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Memorandum

To: **LaDonna Turner, Site Assessment Manager**
Technical and Enforcement Branch
U.S. Environmental Protection Agency, Region 6

From: **Dana Bahar, Manager, Superfund Oversight Section**
Ground Water Quality Bureau, New Mexico Environment Department.

Date: **September 10, 2009**

Subject: **Pre-CERCLIS Screening Assessment of Red Bluff #1 Mine, McKinley County, New Mexico: Further action under CERCLA recommended**

Site name	Red Bluff #1 Mine				
City	not applicable	**State**	New Mexico	**Zip code**	not applicable
County	McKinley				
Latitude	35° 18' 59.97"	**Longitude**	107° 50' 26.61"		

Site physical description: Site observations of the Red Bluff #1 Mine by NMED personnel were made from Haystack Road from which no disturbance was evident since access to the privately-owned site could not be arranged in advance. Anderson (1980) describes the site as comprising two pit areas oriented along the north and east section lines respectively that were excavated to exploit uranium deposits within the Todilto Limestone.

Site identification: Potential alluvial ground water contamination within the Grants Mineral Belt was identified because background standards established for the contaminants of concern for ongoing remedial action associated with the Homestake Mining Company NPL site (CERCLIS NMD0007860935) are generally higher than Maximum Contaminant Levels (MCLs). NMED conducted sampling of private residential wells in subdivisions located in the vicinity of the HMC site, and found that the majority had one or more contaminant concentrations exceeding MCLs.

Site summary: Observations made during NMED's Site reconnaissance are shown on the accompanying figures. As indicated, no disturbance was visible from Haystack Road.

However, Anderson (1980) includes pictures of stripped areas and waste materials, which mostly comprise veneers on natural slopes. Anderson also states that the maximum radioactivity at this site was 1100 counts per second. Contamination of vicinity soils and surface drainages by precipitative erosion and wind dispersion comprise the primary contaminant pathways that may be associated with this site. Additionally, site runoff of contaminated wastes may impact ground water quality through seepage through alluvium.
Targets: The closest residence to the Site is approximately 1.0 mile northwest of the site on Haystack Road; a second residence on Haystack Road is located approximately 1.3 miles northwest. Residences located near the junction of State Hwy. 605 and 509 are approximately 4 air-miles northeast of the Site. Other potential targets may include cattle and wildlife.

Closest well sampled to date: livestock well SMC-22 (1 air-mile; 48.2 µg/l total uranium in 2009 sampling).
Site ownership and Potentially Responsible Parties: Surface and mineral rights for the site are held by the State of New Mexico. Homer Scriven reportedly last operated the mine in 1964.
File review: NMED staff reviewed the following files:

- Database compiled by Mining and Minerals Division of the New Mexico Energy, Minerals, and Natural Resources Department (07/20/2007).
- Anderson, Orin J., 1980. "Abandoned or inactive uranium mines in New Mexico".
- McLemore, Virginia T. and William L. Chenoweth, 1991. "Uranium mines and deposits in the Grants district, Cibola and McKinley Counties, New Mexico." New Mexico Bureau of Mines and Mineral Resources Open-file report 353.
- Rappaport, Linda, "Uranium deposits of the Poison Canyon ore trend, Grants District," in "Geology and technology of the Grants Uranium Region, 1963. State Bureau of Mines and Mineral Resources.
- U.S. Geological Survey, 1997. "Gallup quadrangle NURE HSSR study." OFR-97-492.

Site reconnaissance: NMED staff conducted a Site reconnaissance on July 2, 2009.
Recommendation: A release of CERCLA hazardous substances has been documented at the site. NMED recommends further investigation under CERCLA to assess the risk posed by the site using the Hazard Ranking System.

NMED recommends that the investigation include the following:

1. Sample sediments along drainages to characterize extent of Site-derived waste dispersion.
2. Investigate and characterize impacts to surface water accumulations and to ground water.

In addition NMED recommends the following actions be performed to address immediate threats to public health and the environment:

1. Remove waste with elevated radioactivity.
2. Reclaim unstable pit highwalls.

Figure 1: Red Bluff mine

"Px" reference the location of photographs on pages following.

P1: Red Bluff Mine; view toward SSW