



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

November 18, 2019

MEMORANDUM

SUBJECT: Management Alert: Unapproved Use of Slag at Anaconda Co. Smelter Superfund Site
Report No. 20-N-0030

FROM: Charles J. Sheehan, Acting Inspector General

A handwritten signature in blue ink that reads "Charles J. Sheehan".

TO: Gregory Sopkin, Regional Administrator
Region 8

Summary

While conducting work on the ongoing audit currently titled *Communication of Human Health Risks Posed by Sites in the Office of Land and Emergency Management's Programs* (Project No. OA&E-FY19-0031), the U.S. Environmental Protection Agency's (EPA's) Office of Inspector General (OIG) decided to issue this management alert to inform the agency and the public of our discovery that a certain unapproved use of slag is taking place in Anaconda, Montana. Slag is waste material from historical mining and smelting operations. Slag from the Anaconda Co. Smelter Superfund Site is being used or sold as a souvenir despite it not being an approved use according to the Record of Decision for the site. As a result of slag being used or sold as a souvenir, the public may be at risk of exposure to contamination.

Scope and Methodology

We conducted our work from November 2018 to October 2019. We reviewed the EPA's Anaconda Co. Smelter Superfund site documentation, including Records of Decisions; Agency for Toxic Substances and Disease Registry (ATSDR) information regarding health risks of exposure to toxic substances; conducted a public listening session in Anaconda, Montana, and a site visit in July 2019; and interviewed regional staff and other stakeholders at the site. This report, while generated during an audit, does not itself constitute an audit done in accordance with generally accepted government auditing standards.

Background

The Anaconda Co. Smelter Superfund site, covering approximately 300 square miles in southwestern Montana, is located in and around the city of Anaconda, also known as the Smelter City. Nearly 100 years of smelting activities resulted in widespread contamination of the area. The 585-foot-tall Anaconda smelter smoke stack and large Main Granulated Slag Pile, owned by the Potentially Responsible Party for the Superfund site, are highly visible landmarks in the community and reminders of the city's industrial past. According to the EPA, slag—stored in large amounts at the Main Granulated

Slag Pile and other areas—can be a source of contamination that poses health risks to the surrounding community. The contaminants found in slag from the Anaconda site include arsenic and lead. According to the ATSDR:

Breathing high levels of inorganic arsenic can give you a sore throat or irritated lungs. Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of “pins and needles” in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small “corns” or “warts” on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. In pregnant women, exposure to high levels of lead may cause a miscarriage. High-level exposure in men can damage reproductive organs. (Source: ATSDR, [Arsenic – ToxFAQs](#), August 2007).

The effects of lead are the same whether it enters the body through inhalation or ingestion. Lead can affect almost every organ and system in your body. The nervous system is the main target for lead toxicity in adults and children. Long-term exposure can result in decreased learning, memory and attention, and weakness in fingers, wrists, or ankles. Lead exposure can cause anemia and damage to kidneys. It can also cause increases in blood pressure, particularly in middle-aged and older individuals. Exposure to high lead levels of lead can severely damage the brain and kidneys and can cause death. (Source: ATSDR, [Lead – ToxFAQs](#), May 2019).

The Record of Decision included remedial requirements for the Anaconda Co. Smelter Superfund site to minimize the risk of human exposure to slag, specifically at the Main Granulated Slag Pile. Specifically, the September 1998 Anaconda Regional Water, Wastes, and Soils Operable Unit Record of Decision identifies the remedial requirements for the Main Granulated Slag Pile:

- (1) Maintain the status of the slag as a resource, rather than a waste. Specifically, the EPA and the Montana Department of Environmental Quality approved use of the slag for purposes of:
 - Blasting media.
 - Manufactured roofing material and other building material.
 - Underground pipe bedding material.
 - Controlled landscaping (e.g., golf course sand traps).The EPA and the Montana Department of Environmental Quality will continue to review and approve future uses of the slag.
- (2) Operate the facility in compliance with applicable regulations, including that developers of the slag will follow all applicable environmental regulations regarding production of the slag, including Occupational Safety and Health Administration and Resource Conservation and Recovery Act regulations.
- (3) Implement and maintain best management practices, including that slag production will be conducted in a manner to minimize wind erosion and transport of material outside the Waste Management Area.
- (4) Control access to prevent exposure to waste materials, including that the Potentially Responsible Party will maintain existing institutional controls to restrict public access and continue fencing and security inspections to assure appropriate access and land use.

OIG Concerns

During our work on a risk communication audit of the EPA's Office of Land and Emergency Management, we became aware that bags of slag were being sold or provided as souvenirs to the public in Anaconda. This use of slag has not been approved by the EPA and the Montana Department of Environmental Quality in the Record of Decision. As the EPA has oversight responsibility for the site, we are informing you about this matter so that you can take steps to enforce the existing remedial requirements established to minimize the risk of human exposure from contaminated slag.

The OIG is concerned that direct exposure to contaminants from slag could occur as a result of the Record of Decision's requirements not being effectively implemented or enforced. A tourism brochure for Anaconda highlights that "the tourist can leave with a token of the smelter – small bags of slag." According to EPA personnel, individuals are trespassing onto the Anaconda Co. Smelter Superfund site to collect slag for the souvenir bags, which EPA personnel told us "is not an approved (or approvable) use of the slag."

The OIG is also working with Region 8 on additional issues we observed at the Anaconda Co. Smelter Superfund site, including the issue of public trespassing on the site for recreational purposes, the migration of slag from workers' vehicles (the interior compartments and tires), and the EPA's overall assessment of risk related to the slag at the Main Granulate Slag Pile.

Response Requested

The OIG recommends that the Region 8 Regional Administrator:

1. Notify any individuals or businesses known to be involved in the collection or sale of the slag that those are not approved uses of the slag. The OIG recommends that Region 8 identify any other federal, state or local agencies with oversight on this matter and notify those entities accordingly.
2. Determine how long and approximately how many souvenir bags of slag have been sold and determine what should be done to inform purchasers of the health risks that the slag souvenirs may pose to them.
3. Create and distribute, both in hard copy and via the EPA's website, a fact sheet for the public that describes the potential hazards associated with the souvenir bags of slag, noting any precautions that are needed, especially for children; how to properly dispose of the bags; and any other information necessary to inform the public of any potential hazards from the possession, use, handling or storage of the bags of slag.
4. Work with the Montana Department of Environmental Quality to coordinate on these recommendations, as needed.

Within 15 days, we request that you provide a response, including actions taken concerning this matter. Please email both an Adobe PDF and a Microsoft Word version of your response to lovingood.tina@epa.gov. The OIG's ongoing audit on risk communication includes the Anaconda site and may be impacted by this matter.

We will post your reply on the OIG's website at www.epa.gov/oig.

If you or your staff have any questions, please contact Kevin Christensen, Assistant Inspector General for Audit and Evaluation, at (202) 566-1007 or christensen.kevin@epa.gov; or Tina Lovingood, Director, Land Cleanup and Waste Management, at (202) 566-2906 or lovingood.tina@epa.gov.

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