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ENVIRONMENT DEPARTMENT

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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: **October 8, 2010**

Subject: **Pre-CERCLIS Screening Assessment of the Vallejo Mine (Grants Mining District), McKinley County, New Mexico: Further action under CERCLA recommended**

Site name Vallejo Mine **Alternative names** Double Jerry, Section 34, Farris No. 1
Street address not applicable **City** not applicable **State** New Mexico
Zip code not applicable **County** McKinley
Latitude 35.31298 **Longitude** 107.77149 **TRS** T12N, R9W, Sec 34

Site physical description:
The Vallejo Mine Site ("Site") is located approximately 2.5 miles directly south of the junction of State highways 509 and 605 (Ref. 1). The Site is approximately 11.5 miles north of Grants, NM. The Site is located in the Dos Lomas 7.5 minute USGS 1:24000 scale topographic map quadrangle at latitude 35.31298, longitude 107.77149, and elevation approximately 7,329 ft above sea level. The total area of the Site is unknown, but the estimated area of disturbance is 2 acres (Ref. 2).

Access to the Site is required by permission from the landowner whose land must be crossed to access the site, Mr. Robert Schmitt. Figure 1 is a general location map and Figure 2 is a site map of Section 34. Figure 3 is a copy of a figure-photograph from a 2008 report (Ref. 3). Figures 1, 2, and 3 are contained in Attachment A.

The Site is located along the western margin of La Jara Mesa and along the eastern margin of the alluvial valley for San Mateo Creek (Ref. 3).

Site identification:
The Site is one of numerous legacy uranium sites within the Grants Mining District, Ambrosia Lake Subdistrict, San Mateo Creek watershed, Bluewater Underground Basin.

Site summary:
Based on a visit by Anderson, 1980, approximately 2 acres were disturbed. The portal indicated 350-600 counts per second (cpm) or 21,000-36,000 counts per minute (120-206 µR/hr). In 1980 there was a visible head frame and load out area; a caved incline (shaft); the wooden timber was in poor condition, a powder magazine was present; and a mine dump was present (Ref. 2).

A field visit-site assessment was performed on March 13, 2008 by a contractor to the New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division (MMD). The resultant report summarizing their findings is dated July 18, 2008.

Targets:
The Site is located on the highlands above the San Mateo Creek surface water drainage.

Potential impacts to the alluvial ground water system during Site operation may have occurred from ground water discharges from mine workings to settling ponds and ultimately to the San Mateo Creek drainage. Some portion of discharged contaminants may adhere to sediments, and propagate episodically downgradient in response to stream flows within the San Mateo Creek drainage. Current details of alluvial ground water flow are unknown, but are thought to follow general topographic slope (i.e., locally southward from the site, and generally westward in the direction of surface water flow). Such alluvial ground water impacts may also propagate into underlying bedrock aquifers through stratigraphic, structural, and/or anthropogenic (e.g., leaky wells, mine shafts) interconnections. Additional contaminant mobilization in ore-bearing Westwater Canyon Formation could result from oxygenated ground water influx resulting from progressive basin recharge following cessation of mining activities.

Well records from the New Mexico Office of the State Engineer that are located within a four-mile radius of the Site are shown in Table 1 below (Ref. 5). The Site is located within 10,000 ft of San Mateo Creek.

Site ownership and Potential Responsible Parties:
The history of the Site ownership and potentially responsible parties information includes the following. In 1956 Farris Mines drove incline. In February 1957 Farris Mines, of Grants, began construction of the mine portal under contract to Vallejo Uranium Mines of Vallejo, California. From 1957-1959 Vallejo Uranium Mines, Inc. operated the Site. From 1959-1960 Samson Oil & Mineral Co. operated the Site. From 1962-1963 Penta Mining Co. operated the Site (Ref. 2 and Ref. 5). The Site is located on land of the Cibola National Forest under management by the US Forest Service (USFS). The USFS owns the surface and mineral rights at the Site.

File review:
Files and information sources that were reviewed for this assessment are listed below.

Site reconnaissance:
A field visit-site assessment was performed on March 13, 2008 and a final report is dated July 18, 2008 by Souder Miller Associates under contract to the New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division (MMD). No evidence of human activity was noted. The radiological survey measurements are as follows. The ground surface maximum radioactivity measurement was 240 µR/hr and the minimum measurement was 12 µR/hr. Four-foot high radioactivity measurements were 180 µR/hr and the minimum measurement was 12 µR/hr. Background radiation at the Site is approximately 12 µR/hr.

There were no obvious signs of mine workings on the Site. A small, 10, 000 ft^2 level area was noted, as was a wooden foot bridge across the arroyo bounding the southern extent of the area (See Figure 3). According to Chuck Hagerman with US Forest Service (Grants, NM), the mine was reclaimed in the late 1980s (Ref. 3). There were signs of small animal life on the Site. The land use is designated for grazing of livestock.

Table 1. Well records from the New Mexico Office of the State Engineer located within a 0 – 4 mile distance ring from the Vallejo Mine Site, Grants Mining District, New Mexico

distance from site (miles)	POD REC NB	POD BASIN	POD NBR	well completion date	DEPTH WELL (ft)	DEPTH WATER (ft)	CASING SIZE (in)	owner name	USE	diversion acre/ft yr
0 - 0.25										
0.25 - 0.50										
0.50 - 0.75										
0.75 - 1.0										
1.0 - 2.0	233	B	01340		300.00	0.00	5.50	JAEGER	Domestic	3
1.0 - 2.0	1419	B	01341		300.00	0.00	6.00	ROUNDY	Multiple domestic	3
1.0 - 2.0	227069	SP	03384		0.00	0.00	0.00	ROUNDY	Irrigation	0
2.0 - 3.0	18	B	00415	8/30/1977	59.00	30.00	5.00	NEW MEXICO E.I.A.	Domestic	3
2.0 - 3.0	992	B	00415	8/30/1977	72.00	30.00	5.00	NEW MEXICO E.I.A.	Domestic	3
2.0 - 3.0	936	B	00415	8/10/1977	95.00	72.00	5.00	NEW MEXICO E.I.A.	Domestic	3
2.0 - 3.0	165	B	00415	8/30/1977	54.00	30.00	5.00	NEW MEXICO E.I.A.	Domestic	3
2.0 - 3.0	328	B	00415	8/30/1977	57.00	32.00	5.00	NEW MEXICO E.I.A.	Domestic	3
2.0 - 3.0	180546	B	00558		0.00	0.00	0.00	N.M. STATE HWY DEPT.	Public	3
2.0 - 3.0	1391	B	00659	1/18/1979	220.00	190.00	0.00	GARCIA	Domestic	3
2.0 - 3.0	770	B	00778		0.00	0.00	0.00	ROUNDY	Stock	3
2.0 - 3.0	444	B	00778		0.00	0.00	0.00	ROUNDY	Stock	3
2.0 - 3.0	1004	B	00861		0.00	0.00	0.00	SANDOVAL	Domestic	3
2.0 - 3.0	24415	RG	62079		0.00	0.00	0.00	VALDEZ	Sanitary	3
3.0 - 4.0	288	B	00113	8/3/1961	100.00	55.00	4.00	STEELE	Domestic	3
3.0 - 4.0	832	B	00305		0.00	0.00	0.00	WILSON	Sanitary	3
3.0 - 4.0	1386	B	00414		0.00	0.00	0.00	RESERVE OIL & MINERALS CORP	Sanitary	3
3.0 - 4.0	706	B	00415	3/23/1978	32.00	15.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	538	B	00415	8/11/1977	90.00	73.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	898	B	00415	8/12/1977	80.00	74.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	565	B	00456		0.00	0.00	0.00	SANDOVAL	Stock	3
3.0 - 4.0	1440	B	00521	9/25/2003	320.00	198.00	4.00	DAVEY	Domestic	3
3.0 - 4.0	375	B	00997		0.00	0.00	0.00	MARQUEZ	Multiple domestic	3
3.0 - 4.0	259	B	01104	4/2/1986	303.00	247.00	4.00	SANDOVAL	Domestic	3
3.0 - 4.0	804	B	01115	7/21/1986	478.00	204.00	4.00	MARQUEZ	Domestic	3
3.0 - 4.0	163876	B	01458	3/7/2001	702.00	126.00	4.00	ELKINS	Domestic	3
3.0 - 4.0	175541	B	01485	1/28/2002	580.00	280.00	4.00	MARQUEZ	Domestic	3
3.0 - 4.0	209713	B	01636	5/10/2005	260.00	80.00	4.00	GARCIA	Domestic	3
	POD REC NBR: point of diversion record number.						B: Bluewater Basin			
	POD BASIN: point of diversion basin						SP: Surface Permit			
	POD NBR: point of diversion number						RG: Rio Grande Basin			

Recommendation:
It is important to note that this Site is located in a remote location with rugged terrain that is not easily accessed by assessment crews or trespassers. The Site should be assessed for potential physical hazards, especially any compromise to the cover of the open shaft. The old powder box or magazine may be a hazard to humans and animals if it contains aged explosives or blasting caps.

The Site is assigned a low priority for additional investigation under CERCLA authority because the Site is located in a remote area with rugged terrain that is not easy to access. The reconnaissance radioactivity readings indicate waste rock levels are 15-20 times the surface soil background level of 12 µR/hr. The Site should be evaluated to determine if threats to human health and the environment exist from radioactivity at the Site. NMED also recommends assessment of sediments in the Site vicinity in order to evaluate the potential occurrence of impacts from dispersal of waste materials that have been left on-Site.

Currently, the existence of regional impacts from legacy uranium sites to the ground water system has not been determined. A generalized investigation of potential ground water impacts from "wet" former uranium mines within the Grants Mining District is recommended as part of regional ground water quality characterization. If this generalized investigation were to indicate a potential for alluvial and/or deep ground water impacts, on-Site or adjacent installation of one or more monitor wells may be considered necessary.

References:
1. USGS, 1957. Dos Lomas, N, Mex. 7.5 minute quadrangle topographic map, 1:24,000 scale.
2. New Mexico Energy, Minerals and Natural Resources Department, undated. "2007-07-20 to NMED-GWQ-Sfund.xls." Spreadsheet excerpt.
3. Soder Miller Associates, 2008. Abandoned Uranium Mine Field Survey Project, prepared for NM EMNRD, MMD, 7/18/2008, 220 pp.
4. New Mexico Office of the State Engineer. "May_08_wells." Shapefile.
USGS, 1957. Dos Lomas, N, Mex. 7.5 minute quadrangle topographic map, 1:24,000 scale..
5. McLemore, Virginia T. and William L. Chenoweth, revised December 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.

Attachment A

Figures 1, 2, and 3

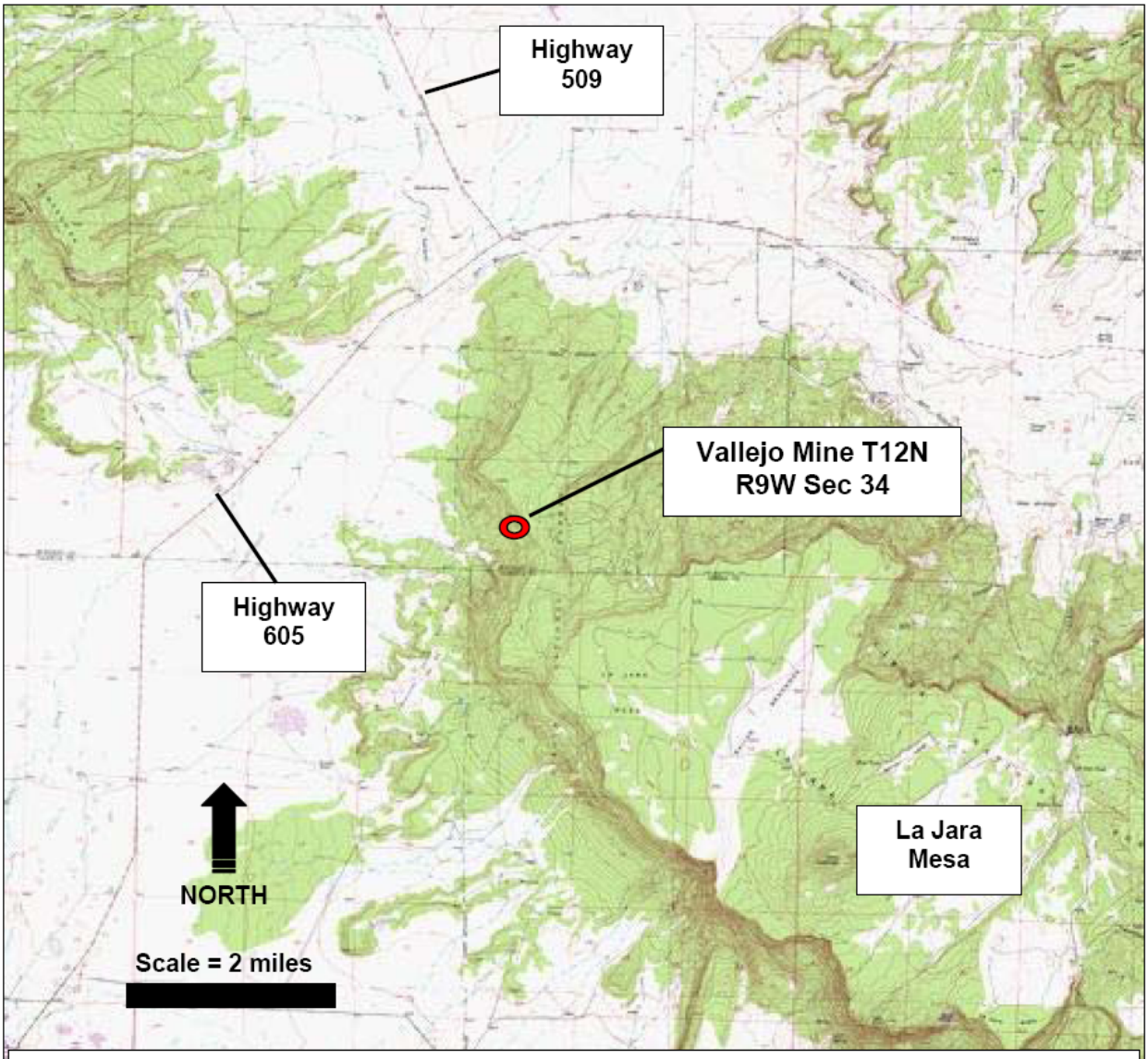


Figure 1. TopoQuest.com location map of the Vallejo Mine in USGS Dos Lomas 7.5 Minute Quadrangle, Ambrosia Lake Subdistrict, San Mateo Creek area, Grants, NM.

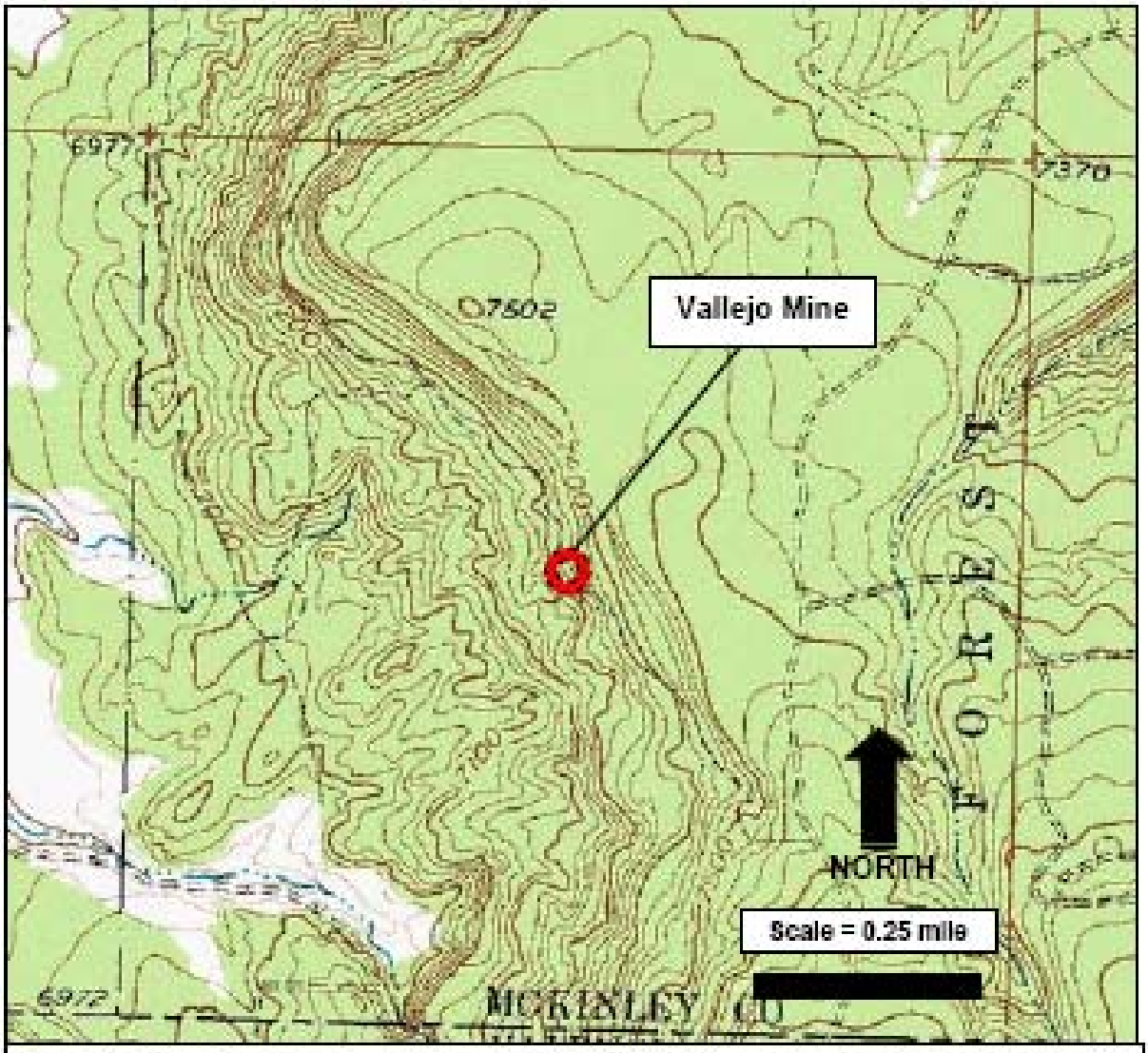
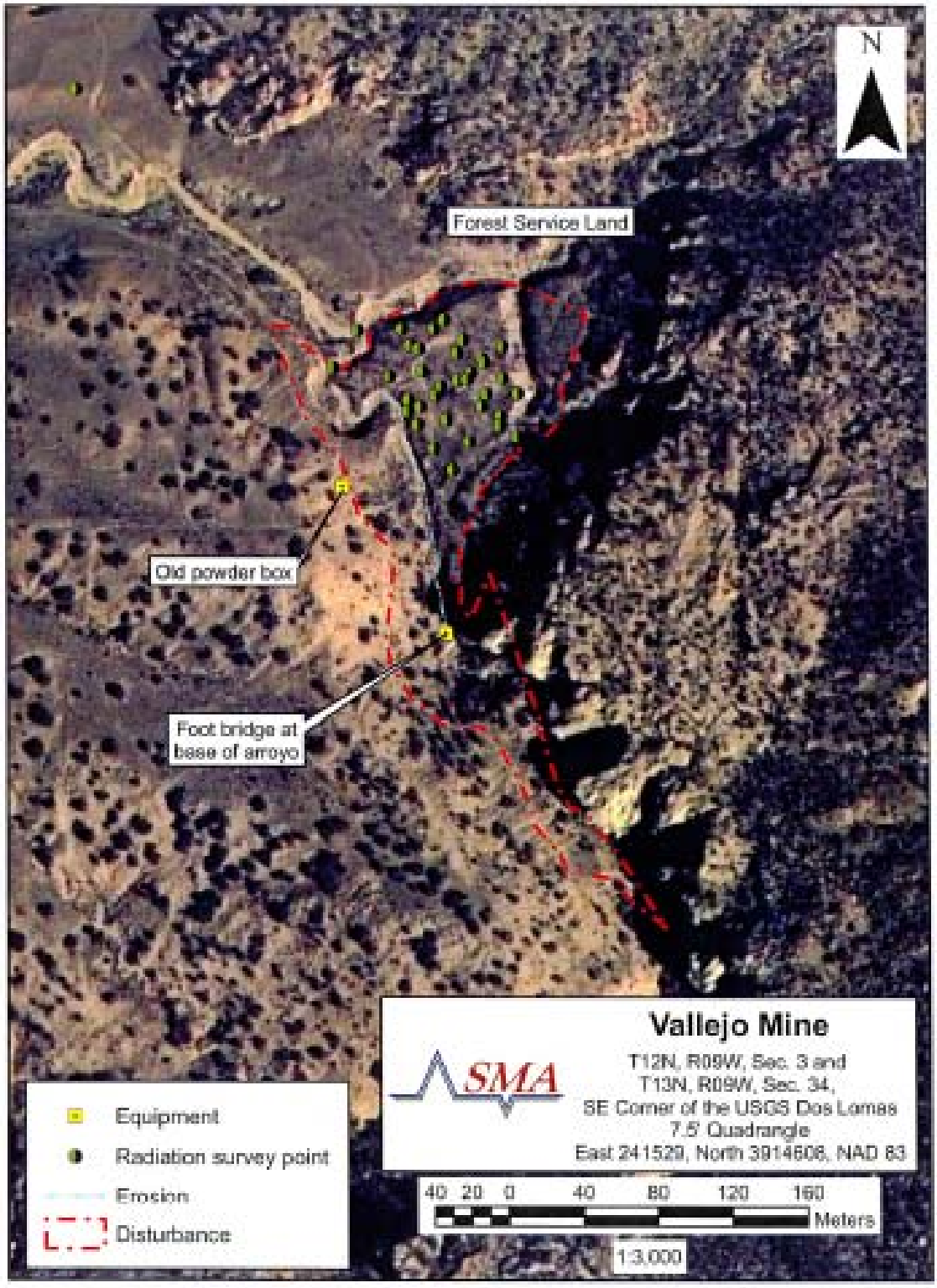
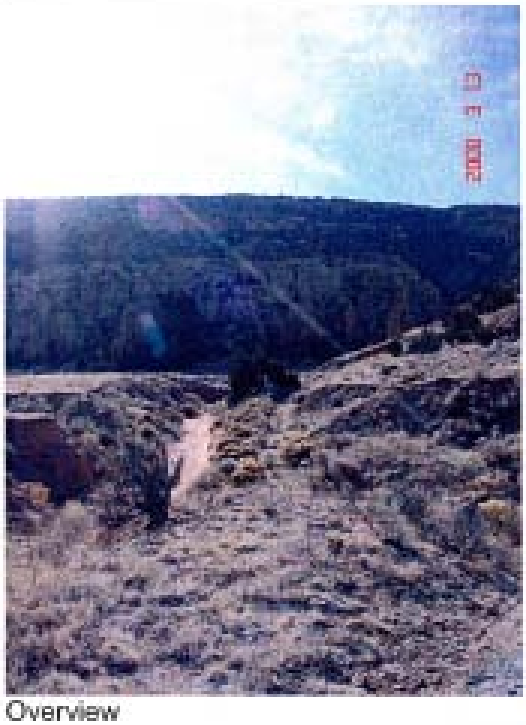


Figure 2. TopoQuest.com location map of the Vallejo Mine in the Dos Lomas Quadrangle USGS 7.5 topographic map, T12N, R9W, Sec 34, Ambrosia Lake Subdistrict, Grants, NM.


N
Forest Service Land
Old powder box
Foot bridge at base of arroyo
Vallejo Mine
SMA
T12N, R09W, Sec. 3 and
T13N, R09W, Sec. 34,
SE Corner of the USGS Dos Lamas
7.5' Quadrangle
East 241529, North 3914606, NAD 83
Equipment
Radiation survey point
Erosion
Disturbance
40 20 0 40 80 120 160
Meters
1:3,000

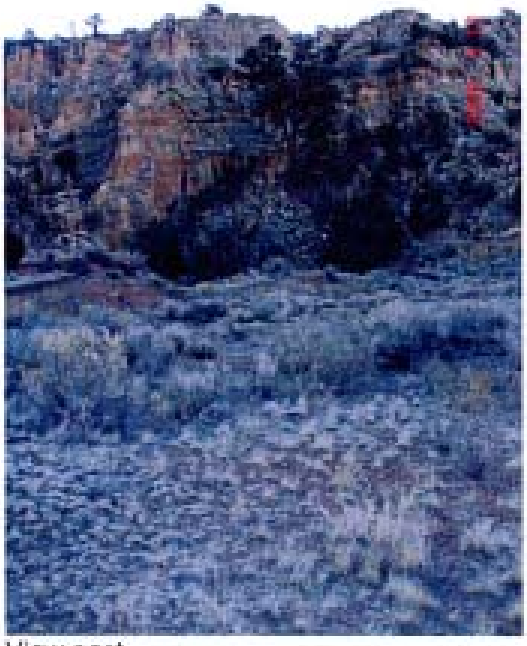
Attachment B

Photo Log from March 13, 2008

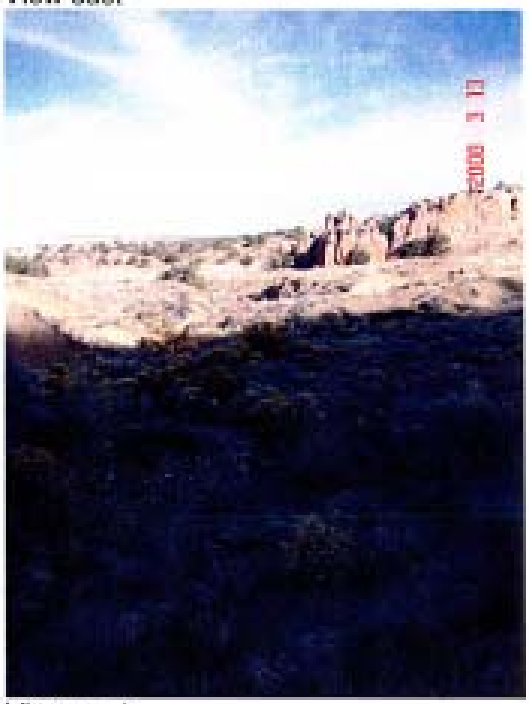


Overview

View east



View east



View west