

SHARON STEEL SITE (MIDVALE TAILINGS SITE)

MIDVALE, UTAH

CERCLIS NO. UTD980951388

DECEMBER 11, 1986

Agency for Toxic Substances and Disease Registry
U.S. Public Health Service



Memorandum

Date DEC 11 1986

From Acting Director
Office of Health Assessment

Subject Sharon Steel - Midvale Tailings Site, Midvale, Utah
SI-87-069

To Mr. Michael A. McGeehin
Public Health Advisor
EPA Region VIII
Denver, Colorado

EXECUTIVE SUMMARY

The Environmental Protection Agency (EPA) Region VIII has requested the assistance of the Agency for Toxic Substances and Disease Registry (ATSDR) to review their Preliminary Level I Endangerment Assessment of the Sharon Steel - Midvale Tailings Site to determine if a public health risk existed from off-site migration of the heavy metals in the mine tailings. Based on the information provided, we have determined that a potential public health threat exists.

DOCUMENT REVIEWED

Preliminary Level I Endangerment Assessment, Sharon Steel - Midvale Site, Document No. 340-WP1-LI-DCZW-1 dated August 19, 1986. This document was prepared for EPA by Camp Dresser & McKee Inc., Denver, Colorado.

STATEMENT OF THE PROBLEM

The Sharon Steel - Midvale Tailings Site is located in the town of Midvale, Utah, which is approximately ten miles south of Salt Lake City. The site is approximately 260 acres in size and contains the milling portion of a former milling and smelting operation. The milling operation lasted for a period of about 61 years (from 1910 to 1971); the smelter closed in 1958. The wastes from the milling operations were disposed in unconsolidated tailing piles at the site. Currently, an estimated ten million tons of tailings, 40 to 50 feet deep in places, are stored on-site. In August 1982, the State of Utah sampled the windblown tailings from nine off-site locations. The State analysis showed high concentrations of arsenic, cadmium, chromium, copper, lead, and zinc. Approximately 1,443 people live within 0.25 miles of the site. Elevated concentrations of arsenic, cadmium, and lead have been found in a downgradient well at the northwest corner of the site in a shallow, unconfined aquifer. It appears that these tailings are not adequately secured and releases have occurred through air and groundwater pathways.

DISCUSSION

Though analytical data are incomplete, the information provided is adequate to indicate a threat to the public health via inhalation, direct skin absorption, and ingestion of potentially contaminated crops in the area surrounding the site. The document reviewed reports that the results from the windblown tailings collected off-site on August 11, 1982 showed arsenic at 330 mg/kg, cadmium at 43 mg/kg, lead at 7,000 mg/kg, and zinc at 8,800 mg/kg. Though this assessment is tempered with the knowledge that these are not QA/QC data, they indicate that unacceptable levels of reported contaminants are available to the residents of the area. Some of the off-site migration of the contaminated soil has been "uncontrollable" via wind dispersion, and some has been "intentional" by residents collecting the "sand" for garden use. This does not alter the threat to public health, rather, it suggests that both dust control and security is inadequate. As noted, contaminated soil is only one environmental pathway of concern at this site. What appears to be a monitoring well on the northwest corner of the property was sampled in 1983. Arsenic was present at 0.390 mg/L; the MCL is 0.05 mg/L. Cadmium was present at 0.20 mg/L; the MCL is 0.01 mg/L. The report indicates that these samples were taken from a shallow unconfined well, and no evidence exists to suggest that anyone uses this water for consumption or irrigation. A deep confined aquifer beneath the site is used for municipal water supply and irrigation, and the USGS report regarding the potential for interconnection between the shallow and deep aquifers has not been provided. If the deep aquifer has been contaminated, the risk to public health via drinking, showering, etc., is compounded by the risk of cadmium-contaminated water being used on crops. Consumers not even living in the area could be subjected to ingesting unacceptable levels of cadmium if these crops are sold commercially. Residents who eat their own crops would therefore compound the amount of cadmium that they are exposed to if this deep aquifer is contaminated. It is clear that a potential public health threat exists via the inhalation, ingestion, and/or consumption of contaminated water and/or soil, and steps need to be taken to better characterize and eliminate this risk.

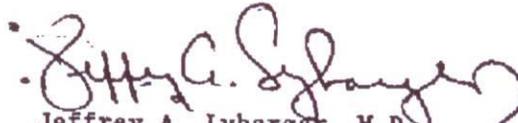
RECOMMENDATIONS

It is clear that heavy metal contamination from mine tailings are a potential public health threat. The extent of the public health threat is not clear. We therefore recommend the following:

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1. Results of the shallow unconfined aquifer have been provided. The possible interconnection of this shallow aquifer and the deep, confined aquifer needs to be determined. This determination is reportedly made in the 1984 USGS report. Findings of this report are crucial to our ability to determine if the deep, confined aquifer could be contaminated.
2. The source of water used by the residents (presumably the deep, confined aquifer) needs to be sampled. We will be available to review the results to determine the public health implications.
3. Dust control measures need to be initiated to prevent off-site migration of contaminated soil.
4. Residents should be discouraged from using contaminated soil for gardening.
5. As additional water samples need to be collected to determine the extent of off-site migration in water, additional soil samples need to be collected to characterize the extent of off-site soil contamination.

We will be available to review additional documents and analytical results associated with this site.


Jeffrey A. Lybarger, M.D.