



DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
INSTALLATION RESTORATION PROGRAM
JOINT BASE MCGUIRE-DIX-LAKEHURST, NJ 08641

31 August 2021

Mr. James Richman
Remediation Program Manager (AFCEC/CZO)
787 CES/CEIE
2403 Vandenberg Avenue
Joint Base McGuire-Dix-Lakehurst, NJ 08641

Mr. Haiyesh Shah
New Jersey Department of Environmental Protection - SRP
Bureau of Federal Case Management
P.O. Box 28
401 East State Street
Trenton, NJ 08625-0028

Re: Final Proposed Plan for Dix Former Practice Mortar Range (FR004) Munition Response Site, Joint Base McGuire-Dix-Lakehurst New Jersey

Dear Mr. Shah:

Attached please find the Final Proposed Plan for Dix Munition Response Site FR004.

If you have any questions or require additional information please contact Mr. Michael Figura at (732) 323-4857.

Sincerely,

RICHMAN.JAMES.CA
MERON.1506546946

Digitally signed by
RICHMAN.JAMES.CAMERON.1506546946
Date: 2021.08.30 14:34:00 -0400

JAMES RICHMAN
Remediation Program Manager

Attachment:

(1) Final Proposed Plan for Dix Former Practice Mortar Range (FR004) Munition Response Site, Joint Base McGuire-Dix-Lakehurst New Jersey (2 Hard Copies, 2 CDs)

Cc:

Mr. William Friedmann, USEPA Region 2 (1 CD)
Mr. Ralph Rodrigues, NJDEP (1 Hard Copy, 1 CD)
Ms. Branwen Ellis, New Jersey Pinelands Commission (1 CD)
Mr. Michael Tamn, Restoration Advisory Board Co-chair (1 CD)
Mr. Russell Cason, AFCEC/CZRE (1 CD)
Mr. Michael Figura, AFCEC/CZOE (1 hard copy, 2 CDs)



New Jersey Department of Environmental Protection
Site Remediation Program

TRADITIONAL OVERSIGHT REPORT CERTIFICATION
FORM

Date Stamp
 (For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: FR004
 List All AKAs: Dix Practice Mortar Range
 Street Address: 2403 Vandenberg Avenue
 Municipality: McGuire AFB, NJ (Township Borough or City)
 County: Burlington Zip Code: 08641-5104
 Program Interest (PI) Number(s): NJ2571824018 Case Tracking Number(s): _____

SECTION B. REPORT INFORMATION

Report Name: Final Proposed Plan for Dix Practice Mortar Range FR004
 Report Date: 08/31/2020
 Federal Traditional Case Type :
 RCRA GPRA 2020 CERCLA/NPL USDOD USDOE
 Other (explain): _____

SECTION C. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: James Richman
 Representative First Name: James Representative Last Name Richman
 Title: Remediation Program Manager
 Phone Number: (609) 754-2267 Ext: _____ Fax: (609) 754-2096
 Mailing Address: 787 CES/CEIE, 2403 Vandenberg Avenue
 City/Town: JBMDL State: NJ Zip Code: 08641-5104
 Email Address: james.richman.1@us.af.mil

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: RICHMAN.JAMES.CAMERON.1506546946 Digitally signed by RICHMAN.JAMES.CAMERON.1506546946 Date: 2021.08.30 14:41:12 -04'00'
ON.1506546946 Date: 8/30/2021
 Name/Title: James Richman, Remediation Program Manager

Signed in my official capacity only

Section D - Not Applicable

SECTION D. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: Federal Facility

First Name: _____ Last Name: _____

Phone Number: _____ Ext: _____ Fax: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRR Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

- directly oversaw and supervised all of the referenced remediation, and/or*
- personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: _____ Date: _____

LSRP Name/Title: _____

Company Name: _____

Completed forms should be sent to:

Assigned Case Manager
Bureau of Case Management
Site Remediation Program
NJ Department of Environmental Protection
401-05F
PO Box 420
Trenton, NJ 08625-0420

**Proposed Plan for
Munitions Response Site
Former Practice Mortar Range (FR004)
Joint Base McGuire-Dix-Lakehurst, New Jersey
Department of the Air Force**



Air Force Announces Proposed Plan

This **Proposed Plan (PP)**, presented by the United States Air Force (USAF), identifies the **preferred alternative** for the **munitions response site (MRS)**: Former Practice Mortar Range (FR004), located at the Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey. The USAF has determined the preferred alternative for Former Practice Mortar Range (MRS FR004) to be a magnetometer (mag) assisted **munitions and explosives of concern (MEC)** clearance known as “mag and dig”. [Note: Words and acronyms shown in **bold italicized** lettering are defined in the Glossary at the end of this PP.]

This PP provides the rationale for this preference and includes summaries of other remedial action alternatives evaluated for use at this site. This document is issued by the USAF, the lead agency for MRS activities, and two support agencies: the New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (USEPA). The USAF, in coordination with NJDEP and USEPA, will select a final remedy for the MRS in a **Record of Decision (ROD)** after reviewing and considering all information submitted during the 30-day public comment period to this proposed plan (see Community Participation section). The USAF may modify the preferred alternative or select another response action presented in this PP based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives in this PP.

MARK YOUR CALENDARS

PUBLIC COMMENT PERIOD: SEPT 20 – OCT 19, 2021

The United States Air Force (USAF) will accept written comments on the Proposed Plan during the public comment period. Comment letters must be postmarked by October 19, 2021 and should be submitted to:

James Richman, Remediation Program Manager
Air Force Civil Engineer Center/CZO
787 CES/CEIE
2403 Vandenberg Avenue
Joint Base McGuire-Dix-Lakehurst, New Jersey 08641
Email: James.Richman.1@us.af.mil
Phone: (609) 754-2267

PUBLIC MEETING: A virtual public meeting will be held on September 30, 2021. The USAF will provide this public meeting to explain the Proposed Plan and all of the alternatives presented in the *Feasibility Study for Munitions Response Site (MRS) FR004 at Joint Base McGuire-Dix-Lakehurst*.

For more information, see the Administrative Record file at <https://ar.afcec-cloud.af.mil> or the Information Repository located at:

Burlington County Public Library
5 Pioneer Boulevard
Westhampton, New Jersey, 08060
Phone: (609) 267-9660
Hours: Mon – Thurs: 10 am to 8 pm,
Fri – Sat: 10 am to 5 pm, and
Sun: Closed

NJDEP Records Custodian
Mr. Matt Coefer
Phone: (609) 633-1339
401 East State St.
Mail Code 401-06Q
P.O. Box 420
Trenton, NJ 08625
Mon – Fri: 8 am to 4 pm

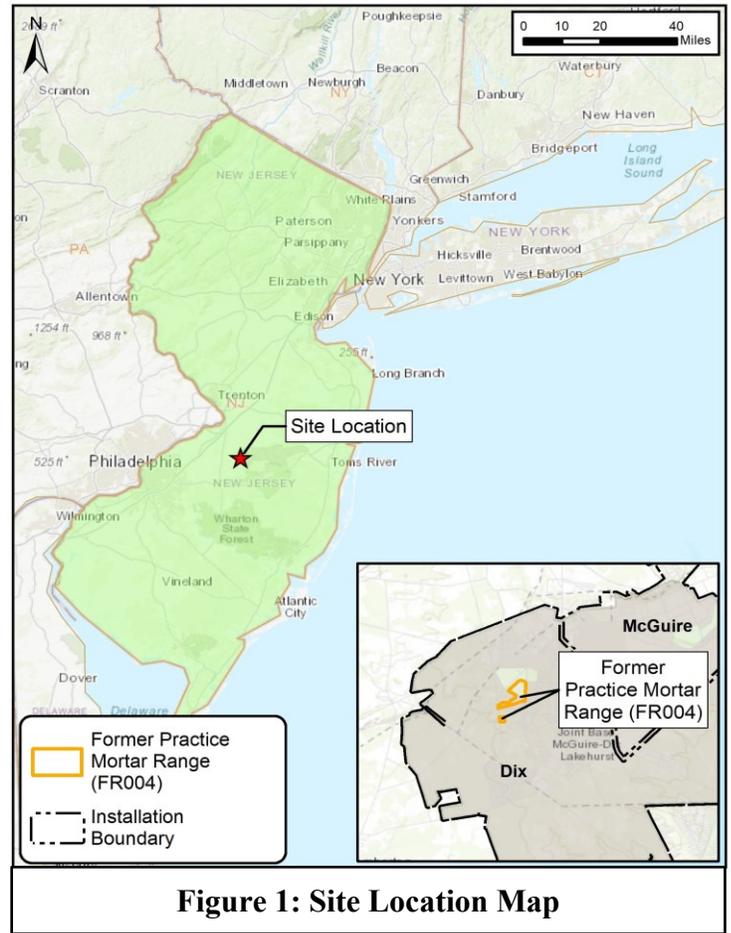
Note that due to disruptions caused by COVID-19 pandemic, it is recommended to contact the repositories prior to visiting.

The USAF is issuing this PP as part of its public participation responsibilities under Section (§) 117(a) of the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)*, 42 U.S. Code Section 9617(a), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 Code of Federal Regulations, Section 300.430(f)(2), which requires the USAF to issue this PP and seek public comments. This PP summarizes previous investigations described in greater detail in the *Remedial Investigation (RI) Report, Feasibility Study (FS)*, and other documents contained in the JB MDL *Administrative Record (AR)* file. The JB MDL AR can be accessed at <https://ar.afcec-cloud.af.mil>. Select documents are also available in the Information Repository, located at the Burlington County Public Library, 5 Pioneer Boulevard, Westhampton, New Jersey. The USAF, NJDEP, and USEPA encourage the public to review these documents to gain a more comprehensive understanding of the MRS and investigation activities that have been completed. Public comments to this PP will be documented in a ROD that identifies the selected remedial action.

Site Description and Background

JB MDL is located in Burlington County and is approximately 18 miles southeast of Trenton, New Jersey (Figure 1). The Dix Area, which occupies a portion of JB MDL, has an area of 30,638 acres and is divided into five basic areas: a cantonment area, training area, and range and impact area, housing area, and recreational area.

The Former Practice Mortar Range (MRS FR004) is part of the Practice Mortar Range *Munitions Response Area (MRA)*. The Practice Mortar Range MRA is 123 acres and contains two MRSs: the 51-acre Former Practice Mortar Range (MRS FR004) and the 72-acre Former Practice Mortar Site 02 (MRS



FR004a) (Figure 2). Between 2002 and 2004, a geophysical investigation and removal action was conducted on the 72-acre Former Practice Mortar Site 02 (MRS FR004a). Over 6,000 anomalies were excavated, and 51 inert projectiles were removed; however, no MEC were found. A ROD documenting no further action for the Former Practice Mortar Site 02 (MRS FR004a) was finalized in 2006.

The Former Practice Mortar Range (MRS FR004) is comprised of two distinctly separate areas, with a combined area of 51 acres (Figure 2):

- a 46.88-acre irregularly shaped area located both north and south of 4th Street, and encompassing a portion of the Fountain Green Golf Course as well as base housing and recreational fields located

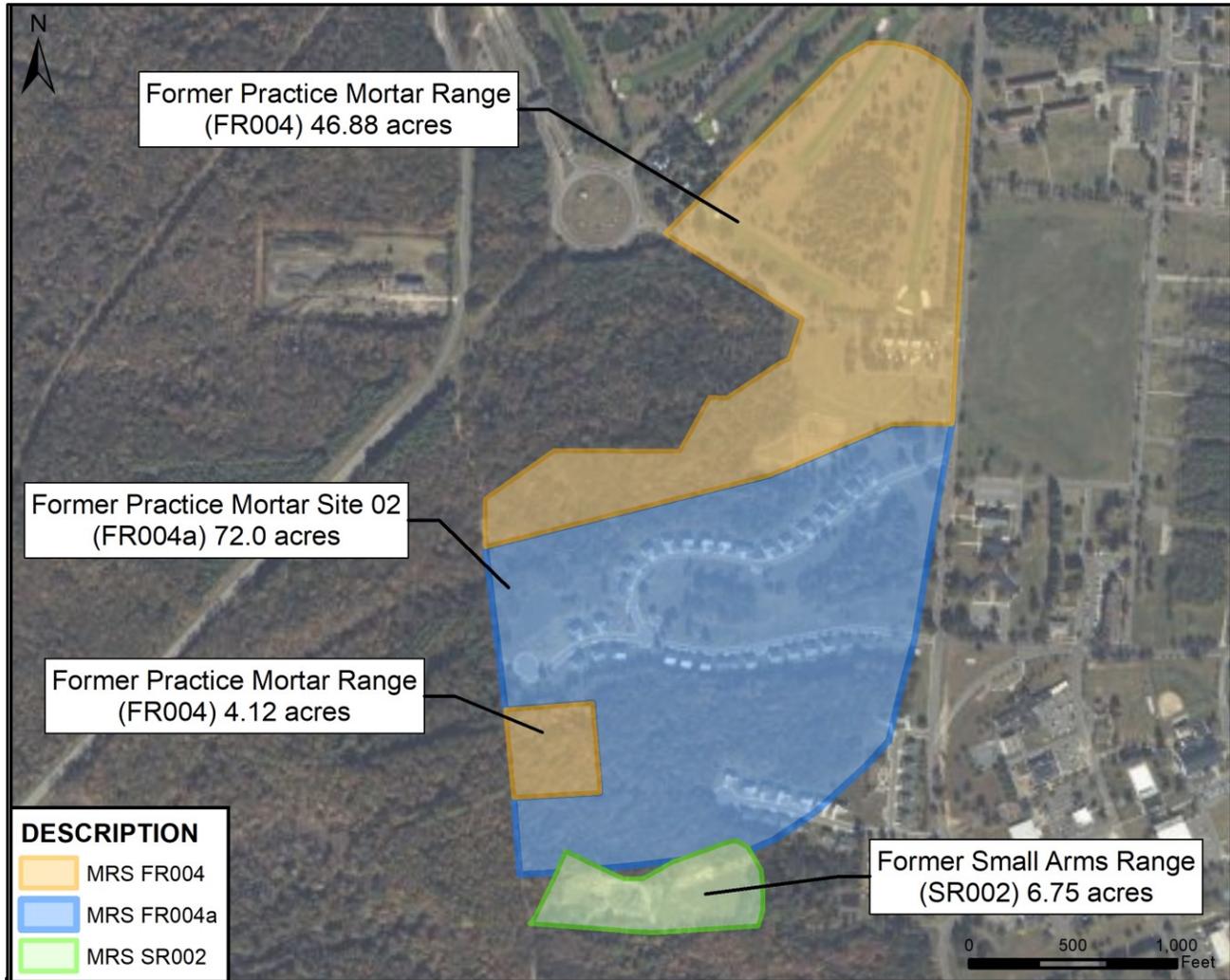


Figure 2: MRS Location Map

southwest of the intersection of 4th Street and New Jersey Avenue; and

- a 4.12-acre wooded area located south-southwest of the Grove Park housing area.

The southern 4.12-acre wooded area of the MRS was identified as having a potential risk for MEC and is the focus of the remedial alternatives described herein. The 46.88-acre northern portion of Former Practice Mortar Range (MRS FR004) was recommended for no further action in previous investigations.

MRS SR002 is an MRS located south of MRSs FR004 and FR004a. This area is a for-

mer small arms range, which was investigated with Former Practice Mortar Range (MRS FR004). MRS SR002 was recommended for no further action, and a separate PP and ROD are being prepared for this MRS.

Previous investigations completed under the USAF *Military Munitions Response Program (MMRP)* are summarized in the following sections.

Archives Search Report

The Practice Mortar Range MRA was initially identified in the Archives Search Report (ASR) prepared in 1997. The ASR identified the Practice Mortar Range MRA as a

123-acre practice mortar range formerly known as “Tent City,” which was reportedly used between the late 1940s and 1959. According to the ASR, inert 81-millimeter (mm) and 60 mm practice mortars were found at the Practice Mortar Range MRA during construction of the Holly Crest and Grove Park Military Housing areas, and subsequently removed by explosive ordnance disposal teams.

Site Inspection

A *Site Inspection (SI)* was completed in 2007 and included the collection of one composite soil sample from the northern portion of the Former Practice Mortar Range (FR004) for analysis of copper, zinc, lead, and explosive constituents. Explosive constituents were not detected in the composite soil sample. Copper, lead, and zinc were detected at concentrations well below the New Jersey Residential Direct Contact Soil Remediation Standards (NJRDCSRs) at New Jersey Administrative Code (N.J.A.C.) 7:26D and within mean background concentrations established for the Dix Area. The SI recommended that an RI be completed for Former Practice Mortar Range (MRS FR004).

Remedial Investigation

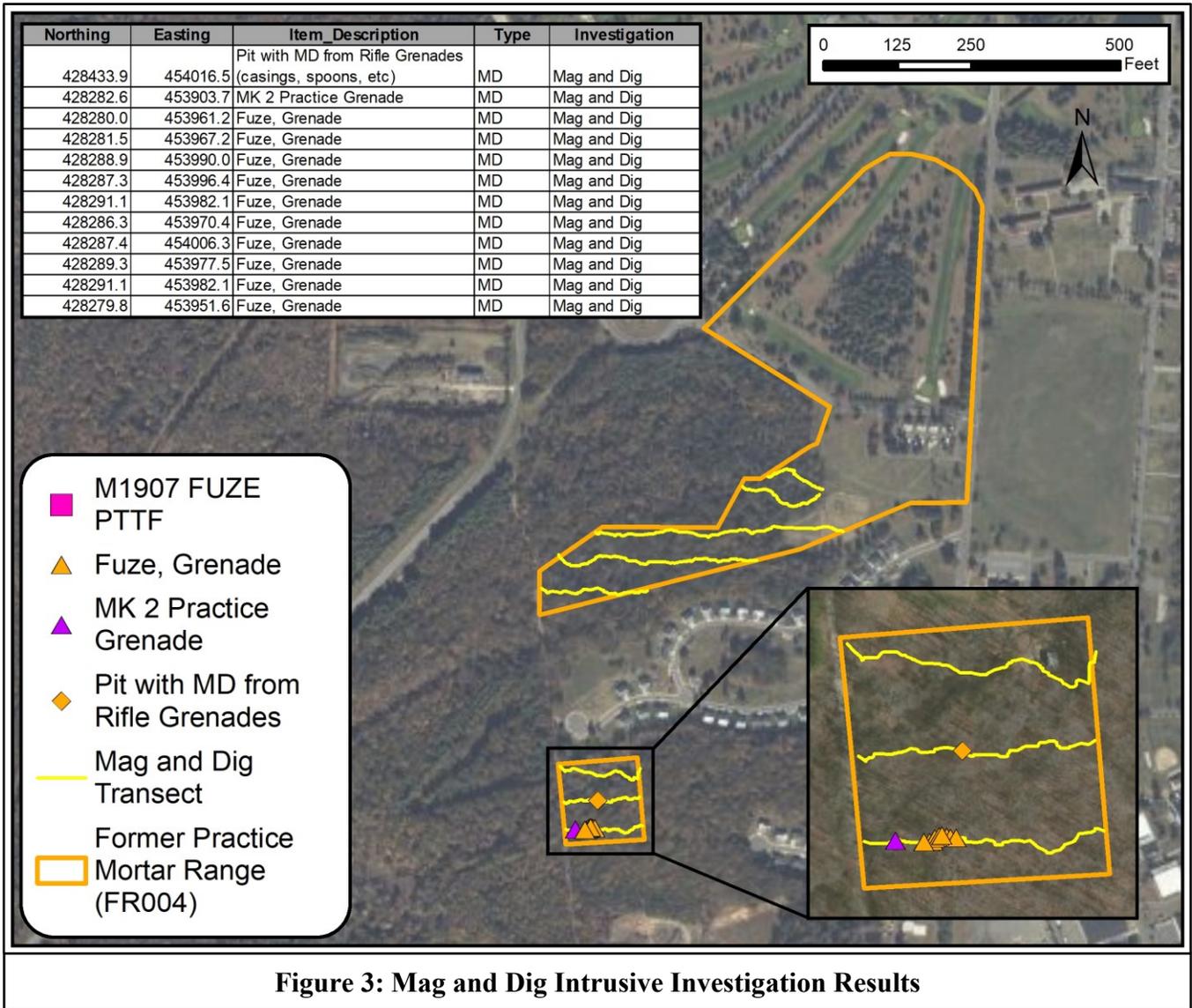
An RI was performed at the Former Practice Mortar Range (MRS FR004) to determine the nature and extent of MEC and *munitions constituents (MC)* contamination associated with historical military munitions used at the MRS. The RI objectives were accomplished through digital geophysical mapping (DGM) surveys (which create images of metallic objects underground), subsurface investigations, and MC sampling.

To assess the nature and extent of MEC, 2.85 miles of DGM transects and 1.05 miles of mag and dig transects were surveyed and investigated during the RI. Anomalies detected during the mag and dig transect surveys were intrusively investigated as they were detected

(real-time) to determine the anomaly source. A total of 12.3 pounds (lb) of *Munitions Debris (MD)*, 43 lb of non-munitions related debris (NMRD), and 0.7 lb of small arms ammunition were identified during the mag and dig survey. As shown on Figure 3, the MD included a pit of M11 practice rifle grenade components, 10 expended Mk II practice hand grenade fuzes and one expended Mk II practice grenade, all found in the southern 4.12-acre portion of the MRS.

Anomalies detected during the DGM transect surveys were assessed and an anomaly density map was prepared to identify locations requiring further investigation. Geophysical grids were placed in high (>800 anomalies per acre), medium (400-600 anomalies per acre) and low (<200 anomalies per acre) anomaly density areas and digitally mapped using an EM61-MK2. Three DGM grids were placed within each density area (high, medium, and low), and each grid was a minimum of 2,500 square feet (ft) in size. The total of all 9 grids was 0.67 acres. DGM surveys were also completed in the accessible and unpaved portions of the military residential property at Colonial Plaza (1.59 acres) and the infield and outfield of the lighted baseball field (0.78 acres).

During the DGM grid surveys, 1,019 DGM anomalies (285 in grids, 454 from the Colonial Plaza housing area, and 280 from the baseball field) were intrusively investigated (meaning that items were excavated from the ground). A total of 0.75 lb of MD, 501.4 lb of NMRD consisting of horseshoes, nails, scrap metal, bolts, etc., and 2.18 lb of small arms ammunition were identified. The 0.75 lb of MD found consisted of one MD item: an expended fuze from a 75 mm shrapnel projectile and was found under the golf course in the northern portion of the MRS and likely placed there since there is no history of this projectile’s use at Former Practice Mortar Range (MRS FR004), and no other evidence



of these projectiles was found. The other anomalies were all NMRD. Figure 3 illustrates the RI mag and dig intrusive investigation results.

To assess the nature and extent of MC, a soil sample was collected and analyzed for copper, zinc, and explosive constituents from the pit of practice rifle grenade components that was identified during the mag and dig effort. No other source of MC was identified during the RI. Explosive constituents were not detected in the sample collected during the RI. Metals were detected in soil, but concentrations were within background values for JB

MDL-Dix. No evaluation of groundwater was warranted based on MC soil sampling results. Therefore, no environmental impacts were identified.

To summarize, no MEC or evidence of an 81mm or 60mm practice mortar range was identified in the Former Practice Mortar Range (MRS FR004), as was suggested in the ASR. The MD items that were found were limited and primarily found in the 4.12-acre southern portion of the MRS. In addition, no impacts from MC were identified and no source of MC was found. However, the RI

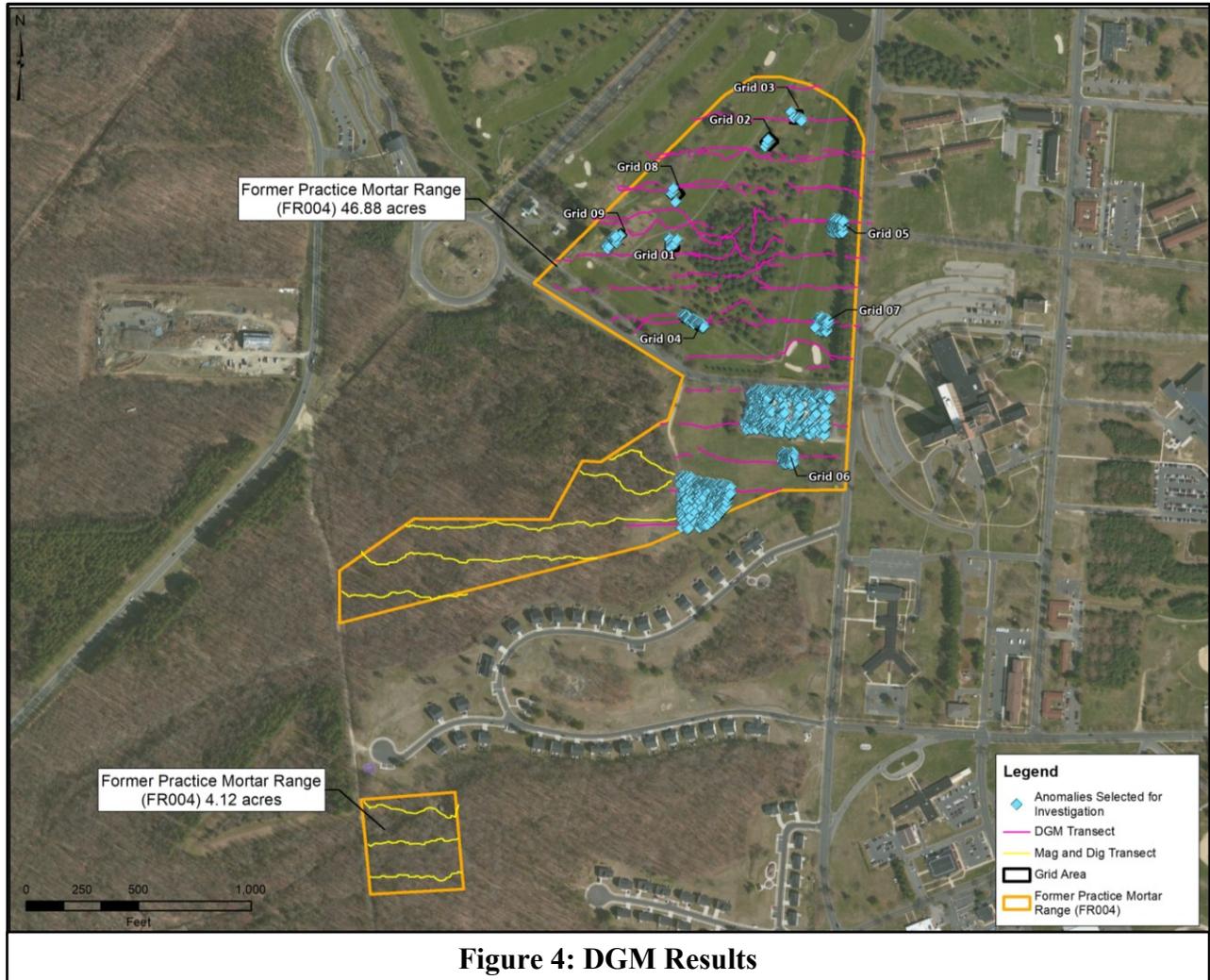


Figure 4: DGM Results

concluded that no MEC is present in the 46.88-acre northern portion of the Former Practice Mortar Range (MRS FR004), but is potentially present in the southern 4.12-acre portion of the MRS. The RI recommended that an FS be completed because the MD items found during the investigation on the southern parcel can be considered suspected physical evidence of MEC (i.e., if unexpended practice grenades or additional burial locations are present where RI investigations were not performed). The remedial alternatives developed and evaluated in the FS are discussed in the *Summary of Remedial Alternatives* section, beginning on page 8 of this document.

Site Characteristics

Site Access: Access to JB MDL requires admittance through the security gate and there is a fence around the perimeter of the installation. However, once on JB MDL, there are no controls in place to limit access to the Former Practice Mortar Range (MRS FR004). The majority of the MRS is located within the Fountain Green golf course, a closed base housing area (i.e., the Colonial Plaza housing area), and the baseball field and is used for recreational purposes and easily accessed.

Current and Future Land Use: The larger contiguous northern portion of Former Practice Mortar Range (MRS FR004) is currently occupied by a portion of the Fountain Green

golf course, recreational fields, and Colonial Plaza housing area, which was closed and is no longer used for residential purposes. The MRS is bound by the Fountain Green golf course to the north, Base Cantonment Area to the east, active training area(s) to the west, and the former Practice Mortar Site 02 (MRS FR004a) to the south. The smaller southern portion of Former Practice Mortar Range (MRS FR004) is currently undeveloped wooded land (Figure 2). With the exception of this southern 4.12-acre wooded area, the degree of disturbance at the Former Practice Mortar Range (MRS FR004) is high. According to the JB MDL Installation Development Plan, the land use at Former Practice Mortar Range (MRS FR004) is not expected to change in the future.

Physical and Environmental Setting: The climate in the JB MDL area is characterized by moderate temperatures, precipitation, and wind, with an average annual temperature of 54 degrees Fahrenheit. The average annual precipitation is 45 inches and is fairly well distributed throughout the year.

The Dix Area topography is characterized by gently rolling plains, with elevations ranging from approximately 70 to 195 ft above mean sea level (msl). A portion of the Former Practice Mortar Range (MRS FR004) encompasses part of the JB MDL Fountain Green Golf Course.

A chain of small ponds is located adjacent to the northern boundary of Former Practice Mortar Range (MRS FR004), and the northern branch of Indian Run flows through the northwest portion of the southern block of the MRS. In addition, wetlands associated with the northern branch of Indian Run are present within the southern block of Former Practice Mortar Range (MRS FR004).

The vegetative cover at JB MDL can be classified as improved and/or highly disturbed. Specific types of vegetation present at the

MRS include primarily manicured lawns associated with the golf course, residential areas, and recreational fields; and deciduous and coniferous trees associated with a smaller portion of the MRS.

While depth to groundwater has not been measured at Former Practice Mortar Range (MRS FR004), it is likely to be shallow (less than 15 ft below land surface) near Fountain Green Golf Course, where several ponds are located. The surficial geology at JB MDL is identified as the Kirkwood and Cohansey Formations, which comprise unconsolidated sands, silts, and clays.

Scope and Role of the Action

The proposed alternative at Dix Former Practice Mortar Range (FR004) MRS of MEC clearance using mag and dig will be the first response action at this MRS. The action will address these potential hazards within the 4.12-acre portion of the MRS and ensure the MRS is safe, compatible with planned future land use, and protective of human health and the environment.

The FS identified remedial alternatives and evaluated them independently against *applicable or relevant and appropriate requirements (ARARs)* and other assessment criteria to determine suitability. The FS process and outcome are discussed in the *Summary of Remedial Alternatives* section, beginning on page 8 of this document.

Summary of Site Risks

Site risks associated with explosive hazards and risks to human health and the environment were evaluated individually during the RI, which can be accessed in the AR file. The MEC Hazard Assessment Tool (MHAT) was used to evaluate existing explosive hazards and to support hazard communication. The MHAT is an automated workbook structured into three components, consisting of severity, accessibility, and sensitivity, and is designed

to be used to describe the MEC hazard posed based on current and future site conditions and to evaluate the efficacy of various cleanup alternatives. Since no MEC has ever been found at the FR004 MRS, the site received an MHAT rating of “MD only”. Since MD is frequently present at sites that contain MEC, the MRS was recommended for further action to address the MD that was found in the southern portion of the MRS.

To address potential risks to human health and the environment from MC, a **human health risk assessment (HHRA)** and a **screening level ecological risk assessment (SLERA)** were conducted. The HHRA evaluated current recreational visitors (e.g., hunters), current site workers (e.g., installation maintenance personnel), future construction/utility workers, and future hypothetical residents. Soil collected from the location where practice rifle grenade MD was recovered and evaluated in the HHRA. Copper and lead were both detected in soil at concentrations below their respective direct contact soil screening levels. Additionally, copper and lead levels were below their respective soil to groundwater impact screening levels. Therefore, no site-related constituents were identified as a **contaminants of potential concern** for the Former Practice Mortar Range (MRS FR004).

The SLERA performed for the Former Practice Mortar Range (MRS FR004) provided estimates of current and future ecological risk to terrestrial and aquatic plants and wildlife associated with MC. The SLERA determined that MC concentrations found in soil did not exceed risk-based ecological screening values. No other source of MC was found during the RI. The SLERA concluded that there is negligible ecological risk for terrestrial receptor exposure to MC in the Former Practice Mortar Range (MRS FR004). Details regarding the SLERA and assumptions made are in-

cluded in the 2019 Final Remedial Investigation for Former Practice Mortar Range (MRS FR004).

Remedial Action Objectives

Remedial Action Objectives (RAOs) are media and site-specific cleanup objectives which are considered in the development of remedial alternatives. These objectives are developed based on the criteria outlined in Section 300.430(e)(2) of the NCP and Section 121 of CERCLA.

The following RAO was established for the Former Practice Mortar Range (MRS FR004) and is focused on addressing the physical hazards to human receptors based on the potential presence of MEC within the 4.12-acre portion of the MRS:

Mitigate JB MDL personnel, contractor/maintenance worker, and visitor contact with MEC, which is anticipated to be present on the ground surface and in subsurface soils to depths up to 18 inches below ground surface to be compatible with current and future land use.

Summary of Remedial Alternatives

The USAF prepared an FS to develop and evaluate remedial alternatives to address residual risk at the Former Practice Mortar Range (MRS FR004). In accordance with Department of Defense (DoD) Manual 4715.2, an FS must consider at least the following three alternatives: 1) No Action (baseline), 2) **land use controls (LUCs)**, and 3) remediation to a **unlimited use/unrestricted exposure** condition. However, no method of MEC detection and removal has proven to be 100% effective. Therefore, UU/UE may not be achievable at MRS FR004.

The remedial action alternatives developed to address the RAO for Former Practice Mortar Range (FR004) include

- Alternative 1: No Action,
- Alternative 2: LUCs, and
- Alternative 3: MEC Clearance Using Mag and Dig (Table 1).

Table 1.
Summary of Remedial Alternatives

Alternative	Description
Alternative 1: No Action	No Action
Alternative 2: Land Use Controls	Develop and maintain engineering and institutional controls
Alternative 3: MEC Clearance Using Mag and Dig	Conduct MEC clearance using frequency domain electro-magnetic induction FDEMI metal detectors

Notes: MEC = munitions and explosives of concern
FDEMI = frequency domain electro-magnetic induction

A summary discussion of each alternative is provided in the following sections. The cost types evaluated for each alternative include the following:

- capital costs, including both direct and indirect costs;
- total operation and maintenance (O&M) costs for 30 years; and,
- net present worth of capital and O&M costs.

An analysis of the alternatives’ strengths and weaknesses is described further in the *Evaluation of Alternatives* section. Additional detail regarding the development and evaluation of remedial alternatives can be found in the FS.

Alternative 1: No Action

The NCP requires that a No Action alternative be evaluated to provide a baseline for comparison to other alternatives. In a CER-CLA FS evaluation, a No Action alternative

does not include remediation or controls and does not consider existing controls. No public awareness training would be initiated regarding the hazards associated with MEC. Site access is assumed to be unrestricted and there are no limits on current or future site use activities, including the transfer of property. Further, the No Action alternative does not require identification or screening for MEC during future construction activities.

Estimated Capital Cost: \$0
Estimated Annual O&M Cost:\$0
Estimated Present Worth Cost:\$0
Estimated Construction Timeframe: 0 days
Estimated Time to Achieve RAOs: Would not achieve RAOs.

Alternative 2: Land Use Controls

Alternative 2 develops and maintains LUCs for the Former Practice Mortar Range (MRS FR004) and complies with Defense Explosives Safety Regulation (DESR) 6055.09 for access to areas known or suspected to contain **unexploded ordnance (UXO)**. LUCs include engineering controls (i.e., physical mechanisms) and institutional controls (i.e., administrative and/or legal mechanisms) to restrict the use of or limit access to real property to mitigate potential MEC explosive hazards. Although no MEC has been discovered at the MRS during past investigations or removal actions, there is a potential that MEC exists within the 4.12-acre southern portion of Former Practice Mortar Range (MRS FR004). Therefore, as a precautionary measure, the Air Force must:

- limit access to the area to personnel who have an operational requirement to enter such areas and provide public notifications of any potential hazards;
- prohibit construction without construction or UXO avoidance support;
- develop guidelines to determine when individuals are authorized access to areas known or suspected to contain UXO and are escorted;

- establish UXO safety education programs; and,
- evaluate requirements to protect human health should land use change.

Alternative 2 includes the following LUCs for the Former Practice Mortar Range (MRS FR004) to meet DESR 6055.09 requirements.

- **Perimeter Signage:** Warning signs would be placed around the 4.12-acre southern portion of the Former Practice Mortar Range (FR004) where the M11 practice rifle grenade and Mk II practice grenade debris were found to prevent interaction by receptors. The warning signs will be spaced close enough to each other so that a person cannot access this area without seeing a warning sign. The appropriate distance between signs will be determined during the remedial design.
- **Periodic Surface Clearance:** The ground surface of the 4.12-acre southern portion of the Former Practice Mortar Range (MRS FR004) where the debris was found would be swept by UXO technicians to ensure that MEC has not migrated to the ground surface. The surface clearance will be detector-aided. If MEC or MD is located at the ground surface, it will be removed. Vegetation removal will be conducted, as necessary, to allow access for the detector aided clearance. Following the first surface clearance event, the surface clearances will be performed every five years.
- **Update Land Use Control and Implementation Plan (LUCIP):** The LUCIP is a document used by JB MDL Base planners to determine areas with environmental or munition impacts and restrictions, if any, on the use of property. The Former Practice Mortar Range (MRS FR004) is currently designated as a use caution area in the LUCIP. Under Alternative 2, the existing LUCIP will be updated to in-

clude all LUCs associated with this alternative for Former Practice Mortar Range (MRS FR004).

- **Safety Excavation Permit Program and Construction Support:** JB MDL has a dig permit process that requires construction support during excavation and other intrusive work in the Former Practice Mortar Range (MRS FR004). On-site construction support will be required during future intrusive activities conducted within the MRS (e.g., grading, utility work, earthmoving), and will be conducted in accordance with Department of the Army Pamphlet 385-64 (Army, 2011). This would include a clearance of the area by UXO technicians prior to the intrusive activities being performed and/or real-time observation of the construction area as excavation occurs. The construction support MEC clearance depth will equal or exceed the intrusive depth for the type of activity for which the property may be used.
- **Contractor Control Policies:** Contractors performing intrusive activities at the MRS that have the potential to contact MEC would be required to receive training. The DoD educational message for explosive safety is referred to as the “3Rs”: recognize, retreat, and report any munitions that are encountered while performing maintenance, improvement, or construction activities on the property.
- **Community Education:** This includes the development and distribution of informational materials to provide awareness to property owners/residents and town authorities of the potential presence of MEC at the MRS. The informational materials would be distributed annually to ensure that new residents are notified in a timely manner. In addition, Community Awareness meetings would be held periodically to communicate the LUCs in place at the MRS.

- **Formal Education Sessions:** This would include providing periodic training for site workers to promote awareness on the munitions potentially located at the MRS. This education program would teach users to recognize MEC and to employ the 3Rs should MEC be found.
- **Five-Year Reviews:** Five-year reviews are included to ensure that LUCs remain effective in the future. The purpose is to determine if a response action continues to minimize explosive safety hazards and continues to be protective of human health, safety, and the environment as required by CERCLA. All available data would be analyzed as part of the five-year review process to determine whether additional remedial actions or site controls are required.

Estimated Capital Cost:\$61,264
Estimated Annual O&M Cost:\$21,697
Estimated Present Worth Cost:\$719,697
Estimated Construction Timeframe: 1 year
Estimated Time to Achieve RAOs: Immediately following implementation of the action (1 year)

Alternative 3: MEC Clearance Using Mag and Dig

Alternative 3 include a MEC clearance and LUCs on the 4.12 acre southern portion of MRS FR004. The MEC clearance would be conducted using mag and dig techniques. No MEC removal is required in the remainder of the MRS to the north as no MEC is suspected in this area. Vegetation removal will be conducted, as necessary, to allow access for the detector-aided clearance; however, large old-growth trees (e.g. those greater than 4-inches in diameter at chest height) will not be performed.

The MEC clearance includes:

- MEC detection and positioning using handheld frequency domain electro-magnetic induction (FDEMI) metal detectors,

- MEC removal by hand excavation,
- MEC disposal (if present) by either consolidating the MEC that are acceptable to move for demolition or blow-in-place for MEC that are not acceptable to move.

The analog FDEMI metal detector was selected as the optimal MEC detection technology since it can detect ferrous and non-ferrous items, is a proven technology since it has been successfully used for MEC removal at the MRS, is hand held and easy to use, and is much lower in cost than digital systems. There are some limitations to FDEMI metal detectors, such as they typically cannot detect as deep as digital methods, quality can depend on attentive-ness and hearing ability of the operator, and they do not provide a permanent electronic record of results. However, within the 4.12-acre wooded area of Former Practice Mortar Range (MRS FR004), the FDEMI analog method is preferred since the terrain and vegetation within the wooded area would limit the performance of digital methods.

During MEC detection and positioning, a grid system will be placed over the MRS to track removal progress. MEC, if detected, is anticipated to be on the ground surface and in subsurface soils to depths up to 18 inches below ground surface. It is estimated that there are less than 100 anomalies per acre in the 4.12-acre clearance area. All-metals analog detectors will be utilized as the RI confirmed non-ferrous items (hand grenade fuzes) were present in the MRS.

When detected, the MEC items will be located using real-time kinetic (RTK) Global Positioning System (GPS), or fiducial methods. Advanced forms of GPS, like RTK, can provide locations to centimeter accuracy in real time. The fiducial method consists of digitally marking a data string with an indicator of a known position.

UXO personnel qualified in accordance with DoD Explosives Safety Board Technical Paper 18 will perform UXO operations. Anomalies found will be excavated manually with hand tools. The anomaly will initially be classified as material potentially presenting an explosive hazard first, then material documented as safe (MDAS) or material documented as an explosive hazard. All NMRD will be removed from the excavation for inspection. If any item cannot be classified as MD or NMRD, it will be treated as MEC. Investigated anomalies will be quality-control checked with analog or digital metal detectors to verify complete resolution in accordance with Engineer Manual 200-1-15. Excavations will be backfilled after the quality control check.

If acceptable to move, MEC may be consolidated for disposal within the MRS and if unacceptable to move, it will be blown in place. Disposal operations will follow Engineering Manual (EM) 385-1-97 and an approved explosives safety submission. Exclusion zones will be established, and engineering controls used to protect personnel from blast and fragmentation. Following demolition shots, all material will be inspected and certified as MDAS or subject to further disposal procedures. Before removal from the MRS, each MD or NMRD item will be inspected in accordance with EM 385-1-97 to be certified as MDAS. MDAS will be stored in a sealed container and will be shipped to a processor for final disposition.

A discrete soil sample will be collected after each demolition shot and analyzed for MCs dependent on the type of munition(s) identified.

Under Alternative 3, MEC would effectively be removed from the MRS. However, since the site is a former range and it cannot be proven to 100% certainty that no MEC will remain at the MRS, LUCs are required for the 4.12-acre area. LUCs under this alternative would include a notification of the potential

presence of MEC within the MRS be retained in the Base General Plan and evaluated through the Dig Permit process, which would on-site construction support during intrusive activities conducted within the MRS. Future construction project site workers would be notified the area was a former range and would notify the installation if MEC was found. Finally, since this alternative does not allow for UU/UE, five-year reviews would be conducted.

Estimated Capital Cost:\$294,142
Estimated Annual O&M Cost:\$2,628
Estimated Present Worth Cost:\$372,983
Estimated Construction Timeframe: 1 week
Estimated Time to Achieve RAOs: Immediately following implementation of the action (1 week)

Evaluation of Alternatives

Nine criteria are used to evaluate the different remediation alternatives individually and against each other in order to select a remedy. This section of the PP profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The nine criteria fall into three groups: threshold criteria, primary balancing criteria, and modifying criteria. A description of the purposes of the three groups follows:

- Threshold criteria - requirements that each alternative must meet in order to be eligible for selection.
- Primary balancing criteria - used to weigh major trade-offs among alternatives.
- Modifying criteria - may be considered to the extent that information is available during the FS, but can be fully considered only after public comment is received on the PP.

Summary of Evaluation Criteria for Superfund Remedial Alternatives	
THRESHOLD CRITERIA	
Overall Protectiveness of Human Health and the Environment	determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.
Compliance with ARARs	evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.
PRIMARY BALANCING CRITERIA	
Long-term Effectiveness and Permanence	considers the ability of an alternative to maintain protection of human health and the environment over time.
Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment	evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
Short-term Effectiveness	considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
Implementability	considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
Cost	includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
MODIFYING CRITERIA	
State/Support Agency Acceptance	considers whether the state agrees with the USAF's analyses and recommendations, as described in the RI/FS and PP.
Community Acceptance	considers whether the local community agrees with USAF's analyses and preferred alternative. Comments received on the PP are an important indicator of community acceptance.

1. Overall Protection of Human Health and the Environment

Alternative 1 (No Action) would not be protective of human health and the environment because there would be no actions taken and the current risks to human health and the environment would not change.

Alternative 2 (LUCs) would provide protection of human health and the environment through behavior modification that reduces potential exposure to MEC remaining within the MRS. In addition, periodic surface clearance would be undertaken to ensure that any MEC that has migrated to the surface would be addressed.

Alternative 3 (MEC Clearance Using Mag and Dig) would provide the greatest protection to human health and the environment because all detectable surface and subsurface MEC would be physically removed from the MRS.

2. Compliance With ARARs

ARARs are typically divided into three specific requirements: chemical-specific, location-specific, and action-specific. Table 2, on the following page, summarizes the ARARs identified for this project.

Alternative 1 (No Action) does not have any associated ARARs.

Alternative 2 (LUCs) would comply with the ARARs identified for this project if deemed applicable. The ARARs would apply to future vegetation clearance and MEC disposal activities that occurs as a result of periodic surface clearance/inspections.

Alternative 3 (MEC Clearance Using Mag and Dig) would comply with the ARARs identified for this project if deemed applicable. The ARARs would apply to future vegetation clearance and disposal of MEC resulting from clearance activities.

Table 2. Potential Chemical, Location, and Action-Specific Applicable or Relevant and Appropriate Requirements

Standard, Requirement, or Criteria	Description	Type	Comments on ARARs
Chemical-Specific			
No chemical-specific ARARs have been identified for the alternatives selected.			
Location-Specific			
Migratory Bird Treaty Act, 16 USC 703(a)	Requires protection of migratory birds during nesting seasons.	Federal	Applicable if vegetation removal activities will occur outside the nesting seasons for migratory birds. Vegetation removal cannot take place between April 15 and August 31.
Endangered and Threatened Wildlife and Plants: 4(d) Rule for the Northern Long-Eared Bat, 50 CFR §17.40(o)(1)(c) and 17.40(o)(2)(ii)	Prohibits purposeful taking of northern long-eared bats throughout the species’ range, except in instances of removal of hazardous trees for protection of human life and property.	Federal	Applicable to vegetation clearance activities. Tree removal will not be performed for this action.
Action-Specific			
Environmental Performance Standards, Subpart X –Miscellaneous Units: 40 CFR 264.604	Miscellaneous units will be required to be located, designed, constructed, operated, maintained, and closed in a manner that will prevent any release that may have adverse effects on human health and the environment.	Federal	Relevant and Appropriate if actions require treatment of explosives by open detonation.

Notes: ARAR = applicable or relevant and appropriate requirements; MRS = munitions response site
 CFR = Code of Federal Regulations; USC = United States Code

3. Long-Term Effectiveness and Permanence

Alternative 1 (No Action) would not be effective in the long-term because no actions are taken to address the potential MEC hazards. The RAO would not be met as potential MEC exposure hazards would still be present in the MRS, and controls would not be implemented to maintain protection of human health and the environment.

Alternative 2 (LUCs) would be effective long-term if enforced by the USAF. Periodic surface clearances (every five years) and construction support would be required and CERCLA five-year reviews would be conducted to assess the site condition and the

protectiveness to human health and the environment.

Alternative 3 (MEC Clearance Using Mag and Dig) would be effective and permanent at the MRS since any MEC items found within the MRS would be removed. The RAO of minimizing exposure to potential MEC while maintaining the current and future land uses would be met. If no MEC is found during mag and dig, no further action would be performed at this site other than notification of the potential presence of MEC within the Installation Development Plan, LUCIP, and Base’s dig permit process. Five year reviews will also be performed to assess the site condition and confirm that the LUCS

in place are protective of human health and the environment.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment

Alternative 1 (No Action) does not provide any treatment to reduce toxicity, mobility or volume (TMV); therefore, if implemented, there would be no reduction of the number and density of MEC potentially present at the MRS. As a result, this alternative does not meet this criterion.

Alternative 2 (LUCs) does not involve treatment and, therefore, would not provide a reduction in TMV through treatment. However, any future MEC identified within the MRS during clearances, inspections, and construction support would be destroyed, providing a small reduction of MEC at the MRS. Therefore, Alternative 2 would only meet this criterion to the limited extent that MEC were found and addressed in the future.

Alternative 3 (MEC Clearance Using Mag and Dig) would reduce the TMV of MEC present within the MRS through detection, removal (treatment through detonation), and disposal.

5. Short-Term Effectiveness

Alternative 1 (No Action) will not pose any additional risks to the community, the workers, or the environment as a result of the implementation of this alternative since no actions will be taken.

Alternative 2 (LUCs), There are no short-term risks to the community or workers associated with the development of educational materials. There would be an increased risk to workers during the periodic surface clearances and construction support activities. These risks would be mitigated through the use of physical controls, evacuations, road closures, and other safety measures, as appropriate.

Alternative 3 (MEC Clearance Using Mag and Dig) poses an increased risk for workers to encounter potential residual MEC during the removal. However, these risks would be mitigated through the use of physical controls, evacuations, road closures, and other safety measures, as appropriate.

6. Implementability

Alternative 1 (No Action) does not involve any activities; therefore, this alternative would be technically and administratively feasible.

Alternative 2 (LUCs) is considered technically and administratively feasible, and services and materials are readily available to implement this alternative.

Alternative 3 (MEC Clearance Using Mag and Dig) would use proven technologies, that, while somewhat more difficult than implementing LUCs alone, are easily implementable at the MRS.

7. Cost

Present Worth Cost for the alternatives are summarized in Table 3.

Table 3. Total Present Worth Cost Summary for Former Practice Mortar Range (MRS FR004)

Alternatives		
1: No Action	2: LUCs	3: MEC Clearance Using Mag and Dig
\$0	\$719,697	\$372,983

Notes: LUC = land use controls
MEC = munitions of explosive concern

8. State/Support Agency Acceptance

Based on their concurrence with the RI and FS, NJDEP and USEPA acceptance of this document is anticipated. Final state and support agency acceptance will be evaluated in the ROD following agency comments on the PP.

9. Community Acceptance

Community acceptance of the preferred alternative will be evaluated in the ROD following the public comment period on the PP. All community input will be incorporated into the ROD, which formalizes the selection of remedy for the site.

Summary of Preferred Alternatives

Alternative 3 is the preferred alternative to address MEC at Former Practice Mortar Range (MRS FR004). Alternative 3 would include MEC clearance across the 4.12-acre southern portion of the MRS using mag and dig techniques and implementation of LUCs for the 4.12-acre area. While Alternative 3 would effectively remove MEC from the MRS, it would be retained in the Base General Plan and evaluated through the Dig Permit process since the site is a former range. Future construction project site workers would be notified the area was a former range and to notify the installation if MEC was found. Five year reviews would also be conducted to ensure that the administrative LUCs in place continue to be protective.

Alternative 3 meets the RAO for Former Practice Mortar Range (MRS FR004) of mitigating personnel and visitor contact with suspected MEC by identifying and removing suspected MEC. This alternative is protective of human health and the environment, complies with ARARs, is effective in the short and long term, and is implementable.

The USAF believes the preferred alternative of MEC Clearance Using Mag and Dig for Former Practice Mortar Range (MRS FR004) meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The USAF expects the preferred alternatives to satisfy the requirements of CERCLA by (1) being protective of

human health and the environment, (2) complying with ARARs, and (3) being cost-effective. The preferred alternative could change in response to public comment or new information.

Community Participation

The USAF and NJDEP provide information regarding the cleanup of Former Practice Mortar Range (MRS FR004) to the public through public meetings, the AR file for the site, and announcements published in the *Burlington County Times* and the *Pine Barrens Tribune*. The USAF and the NJDEP encourage the public to gain a more comprehensive understanding of the site and the investigation activities that have been conducted.

The public comment period for this PP extends from September 20 through October 19, 2021. Comments must be postmarked no later than October 19, 2021. A virtual public meeting will be held on September 30, 2021. USAF will review and consider all public comments before preparing the ROD for Former Practice Mortar Range (MRS FR004). A copy of all public comments and USAF's responses will be included in the responsiveness summary section of the ROD. The AR file for can be accessed at <https://ar.afcec-cloud.af.mil/> and documents are available at the Burlington County Public Library, 5 Pioneer Boulevard, Westhampton, New Jersey. For additional information on Former Practice Mortar Range (MRS FR004) or to submit written comments on this PP, please contact:

James Richman
Remediation Program Manager
AFCEC/CZO, 787 CES/CEIE
2403 Vandenberg Avenue
Joint Base McGuire-Dix-Lakehurst,
New Jersey 08641
Phone: (609) 754-2267

Glossary of Terms

Term	Definition
Applicable or relevant and appropriate requirements (ARARs)	<p>Applicable requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site.</p> <p>Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.</p>
Administrative Record (AR)	A compilation of all documents relied upon to select an alternative for a remedial action.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, otherwise known as the Superfund Statue)	A federal law that addresses the investigation and cleanup of releases of hazardous substances or pollutants or contaminants from facilities into the environment. This law also establishes remedy selection criteria and mandates the creation of decision documents to memorialize selected remedies.
Contaminant of Potential Concern (COPC)	Contaminants that were identified in the RI that are potentially site related and may require action.
Feasibility Study (FS)	This CERCLA document develops and evaluates options for remedial action. The FS emphasizes data analysis and is generally performed concurrently in an interactive fashion with the RI, using data gathered during the RI.
Human Health Risk Assessment (HHRA)	A process that evaluates the likelihood that adverse health effects are occurring or may occur as the result of human exposure to one or more stressors through one or more exposure pathways. In CERCLA actions, HHRA specifically means a qualitative and/or quantitative evaluation of actual or potential impacts of restoration site contaminants on human health. There are several classes of human receptors, based on age or gender, and include special populations such as those with compromised immune systems. For risk to human health to exist, the contaminant must have the ability to cause an adverse effect and there must be a completed exposure pathway (e.g., ingestion, inhalation) over a period long enough and at a high enough level to cause an adverse effect.

Term	Definition
Land Use Controls (LUCs)	Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, contaminated property to reduce risk to human health and the environment. Physical mechanisms encompass a variety of engineered remedies to contain or reduce contamination and physical barriers to limit access to property, such as fences or signs. The legal mechanisms are imposed to ensure the continued effectiveness of land use restrictions imposed as part of a remedial decision. Legal mechanisms include restrictive covenants, equitable servitudes, and deed notices. Administrative mechanisms include notices, adopted local land use plans and ordinances, construction permitting, or other existing land use management systems that may be used to ensure compliance with use restrictions.
Land Use Control and Implementation Plan (LUCIP)	The specific post-ROD document where the LUC implementation details are designated.
Military Munitions Response Program (MMRP)	The MMRP was created by Congress in 2001, as a sister program to the Installation Restoration Program (IRP) under the Defense Environmental Restoration Program (DERP). This revision to DERP tasked the Department of Defense (DoD) to develop and maintain an inventory of defense sites which are known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC); create a new prioritization system for the sites; and establish a funding program element for the program.
Munitions Constituents (MC)	Any materials originating from unexploded ordnance, discarded military munitions, 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., penetrators, projectiles, shell casings, fins) remaining after munitions use, demilitarization or disposal. MD is confirmed inert and free of explosive hazards by qualified personnel.
Munitions and Explosives of Concern (MEC)	Military munitions that may pose unique explosives safety risks, including: a) unexploded ordnance, b) discarded military munitions, or c) explosive MC (e.g., trinitrotoluene) present in high enough concentrations to pose an explosive hazard.
Munitions Response Area (MRA)	Any area on a defense site that is known or suspected to contain UXO, discarded military munitions, or MC. Examples include former ranges and munitions burial areas. A MRA is comprised of one or more munitions response sites.
Munitions Response Site (MRS)	A discrete location that is known to require a munitions response.

Term	Definition
Preferred Alternative	The remedial action that, when compared to other potential remedial actions, was determined to best meet the CERCLA evaluation criteria and is proposed for implementation at a site.
Proposed Plan (PP)	CERCLA document that summarizes evidence to support the selection of a preferred remedial alternative. The document is intended for public distribution to solicit comments on the proposed action(s).
Record of Decision (ROD)	The CERCLA decision document that presents the cleanup remedy selected by the USAF after consultation with regulatory agency(ies).
Remedial Action Objective (RAO)	Objectives established to guide development of alternatives and focus the comparison of acceptable remedial action alternatives. RAOs also assist in clarifying the goal of minimizing risk and achieving an acceptable level of protection for human health and the environment.
Remedial Investigation (RI)	A CERCLA process to determine the nature and extent of the problem presented by a contaminant release. The RI includes sampling, monitoring, and gathering of sufficient information to determine the necessity for remedial action.
Site Inspection (SI)	The second stage of a site assessment under CERCLA. SIs are performed at sites that receive a further action recommendation after the preliminary assessment (PA), and build on the PA information. SIs typically include sampling to identify hazardous substances, releases, and targets exposed to actual contamination and help characterize sites that pose the greatest threats to human health and the environment.
Screening Level Ecological Risk Assessment (SLERA)	A simplified risk assessment that can be conducted with limited data; where site-specific information is lacking, assumed values should consistently be biased in the direction of overestimating risk. The need for conservatism is to provide a defensible conclusion that negligible ecological risk exists or that certain contaminants and exposure pathways can be eliminated from consideration
Unexploded Ordnance (UXO)	Military munitions that: (a) Have 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, installations, personnel, or material; and (c) Remain unexploded either by malfunction, design, or any other cause.
Unlimited Use/Unrestricted Exposure	Unlimited Use/Unrestricted Exposure generally is the level of cleanup at which all exposure pathways present an acceptable level of risk for all land uses.

