

Rio Algom Mining LLC

November 17, 2017

CERTIFIED MAIL

Mr. Holland Shepherd
New Mexico Mining Act Reclamation Program
Mining and Minerals Division
Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

**RE: Old Stope Leach Proposed Permit Area
Rio Algom Mining LLC Ambrosia Lake Facility
Permit No. MK009RE**

Dear Mr. Shepherd,

Thank you for visiting Rio Algom Mining LLC (RAML) Ambrosia Lake site on August 23, 2017. During the visit, which included members of your staff and New Mexico Environment Department (NMED), we discussed the Permit Areas as defined in the 1999 Old Stope Leach Permit No. MK009RE (OSL Permit) and what areas should be included in a revised permit and updated Closeout Plan. At the conclusion of the visit, we committed to providing you with our understanding, consistent with the regulatory requirements, of what should be included in the revisions for further reclamation work and for establishing a financial surety. This letter provides our current understanding of which areas should be included in the revisions.

Our proposed area is based on the review of a range of documents, including the following:

- Section 35 Mine Permit MK002RE (1995).
- MK009RE Permit and associated application documents.
- Correspondence from New Mexico Mining and Minerals Division (MMD) regarding the release of several sections in Ambrosia Lake from further reclamation requirements.
- Quarterly injection and extraction reports for old stope leaching activities submitted to NMED for Discharge Permit 362 (DP-362).
- Land ownership records.

The remainder of this letter presents our understanding of how the Permit Area has been defined to date, the requirements associated with Affected Areas, and the proposed basis for the new Permit Area. After you have had a chance to review this letter, we would like to propose a meeting between MMD, NMED, and RAML to discuss further the scope of reclamation activities under the Permit and groundwater abatement activities required under DP-362.

Permit Area History

The requirement for existing mining operations to complete and submit a permit application and a closeout plan was promulgated in 1993. Existing mining operations were required to undertake a site assessment on or before June 30, 1994. The site assessment was required to include, among other things, identification of a proposed permit area for the mining operation. NMSA § 69-36-5.A. "‘Permit area’ means the geographical area defined in the permit . . . for an existing mining operation on which mining operations are conducted or cause disturbance." NMSA § 69-35-3.J; NMAC § 19.10.1.P(3).

The first permit that MMD issued to RAML (or its predecessor companies) was Section 35 Mine (Township 14N, Range 9W) Permit MK002RE in July 1995. At the time the site assessment was undertaken and the permit application was submitted, the Section 35 mine was currently inactive due to the depressed condition of the uranium market, but areas of the mine were available for old stope leaching. No mining activity had occurred since September 1991 when mine dewatering was discontinued. Discharge Permit (DP) 67 authorized the discharge of mine water for use in irrigation and stock watering. The permit area for MK002RE was comprised of the entirety of Section 35.

Old stope leaching was first permitted under NMED DP-362 in 1985. The NMED permit covered eight underground mines: Sections 17, 19, 22, 24, 30, 30W, 33 and 35 mines. Currently, RAML is conducting abatement activities in order to closeout DP-362, which includes abatement activities associated with DP-67.

In lieu of undertaking a site assessment regarding areas where conventional mining took place, RAML submitted a prior reclamation approval application for the Section 17, 19, 22, 24, 30, 30 West, 33 and 36 mining areas in accordance with NMSA § 69-36-5.E. MMD inspected the sites in August 1995. As a result of the inspection, MMD released Section 36 from further requirements under the New Mexico Mining Act. The remaining sections met all reclamation requirements other than re-vegetation criteria. RAML submitted a request for variance in May 1997 regarding the other sections. MMD granted the variance request, with the following conditions:

1. MMD will conduct an inspection of the sites, indicated above, during the late summer of 1996, to determine if conditions are present to meet revegetation criteria. If the results do not meet the release criteria, Quivira will develop and implement the appropriate program to meet the release criteria which may include reseeding and/or interseeding. Any areas that remain unreleased after the summer of 1997 will be reevaluated in the summer of 1998.
2. If old stope leaching takes place on a prior reclamation site before or after the site is released from prior reclamation, those portions of the site redisturbed for mining will be addressed under an existing mine permit by Quivira.

[Letter from MMD to Quivira Mining Co. dated April 21, 1997.]

In May 1997, RAML submitted an application to MMD to cover old stope leaching activities. All or portions of Sections 13, 15, 22, 23, 24, 25, and 26 (T14N – R10W) and Sections 17, 18, 19, 20, 29, 30, 32, 33, 34 and 35 (T14N – R9W) were included in the Permit Area (Attachment 1). The OSL Permit specifically incorporated Permit MK002RE in its entirety.

At the time of the permit application submittal, RAML planned on expanding the scope of leaching activities to areas that had not been leached previously, including areas that were not covered by DP-362. Due to a downturn in the uranium market, a change in corporate plans, and concerns raised by NMED, RAML only conducted only a limited amount of old stope leaching after the OSL Permit was issued. An August 7, 1999 letter from NMED to RAML (“Discharge Plan Renewal and Modification, Quivira Mining Company, Old Stope Leaching, DP-362”), states that *“until groundwater closure modelling of the old stope leaching area has been completed, the leaching operation shall not be expanded into Sections 13, 15, 23, and 25.”* Quarterly reports submitted to NMED for DP-362 that RAML has been able to locate show no record of injection into sites located within these four sections and no record of NMED approval of the expanded leaching area. RAML ceased all underground stope leaching activities before obtaining approval of the geochemical model (see October 31, 2011 Pre-CERCLIS Screening Assessment letters). As a result, old stope leaching was never approved or conducted in sections 13, 15, 23 and 25 mines.

Table 1 presents the injection and extraction rates related to old stope leaching performed by RAML, based on quarterly reports that were submitted to NMED for DP-362. It is our understanding that DP-362 reporting provides a good proxy for disturbance activities that were undertaken by RAML after the OSL Permit was issued since approval from both MMD and NMED were required beginning in the 1990s. As shown in Table 1, mine water injection only occurred in four sections (Sections 19, 22, 24, and 30) in 1999. By 2000, RAML had ceased all underground injections (October 31, 2011 NMED Pre-CERCLIS Screening Assessments). Mine water extraction associated with old stope leaching occurred from locations within five sections (Section 19, 22, 24, 30, and 35) in 1999. Beginning in 2000, extraction continued only from shafts in Section 30 in order to provide a source of water for the Corrective Action Plan that was implemented in response to groundwater quality concerns related to Materials License SUA-1473. Extraction from Section 30 shafts ceased in 2006 when the Nuclear Regulatory Commission adopted alternate concentration limits (ACLs) for groundwater within the licensed area.

Throughout the years since the OSL Permit was issued, RAML has reported to MMD its reclamation activities that it has undertaken in the Ambrosia Lake area. The vast majority of reclamation work was associated with addressing mining features and conditions that existed prior to either the original Section 35 permit or the OSL Permit. MMD released the Section 19 and Section 30 mines from further reclamation requirements on October 17, 2000 and May 6, 1999, respectively.

Affected Area

In an email dated August 8, 2017, MMD suggested that RAML include “affected areas” within the revised Closeout Plan for the OSL Permit, specifically Sections 1, 2, 3, and 11 (T13N – R9W). These four sections are not within the Permit Area specified in the OSL Permit. Our review of the statute and regulations indicates that closeout plans and requisite financial assurance are only required for the Permit Area. See NMSA § 69-36-11; NMAC §19.10.5.506-507. An “affected area,” by definition, is not part of the permit area. “‘Affected area’ means the area *outside* of the permit area where the land surface, water surface, ground water or air resources are impacted by mining operations within the permit area.” NMSA § 69-36-3.A (emphasis added); NMAC § 19.10.1.A(3).

It is RAML's understanding that areas with elevated gamma readings in the Ambrosia Lake area that are outside the OSL Permit Area will be addressed through the abatement process for DP-362 (including DP-67) and/or the United States Environmental Protection Agency (EPA) non-time critical action that is currently being implemented with Tronox funds. This approach is consistent with the long-term permitting history and definition of the "permit area" with regards to OSL. It also distinguishes between mining impacts and impacts associated with irrigation and stock watering.

New Permit Area

Figure 1 and Table 2 present the updated Permit Area that RAML proposed to include in an updated Closeout Plan and revised OSL Permit including the following:

- Township 14N, Range 9W: all or portions of Sections 17, 20, 29, 32, 33, 34, and 35 and
- Township 14N, Range 10W: all or portions of Sections 22, 24, and 26.

Where only portions of a section will be included in the updated Permit Area, the areas will be consistent with the Permit Area originally specified in the OSL Permit unless the area is within the Nuclear Regulatory Commission (NRC) licensed area. Specifically, a small portion of Section 29 and a portion of the Section 32 former right of way (ROW) are within the proposed Long-Term Surveillance and Maintenance (LTSM) boundary for long-term care and maintenance by the U.S. Department of Energy and are excluded from the new proposed Permit Area.

Section 18 (T14N/R9W) has been excluded from the Permit Area because RAML does not own the surface rights in the section and there is no record that RAML undertook leaching activities after the OSL Permit was in place. The current owner has livestock in the area that limits the ability for vegetation to be established. RAML is attempting to contact the current landowner to obtain written concurrence that historic mining features have been sufficiently addressed.

Section 32 (T14N/R9W) was originally included in the OSL Permit as a ROW because the section was owned by Homestake Mining Company at the time. RAML subsequently purchased the section so the area is no longer technically a ROW. As water supply piping is still present in the former ROW, RAML proposed to include the former ROW in the updated Permit Area.

Sections 19 and 30 (T14N/R9W) have been excluded from the Permit Area because of MMD's previous release of the sections.

Sections 13, 15, 23, and 25 (T14N/R10W) have been excluded from the Permit Area because they were never approved for old stope leaching by NMED. RAML has never owned the surface rights to Sections 13 or 15 and there is no indication of mining impacts related to past RAML activities. Surface rights to Sections 23 and 25, which were previously owned by Homestake, were purchased by RAML in November 1996. A letter from MMD dated October 31, 1997 states that Section 23 qualifies for release

"based on the fact that this section had a diverse species composition, including several native grass species that were not in the original seed mix; shrub establishment including winterfat, sage and fourwing saltbush was excellent; and vegetation cover was 25% with no crested wheatgrass."

No areas affected by conventional mining or old stope leaching that were not previously identified in the OSL Permit have been included in the proposed new Permit Area.

Conclusion

We appreciate MMD's willingness to discuss and review the permit record so that we can come to agreement regarding the appropriate path forward for revising the Closeout Plan and OSL Permit. As you know, there is much history and regulatory correspondence associated with the many decades of mining activities in the Ambrosia Lake area. We would appreciate meeting with you and NMED once you have had the opportunity to review the details presented in this document. You may reach me at (209) 736-4803 or at Theresa.Ballaine@bhpbilliton.com.

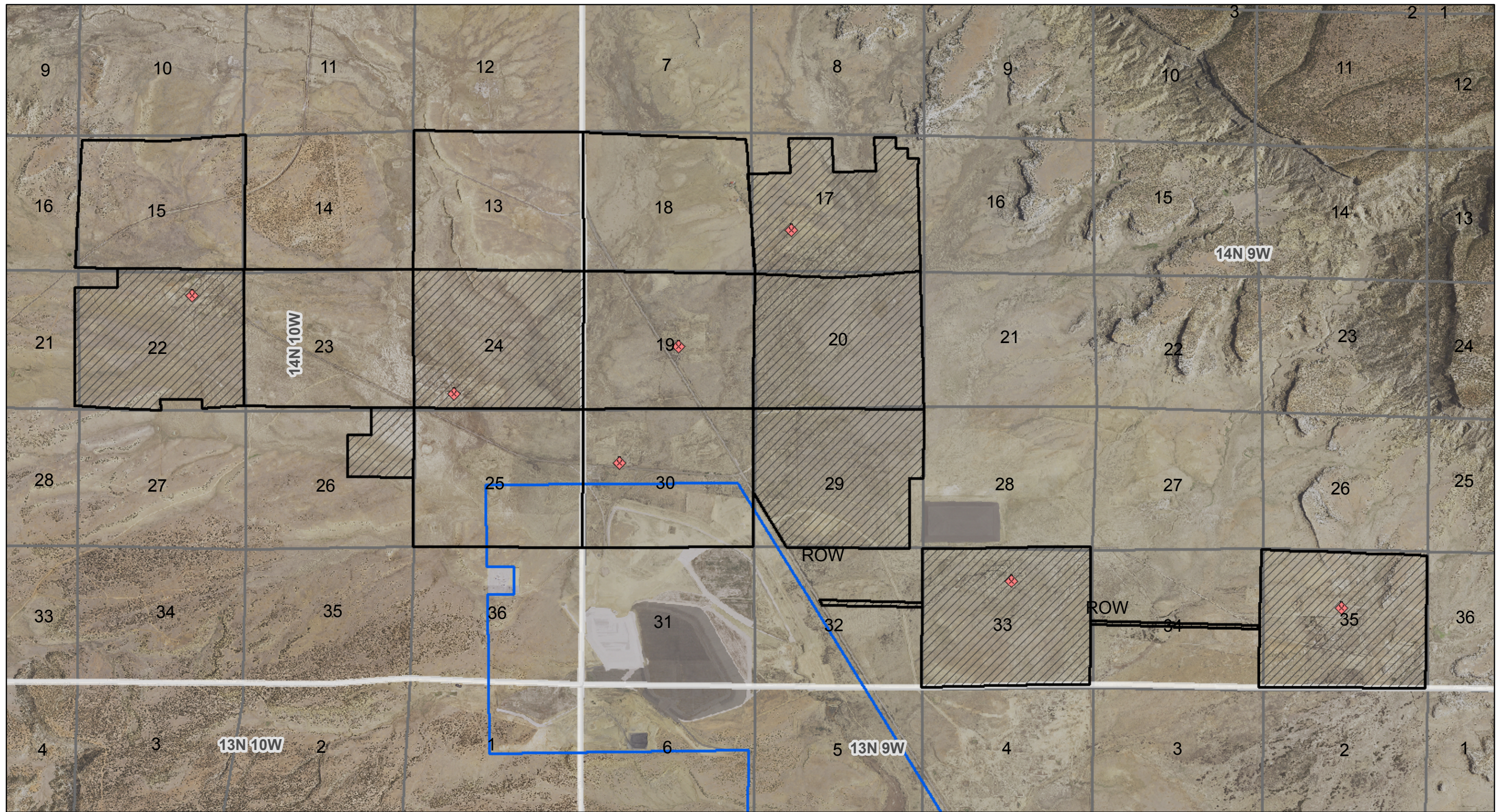
Sincerely,

Rio Algom Mining LLC

A handwritten signature in black ink, appearing to read "Theresa Ballaine", with a stylized flourish at the end.

Theresa Ballaine
Manager

Cc: Kurt Vollbrecht, NMED (email only)
Bill Pearson, NMED (email only)



RIO ALGOM MINING LLC
Figure 1
OLD STOPE LEACHING
PERMIT AREA EVALUATION
PERMIT # MK009RE

Stope Permit Area

- Not Included
- Included
- LTSM_boundary
- Mines

N

DATE: NOVEMBER 16, 2017
 AUTHOR: C. KENT APPLGATE

**Table 1. Old Stope Leaching Water Management Activities
DP-362 Quarterly Reports¹**

Date	Mine Water Extraction (gpm)								Mine Water Injection (gpm)						
	Township 14N, Range 9W					Township 14N, Range 10W			Township 14N, Range 9W					Township 14N, Range 10W	
	Section 17	Section 19	Section 30 ²	Section 33	Section 35	Section 22	Section 24		Section 17	Section 19	Section 30 ²	Section 33	Section 35	Section 22	Section 24
Oct-1999	0	265	975	0	947	71	1170		0	195	337	0	0	59	1513
Nov-1999	0	138	1002	0	805	87	1170		0	0	374	0	0	42	1271
Dec-1999	0	102	855	0	291	71	902		0	0	137	0	0	18	153
Apr-2000	0	0	602	0	0	0	0		0	0	0	0	0	0	0
May-2000	0	0	593	0	0	0	0		0	0	0	0	0	0	0
Jun-2000	0	0	620	0	0	0	0		0	0	0	0	0	0	0
Jul-2000	0	0	617	0	0	0	0		0	0	0	0	0	0	0
Aug-2000	0	0	617	0	0	0	0		0	0	0	0	0	0	0
Sep-2000	0	0	627	0	0	0	0		0	0	0	0	0	0	0
Oct-2000	0	0	468	0	0	0	0		0	0	0	0	0	0	0
Nov-2000	0	0	408	0	0	0	0		0	0	0	0	0	0	0
Dec-2000	0	0	406	0	0	0	0		0	0	0	0	0	0	0
Oct-2001	0	0	682	0	0	0	0		0	0	0	0	0	0	0
Nov-2001	0	0	595	0	0	0	0		0	0	0	0	0	0	0
Dec-2001	0	0	716	0	0	0	0		0	0	0	0	0	0	0
Jan-2002	0	0	726	0	0	0	0		0	0	0	0	0	0	0
Feb-2002	0	0	721	0	0	0	0		0	0	0	0	0	0	0
Mar-2002	0	0	712	0	0	0	0		0	0	0	0	0	0	0
Apr-2002	0	0	693	0	0	0	0		0	0	0	0	0	0	0
May-2002	0	0	677	0	0	0	0		0	0	0	0	0	0	0
Jun-2002	0	0	644	0	0	0	0		0	0	0	0	0	0	0
Oct-2008	0	0	0	0	0	0	0		0	0	0	0	0	0	0
Nov-2008	0	0	0	0	0	0	0		0	0	0	0	0	0	0
Dec-2008	0	0	0	0	0	0	0		0	0	0	0	0	0	0

Notes:

¹A record of mine water injection and extraction associated with old stope leaching activities as reported in quarterly reports to New Mexico Environment Department Discharge Permit 362. RAML is in the process of reviewing records to expand the table. Note that mine water extraction at Section 30 related to the groundwater corrective action program ceased in 2006 with the Nuclear Regulatory Commission's adoption of alternate concentration limits within the licensed area.

²Flow rates for both Section 30 and 30 West mine shafts are listed.

gpm: gallons per minute

Table 2. Proposed Revised Permit Area for Old Stope Leaching Permit MK009RE

Township/Range	Section	All or Portion of Section included in 1999 Permit? ¹	Current Surface Ownership	Released by MMD (date listed)	NMED DP-362 Status ²	OSL Injection/ Extraction ³	Landowner acceptance of conditions ⁴	Include in Revised Closeout Plan?
Township 14N Range 9W	18	All	Other			No	Pending	No
	19	All	Other	10/17/2000	Approved (1985)	Yes		No
	30	All	RAML	5/6/1999	Approved (1985)	Yes		No
	17	Portion	RAML		Approved (1985)	No		Yes
	20	All	BLM			No		Yes
	29	Portion	RAML			No		Yes
	32	ROW only ⁵	RAML		<i>not applicable</i>	No		Yes
	33	All	RAML		Approved (1985)	No		Yes
	34	ROW only	Other		<i>not applicable</i>	No		Yes
	35	All	RAML		Approved (1985)	Yes		Yes
Township 14N Range 10W	13	All	Other		Not Approved	No		No
	15	All	Other		Not Approved	No		No
	23	All	RAML	10/31/1997 ⁴	Not Approved	No		No
	25	All	RAML		Not Approved	No		No
	22	Portion	RAML		Approved (1985)	Yes		Yes
	24	All	RAML		Approved (1985)	Yes		Yes
	26	Portion	RAML			No		Yes

Notes:

¹Old Stope Leach Permit area as established in 1999: "All" full section as included in permit area; "Portion" indicates that only a portion of the section was included in the permit area as shown in Attachment 1; "ROW only" indicates that only a right of way was included in the permit area.

²Section was approved for old stope leaching under New Mexico Environment Department (NMED) Discharge Permit (DP) 362. Although Sections 13, 15, 23, and 25 were included in the 1999 revision of DP-362, approval for the expanded leaching program was contingent on completion of specified tasks. No record of NMED approval and no record of injection or extraction activities in these four sections.

³See Table 1 for summary of mine water injection and extraction activities as reported in Quarterly DP-362 Permits.

⁴RAML is attempting to contact the landowner of Section 18 to obtain concurrence on reclamation status.

⁵At the time of the 1999 permit area was established, RAML did not own Section 32; therefore a right of way was required. The area previously designated as a ROW would be included in the revised permit area.

⁴Date of MMD letter indicating that revegetation had been successful. Original mining had been performed by Homestake.

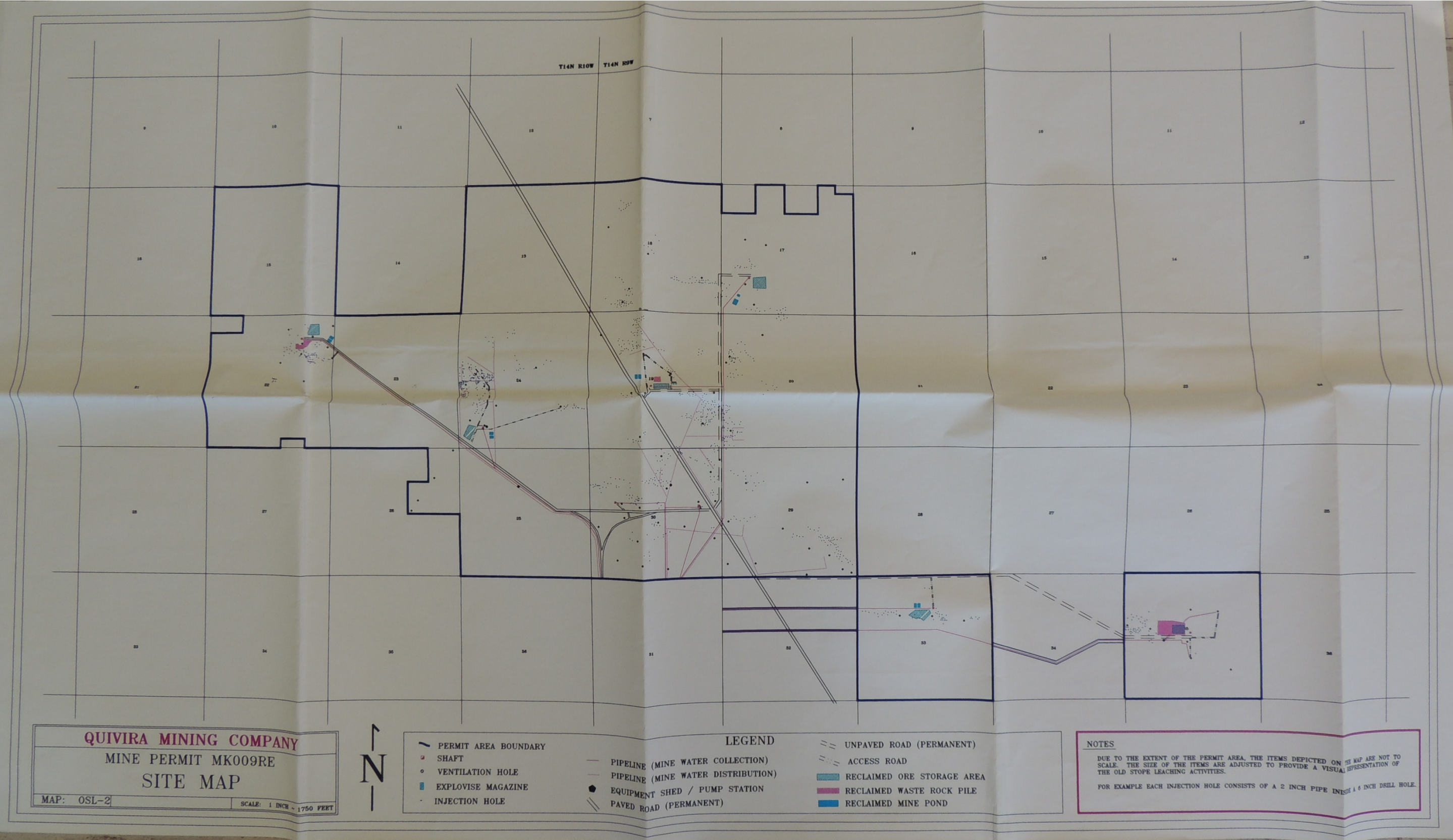
Attachment 1

1999 Permit Area

Old Stope Leach Permit MK009RE

Attachment 1

Permit Area Established for Old Stope Leach Permit, MK009RE (1999)



From: August 3, 1999 Letter from Peter Luthiger, Quivira Mining Company to Ms. Mary Ann Menetry, Mining Act Team Leader, New Mexico Environment Department, "Site Map – Permit MK009RE"