

Proposed Plan Former Raritan Arsenal Middlesex County College Area – Munitions and Explosives of Concern Edison and Woodbridge, New Jersey

The Proposed Plan

This Proposed Plan presents a No Further Action decision for the Middlesex County College (MCC) Area at the Former Raritan Arsenal (FRA) in Edison and Woodbridge Townships, New Jersey and summarizes technical documents that demonstrate there is no unacceptable risk of exposure to munitions and explosives of concern (MEC) for both current and future receptors at the MCC Area. This Proposed Plan, prepared by the U.S. Army Corps of Engineers (USACE) New England and New York Districts, presents the preferred alternative for response to MEC at the MCC Area and the USACE rationale for recommending No Further Action. No additional investigations or remedial actions are recommended.

Introduction

This Proposed Plan provides information to the public on the **USACE**¹-recommended response for **MEC** that may remain buried in soil at the MCC Area at the FRA in Edison and Woodbridge Townships, New Jersey. This Proposed Plan presents the **USACE** rationale for the selection of the No Further Action decision for **MEC** at the MCC Area, which is based on site investigations and removal actions that have occurred, resulting in no unacceptable risks for human health or the environment.

Proposed remedial responses for other media are addressed in other documents. Specifically,

site-wide FRA groundwater and vapor intrusion (VI) concerns and identified Hazardous and Toxic Waste (HTW) soil contamination for the MCC Area have been evaluated as separate projects. This No Further Action Proposed Plan is for the MCC Area and evaluates the presence and potential for finding **MEC** associated with historical Department of Defense (DoD) activities.

The FRA has been divided into several areas of investigation, referred to as **Remedial Investigation (RI)** Areas, based on a combination of property ownership, land use, and historical Investigation Area boundaries. The MCC Area is one of these **RI** Areas. Figure 1 presents a Site Layout of the FRA. The MCC Area is in the northwest portion of the FRA and is shaded blue.

USACE, New York District, is the lead agency responsible for managing the project and provides direction and guidance for its execution. The U.S. Army Engineering and Support Center, Huntsville and USACE New England District provide technical support. The lead regulatory agency is the New Jersey Department of Environmental Protection (NJDEP). Federal environmental laws govern characterization and response activities at Federal facilities. Investigation and environmental restoration of the FRA has been conducted under the Defense **Environmental Restoration Program – Formerly** Used Defense Sites (DERP-FUDS). The overall goal of **DERP-FUDS** is to achieve environmental restoration of the FRA and to address potential human health and environmental risks

¹ Terms noted in **boldface** are defined in the Glossary.



associated with past DoD activities. The **Comprehensive Environmental Response,** Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes procedures for site investigation, evaluation, and remediation. USACE is required by DERP-FUDS to execute the environmental restoration program in accordance with CERCLA and NCP. USACE has been working in accordance with CERCLA to evaluate potential impacts from past DoD activities at the FRA and identify appropriate remedial responses. In accordance with Federal law and regulations, state involvement is sought in the form of reviews. USACE has also been conferring with local stakeholders about community concerns regarding the FRA since the 1990s.

As the lead agency for implementing the environmental response program for the FRA, **USACE** has prepared this Proposed Plan in accordance with **CERCLA** Section 117(a) and Section 300.430(f)(2) of the NCP to inform and solicit public input on the proposed alternative. After the public has the opportunity to review and comment on this Proposed Plan, **USACE** will summarize and respond to the comments received during the public comment period and at a public meeting. Information on the times and places for public comment and the public meeting are shown in the Public Comments highlight box.

USACE will carefully consider all comments received from the public and provide responses which will be compiled into a **Responsiveness** Summary. The decision on which action is appropriate for the MCC Area will be detailed in a **Record of Decision (ROD)** (also referred to as a Decision Document), which will include the **Responsiveness Summary**. This Proposed Plan highlights key information from previous investigations including the weight-of-evidence

Public Comments Are Requested

PUBLIC COMMENT PERIOD

October 16, 2024 – November 18, 2024

Written comments on this Proposed Plan can be submitted to USACE during the comment period. Comment letters must be postmarked no later than November 18, 2024 and can be sent to Mr. James Kelly, USACE New England District, Project Manager and Engineering Technical Lead,

U.S. Army Corps of Engineers New England District 696 Virginia Road Concord, MA 01742-2751 Comments can also be sent by email to: James.A.Kelly@usace.army.mil

PUBLIC MEETING

October 16, 2024 at 7 PM

USACE will host an information session from 7 to 8 PM at Raritan Bay Room in Crabiel Hall at Middlesex College to provide information and answer questions in an informal setting. This meeting will include a brief introduction and summary by USACE.

evaluation documented in the *Final Remedial Investigation for Munitions and Explosives of Concern, Middlesex County College, FRA* (January 2023). USACE received regulatory approval of the RI on 25 January 2023 supporting our No Further Action decision for MEC. The Final January 2023 **RI** for MEC and other supporting documents are available for review through **USACE**'s On-Site **Information Repository** in Edison, NJ and the website for the FRA:

http://www.nan.usace.army.mil/Raritan

To access the January 2023 **RI** and the Proposed Plan, click on the 'Reports/Public Documents'



link in the website. Other documents related to the MCC Area can be obtained directly from the **USACE** Project Manager and Engineering Technical Lead – Mr. James A. Kelly.

Email : <u>James.A.Kelly@usace.army.mil</u> Phone : 978-318-8227

Information Repository U.S. Army Corps of Engineers, New York District 2890 Woodbridge Avenue Edison, NJ 08837

Site History and Background

Where is the former Raritan Arsenal?

The FRA is located on approximately 3,200 acres along the north bank of the Raritan River, mostly in Edison Township with a portion of the site located in Woodbridge Township, approximately 20 miles southwest of lower Manhattan. It is bordered to the north and northwest by Woodbridge Avenue (Route 514), to the southwest by Mill Road and the Industrial Land Reclamation (ILR) Landfill, and to the east by vacant and industrial properties. Figure 1 presents the FRA location.

What was the former Raritan Arsenal used for?

The FRA was used by the U.S. Army from 1917 to 1963. Operations at the arsenal included the receipt, storage, shipment, and decommissioning of ordnance, arms, and machinery. Some waste material, including ordnance and chemical agents, were reportedly buried on site. It has also been reported that explosive materials were routinely destroyed by surface burning or burning in chambers or pits. Accidental explosions in magazine buildings and outdoor storage areas reportedly scattered materials over large areas and drove ordnance fragments into the ground. Site operations were phased out between 1961 and 1963. Today much of the northern portion of the FRA is developed by private landowners who have built Raritan Center, a major industrial park complex. Other development in the northern portion of the FRA includes the MCC Area, the United States Environmental Protection Agency/Government Services Administration (EPA/GSA) Area, and Thomas Edison County Park. The southern portion of FRA has remained primarily tidal marsh with limited development since the closing of the FRA in 1963.

What is the history of the MCC Area?

The MCC Area occupies approximately 169 acres in the northwest corner of the FRA.

A 1918 site plan indicated that the MCC Area was used by the Army as a cantonment (living) area and included a hospital complex. During the period between 1918 and 1934, most of the barracks were demolished as they were no longer necessary following World War I (WWI). Construction activities that occurred between 1918 and 1934 included the construction of: brick buildings to house non-commissioned officers, a 9-hole golf course, a swimming pool, and a new hospital building.

Between 1934 and 1943, the remaining WWI barracks were demolished and redeveloped with new barracks, a school building, and other miscellaneous buildings. An area identified as "Future Salvage Yard" was noted on a 1943 site plan.

Few changes occurred within the MCC Area between 1943 and 1961. While the Future Salvage Yard noted on the 1943 site plan was not included on a 1954 site plan, an area identified as "Burning Ground" was noted on the 1954 site plan. The Burning Ground area is located near the location of the Future Salvage Yard noted on the 1943 site plan.



A few buildings previously constructed by the Army remain and are used by MCC for various administrative purposes. Most other current structures and roads, sidewalks, fields/parks and parking lots were constructed by MCC during the 1960s and 1970s with some newer construction in recent years. A number of athletic fields are present in this area.

Based on what is known about historic uses of the MCC Area, the following areas of concern for **MEC** have been identified (see Figure 2).

- Area 17 Former salvage and property disposal yard.
- Area 17A Former burning grounds used for the decommissioning of small arms ammunition by non-explosive means for subsequent reuse or scrap.
- Building 118 Former hospital wards and building used as a disposal area for adapter boosters.

What is MEC?

MEC consists of specific categories of military munitions that have explosive properties that may pose unique safety risks. **MEC** categories include:

- Unexploded Ordnance (UXO) an explosive weapon that did not explode upon detonation and may still pose a hazard or risk of detonation.
- Discarded military munitions (DMM) abandoned military munitions not properly disposed of.
- Munitions constituents (MC) materials (e.g., metals such as lead or chemicals such as trinitrotoluene [TNT]) originating from UXO, DMM or other military munitions, including explosive and non-explosive materials, and emission, degradation or breakdown elements of such ordnance or munitions that are present

in high enough concentrations to pose an explosive hazard.

Non-explosive remnants of munitions (e.g., fragments, penetrators, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal is called **munitions debris (MD)**.

The MCC Area was used as a cantonment area for the FRA and did not have a use directly associated with munitions. The primary potential **MEC** contamination at the MCC Area resulted from **DMM** at Area 17 (former salvage yard), Area 17A (former burning ground where small arms munitions were decommissioned) and Building 118 (former hospital building). Anomalous munitions finds in these areas have been removed from the MCC Area, as described below.

Site Characterization

As noted previously, site-wide groundwater and VI concerns, and identified HTW soil contamination for the MCC Area are evaluated as separate projects. Information regarding the sitewide groundwater and VI investigations of HTW soil contamination in the MCC Area can be found in the FRA **Information Repository**

http://www.nan.usace.army.mil/Raritan.

What has USACE done to investigate the MCC Area for MEC?

Various studies have been conducted by the Army, including multiple **RI**s performed to investigate environmental issues at the MCC Area since the closing of the FRA. Figure 2 provides a map view of the munitions investigations and findings. The report titled *Remedial Investigation for Munitions and Explosives of Concern, Middlesex County College* (January 2023) summarizes the previous **MEC** studies and **removals** performed at the MCC Area. The report provides a weight-of-evidence approach to determine the potential presence of **MEC** in the



MCC Area based on the previous investigations and **removals**.

The January 2023 **RI** used a variety of characterization tools that are identified in the **RI** Characterization Tools highlight box. The **RI** evaluated efforts to find and remove known and suspected **MEC** at the MCC Area.

RI Characterization Tools

- Historical land use
- Site visit and interviews
- Archival searches
- Comprehensive review and reassessment of previous field investigations and removal actions
- Geophysical surveys
- MEC surveys
- Application of Munitions Response Site Prioritization Protocol (MRSPP)

The first investigation performed was documented in a report prepared in 1963 by the Letterkenny Army Depot (LEAD) that discussed the results of a decontamination of 17 ammunition areas (explosive residue only) performed by the Army during the closure of the FRA. The 1963 report described Area 17, which is part of the MCC Area, as having been a "property disposal storage area" that contained ammunition items. The area was inspected prior to decontamination because "various types of ammunition" items had been found in the area. It was reported that all ammunition items were removed from Area 17 and the ground surface was scarred with grader equipment to a depth of 4 inches below ground surface specifically to uncover buried ammunition items. It was concluded that the area was not contaminated with explosive items and recommended to release the area without restriction.

The following subsequent investigations and munitions **removals** have been conducted.

- Archival searches in 1991 and 1993 were completed to identify areas of potential MEC at the FRA based on historical land uses and operations (disposal areas, burning pits, etc.) and ordnance cleanup activities. The reports included researching historical documents, conducting interviews, and analyzing maps and aerial imagery.
- A 1992 UXO location survey using a magnetometer was performed focusing on the 17 areas noted in the 1963 initial investigation and included all the FRA. In the MCC Area, MEC findings were limited to the Building 118 area, where included 83,873 adapter boosters were found and removed. The magnetometer survey located metallic anomalies in Area 17, but only a single piece of munitions debris (MD), a mortar fin, was found.
- In 1993, geophysical surveys of the MCC Area were conducted to identify and record subsurface anomalies. Twelve metallic anomalies were selected for further investigation, but no MEC was recovered.
- An Engineering Evaluation/Cost Analysis (EE/CA) was prepared in 2000 for ordnance removal actions at the FRA and included portions of the MCC Area, including Area 17 and Building 118.
- The June 2014 RI and Remedial Actions Summary Report for MCC Area was prepared specifically for HTW that included a review and findings of all previously completed investigations and removal actions for both HTW and MEC, and new information regarding removal actions for impacted soil in several MCC Areas that yielded an underground storage tank (UST), drums, debris and stained soil. No MEC was recovered from the excavated areas.



- During construction activities at MCC in 2012 and 2015, only inert MD were unearthed and removed.
- Interviews with MCC personnel and former Arsenal staff familiar with past investigations and removal actions were conducted.

What did the RI conclude?

As described above, the MCC Area has undergone several investigations and removal actions to find and remove known and suspected **MEC** for half a century (from 1963 to 2014). **USACE** concluded that there is no unacceptable risk of exposure to **MEC** for both current and future receptors based on the following evidence.

- The MCC Area is a former cantonment area and, as such, munitions use would not be expected.
- MEC items have only been found in one part of the MCC Area: Building 118. This was thought to be the result of an isolated disposal event. A MEC removal was conducted at that location from 1991-1992, and the area was cleared of all MEC.
- No other MEC has been identified in the MCC Area since 1992, despite multiple intrusive activities.
- Many HTW-related soil removal actions have been completed (further discussed in a separate Proposed Plan for MCC Area, February 2019) and no MEC was identified.
- Numerous geophysical investigations covering large areas of the MCC Area have not identified any other MEC.
- Dense development (requiring intrusive activities) of the MCC campus has revealed no additional sources of MEC since the 1991-1992 removal action at Building 118.

 Although there have been multiple instances of isolated MD findings, as shown on Figure 2, during past investigations and construction activities, no other evidence of disposal activities indicative of unacceptable MEC risk has been found.

The Project Delivery Team used the **MEC RMM** to conclude that the human health risk due to the possible presence of **MEC** in the MCC Area is "Acceptable," and no **remedial action** is required to be protective.

Based on these findings, it is recommended that the 169-acre MCC Area (comprising the FRA cantonment area) be distinguished from all other Areas of the FRA with a unique munitions response site (MRS) subset designation for site tracking purposes. Additionally, because the MCC Area does not pose an unacceptable risk to current and future receptors, a **Feasibility Study** (FS) for the MCC Area is not warranted. No additional investigations or **remedial actions** are recommended.

Next Steps

NJDEP has concurred with the recommendations of RI for No Further Action for MEC in a letter dated 25 January 2023.

What happens next?

USACE will conduct a public meeting on October 16, 2024 at the Middlesex College, Crabiel Hall – Raritan Bay Room. Once the community has reviewed this Proposed Plan, **USACE** will review all comments received from the public and consult with the lead regulator to determine if the recommended alternative remains the most appropriate decision for the MCC Area. **USACE** will prepare a written summary of all comments, criticisms, and new or relevant information submitted during the public comment period, and the **USACE** response to each issue in a **Responsiveness Summary** in the **ROD**. The **ROD**



will identify the selected No Further Action decision for MCC Area. **USACE** anticipates that the **ROD** will be finalized and signed before the end of 2024, at which time the ROD will be made available at the **USACE**'s On-Site **Information Repository** in Edison, NJ and the webpage for the former Raritan Arsenal:

http://www.nan.usace.army.mil/Raritan.

The *public comment period* for this Proposed Plan is 33 days from October 16, 2024 to November 18, 2024. Contact information is provided in the Contact section of this plan.





Figure 1 - Former Raritan Arsenal Remedial Investigation Areas





Figure 2 – Summary of Munitions Investigations and Finds at MCC



Abbreviations and Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DoD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
FRA	Former Raritan Arsenal
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
GSA	General Services Administration
HTW	Hazardous and Toxic Waste
ILR	Industrial Land Reclamation
LEAD	Letterkenny Army Depot
MC	Munitions Constituents
MCC	Middlesex Community College
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NJDEP	New Jersey Department of Environmental Protection
RI	Remedial Investigation
RMM	MEC Risk Management Methodology
ROD	Record of Decision
TNT	Trinitrotoluene
USACE	U.S. Army Corps of Engineers
U.S.EPA/EPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VI	Vapor Intrusion
WWI	World War I



Glossary of Terms

Administrative Record: The documents that form the basis for the selection of a response action compiled and maintained by the lead agency.

Anomaly: Any item that is seen as a subsurface irregularity after **geophysical** investigation. This irregularity will deviate from the expected subsurface ferrous and non-ferrous material at a site (e.g., pipes, power lines).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986.

Defense Environmental Restoration Program (DERP): Congressionally authorized in 1986, DERP promotes and coordinates efforts for the evaluation and cleanup of contamination at Department of Defense (DoD) installations and Formerly Used Defense Sites (FUDS). The DERP statute [10 U.S.C. 2701(a)] requires that the environmental restoration program be subject to, and in a manner consistent with, CERCLA and the NCP.

Discarded Military Munitions (DMM): Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions being held for future use or planned disposal, or military munitions that have been properly disposed of consistent with applicable environmental laws and regulations.

Feasibility Study (FS): A study undertaken by the lead agency to develop and evaluate options for remedial action. The RI data are used to define the objectives of the response action, to develop remedial action alternatives, and to undertake an initial screening and detailed analysis of the alternatives. The term also refers to a report that describes the results of the study.

Formerly Used Defense Sites (FUDS): Facility or site which was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances or pollutants and contaminants, for which the Secretary of Defense shall carry out all response actions with respect to releases of hazardous substance from that facility or site.

Geophysical Techniques - Techniques utilized for the detection and measurement of buried anomalies (e.g., ferromagnetic indicators and ground penetrating radar) to investigate the presence of munitions. **Information Repository:** A repository, generally located in libraries of other publicly accessible locations in or near communities affected by the FUDS project, which contains accurate and up-to-date documents reflecting ongoing environmental restoration activities. The information repository may contain information beyond the scope of the administrative record because the documents in the administrative record relate to a particular response action selection decision at a site. This may include historical documents, public notices, public comments, and responses to those comments.

MEC Risk Management Methodology (RMM): MEC Risk Management Methodology is a tool used to conduct a qualitative assessment of hazards posed by MEC by reviewing site conditions and history



including site access, frequency of use, likelihood of MEC encounter, classification of MEC detected and associated hazard, and likelihood of detonation.

Munitions Constituents (MC): Any materials originating from unexploded ordnance, (UXO) discarded military munitions (DMM), or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.

Munitions Debris (MD): Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.

Munitions and Explosives of Concern (MEC): Specific categories of military munitions that may pose unique explosives safety risks, such as UXO, as defined in 10 U.S.C. 101(e)(5); discarded military munitions, as defined in 10 U.S.C. 2710(e)(2); or munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

Munitions Response Site Prioritization Protocol (MRSPP): A tool adopted by DoD to assign a relative priority for munitions responses to defense sites known or suspected of containing UXO, DMM, MEC or MC.

Record of Decision (ROD): A legal, technical, and public document that explains the rationale and remedy decision for a given site. It also summarizes the public's involvement in the decision process. The ROD was previously referred to as a Decision Document.

Remedial Investigation (RI): A process undertaken by the lead agency to determine the nature and extent of the problem presented by the release. The RI emphasizes data collection and site characterization and is generally performed concurrently and in an interactive fashion with the feasibility study. The RI includes sampling and monitoring to determine the necessity for remedial action and to support the evaluation of remedial alternatives.

Remedy [or **remedial action**] – Under CERCLA, those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches, or ditches, clay cover, neutralization, cleanup of released hazardous substances and associated contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, onsite treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment.

Remove [or **removal**] – Under CERCLA, the cleanup or removal of released hazardous substances from the environment, such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. The term includes, in addition, without being limited to, security fencing or other measures to



limit access, provision of alternative water supplies, temporary evacuation and housing of threatened individuals not otherwise provided for, action taken under section 9604 (b) of this title, and any emergency assistance which may be provided under the Disaster Relief and Emergency Assistance Act [42 U.S.C. 5121 et seq.].

Responsiveness Summary: Summary of the Army's response to all public comments received during the public comment period held for the Proposed Plan.

Risk Assessment: The process used to estimate the nature and probability of adverse health effects in humans or ecological receptors who may be exposed to chemicals in affected environmental media, now or in the future.

Unexploded Ordnance (UXO): military munitions that have (a) been primed, fuzed, armed, or otherwise prepared for action; (b) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and (c) remain unexploded either by malfunction, design, or any other cause.

U.S. Army Corps of Engineers (USACE): The U.S. Army Corps of Engineers provides comprehensive environmental restoration services for the Army, Department of Defense (DoD), Environmental Protection Agency (EPA), Department of Energy (DOE), and other federal agencies. The DoD has designated USACE to oversee the environmental program at the Site, under Defense Environmental Restoration Program – Formerly Used Defense Sites (DERP-FUDS) program.



Contact Information

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Information Repositories

Information Repository U.S. Army Corps of Engineers, New York District 2890 Woodbridge Avenue Edison, NJ 08837

Central Information Repository USACE New York District Office 26 Federal Plaza New York, NY 10278-0090

Information can also be found through the USACE New York District website for the FRA:

http://www.nan.usace.army.mil/Raritan