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REPLY TO
ATTENTION OF:

April 24, 2013

Environmental Division

Mr. John Burchette (3HS11)
NPL/BRAC/Federal Facilities Branch
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Burchette:

This letter serves as notification that the April 2013 *Fort George G. Meade Former Mortar Range (Operable Unit 40/FGGM-003-R) Remedial Design* has been finalized. United States Environmental Protection Agency (USEPA) and Maryland Department of the Environment (MDE) responded with no comments on the Draft Final RD on April 3, 2013 and April 15, 2013, respectively. Copies of the final cover and updated compact disk have also been furnished to Mick Butler (Fort George G. Meade), Francis Coulters (U.S. Army Environmental Command), Dr. Elisabeth Green (MDE), Jeffrey Williams (Department of Defense), and the Fort George G. Meade Restoration Advisory Board.

If you have any questions, please feel free to contact Ms. Denise Tegtmeyer at (301) 677-9559 or me at (301) 677-9365.

Sincerely,

A handwritten signature in black ink that reads "Paul V. Fluck".

Paul V. Fluck, PG, REP
Program Manager, Installation Restoration Program
Directorate of Public Works-Environmental
Division

Enclosure



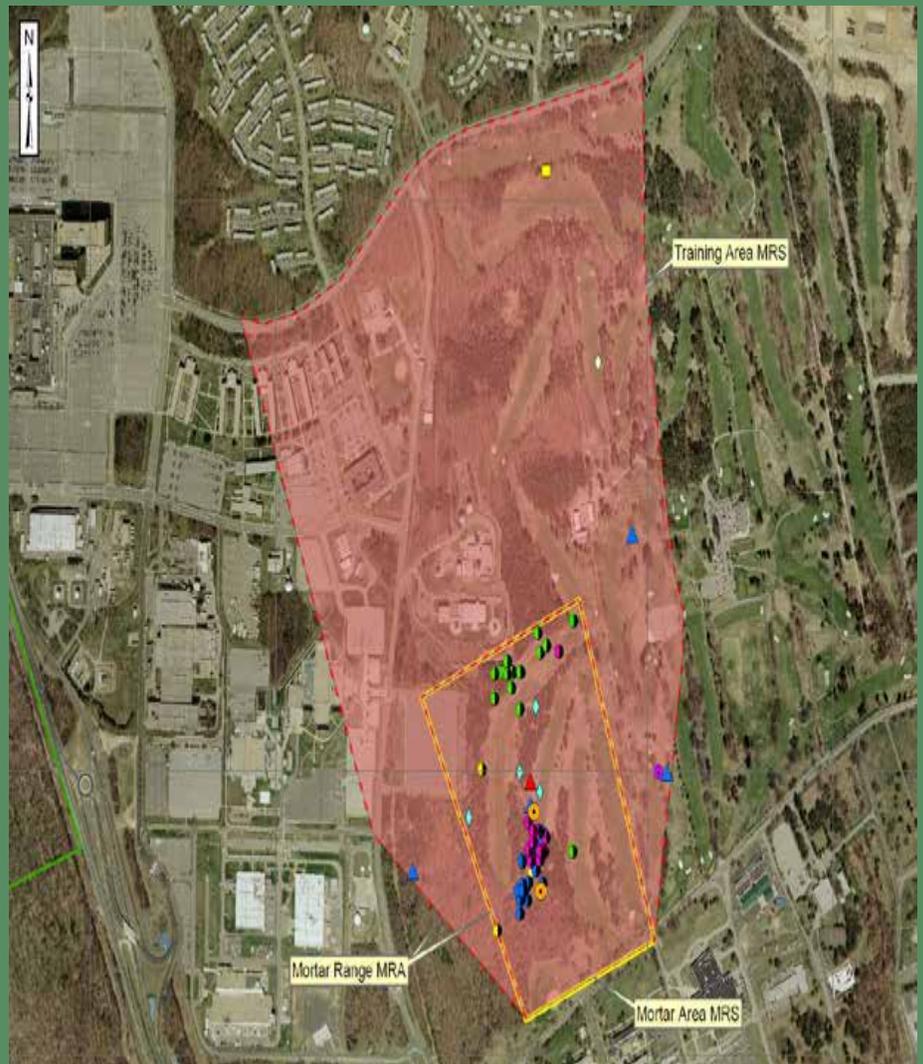
Imagine the result



Final Remedial Design Former Mortar Range Munitions Response Area

Fort George G.
Meade,
Maryland

April 2013





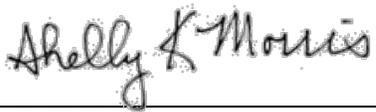
Imagine the result

Final Remedial Design

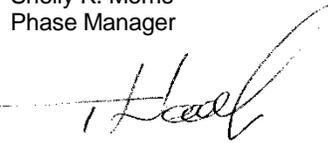
Former Mortar Range Munitions Response Area

Fort George G. Meade, Maryland

April 2013



Shelly K. Morris
Phase Manager



Tim Llewellyn
Project Manager

Remedial Design

Former Mortar Range Munitions
Response Area
Fort George G. Meade, Maryland

Prepared for:
U.S. Army

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Date:
April 2013

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Table of Acronyms and Abbreviations

| | |
|--------|--|
| Army | United States Army |
| cal | caliber |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act (1980) |
| DoD | U.S. Department of Defense |
| EC | Engineering Control |
| EMO | Environmental Management Office |
| EOD | Explosive Ordnance Disposal |
| FGGM | Fort George G. Meade |
| GIS | Geographical Information System |
| HASP | Health and Safety Plan |
| IC | Institutional Control |
| LTM | Long-Term Management |
| LUC | Land Use Control |
| MD | Maryland |
| MDE | Maryland Department of the Environment |
| MEC | Munitions and Explosives of Concern |
| mm | millimeter |
| MPPEH | Material Potentially Presenting an Explosive Hazard |
| MRA | Munitions Response Area |
| MRS | Munitions Response Site |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| RD | Remedial Design |
| RI | Remedial Investigation |
| ROD | Record of Decision |
| SARA | Superfund Amendments and Reauthorization Act (1986) |
| SI | Site Inspection |
| U.S. | United States |
| USAEC | U.S. Army Environmental Command |
| USEPA | U.S. Environmental Protection Agency |
| UXO | Unexploded Ordnance |

Executive Summary

The Selected Remedy for the former Mortar Range Munitions Response Area (MRA) at Fort George G. Meade (FGGM) is land use controls (LUCs) with long term management (LTM), per the Record of Decision (ROD), signed September 27, 2012. This Remedial Design (RD) presents a description of the LUCs with LTM that will be implemented to address munitions and explosives of concern (MEC) hazards at the former Mortar Range MRA. Specific procedures for reporting on and enforcing the LUCs to assure that land use remains safe and is protective of human health and the environment are also included in this report. The RD is inclusive of both the Mortar Area and the Training Area Munitions Response Sites (MRSs) that make up the former Mortar Range MRA.

The objectives of the LUCs chosen as the Selected Remedy at the former Mortar Range MRA are the following:

- Maintain a land use that protects potential human receptors from risks associated with the MEC / Material Potentially Posing an Explosive Hazard (MPPEH);
- Educate current and future site users about the potential risks at the site through training programs and signage;
- Employ on-call construction support during all intrusive construction projects, and employ anomaly avoidance procedures for all other intrusive activities;
- Identify and remove MEC/MPPEH/munitions debris that surface due to natural forces, such as frost heave and erosion, from the site; and
- Prohibit residential land use.

Based on past investigations, MEC/MPPEH risks exist at both the Mortar Area MRS and the Training Area MRS on the former Mortar Range MRA. However, there is a low probability of encountering MEC/MPPEH since only small arms ammunition (not presenting a unique explosive hazard), munitions debris, and evidence of only training items with no explosive configuration were identified during the 2011 Remedial Investigation.

The Selected Remedy for the former Mortar Range MRA consists of the implementation of LUCs with LTM to control explosive risks from MEC/MPPEH and to mitigate the potential physical hazard posed to current and future site users. LUCs generally include physical and/or administrative/legal mechanisms that minimize the potential for exposure by limiting land use. The Selected Remedy can effectively control exposure to MEC/MPPEH by restricting access to the former Mortar Range MRA.

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Under the Selected Remedy, existing LUCs, including institutional controls (ICs) and engineering controls (ECs) at the Mortar Area MRS and the Training Area MRS, will be maintained and enhanced. ICs are administrative measures put in place to restrict human activity in order to control future land use. ECs include a variety of engineered or constructed barriers to control human activity to restrict access to MEC/MPPEH.

Most of the required ICs are already in place as elements of required procedures at FGGM. These elements include requirements to obtain dig permits from the Directorate of Public Works for any intrusive activity at FGGM; Master Plan Regulations; and the FGGM Geographical Information System (GIS) Database. Through the ROD and this LUC RD, these ICs are incorporated as required procedures under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) at the former Mortar Range MRA. The ICs will be supplemented by the requirement for on-call construction support for all intrusive construction projects, and anomaly avoidance procedures for any other intrusive activity. Residential land use at the former Mortar Range MRA will be prohibited as part of the LUCs. This prohibition will be incorporated into the Installation Master Plan and included in the FGGM GIS Database.

ECs, including signage (warning signs) specific to both the Mortar Area MRS and the Training Area MRS, will be installed. These warning signs will describe the restrictions on site use at key locations within each of the MRSs. Annual inspections of each of the MRSs will be performed to confirm that all on-site LUCs (for example, MRS-specific signage) are in good condition and to confirm that the land use of the site has not changed. An annual instrument-assisted surface sweep will ensure that no MEC, MPPEH, or munitions debris has been exposed through erosion or frost heave.

The annual land use certifications and surface sweeps will be used during the CERCLA five-year review process to verify and document that continuing land use remains unchanged and the remedy remains protective. Additionally, the remedial design specifies notification requirements to the United States Environmental Protection Agency should a change in land use occur or be planned. The Army owns the property, and there are no plans to close FGGM in the future.

A pit containing several thousand expended 0.22-caliber (cal) short cartridge casings was identified on the Training Area MRS during the Remedial Investigation fieldwork. Prior to implementing the Selected Remedy, the expended 0.22-cal short cartridge casings will be recovered and recycled as scrap metal or disposed of properly. This will be done as a preliminary maintenance activity to prepare the Training Area MRS for the LUC program.

1. Introduction

ARCADIS U.S., Inc. has been retained by the United States (U.S.) Army Environmental Command (USAEC) to support the Installation Restoration Program (IRP) and Military Munitions Response Program activities at Fort George G. Meade (FGGM), located in Anne Arundel County, Maryland (MD). This work is being conducted under a Performance Based Contract associated with the environmental restoration program at FGGM. The full scope of services for this contract is defined in Contract W91ZLK-05-D-0015: Task 0005.

The Record of Decision (ROD) for the former Mortar Range Munitions Response Area (MRA), signed September 27, 2012, states that the Selected Remedy for the former Mortar Range MRA is the enforcement of land use controls (LUCs) with long term management (LTM) to address munitions and explosives of concern (MEC) hazards at the former Mortar Range MRA. LUCs are defined broadly as legal measures that limit human exposure by restricting activity on, use of, and access to properties with residual contamination. The LTM will include annual inspections of the MRA and surface sweeps to ensure that no Munitions and Explosives of Concern (MEC)/ Material Potentially Posing an Explosive Hazard (MPPEH) or munitions debris has been exposed through erosion or frost heave. These annual inspections will be used during the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) five-year review process to verify and document that the remedy remains protective. . The ROD addresses both the Mortar Area and the Training Area Munitions Response Sites (MRSs) that make up the former Mortar Range MRA. This Remedial Design (RD) presents a description of the LUCs that will be implemented, and the specific procedures for reporting on and enforcing the LUCs to assure that land use remains safe and protective of human health and the environment. The U.S. Army (Army) will be responsible for maintaining the effectiveness of the LUCs. The location of the former Mortar Range MRA is provided in **Figure 1-1**.

LUCs at the former Mortar Range MRA will control or eliminate the exposure pathway between receptor populations and potential MEC/ Material Potentially Presenting an Explosive Hazard (MPPEH) through institutional controls (IC) and engineering controls (EC). ICs are administrative measures put in place to restrict human activity in order to control future land use. ECs include a variety of engineered or constructed barriers to control human activity to restrict access to MEC/MPPEH. The Selected Remedy also involves performing any site maintenance required to ensure the protectiveness of the remedy, including sign maintenance, removal of any MEC items found during the annual inspections or as needed, and correcting any deficiencies noted during five-year reviews.

Under the Selected Remedy, existing LUCs, including ICs and ECs at the Mortar Area MRS and the Training Area MRS, will be maintained and enhanced. The LUCs are incorporated into the Installation Master Plan and included in the FGGM Geographical Information System (GIS) Database.

Most of the required ICs are already in place as elements of required procedures at FGGM. These elements include requirements to obtain dig permits from the Directorate of Public Works for any intrusive activity at FGGM; Master Plan Regulations; and the FGGM GIS Database. Through the ROD and this LUC RD, these ICs are incorporated as required procedures under CERCLA at the former Mortar Range MRA. The ICs will be supplemented by the requirement for on-call construction support for all intrusive construction projects, and anomaly avoidance procedures for any other intrusive activity. Residential land use at the former Mortar Range MRA will be prohibited as part of the LUCs. This prohibition will be added to the Installation Master Plan.

The LUCs described in this RD are applicable to both the Mortar Area and the Training Area MRSs that make up the former Mortar Range MRA. **Figure 1-1** depicts the site boundaries of the former Mortar Range MRA.

The Selected Remedy was chosen based on protection of human health and the environment and to effectively address the MEC/MPPEH risks presented at the site.

1.1 Report Organization

This report consists of the following sections:

- Executive Summary, provides an overview of the RD report;
- Section 1. Introduction, provides project scope, objectives, and report organization;
- Section 2,.Former Mortar Range MRA Description, provides a physical location, description, and history of the site;
- Section 3. Land Use Control Performance Objectives, describes the remedial action objectives and LUC performance objectives for the former Mortar Range MRA ROD;
- Section 4. Land Use Controls with Long Term Management, describes the types of LUCs and LTM that will be implemented at the site;
- Section 5. Health and Safety, describes the health and safety procedures developed for the site; and,
- Section 6. References, lists all documents referenced in this report.

2. Site Location, History, Description

2.1 Installation Overview

FGGM is located in Anne Arundel County, MD, almost midway between the cities of Baltimore, MD, and Washington, District of Columbia. FGGM lies approximately four miles east of Interstate 95 and immediately east of the Baltimore-Washington Parkway (MD Route 295), between MD Routes 175 and 32 (**Figure 1-1**). FGGM is located near the communities of Odenton, Laurel, Columbia, and Jessup. Following implementation of the requirements of the 1988 Base Realignment and Closure Act, the installation covers approximately 5,100 acres. The current installation boundaries encompass the area previously referred to as the cantonment area, which is used for administrative, recreational, and housing facilities. FGGM currently contains approximately 65.5 miles of paved roads, 3.3 miles of secondary roads, and about 1,300 buildings.

2.2 Former Mortar Range MRA Location and History

The former Mortar Range MRA is a former range and training area located in the west-central portion of FGGM (**Figure 1-1**). The former Mortar Range MRA (FGGM-003-R) is comprised of the 62-acre Mortar Area (FGGM-003-R-01) and the 260-acre Training Area (FGGM-003-R-02) MRSs.

Based on the 2007 Site Inspection (SI) and the 2011 Remedial Investigation (RI) Reports, the site was used as a practice/training mortar range beginning in the early 1920s (Malcolm Pirnie, 2007). Training was assumed to have ended in the 1940s based on munitions debris found during the RI (ARCADIS/Malcolm Pirnie, 2011).

During the RI field activities, no MEC (except small arms ammunition not presenting a unique explosive hazard) were found on the MRA. However, a variety of munitions debris from 60 and 81 millimeter (mm) training mortar rounds, 3-inch Stokes training mortar rounds, a training landmine, flares, practice grenades, a dummy grenade, discarded small arms ammunition, and casings from expended small arms ammunition were found. The training mortar rounds, identified during the RI MEC field activities, were concentrated in an area corresponding to the original location of the former Mortar Range shown on maps from the 1920s. An analysis of historical aerial photographs, performed during the RI, confirmed the Mortar Area MRS boundary. Additionally, a number of training areas within the former Mortar Range MRA were observed and the former Mortar Range MRA boundary was determined to extend east to Taylor Avenue beyond the boundary established during the SI. As a result of these findings, the boundary was revised and the overall acreage of the former Mortar Range MRA was increased from a total of 291 acres to 322 acres. Based on the evidence of two distinct historical uses as a general troop training area and a training range, the former Mortar Range MRA (FGGM-003-R) was divided into the 62-

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Former Mortar Range
Munitions Response Area

acre Mortar Area (FGGM-003-R-01) and the 260-acre Training Area (FGGM-003-R-02) MRSs.

The majority of the former Mortar Range MRA had been used as a golf course since 1956. The northwestern portion of the site is a secure U.S. Department of Defense (DoD) facility and is developed with buildings and associated paved surfaces (i.e., roadways, parking lots, and walkways). As of early 2012, construction of additional DoD buildings began on the area that had been the golf course which is no longer in use.

Based on discussions at the June 12, 2008 Technical Project Planning meeting and subsequent planning by the DoD, no future residential development is planned within the MRA boundary. Based on the 2011 Real Property Master Plan Update, the MRA is projected for future professional and industrial use (Atkins, 2011). Construction as part of DoD expansion is currently underway for the majority of the MRA and its surroundings. A portion of the area will also be retained for open space use and a forested area.

3. Land Use Control Performance Objectives

As stated in the former Mortar Range MRA ROD (ARCADIS/Malcolm Pirnie, 2012), the remedial action objective for the site is to:

- Control and minimize the potential for direct physical contact of receptors with possible MEC at the surface and within the subsurface.

The LUC performance objectives for the former Mortar Range MRA are as follows:

- Maintain a land use that protects potential human receptors from risks associated with the MEC / MPPEH;
- Educate current and future site users about the potential risks at the site through training programs and signage;
- Employ on-call construction support during all intrusive construction projects, and employ anomaly avoidance procedures for all other intrusive activities;
- Identify and remove MEC/MPPEH/munitions debris that surface due to natural forces, such as frost heave and erosion, from the site; and
- Prohibit residential land use.

3.1 Regulatory Standards

This RD is being submitted as directed by the ROD for the former Mortar Range MRA, signed September 27, 2012. The Selected Remedy was selected in accordance with CERCLA, and to the extent practicable, the relevant and appropriate provisions of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

3.2 Permitting Requirements

There are no additional environmental permit requirements associated with the implementation of LUCs.

4. Land Use Controls with Long Term Management

The purpose of this section of the RD for the former Mortar Range MRA is to provide information on how the LUC portion of the remedy selected in the ROD for this site will be implemented and maintained. This section discusses the LUCs that will be established to protect public health and welfare from explosive hazards from MEC and MPPEH. The LUCs will minimize or eliminate hazard by controlling or eliminating the exposure pathway between receptor populations and potential MEC/MPPEH at the former Mortar Range MRA. The area of applicability of LUCs at the former Mortar Range MRA is presented on **Figure 4-1**.

Under the Selected Remedy, existing LUCs at the sites will be maintained and enhanced. Both ICs and ECs will be used. The LUCs are incorporated into the installation's Master Plan and included in the FGGM GIS Database.

Based on the 2011 Real Property Master Plan Update, the MRA is intended for future professional and industrial use (Atkins, 2011); residential land use will be prohibited by this CERCLA action. Construction as part of the expansion of the secure DoD facility is currently underway for the majority of the MRA and its surroundings. A portion of the area will also be retained for open space use and a forested area.

The annual inspections and reporting requirements described herein will become effective immediately upon approval of this RD by the U.S. Environmental Protection Agency (USEPA) and concurrence by Maryland Department of the Environment (MDE).

Based on the nature of the contamination (MEC/MPPEH), a residual hazard will always remain on the MRA; therefore, the Selected Remedy and all the applicable requirements will remain in perpetuity.

4.1 Site Preparation

A pit containing several thousand expended 0.22-caliber (cal) short cartridge casings was identified on the Training Area MRS during the RI fieldwork. Prior to implementing the Selected Remedy, the expended 0.22-cal short cartridge casings will be recovered and recycled as scrap metal or disposed of properly. This will be completed as a preliminary maintenance activity to prepare the Training Area MRS for the LUC program. This pit is shown on **Figure 4-1**.

4.2 Land Use Controls and Remedy Implementation Actions

This section discusses the responsibilities of the Army with respect to LUC implementation, inspections, reporting, and enforcement.

The Army will be responsible for the following LUCs and Remedy Implementation Actions:

- a. Updates to Installation Master Plan;
- b. Maintenance of the FGGM GIS Database;
- c. Access restrictions;
- d. Revisions of the dig permit process to require on-call construction support;
- e. Installation and maintenance of signage;
- f. Education programs for site users regarding the potential presence of MEC/MPPEH;
- g. Annual site inspections and surface sweeps;
- h. Compliance reporting;
- i. CERCLA 5-Year Reviews; and,
- j. USEPA/MDE Notifications.

4.2.1 LUC Implementation

The following LUC implementation actions will be undertaken by the Army in order to ensure that the LUC performance objectives listed in Section 3 of this RD for the former Mortar Range MRA are met and maintained.

FGGM has many safeguards in place to ensure protection of the environment and the health and safety of Installation personnel and the public. The four general categories of ICs evaluated or already in use at FGGM, and which provide layers of protection, are as follows: governmental controls, proprietary controls, enforcement and permitting, and informational devices, which assist with the management and implementation of LUCs (USEPA, 2000; USEPA, 2010). These elements include requirements to obtain dig permits (from the Directorate of Public Works for any intrusive activity at FGGM or from the secure DoD facility for intrusive activities on that property), Master Plan Regulations, and the FGGM GIS Database. These controls, detailed below, have been developed with a consideration of all reasonably anticipated future land uses at FGGM, including administrative and industrial military operations and greenways.

ICs will be supplemented by revising the established dig permit process to require on-call construction support for all intrusive construction and excavation projects and anomaly avoidance procedures for any other intrusive activities occurring on the MRA. Additionally, an education program will be initiated as part of an orientation program for site workers, users, and emergency responders at the MRA.

4.2.1.1 Updates to Installation Master Plan

The Army issued a regulation, Master Planning for Army Installations, Army Regulation (AR) 210-20, on July 13, 1987, updating an earlier regulation dated January 26, 1976. AR 210-20 establishes the requirement for an installation master plan and planning board to specify procedures for developing, submitting for approval, updating, and implementing the installation master plan. This regulation provides for comprehensive planning at Army installations and not only allows, but requires, incorporation of existing land use requirements into the installation's master plan.

The master plan regulations provide a framework for comprehensive planning through the use of component plans, which include, but are not limited to, the following:

- Natural Resources Plan;
- Environmental Protection Plan;
- Installation Layout and Vicinity Plan;
- Land-use Plan; and,
- Future Development Plan.

The overall objective is to provide each installation with a master plan through the integration of each component plan into the installation master plan. The component plans form a series of narrative, tabular, and graphic plans. Their integration into an installation master plan provides many benefits, as outlined in AR 210-20, including the mechanism for ensuring that installation projects are sited to meet operational, safety, physical security, and environmental requirements.

The planned LUCs and their respective locations will be added to the installation master plan. The planned future development will be added as these decisions are made.

4.2.1.2 FGGM GIS Database

FGGM maintains a comprehensive installation GIS Database. The database includes descriptions of existing land and environmental restrictions, locations of known contamination, and locations of MRAs/MRSs. This information will allow future end-

users and tenants of FGGM to make rapid and accurate inquiries regarding sites within FGGM and will specify the LUCs in-place at specific locations.

A GIS layer containing the LUCs planned for the MRA, along with their respective locations, has been created and is provided in Appendix A. This GIS layer will be added to the FGGM GIS database, in accordance with Army Regulation 200-1, Section 12-4. Building restrictions, MEC concerns, and many other lines of inquiry will quickly be available to support the decision-making process. If additional MEC/MPPEH/munitions debris is found at the MRA, FGGM or designee will add the resultant data to the FGGM GIS Database. Land use will also be updated in the FGGM GIS Database. Other applicable layers may also be added to the FGGM GIS Database, as necessary.

4.2.1.3 FGGM Access Regulations

Access regulations are in place at FGGM. Although not closed to the public, access to FGGM is strictly controlled. Trespassing and unauthorized activities on FGGM are prohibited. As of early 2012, construction of additional DoD buildings began on the former golf course. This area will be fenced off from the rest of FGGM and will have additional high levels of security, similar to the existing secure DoD buildings.

4.2.1.4 Dig Permit Process

Currently, dig permits must be obtained from the Directorate of Public Works prior to any intrusive activity at FGGM or from the secure DoD facility for intrusive work on that property. Due to the potential MEC/MPPEH hazards that exist at the former Mortar Range MRA, the dig permit process will be revised to require on-call construction support¹ for all intrusive construction and excavation projects and anomaly avoidance² procedures for any other intrusive activities occurring on the MRA. The on-call

¹ On-call support is necessary based on the low probability for encountering munitions, in accordance with Department of Army Pamphlet 385-64. Explosive Ordnance Disposal (EOD) or Unexploded Ordnance (UXO)-qualified personnel will be available to respond if construction personnel encounter or suspect they have encountered MEC. These personnel can either respond from offsite when called or be onsite and available to provide required construction support.

² Anomaly avoidance techniques may be employed on properties known or suspected to contain MEC to avoid contact with potential surface or subsurface MEC to allow entry to an area for the performance of required operations (for example, cultural resource studies, installation of fence posts, installation of environmental monitoring wells). Site workers will be escorted at all times by an EOD or UXO-qualified technician. If anomalies or MEC are detected, the UXO escort will halt escorted personnel in place, select a course around the item, and instruct escorted personnel to follow (Engineering Pamphlet 75-1-2).

construction support and anomaly avoidance requirements provide for the protection and safety of human health while intrusive activities are being conducted.

4.2.2 Engineering Controls

4.2.2.1 Installation and Maintenance of Signage

Warning signs will be installed throughout the MRA. The signs will be installed throughout the site near likely egresses to undeveloped areas (forested and undeveloped) to warn of potential MEC risk. **Figure 4-1** shows the potential areas where signs will be placed. These areas are based on the current understanding of future site layout after construction. The placement of the signs is subject to change based on actual site development. The approximate size of the signs will be 12 inches by 12 inches. An example is provided in **Appendix B**.

4.2.2.2 Education Programs

As mentioned previously, construction as part of DoD expansion is currently underway on a majority of the MRA. As with any large construction project, an extensive health and safety program was developed and is being strictly enforced on the MRA during the construction activities. On-call construction support has been implemented as part of the health and safety program for the project. Additionally, construction workers are educated and reminded of potential hazards associated with MEC/MPPEH that may remain on the MRA as part of the overall health and safety program and during health and daily safety tailgate meetings. This includes Unexploded Ordnance (UXO) awareness and basic identification.

As part of the remedy implementation, educational materials and guidelines have been developed and an education program will be initiated (see **Appendix C**). Educational guidelines provide procedures for administering the educational program (e.g., responsible administrators, applicability, timelines etc.) and will establish the procedures for the educational program.

The educational materials that have been developed include an educational fact sheet and a brief slide presentation to be viewed as part of a site user/worker orientation program. The educational program will be provided to all site maintenance personnel, security workers, and building managers. Annual training will also be provided to FGGM Department of Public Works employees who handle dig permits to ensure they fully understand the requirements. Office workers in the secure DoD facility will have

the training program posted on the internal Intranet. The educational materials contain the following:

- A brief history of the site use which will provide context;
- Images and descriptions of the types of MEC/MPPEH that may be encountered;
- Safety recommendations for site users/workers;
- A discussion of LUCs including dig permit requirements; and
- Instructions on actions to be taken if MEC/MPPEH is encountered on the MRA.

The educational materials will also be provided to emergency responders to ensure that current and future responders are aware of potential hazards associated with the MRA and the appropriate actions to be taken if MEC/MPPEH is encountered on the MRA. The educational materials are presented in **Appendix C** as a slide presentation and a fact sheet.

The former Mortar Range MRA LUCs will be discussed in the FGGM newspaper, *Soundoff*, and on the FGGM Environmental Management System website, <http://www.ftmeade.army.mil/environment>. The information will include the educational materials (slide presentation and factsheet in Appendix C), a map depicting the areas subject to LUCs (Figure 4-1), and contact information for the FGGM Public Affairs Office to request additional information.

4.3 LUC Inspections, Reporting, and Enforcement

The Army will be responsible for LUC inspections, reporting and enforcement activities required for the MRA. The following activities will be performed: site inspections, compliance reporting, LUC enforcement, CERCLA Five-Year Reviews, and LUC modification or corrective action.

4.3.1 Annual Site Inspections / Surface Sweeps

Because there is the potential for MEC/MPPEH/munitions debris to resurface through mechanisms such as erosion or frost heaves, LTM will be put into place. LTM will include an annual LUC inspection / surface sweep, and annual reporting of the results, which will be used in the required CERCLA five-year reviews to ensure that the remedy remains protective.

Upon approval of this RD by the USEPA and concurrence by MDE, the Army will conduct annual inspections of the site to confirm continued compliance with all LUC

objectives. FGGM will maintain the records of these inspections, which will include the following:

- Visual inspection / surface sweep for MEC/MPPEH/munitions debris – A visual inspection and magnetometer-assisted surface sweep of 100% of undeveloped areas by meandering path will be conducted by a UXO Technician (either UXO Technician II or III) to ensure that no MEC/MPPEH/munitions debris have been uncovered by erosion or frost heave. The results of the inspections will be recorded using the form in **Appendix D**.
- § **Handling MEC/MPPEH:** If MEC/MPPEH is identified, the location of the item will be marked/documented and photographed without disturbing the item. At completion of the inspection activities the UXO Technician will contact Explosive Ordnance Disposal (EOD) to remove and/or properly dispose of MEC/MPPEH found on site. This approach will be followed to avoid making multiple calls to EOD. Demolition operations will be performed daily, or items will be guarded until demolition operations can be conducted. Items, other than an MEC/MPPEH deemed acceptable-to-move by EOD, will be properly stored.
- § **Handling Munitions Debris:** Munitions debris identified during the visual inspection / surface sweep will be consolidated, segregated, and containerized in an onsite storage container and appropriately secured until proper disposition can be arranged. The storage container will be locked at all times when not in use. The location of this onsite storage container will be determined prior to the visual inspection / surface sweep. All munitions debris will be disposed of at a foundry and/or recycler, where it will be processed through a smelter, shredder, or furnace prior to resale or release, in accordance with all governing regulations.
- Condition of Warning Signs – The warning signs will be inspected for damage as part of annual LTM activities. Any necessary repair will be performed promptly.
- Evaluation of Land Use – The site will be inspected for any signs of changes in land use.

These site inspections will be documented using the checklists included as **Appendix D**.

4.3.2 Compliance Reporting

Upon approval of this RD, the Army will provide to USEPA and MDE a written annual LUC Compliance Certificate for the former Mortar Range MRA. This certification will include self-inspection dates, name of inspector, results of inspection, and the condition of ECs. The annual certification will address whether use of the property has conformed to use restrictions and controls, and whether the owners and state and local agencies were notified of the use restrictions and controls affecting the property. . In addition, should any deficiencies or inconsistent uses be found during the site inspections, the Army will provide USEPA and MDE a separate written explanation indicating the specific deficiencies or inconsistent uses found and what efforts or measures have, or will be taken, to correct those deficiencies or inconsistent uses along with the certificate. Documentation of compliance with all provisions of the LUCs will be documented on the Annual Certification of Land Use Controls form (see **Appendix E**).

The annual LUC Compliance Certificate will be used in preparation of the Five-Year Review to evaluate the effectiveness of the remedy. Based on the nature of the contamination (MEC/MPPEH), a residual hazard will always remain on the MRA. It is, therefore, assumed that compliance reporting will continue in perpetuity as an integral part of the LUCs.

Any activity that is inconsistent with the IC objectives or use restrictions, or any other action that may interfere with the effectiveness of the ICs will be addressed by the Army as soon as practicable, but in no case will the process be initiated later than ten days after the Army becomes aware of the breach.

FGGM will notify the USEPA and MDE as soon as practicable but no longer than ten days after discovery of any activity that is inconsistent with the LUC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUCs. FGGM will notify the USEPA and MDE regarding how FGGM has addressed or will address the breach within 14 days of sending the USEPA notification of the breach.

4.3.3 LUC Management and CERCLA Five-Year Reviews

The focus of the LUC management will be with the FGGM Environmental Division, more specifically, the IRP Manager. The Program Manager will implement LUC compliance within their division.

The Army will conduct Five-Year Reviews of the former Mortar Range MRA LUC remedy, as required by CERCLA and the NCP. The annual monitoring of the environmental use restrictions and controls that will be conducted will be used as part of the preparation of the Five-Year Reviews to evaluate the effectiveness of the

remedy. The Five-Year Review is triggered by the date construction of the remedy is completed. In the case where a field mobilization is not required the date of the initial monitoring event or the date of the ROD signature itself will trigger the Five-Year Review. The Five-Year Review for this site will be in 23 September 2016.

For the first Five-Year Review, changes in site conditions will be evaluated. If conditions have changed and LUCs are no longer needed, annual site inspections could occur less frequently, such as every five years.

4.3.4 Notifications of Land Use Control Changes

The Army shall not modify or terminate LUCs, implementation actions, or modify land use without approval by USEPA and MDE. The Army shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the LUCs or any action that may alter, increase, or negate the need for LUCs.

The Army shall notify the USEPA and MDE at least 45 days in advance of any proposed land use changes that are inconsistent with LUC objectives or the Selected Remedy. Should FGGM be made aware of a project that will necessitate a significant land use change, the office will notify the USEPA at least six months prior to this change occurring.

FGGM will provide notice to the USEPA and MDE at least six months prior to any FGGM transfer or sale of the site so that the USEPA and MDE can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for FGGM to notify the USEPA and MDE at least six months prior to any transfer or sale, then the facility will notify the USEPA and MDE as soon as possible but no later than 90 days prior to the transfer or sale of any property subject to ICs.

In addition to the land transfer notice and discussion provisions above, the Army further agrees to provide the USEPA and MDE with similar notice, within the same time frames, as to federal-to-federal transfer of property. The FGGM Environmental Management Office (EMO) shall provide a copy of the executed transfer assembly to the USEPA and MDE.

In the event of a transfer of property, each transfer of fee title from the United States will include a CERCLA 120(h)(3) covenant which will have a description of the residual contamination on the property and the environmental use restriction, expressly prohibiting activities inconsistent with the performance measure goals and objectives. The environmental restrictions are included in a section of the CERCLA 120(h)(3) covenant that the United States is required to include in the deed for any property that has had hazardous substances stored for one year or more, known to have been

Remedial Design

Former Mortar Range
Munitions Response Area

released or disposed of on the property. Each deed will also contain a reservation of access to the property for the Army and USEPA, and their respective officials, agents, employees, contractors, and subcontractors for purposes consistent with the Army IRP or the Federal Facility Agreement. The deed will contain appropriate provisions to ensure that the restrictions continue to run with the land and are enforceable by the Army.

The Army will notify the USEPA in advance of any changes to the internal procedures for implementing or maintaining the LUCs.

5. Health and Safety

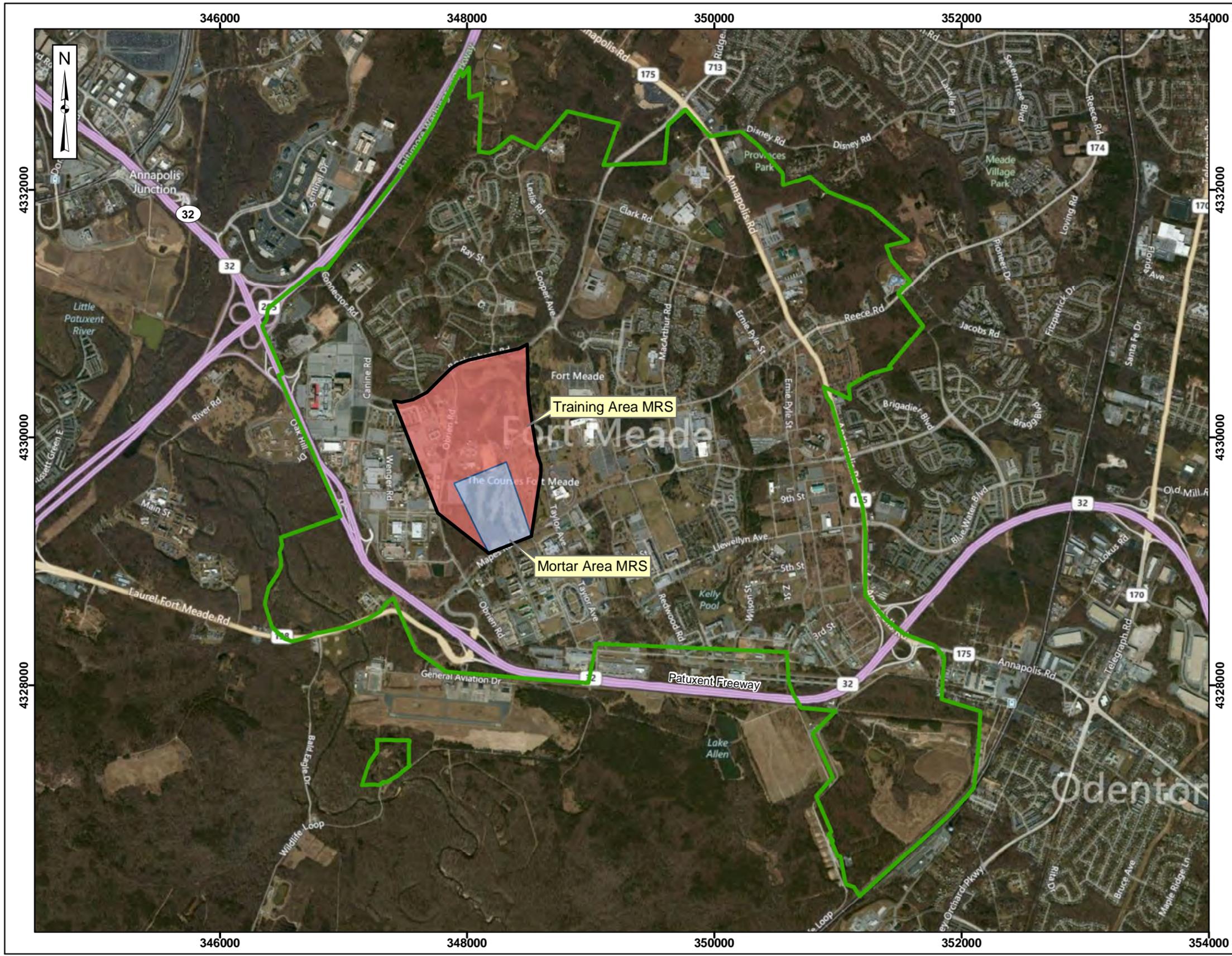
The implementation of these LUCs, will occur under the 2010 *Performance Based Acquisition – FGGM Site-Wide Health and Safety Plan* (HASP) (ARCADIS, 2010a) and *HASP Addendum 1* (ARCADIS, 2010b), addressing anomaly avoidance.

6. References

- ARCADIS. 2010a. Performance Based Acquisition – Fort Meade Sitewide Health and Safety Plan. February 2010.
- . 2010b. Performance Based Acquisition – Fort Meade Sitewide Health and Safety Plan, Addendum 1. March 2010.
- ARCADIS/Malcolm Pirnie. 2011. *Final Former Mortar Range Munitions Response Area Remedial Investigation Report*. September.
- . 2012. *Final Former Mortar Range Munitions Response Area Record of Decision*. September.
- Department of the Army, 2004. *EP 75-1-2. Munitions and Explosives of Concern (MEC) Support During Hazardous, Toxic, And Radioactive Waste (HTRW) and Construction Activities*. 1 August 2004.
- . 2011. *DA PAM 385–64: Ammunition and Explosives Safety Standards*. 24 May 2011.
- Atkins. 2011. *Real Property Master Plan Update. 90% Submission*. October.
- Malcolm Pirnie, Inc. 2006. *Final Historical Records Review, Fort George G. Meade, Maryland*.
- . 2007. *Final Site Inspection, Fort George G. Meade, Maryland*.
- United States Army Corps of Engineers (USACE). 2002. *Environmental Baseline Survey United States Army Residential Communities Initiative Properties Fort George G. Meade, Maryland*.
- United States Environmental Protection Agency (USEPA). 2000. *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*. Office of Solid Waste and Emergency Response Directive No. 9355.0-74.
- . 2010. *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*. Office of Solid Waste and Emergency Response Directive No. 9355.0-89. November.

Figures

W:\Projects\ARM\1\Installations\Fort_Meade_MDXs\Range\MXD\RD\Figure_1-1_Site_Location.mxd



**Fort George G. Meade
Remedial Design**

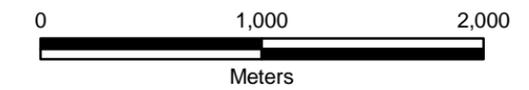


ARCADIS

**Figure 1-1
Site Location**

Legend

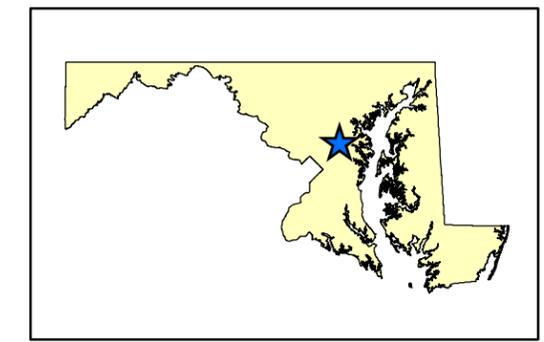
-  Installation Boundary
-  Mortar Range MRA
-  Mortar Area MRS
-  Training Area MRS



Data Sources: Bing Maps aerial imagery web mapping service; (c) 2010 Microsoft Corporation and its data suppliers

FGGM, GIS Data, 2005

Coordinate System: UTM Zone 18
Datum: NAD 1983
Units: Meters



**Fort George G. Meade
Remedial Design**



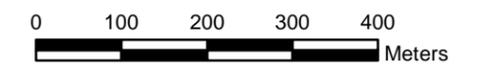
ARCADIS

**Figure 4-1
Land Use Controls**

Legend

-  Installation Boundary
-  Mortar Area MRS: Land Use Controls with on-call UXO Construction Support
-  Training Area MRS: Land Use Controls with on-call UXO Construction Support
-  Current Secure DoD Facility
-  Future Secure DoD Facility
-  Proposed Posted Undeveloped Area
-  Small Arms Casings Disposal Pit to be removed as part of Site Preparation

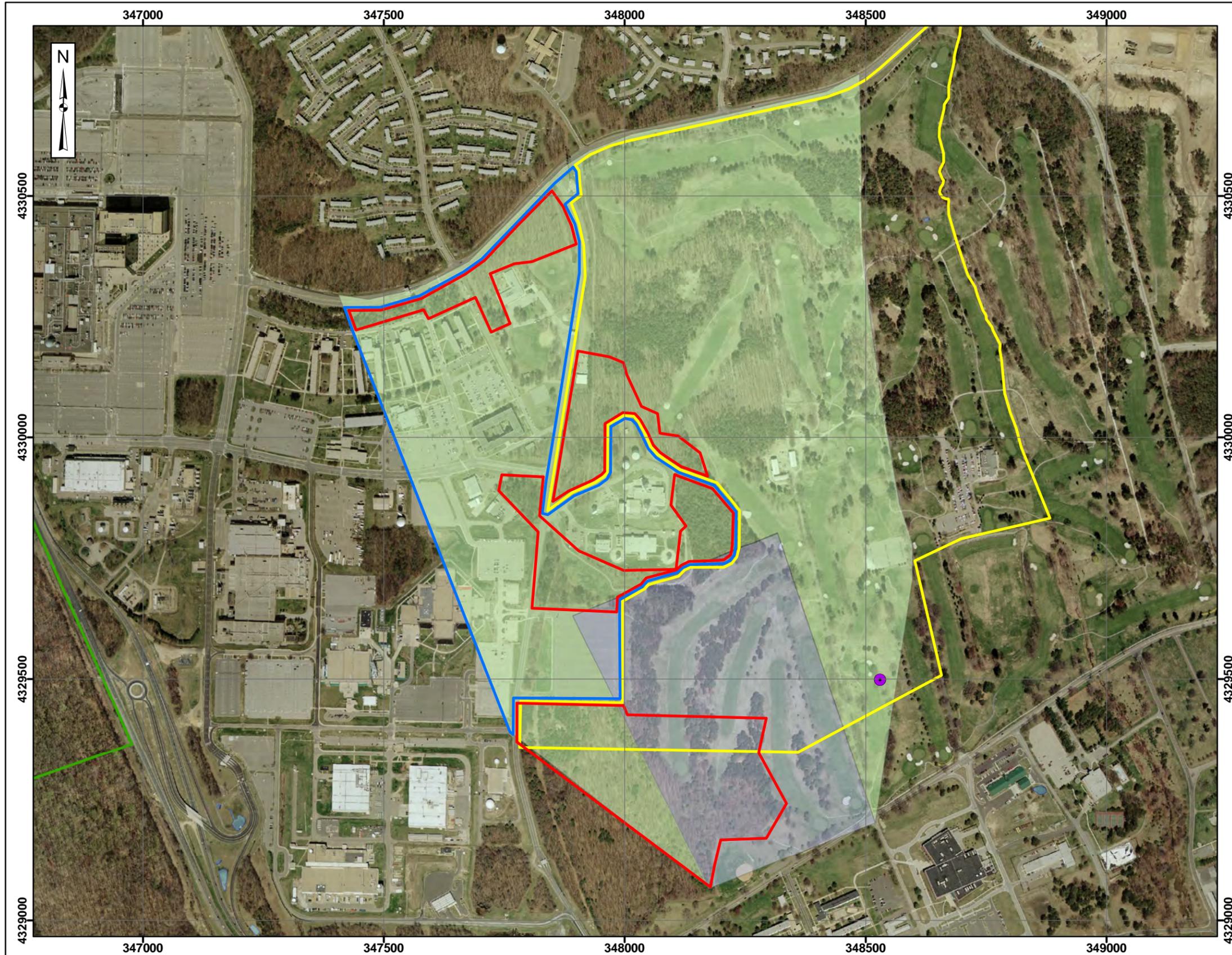
Note: Approximately 50 signs will be added at entrances and exits throughout the current and future secure DoD facility.



Data Sources: FGGM, Digital Orthophoto, 2003
FGGM, GIS Data, 2005

Coordinate System: UTM Zone 18
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004



Appendix A

GIS Deliverable

**Fort George G. Meade
Remedial Design**

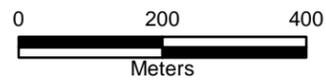


ARCADIS

**Land Use Controls
GIS Data Layer Example**

Legend

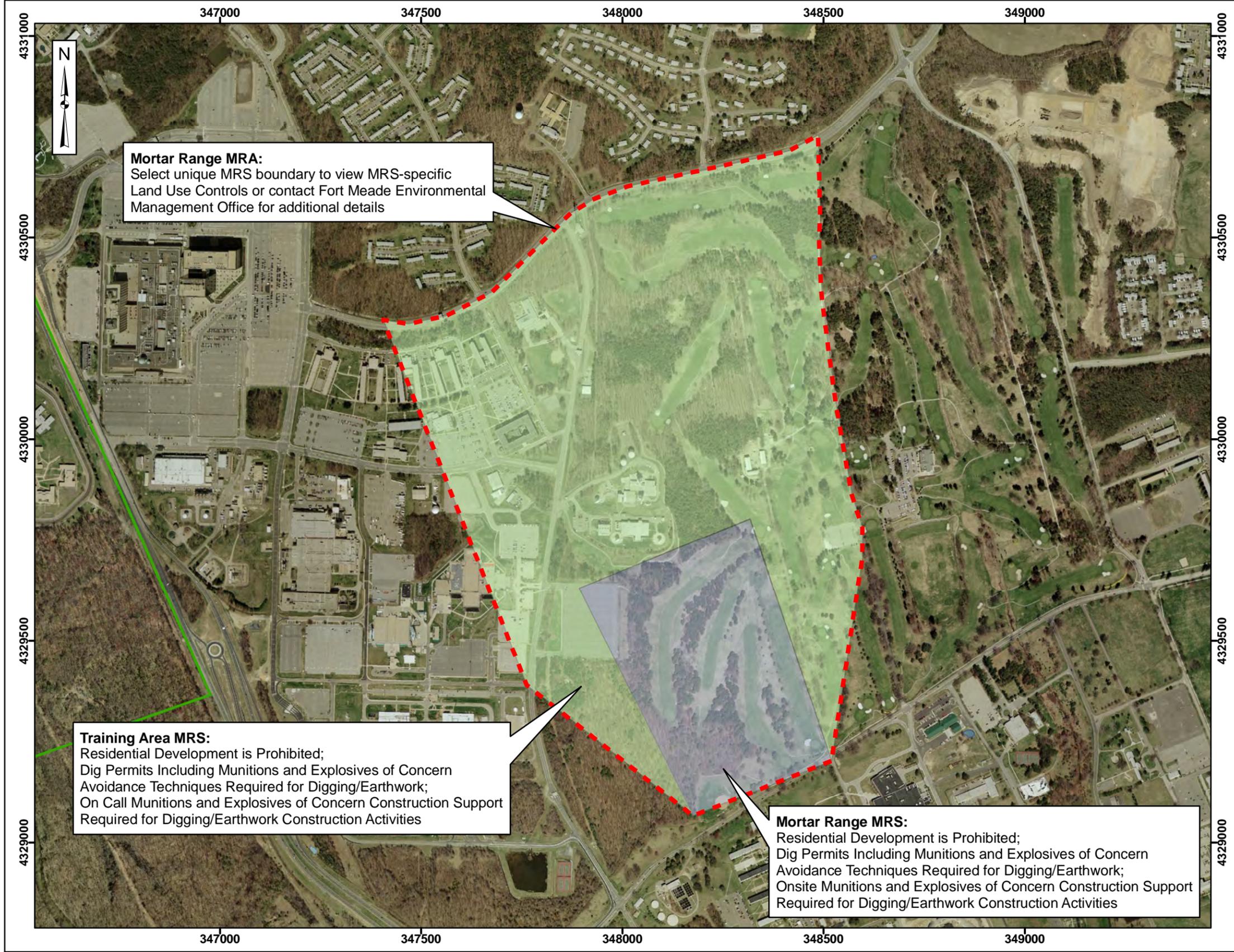
-  Installation Boundary
-  Mortar Range MRA
-  Mortar Area MRS
-  Training Area MRS



Data Sources: FGGM, Digital Orthophoto, 2003
FGGM, GIS Data, 2005

Coordinate System: UTM Zone 18
Datum: NAD 1983
Units: Meters

Contract: W912DR-05-D-0004



Appendix B

Proposed Signs for the Mortar Range
Munitions Response Area

NOTICE

Environmentally Restricted Area

DIGGING RESTRICTED

SOIL CLEARANCE REQUIRED

FORMER MORTAR TRAINING AREA

POTENTIAL UNEXPLODED ORDNANCE HAZARD

Call Fort Meade

Environmental Management Office

(301) 677-9648

NOTICE

Environmentally Restricted Area

DIGGING RESTRICTED

SOIL CLEARANCE REQUIRED

FORMER TRAINING AREA

POTENTIAL UNEXPLODED ORDNANCE HAZARD

Call Fort Meade

Environmental Management Office

(301) 677-9648

Appendix C

Educational Program—Guidelines
and Materials

Fort George G. Meade and secure DoD facility former Mortar Range Site User Training Guide

Training Materials Include:

- Fort Meade Unexploded Ordnance Safety Program Slide Presentation
- Mortar Range Munitions Response Area Fact Sheet

Target Audience:

- Individuals responsible for maintaining structures, grounds/land on the former Mortar Range Munitions Response Area
- Individuals responsible for emergency response and security on the former Mortar Range Munitions Response Area
- Individuals responsible for construction, including construction workers, planners, and managers, on the former Mortar Range Munitions Response Area
- Employees of the Fort Meade and secure DoD facility Environmental Divisions
- Employees of Fort Meade Department of Public Works who process dig permits
- Individuals working within office buildings on the former Mortar Range Munitions Response Area

Purpose:

- Educate site users (audience) of the potential hazards posed by possible unexploded ordnance
- Inform site users of actions to take if an ordnance item is encountered, and
- To communicate land-use restrictions applicable to the former Mortar Range Munitions Response Area.

Training Administrators:

- Fort Meade Environmental Division (or assignee)

Training Drivers and Timeline

- With the exception of office workers, training should be administered as part of orientation upon assignment to work on the former Mortar Range Munitions Response Area or within the Fort Meade Environmental Division
- Training should be completed within one month of assignment
- Training will be provided on an internal Intranet for office workers and is non-mandatory

Training shall be completed annually by employees of Fort Meade Department of Public Works who process dig permits to ensure they fully understand the requirement

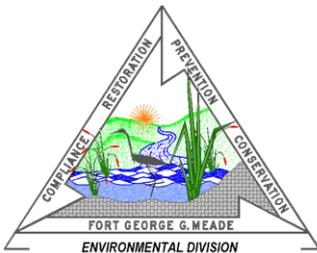


Fort George G. Meade



Unexploded Ordnance Safety Program

Former Mortar Range Munitions Response Area



ARMY STRONG.



Purpose



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The purpose of this training presentation is to:

- Educate site users of the potential hazards posed by possible unexploded ordnance
- Inform site users of actions to take if an ordnance item is encountered, and
- To communicate land-use restrictions applicable to this area.





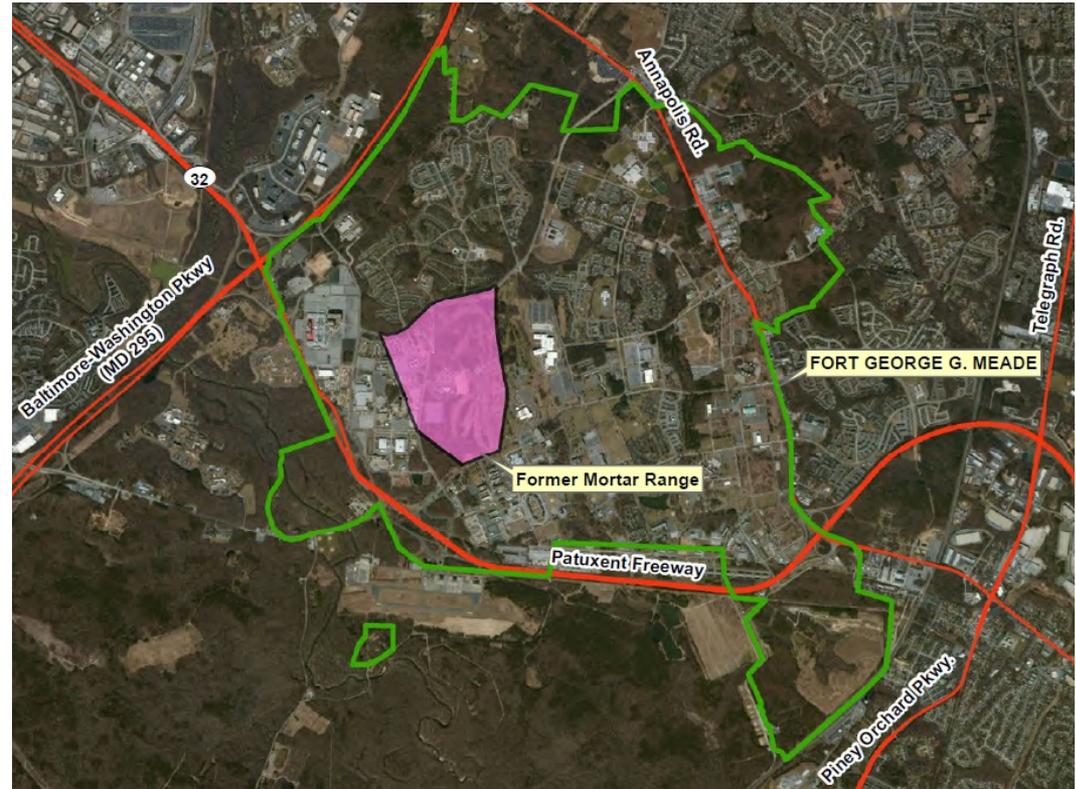
Former Mortar Range Location



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These buildings are located on a former Mortar Range which was located in the west-central portion of Fort Meade and is bounded to the:

- north by Rockenbach Road,
- east by Taylor Avenue, and
- south by Mapes Road.





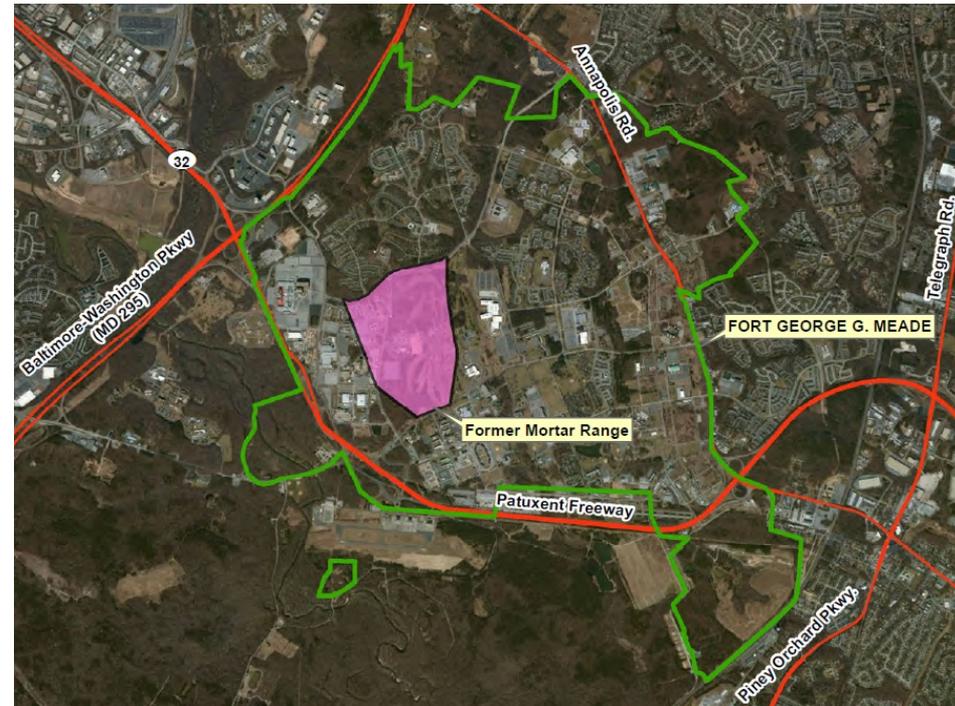
Former Mortar Range Background



The former Mortar Range was active from the early 1920s until the 1940s when it became the installation golf course. Future use is administrative and construction is currently underway.

Extensive studies found only one live munition, but did find numerous training rounds without explosives.

Although the probability of encountering live munitions is low, it cannot be ruled out.



Additional information regarding the former Mortar Range MRA is available on the FGGM Website: <http://www.ftmeade.army.mil/environment>





Safety Recommendations for Site Users

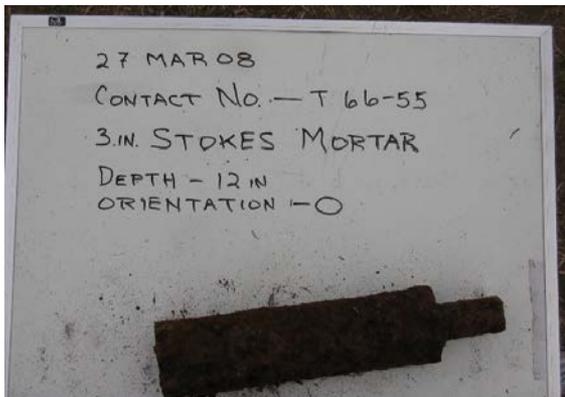


- Site Users - Avoid unpaved, wooded or undeveloped portions of the site. Your best defense is avoidance.
- Maintenance Users - Use extreme caution when working in areas where evidence of erosion is observed. Be aware of and follow the Fort Meade and secure DoD facility dig permit processes. Be familiar with examples of munitions presented on the following slide.
- All Users – Understand the Land Use Restrictions. Obey signage.





Examples of Munitions Debris Encountered on the Site



3-inch Training Stokes Mortar



Small Arms Ammunition



75-mm Mk1 Shrapnel Projectile
(Explosive Hazard)



60-mm Training Mortar



81-mm Training Mortar





Learn the **3RS** of UXO Safety



- R**ecognize ...when you may have encountered munitions.
- R**etreat ...do not touch, move or disturb it, and carefully leave the area.
- R**eport ...immediately to the police.

UXO stands for **U**ne**X**ploded **O**rdnance
(UXO can be: new or old; shiny or rusty; clean or dirty)

*Additional information can be found on the Army Environmental Command website:
<http://aec.army.mil/usaec/cleanup/images/mmrp-uxofactsht.pdf>*





UXO Safety Steps



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Should you encounter UXO or suspicious items:

- **STOP**, do **NOT** touch or attempt to move any object you find.
- Note the location and go back the way you came.
- Notify the Fort Meade Police Department by calling 911.
 - Explain to the dispatcher where you found the object.





UXO Safety



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This training **DOES NOT** make you an expert in UXO!!
Safety must always be your prime consideration.

Follow the three Basic Rules of UXO Site Safety:

1. If you didn't drop it, don't pick it up!
2. If you didn't drop it, don't pick it up!
3. If you didn't drop it, don't pick it up!





UXO Safety



REMEMBER:

Not all hazards are obvious, don't assume anything is safe.

- DO NOT TOUCH IT!
- DO NOT MOVE IT!
- DO NOT DELAY IN REPORTING IT!

Be Safe!

Your best defense is avoidance!





Glossary



Explosive Ordnance Disposal (EOD) – The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded ordnance by a military response unit. It may also include explosive ordnance that has become hazardous by damage or deterioration.

Land Use Controls (LUCs) – LUC are physical, legal, or administrative mechanisms that restrict use of or limit access to, real property, to manage risks to human health and the environment. Physical mechanisms encompass a variety of engineered remedies to contain or reduce contamination and/or physical barriers to limit access to real property, such as fences or signs.

Munitions and Explosives of Concern (MEC) – This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks, includes: unexploded ordnance (UXO), as defined in 10 U.S.C. 101(e)(5); discarded military munitions (DMM), as defined in 10 U.S.C. 2710(e)(2); and munitions constituents (e.g., trinitrotoluene [TNT], cyclotrimethylenetrinitramine [RDX]) present in high enough concentrations to pose an explosive hazard.

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

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain unexploded ordnance, DMM, or MC. Examples include former ranges and munitions burial areas. An MRA is composed of one or more munitions response sites.

Munitions Response Site (MRS) – A discrete location within an MRA that is known to require a munitions response.





Glossary (Cont'd)



Unexploded Ordnance (UXO) – UXO are military munitions that:

- Have been primed, fused, armed, or otherwise prepared for action.
- Have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or materiel.
- Remain unexploded, whether by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5)).

UXO Construction Support – Support provided by qualified UXO personnel during construction activities at potential MEC sites to ensure the safety of construction personnel from the harmful effects of UXO. When a determination is made that the probability of encountering UXO is low (e.g., current or previous land use leads to an initial determination that UXO may be present), a minimum of a two person UXO team will stand by in case the construction contractor encounters a suspected UXO with unknown fillers. When a determination is made that the probability of encountering a UXO is moderate to high (current or previous land use leads to a determination that MEC was employed or disposed of in the parcel of concern, e.g., open burn and open detonation areas), UXO teams are required to conduct subsurface UXO removal for the known construction footprint either in conjunction with the construction contractor or prior to construction. The level of effort will be determined on a case-by-case basis in coordination with the MM MCX. (EP 75-1-2, ER 1110-1-8153).





**U.S. Army Fort George G. Meade
Military Munitions Response Program
Former Mortar Range Munitions Response Area
Fact Sheet**



Final Date

OVERVIEW

This fact sheet discusses the history of the former Mortar Range Munitions Response Area, the Army's environmental investigation of the site, and the measures the Army has put in place to ensure the site is safe.

LOCATION & HISTORY OF SITE

The 322-acre former Mortar Range Munitions Response Area (site) was a range and training area located in the west-central portion of Fort Meade (see map below). Based on munitions debris found at the site, it is believed the site was used from the early 1920s into the 1940s. The former Mortar Range Munitions Response Area has been divided into two munitions response sites: the Mortar Area and the Training Area.

The majority of the site has been used as a golf course since 1956. A jogging trail was along the western edge of the golf course. The northwestern portion of the site is Department of Defense property and is developed with buildings and associated paved surfaces. In early 2012, the Department of Defense closed the golf course and jogging trail and began construction of additional buildings on the site.

COMPREHENSIVE INVESTIGATIONS CONDUCTED

The Army conducted a thorough remedial investigation of the site to determine if any risk posed by munitions and explosives of concern needs to be addressed. The studies conducted by the Army included reviewing historical records, a geophysical investigation, an intrusive investigation, and soil sampling.

The 2010 Remedial Investigation included a geophysical investigation that identified 6,228 anomalies; 1,805 were identified as cultural features such as buried utilities. The remaining 4,423 anomalies were evaluated and 1,333 were hand dug during the intrusive investigation. The majority were found to be metal items such as horseshoes and nails. The investigation found no unexploded ordnance.



COMPREHENSIVE INVESTIGATIONS CONDUCTED (continued)

Historical evidence indicates that risks associated with unexploded ordnance may exist on the former Mortar Range Munitions Response Area. However, based on the results of investigations conducted there is a low probability of encountering unexploded ordnance, as only munitions debris and evidence of only non-explosive training items were identified during the 2010 Remedial Investigation.

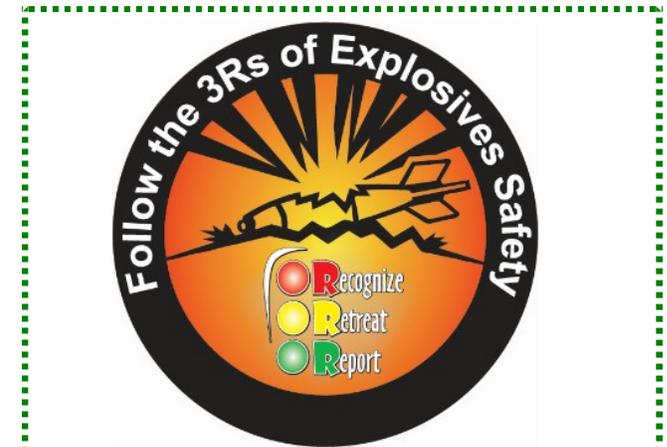
RECORD OF DECISION SIGNED TO PROVIDE LONG-TERM SITE MONITORING

In September 2012, the Army and the U.S. Environmental Protection Agency signed a Record of Decision. This document legally binds the Army to maintain land-use controls and conduct long-term monitoring. The land-use controls require a permit to be obtained before digging occurs and prohibits residential housing at the site. The long-term monitoring includes annual inspections to ensure no munitions items have moved to the surface through erosion or frost heave.

A copy of this Record of Decision and more information about the site is available online at: www.ftmeade.army.mil/environment (click Clean-up Program, Program Sites, and Former Mortar Range). The Record of Decision is also available in the Fort Meade Administrative Record located at the Anne Arundel County Library, West County Area Branch, 1325 Annapolis Road, in Odenton, Maryland.

STEPS TO FOLLOW IF YOU IDENTIFY A POTENTIAL MUNITIONS ITEM

Below are photographs of some of the munitions items found during the investigation. If you see an item that looks suspicious, do not touch it. Leave the area and immediately call 911.



RECOGNIZE: When you discover a suspicious item or a possible munitions, remember they can be very dangerous. Do not touch, kick, throw or do anything else to disturb the item. Also, remember that the munitions are sometimes not readily identifiable, and may appear to be any other metallic or rusty item. Use caution and do not touch it.

RETREAT: Mark the general location of the item (a minimum of 10 feet away) and retreat to a minimum of 300 feet away on the same path used to approach the item.

REPORT: Call 911.

Additional Information: Go to the Army Environmental Command website: <http://aec.army.mil/usaec/cleanup/images/mmrp-uxofactsht.pdf>



Appendix D

Annual Inspection Form

Annual Inspection Checklist for Land Use Evaluation

1. Land Use Evaluation

_Date: _____

1. Inspector walked over entire site. ____ Yes ____ No

Reason why not?

2. Check for any sign of the following conditions – note whether corrective action was taken:

| <u>Condition</u> | <u>Yes/No</u> | <u>Corrective Action Taken</u> | <u>Designation of Location Shown on Attached Map</u> |
|--|---------------|--------------------------------|--|
| Intrusive activities | | | |
| MEC/MPPEH/munitions debris | | | |
| Signs of vegetative stress | | | |
| Construction activities | | | |
| Signs of erosion | | | |
| Other | | | |
| No residential / no change in land use | | | |

3. Signs appropriately posted

| <u>Sign noting the following (# of signs installed)</u> | <u>Yes/No/#</u> | <u>Corrective Action Taken</u> |
|---|-----------------|--------------------------------|
| Warning Sign (~50 TBD) | | |

Printed Name & Title of Inspector

Signature of Inspector

Date _____

Approved by Paul Fluck, Program Manager
Installation Restoration Program
DPW-ED

Date _____

Appendix E

Annual Certification of Land Use
Control

**Annual Certification of Land Use
Former Mortar Range MRA
Fort George G. Meade, Maryland**

Date

This certification is being made in accordance with the Remedial Design (RD) for the former Mortar Range MRA. The RD is in accordance with the former Mortar Range MRA Record of Decision (ROD) signed by the Fort George G. Meade (FGGM) garrison commander and USEPA Region 3 Director of the Emergency and Remedial Response Division on September 26, 2012 and September 27, 2012, respectively.

1. **Certification of Point of Contact:** The FGGM Installation Restoration Program Manager is the designated point-of-contact for monitoring, maintaining, and enforcing the site-specific LUCs as specified in Section 4 of the RD.
2. **Certification of Commitment to Funding:** Funding for the proposed LUCs has not yet been awarded.
3. **Certification of how LUC objectives outlined in Section 4.2 of the RD:**
 - A. **LUC Objective: To maintain a land use that is protective from risks associated with MEC/MPPEH:**
 - i. *Pit Removal:* The pit removal will be coordinated through FGGM Safety and Environmental Division (ED), with additional support from the USACE Huntsville Division, Ordnance and Explosives Center of Expertise. This will be done as a preliminary maintenance activity to prepare the Training Area MRS for the LUC program.
 - ii. *FGGM Master Plan:* The FGGM Master Plan will be updated based on the new land use requirements. As planned, construction is currently underway over a large portion of the MRA.
 - iii. *The FGGM Geographic Information System (GIS):* The FGGM GIS incorporates the area of applicability existing land and environmental restrictions, locations of known contamination, and locations of MRAs / MRSs. The plan is to incorporate the GIS into the new Master Plan by reference.
 - iv. *Dig Permits:* No excavation of soil without approval of the FGGM Department of Public Work and the secure DoD facility; no excavation of soil without the proper safety equipment and a health and safety plan.
 - v. *FGGM Access Regulations:* Access regulations are in place at FGGM. Although not closed to the public, access to FGGM is strictly controlled. Trespassing and unauthorized activities on FGGM are illegal.
 - vi. *Unexploded Ordnance (UXO) On-Call Construction Support:* Institutional controls will be supplemented by the requirement for UXO on-call construction support for all intrusive Military Construction projects, and anomaly avoidance procedures for any other intrusive activity. UXO procedures will be coordinated through FGGM Safety and ED, with additional support from the USACE Huntsville Division, Ordnance and Explosives Center of Expertise. All intrusive activities (e.g., investigations involving any digging, clearing activities, and construction activities) must be authorized prior to the commencement of work.
 - vii. *Posted Signs:* Signs will be posted around the site to prevent unauthorized digging. The conditions of these signs will be verified and documented annually.

- viii. *Education Program:* An education program will be initiated for potential future site workers, users, and emergency responders of the MRA. This will be coordinated through FGGM ED.
- ix. *Inspections:* Annual Inspection forms were developed and approved by the USEPA. These forms have been included with the RD.
- x. *Notification Requirements:* If the land use at the former Mortar Range MRA were to change, any and all notifications, as described in Section 4.5.3.5 of the RD, will be made to the regulators. Currently the land use has not changed (construction remains underway); therefore, there was no need to notify the USEPA or Maryland Department of the Environment (MDE) of any land use changes in the past year.
- xi. *CERCLA Five –Year Reviews:* The Army will conduct Five Year Reviews as required by CERCLA and the NCP to determine if the LUC have remained protected of human health under the currently and reasonably anticipated future use. The Army will not modify or terminate LUCs, implementation actions, or land use with approval by USEPA and MDE.

B. LUC Objective: Prohibit the development and use of the MRA for residential housing:

- i. *Prohibit residential land use:* Residential land use at the former Mortar Range MRA will be prohibited as part of LUCs. No future residential development is planned within the MRA boundary. Residential land use at the former Mortar Range MRA will be prohibited. Due to the fact that the former Mortar Range MRA is a site entirely included within the FGGM property boundary and this property will remain under ownership and control of the federal government, a deed notice will not be necessary.

“I certify that the site-specific land use controls for the former Mortar Range MRA have been in effect throughout (insert calendar year here) or for the period starting (Month Year and ending Month Year) and are protective of human health and the environment.”

Program Manager
Installation Restoration Program
DPW-ED

Date

Attachments:

Appendix F

Response to Comments



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

April 3, 2013

Paul V. Fluck, P.G., REP
Installation Restoration Manager
Dept. of Army DPW - Environmental Division
4215 Roberts Ave,
Room #320
Fort George G. Meade, MD. 20755-7068

Subject: Draft Final Remedial Design: Former Mortar Range Munitions Response Area. March 2013.

Mr. Fluck:

Thank you for the opportunity to review the subject document. EPA has found the response to comments to be acceptable and has no additional comments on the document. Please submit the Final version of the document.

If you have any questions, please contact me at 215-814-3378.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Burchette", is written over a light gray rectangular background.

John Burchette
Remedial Project Manager

cc: Dr. Elisabeth Green



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

April 15, 2013

Paul V. Fluck, REP
Installation Restoration Manager
U.S. Army Garrison Fort George G. Meade
Directorate of Public Works – Environmental Division
4215 Roberts Ave., Room 320
Fort Meade, Maryland 20755-7068

RE: Draft Final Remedial Design, Former Mortar Range Munitions Response Area, Fort George G. Meade – March 2013

Dear Mr. Fluck,

The Land Restoration Program (LRP) of the Maryland Department of the Environment has reviewed the referenced document. The LRP has no further comments and looks forward to receipt of the final version.

If you have any questions, please contact me at (410) 537-3340.

Sincerely,

Kim Lemaster
Federal Assessment and Remediation Division

cc: Mr. John Burchette
Mr. Horacio Tablada
Mr. James Carroll