



The National Park Service EnviroFact Sheet

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Managing Firing Range Waste (SW-5)

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Firing Range wastes are generated by discharging firearms at indoor and outdoor ranges. They include spent bullets and shot, cartridges, dust, soil, and waste gun-cleaning materials.

The primary environmental risk at a firing range is associated with the historical and continued use of lead shot and bullets.

Lead that accumulates in the firing range can be introduced into the environment at outdoor shooting ranges in one or more of the following ways:

- Lead oxidizes when exposed to air and dissolves when exposed to acidic water or soil;
- Lead bullets, bullet particles, or dissolved lead can be moved by storm water runoff; and
- Dissolved lead can migrate through soils to groundwater.

Parks should minimize the spread of lead contamination by implementing best management practices appropriate for their specific range.

APPLICABLE REGULATIONS

Spent leaded ammunition at firing ranges may be subject to the Resource Conservation and Recovery Act (RCRA) regulations. Lead is not considered a RCRA hazardous waste at the time it is discharged from a firearm because it is being used for its intended purpose. However, lead and other toxic metals remaining in the ground at outdoor ranges for extended periods are subject to the broader definition of solid waste under RCRA. As such, spent leaded ammunition is potentially subject to RCRA hazardous waste requirements at 40 CFR 262 - 265.

It is important to determine if lead waste and any other waste streams at the firing range are hazardous wastes as defined by the RCRA regulations at 40 CFR 261. The following firing range wastes may be hazardous:

- Contaminated soil and surface water; lead waste; and dust (indoor ranges) – potentially hazardous due to lead and arsenic content (see “Compliance with RCRA” below); and
- Gun cleaning materials (spent solvents; used oils, rags, & swabs) – potentially hazardous due to ignitability and/or lead/arsenic toxicity. Used gun oil may be classified as used oil under 40 CFR 279.

Since active outdoor firing ranges can potentially spread lead contamination, state regulations covering the management of outdoor firing range waste may be more stringent than the federal regulations.

COMPLIANCE WITH RCRA

In general, the following points should serve as guidance in understanding the RCRA compliance issues that apply to firing ranges (check state regulations to ensure they are comparable):

- Lead waste, **if recycled**, is considered a scrap metal pursuant to 40 CFR 261.6(a)(3)(ii) and is exempt from RCRA regulation.
- For outdoor ranges - after the removal contractor or reclaimer applies standard best management practices (BMPs) to separate the lead from soil, the soil may be placed back on the range without further treatment.
- Lead waste destined for recycling does not need to be manifested (see first bullet). Therefore, the lead waste transporter is not required to have a RCRA ID number. However, NPS encourages parks to use transporters with RCRA ID numbers. Records of lead waste shipments and the facilities to which they were sent should be kept to demonstrate the lead was recycled.
- Sections 7002 and 7003 of RCRA allow the EPA, states, or citizens to file civil lawsuits to compel cleanup of “solid waste” (e.g., spent leaded ammunition) posing actual or potential imminent and substantial endangerment to the environment. Such action may be sought whether the range is active or closed. The risk of lead migrating outside firing range boundaries increases with time, so parks with ranges that have not been cleaned up are potential targets for such lawsuits.



IMPLEMENTING BEST MANAGEMENT PRACTICES

Continuous lead removal and implementing other BMPs such as storm water management and segregating accumulated waste in closed, properly labeled containers will allow the park to: minimize contamination and potential impacts to human health and the environment; reduce liability; benefit economically from the recycling of lead; and enhance the park’s role as a good steward of the environment. Refer to the EPA Region 2 guidance, “Best Management Practices for Lead at Outdoor Shooting Ranges” at <http://www.epa.gov/region02/waste/leadshot/> for more information.

POLLUTION PREVENTION

- Use lead-free (“green”) ammunition, and green gun cleaning (“supplies and methods).
- Avoid use of green ammunition containing tungsten.
- Remove and recycle lead and other scrap metal from the range.
- If possible, recycle spent metal cartridges via the ammunition supplier or manufacturer.
- Utilize non-NPS firing ranges that recycle lead waste.
- Restrict unauthorized, non-NPS use of ranges.

FOR MORE INFO...

NPS Law Enforcement, Security and Emergency Services (LEES) website:

<http://inside.nps.gov/waso/waso.cfm?prg=967&lv=4>

NPS EMP Outdoor Firing Range Management website:

http://pfmd2.nps.gov/EMP/hazmat/EMP_LIB/library_firing_ranges.cfm

DOD Guidance on closing ranges (proposed rule):

<http://www.apg.army.mil/NGBIRP/32CFR178.HTM>

FIRING RANGE WASTE MANAGEMENT CHECKLIST

Checklist Item	Notes
<p>1. Ensure that non-leaded ("green") ammunition and green gun cleaning supplies are used by law enforcement staff at the range(s). For a current price list of Federal Law Enforcement Training Center (FLETC)-approved green ammunition go to: http://inside.nps.gov/waso/custommenu.cfm?lv=3&prg=679&id=4381.</p> <p>Contact the FLETC Procurement Division at: 912 -267-3297 or ask your ammunition supplier.</p>	
<p>2. Determine whether and which best management practices have been implemented at outdoor firing ranges to minimize potential environmental impacts.</p>	
<p>3. Confirm that there is a program for the collection of discharged projectiles and other firing range wastes, including the collection of projectiles from impact berms and bullet traps, and the collection of dust from indoor ranges using HEPA vacuums. If not, develop a collection program based on:</p> <ul style="list-style-type: none"> • Number of rounds fired; • Average precipitation; • Soil type and pH; and • Depth to groundwater. <p>For additional guidance, see EPA Region 2, "Best Management Practices for Lead at Outdoor Shooting Ranges," Section 3.3 Lead Removal and Recycling at http://www.epa.gov/region02/waste/leadshot/</p>	
<p>4. Verify that firing range wastes are properly segregated and accumulated in closed, properly labeled containers.</p> <p>For additional guidance, see EPA Region 2, "Best Management Practices for Lead at Outdoor Shooting Ranges," Appendix D Lead Removal and Recycling at http://www.epa.gov/region02/waste/leadshot/</p>	
<p>5. Ensure that disposal of lead contaminated dust and vacuum HEPA filters from indoor ranges is in accordance with RCRA requirements. Ensure that spent projectiles, metal casings, spent cleaning solvents, and used oils are recycled or reclaimed.</p>	
<p>6. Verify that personnel conducting maintenance activities are properly trained in lead abatement procedures and wear appropriate personal protective equipment, and that air monitoring is conducted during maintenance activities in accordance with OSHA requirements.</p>	
<p>7. Verify that contamination monitoring programs have been conducted to determine if there is contamination of surface water, groundwater, and/or soil, and that procedures are in place to control or mitigate such contamination.</p>	
<p>8. Determine if there is a health and safety plan for the range and facilities (e.g., hand washing and clothes changing) to minimize exposure to lead.</p>	
<p>9. Confirm that a formal closure procedure has been initiated and completed for deactivated ranges in accordance with RCRA/CERCLA guidelines.</p>	
<p>10. Confirm that records of collection, storage and disposal, maintenance procedures, environmental monitoring, range closure, and other documents related to range operations are properly maintained.</p>	