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**Memorandum**

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

**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 Barbara J #2 mine,  
McKinley County, New Mexico: Further action under CERCLA  
is recommended

<b>Site name</b>	Barbara J #2 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' 55.17" N	<b>Longitude</b>	107° 49' 27.82" W

**Site physical description:** The Barbara J #2 minesite currently has several waste piles, and concrete pads remaining from uranium mining activities. The waste piles emit elevated levels of radioactivity in comparison to background values (assumed to be in the range of 10 to 40 counts per second [cps] from data collected at this and nearby sites), border drainage courses, and show evidence of erosion (see Figure 1).

**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 a July 1, 2009 site visit are shown on the accompanying figure. Waste piles with elevated radioactivity (highest radioactivity=348 cps; background=40 cps) were noted. The waste piles are marked by erosional rills, indicating that

waste has been dispersed downstream. 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.

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**Targets:** Residences are located near the junction of State Hwy. 605 and 509, approximately 2.3 air-miles east-northeast of the Site. Another residence is located along Haystack Road approximately 1.5 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-22 (1.14 air-miles; 48.2 µg/l total uranium in 2009 sampling [total uranium Maximum Contaminant Level=30 µg/l])

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**Site ownership and Potential Responsible Parties:** Surface and mineral rights reportedly are held by the Bureau of Land Management (BLM). Mid-Continent Uranium Company last operated the mine in 1968.

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**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.
- Golder Associates, 2009. "Findings of Barbara J Sites, Abandoned uranium mine lands pilot study conducted March—May 2009." Draft Technical Memorandum.
- 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.

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**Site reconnaissance:** NMED staff conducted a Site reconnaissance on July 1, 2009

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**Recommendations:** 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.

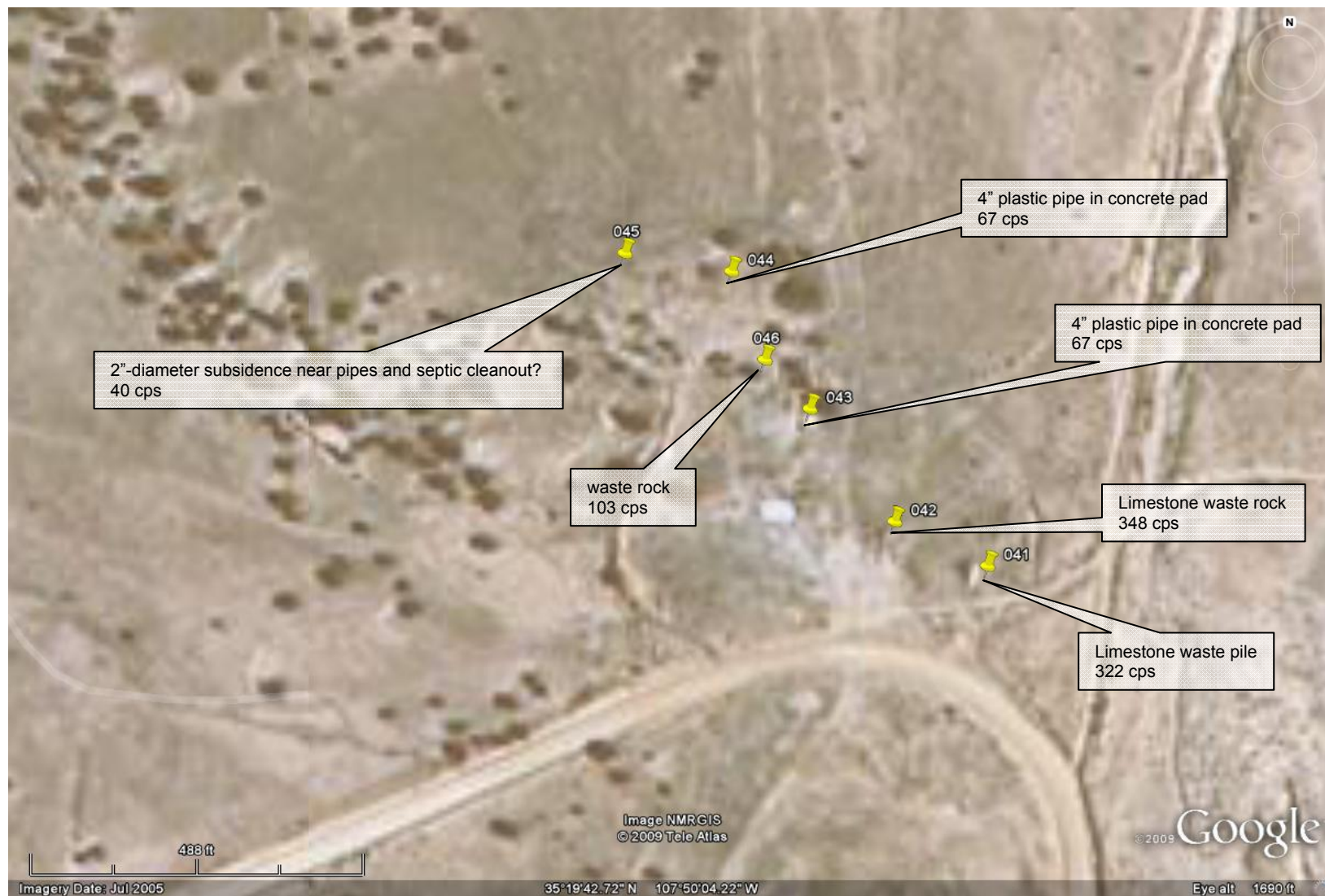


Figure 1: Barbara J #2 Mine—measurements taken July 1, 2009