



BILL RICHARDSON  
Governor  
DIANE DENISH  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Ground Water Quality Bureau*

Harold Runnels Building  
1190 St. Francis Drive, P. O. Box 5469  
Santa Fe, NM 87502-5469  
Phone (505) 827-2900 Fax (505) 827-2965  
www.nmenv.state.nm.us



RON CURRY  
Secretary  
JON GOLDSTEIN  
Deputy Secretary

**Memorandum**

**To:** LaDonna Turner, Site Assessment Manager  
Response and Prevention Branch  
U.S. Environmental Protection Agency, Region VI

**Date:** September 10, 2009

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

**Subject:** Pre-CERCLIS Screening Assessment of Mesa Top mine,  
McKinley County, New Mexico: Further action under CERCLA  
is recommended

<b>Site name</b>	Mesa Top mine	<b>Street address</b>	not applicable
<b>City</b>	not applicable	<b>State</b>	New Mexico
<b>County</b>	McKinley	<b>Zip code</b>	not applicable
<b>Latitude</b>	35° 20' 25.67" N	<b>Longitude</b>	107° 49' 03.13" W

**Site physical description:** The Mesa Top minesite currently has numerous waste piles, building pads, debris, and 2 open shafts remaining from uranium mining activities. Some waste piles emit elevated levels of radioactivity in comparison to background values (i.e., 34 counts per second [cps] from measurements taken on-site), and most waste piles show evidence of erosion, or border surface water drainage channels.

**Site identification:** Potential alluvial ground water contamination within the Grants Mineral Belt was identified because background ground water 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 a June 3, 2009 site visit are shown on the accompanying figures. Radioactivity at one shaft, the location of which is marked by a vertical large diameter pipe, measured 900 cps outside a closed metal hatch. Several waste piles

and barren areas with elevated radioactivity (highest radioactivity=553 cps; background=34 cps) were noted. Many waste piles are marked by erosional rills, suggesting that waste has been dispersed down-stream. 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 either through seepage through alluvium or by direct entry via the open shafts.

**Targets:** Residences are located near the junction of State Hwy. 605 and 509, approximately 1.8 air-miles east-northeast of the Site. Another residence is located along Haystack Road approximately 1.9 air-miles southwest of the Site, from which another residence is visible further to the west. Other potential targets may include cattle and wildlife.

Closest well sampled to date: irrigation well SMC-34 (1.0 air-miles; 119 µg/l total uranium in 2009 sampling)

**Site ownership and Potential Responsible Parties:** Surface and mineral rights reportedly are held by the Bureau of Land Management (BLM). Holly Minerals reportedly last operated the mine in 1958.

**File review:** NMED Superfund Oversight Section (SOS) 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," p. 73-76.
- 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, p. 122-.
- Souder, Miller, and Associates, 2008. "Abandoned uranium mine field survey project."
- U.S. Geological Survey, 1997. "Gallup quadrangle NURE HSSR study." OFR-97-492.

**Site reconnaissance:** NMED staff conducted a Site reconnaissance on June 3, 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 ground water impacts.

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. Plug open shafts.

Ms. LaDonna Turner, EPA Region 6 Site Assessment Manager  
RE: Pre-CERCLIS screening Assessment of Mesa Top mine, McKinley County, New Mexico  
September 10, 2009

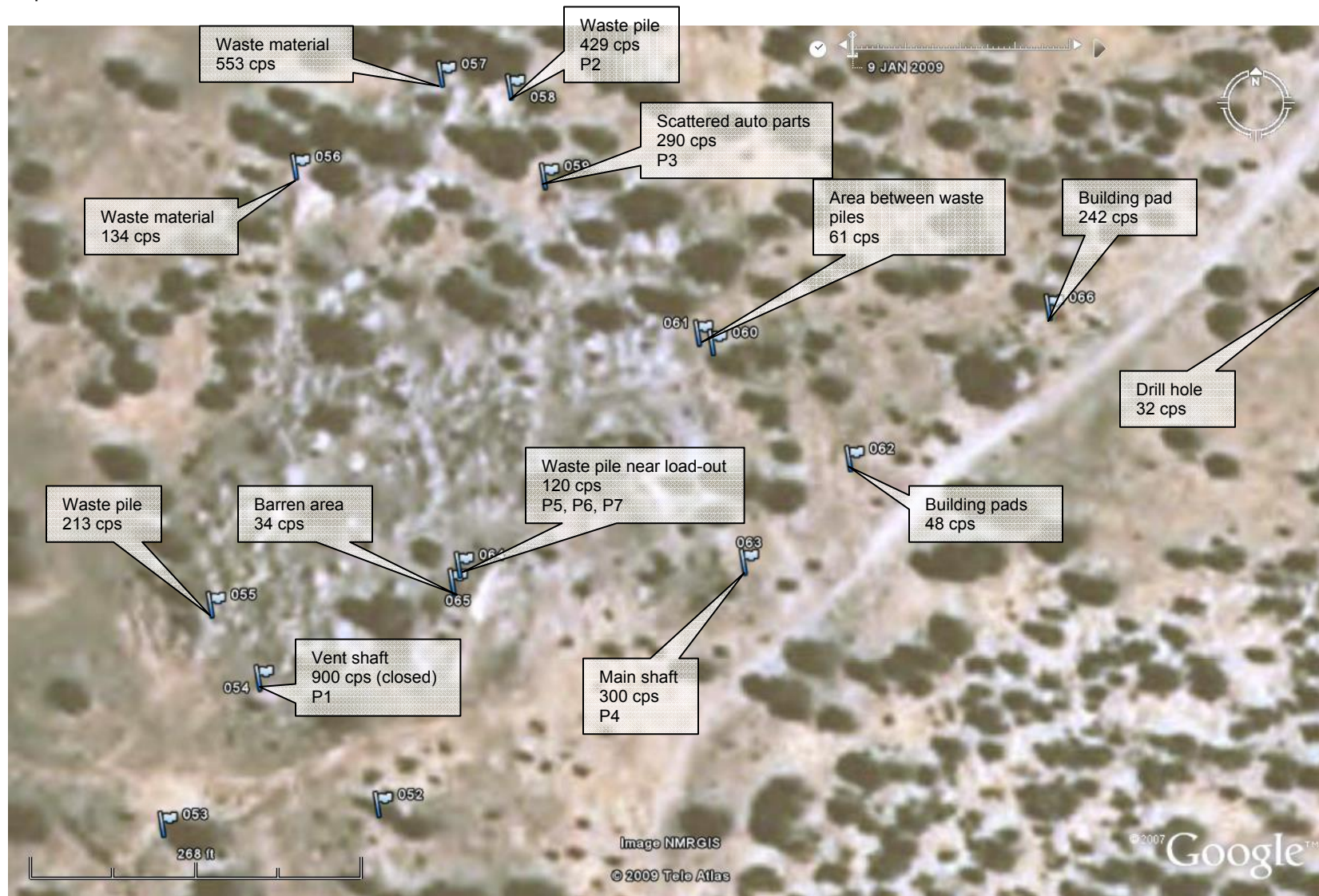


Figure 1: Mesa Top mine—measurements taken on June 3, 2009

“Px” reference the location of photographs on pages following.

Ms. LaDonna Turner, EPA Region 6 Site Assessment Manager

RE: Pre-CERCLIS screening Assessment of Mesa Top mine, McKinley County, New Mexico

September 10, 2009



P1: Mesa Top Mine ventilation shaft



P2: Mesa Top Mine waste pile



P3: Mesa Top Mine scattered automobile parts



P4: Mesa Top Mine shaft

Ms. LaDonna Turner, EPA Region 6 Site Assessment Manager

RE: Pre-CERCLIS screening Assessment of Mesa Top mine, McKinley County, New Mexico

September 10, 2009



P5: Mesa Top Mine waste pile near load-out facility



P6: Mesa Top Mine view from waste pile near load-out toward north



P7: Mesa Top Mine view from waste pile near load-out toward south