



# **Sustainable Management of Lead on Small Arms Ranges**

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# Overview

**Small Arms Range Issues**

**Case Studies**

**Sustainable Management and Remedial Services**

## Small Arms Range Issues

- Training Service members to use small arms is a core competency for the Military
- Sustainable use of our ranges is critical
- Lead in the environment can be a serious treat and must be managed

## Small Arms Range Issues

- Over 160 million pounds of lead per year
- 4% of the lead produced each year
- DOD uses an estimated 300,000,000 rounds a year for training



# Small Arms Range Issues

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## Regulatory Drivers

- Resource Conservation and Recovery Act (RCRA)
- Clean Water Act
- Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA)
- State laws
- Increase in community and public awareness

**Bottom Line: Pay (manage) now or pay later**

## New Management Guidance

- Massachusetts Lead Shot Initiative
- Best Management Practices for Lead at Outdoor Shooting Ranges – EPA Region 2
- Best Management Practices for Environmental Stewardship of Florida Shooting Ranges
- Best Management Practices for Environmental Stewardship at Small Arms Ranges - Interstate Technology and Regulatory Committee (ITRC) - 2004
- Army Environmental Center guidance – 2004

**Bottom Line: Need a lead management plan for active small arms ranges**



# Small Arms Firing Ranges

## Case Studies



## Fort Dix, NJ – Active Training Range

- Pb concentrations:
  - 35,000 mg/l Total
  - 74 mg/l TCLP
- Post treatment: <0.05 mg/l TCLP
- Regulatory standard: 5 mg/l TCLP
- Range was reconstructed with treated soils



# City of Houston, Dept. of Aviation

## George Bush Intercontinental Airport, Houston, Texas

**25,000 tons of lead contaminated material processed**

- **Lead Separation and Lead soil treatment using ECOBOND®**
- **Sediments – Excavation/Dewatering Within Large Ditch**
- **Integrated process operations**
- **Savings of over \$500,000**
- **EPA and State of Texas Oversight**



# New York Firing Range

- **Recycled Lead Bullet fragments for re-use**
- **Reconstructed firing range for re-use by the NYPD**
- **Savings of over \$100,000 as compared to alternative methods**
- **ECOBOND® technology allowed for soils to remain on-site for re-use**
- **Met RCRA & UTS standards**



# Firing Range Sustainable Management and Remedial Services

## **MT<sup>2</sup> can provide**

- Treatability analysis
- Chemical products
- Expertise and oversight of application
- Turnkey remedial services

**Application of EcoBond technologies can be performed by prime or subcontractors or other DOD resources**

# Firing Range Sustainable Management and Remedial Services

- Sustainable management of lead at active military or civilian ranges
- Lead removal, short term and long term stabilization,
- Protective of human health risks and surface and groundwater
- Applicable at indoor and outdoor ranges
- Generally 50% less expensive than competing methods
- Supports range final closure

# How To Contact MT<sup>2</sup>

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