



Naval Weapons Station Yorktown Environmental Restoration Program Update

Naval Weapons Station Yorktown
Restoration Advisory Board Meeting
July 29, 2025

NWS Yorktown Active ERP Sites



- RI/FS IRP Sites: 10
- PFAS RI Sites: 6
- PP/ROD IRP Sites: 2
- RD/RA IRP Sites: 2
- RC/LTM IRP Sites: 1
- RI/FS MRP Sites: 1
- Total Active ERP Sites: 22

Agenda



- **Environmental Restoration Program (ERP) Overview**
- **Update on select sites:**
 - **Site 1 – Dudley Road Landfill**
 - **Site 3 – Group 16 Magazine Landfill**
 - **Site 6 – Explosives-Contaminated Wastewater Impoundment**
 - **Site 8 – NEDED Explosives-Contaminated Wastewater Discharge Area**
 - **Site 22 – Burn Pad**
 - **Site 24 – Aviation Field**
 - **Site 25 – Building 373 Rocket**
- **Update on Basewide PFAS Investigation**
- **Update on Basewide G-RAM Investigation**

Site Status



Site 1 – Dudley Road Landfill

- 10-acre landfill
- ROD (1999) for soils; RA completed in 2000
 - Soil cover installation, surface debris removal, and excavation and offsite disposal
- Pre-RD investigation completed in 2025
 - Extent of source area for RD (soil excavation)
 - GW COC concentrations and conditions for MNA
- Proposed Plan complete; public comment period planned for 2026
- ROD being developed
 - NFA for sediment and surface water
 - For groundwater preferred alternative includes Source Removal, SBGR, Biobarrier, Performance Monitoring, and LUCs
- RD in development
- Site included in ongoing PFAS RI



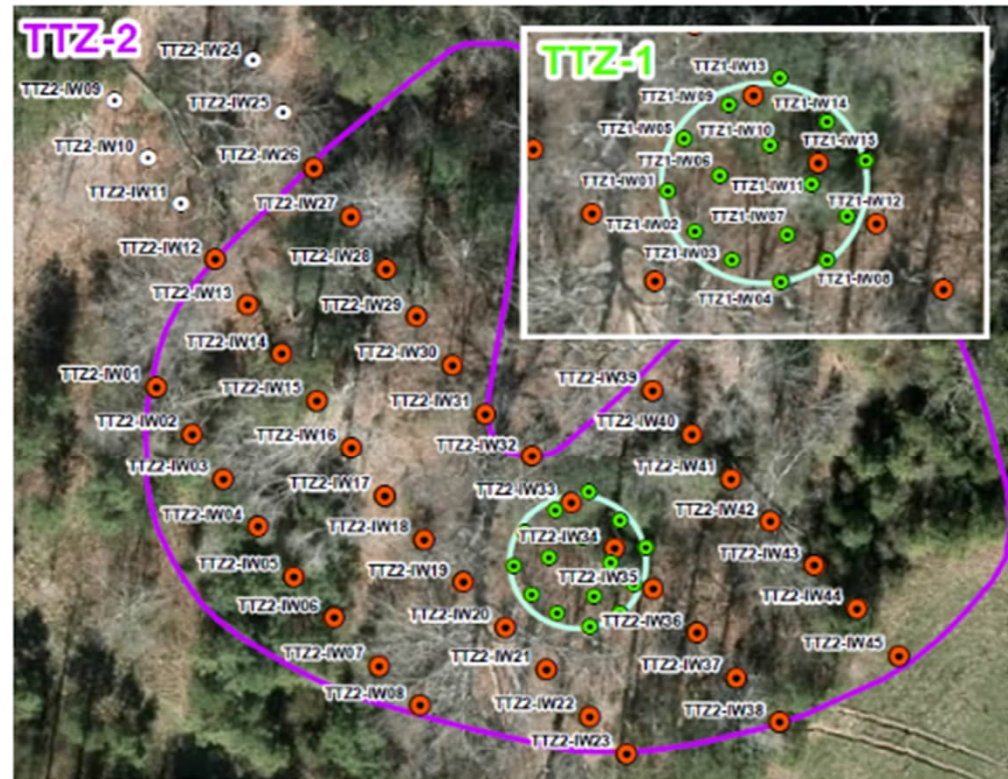
Legend

- | | |
|--|---|
| ■ Sediment Pore Water Sample Locations | ● Columbia Aquifer Monitoring Well |
| ▲ Surface Water and Sediment Sample Locations | ● Yorktown-Eastover Aquifer Monitoring Well |
| ● MIP Location | — Tributary |
| ◆ Test Pit Location | - - Intermittent Tributary |
| ● Staff Gauge Location | — Landfill Soil Cover Contour (CH2M HILL, 2014) |
| ⊕ Surface Water/Sediment Sampling Location | □ Study Area Boundary |
| ○ Shelby Tube Sampling Location | |
| ■ Surface Soil Sampling Location | |
| ■ Approximate Area of 1999 Excavation of Arsenic Contaminated Soil (OHM, 2001) | |
| ■ Extent of 1999 Landfill Cover Restoration (OHM, 2001) | |
| ■ Extent of Landfilled Waste and Landfill Cover (CH2M HILL, 2014) | |

Site Status

Site 3 – Group 16 Magazine Landfill

- 6-acre landfill
- Soil: No further action (NFA) ROD following soil removal action
- Groundwater Pre-RD investigation completed in 2021
- Groundwater, surface water, sediment: ROD finalized in 2023
 - Active remedy for groundwater
 - NFA for surface water and sediment
- Land Use Control (LUC) RD finalized in 2024
- RD for GW remediation finalized in 2024
 - Enhanced In-Situ Bioremediation (EISB)
 - Groundwater Monitoring
 - LUCs
- GW RA awarded in 2024 and planned for 2025/2026



- Legend
- Proposed Injection - Target Treatment Zone 1 (30 to 42 feet bgs)
 - Proposed Injection - Target Treatment Zone 2 (40 to 64 feet bgs)
 - Contingent Injection Locations
 - Target Treatment Zone 1 - Clay
 - Target Treatment Zone 2

Site Status



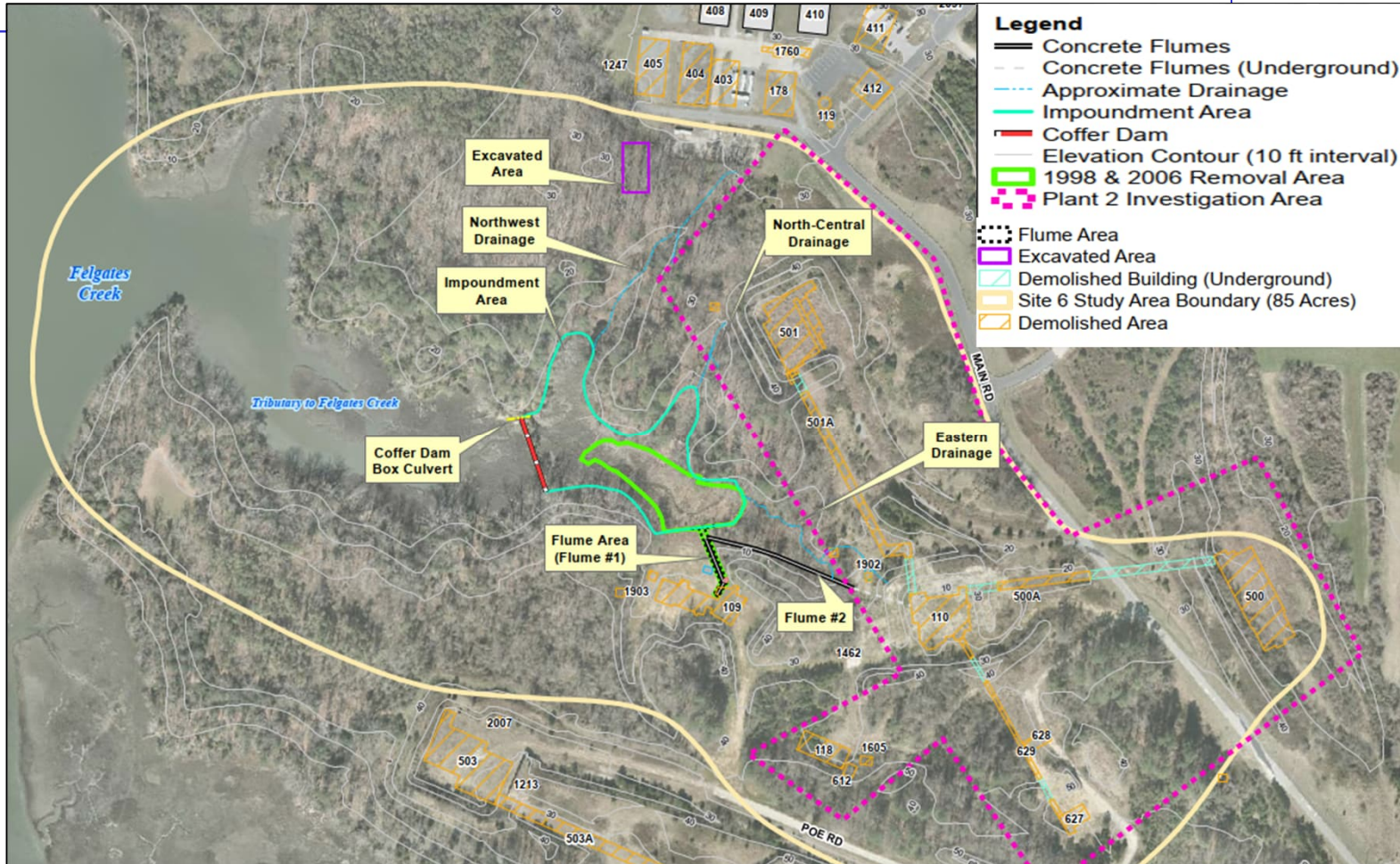
Site 6 – Explosives-Contaminated Wastewater Impoundment

- **85-acre site encompassing Plant 2 complex and consisting of three operational units (OUs):**
 - Impoundment Area (OU XV; approximately 3 acres)
 - Flume Area (OU XIII; approximately 0.1 acres)
 - Excavated Area (OU XIV; approximately 0.2 acres)
- **ROD in place for soil, groundwater, surface water, and sediment within the three operational units consisting of the following:**
 - Impoundment Area: LTM of surface water, sediment, and groundwater (interim action)
 - Flume Area: excavation and ex-situ bioremediation of soil and sediment; pressure washing of the flume; LUCs
 - Excavated Area: soil cover and LUCs
- **Phase II RI Report finalized in 2023**
- **Excavated Area Non-Time-Critical Removal Action (NTCRA) completed in 2025**
 - Excavation and offsite disposal of zinc-impacted surface soil to mitigate potential ecological risk
- **Flume Area Remedial Action Completion Report (RACR) in development, planned for completion in 2026**
- **Pre-FS investigation planned for 2026**
 - Evaluates ecological risks in soil in Plant 2 investigation area and groundwater-surface water interface migration pathway in the Impoundment Area
- **FS to be completed to evaluate site-wide groundwater and soil**
 - Evaluates remedial alternatives to mitigate potential risks to human and ecological receptors from exposure to COCs in groundwater and soil
 - Provides rationale for NFA for surface water and sediment outside of the Impoundment Area at Site 6

Site Status



Site 6 – Explosives-Contaminated Wastewater Impoundment



Site Status



Site 6 – Excavated Area Non-Time-Critical Removal Action (NTCRA)

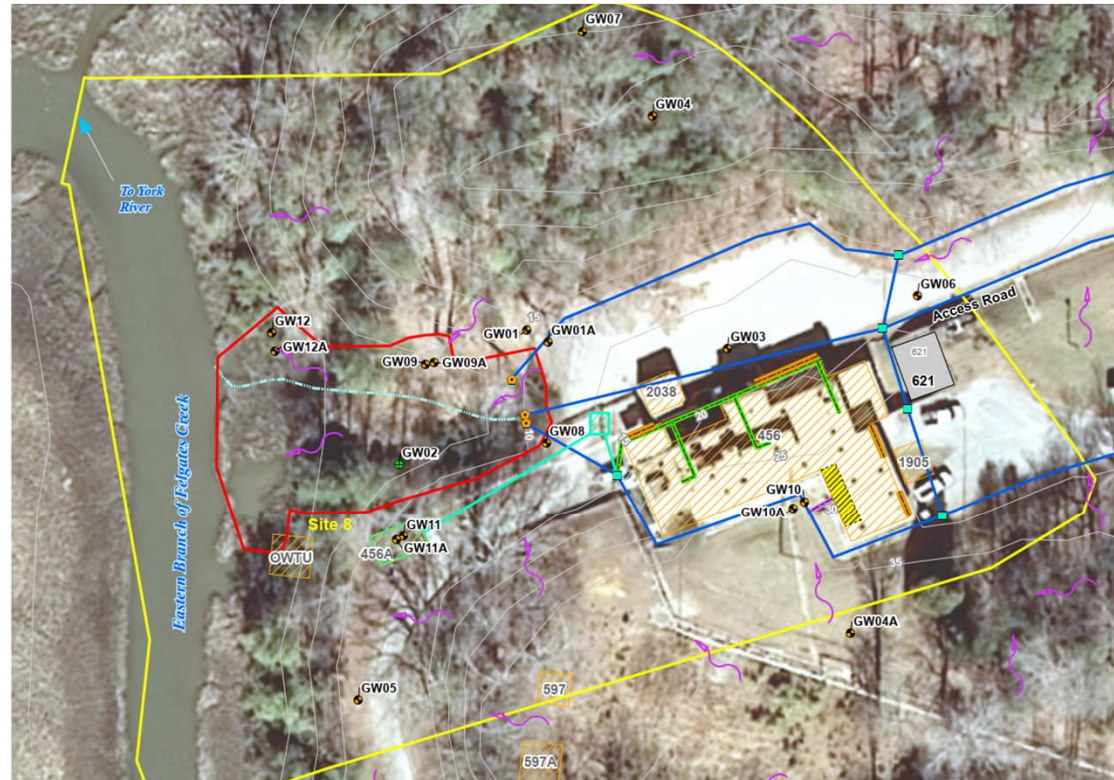


Site Status



Site 8 – NEDED Explosives-Contaminated Wastewater Discharge Area

- **3-acre site**
- **SRI completed 2017-2020**
 - Evaluated soil and groundwater in the previously inaccessible area of the site following building demolition
 - Potential unacceptable risks to future residents identified from exposure to metals in soil and metals, explosives, and volatile organic compounds in groundwater
- **Pre-FS groundwater sampling completed in 2023**
 - Evaluate the potential for natural attenuation of COCs in groundwater to
 - Determine whether MNA is a viable remedy for groundwater at the site to protect possible future residents
- **Pre-FS Report being developed for MNA evaluation**
- **FS anticipated to be completed in 2026**



Legend

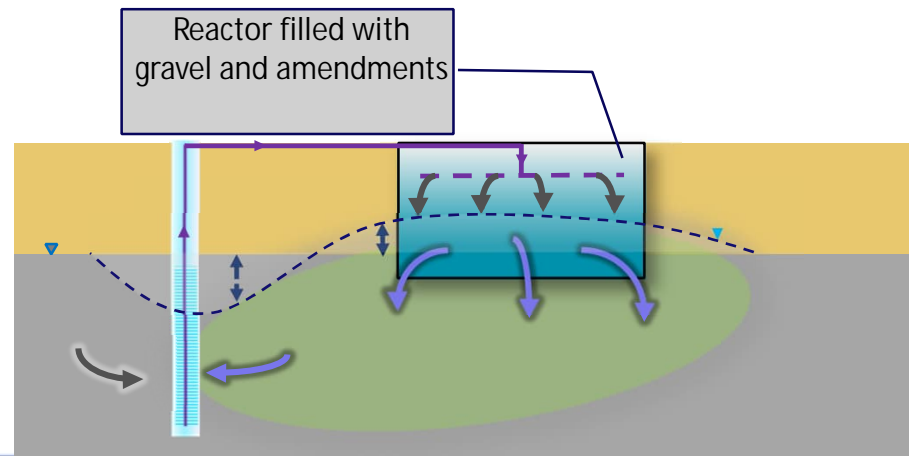
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|---|--------------------------------|-----------------------------------|
| Unable to locate Well | Building Drain | Loading Dock |
| Yorktown-Eastover Aquifer Monitoring Well | Drainage Trench | Elevation Contour (5 ft interval) |
| Outfall | Drainage Channel | Excavated Area |
| Drop Inlet | Buildings | Study Area Boundary (3 Acres) |
| Wastewater Treatment Line | Wastewater Treatment Structure | |
| Overland Flow | Wash Basin | |
| Storm Water Drainage | Demolished Buildings | |

Site Status



Site 22 – Burn Pad

- **9-acre site**
- **RODs in place**
 - Soil (NFA) signed in 2003
 - Surface water and sediment (NFA) signed in 2011
 - Groundwater in 2012
 - Remedial action objective of reducing TCE, VC and RDX and preventing exposure until remediated
 - In situ bioremediation of RDX and monitored natural attenuation of TCE and VC
- **Pre-RD Investigation in 2014 and 2017 recommended further delineation of COCs in groundwater**
- **Remedy Optimization pilot study ongoing through August 2025**
- **Subgrade Biogeochemical Reactor (SBGR) installation (2023)**
 - Performance monitoring samples collected quarterly through August 2024 and semi-annually through August 2025
 - Report for initial 12 months of SBGR operation being developed
- **Site included in ongoing PFAS RI**



Site Status

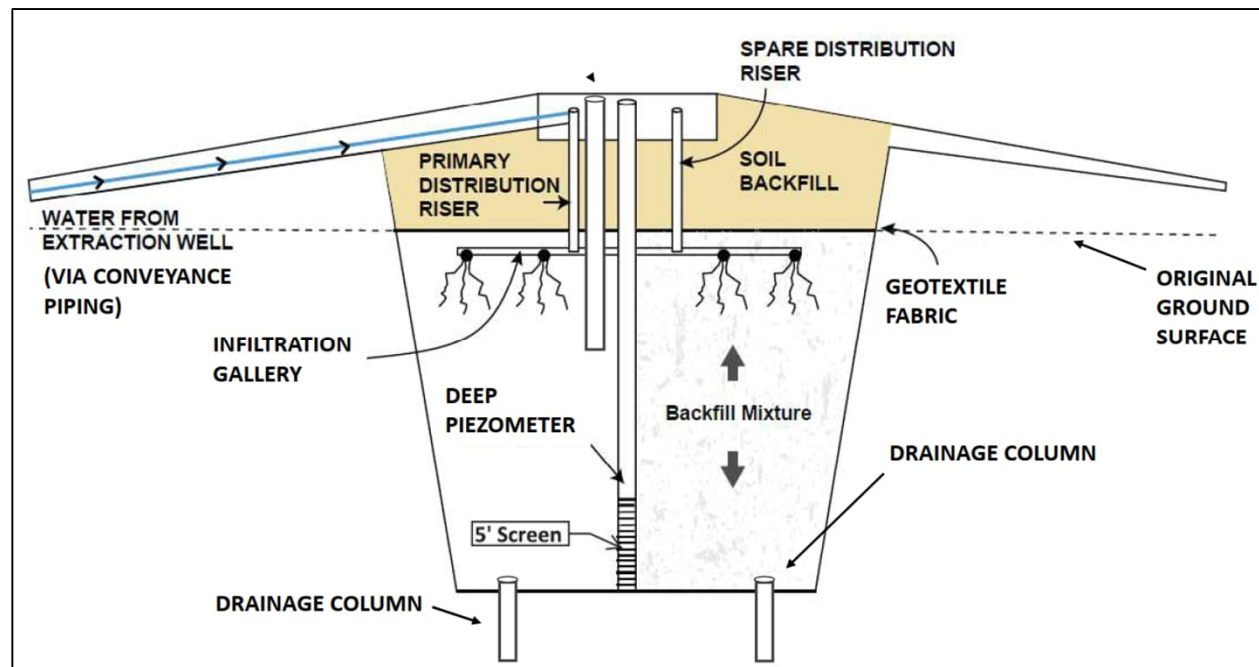


Subgrade Biogeochemical Reactor (SBGR)

- Promotes favorable conditions for biodegradation
- Reactor filled with locally sourced, non-refined products
- Groundwater is recirculated from downgradient extraction wells
 - Powered by solar panels
 - Creates a treatment zone in aquifer
- Favorable for treatment near surface water bodies
 - Low potential for daylighting

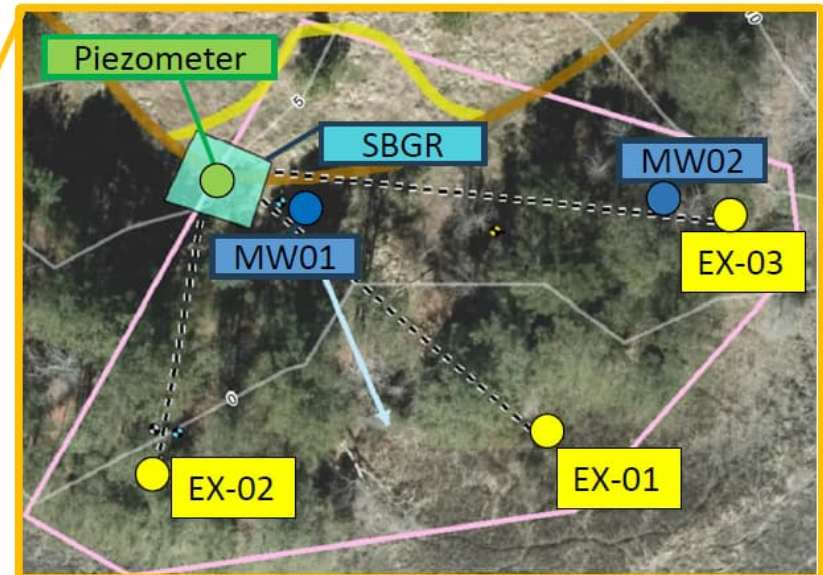
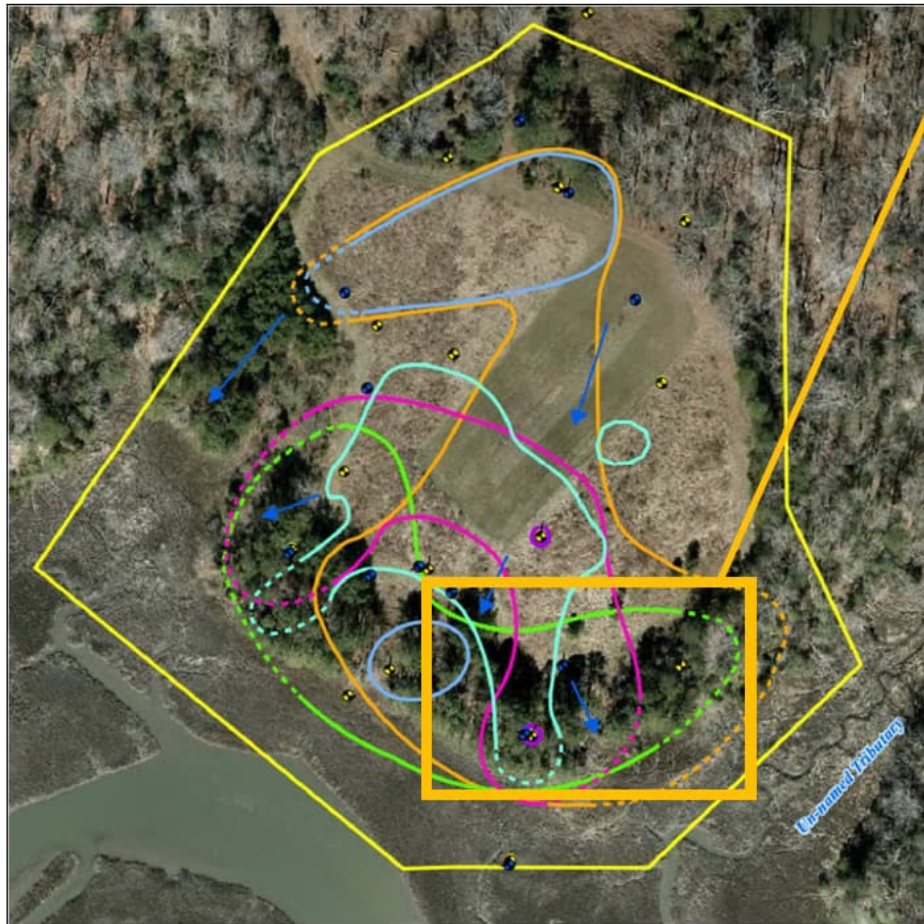
Site-Specific Objectives:

- Evaluate ability to treat TCE, VC, perchlorate, and 1,4-dioxane
- Monitor effect on RDX and PFAS



Site Status

Site 22 – Burn Pad



SBGR Layout

Location Rationale

Addresses areas of highest concentrations
Provides treatment prior to offsite migration

Site Status



Site 24 – Aviation Field

- **34-acre site**
- **Groundwater: evaluated in RI**
- **Soil: NTCRA initiated in 2016, now on hold**
 - Site has been temporarily stabilized and secured pending determination of an appropriate path forward
 - Non-woven geotextile fabric was installed as a marker in the incomplete excavation areas and all excavations have been backfilled and restored
 - Signs have been posted around the perimeters of incomplete excavation areas and no waste materials are currently stored on site
- **Data Gap RI being planned for 2026; SAP currently in development**

Site 25 – Building 373 Rocket Plant

- **2-acre site associated with Building 373 explosives loading plant**
- **Soil, groundwater, surface water, sediment**
 - RI completed in 2021; only soil requiring additional action
- **FS for soil excavation and offsite disposal finalized in 2023**
- **Proposed Plan in regulatory review**
- **ROD being developed**



Overview of PFAS

What are PFAS?

- Group of manufactured chemicals
- PFOA and PFOS are the most studied
- Present in the environment around the world (air, water, soil, plants, animals, and humans)
- Called "forever chemicals" because they last a long time in the environment
- Widely used since 1940s in many products, such as:



firefighting foam



water-resistant fabrics



stain-resistant carpets



some nonstick cookware



personal care products



food packaging

Previous Investigations



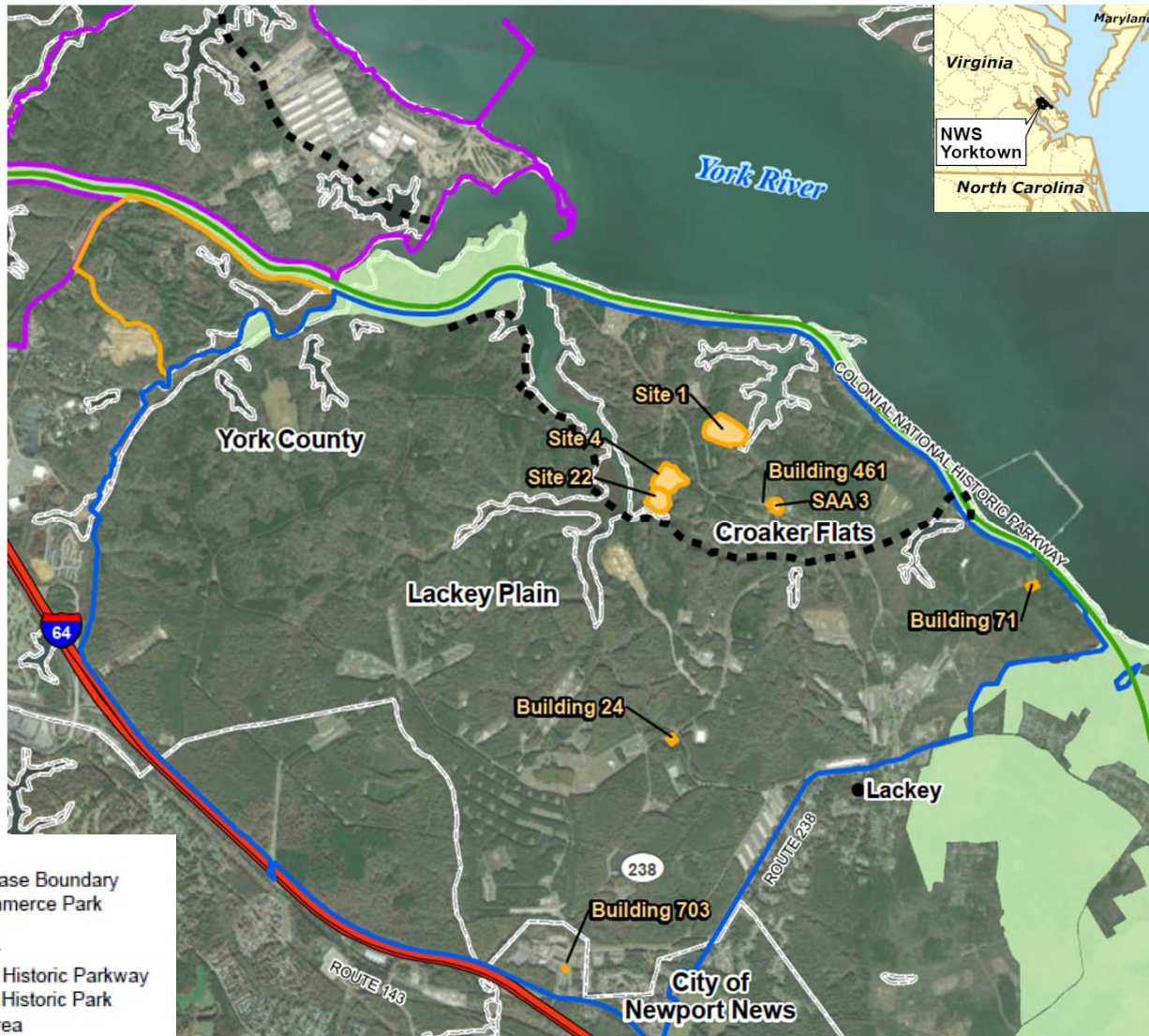
➤ Preliminary Assessment (PA) finalized in October 2021

- Desktop research phase to review site history, determine if potential source exists, and determine if investigation is warranted
- 75 areas screened
- 26 Areas regulatory concurrence was not achieved and are tracked in the Site Management Plan for Yorktown.
- 9 Areas of Interest (AOI) recommended for Site Inspection (SI): Site 1 Dudley Road Landfill, Site 4 Burn Pad Residue Landfill, Site 22 Burn Pad, Building 461 Fire Station No. 14, SSA 3 Fire Training Pits and Vicinity, Building 24 (Betty Warehouse), Building 27, Building 71 Former Fire Station, Building 703 Main Fire Station No. 13

➤ Site Inspection (SI) Report finalized in December 2023

- Investigation to determine if PFAS are present at concentrations warranting further evaluation
- SI recommended five areas to proceed to an (RI): Site 1 Dudley Road Landfill, Site 4 Burn Pad Residue Landfill, Site 22 Burn Pad, Building 461 Fire Station No. 14, SSA 3 Fire Training Pits and Vicinity, Building 24 (Betty Warehouse), Building 703 Main Fire Station No. 13
- *Based on the January 2025 Assistant Secretary of Defense (ASD) Memo lowering the DoD screening levels. Building 71 Former Fire Station will be included in the PFAS RI*

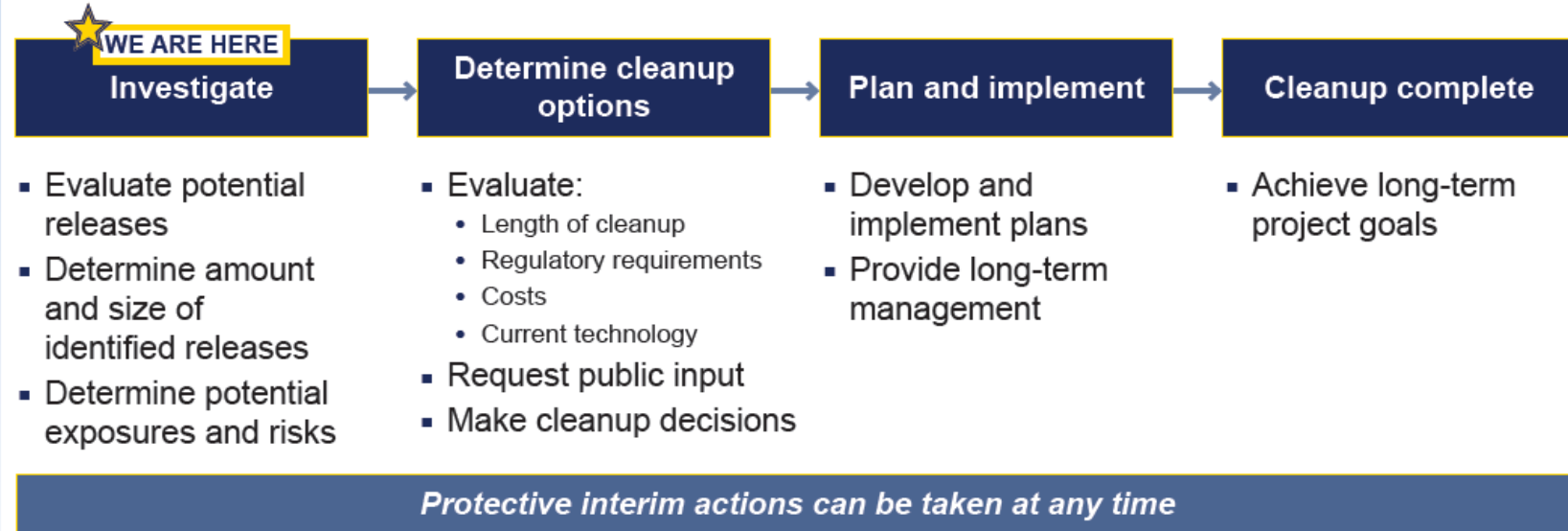
PFAS Remedial Investigation Sites



Remedial Investigation Process



PFAS Environmental Cleanup Process



RI phase consists of the following steps:

- ✓ **PFAS RI has been awarded**
- ✓ Work plan (Uniform Federal Policy-Sampling and Analysis Plan [UFP-SAP]) (~8 months) [**IN DEVELOPMENT**]
- Data gap fieldwork and data collection (if needed) (~3 months)
- Reporting (~10 months)
- Fieldwork and data collection (~3 months)
- Laboratory analysis and data management (~2 months)
- Data analysis and risk assessment (~3 months)

Base-wide G-RAM Investigation



Overview of G-RAM

- Historical use of G-RAM through use of commodities, research radionuclides, and other military projects
- Commodities are most common form of G-RAM
 - Radio luminescent devices such as compasses, deck markers, signs, dials, and gauges; aircraft components such as engine exciters, structural metal alloys, and electronics systems; munitions; weaponry sights; and radar systems
- Many items were unregulated or permitted disposal by burial
- Regulations applicable to low-level radioactive waste were not implemented until early 1980s
- Legacy commodities (or residual radioactive material as the result of their use) may be present in environment



G-RAM Preliminary Assessment



- **The Preliminary Assessment team will gather information, evaluate environmental conditions, and provide recommendations to sites that warrant further investigation**
- **Accomplished through the following steps; methodology for completing each step is unique for sites with G-RAM**

1

**IDENTIFY SITES
WITH G-RAM**

(Or potential
to contain)

2

**DEVELOP
CSM**

3

**ASSIGN
PRELIMINARY
CLASSIFICATION**

4

**PREPARE PA
REPORT**

(Making
recommendations)

Questions or Comments?



For additional information regarding the ERP at Naval Weapons Station (NWS) Yorktown, please contact:

Melvin Acree – Navy’s ERP Manager for NWS Yorktown
(757) 341-1597 or melvin.l.acree.civ@us.navy.mil

NWS Yorktown Publics Affair Officer
(757) 887-4939

Visit NWS Yorktown’s ERP Public Web Page at:
<https://www.navfac.navy.mil/Business-Lines/Environmental/Products-and-Services/Environmental-Restoration/Mid-Atlantic/Yorktown-NWS/>

Have questions after the meeting?

If so, you can submit your questions for up to 10 calendar days after the meeting to the NAVFAC PAO officer at NAVFAC_ML_PAO@navy.mil or leave a message at 757-341-1410/11