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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 Malpais Mine, McKinley
County, New Mexico: Further action under CERCLA
recommended

Site name	Malpais Mine				
City	not applicable	State	New Mexico	Zip code	not applicable
County	McKinley				
Latitude	35° 20' 42.21"	Longitude	107° 48' 51.62"		

Site physical description: The Malpais Mine currently has an open and unfenced shaft and numerous waste material piles bordering or within drainages.

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. The largest pile of waste material had radioactivity readings between 140 and 400 micro Roentgens/hour (µR/h); background was measured at 15—18 µR/h. The open and unfenced shaft presents a hazard to livestock, wildlife, and humans. 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 to the subsurface via the open shaft.

Targets: Residences are located near the junction of State Hwy. 605 and 509, approximately 1.82 air-miles east-northeast of the Site. Another residence is located along Haystack Road approximately 2.0 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: livestock well SMC-18 (0.7 air-miles; 2 µg/l total uranium in 2009 sampling).

Site ownership and Potentially Responsible Parties: Surface and mineral rights reportedly are held by the Bureau of Land Management (BLM). Four Corners Exploration Company reportedly last operated the mine in 1961.

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 June 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 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 shaft.

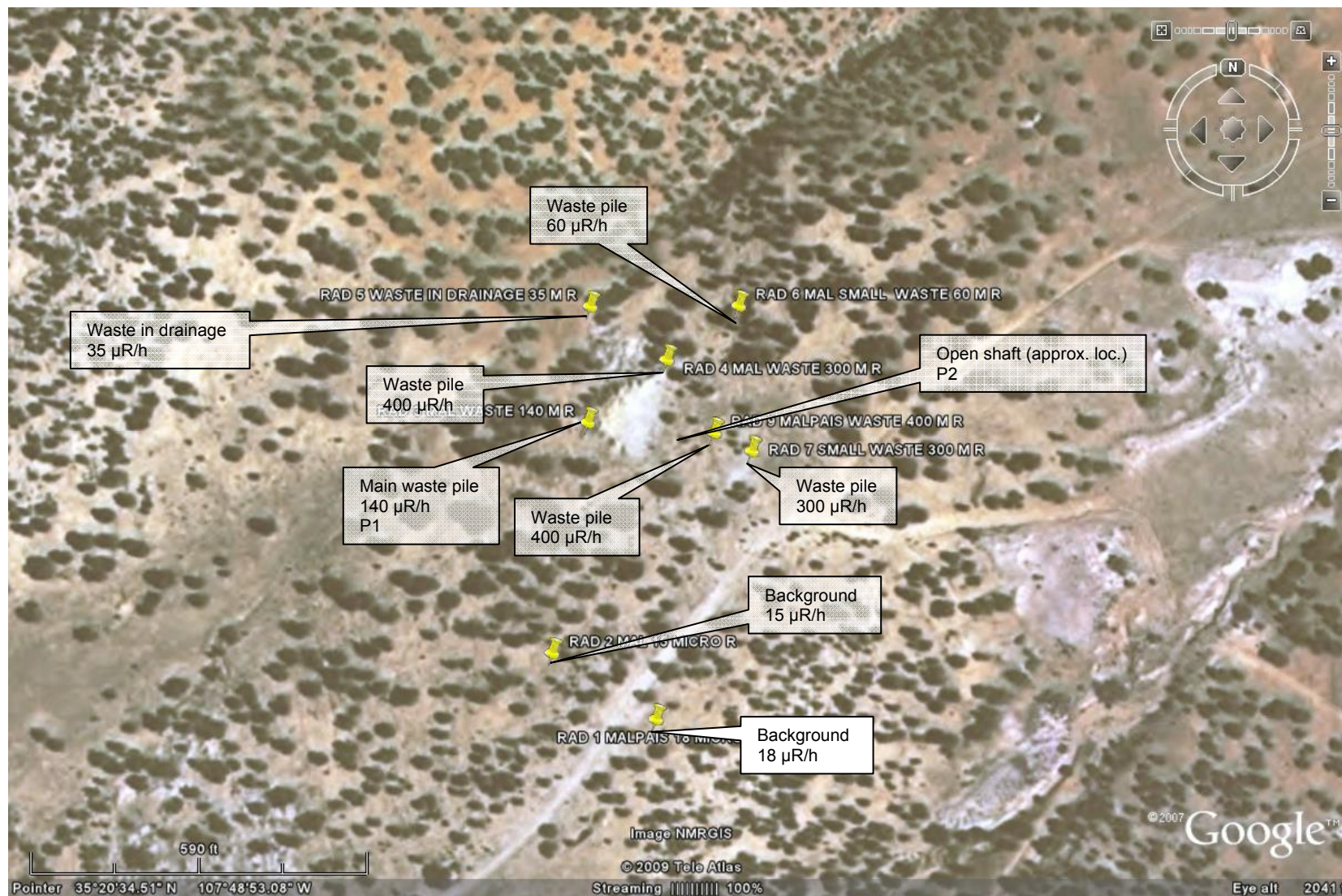


Figure 1: Malpais Mine

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

Ms. LaDonna Turner, EPA Region 6 Site Assessment Manager
Pre-CERCLIS Screening Assessment of Malpais Mine, McKinley County, New Mexico
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P1: Malpais Mine main waste pile



P2: Malpais Mine open shaft