



October 2011

Fact Sheet

Ricochet Area Munitions Response Site

Final Remedial Investigation Report Summary

Introduction

The National Guard conducted a remedial investigation (RI) at the Ricochet Area Munitions Response Site (MRS) in State Game Lands 211. The 8,002-acre site is located between Second and Stony Mountains within eastern Dauphin County and northern Lebanon County in south central Pennsylvania. State Game Lands 211 are owned by the Commonwealth of Pennsylvania and managed by the Pennsylvania Game Commission. The Ricochet Area MRS lies north of the Fort Indiantown Gap Military Reservation, Annville, PA.

Purpose of the RI

The purpose of the RI was to collect sufficient data to determine the nature and extent of munitions and explosives of concern (MEC) and munitions constituents (MC). The RI results will be used to develop and evaluate remedial alternatives and provide cleanup recommendations as part of the feasibility study (FS).

Overview of RI Field Work

The RI field work focused on visual and geophysical surveys of a representative portion of the site to identify areas of MEC and munitions debris (MD) and soil sampling for MC. Field work occurred March through May 2010 and March 2011. The cumulative acreage surveyed in transects and grids was 374 acres across the entire site. Soil sampling consisted of eight samples collected from beneath MEC items, nine samples collected after these MEC items were detonated, and background soil samples. Samples were analyzed for explosives and/or metals.

Results of the visual and geophysical surveys identified 13 MEC and 121 items of MD that were removed from the site and/or destroyed. Cultural debris, totaling 594 items, was also recovered.

The 13 MEC items identified and disposed of included:

- Seven 75-mm (millimeter) high explosive projectiles, classified as unexploded ordnance (UXO).
- One 155-mm high explosive projectile (Disposed of by a U.S. Army Explosive Ordnance Disposal team).

- One 75-mm armor piercing high explosive projectile (UXO).
- Four MK-2A4 primers, classified as discarded military munitions.

Approximately 10% of the munitions items (including debris) found represent an explosive hazard. Most items, including the UXO, were located at or near the ground surface and at a maximum of 12 inches below the surface. The highest density of MEC and munitions debris is located between the ridgeline of Second Mountain and Stony Creek in the south-central portion of the site.

Soil analytical results showed no significant detections of explosives or metals above background or PADEP standards.

Human Health and Ecological Risks

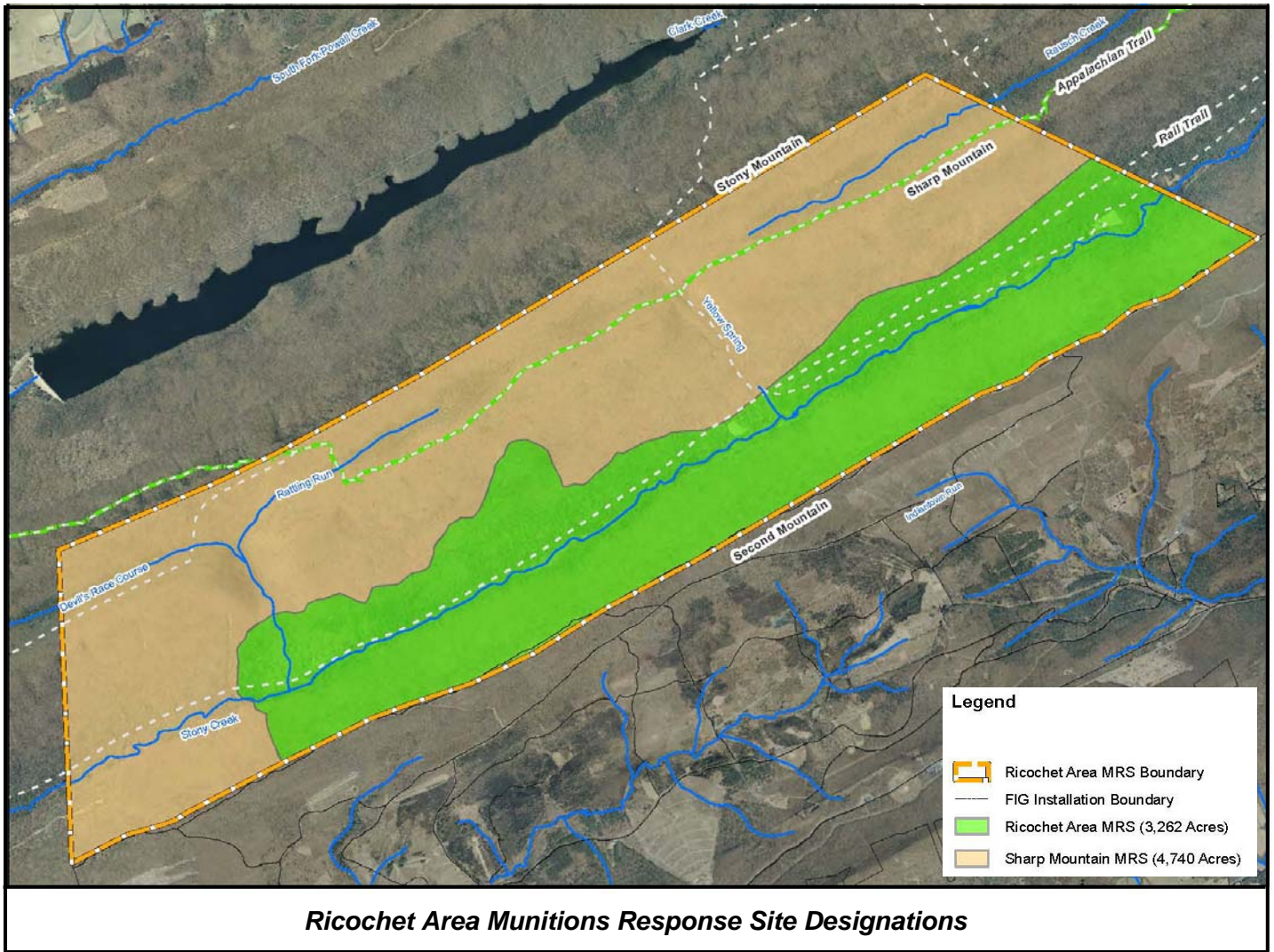
A Human Health Risk Assessment (HHRA) and Screening Level Ecological Risk Assessment (SLERA) were performed to evaluate the potential risk associated with MC. The HHRA exposure and toxicity assessment concluded that no remedial action was necessary to protect public health, welfare, or the environment based on the current and intended future use of the site (i.e., recreational visitors and site workers).

The SLERA concluded that the potential ecological risk for populations from MC in soil is low.

Remedial Action Objectives

Based on the Remedial Investigation results, the following subdivisions of the Ricochet Area MRS and remedial action objectives were developed for the protection of human health and the environment:

- **Ricochet Area MRS** – This MRS consists of 3,245 acres located along the northern slope of Second Mountain into the valley between Second and Sharp Mountains and encompassing both the Rail Trail and Stony Creek. This MRS also includes the 12 acres located at the Cold Spring clearing. The Ricochet Area MRS is recommended for further remedial



alternative evaluation as part of the FS to be protective of human health.

- **Sharp Mountain MRS** – This MRS consist of the 4,730 acres comprising the southern slope and top of Sharp Mountain. No further action is recommended for the Sharp Mountain MRS based on the lack of MEC and MD observed during the RI.

For More Information

Administrative Record File and Information Repository

Copies of the final technical and other project documents are available to the public at the Annville Free Library and the Pennsylvania Department of Military and Veterans Affairs Website:

Annville Free Library
216 East Main Street
Annville, PA 17003

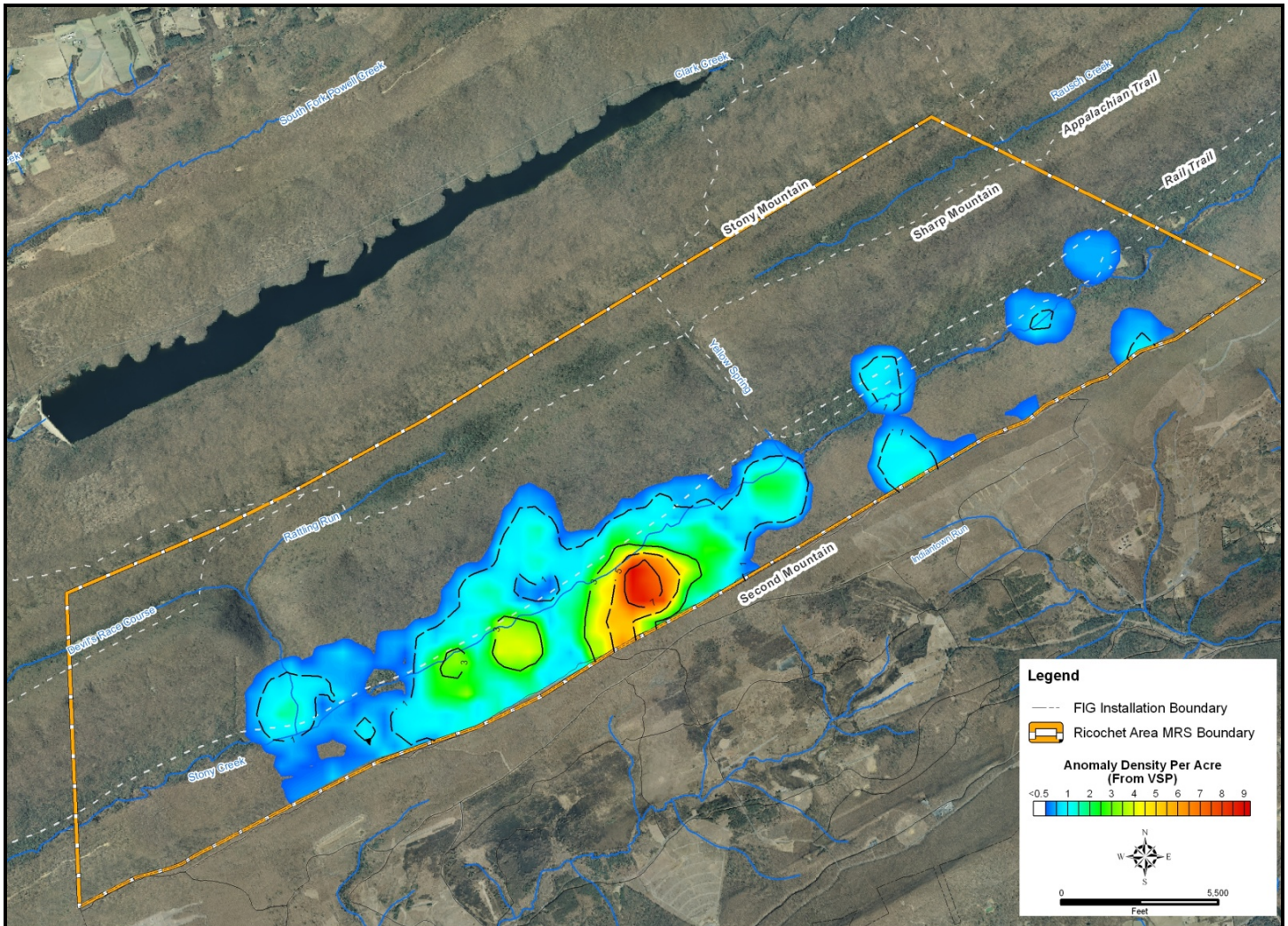
Ricochet Area MRS Project Website

<http://www.dmva.state.pa.us> Click on “Featured Topics,” then click on “Ricochet Area”

Questions regarding the Ricochet Area MRS project may be directed to Jo Anderson, Pennsylvania of Military and Veterans Affairs, Bureau of Environmental Management, at (717) 861-8181.

Ricochet Area MRS Project Schedule

- **2007-2008** – Site Inspection
- **October 2009-February 2010** – Project planning
- **March-May 2010** – RI field work
- **June 2010-May 2011** – Prepare RI report
- **July 2011** – Final RI report
- **2011-2012** – Prepare Feasibility Study
- **November-December 2011** – Finalize Feasibility Study
- **January-March 2012** – Proposed plan, public meeting, and 30-day public comment period
- **March-July 2012** – Record of Decision



Densities of Munitions and Explosives of Concern and Munitions Debris

Introduction to Feasibility Study

The Feasibility Study identified and evaluated five remedial alternatives for the Ricochet Area MRS. The following provides a brief description of each alternative.

- **Alternative 1 – No Action.** A continuation of current site uses. No changes for recreational users and Pennsylvania Game Commission personnel and contractors. Responses to future munitions discoveries handled on a case-by-case basis. No actions taken to locate, remove, or dispose of munitions items. No implementation of programs to inform the public of potential explosive hazards.
- **Alternative 2 – Containment and Controls.** Explosive risk is managed through public outreach and awareness programs. A public awareness campaign may include educational and printed materials, signs, notifications with permits and contracts, websites, and safety videos.
- **Alternative 3 – Surface Removal of Munitions with Containment and Controls.** Explosive risk is mitigated primarily by removing and disposing of

munitions and other metal debris on the surface across the entire site acreage.

- **Alternative 4 (Preferred) – Focused Surface and Subsurface Removal of Munitions with Containment and Controls.** Explosive risk is mitigated by focused removal and disposal of munitions and other metal debris in both surface and subsurface. Surface removal is focused in specific areas of munitions density (Greater than 0.5 item per acre) and along trails. Subsurface removal is focused in areas where subsurface activities are planned (e.g., wild game food plots) and on-site UXO construction support during road building for timber harvesting.
- **Alternative 5 – Surface and Subsurface Removal of Munitions with Containment and Controls.** Explosive risk is mitigated by removal and disposal of all munitions and other metal debris in both the surface and subsurface throughout the site.

Currently, the draft final Feasibility Study is posted on the project website. (See page 2 for website address.)

**UXO, Dud, Training Round, War Trophy, Souvenir
NO MATTER WHAT YOU CALL THEM! THEY CAN BE DEADLY!**



If you **did not**
drop it,
do not
pick it up!

Learn and Follow
the **3Rs**

RECOGNIZE: The danger that a souvenir
munition poses to yourself,
your family and your neighbors

RETREAT: Do not disturb, touch or move it
Do not give or throw it away

REPORT: Call 911



<https://www.denix.osd.mil/uxosafety>