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

Site name	Flea Mine				
City	not applicable	**State**	New Mexico	**Zip code**	not applicable
County	McKinley				
Latitude	35° 20’ 27.51”	**Longitude**	107° 48’ 20.64”		

Site physical description: The Flea Mine currently has a caved decline, an open vent shaft, several concrete pads, and numerous waste piles within or bordering an arroyo over a distance of 0.25 mile. The disturbance is located approximately 0.1 mile from an arroyo, although the landscape generally shows evidence of erosional scarring.

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 highest radioactivity reading came from an area of limestone rock scattered on the ground surface near to the supposed shaft location (563 counts per second [cps]; background=17 cps). The location of a shaft is presumed by the

presence of a heavy steel plate that is mostly covered by soil. While few piles of waste materials can be attributed to this site, the landscape is largely denuded of vegetation, and shows evidence of erosion. 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: The closest residence to this site is located on Haystack Road, approximately 0.7 air-miles to the southwest, from which another residence is visible further to the west. Residences also are located near the junction of State Hwy. 605 and 509, approximately 3 air-miles east-northeast of the Site. Other potential targets may include cattle and wildlife.

Closest wells sampled to date: livestock well SMC-34 (0.60 air-miles; 119 µg/l total uranium in 2009 sampling); livestock well SMC-18 (0.60 air-miles; 2.0 µg/l total uranium in 2009).

Site ownership and Potentially Responsible Parties: Surface and mineral rights reportedly are held by the Bureau of Land Management (BLM) and Schmitt. M&M Mining Company reportedly last operated the mine in 1981.

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 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 shaft.

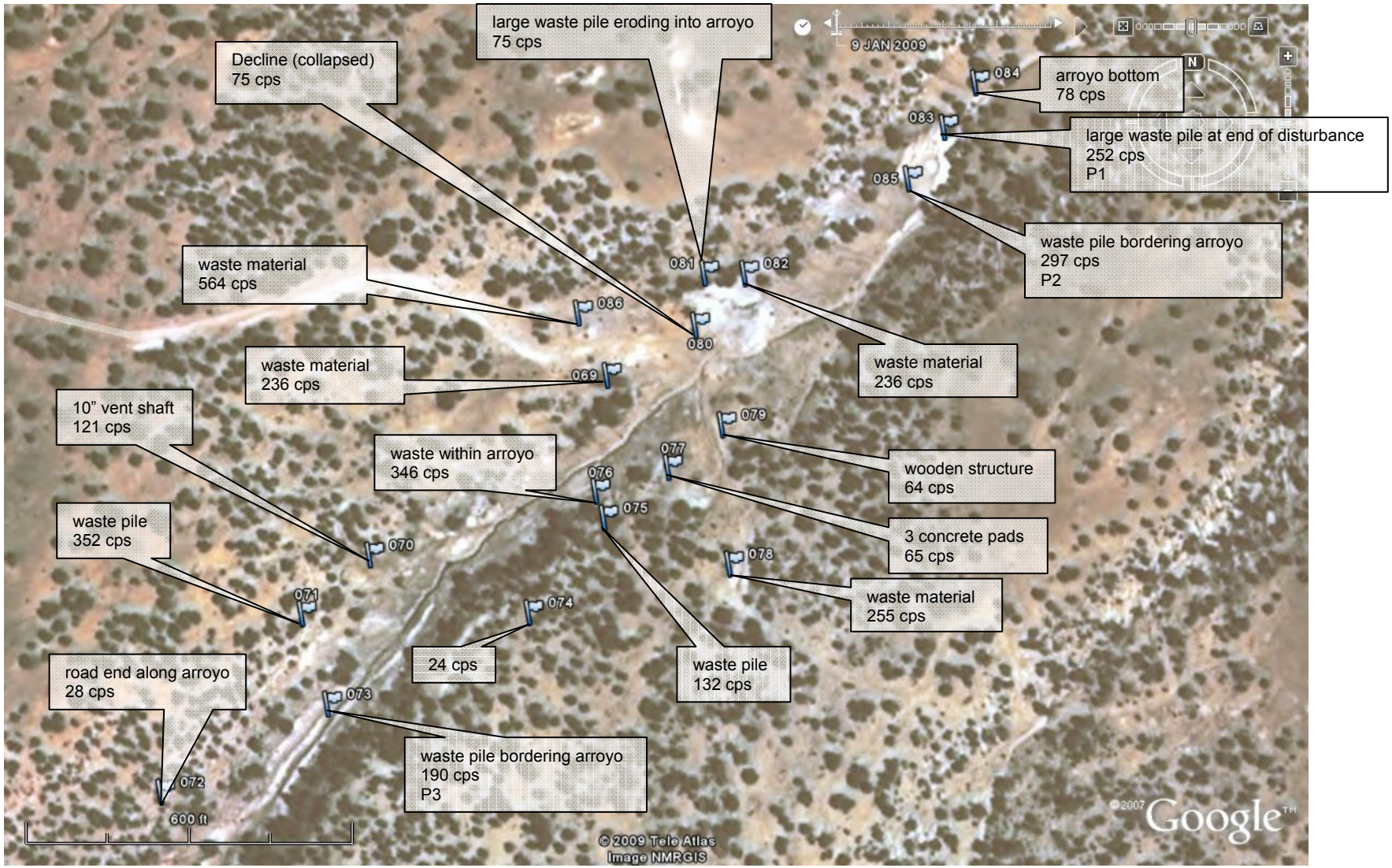

Figure 1: Flea Mine—measurements taken on June 3, 2009.

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

P1: Flea Mine waste pile at end of mine disturbance, eroding into arroyo.

P2: Flea Mine waste pile bordering arroyo

P3: Flea Mine waste pile bordering arroyo