

Formerly Used Defense Site (FUDS) Program

*Former Raritan Arsenal
Edison, New Jersey*

*Proposed Plans
Areas 6/6A/6B and Dredge Spoil Area 1
Dredge Spoil Area 5*

U.S. Army Corps of Engineers, New York District

U.S. Army Corps of Engineers, New England District

July 2021

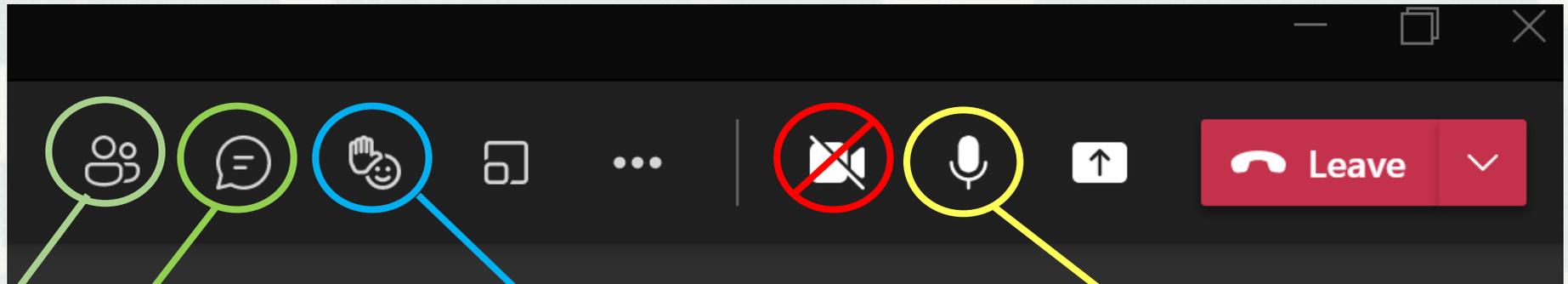


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- **Trouble? Call or text Amy Brand at 757-803-3986.**



Click to see chat box

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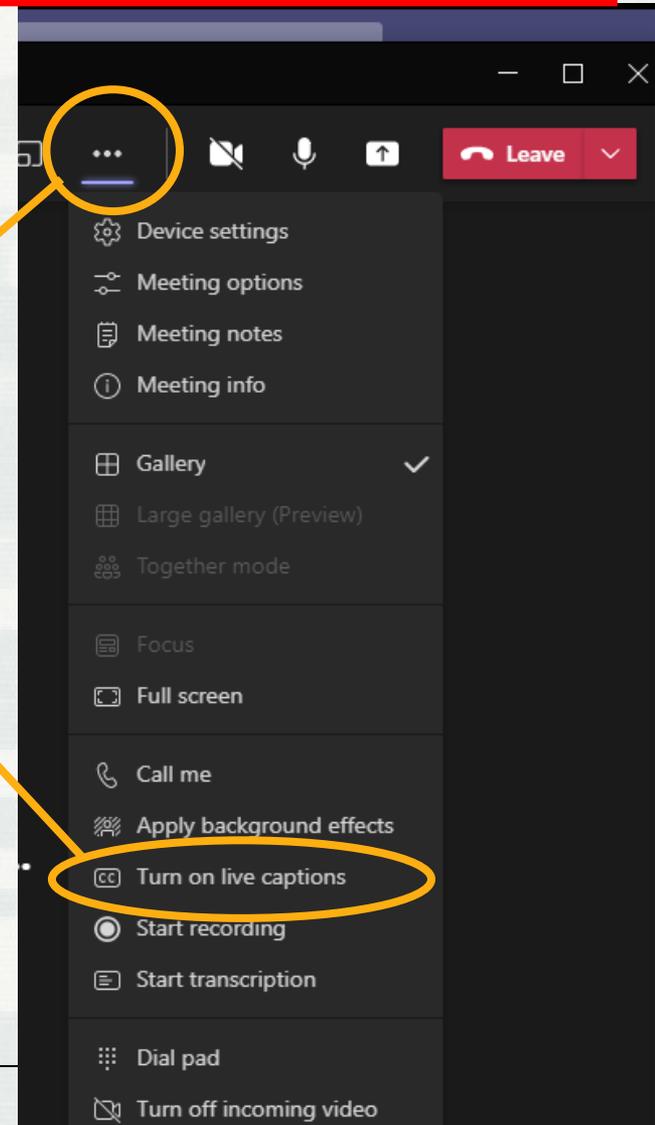
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Virtual Meeting Logistics

MS Teams – Computer Participants

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Virtual Meeting Logistics

MS Teams – Phone Participants

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- Trouble? Call or text Amy Brand at 757-803-3986

The meeting is being recorded and a court reporter is preparing a transcript.



Project Personnel and Stakeholders

- USACE North Atlantic Division, FUDS Program Manager: Heather Sullivan
- USACE New York District Project Manager: Amanda Regan
- USACE New England District Technical Manager: James Kelly
- USACE Huntsville District (Munitions Response):
Dorothy Richards (Project Manager) and Brett Frazier (Technical Lead)
- Regulatory Agency: Ralph Rodrigues and Scott Vondy, New Jersey
Department of Environmental Protection
- Stakeholders: Property owners/residents/users, Township of Edison,
Woodbridge Township, Borough of Sayreville
- USACE contractor: CH2M (Sarah Meyers, Project Manager and
Amy Brand, Community Relations Specialist)



Presentation Overview

- Introduction Former Raritan Arsenal
- Formerly Used Defense Site (FUDS) Process
- Remedial Investigation (RI)
 - ▶ Nature and Extent of Contamination
 - ▶ Risk Assessment
- Remedial Investigation Recommendation
 - ▶ No Further Action
- Proposed Plan and public comment process
- Questions

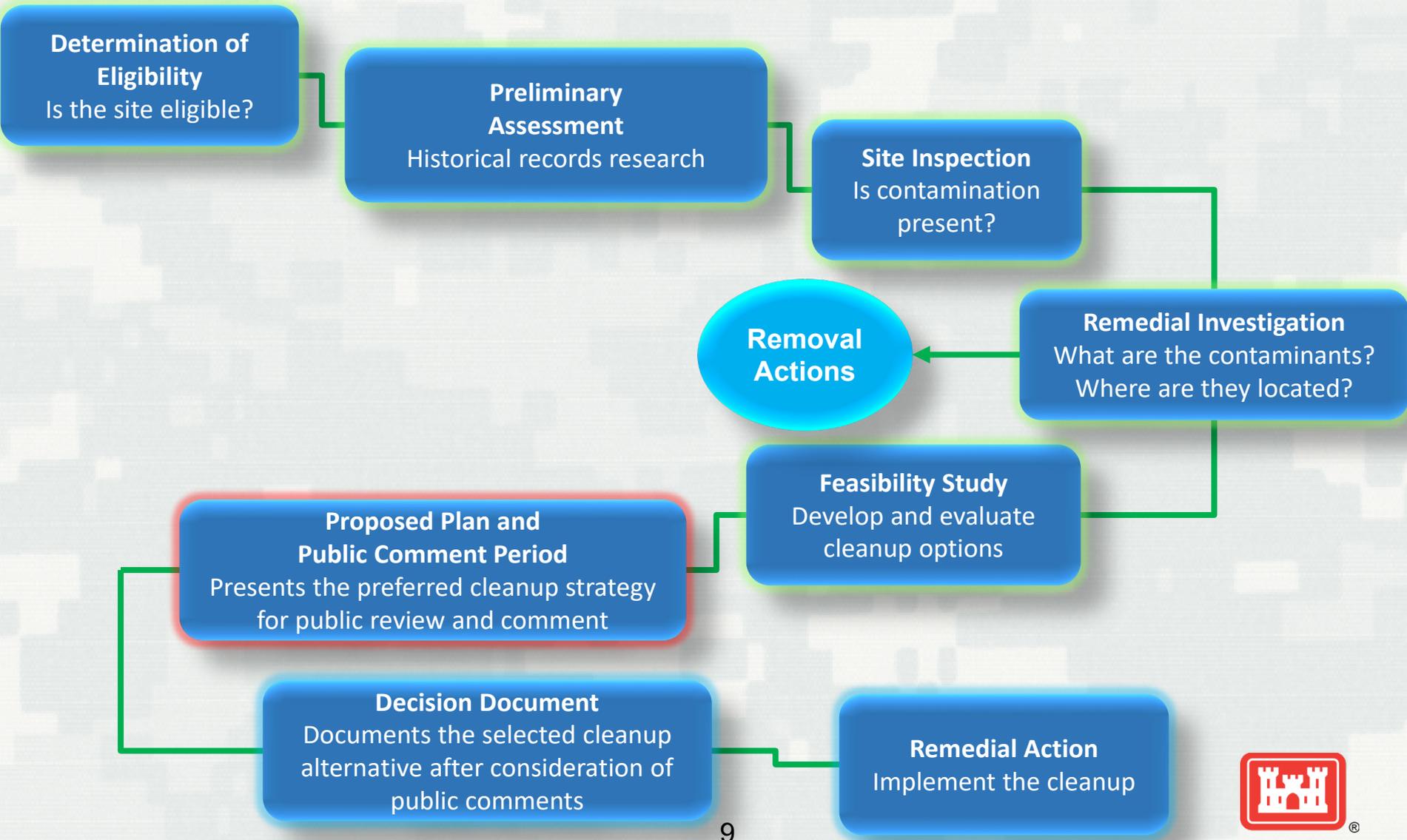


Former Raritan Arsenal

- The former Raritan Arsenal includes over 3,300 acres located along the northern bank of the Raritan River
- Used by the U.S. Army from 1917 to 1963
- Operations included the receipt, storage, shipment, and decommissioning of ordnance, arms, and machinery
- Currently – northern portion is developed and southern portion has remained a tidal marsh with little development
- Numerous soil and munitions removal activities
- Cleanup managed through the FUDS program following the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) process



Summary of USACE Process for FUDS



Terminology

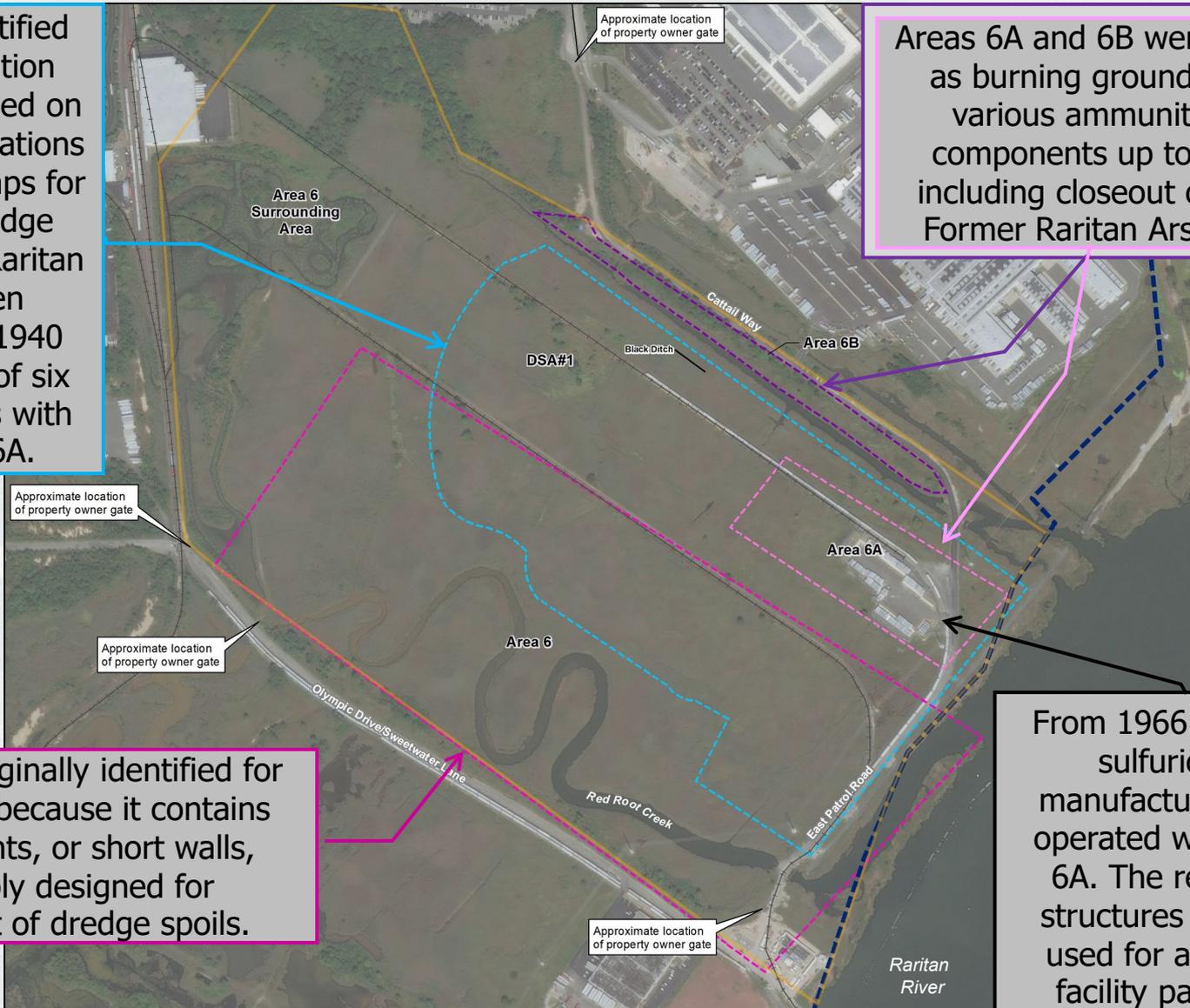
- MEC – Munitions and Explosives of Concern
 - ▶ Specific categories of military munitions that may pose unique explosives safety risks.
- MPPEH - Material Potentially Presenting an Explosive Hazard
 - ▶ DoD material that potentially contains explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris) or potentially contains a high enough concentration of explosives that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated with munitions).
- MD – munitions debris
 - ▶ Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.
- MC - Munitions Constituents
 - ▶ Any materials originating from MEC or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.



Areas 6/6A/6B and DSA 1

DSA 1 was identified as an investigation area in 2012 based on previous investigations and historical maps for disposal of dredge spoils from the Raritan River between approximately 1940 and 1956 (one of six DSAs). Overlaps with Areas 6 and 6A.

Areas 6A and 6B were used as burning grounds for various ammunition components up to and including closeout of the Former Raritan Arsenal.



Area 6 was originally identified for investigation because it contains impoundments, or short walls, presumably designed for containment of dredge spoils.

From 1966 to 1997 a sulfuric acid manufacturing plant operated within Area 6A. The remaining structures area now used for a shipping facility parking lot

Dredge Spoils from the Raritan River

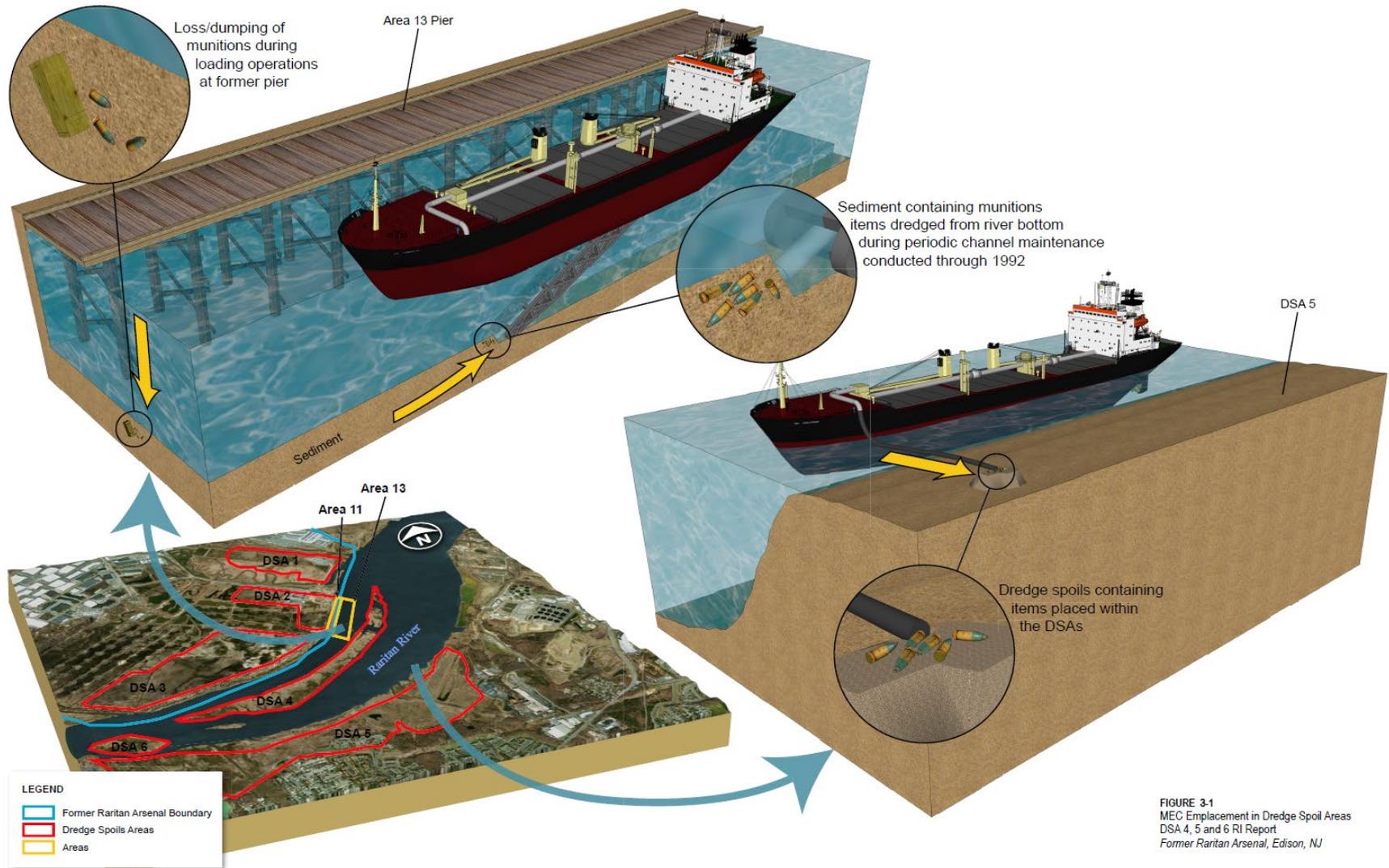


FIGURE 3-1
MEC Emplacement in Dredge Spoil Areas
DSA 4, 5 and 6 RI Report
Former Raritan Arsenal, Edison, NJ

Areas 6/6A/6B and DSA 1 MEC Evaluation

- Extensive MEC investigations, inspections, and removals
- 1961: Department of Defense announced the proposed disposition of the arsenal
- 1963: Decontamination study conducted as part of the decommissioning process. Areas 6A and 6B surface cleaned by disking to a depth of 6 inches and then searched using hand rakes.
- 1988: Preparation for advancement of soil borings included visual inspection for munitions on the surface throughout Areas 6A and 6B, as well as spot checks using a metal detector. No munitions items identified.
- 1991 to 1992: Site preparation for Phase I Remedial Investigation sampling locations and access routes in Areas 6A and 6B found inert munitions components in the southern portion of Area 6A (three bomb vanes and several small fragments).



Areas 6/6A/6B and DSA 1 MEC Evaluation

- 1993: Geophysical mapping in four 100-foot by 50-foot areas in and around Areas 6A and 6B.
 - ▶ 805 anomalies identified
 - ▶ 200 anomalies (approximately 25 percent) intrusively investigated
 - ▶ Primarily non-munitions items such as nails, scrap metal and magnetic rock/slag were identified
 - ▶ One munitions related item was found in one anomaly (an inert tail boom from a rifle grenade)
 - ▶ No MEC identified



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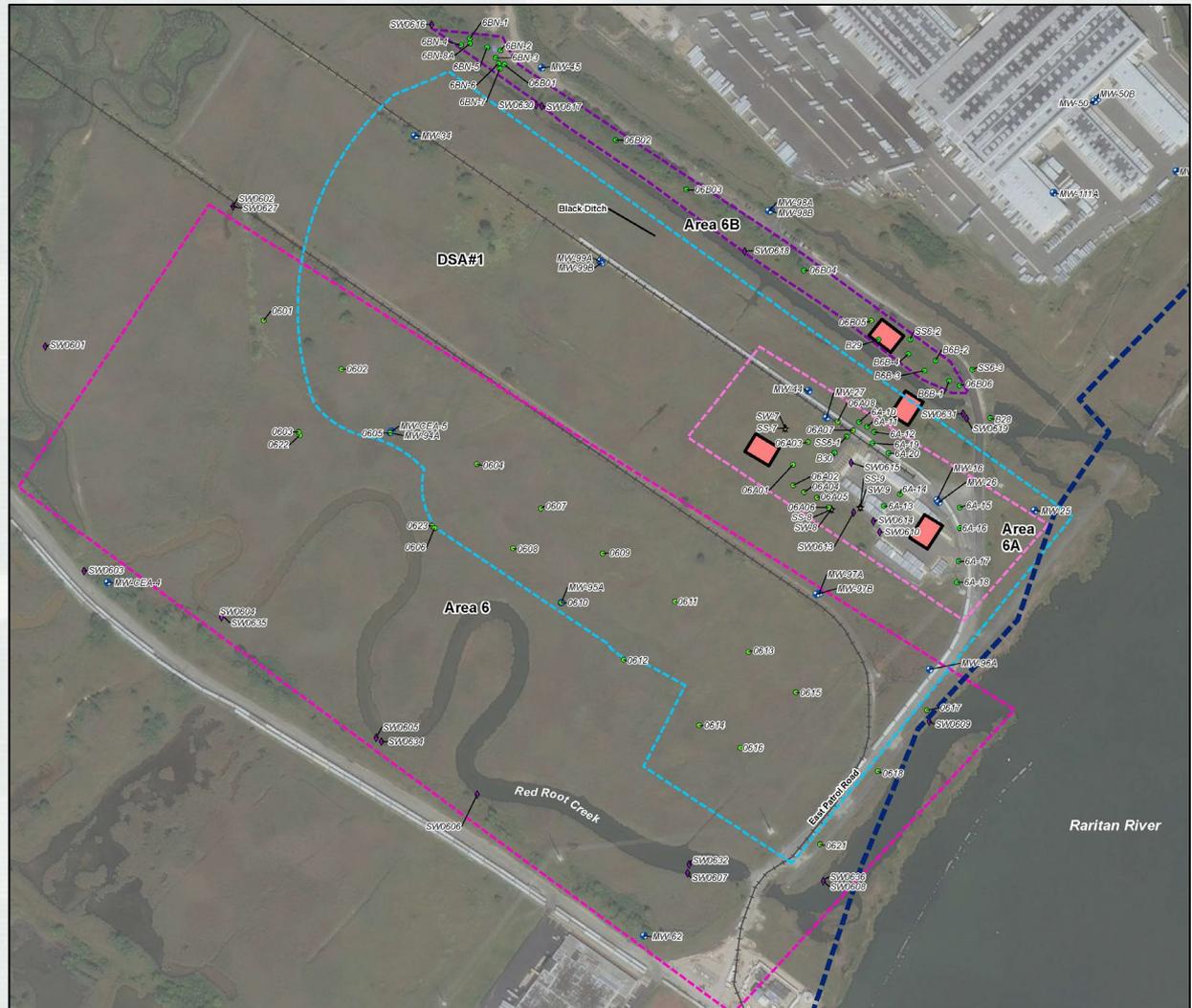
Areas 6/6A/6B and DSA 1 MEC Evaluation

1994: Phase II Remedial Investigation

- ▶ Installation of 10 monitoring wells and 33 soil borings to depths up to 16 feet below ground surface throughout the area - No munitions related items encountered

LEGEND

- ◆ Historic Surface Water Sample Location
- ⊕ Monitoring Well
- Historic Soil Sample Location
- Former Raritan Arsenal Boundary from GIS (3,316 acres)
- 1993 Geophysical and Intrusive MEC Investigation Area
- Area 6
- Area 6A
- Area 6B
- DSA #1
- +— Railroad
- +— Historical Railroad



Areas 6/6A/6B and DSA 1 MEC Evaluation

2013 to 2014: Remedial Investigation

- ▶ Previous investigations and cleanup for munitions focused on Areas 6A and 6B
- ▶ MEC field investigation for the 2013 to 2014 RI focused on DSA 1
- ▶ Geophysical mapping performed along 3-meter wide transects spaced 100-meters apart throughout DSA 1
- ▶ Geophysical mapping also performed across an area of potential pit locations identified between Areas 6 and 6A in a 1963 aerial photograph (1-meter wide transects spaced 3-meters apart).
- ▶ 318 anomalies identified
 - 205 anomalies intrusively investigated
 - MD recovered from 6 anomalies (consisting of frag items and an empty grenade fuze) between 3 and 10 inches below the ground surface. All items were certified as no explosive hazard.
 - The remainder were non-munitions-related items (scrap metal and miscellaneous debris).
- ▶ Results consistent with previous investigations (only inert munitions related items identified)



Areas 6/6A/6B and DSA 1 MEC Evaluation



Areas 6/6A/6B and DSA 1 MEC Evaluation

- Based on these investigations and removal actions, there is no evidence of an explosive hazard remaining.
- No Further Action recommended for MEC.



Areas 6/6A/6B and DSA 1 MC/HTW Evaluation

- 1992 to 2005: Surface and subsurface soil, surface water and sediment samples were collected to evaluate munitions constituents (MC)/hazardous and toxic waste (HTW).
- Analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and explosives.
- Determined there is no unacceptable risk associated with exposure of current or future human and ecological receptors associated with DoD releases.
- Therefore, No Further Action also recommended for MC.



Areas 6/6A/6B and DSA 1

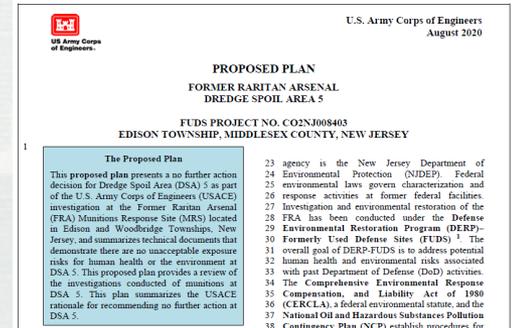
RI Conclusions and Recommendations

- No evidence of explosive hazard
- No unacceptable risks associated with potential exposures to DoD-related constituents
- Feasibility Study not warranted
- No Further Action recommended



Proposed Plan (PP)

- Highlights key information from site characterization and removal action efforts, which demonstrate no evidence of an explosive hazard and no unacceptable risks associated with potential exposures to a DoD release
- Proposes No Further Action
- 30-day public review period
 - ▶ July 5 to August 6
 - ▶ Advertised in local newspapers and the USACE website



DSA 5

MEC Evaluation

1993 Removal Action

- 4.5-acre area within the northeast portion of DSA 5
- Investigated using metal detectors to identify munitions items, removing soil in layers until no additional anomalies were identified.
- Excavation went deeper than 44 inches.
- Removed 245 items (231 French Rifle grenades and 14 Mk II hand grenades).
- No munitions have been reported at DSA 5 since the 1993 removal action.



DSA 5

MEC Evaluation

2013 to 2014 Remedial Investigation

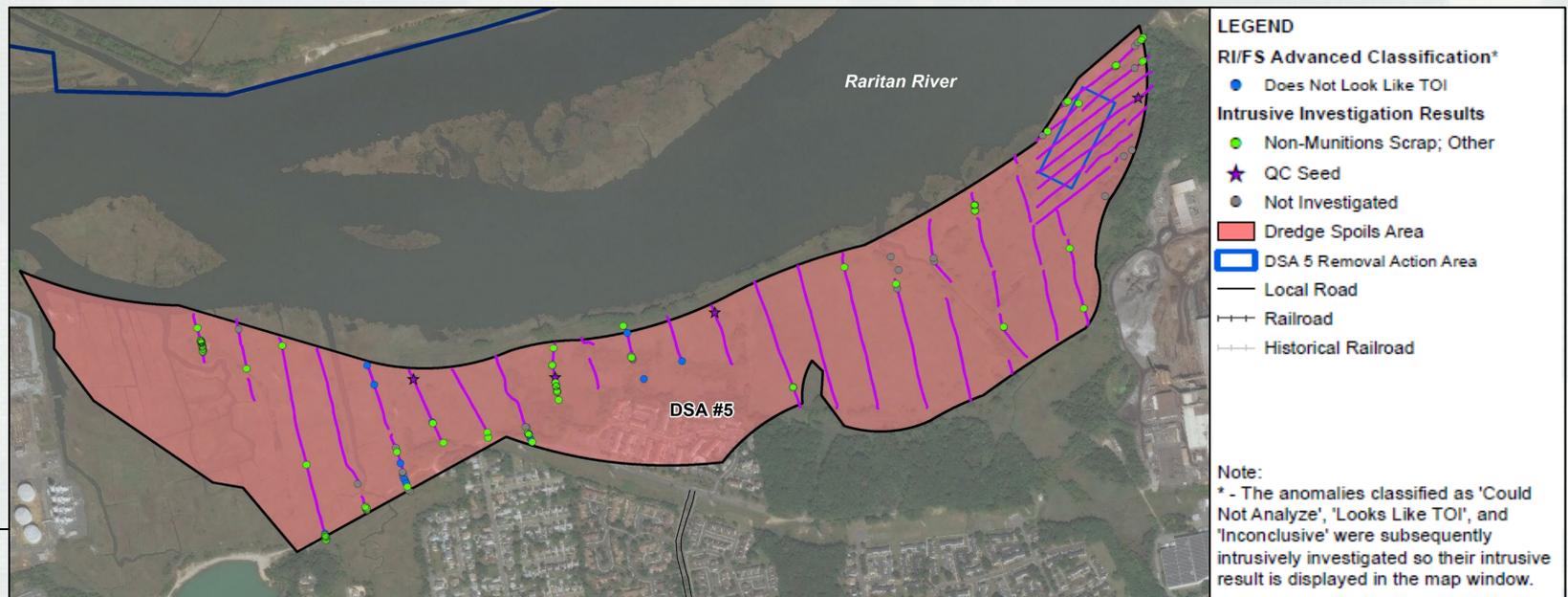
- Geophysical mapping performed along 3-meter wide transects spaced 100 meters apart in all accessible areas to characterize the extent of geophysical anomalies in the subsurface that may be indicative of munitions.
- Geophysical mapping in the 1993 removal action area along 3-meter wide transects spaced 30 meters apart.
- Surface clearance performed along the transects prior to the geophysics; no munitions related items identified on the surface.
- Some areas could not be surveyed due to the presence of canals and berms throughout the survey area, canals and standing water that could not be safely crossed in the far western portion of DSA 5, and the housing development in the south-central portion of the DSA.



DSA 5 MEC Evaluation

2013 to 2014 Remedial Investigation (continued)

- 111 anomalies identified
- 83 anomalies investigated
 - ▶ No munitions related items identified.
 - ▶ All anomalies consisted of non-munitions scrap such as rebar, pipe, wire, fence post, angle iron, and other miscellaneous pieces of scrap metal.



DSA 5

MEC Evaluation

- Based on the past removal action and the results of the RI, there is no evidence of an explosive hazard at DSA 5.
- The data from the RI field effort suggest that any potential MEC/MPPEH items have already been removed.
- No Further Action recommended for MEC.



DSA 5

MC Evaluation

2013 to 2014 Remedial Investigation

- Samples collected at 10 locations spread throughout the 1993 removal action footprint
- Surface soil samples (0.5 feet below ground surface) and subsurface soil samples (1 to 3 feet below ground surface).
- Analyzed for explosives and select metals (barium, chromium, iron, lead, manganese, molybdenum, nickel, and vanadium) based on the munitions items recovered during the removal action (French Rifle grenades and Mk II hand grenades).
- No unacceptable risk associated with exposure of current or future human and ecological receptors associated with a DoD release.
- No Further Action recommended for MC.



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DSA 5

RI Conclusions and Recommendations

- No evidence of explosive hazard
- No unacceptable risks associated with potential exposures to DoD-related constituents
- Feasibility Study not warranted
- No Further Action recommended



Proposed Plan (PP)

- Highlights key information from site characterization and removal action efforts, which demonstrate no evidence of an explosive hazard and no unacceptable risks associated with potential exposures to a DoD release
- Proposes No Further Action
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Proposed Plan (PP)

- 30-day public review period
 - ▶ July 5 to August 6
 - ▶ Available on the internet <http://www.nan.usace.army.mil/Raritan> and at the USACE New York District Information Repositories:
 - 2890 Woodbridge Avenue
Edison, NJ 08837
 - 26 Federal Plaza
New York, NY 10278
 - ▶ Send written comments postmarked by August 6 to:
 - Amanda Regan, Project Manager
USACE New York District
2890 Woodbridge Avenue
Edison, NJ 08837
Amanda.M.Regan@usace.army.mil
 - ▶ Responsiveness summary will be prepared and incorporated into the final Decision Document



3Rs of Explosives Safety



- **Recognize**

- ▶ If you come across an item that might be a munition, recognize that munitions are dangerous.

- **Retreat**

- ▶ Do not approach, touch, move, or disturb a suspect munition.
- ▶ Carefully leave the area the same way you entered.
- ▶ Take note of the location

- **Report**

- ▶ Call 911 to report the item



Questions



- On computer, please raise hand to be called on. Unmute yourself before speaking.
- On phone, please press *6 to unmute yourself.
- Please state your name (and affiliation, if applicable) prior to your question.

