO 30
 - Preliminary Results
 - Path Forward

UXO 30 Background



UXO 30 is a 5-acre site located along the western boundary of the Main Installation along the shoreline of the Potomac River. The site has been used as a burning ground where munitions may have been brought to the site for open burning. In addition, the site is within a shortfall area of a munitions firing point at UXO 11 where various types of projectiles were tested and fired.



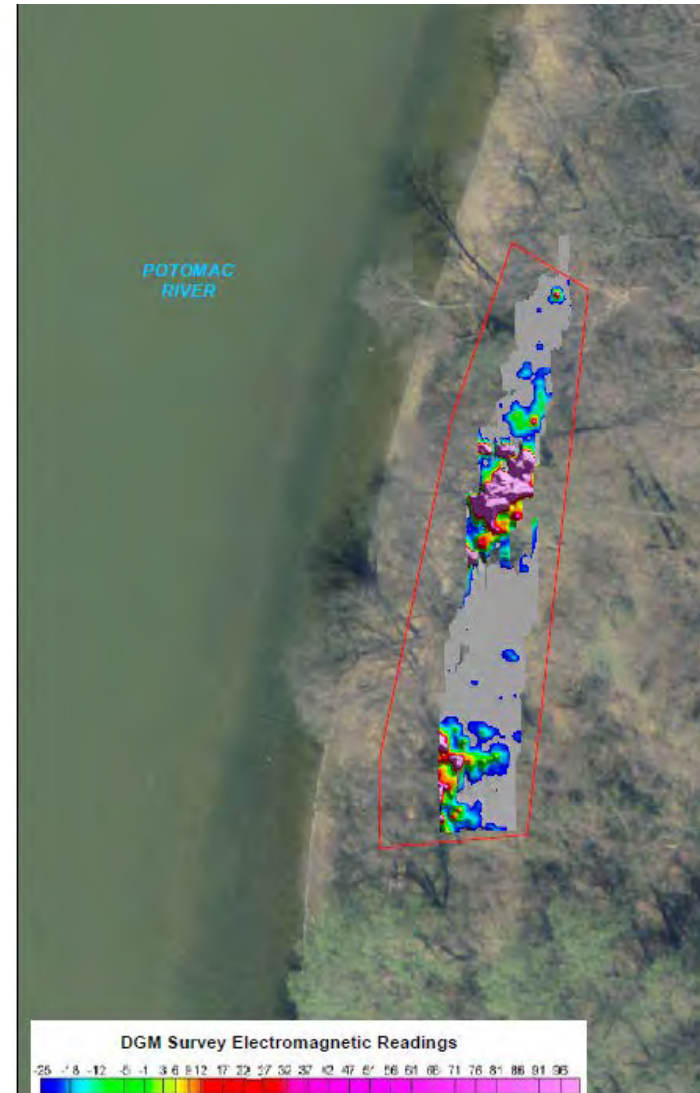
UXO 30-Backgroun cont'd



- The history of MEC use at UXO 30 is documented in the Preliminary Assessment (PA) report (Malcolm 9 Pirnie, 2005), which states the site was a potential burning ground operating from 1955 to 1961.
- Explosives may have been brought to the site for burning; however, the types and quantities of explosives are unknown.
- Munitions could have included flares, pyrotechnics, solid fuse boosters, bulk explosives, propellants, and small arms ammunition.
- The site also lies within the estimated firing fan of UXO 11 (The Valley), making it a suspected munitions area.
 - The impact from UXO 11 would have been from the firing of long-range guns toward primary impact areas at Stump Neck Annex and the Potomac River.

UXO 30-Previous Work MEC/MPPEH

- From 2008 to 2010, CH2M conducted a Site Inspection (SI) to determine the presence of MEC and/or munitions constituents (MC) at the site.
- The SI was completed at UXO 30 that included a DGM survey over the 0.23-acre area where evidence of a burnt ground surface was identified.
- Field activities for the SI were completed in 2010, and no MEC or MPPEH items were observed at the site during fieldwork. The DGM survey identified several areas of high densities of DGM anomalies.



UXO 30-Previous Work MC



- The objective for MC was accomplished by collecting surface soil, subsurface soil, and in situ groundwater grab samples to determine if polycyclic aromatic hydrocarbons (PAHs), perchlorate, explosives (including nitroguanidine, nitrocellulose, and nitroglycerin), and metals are present at concentrations that exceed the adjusted residential soil regional screening level for soil and adjusted tap water regional screening level for groundwater.
- Munitions Constituents detected in either soil or groundwater at levels exceeding human health screening criteria included 2-nitrotoluene, nitrobenzene, nitroglycerin, and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX); however, PAHs and metals were prominent in the site samples compared to the explosive compounds.
- Based on the MC results, soil and groundwater were recommended for further investigation through an RI mainly because of the presence of PAHs and metals.

UXO 30-Field Work

- In 2016, the Navy conducted a site visit in support of the RI.
 - Identified two additional features that could be associated with the site.
 - Mounded area, approximately 50 feet wide
 - 50-foot-wide crater-shaped area



Mounded features on the Northeast part of the site



50 ft. wide crater shaped area, in the southeast portion of the site

UXO 30-Field Work



- Due to the discovery of the mounded areas and potential crater, the Navy proposed expanding the investigation area during the RI.
- Previous 0.23 acre DGM area expanded to 5 acres of transects.



UXO 30-Field Work



- Vegetation reduction and removal of non-MEC/MPPEH scrap metal along the proposed DGM transects.



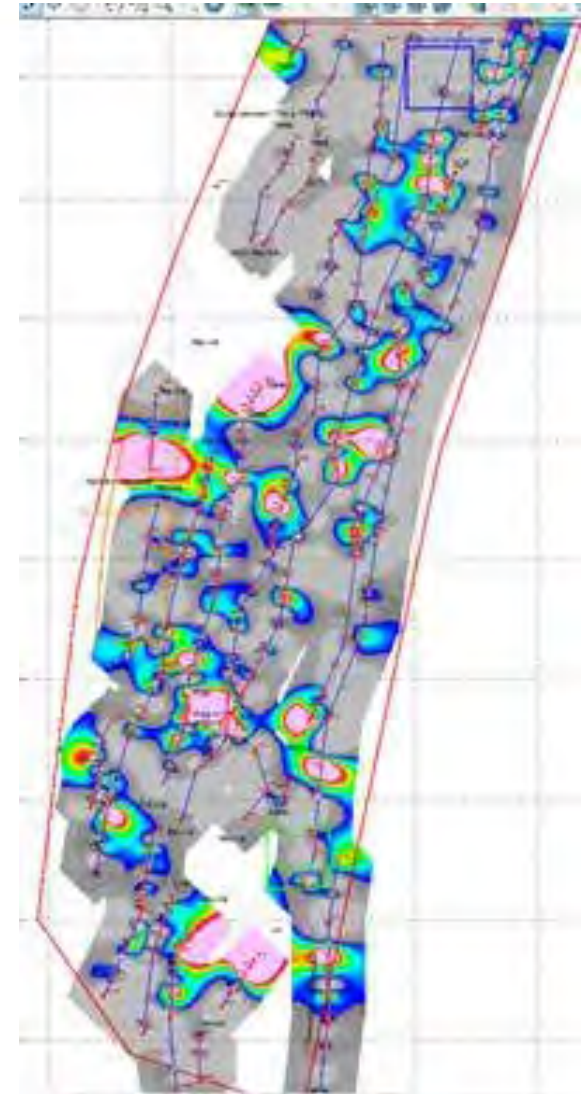
UXO 30-Field Work

- Performance of land survey to stake out nine transect lines for the DGM



UXO 30-Field Work

- Performing DGM survey along the transects within the five-acre investigation area. The DGM survey was conducted along approximately 6,600 feet of 1-meter (3.28 feet) wide transects spaced at approximately 10-meter (33 feet)
- Highest densities of DGM anomalies occurred in the vicinity of the SI DGM Area



UXO 30-Summary of Results



- A total of 380 targets were identified of which 21 targets were QC seed items. This means that 359 anomalies represent metallic items that could potentially be MEC or MPPEH in the subsurface
- Preliminary evaluation of the 380 targets using the Estimating a Proportion statistical method (as outlined in the QAPP) indicated that to achieve 95% confidence, 191 anomalies should be intrusively investigated
- Based on the identification of 380 anomalies, a total of 190 randomly selected anomalies would need to be intrusively investigated to provide a 95% confidence level to determine if MEC is present.
- Because 100% DGM was not conducted over the entire site but along transects (0.5 acre within the approximate 5.2-acre site), it is recommended that the total 380 targets be intrusively investigated

UXO 30-Next Steps



- ESS
 - Submit draft version to Navy for NOSSA review (Aug 2019)
 - Final version (proposed Feb 2020)
- SAP
 - Final version (2019)
- Statistical analysis tech memo
- Draft version (proposed Nov 2019)
 - Final version (proposed Feb 2020)
- MEC intrusive investigation – Proposed from Feb 2020 to March 2020
 - Surveyor to reacquire selected DGM anomalies
 - UXO contractor to excavate anomalies to potentially identify MEC
- Chemical investigation – Proposed from April to June 2020

Contacts and Questions



Points of Contact:

- **NAVFAC Washington:** Alex Scott
- **NAVFAC Washington (Base RPM):** Andrew Louder

Questions ?



Site 67 EE/CA & Action Memo Update

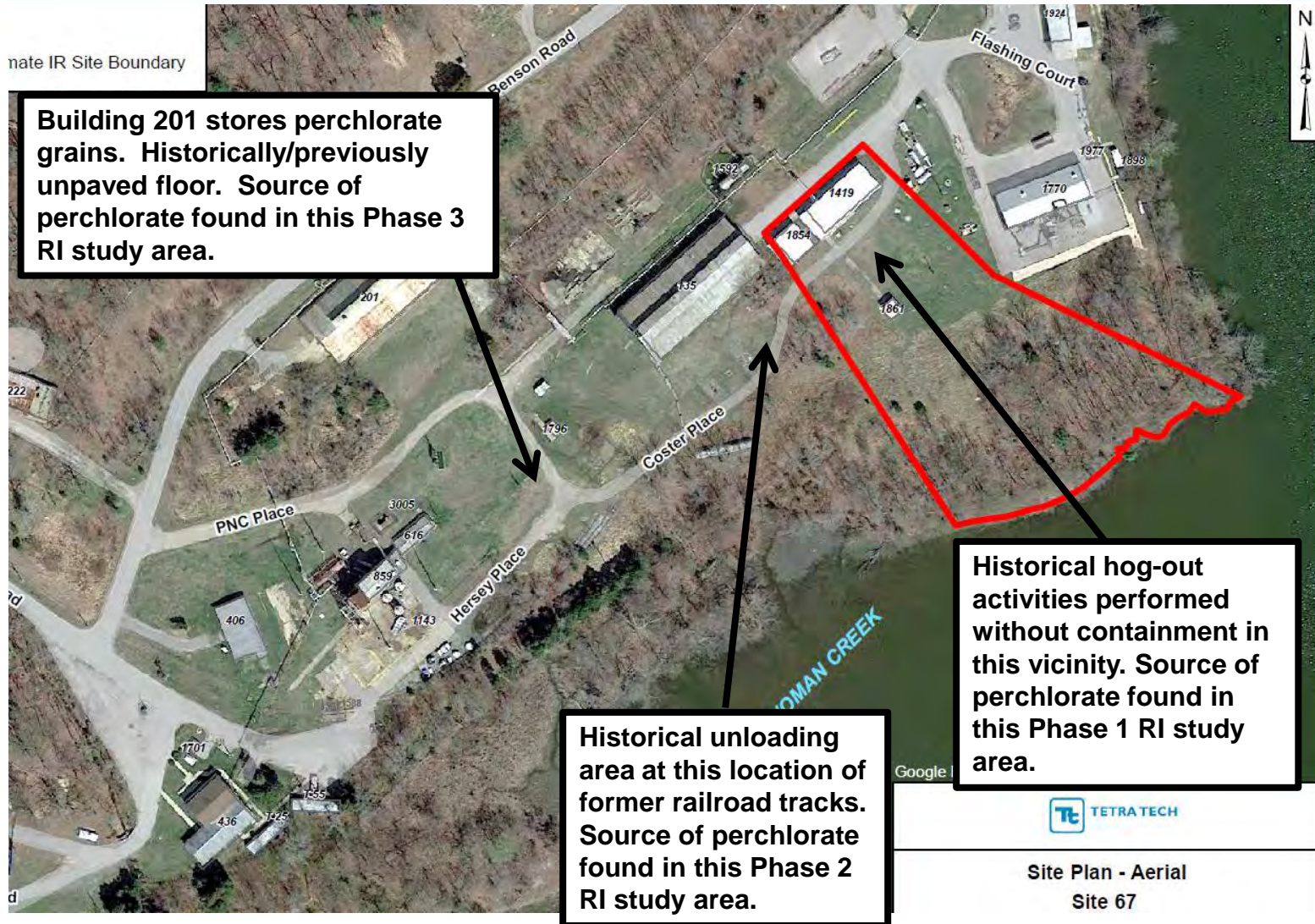
Presented By
Joseph Rail
Naval Facilities Engineering Command (NAVFAC)
Washington

10/17/19

Site 67- Hog-Out Facility Location



Site Information



Site 67 EE/CA Overview



- Engineering Evaluation/Cost Analysis (EE/CA) addressed contaminated soil and sediment and was finalized in July 2019.
- Public comment period held between 8/3/19 - 9/2/19.

Removal Action Objectives (RAO) included:

- Reduce unacceptable risks to human and ecological receptors from exposure to chemicals of concern (COCs) in the Unloading Area soil.
- Reduce unacceptable risks to ecological receptors from exposure to zinc in surface soil and sediment.
- Reduce migration of zinc from upland soil to sediment in Mattawoman Creek.

Site 67 EE/CA Overview



Removal Action Alternatives developed and evaluated in the EE/CA:

- Alternative 1- No Action
- Alternative 2- Excavation and Off-Site Disposal
- Alternative 3- Treatment, Excavation, and Off-Site Disposal

Alternative 2 is recommended because it's the most cost-efficient alternative that meets RAOs and achieves unrestricted use/unlimited exposure (UU/UE.)

NOTE: Groundwater to be addressed separately.

Site 67 EE/CA Overview



Removal Action Cleanup Goals

Chemical of Concern	Location	Cleanup Goal (mg/kg)	Basis
Ecological Risk⁽¹⁾			
Zinc	Surface soil at multiple locations; Sediment along shoreline of Mattawoman Creek.	219	Ecological risk-based value used at Site 28 for non-time-critical removal action of zinc in soil and creek sediments based on the no-observed-adverse-effects-level (NOAEL) sample concentration from Site 47 Baseline ERA. ⁽²⁾ This cleanup goal results in site-wide average soil concentrations and creek sediment concentrations at less than 100 mg/kg.
Human Health Risk⁽³⁾			
Benzo(a)pyrene	Unloading Area (south of Building 135) surface and subsurface soils	0.367	Lifelong Resident apportioned cancer risk (TCR=10 ⁻⁵).
Dibenzo(a,h)anthracene		0.367	Lifelong Resident apportioned cancer risk (TCR=10 ⁻⁵).
Aluminum		14,500	Construction Worker apportioned noncancer risk (HI=1 for target organ/effect).
Arsenic		10.5	Background. Child Resident and Lifelong Residents apportioned cancer risk(s) (TCR=10 ⁻⁵), but not below background value.
Cobalt		23	Child Resident apportioned noncancer risk (HI=1 for target organ/effect)
Copper		1,550	Child Resident apportioned noncancer risk (HI=1 for target organ/effect)
Iron		29,368	Background. Child Resident apportioned cancer risk (TCR=10 ⁻⁵), but not below background value.
Lead		400	Child Resident
Lithium		50	Child Resident apportioned noncancer risk (HI=1 for target organ/effect)
Manganese		250	Child Resident apportioned noncancer risk (HI=1 for target organ/effect)
Vanadium		100	Child Resident apportioned noncancer risk (HI=1 for target organ/effect)

Notes:

mg/kg – milligrams per kilogram

BERA – Baseline Ecological Risk Assessment

TCR – Target Cancer Risk

HI – Hazard Index

1. A surface soil from a test pit in the Unloading Area indicated potential risks to plants from lead and selenium; however, the soil in this area is being removed to mitigate human health risks at depth, which obviates the need to address lead and selenium in surface soils in this area.

2. Value is the maximum zinc soil concentration submitted for toxicity testing for the Site 47 Baseline ERA (CH2M HILL, 2006a and 2006b). No adverse effects (survival or growth) were observed in any of the bioassay samples from Site 47 (28-day tests with earthworm, *Eisenia foetida*).

3. See selection of human health cleanup goals for soil in the Unloading Area in Table 3-5 of the EE/CA (Tetra Tech, 2019a).

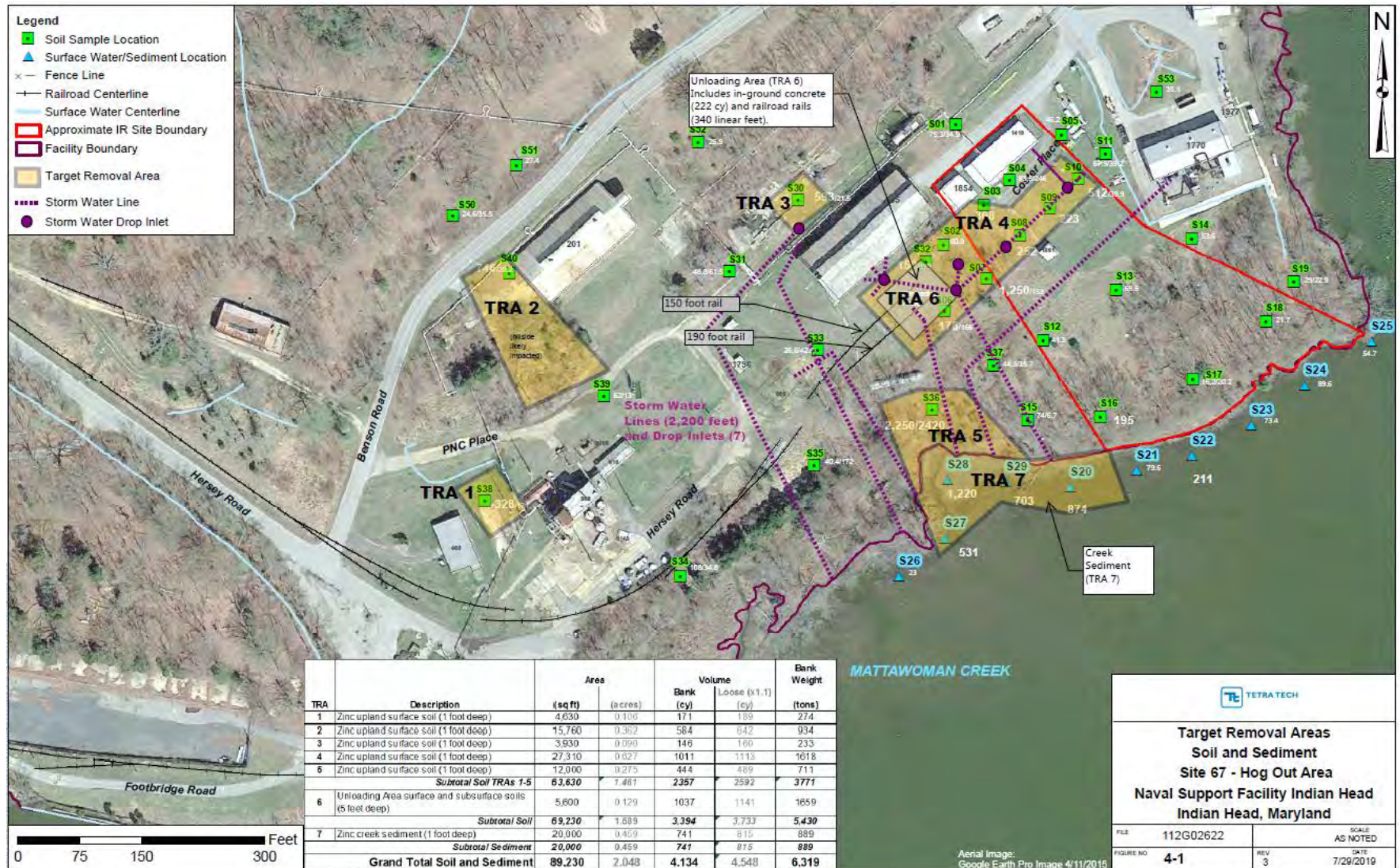
Site 67 EE/CA Overview



Alternative 2 Parameters:

- Approximately 3,390 C.Y. (5,400 tons) of contaminated soils are designated for removal.
- Approximately 740 C.Y. (890 tons) of contaminated creek sediments are designated for removal.
- Excavated soils determined to be hazardous by corrosivity will be treated on site.
- Excavated soil and sediment will be sent off-site to a Subtitle D landfill.
- Estimated 5,300 tons of concrete and debris and 240 feet of railroad line will be shipped off-site for disposal or recycling.
- Approximately 2,200 feet of storm water drainage lines to be cleaned and rehabilitated.

Site 67 Target Removal Areas



Site 67 Area Photos



U.S. Navy



U.S. Navy



U.S. Navy



U.S. Navy

Site 67 Action Memo



- Action Memo finalized & signed in September 2019 following the EE/CA public review period (no comments received.)
- Action Memo documented the decision by the Navy to conduct a non-time-critical removal action (NTCRA) at Site 67 utilizing Alternative 2.
- Project is expected to be awarded in early FY20 and completed within 1 year.

Site 67 EE/CA & Action Memo Update



Points of Contact:

- **NAVFAC Washington:** Joseph Rail
- **NAVFAC Washington (Base RPM):** Andrew Louder

Questions ?



NSF INDIAN HEAD – BASEWIDE PRELIMINARY ASSESSMENT (PA) FOR PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Presented By
Alex Scott
Naval Facilities Engineering Command (NAVFAC)
Washington

10/17/2019

Presentation Objectives



Objective:

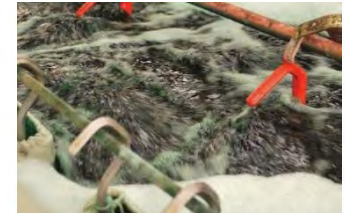
- Briefly explain PFAS and their potential uses and releases.
- Summarize the Preliminary Assessment for PFAS at NSF Indian Head

What are PFAS?

- **Man-made compounds, no natural occurrence**
- **Used since the 1950s in many products**
 - Heat resistant/Flame retardant
 - Oil resistant
 - Water resistant
 - Found in blood of people, wildlife, and fish worldwide
- **Properties which make these compounds useful also result in their persistence in the environment**



firefighting foam



plating shop mist suppression systems



stain-resistant carpets



water-repelling fabrics



nonstick cookware

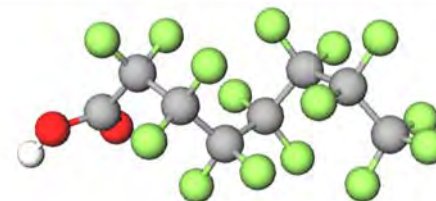


food packaging

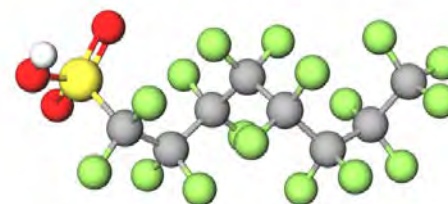
What are PFAS?

- A potential suite of thousands of compounds
- Contain a non-polar chain of partially or fully fluorinated carbons with a polar end group (e.g. carboxyl group, sulfonate group)
- Carbon chains are different lengths depending on the compound
- PFOA and PFOS both have eight carbon chains
- Per- FAS – all carbons in the chain are bonded with fluorine
- Poly-FAS – not all carbons are bonded with fluorine (some have C-H bonds instead)
- Chemical properties
 - Water soluble
 - Low volatility
 - Resistant to heat, biodegradation, and chemical reactions

PFOA



PFOS



Potential Sources of PFAS at NSFIH?



Aqueous film forming foam (AFFF): is a highly efficient type of fire suppressant agent, used by itself to attack flammable liquid pool fires, and in conjunction with Halon 1301 to attack fires in Navy vessel machinery spaces and air crashes.

Coatings and treatments: in metal plating operations.

Textile Treatments: for flame retardation and waterproofing.

PFAS Timeline at NSFIH (1)



May 2016 - USEPA issued a lifetime health advisory (LHA) for two PFAS constituents (PFOA and PFOS)

- LHA is 70 ng/L or ppt in drinking water
 - Total detected concentration of both PFOS and PFOA is compared to 70 ppt
 - Can also be compared individually if only one compound is detected
- LHA is based on studies in laboratory animals
- LHA provides a margin of protection for Americans, including the most sensitive populations, from a lifetime of exposure to PFOA and PFOS in drinking water
- LHA is non-enforceable

PFAS Timeline at NSFIH (2)



June 2016 – Three Navy policies issued

1. June 14, 2016 - Required all Navy bases not previously tested part of the initial 2014 priority list to test their finished drinking water, regardless of water source or potential for PFAS release
2. June 17, 2016 – Provided AFFF control, removal, and disposal requirements
3. June 20, 2016 – Provided the process to efficiently identify, validate, and prioritize the inventory of sites and Areas of Concern (AOCs) with known or potential PFAS releases

Primary concerns are protecting drinking water and preventing human exposure to levels of PFAS above the LHA. Well-water drinking water sources were prioritized. No local sources of well-water were identified within 1-mile of NSFIH.

Preliminary Assessment



Pre-Preliminary Assessment Site Identification:

At NSF Indian Head, 5 fire-fighting training areas were identified as AOCs where AFFF had the possibility of being used.

Preliminary Assessment Actions and Timeline:

Paper research regarding activities and potential sites where PFAS may have been released into the environment. Follow up on the 5 AOCs and identify other potential AOCs.

Conduct interviews, site visits, and other non-sampling investigations to confirm the potential for PFAS release and develop a list of AOCs for further study.

Following the PA, conduct site investigations to further investigate and confirm if PFAS contamination is a concern at these sites.

PA Follow-up Sampling Challenges

- PFAS are found in a wide variety of products
 - Duct tape
 - Water level indicators
 - Pump components
 - Drilling grease
 - Teflon-lined sample bottle lids
 - Hundreds of other products
- Actual potential for cross-contamination during sampling efforts has not been thoroughly evaluated
- Current SOPs recommend careful selection of field equipment and heavily restrict presence of PFAS-containing materials on sites
- SOPs are evolving and are updated as we determine which products do and do not contain PFAS
- Because PFAS can sorb to bottleware, HDPE or polypropylene (drinking water only) bottles with a Teflon-free HDPE or polypropylene (drinking water only) screw cap must be used

PFAS PA Timeline and Follow-up



- FY20 – Complete the PFAS PA
- FY21 – Site investigations for various AOCs
- FY22 – Investigate and develop response actions where needed

The Navy is here to help!

Exposure to PFAS is a concern to our communities inside and outside the fence line.

The Navy is committed to continuing to update and inform the community as these studies progress.

Upon request, we can provide you with additional resources and expertise to address your questions and concerns.

Contacts and Questions



Points of Contact:

- **NAVFAC Washington PM:** Alex Scott
- **Indian Head PM:** Andrew Louder

Questions ?



NSF INDIAN HEAD – ARSENIC STUDY

Presented By
Alex Scott
Naval Facilities Engineering Command (NAVFAC)
Washington

17 October 2019

Presentation Objectives



Objective:

- Summarize the Arsenic Study
 - Relevant history of Arsenic use on Indian Head Railroad tracks
 - How it applies to management of Navy Environmental Restoration (ER,N) Sites. Especially at Site UXO 09
 - Timeline

Arsenic Study Rationale

Arsenic is a natural occurring earth metal, often occurring as salts in minerals and soils. However industry uses arsenic in various processes and products where releases of this hazardous substance may occur.

Why is arsenic in soil a concern?

- Arsenic is a known carcinogen. It is also toxic, and in high doses causes organ failure when ingested. It is also a known irritant of skin and mucous membranes and causes gastrointestinal issues. (www.atsdr.cdc.gov/toxfaqs)
- Arsenic is toxic to plants and animals, preventing healthy vegetation growth, microbial , and causes tumors and ailments in herbivores

Why is Elevated Arsenic Found in Soils at Indian Head?

- Arsenic may have been released from accidental spillage or inappropriate handling and disposal of arsenic products and process wastes.
- Prior to the 1970s, Arsenic was widely used as an approved herbicide along railroad tracks and loading areas to control vegetation growth, to prevent brushfires.

Arsenic Study Objectives

The study designed to answer the following questions which have occurred over various ER,N sites, especially regarding on the ongoing Remedial Investigation at UXO 09:

- 1. Where does elevated arsenic in soil occur at Indian Head?**
- 2. Do the results indicate its widespread presence in the environment, and is it anthropogenic or naturally occurring?**
- 3. Do the elevated levels geospatially correspond to the historic application of arsenine herbicide?**
- 4. Do the elevated arsenic levels in soils observed at ER,N sites necessitate CERCLA response actions?**

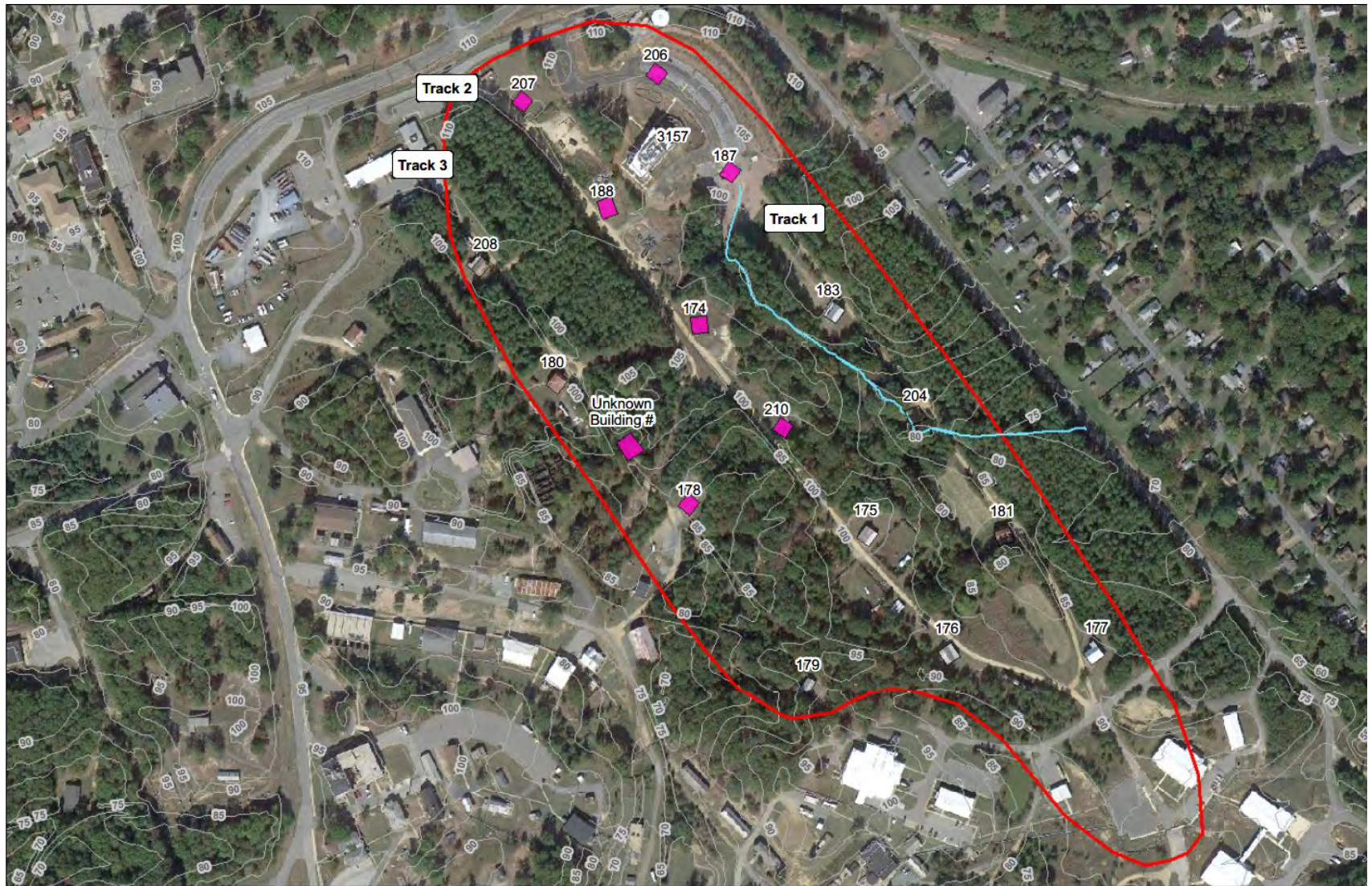
Background: The RI at UXO 09

- Risks to human health and environment at UXO 09 were primarily concerned with elevated Arsenic, Lead, and Chromium in soils.
- Based on site history, the primary hazardous substance release was suspected as a result from the spillage of propellant grains being transported via rail, to the dry-and-storage-houses along the rail lines at UXO 09.
- These rail lines are no longer active, and mostly removed at the site.
- Sample results of the soils of the site demonstrate elevated levels of arsenic, corresponding in areas that run along the former rail lines and the loading areas of the dry houses.
- Historically, there has been extensive application of highly concentrated arsenine (arsenic-based) herbicide used along rail lines at Indian Head.
 - The herbicide effectively prevents grass and shrub growth to prevent brush fires from occurring from sparking rails. The fires could potentially ignite the grains and cause an explosive and/or incendiary incident.
- Legal use of herbicides according to specifications and in compliance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is not considered a hazardous substance release under CERCLA. As long as soils are stable and Arsenic is not migrating.

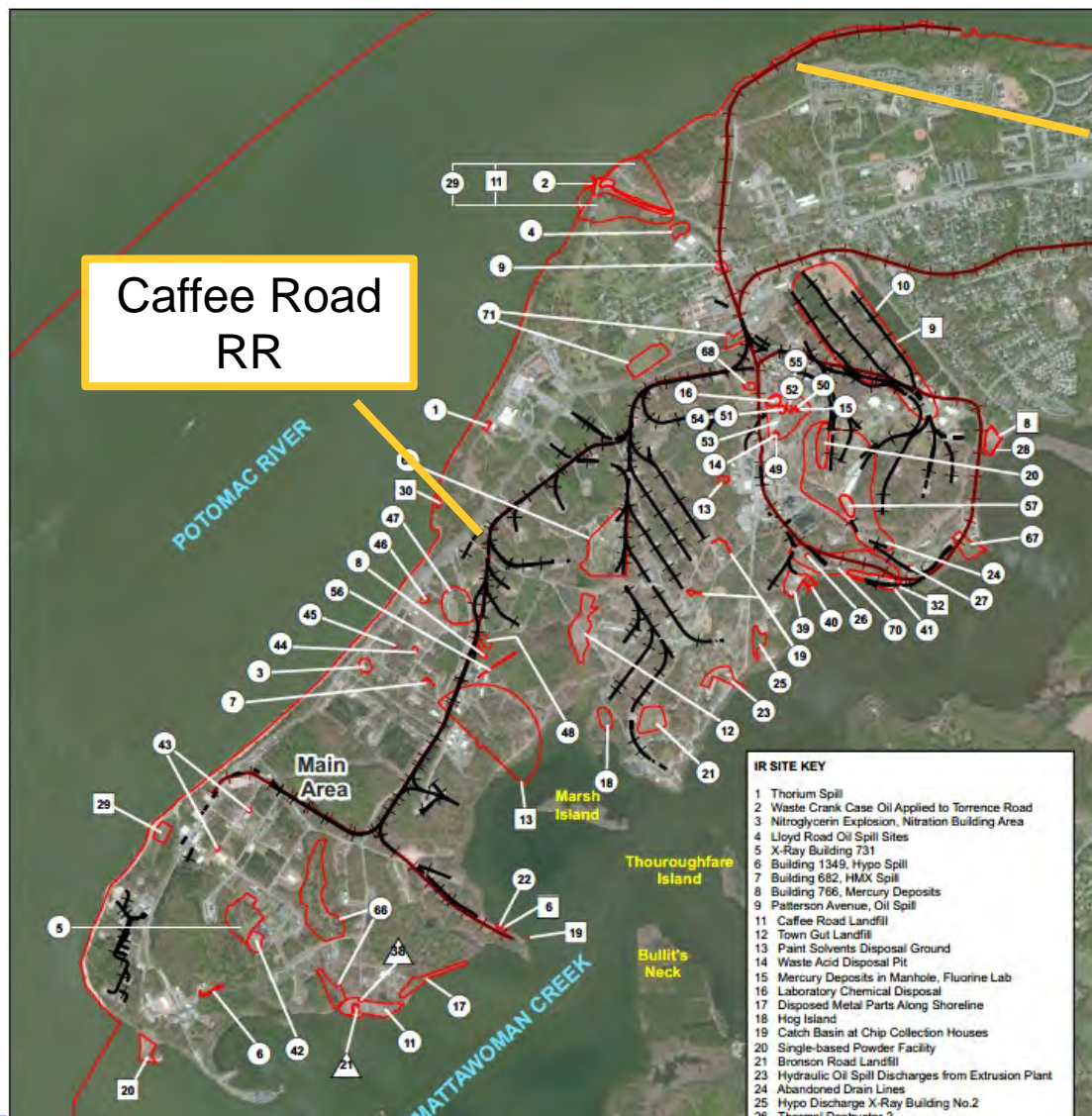
UXO 09 Site Location



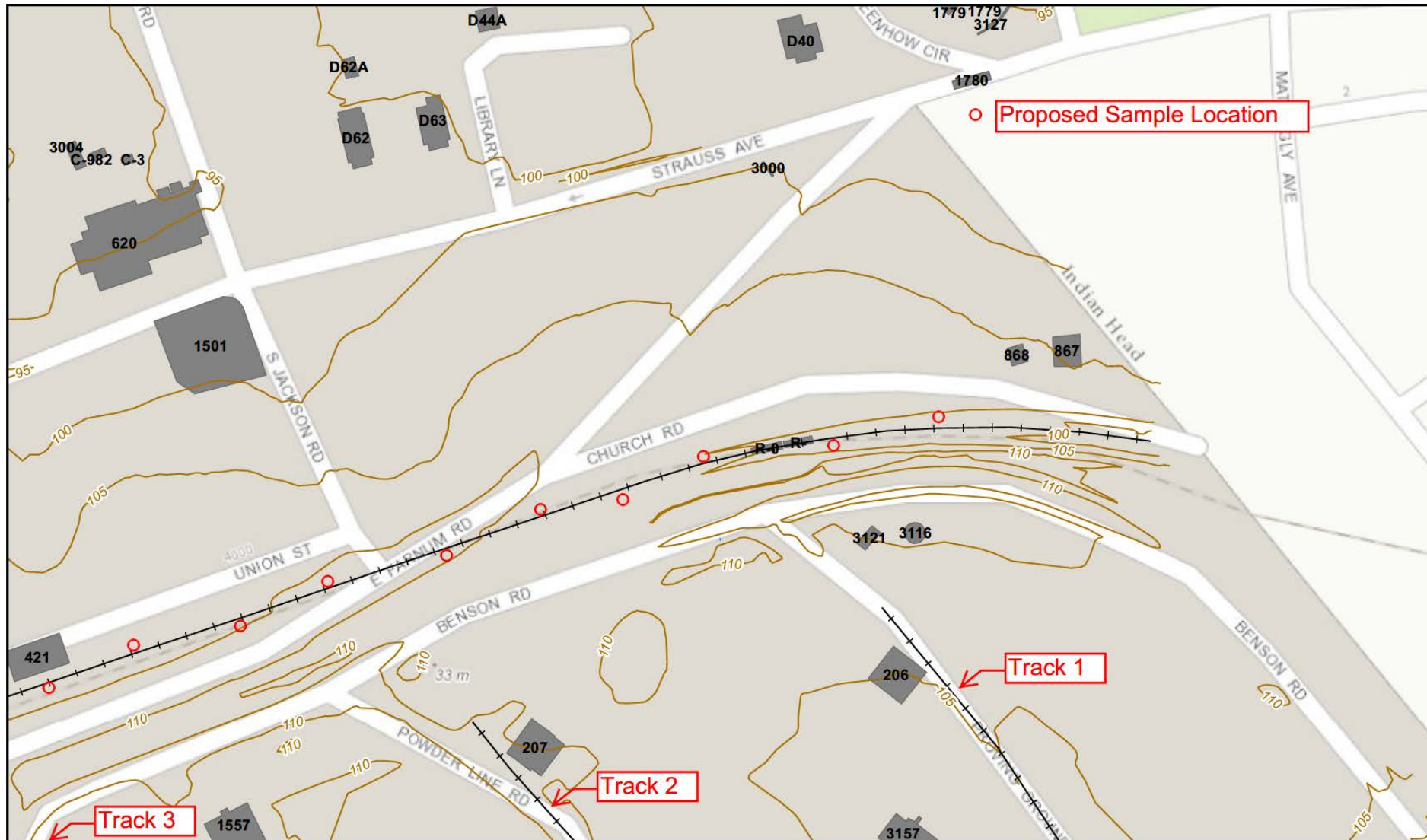
UXO 09 Site Layout



Indian Head Rail Lines



Rail Line Sampling Example



Arsenic Study Timeline

- FY 19 – Navy funded the Arsenic Study under the UXO 09 RI
- FY 20 – Project planning for the Arsenic Study and Sampling to Occur
- FY 21 – Study results and incorporation into relevant site RI/FS where Arsenic in soils is a risk driver.

Contacts and Questions



Points of Contact:

- **NAVFAC Washington PM:** Alex Scott
- **Indian Head PM:** Andrew Louder

Questions ?