

Small Arms Firing Range Maintenance and Management Guidance,
Including Internet and Seminar Training
(Project #2004)

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Project Summary: Develop Best Management Practices for Environmental Stewardship for operating small arms firing ranges, including a template for state initiatives providing technical services to operating facilities; develop Internet and on-site training modules for state environmental employees, firing range operators, and community stakeholders on the proper design, management, maintenance and oversight of operating firing ranges.

Problem Statement: Lead is the primary contaminant at small arms firing ranges. It is found in both the spent bullets that must be separated from the soil and as a soil contaminant resulting from both leaching and weathering. Other contaminants can include copper, zinc, arsenic, tungsten, antimony, and PAHs. Depending on the depth of groundwater or proximity to water bodies, firing ranges have also caused water pollution concerns.

Many existing ranges are unaware of the potential to contaminate the environment and have not designed the range appropriately to avoid contamination. State and federal environmental regulatory agencies have no oversight authority of operating facilities therefore some states have developed a technical services program to educate and inform site operators and community stakeholders of the design options for environmentally safe small arms firing ranges. Massachusetts (an active team member) has an existing Lead Shot Program; Florida (active member) has a draft of the program elements for best management practices for small arms firing ranges, and Michigan is considering such a program.

Affected Parties: The Department of Defense (DoD) currently has over 2200 small arms firing ranges in active use. This does not include inactive ranges waiting cleanup or ranges that receive larger munitions and explosives. In addition to the DoD problem, the remediation of firing ranges is also a public problem, with many gun clubs and law enforcement ranges needing cleanup.

A cost-effective menu of technologies must be available for the remediation of these facilities. Depending upon the future use of the range, cleanup might be as simple as sifting the bullets from the impact berm, to complete chemical extraction of the contaminants.

As stated previously, all branches of the DoD, the Department of Energy, public and private gun clubs, federal, state, and local law enforcement all have concerns and responsibility for the remediation of firing ranges. The potential costs are easily in the hundreds of millions of dollars.

The market stage is “early.” DOD estimates that millions of acres of training ranges are contaminated, but financial estimates are very fuzzy and dependent on thousands of regulatory actions, which have not been made yet. Some prioritization of ranges based on risk exposure and uptake pathways is probably required. Small arms firing ranges are a much simpler cleanup

exercise than unexploded ordinance, requiring primarily a lot of conventional land-moving equipment more than sophisticated technology. The main issues driving the market revolve around the level of cleanup negotiated between regulators and the military at particular sites, based somewhat on future land use.

Project Description: The ITRC Small Arms Team has completed a guidance describing the technical requirements and regulatory issues surrounding the clean up of small arms firing ranges. This 2003 project is underway and progressing well, however, understanding the local government interest is necessary to address law enforcement and state or local government owned firing ranges. This required a questionnaire to be developed, distributed and information collected and compiled from a variety of organizations and targeted municipalities. This caused scheduled to extend into 2004. The best management practices guidance will contain information from the remediation guidance, design requirement from existing state, federal industry and European programs, as well as information from site visits and case studies. A training module will be developed on the best management practices as well as a template for government technical assistance programs for Environmental Stewardship of SAFRs. This training module is intended to be used as on-site live training presented by team members in their respective states and (or) the team leaders in addition to Internet based. Range owners can benefit from a document that describes environmentally sound maintenance and management practices that minimizes the efforts needed for future range closure, reuse and remediation. The existing Small Arms Team has the right mix of personnel to prepare such a manual.

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Related Work: The team has completed the tech and reg document for remediating abandoned or closed small arms firing ranges and associated internet training in 2002 and are progressing well on the BMP guidance document.

Project Outcome:

- These Internet training modules will be used in a similar fashion to other ITRC training courses. However, they will also be used as site training modules by the team members. As pollution prevention guidance, there rarely are environmental consultants supporting active ranges during design and maintenance. This document will offer the owners and operators state-defined design requirements to prevent operating ranges from contaminating the environment. The document will contain a template states may consider when developing a technical services program for active small arms firing ranges.
- The tech/reg document will be widely used by state regulators, DOD personnel, and consultants.
- Internet training will be used to inform range owners and operators of the technical guidance developed by states and stakeholders of the design requirements specifically created to prevent unnecessary contamination of the environment.
- It is envisioned that full-scale training might be valuable as a pre- or post-conference seminar at such meetings as SERDP or ESTCP.
- This training will provide information and tools needed to assist with the decision-making process and will be based on a suite of available technologies that can be applied to range remediation, monitoring, and maintenance. One goal of these training exercises will be to develop an understanding of how these technologies work, when they are appropriate, and how they should be implemented.
- The BMP document will be a unique ITRC document in that it will address approaches to operation and maintenance that should ultimately result in less future remediation.
- The BMP guidance will also include a template created from existing state initiatives, enabling states to design and offer technical assistance and education to range owners and the surrounding communities.
- The potential cost savings to responsible parties is tremendous. The technologies proposed produce very little off-site disposal. The main export from the range is the lead bullets, which

have a market value. By reducing the costs of disposal of contaminated soils and returning the existing soils to the site, the costs of remediation are greatly reduced.

Project Schedule: Estimated completion dates are shown below:

<u>2002</u>	Complete
Jan-Dec 2002	complete the remediation tech/reg document and concurrence
May-Aug 2002	Prepare Internet and classroom training
Sept and Nov 02	Internet training sessions
Dec 2002	deliver one on-site seminar at a DOD facility or conference
<u>2003</u>	In Progress
Jan-July 2003	Develop and deliver a questionnaire identifying local government involvement at SAFRs (New Task)
Jan-Nov 2003	Develop a maintenance/management document (Renamed Best Management Practices for Environmental Stewardship at Small Arms Firing Ranges)
July Dec 2003	Develop maintenance/management Internet training
<u>2004</u>	Proposed
Jan-April 2004	Complete concurrence review and Response to Comments on BMP for Environmental Stewardship at Small Arms Firing Ranges
Jan-Dec 2004	Complete testing of Internet training and deliver Dry Run plus 2 full courses
July 04 – Dec 04	Site visits for on-site seminars to range operators and Governmental environmental staff

Project Budget:

SMART	Team	Contractor	State	Calls, Print,	Other	Project
Calendar Year	Travel	Support	Grants	& Materials		Totals
2001 Budget	12,000	63,000		10,000		85,000
2002 Budget	12,000	63,000		10,000		85,000
2003 Budget	24,000	63,000		10,000		97,000
2004 Budget¹	25,000	20,000		10000		55,000
Project Total	73,000	209,000		40,000		322,000

¹ Travel cost for on-site training using the Internet modules.