



September 12, 2019

Mr. Mike Thompson, Acting Interim Director
NM Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Rocky Mountain Mine Overburden Request for Modification 19-1 of Permit No. RA004RE

Dear Mr. Thompson,

CR Minerals Company, LLC (CR Minerals) is pleased to submit a formal request for a modification to the Rocky Mountain Mine Permit RA004RE.

Context of Request for Modification

CR Minerals proposes to enter and begin mining in the E-3 Unit of the Rocky Mountain Mine and proposes to modify Rocky Mountain Mine Permit RA004RE to reflect entry and mining in this unit.

The 14.02 acre E-3 Unit is the last unit in the first phase (Phase 1) of mining at the Rocky Mountain Mine. The adjoining E-1 and E-2 Units are currently being mined and Letters of Credit were approved by MMD under Modification 17-1 in March 2017 (see Attachment 1).

CR Minerals does not anticipate altering or changing any of the other elements in the Rocky Mountain Mine's current permit or closeout plan and respectfully submits the attached application with the financial assurance estimates for the closeout and reclamation of the E-3 unit.

Please contact me at 505.428.6540 (office), 720.201.4875 (mobile), ed.dvorak@crminerals.com, or Robyn Tierney at 402 335 0245 (cell phone), robyn@permitswest.com if you have any questions.

Again, thank you for your consideration of this request. We look forward to working with you and your staff.

Sincerely,



Ed Dvorak

Attachment (1)

Cc: Robyn Tierney
Joe Griego
Jeff Whidden
David Otori

PERMIT RA004RE
REQUEST FOR MODIFICATION 19-01
ROCKY MOUNTAIN MINE

SECTIONS 33 & 34, T. 21 N., R. 7 E.
RIO ARRIBA COUNTY, NEW MEXICO

September 12, 2019



Prepared by:

Permits West, Inc.
37 Verano Loop
Santa Fe, NM 87508



CR Minerals Company, LLC
P.O. Box 708
Ohkay Owingeh, NM 87566

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Appendices

- Appendix A - Finding of No Significant Impact and Decision Record, December 9 2011
- Appendix B - USEPA approval and NOI for 2015 Multisector General Permit (MSGP)
- Appendix C - Plant Survey Report from 2011 PRP and portion of Exhibit 6 from 1999 Mine Permit Application and Closeout Plan
- Appendix D - Wildlife Survey Report from 2011 PRP
- Appendix E – Confidential (submitted as an electronic file)
- Appendix F - Receipt for Application Fee

BACKGROUND

CR Minerals (CRM) is proposing to enter the E3 unit in the first phase of mining (Phase 1) of the BLM East tract at the Rocky Mountain Mine and to extract and sell pumice and overburden aggregate consisting of pumicite from that unit. Pursuant to 19.10.5.505 NMAC, the New Mexico Mining and Minerals Division (NM MMD) requires submission of a Financial Assurance (FA) estimate and a Permit Modification application to CRM's existing Rocky Mountain Mine Permit RA004RE. The NM MMD Director will determine if the proposed FA and modification contained within this request meet the requirements of 19.10.5 NMAC.

Who: CR Minerals Company, LLC (CRM) owns neither the surface, nor the minerals of the BLM East tract. The Bureau of Land Management (BLM), Taos Field Office (TFO) administers both the surface resources and the minerals of the majority of the mine.

Applicant's mailing address: CR Minerals Company, LLC
P.O. Box 708
Ohkay Owingeh, NM 87566

Where: From the equivalent of Mile Post 190.7 on US 84, go west 6.6 miles on 31-Mile Road (aka, Santa Clara Indian Reservation Road, FS Road 144, and formerly NM 565). Then turn left (south) onto a small dirt road between steel posts directly into the southern project area. The project area is within Section 34, T. 21 N, R. 7 E, Rio Arriba County, New Mexico (**Figure 1**).

What: This document provides the context and supporting information for the financial assurance estimate for entry, mining of pumice and pumicite, and reclamation of the E-3 unit of the Phase I operations at the Rocky Mountain Mine, a surface mine on 349 acres (Figure 2). The E-3 unit consists of 14.02 acres (Figure 3).

How: The top (approximately) 9 inches of soil would be scraped and discretely stockpiled separate from the remaining 6-8 feet of soil-stained or weathered overburden, then interim seeded. Approximately 30-35 feet of the unstained or virgin pumicite would then be stripped, loaded into haul trucks, and sold as aggregate prior to the extraction and removal of the underlying pumice product. The remaining 6-8 feet of subsoil and weathered overburden will continue to be segregated from the topsoil and will be placed in the previously designated overburden stockpiles for use in reclamation.

When: Stripping of the pumicite overburden would occur after the top 9 inches of topsoil are removed. The remaining 6-8 feet of subsoil and weathered overburden will continue to be segregated from the topsoil and will be placed in the previously designated overburden stockpiles for use in reclamation.

The unstained or virgin pumicite would be stripped, loaded into haul trucks, and sold as aggregate prior to the extraction of the pumice product. The pumice product also would be mined and sold as described in the mine permit.

Why: The removal and sale of the pumicite overburden as aggregate and the pumice product will reduce the post-mining surface and would require the posting of a financial assurance instrument for reclamation as outlined in CRM's existing closeout plan for Rocky Mountain Mine Permit RA004RE.

Relevant Details: There will be no change in the existing permit's design limits nor any increase in the daily production rate of pumice or pumicite extraction or in the annual rates of reclamation at the Rocky Mountain Mine. The maximum land use will remain at = 349 acres and there will be a new pit in the E-3 unit which would become part of the mine's focus. Pumice and pumicite overburden will be mined from 14.02 acres in the E-3 unit.

CR Minerals does not anticipate altering or substantially changing any other elements of the Rocky Mountain Mine's current permit or closeout plan. The purpose of this request for modification is to: 1) present an estimate of reclamation costs of the E3 unit to the NM MMD prior to entry into the unit; 2) secure approval of the financial assurance estimate from NM MMD; 3) obtain a Letter of Credit (LOC) for financial assurance; and 4) receive approval to enter and mine the E-3 unit from MMD and the BLM.

Consistent with the closeout plan in the current Mine Permit RA004RE, reclamation will remain contemporaneous throughout all mine blocks. CR Minerals does not anticipate changing any part of the closeout/reclamation schedule contained in the current permit.

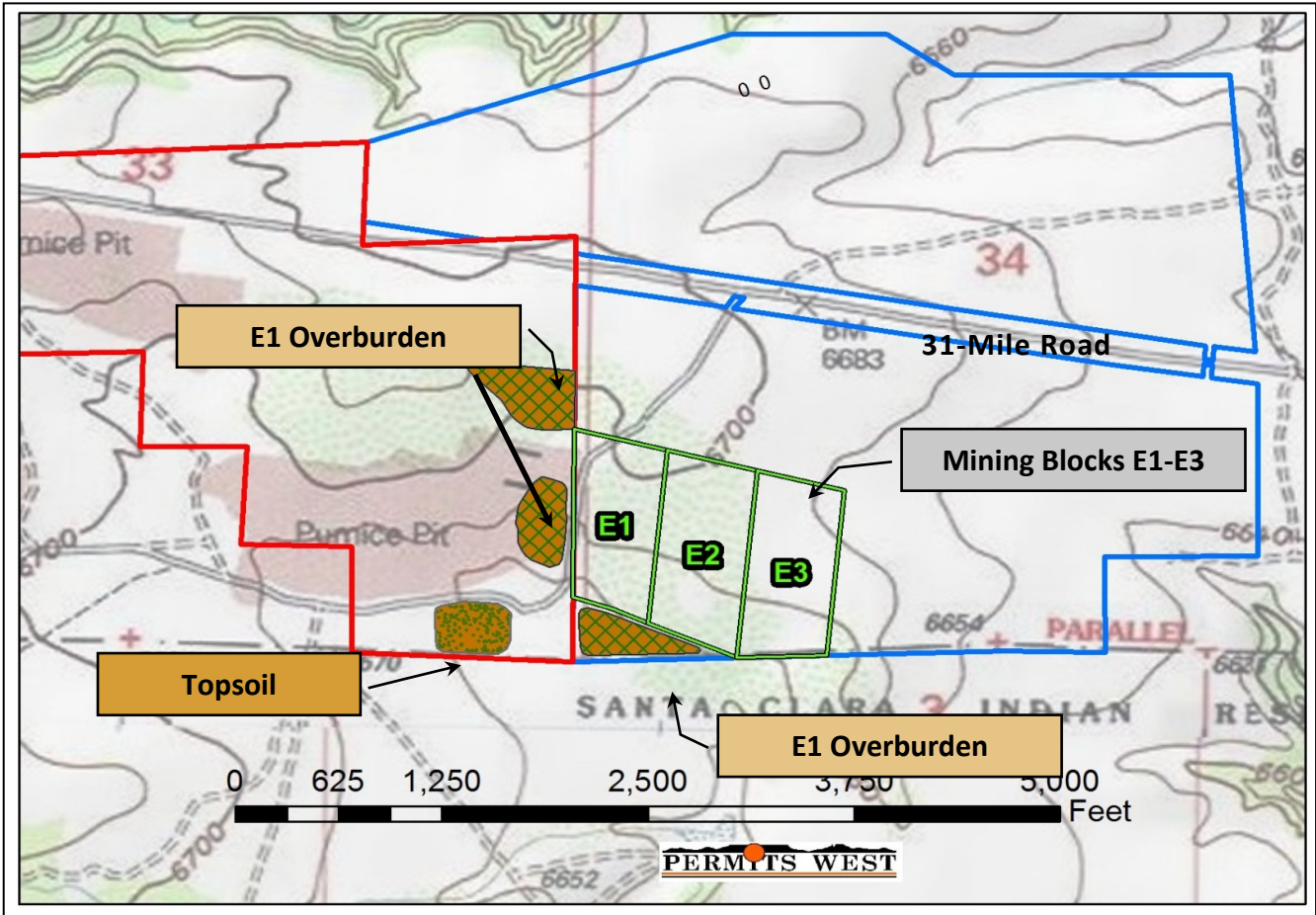
This estimate is separate from, and additive to, existing bonding for the Rocky Mountain Mine Pursuant to 19.10.5.506.J.2 NMAC, current financial assurance instruments are Letters of Credit and are in a form that is presently acceptable to the Director.

Letter of Credit (LOC) Modeling Assumptions (August 2019)

Acreage and Ownership of Disturbance Area: Disturbance area of the E3 Block is 14.02 acres as indicated below:

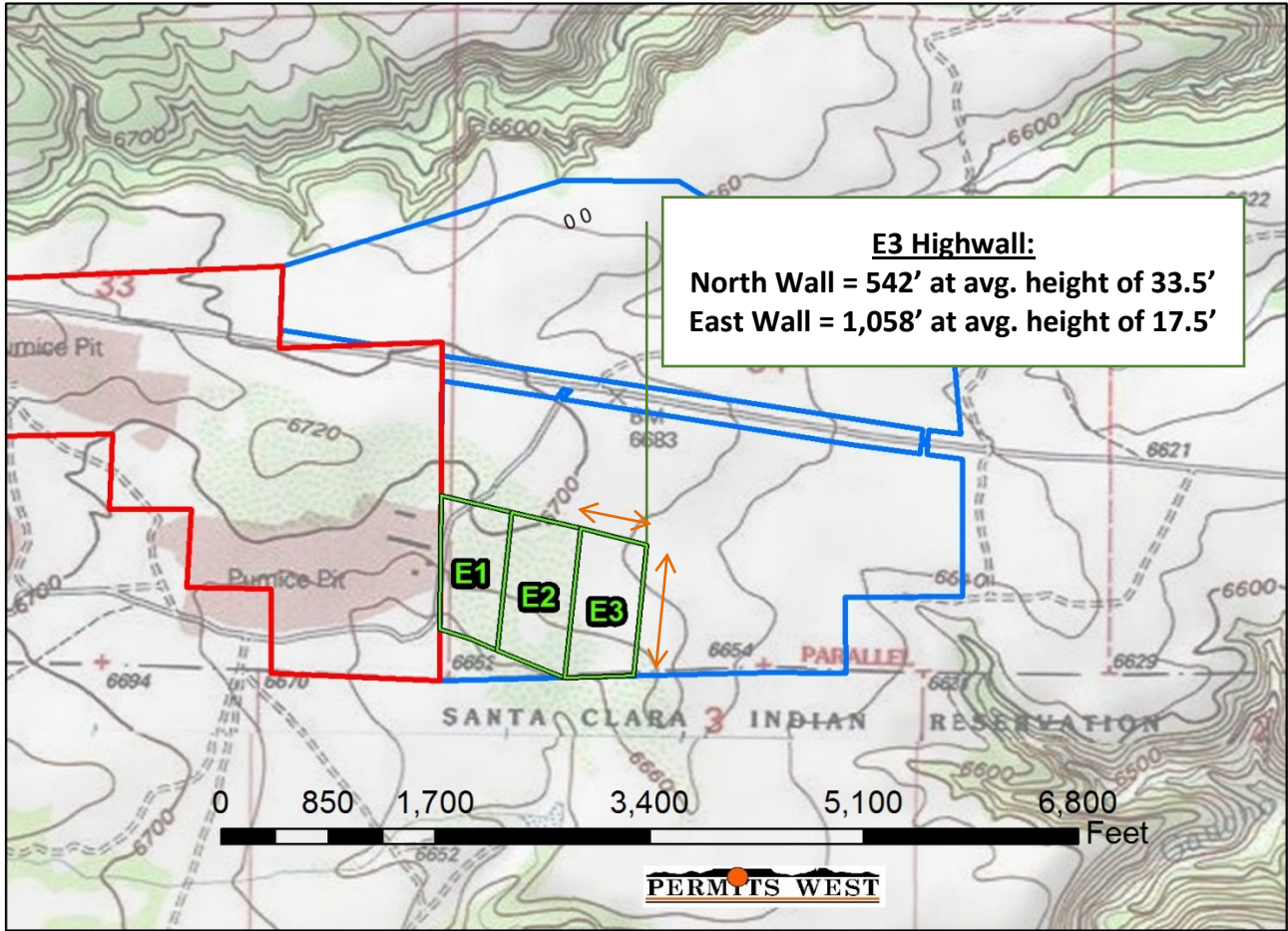
Refer to map below for locations of features:

FEATURE	ACRES
BLM Land	
Blocks E1-E2	27.71
Block E3	14.02
E1 overburden stockpile on BLM-East (south of E1)	3.07
Subtotal on BLM	44.80
CR Minerals Land	
Topsoil Stockpile on CR Minerals land	3.20
E1 overburden pile on CR Minerals land (west of E1)	3.20
E1 overburden pile on CR Minerals land (northwest of E1)	4.40
Subtotal on CRM	10.80
Total (BLM & CRM)	55.60



MAP SHOWING FEATURES AND THEIR LOCATIONS (ASSUMPTION 1)

Highwall Length: The total length of highwall that would require reclamation on the E3 unit is 1600' (542 feet North wall + 1058 feet East wall) as taken from ArcGIS projections.



MAP SHOWING LENGTH OF HIGHWALL (ASSUMPTION 2).

Maximum Topsoil Stockpile Volume (10' high pile): The potential maximum topsoil stockpile volume was calculated for the “grading” tab for the E-3 Unit or Mining Block.

MINING BLOCK	ACRES
E3	14.02
Total	14.02

- **CALCULATION: Acreage Required to stockpile 9” of topsoil from 14.02 ac. (10 ft. high):**
 - **STEP 1 (CUBIC YARDS OF 9” OF TOPSOIL TAKEN FROM 14.02 AC)**
 $14.02 \text{ ac.} \times 43,560 \text{ ft}^2/\text{ac.} = 610,711.2 \text{ ft}^2 \times 0.75 \text{ ft. (9 inches)} = 458,033 \text{ ft}^3$
 $458,033 \text{ ft}^3 / 27 \text{ ft}^3 \text{ per yd}^3 = \mathbf{16,964 \text{ yd}^3}$
 - **STEP 2 (ACRES REQUIRED TO PILE 16,964 YD³ 10’ TALL)**
 $16,964 \text{ yd}^3 \times 27 \text{ ft}^3/\text{yd}^3 = 458,033 \text{ ft}^3 / 10 \text{ ft. (max. pile height)} = 45,803 \text{ ft}^2$
 $45,803 \text{ ft}^2 / 43,560 \text{ ft}^2 \text{ per ac.} = \mathbf{1.05 \text{ ac.}}$

Soil Weight Correction Factor: Used for “Dozer” and “Grading” estimations. Previously calculated for the Rocky Mountain Mine using ASTM C29/C29M-09 *Standard Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate*. A total of 10 samples were collected on Oct. 31, 2011 from various

reclaimed areas at the RMM.

TEST NO.	WEIGHT (LBS./FT ³)	MOISTURE (%)
1	57.5	13
2	57.5	13.3
3	54.5	13.3
4	54	13.5
5	54	10.7
6	55	13
7	60.5	12.6
8	54	12.3
9	56	11.3
10	57	15.4
Average	56	12.84

- **CALCULATION:** Average soil weight at RMM = 56 lbs. per ft³ x 27 ft³ per cy = **1,512 lbs./cy**

Material Volume to Reduce Highwall:

- North Highwall length = **542 ft.** (See Assumption 2)
 - East Highwall length = **1,058 ft.** (See Assumption 2)
 - **FACTOR A:**
 - North Highwall Height = **33.5 ft.** (Averaged from 3 drill holes located ≈100'-200' south of, or at highwall location from Assumption #2 above and spaced from ≈650'-700' apart running east-west in a line)
 - East Highwall Height = **17.5 ft.** (Estimated from 1 drill hole located at northeast corner of E3, and inferred geology)
 - **FACTOR B:**
 - North Highwall Base = **100.5 ft.** (Calculated as ratio of 3 (horizontal) to 1 (vertical) slope with a highwall average height of 33.5 ft.)
 - East Highwall Base = **52.5 ft.** (Calculated as ratio of 3 (horizontal) to 1 (vertical) slope with a highwall average height of 17.5 ft.)
 - **CALCULATIONS:** Volume = ½ base x height x highwall length
 - North Highwall Volume = ½ (100.5' x 33.5' x 542') = 912,389 ft³ / 27 ft³/cy = **38,016 cy**
 - East Highwall Volume = ½ (52.5' x 17.5' (1,058'-100.5')) = 439,852 ft³ / 27 ft³/cy = **16,291 cy**
- Note:** 100.5' of length subtracted from the East Highwall Length to account for overlap/coverage from North Highwall slope reduction.

Pit Area Covered by Reducing Slopes of Highwall:

- **CALCULATIONS:**
 - North Highwall: 542' (N. highwall length) x 100.5' (length of base, Assumption 5 above) = 54,471 ft² / 43,560 ft² per ac. = 1.25 ac.
 - East Highwall: (E. highwall length 1,058-100.5) x 52.5' (length of base, Assumption 5 above) = 50,032.5 ft² / 43,560 ft² per ac. = 1.14 ac.
- Note:** 100.5' of length subtracted from the East Highwall Length to account for overlap/coverage from North Highwall slope reduction.
- 1.25 ac. (North Highwall Area) + 1.14 ac. (East Highwall Area) = **2.40 ac.**

Pit Bottom Requiring Ripping and Topsoiling: (BLM-East, Block E3 = 14.02 ac.)

- 14.02 ac. (pit area) – 2.40 ac. (pit bottom covered by reducing slopes[Assumption 6]) = **11.62 ac.** (Pit bottom area requiring ripping and topsoiling)
- **STEP 1 (CUBIC YARDS OF TOPSOIL TO BE PLACED ON PIT BOTTOM – 9 INCH LAYER)**
 11.62 ac. (pit bottom) x 43,560 ft²/ac. = 506,167.2 ft² x 0.75 ft. (9 inches) = 379,625.4 ft³
 379,625.4 ft³ / 27 ft³ per yd³ = **14,060.2 yd³**

Caterpillar Model 657G Scraper: (Used for scraping operations to move topsoil stockpiles)

- Power Generation
- Turbines
- OEM Solutions
- Technology
- Gifts & Apparel

657G WHEEL TRACTOR-SCRAPER

Select a Model ---

Overview
Specifications
Benefits & Features
Standard / Optional Equip.
Machine Comparison

SPECIFICATIONS

Units: [US](#) | [Metric](#)

Tractor Engine

Net Power - Tractor/Scraper	421 kW (564 hp) / 306 kW (410 hp)
Net Power	421/447 kW 564/600 hp
Gross Power - Gears 1-2	596 hp
Gross Power - Gears 3-8	632 hp
Net Power - Gears 1-2	564 hp
Net Power - Gears 3-8	600 hp
Bore	5.7 in
Stroke	7.2 in
Displacement	1105 in ³

Scraper Bowl

Capacity Heaped	44 yd ³
Rated Load	104000 lb
Capacity Struck	32 yd ³
Depth of Cut - max.	17 in
Width of Cut, to Router Bits	12.7 in
Ground Clearance - max.	23 in
Cutting Edge - thickness	1.8 in.
Hyd. Penetration Force - 657G	121000 lb
Depth of Spread - max.	26 in
Apron Opening	92 in
Apron Closure Force	39200 lb

Transmission

1 Forward	3.5 mph
2 Forward	6.3 mph
3 Forward	7.8 mph
4 Forward	10.6 mph
5 Forward	14.1 mph
6 Forward	19 mph
7 Forward	25.6 mph
8 Forward	34.6 mph
Reverse	6.1 mph

Engine

Tractor Engine	Cat® C18 ACERT™
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19.10.5.502 NMAC

A. Minimum of 6 Copies

A minimum of 6 copies of this permit application are submitted.

B. Availability for Public Inspection

There is no confidential information in this permit application. All information submitted with this application can be made available for public review.

The cultural resources inventory report contains sensitive information and is provided as a separate **Confidential Appendix** to this permit application.

C. Signature

I certify that I have personally examined and am familiar with the information submitted herein, and based on my inquiry of those individuals responsible for obtaining the information; I believe the submitted information is true, accurate, and completed.

Signed



Signed

Date

09/09/19

D. Each Application Shall Contain

1) CR Minerals Company, LLC, P. O. Box 708, Ohkay Owingeh, NM 87566.

2) A Rio Arriba County Assessor's Office Property Identification Map of the surface ownership is provided as [Figure 5](#) to this permit modification application.

3) CR Minerals Company, LLC, Rocky Mountain Mine Pumice Extraction Environmental Assessment (DOI-BLM-NM-F020-2011-0032-EA) was prepared for the extension of the Rocky Mountain Mine surface and use of Federal minerals and submitted to the TFO-BLM in December 2011. A Finding of No Significant Impact and Decision Record was signed by the TFO Field Manager on December 9, 2011 and is provided in [Appendix A](#) of this permit modification application.

4) CRM has worked with the BLM TFO to permit the use of the overburden as a Federal mineral through preparation of a Determination of NEPA Adequacy (DNA) pursuant to the National Environmental Policy Act (NEPA) of 1969.

CR Minerals completed and submitted a Notice of Intent (NOI) requesting renewed coverage for the Rocky Mountain Mine under EPA's 2015 Multi-Sector General Permit (MSGP). This NOI has been accepted by the USEPA, and the following NPDES ID. NMR053267 was assigned. Authorization to discharge under the 2015 MSGP became effective on 2015-10-30. A copy of the USEPA approval and the NOI are provided in [Appendix B](#) of this permit modification application.

5) Prior to proceeding, CRM will ensure that approval of Modification 19-1 has been obtained and that all applicable State and Federal regulations and requirements, including those of the BLM, TFO Rocky Mountain Mine DNA are satisfied and have been approved.

6) Additionally, CRM holds "active" mining claims for all land areas within the BLM-East parcel in Sections 33 and 34, T. 21 N., R. 7 E. as evidenced by the BLM Mining Claim Geographic Reports for Sections 33 and 34 that are provided as [Figures 6, 7, and 8](#) to this permit modification application.

7) The site assessment previously submitted in CRM's June 1999 Mine Permit Application and Close Out Plan, pursuant to Section 69-36-5 of the Act is referenced here. The following elements of the site assessment were updated and incorporated into the 2011 Permit Revision Package (2011 PRP) and are referenced below:

Vegetation in the project area was previously surveyed from October 5 -9, and on October 12, 2010 by a qualified botanist as part of the 2011 PRP. The survey of the proposed project area was conducted at 40- to 50-foot intervals following a zigzag pedestrian transect. The Plant Survey Report provided in Appendix A of the 2011 PRP supplements existing information for vegetation originally provided as Exhibit 6 in CRM's June 1999 Mine Permit Application and Close Out Plan (Appendix C) and is provided as [Appendix C](#) to this permit modification application. Details regarding relative abundance, cover, and production were originally provided as Exhibit 6 in CRM's June 1999 Mine Permit Application and Close Out Plan (Appendix C) and are also provided as [Appendix C](#) to this permit modification application.

Wildlife surveys were conducted on September 10, 12, and 16, 2010 by a qualified wildlife biologist as part of the 2011 PRP. Additionally, a one-mile line-of-sight survey was conducted for raptor nests using 10 x 40 binoculars. The Wildlife Survey Report provided in Appendix B of the

2011 PRP supplements existing information for wildlife originally provided as Exhibit 6 in CRM's June 1999 Mine Permit Application and Close Out Plan (Appendix C) and is provided as Appendix D to this permit modification application.

8) A cultural resource records search and a field inventory were performed on the BLM-East parcel. The inventory was conducted between September 5 and 9, 2010 by Complete Archaeological Service Associates (CASA). Additional fieldwork was also performed by CASA and Cibola Research Consultants on October 12-13, 2010. The results of the inventory are documented in a report maintained in the central files of the Taos Field Office of the BLM.

Because specific information on the nature and location of cultural resources is confidential and proprietary, the report (CASA 10-79) is incorporated by reference into this permit application. The cultural resources inventory report authored by CASA is titled, ***Cultural Resource Inventory, CR Minerals Company, LLC, Rocky Mountain Mine Expansion West of Espanola, Rio Arriba County, New Mexico*** (CASA 10-79), and was prepared on Oct. 25, 2010. It is provided in electronic format as a separate ***Confidential Appendix E*** to this permit modification application.

9) Maps showing all current and existing details are provided in Figures 3, 4, 5 of the existing Mine Permit RA004RE and are provided to this permit modification application. Provisional maps showing all proposed details of this request for permit modification include Figure 3 as attached to this permit modification application.

10) A description of undisturbed vegetation including a comprehensive list of species is provided in the Plant Survey Report in Appendix A of the 2011 PRP. The report supplements existing information for vegetation originally provided as Exhibit 6 in CRM's June 1999 Mine Permit Application and Close Out Plan (Appendix C) and is provided as Appendix C to this permit modification application. Details regarding relative abundance, cover, and production were originally provided as Exhibit 6 in CRM's June 1999 Mine Permit Application and Close Out Plan (Appendix C) and are also provided as Appendix C to this permit modification application.

11) CR Minerals Company, LLC, Rocky Mountain Mine Pumice Extraction Environmental Assessment (DOI-BLM-NM-F020-2011-0032-EA) was prepared for the extension of the Rocky Mountain Mine surface and use of Federal minerals and was submitted to the TFO-BLM in December 2011. A Finding of No Significant Impact and Decision Record was signed by the TFO Field Manager on December 9, 2011 and is provided in Appendix A of this permit modification application.

12) CRM has worked with the BLM TFO to permit the use of the overburden as a Federal mineral through the preparation of a Determination of NEPA Adequacy (DNA) pursuant to the National Environmental Policy Act (NEPA) of 1969.

CR Minerals completed and submitted a Notice of Intent (NOI) requesting renewed coverage for the Rocky Mountain Mine under EPA's 2015 Multi-Sector General Permit (MSGP). This NOI has been accepted by the USEPA, and the following NPDES ID. NMR053267 was assigned. Authorization to discharge under the 2015 MSGP became effective on 2015-10-30. A copy of the USEPA approval and the NOI are provided in Appendix B of this permit modification application.

Prior to proceeding, CRM will ensure that all applicable State and Federal regulations and requirements, including the BLM, TFO Rocky Mountain Mine DNA are satisfied and have been approved.

13) The designated Agent for this permit modification application is:

**Ed Dvorak, Vice President -
Operations CR Minerals Company,
LLC P.O. Box 708
Ohkay Owingeh, NM 87566**

14) Copies of the proposed form of notices will be submitted by CR Minerals, LLC if required under 19.10.9 NMAC.

15) A \$1,000 application fee (CR Minerals, LLC Check No. 001583) was submitted to the State of New Mexico Energy, Minerals and Natural Resources Department (NM EMNRD for this permit modification under 19.10.2.201.H NMAC, on September 10, 2019. A copy of the official receipt for the application fee is contained in Appendix F.

There is no additional information provided for evaluation of the permit application.

16) Information from Other Permits

There is no additional information from environmental permits relevant to the application.
Physically Separate but Interrelated Mining Operations

17) There are no mining operations other than the Applicant's Rocky Mountain Mine near the project area.

There are no interrelated mining operations near the project area.

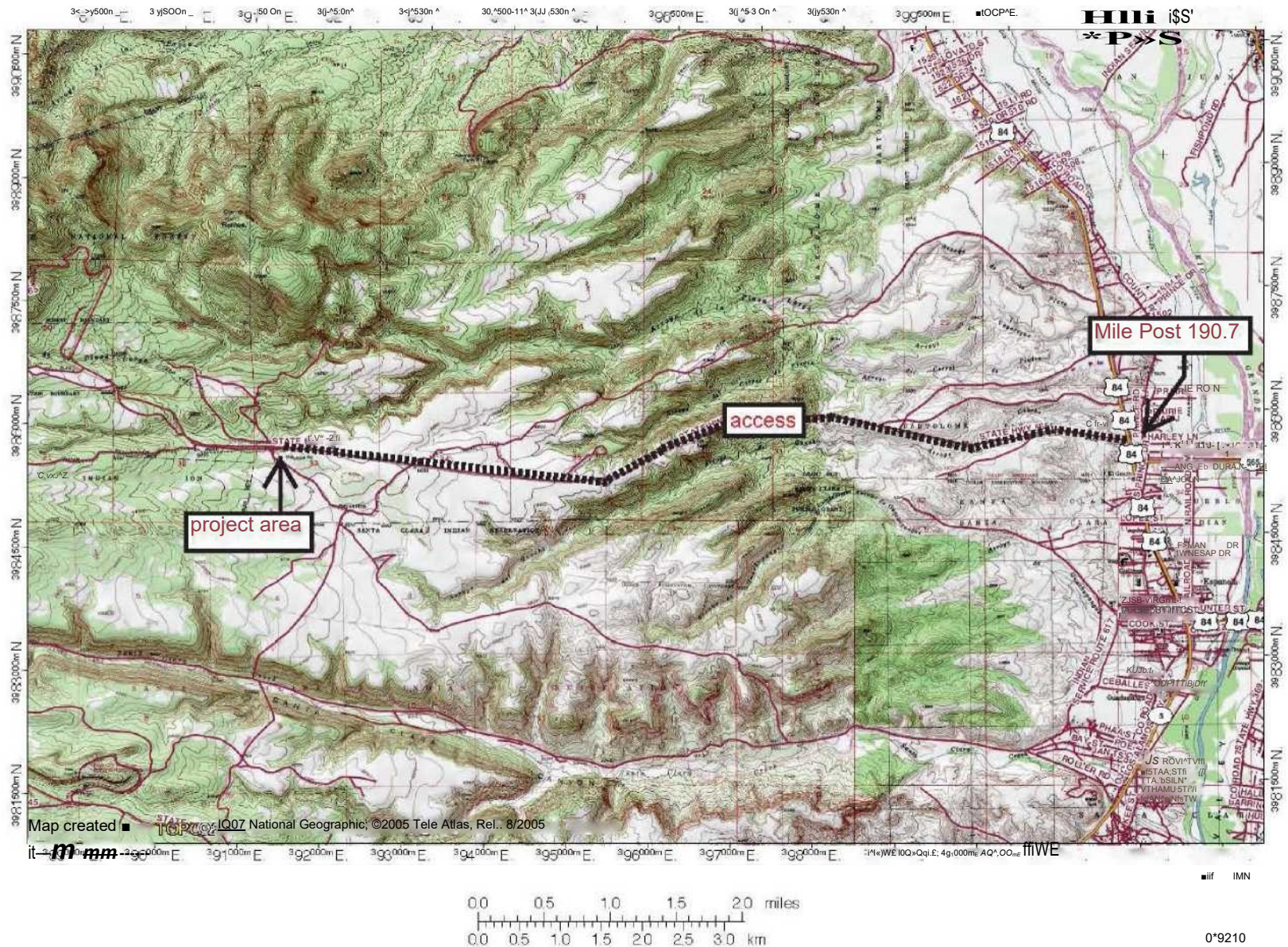


Figure 1. Map of access from U.S. 84/285 along 31-Mile Road.

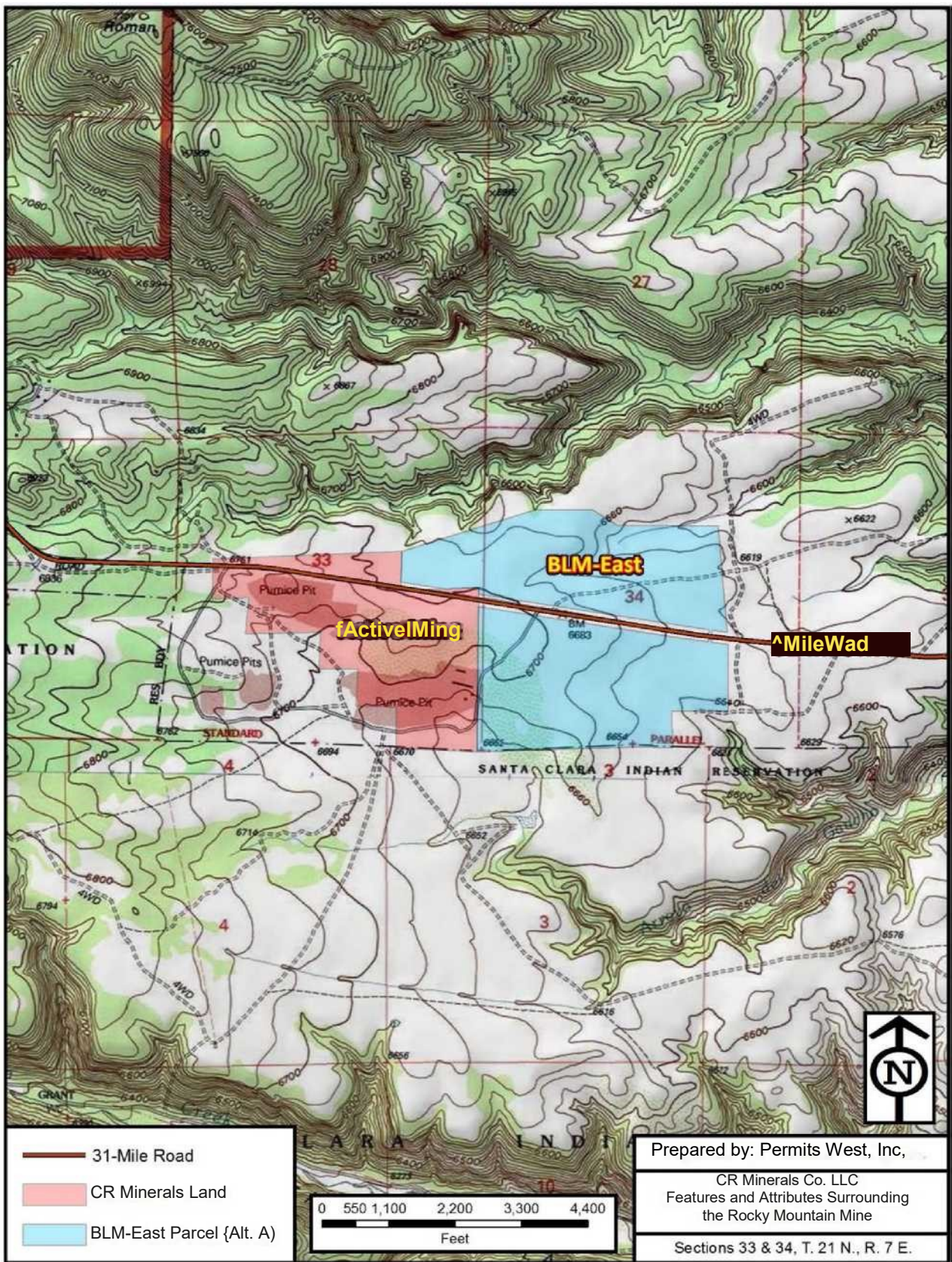


Figure 2. Map of project area, active mine, and vegetation reference area .

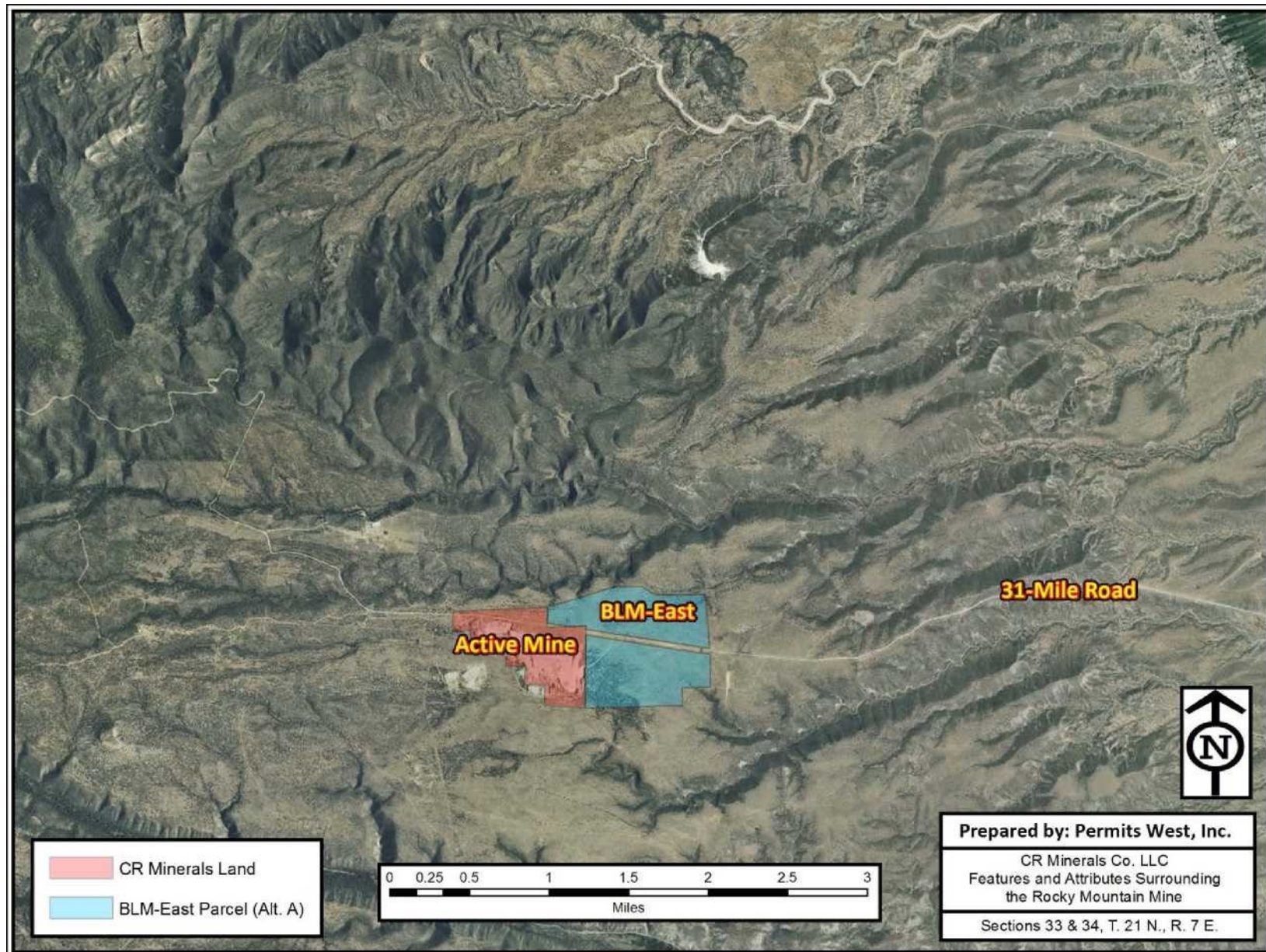


Figure 3. Aerial photo overview of BLM-East parcel relative to active mine.

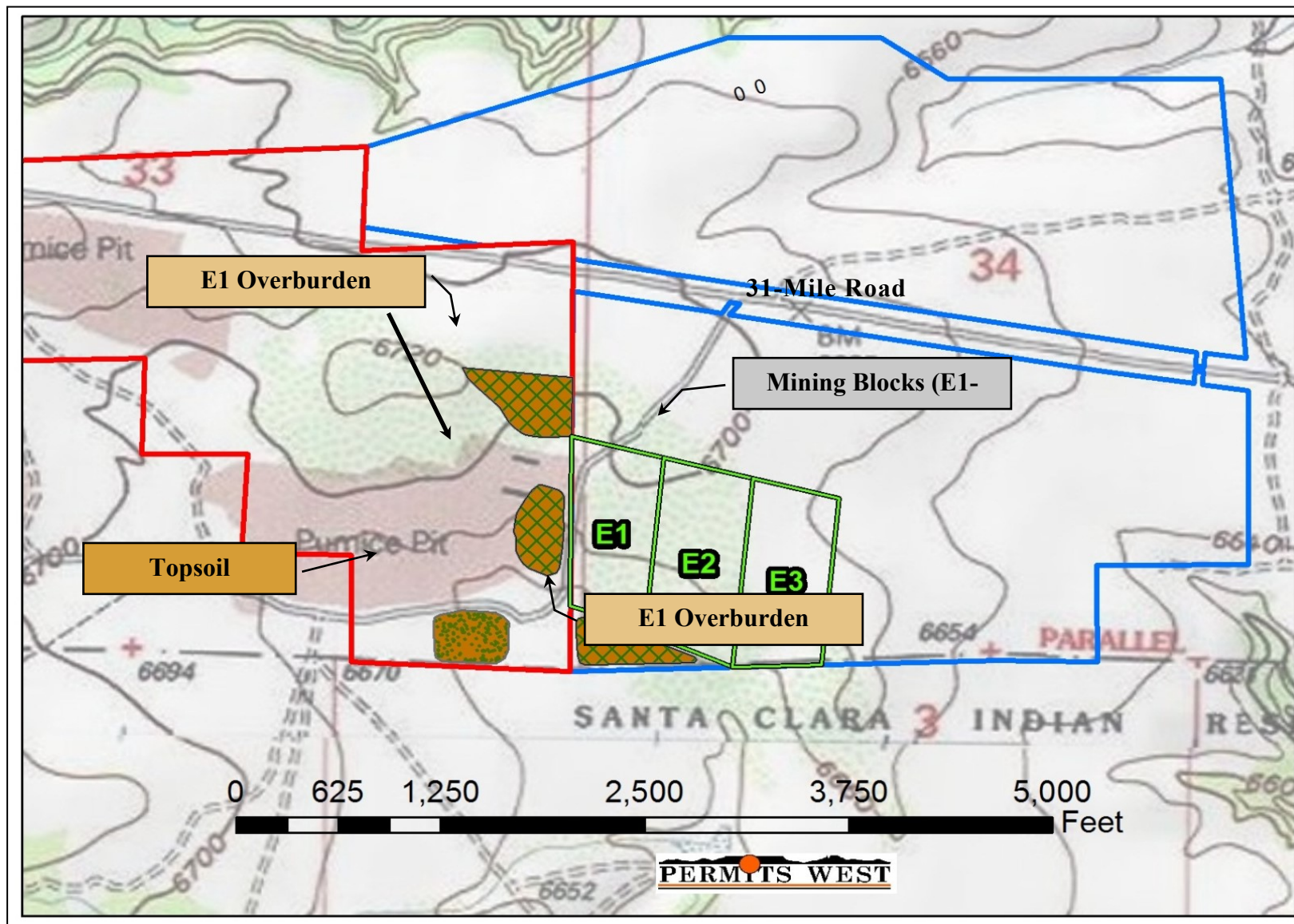
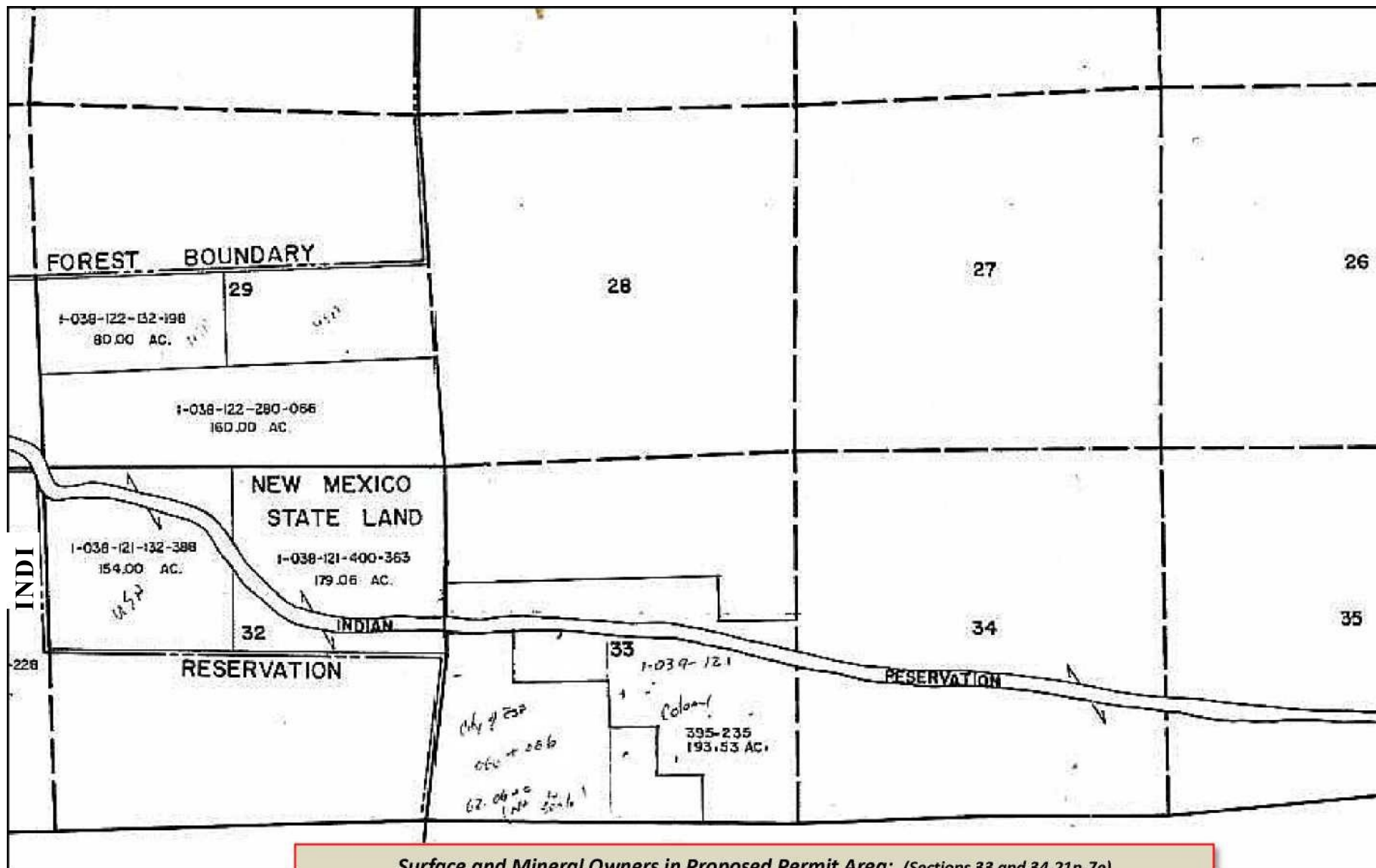


Figure 4. Map of E-3 project area in relation to E1 and E2 units



Surface and Mineral Owners in Proposed Permit Area: (Sections 33 and 34-21n-7e)
 Bureau of Land Management, Taos Field Office: 226 Cruz Alta Rd., Taos, NM 87571

Figure 5. Rio Arriba County Assessor's Office Property Identification Map.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MINING CLAIM GEOGRAPHIC REPORT
LIST OF MINING CLAIMS BY SECTION

Run Date: 08/09/2011
Page 1 of 1

**MER TWP RNG SEC
23 0210N 0070E 033**

Serial Num	Quad	Claim Name/Number	Claimant(s)	Case			Loc Dt	Last Assessment
				Lead File	Type	Status		
NMMC120205	NW	ESPANOLA NO 1	WESTERN MOBILE	NMMC120205	384201	CLOSED	08/28/1946	1992
NMMC120206	SW	ESPANOLA NO II	WESTERN MOBILE	NMMC120205	384201	CLOSED	08/28/1946	1992
NMMC120207	SE	ESPANOLA NO III	WESTERN MOBILE	NMMC120205	384201	CLOSED	08/28/1946	1992
NMMC120208	NE	ESPANOLA NO IV	WESTERN MOBILE	NMMC120205	384201	CLOSED	08/28/1946	1992
NMMC170386	NE	CRM 40	CR MINERALS - NM LLC	NMMC170386	384201	CLOSED	11/12/2003	2004
NMMC170387	NE	CRM 41	CR MINERALS - NM LLC	NMMC170386	384201	CLOSED	11/12/2003	2004
NMMC171015	NE	CRM 41	CR MINERALS - NM LLC	NMMC171015	384201	ACTIVE	11/18/2004	2011
NMMC171016	NE	CRM 40	CR MINERALS - NM LLC	NMMC171015	384201	ACTIVE	11/18/2004	2011
NMMC189416	NW SW	CRM 42	CR MINERALS - NM LLC	NMMC189416	384201	ACTIVE	08/26/2010	2011
NMMC189417	NW SW	CRM 43	CR MINERALS - NM LLC	NMMC189416	384201	ACTIVE	08/26/2010	2011

NO WARRANTY IS MADE BY BLM
FOR USE OF THE DATA FOR
PURPOSES NOT INTENDED BY BLM

Figure 6. BLM Mining Claim Geographic Report for Section 33-21n-73.

RunTime: 01:58 PM		UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MINING CLAIM GEOGRAPHIC REPORT LIST OF MINING CLAIMS BY SECTION					Run Date: 08/09/2011 Page 1 of 2	
MERTWP RNGSEC 23 0210N 0070E034								
Serial Num	Quad	Claim Name#Number	Claimant#st	Lead File	Case Type	Status	Loc Dt	Last Assessment
NMMC122531	SW	ESPANOLA NO VII	WESTERN MOBILE	NMMC122531	384201	CLOSED	08/28/1946	1992
NMMC167524	SE	CRM 1	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167525	SE	CRM 2	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167526	NE	CRM 3	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167527	NE	CRM 6	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167528	NE	CRM 7	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167529	SE	CRM 8	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167530	NE	CRM 10	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167531	SE	CRM 11	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167532	SE	CRM 12	CR MIN CORP	NMMC 167524	384201	CLOSED	02/03/1998	2000
NMMC167533	NE	CRM 14	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167534	SE	CRM 15	CR MIN CORP	NMMC 167524	384201	CLOSED	02/03/1998	2000
NMMC167535	SE	CRM 16	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167536	NW	CRM 18	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167537	SW	CRM 19	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167538	SW	CRM 20	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167539	NW	CRM 22	CR MIN CORP	NMMC 167524	384201	CLOSED	02/03/1998	2000
NMMC167540	SW	CRM 23	CR MIN CORP	NMMC 167524	384201	CLOSED	02/03/1998	2000
NMMC167541	SW	CRM 24	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167542	NW	CRM 26	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167543	SW	CRM 27	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167544	SW	CRM 28	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167545	NW	CRM 30	CR MIN CORP	NMMC 167524	384201	CLOSED	02/03/1998	2000
NMMC167546	SW	CRM 31	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC167547	SW	CRM 32	CR MIN CORP	NMMC167524	384201	CLOSED	02/03/1998	2000
NMMC169313	SE	CRM 1	CR MINERALS NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169314	SE	CRM 2	CR MINERALS- NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169315	NE	CRM 3	CR MINERALS NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169316	NE	CRM 6	CR MINERALS - NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR
PURPOSES NOT INTENDED BY BLM

Figure 7. BLM Mining Claim Geographic Report for Section 32-21n-73 (Page 1 of 2).

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MINING CLAIM GEOGRAPHIC REPORT
LIST OF MINING CLAIMS BY SECTION

Serial Num	Quad	Claim Name/Number	Claimant(s)	Lead File	Case		Loc Dt	Last Assessment
					Type	Status		
NMMC169317	SE	CRM 7	CR MINERALS - NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169318	SE	CRM 8	CR MINERALS - NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169319	NE	CRM 10	CR MINERALS - NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169320	SE	CRM 11	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169321	SE	CRM 12	CR MINERALS - NM LLC	NMMC169313	384201	CLOSED	09/27/2000	2003
NMMC169322	NE	CRM 14	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169323	SE	CRM 15	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169324	SE	CRM 16	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169325	NW	CRM 18	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169326	SW	CRM 19	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169327	SW	CRM 20	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169328	NW	CRM 22	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169329	SW	CRM 23	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169330	SW	CRM 24	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169331	NW	CRM 26	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169332	SW	CRM 27	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169333	SW	CRM 28	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169334	NW	CRM 30	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169335	SW	CRM 31	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011
NMMC169336	SW	CRM 32	CR MINERALS - NM LLC	NMMC169313	384201	ACTIVE	09/27/2000	2011

NO WARRANTY IS MADE BY BLM
FOR USE OF THE DATA FOR
PURPOSES NOT INTENDED BY BLM

Figure 8. BLM Mining Claim Geographic Report for Section 32-21n-73 (Page 2 of 2).
CRM-Rocky Mountain Mine



New Mexico Office of the State Engineer
Active & Inactive Points of Diversion
 (with Ownership Information)

TO File Nbr	Sub basin	(acre ft per annum)	Use Diversion Owner	County	POD Number	Code Grant	Source	1 1 1	4 Sec	Tws	Rng	X	Y	Distance		
RG 28348	DOM		3 SIRI SINGH SAHIB CORP.	RA	RG 28348		Shallow	3	2	4	29	21N	07E	390929	3986825*	1343

Record Count: 1

POD Search:

POD Number: RG 28348

Basin, County Search:

County: Rio Arriba

UTMXAD83 Radius Search (in meters):

Easting (X): 391506

Northing (Y): 3985612

Radius: 20000

Sorted by: Distance

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE ISC and is accepted by the recipient with the expressed understanding that the OSE ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

2/29/16 10:43 AM

ACTIVE & INACTIVE POINTS OF DIVERSION

Figure 10. Point of Diversion by location for well RG 28348

Appendix A

CRM - Rocky Mountain Mine

E-3 Unit Entry and Financial

Assurance Modification

19-01

Permit RA004RE

**United States Department of the Interior
Bureau of Land Management**

BLM

**CR Minerals Company, LLC
Rocky Mountain Mine
Pumice Extraction**

Rio Arriba, New Mexico

Finding of No Significant Impact and Decision Record

December 2011

**Attachment: Environmental Assessment
DOI-BLM-NM-F020-2011-0032-EA**

**U.S. Department of the Interior
Bureau of Land Management
Taos Field Office
226 Cruz Alta Road
Taos, New Mexico 87571
(575) 758-8851**



FINDING OF NO SIGNIFICANT IMPACT

CR Minerals Company, LLC Rocky Mountain Mine Pumice Extraction

Environmental Assessment DOI-BLM-NM-F020-2011-0032-EA

Based on the analysis of potential environmental impacts contained in the attached environmental assessment (DOI-BLM-NM-F020-2011-0032-EA), and considering the significance criteria in 40 CFR 1508.27,1 have determined that the CR Minerals Company, LLC Rocky Mountain Mine Pumice Extraction project will not have a significant effect on the human environment. An environmental impact statement (EIS) is therefore not required.



Authorized Officer



Date

DECISION RECORD

CR Minerals Company, LLC Rocky Mountain Mine Pumice Extraction

Environmental Assessment *DOI-BLM-NM-F020-2011-0032-EA*

Decision

It is my decision to approve the Proposed Action, Alternative A, as described in Chapter 2 of the attached environmental assessment (EA) (DOI-BLM-NM-F020-2011-0032-EA) and authorize CR Minerals Company, LLC to extend its existing Rocky Mountain Mine pumice extraction operation onto an additional 380.5 acres in T. 21 N., R. 7 E., sections 33 and 34 of Rio Arriba County, New Mexico. This approval is subject to adherence with all details and constraints presented under the Proposed Action in the attached EA.

Land Use Plan Conformance and Consistency

The Proposed Action has been reviewed and found to be in conformance with the 1988 *Taos Resource Management Plan* (Taos RMP) and its associated decision(s):

- “The objective of the minerals program is to provide the opportunity for development of mineral resources in a manner which minimizes environmental damage and provides for the rehabilitation of affected lands” (p. 2-8)
- “It is the policy of the Bureau to make mineral resources available for disposal and to encourage development of these resources consistent with national objectives for maintaining an adequate supply of minerals at reasonable market prices. At the same time, the BLM strives to ensure that mineral development is carried out in a manner which minimizes environmental damage and provides for the rehabilitation of affected lands” (p. 2-9)
- “Federal lands are the major source of mineral materials ... for industrial, state, and local projects in Taos, Rio Arriba, and Santa Fe Counties. The Field Office is responsible for the sale, permitting, and inspection and enforcement programs for mineral material activity” (p. 2-9)

In addition, the extension of the Rocky Mountain Mine is found to be consistent with the goals, objectives, and land use planning decisions included in the *Proposed Taos Resource Management Plan and Final Environmental Impact Statement (Proposed RMP/Final EIS)*, which when approved would replace the 1988 plan. (The Proposed RMP/Final EIS was released to the public for protest on December 2, 2011.)

Rationale for Decision

- This decision will provide for the continuity and economic viability of the Rocky Mountain Mine into the future, helping to meet public demand for pumice resources in a manner which minimizes potential environmental effects and provides for the rehabilitation of affected lands. The BLM's purposed and need for this action, as stated in section 1.2 of the EA, will be met.
- As demonstrated by the analysis contained in the EA, the mine extension onto adjacent public lands will not cause significant or unacceptable consequences. All potential resource conflicts and issues have been adequately resolved through project design features and mitigation measures which will be adhered to by CR Minerals Company, LLC as a condition of this approval.
- An adequate range of alternative was considered and evaluated in the EA. In addition to a no action alternative (Alternative B)—which would not meet the purpose and need for the action—the EA analyzed an alternative to reduce the size of the area proposed for mining (Alternative C). The analysis shows that the anticipated effects of Alternative C would be substantially the same as those anticipated under the Proposed Action—that essentially only the acreage disturbed and longevity of the operation would be different. Since the additional acreage included under the Proposed Action did not contain any resources of greater value or importance, the impacts to the various resources on that acreage will not be meaningfully reduced, particularly since the impacts to these resources can be adequately mitigated. Therefore, the Proposed Action is selected over Alternative C.
- An appropriate opportunity for public involvement in the decision making process was provided. On September 14,2010, a 30-day formal public scoping period was opened. A formal scoping letter was sent out to all appropriate agency and government contacts as well as recipients on CRM's mailing list, soliciting the general public to comment on the scope of the proposed Rocky Mountain Mine extension project. A press release was also issued to area media.

The EA was made available on October 25,2011 for a 30-day public review and comment period, announced via a press release and on the BLM New Mexico website. One comment letter was received November 14, 2011 from the New Mexico Department of Game and Fish (NMDGF). Recommendations by NMDGR were incorporated into the Proposed Action as design features to be adhered to by CR Minerals Company, LLC.

- As indicated above, the action is in conformance with the current, applicable land use plan, the 1988 *Taos Resource Management Plan*. It is also consistent with the *Proposed Taos Resource Management Plan* anticipated to be approved in early 2012.

Opportunity to Appeal

Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a notice of appeal must be filed in the office of the Authorized Officer at

the Taos Field Office, 226 Cruz Alta Road, Taos, New Mexico 87571. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, VA 22203 within 30 days after the notice of appeal is filed with the Authorized Officer.

Date

Authorized Officer

Attachment

1. CR Minerals Company, LLC Rocky Mountain Mine Pumice Extraction Environmental Assessment (DOI-BLM-NM-F020-2011-0032-EA), dated December 2011.

Appendix B

CRM - Rocky Mountain Mine

Overburden Modification

16-01

Permit RA004RE

Forwarded Message-----

Subject: EPA Multi-Sector General Permit (MSGP) Authorization is Active - Rocky Mountain Mine, NPDES ID: NMR053267, NeT Submission ID: MSGP-4233 Date: Sat, 31 Oct 2015 11:02:37 -0400 (EDT)

From: NeT@epa.gov

To: ieff@crminerals.com

CC: robyn@permitswest.com, lee.won@epa.gov, lescure.nasrin@epa.gov, emily@avantiacorporation.com, farris.erika@epa.gov, Christiane@avantiacorporation.com, bius.catherine@epa.gov

2015-10-31

Your Notice of Intent (NOI) requesting coverage for Rocky Mountain Mine, P.O. Box 708 1 miule north of Fairview Lane on US 84/285, Road Ohkay Owingeh NM 87566 under EPA's Multi-Sector General Permit (MSGP) has been accepted and authorization to discharge under the MSGP became effective at the conclusion of your 30-day waiting period, on 2015-10-30.

For tracking purposes, the following NPDES ID has been assigned to your NOI: NMR053267. Attached to this email, you will find a copy of your completed NOI form. To access your NOI in NeT, please visit: https://cdx.epa.gov/epa_home.asp.

As you know, the MSGP requires you to have developed a Stormwater Pollution Prevention Plan (SWPPP) prior to submitting your NOI. The MSGP also includes specific requirements for implementing control measures (e.g., minimize exposure, good housekeeping, maintenance, spill prevention and response), conducting self-inspections and visual assessments of your discharges, taking corrective actions, and conducting staff training. You must comply with any specific requirements applicable to your industrial sector(s) in Part 8 and any state/tribal-specific requirements in Part 9 (see <http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm>). You are also required to submit an Annual Report in accordance with Part 7.5 of the MSGP that will contain the results from your past year's routine facility inspections, quarterly visual assessments, and corrective actions. Annual Reports must be submitted to EPA through NeT.

The MSGP includes five types of required analytical monitoring, one or more of which may apply to your discharge:

- Quarterly benchmark monitoring (see Part 6.2.1 and Part 8);
- Annual effluent limitations guidelines monitoring (see Part 6.2.2 and Part 8);
- State- or tribal-specific monitoring (see Part 6.2.3 and Part 9);
- Impaired waters monitoring (see Part 6.2.4); and
- Other monitoring as required by EPA (see Part 6.2.5).

Monitoring requirements in the MSGP (i.e., parameters required to be monitored and sample frequency) will be prepopulated on your electronic Discharge Monitoring Report (DMR) in EPA's NetDMR system, which is accessed at <http://www.epa.gov/netdmr/>.

Where you have

determined that no monitoring requirements apply to your discharge, there is no need to access the NetDMR system. In order to obtain access to this system, you must complete the electronic signature process. Please refer to the following guidance for information about submitting monitoring reports through NetDMR:

<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPAs-MultiSector-General-Permit.cfm>.

Please note that this email does not represent a determination by EPA regarding the validity of the information you provided in your NOI. Your eligibility for coverage under this permit is based on the validity of the certification you provided. Your electronic signature on the NOI form certifies that you have read, understood, and are implementing all of the applicable requirements. An important aspect of this certification requires that you have correctly determined whether you are eligible for coverage under this permit.

The 2014 MSGP and additional guidance are available at:

<http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm>.

Please contact your EPA Regional permitting authority at lee.won@epa.gov; lescore.nasrin@epa.gov; emily@avanticorporation.com; farris.erika@epa.gov; Christiane@avanticorporation.com; bius.catherine@epa.gov for more information.

This is an automated response; please do not reply to this email.

AcceptedNewNOIRceipt.pdf



2015 NPDES Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) Forms

United States Environmental Protection Agency
1200 Pennsylvania Ave, NW Washington, DC 20460

Note: This is a "smart form"; as you fill out the form, additional questions will appear that you will need to answer.

Permit Information

1. What action would you like to take? *

File a New Notice of Intent Form

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in the Facility Operator Information section of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in the Permit Information section of this form. Submission of this NOI also constitutes notice that the operator identified in the Facility Operator Information section of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in the Facility Information section of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

Operator Name (Organization Name) *

CR Minerals Company, LLC

Operator Name as Noted by the NOI Preparer CR Minerals Co., LLC

2. Select the state/territory where your facility is located *

NM

3. Is your facility located on Indian Country lands?

Q Yes (•) No

4. Are you requesting coverage as a "federal operator" as defined in Appendix A? *

Q Yes (•) No

5. Are you a new discharger or a new source as defined in Appendix A? *

Yes

No

5a. Have stormwater discharges from your facility been covered previously under an NPDES permit? *

Yes

No

5aa. Provide your most current NPDES ID (i.e., permit tracking number) if you had coverage under EPA's MSGP 2008 or the NPDES permit number if you had coverage under an EPA individual permit *

NMR05HP62

6. Do you directly discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding Natural Resource Water) (See Appendix L)? Your project will be considered to discharge to a Tier 3 water if the first water of the US to which you discharge is identified by a state, tribe, or EPA as a Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first water of the US to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. *

Yes

No

7. Does your facility directly discharge to a Federal CERCLA site listed in Appendix P? For the purposes of this permit, a permittee discharges to a Federal CERCLA site if the discharge flows directly into the site through its own conveyance, or through a conveyance owned by others, such as a municipal separate storm sewer system. *

Yes

No

8. Has the Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filing this NOI, as required? *

Yes

No

9. By indicating "Yes", I confirm that I understand that the MSGP only authorizes the allowable stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges in Part 1.1.3. Any discharges not expressly authorized under the MSGP are not covered by the MSGP and they cannot become authorized by disclosure to EPA and/or a state via this Notice of Intent to be covered by the permit or by any other means (e.g., in the Stormwater Pollution Prevention Plan or during an inspection). If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.1.2 and 1.1.3 will be discharged, they must be covered under another NPDES permit. *

Yes

No

10. Master Permit Number

NMR050000

A: Facility Operator Information

1. Operator Name (Organization

Name) * CR Minerals Company, LLC

2. Street *

P.O. Box 708

3. Supplemental Address

1 miule north of Fairview Lane on US 84/285, Road

4. City *	5. State *	6. Zip Code *	7. Facility County or Similar Govt. Subdivision *
Ohkay Owingeh	NM	87566	Rio Arriba

8. Phone (10-digits, No dashes) *	9. Extension	10. E-Mail *
5054282940		joe@crminerals.com

Operator point of contact information 11. First

Name *	12. Middle Initial	13. Last Name *	14. Professional Title *
Joe Griego	Griego		Oerations Manager

B: Facility Information

1. Facility Name *

Rockv Mountain Mine

2. Street/Location *

P.O. Box 708

Facility address same as facility operator address

3. Supplemental Address

1 miule north of Fairview Lane on US 84/285, Road

4. City *

Ohkay Owingeh

5. State *

NM

6. Zip Code *

87566

7. Facility County or Similar Govt. Subdivision *

Rio Arriba

Latitude/Longitude for the facility:

8. Latitude (Decimal Degrees) *

+ 36.005220

9. Longitude (Decimal Degrees) *

- 106.193589

10. Latitude/Longitude Data Source *

Other

11. Horizontal Reference Datum

WGS84

12. What is the ownership type of the facility *

Corporation

13. Estimated area of industrial activity at your facility exposed to stormwater (to the nearest quarter acre) *

517.40

Identify the applicable sector and subsector of your primary industrial activity (See Appendix D) that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code:

15. Sector *

SECTOR J: MINERAL MINING AND DRESSING

16. Primary SIC Code *

1499: Miscellaneous Nonmetallic Minerals

17. Subsector

J2: Miscellaneous Nonmetallic Minerals, Except Fuels

18. Identify the applicable sectors(s) of any co-located industrial activity for which you are requesting permit coverage.

Sector

SECTOR J: MINERAL MINING AND DRESSING

Subsector *

J2: Miscellaneous Nonmetallic Minerals, Except Fuels

22. Is your facility presently inactive and unstaffed? *

Yes (+) No

C: Discharge Information

3. Identify if the following Effluent Limitation Guideline(s) apply to any of your discharges

< -----
40 CFR Part/Subpart: Part 436, Subpart
B

Eligible Discharges: Mine dewatering discharges at
crushed stone mining facilities (SIC 1422 - 1429)

Affected MSGP Sector:
J

New Source Date: N/A

Does your facility have any
discharges subject to this effluent
limitation guideline? *

QYes (i)No

> -----
40 CFR Part/Subpart: Part 436, Subpart
C

Eligible Discharges: Mine dewatering discharges at
construction sand and gravel mining facilities (SIC 1442)

Affected MSGP Sector: J

New Source Date: N/A

Does your facility have any
discharges subject to this effluent
limitation guideline? *

QYes QNo

> -----
40 CFR Part/Subpart: Part 436, Subpart
D

Eligible Discharges: Mine dewatering discharges at
industrial sand mining facilities (SIC 1446)

Affected MSGP Sector: J

New Source Date: N/A

Does your facility have any
discharges subject to this effluent
limitation guideline? *

QYes (S)No

> -----
Outfalls

Delete Outfall

A. Outfall ID *	B. Latitude (Decimal Degrees) *	C. Longitude (Decimal Degrees) *	Lookup Receiving Waters Information
001	+ 36.020594	- 106.159676	

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001,002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

5. Multiple Receiving Waters were returned for your outfall. Please select the receiving water that is associated with your outfall from this list: *

Arroyo de la Plaza Larga

/ !
Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

Arroyo de la Plaza Larga

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

Yes (•) No

3. Has a TMDL been completed for this receiving waterbody? * Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

002

B. Latitude (Decimal Degrees) *	C. Longitude (Decimal Degrees) *	(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)
+ 36.009286	- 106.140224	Lookup Receiving Waters Information

Delete Outfall

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

Arroyo del Gaucho

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? * Yes (•) No

3. Has a TMDL been completed for this receiving waterbody? * Yes (m) No

D. Substantially Identical to Any Outfalls Listed Above? * Yes (•) No

Add Another Outfall

Provide the following information about your outfall latitude longitude.

6. Horizontal Reference Datum
WGS84

5. Latitude/Longitude Data Source *
Other

7. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? * Q Yes (•) No 8. Do you discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) (See Appendix L)? * Q Yes (•) No

D: Stormwater Pollution Prevention Plan (SWPPP)

Information SWPPP Contact Information

1. First Name *	2. Middle Initial	3. Last Name *	4. Professional Title *
Joe		Griego	Operations Manager

7. E-Mail *

5. Phone (10-digits, No dashes) *

6. Extension

5054282940

ioe@crminerals.com

8. Your current SWPPP or certain information from your SWPPP must be made available through one of the following two options. Select one of the options and provide the required information. *

Note: You are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.

Option 1: Maintain a Current Copy of your SWPPP on an Internet page (Universal Resource Locator or URL).

Option 2: Provide the following information from your SWPPP.

A. Describe your onsite industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning, cutting steel beams), and potential spill and leak areas. *

Activities at the facility include pumice extraction, crushing and screening for shipment to lightweight aggregate customers and for shipment as feedstock to the CR Minerals Mill in Ohkay Owingeh, New Mexico for further processing and sale to industrial customers. All industrial activities with the exception of the access road/driveway to the public access are contained within the pit area. Industrial activities include: road maintenance, removal of overburden, rock sorting, rock crushing, waste rock storage, raw material loading, processing materials unloading, raw or waste material transportation, equipment/vehicle maintenance - fueling, equipment/vehicle maintenance - parts cleaning, equipment/vehicle maintenance - fluid replacement, equipment/vehicle maintenance - waste disposal, and reclamation activities.

The diesel storage tank is located in a far corner of the pit area and is contained within a plastic lined and bermed area. There are no potential outfalls associated with this source.

Equipment/vehicle maintenance is performed within the pit area and all fluids, oils greases are placed in a container, then hauled offsite by a licensed contractor.

B. List the pollutants(s) or pollutant constituent(s) associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or in any authorized non-stormwater discharges listed in Part 1.1.3. *

Road maintenance - Dust, total suspended solids (TSS)

Removal of overburden - Dust, TSS, total dissolved solids (TDS), turbidity

Rock sorting - Dust, TSS

Rock crushing - Dust, TSS, TDS, turbidity, fines

Raw material storage - Dust, TSS, TDS, turbidity

Waste rock storage - Dust, TSS, TDS, turbidity, pH

Raw material loading - Dust, TSS, TDS, turbidity

Processing materials unloading - Diesel fuel, oil

Raw or waste material transportation - Dust, TSS, TDS, turbidity

Equipment/Vehicle Maintenance-Fueling Activities - Diesel fuel, oil

Equipment/Vehicle Maintenance-Parts Cleaning - containerized solvents, oil, grease, and oily rags

Equipment/Vehicle Maintenance-waste disposal of oily rags, oil and gas filters, batteries, coolants, degreasers, solvents, and spent containers Fluid replacement including hydraulic fluid, oil, transmission fluid, radiator fluids, grease, solvents, and spent containers Reclamation Activities-Site preparation for stabilization - Dust, TSS, TDS, turbidity

C. Describe the control measures you will employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 5.2.4.1). *

All industrial activities with the exception of the access road/driveway to the public access are contained within the pit area. The pit is surrounded by high retaining walls and no potential outfalls have been identified within the pit area. The diesel tank used for refueling is contained within a plastic lined berm and is surrounded by pumice. The pumice itself acts as a sorbent for spill control. The generator is contained within a shed and is not exposed to rain, snow, snowmelt, and runoff. The natural vegetation has been preserved areas not involved in industrial activities. Disturbed areas no longer in use have been vegetated to minimize exposed soils. Haul roads are constructed to minimize runoff from road surfaces.

The area of operations will be kept clean throughout the work day. Actions will include containing and covering garbage, waste materials, and debris in covered containers each day. Pickup and disposal of garbage and waste materials at the site will be performed as covered containers become full or at least once a month.

D. Provide a schedule for good housekeeping and maintenance (see Part 5.2.5.1) and a schedule for all inspections required in Part 4 (see Part 5.2.5.2). *

Good house-keeping actions will be performed each day.

Maintenance actions will be performed at least once a week.

Inspections of the diesel storage tank and plastic lining to the containment area will be inspected at least once a week for leaks and structural integrity.

All motorized equipment will be inspected each day for fluid leaks (i.e. checked for oil or other fluid leaks beneath the equipment. In addition, spill cleanup material will be kept readily available and spills and/or leaks will be cleaned up immediately. Driveways will be inspected each day and kept clear of pumice and oil/grease from vehicles.

E: Endangered Species Protection

1. Using the instructions in Appendix E of the MSGP, under which endangered species criterion listed in Part 1.1.4.5 are you eligible for coverage under this permit? * Criterion

A - No listed species or critical habitat are in the action area

2. Provide a brief summary of the basis for the criterion selected in Appendix E (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service to determine no species in action area; implementation of controls approved by EPA and the Services). *

Based on an examination of the U.S. Fish and Wildlife Service's Official Species List generated August 26, 2015 (Consultation Code: 02ENNM00-2015-SLI-0653 August 26, 2015 Event Code: 02ENNM00-2015-E-00771 Project Name: CR Minerals Co. LLC - Rocky Mountain Mine) and a further examination of the Environmental Conservation Online System (ECOS) IPaC webpage and ECOS-generated descriptions for each of the species listed in the Official Species list, there is no suitable habitat for these species within the project action area and the Project likely will have no adverse effect on these species or their designated/proposed Critical Habitats.
See Attachments 1 and 2, Appendix E)

F: Historic Preservation

1. If your facility is not located in Indian country lands, is your facility located on a property of religious or cultural significance to an Indian tribe? *

Q Yes (•) No

2. Using the instructions in Appendix F of the MSGP, under which historic properties preservation criterion listed in Part 1.1.4.7 are you eligible for coverage under this permit * Criterion C - Contacted the SHPO or THPO and received a response regarding measures to mitigate potential effects

Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. 40 CFR 122.22

(d)

Certifier E-Mail * jeff@crminerals.com

Form Action *

Approve

Appendix C

CRM - Rocky Mountain Mine

E-3 Unit Entry and Financial

Assurance Modification

19-01

Permit RA004RE

PLANT SURVEY REPORT
FOR
CR MINERALS' PROPOSED
ROCKY MOUNTAIN MINE EXTENSION

Sections 33 and 34, T. 21 N., R. 7 E.
Rio Arriba County, New Mexico



NOVEMBER 6, 2010

PREPARED BY:

WINNIE DEVLIN

OF

PERMITS WEST.,,C.

PROVIDING PERMITS for LAND USERS

PERMITS WEST, INC.

37 VERANO LOOP

SANTA FE, NM 87508

1.0 INTRODUCTION

This report evaluates the potential for disturbance to the following 16 plant species listed as rare for Rio Arriba County, New Mexico (NMRPTC 2007): tufted sand verbena (*Abronia bigelovii*), cyanic milkvetch (*Astragalus cyaneus*), Chaco milkvetch (*Astragalus micromerius*), Pagosa milkvetch (*Astragalus missouriensis*), Arboles milkvetch (*Astragalus oocalycis*), Taos milkvetch (*Astragalus puniceus* var. *gertrudis*), Ripley's milkvetch (*Astragalus ripleyi*), robust larkspur (*Delphinium robustum*), Heil's alpine whitlowgrass (*Draba heilii*), New Mexico stickseed (*Hackelia hirsuta*), small-headed goldenweed (*Lorandersonia microcephala*), Chama blazing star (*Mentzelia conspicua*), Pagosa phlox (*Phlox caryophylla*), Pagosa bladderpod (*Physaria pruinosa*), Arizona willow (*Salix arizonica*) and Clifford's groundsel (*Senecio cliffordii*). The potential for disturbance to Federal-listed plant species (USFWS 2010) was also evaluated.

2.0 PROJECT DESCRIPTION

The project area is located on CR Minerals Company, LLC land and on Bureau of Land Management (BLM) land approximately 6-1/2 miles west of Espanola, New Mexico, in Rio Arriba County. The proposed project consists of expanding an existing, active pumice mine. Expansion will total =380.5 acres. The proposed project crosses two sections (33 and 34) of T. 21 N., R. 7 E., and lies on the north and south side of 31-Mile Road about 6 miles west of the intersection of FS 144 with US 84/285. Elevations within the project area range from approximately 6,630 to 6,775 feet.

The proposed pumice mine expansion includes two areas west and east of the active mine named BLM-West and BLM-East. 31-Mile Road runs through the middle of the project area and is fenced on both the north and south side. This fenced area, including 31-Mile Road, is approximately 200 feet wide and will not be part of the proposed mine area. Other than the areas surrounding the existing mine and along the roadway, the project area traverses relatively undisturbed terrain.

The soil is a clay loam, sandy in places with areas of pumice pebbles on the surface. For the most part, there are two major plant communities: pinon-juniper/blue grama woodland (*Pinus edulis-Juniperus monosperma/Bouteloua gracilis*) and savanna grassland of the *Juniperus monosperma/bouteloua* series (according to the classification system in Dick-Peddie 2000). In both communities, the predominant shrubs and subshrubs are rubber rabbitbrush (*Chrysothamnus nauseosus*) and broom snakeweed (*Gutierrezia sarothrae*). In addition to blue grama, the predominant grasses are ring muhly (*Muhlenbergia torreyi*) and alkali sacaton (*Sporobolus airoides*). By far the most abundant forb is tarragon (*Artemesia dracunculus*). In the disturbed areas along the road and adjacent to the mine, Russian thistle (*Salsola tragus*) and cheat grass (*Bromus tectorum*) dominate.

In one area immediately west of the existing mine, the substrate is predominantly pumice rather than soil. Here there is very little grass of any species and no pinon or juniper. The predominant plant is Apache plume (*Fallugia paradoxa*).

3. METHODOLOGY

The proposed project area was surveyed by Winnie Devlin (Ph. D., plant physiology) from October 5 through October 9, and on October 12, 2010. The weather on all of these days was cool in the morning with temperatures warming in the afternoons with a gentle breeze that typically increased in strength in the late

afternoons along with increased cloud cover.

The survey of the proposed pumice mine extension was accomplished by zigzag pedestrian transects of 40 to 50 feet in width. Although the emphasis of the survey was to inspect for listed species, all plants were identified to the extent possible in order to provide a thorough description of the environment and to note any State-listed noxious weeds (NMDA 2009) that might occur in the project area.

4. SURVEY RESULTS

Of the 16 species listed as rare in Rio Arriba County, NM, 14 of the species—tufted sand verbena (*Abronia bigelovii*), cyanic milkvetch (*Astragalus cyaneus*), Chaco milkvetch (*Astragalus micromerius*), Pagosa milkvetch (*Astragalus missouriensis*), Arboles milkvetch (*Astragalus oocalycis*), Ripley's milkvetch (*Astragalus ripleyi*), robust larkspur (*Delphinium robustum*), Heil's alpine whitlowgrass (*Draba heilii*), New Mexico stickseed (*Hackelia hirsuta*), small-headed goldenweed (*Lorandersonia microcephala*), Chama blazing star (*Mentzelia conspicua*), Pagosa bladderpod (*Physaria pruinosa*), Arizona willow (*Salix arizonica*) and Clifford's groundsel (*Senecio cliffordii*)—were not found during the survey due to a lack of potential habitat for any of these species in the project area.

Although there is potential habitat in the project area for the remaining two species listed as rare in Rio Arriba County, NM—Taos milkvetch (*Astragalus puniceus var. gertrudis*) and Pagosa phlox (*Phlox caryophylla*)—neither of these species was found during the survey.

There are no Federal listed plant species for Rio Arriba County, New Mexico.

Four State-listed noxious weed species occurred within the project area: cheatgrass (*Bromus tectorum*), Russian olive (*Elaeagnus angustifolia*), salt cedar (*Tamarix* sp.), and Siberian elm (*Ulmus pumila*). Although not abundant in the project area, cheat grass did occur along the roadside, several arroyos, and other disturbed edges. The three noxious tree species were found in erosion control features adjacent to the active mine. The erosion control features periodically hold water. The resulting damp soil is conducive to the three species. All four species are listed as Class C species, "wide-spread in the state", and for which "management decisions...should be determined at the local level, based on feasibility of control and level of infestation" (NMDA 2009).

While not officially listed as noxious weeds, tumbleweed (*Salsola tragus*) and mullein (*Verbascum thapsus*) were also found in disturbed areas.

4.1 PLANTS FOUND AT THE PROPOSED PROJECT AREA

Trees

<i>Elaeagnus angustifolia</i>	Juniper	Russian olive
<i>monosperma</i>	<i>Pinus edulis</i>	One-seed juniper
<i>Pinus ponderosa</i>	<i>Populus sp.</i>	Pinon pine
<i>Salix sp.</i>		Ponderosa pine
<i>Tamarix sp.</i>		Cottonwood
<i>Ulmus pumila</i>		Willow
		Salt cedar
		Siberian elm

Shrubs, Subshrubs and Vines

<i>Artemisia tridentata</i>	<i>Atriplex canescens</i>	Big leaf sagebrush
<i>Chrysothamnus depressus</i>	<i>Chrysothamnus nauseosus</i>	Four-wing saltbush
<i>Clematis ligusticifolia</i>		Longflower rabbitbrush
<i>Eriogonum microthecum</i>	<i>Fallugia paradoxa</i>	Rubber rabbitbrush
<i>Forestiera neomexicana</i>	<i>Gutierrezia sarothrae</i>	Western virgin's bower
<i>Krascheninnikovia lanata</i>	<i>Lycium pallidum</i>	Slender buckwheat
<i>Ribes cereum</i>	<i>Tetradymia canescens</i>	Apache plume
		New Mexico olive
		Broom snakeweed
		Winterfat
		Wolfberry
		Skunkbush
		Wax currant
		Spineless horsebrush

Cacti and Succulents

<i>Coryphantha vivipara</i>	var. <i>arizonica</i>	Arizona pincushion
<i>Cylindropuntia imbricata</i>	<i>Echinocereus triglochidiatus</i>	Cholla
<i>Opuntia phaeacantha</i>	<i>Opuntia polyacantha</i>	Claret cup cactus
<i>Yucca baccata</i>	<i>Yucca glauca</i>	Pricklypear
		Plains pricklypear
		Banana yucca
		Soapweed yucca

Grasses

<i>Achnatherum hymenoides</i>	<i>Aristida divaricata</i>	Indian ricegrass
<i>Aristida longiseta</i>	<i>Bouteloua curtipendula</i>	Poverty threeawn
<i>Bouteloua hirsuta</i>		Red threeawn
		Sideoats grama
		Black grama
		Hairy grama

Bouteloua gracilis Bromus tectorum
Elymus elymoides Festuca arizonica
Hordeum jubatum Muhlenbergia
torreyi Munroa squarosa Pascopyrum
smithii Pleuraphis jamesii
Schizachyrium scoparium Sporobolus
airoides Sporobolus cryptandrus Stipa
comata

Forbs

Ameranthus hybridus Ambrosia
acanthicarpa Ambrosia psilostachya
Arabis fendleri Artemisia dracuncululus
Artemisia ludoviciana Asclepias
asperula Aster falcatus var.
commutatus Astragalus lentiginosus
Astragalus missouriensis Atriplex
argentea Bahia dissecta Brickellia
eupatorioides Castilleja integra
Chaetopappa ericoides Chamaesyce
albomarginata Chamaesyce
serpyllifolia Chenopodium album
Chenopodium berlandieri
Chenopodium fremontii Chenopodium
leptophyllum Cirsium ochrocentrum
Cleome serrulata Conyza canadensis
Cryptantha crassisejala Cryptantha
paysonii Dalea purpurea Dalea
scariosa

Blue grama Cheatgrass
Bottlebrush squirreltail Arizona fescue Foxtail barley
Ring muhly False buffalograss Western wheatgrass
Jame's galleta Little bluestem Alkali sacaton Sand
dropseed Needle-and-thread

Pigweed Annual bursage Western ragweed
Fendler's arabis Taragon Prairie sage
Antelope horns milkweed Heath aster Beakpod
milkvetch Missouri milkvetch Silverscale saltweed
Bahia
False boneset Foothills paintbrush White aster
Rattlesnake weed Thymeleaf spurge Common
lambquarters Netseed lambquarters Fremont
lambquarters Narrow-leaved goosefoot
Yellowspine thistle Rocky Mountain bee plant
Horseweed
Thicksepal hiddenflower White hiddenflower Purple
prairie clover La Joya prairieclover

<i>Descurainia obtusa</i>	Blunt tansy mustard
<i>Descurainia sophia</i>	Flixweed
<i>Dysphonia graveolens</i>	Fetid goosefoot
<i>Eriogonum cernuum</i>	Nodding buckwheat
<i>Gaillardia pinnatifida</i>	Yellow blanket flower
<i>Helianthus annuus</i>	Annual sunflower
<i>Heterotheca villosa</i>	Hairy golden aster
<i>Hymenopappus filifolius</i>	White ragweed
<i>Hymenoxis richardsonii</i>	Rubberweed
<i>Ipomopsis aggregata</i>	Skyrocket
<i>Ipomopsis laxiflora</i>	Slender trumpet gilia
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lappula occidentalis</i>	Cupseeded stickseed
<i>Lepidium montanum</i>	Pepperweed
<i>Lesquerella fendleri</i>	Fendler bladderpod
<i>Linum lewisii</i>	Blue flax
<i>Machaeranthera canescens</i>	Purple aster
<i>Machaeranthera linearis</i>	Narrowleaf purple aster
<i>Machaeranthera parviflora</i>	Small-flowered tansyaster
<i>Melilotus alba</i>	White sweetclover
<i>Mentzelia multiflora</i>	Many-flowered blazing star
<i>Mirabilis linearis</i>	Narrowleaved four o'clock
<i>Mirabilis multiflora</i>	Giant four o'clock
<i>Monarda pectinata</i>	Plains pagoda plant
<i>Oenothera caespitosa</i>	Stemless evening primrose
<i>Orobanche ludoviciana</i>	Louisiana broomrape
<i>Penellia micrantha</i>	Slimleaf purple mustard
<i>Penstemon angustifolius</i>	Narrowleaf penstemon
<i>Physalis hederifolia</i>	Ivy-leafed groundcherry
<i>Physalis virginiana</i>	Virginia groundcherry
<i>Plantago patagonica</i>	Wooly plantain
<i>Portulaca oleracea</i>	Common purslane
<i>Psilostrophe tagetina</i>	Paper flower
<i>Salsola tragus</i>	Russian-thistle
<i>Senecio riddellii</i>	Riddell's groundsel
<i>Solanum heterodoxum</i>	Melonleaf nightshade
<i>Solanum sarrachoides</i>	Hairy nightshade
<i>Sphaeralcea angustifolia</i>	Narrowleaf globemallow
<i>Sphaeralcea coccinea</i>	Scarlet globemallow
<i>Sisymbrium altissimum</i>	Tumblemustard
<i>Stephanomeria pauciflora</i>	Skeleton weed
<i>Taraxacum officinalis</i>	Dandelion
<i>Thelesperma filifolium</i>	Indian tea

<i>Thelasperma megapotamicum</i>	Cota
<i>Tragapogon dubius</i> <i>Verbascum</i>	Western salsify
<i>thapsus</i> <i>Verbena bracteata</i>	Mullein
<i>Verbesina encelioides</i>	Carpet-verbena
	Cowpen daisy

5.0 DISCUSSION

The proposed project will not impact any State or Federal listed plant species.

6.0 REFERENCES

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CR Minerals Company

Rocky Mountain Mine

**Exhibit 6 - Vegetation, Mining Permit Application and
Closeout Plan, Permit No. RA004RE - June 1999**

VEGETATION

METHODOLOGY

General

The project area was surveyed by a qualified plant biologist on August 19 and 20, 1997 to delineate and sample the vegetation communities present. Vegetation communities were determined based on soils information, aerial photography, and ground truthing. After preliminary community lines were established, five sampling locations were randomly selected within each plant community and were sampled for cover and production.

Cover Sampling

The line intercept method was chosen to evaluate species cover within each plant community. This method comprises three basic considerations:

- 1) The sampling unit is a line transect which is visualized as having length and vertical dimension only; lateral dimension, or width, is not considered.
- 2) The direct measurement of the intercept of the plants through which a vertical plane must pass.
- 3) The random basis of the estimate is obtained through randomization in the location of the sampling units.

The setup and data collection involve the following:

Transect locations are determined randomly from a grid system overlay placed

over the most current map showing areas to be sampled. A 100-foot tape, subdivided into 1.0-foot intervals, is then stretched between two points at the position found on the map. The sampler moves along the line, and for each interval, records the plant species found and the distance it covers along that portion of the line intercept. Measurements of individual plants are read to the nearest 0.1 inch. The sampler considers only those plants or seedlings touched by the line or lying under or over it. For floral canopies below eye level, the distance each species covers along the line at ground level will be measured. For canopies above eye level, the distance covered by the downward projection of the foliage will be measured. Multiple vegetation levels are included for cover measurements.

The advantages of this method are that it is objective and relatively accurate (Canfield 1941). Bias is reduced since it is based on actual measurements of the plants growing in randomly located and clearly defined sampling units. It is accurate in mixed plant communities and suited for measuring low vegetation. By direct measurement of small samples, it will obtain estimates of known reliability concerning the vegetation, its composition and ecological structure.

The measurements which are calculated from the line intercept transect are:

$$\frac{\text{relative cover species A} \times 100}{\text{total transect length}} = \frac{\text{total intercept length, species A}}{\text{total intercept length, all species}}$$

total intercept length, species A X 100 total intercept length, all species

Herbaceous cover (by species), rock and litter were estimated along the transect to the nearest 1 percent Shrub and tree species less than 1 foot in height are considered herbaceous cover. Shrub and tree species over 1 foot in height will

be counted separately as a different stratum. Five transects will be placed within each community.



Production Sampling

Production measurements will be collected within 0.1 m² (20 X 50 cm) frames placed along a 100 foot tape. Setup and data collection involve the following:

Transect locations are determined randomly from a grid system overlay placed over the most current map showing areas to be sampled. A 100-foot tape, subdivided into 1.0-foot intervals, is then stretched between two points at the position found on the map. Five frames are placed on alternate sides of the tape at the 10, 20, 30, 40, and 50 foot marks. Current years growth within the five frames is clipped and weighed to the nearest 0.5 gram. This clipped material will be collected in paper bags and oven-dried to obtain the oven-dry weight.

The vegetation will be separated into grass/grasslike, forb, and shrub categories.

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Yields are corrected to oven-dried weights before reporting so all figures are reported in pounds of dry matter per acre.

VEGETATION COMMUNITY DESCRIPTIONS

Two vegetation communities were identified within the project area; the pinyon-juniper- blue grama community and the blue grama - broom snakeweed community (PLATE 1). These two communities cover 58.8 percent of the project area. The remaining area is existing mining disturbance including current pits, stock piles, and backfilled areas. A list of all species observed during field reconnaissance is presented in APPENDIX 8.

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Pinyon-Juniper-Blue Grama Community

V;,-'

The pinyon-juniper-blue grama community is probably the most dominant vegetation community in New Mexico (Dick-Peddie 1993). This community comprises approximately 20.4 percent of the project area (PLATE 1). The area has moderate coverage of pinyon and juniper with undulating topography.-

The soils on this area are in the Espiritu-Wauquie association. Both of these soil series are deep, well drained, medium textured soils. They were formed in alluvium and colluvium derived from igneous rock. These soils have moderate permeability, very rapid surface run-off and low available water holding capacity.

Vegetation within this community was somewhat sparse when compared to the surrounding grassland. The herbaceous stratum was dominated by blue grama (*Bouteloua gracillis*) with 11.16 percent cover or 77.1 percent of the relative herbaceous cover (TABLE 3). The other notable herbaceous species were an aster (*Asteraceae* spp.)

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and trumpet gilia (*Ipomopsis longiflora*) with 0.90 and 0.48 percent cover or 7.0 and 3.7 percent relative cover, respectively.

The shrub stratum was dominated by broom snakeweed (*Gutierrezia sarothrae*) and prickly pear (*Opuntia* spp.). Broom snakeweed was the most dominant with 3.04 percent cover and 88.4 percent relative cover. Prickly pear accounted for 0.40 percent cover and 11.6 percent relative cover.

The tree stratum was almost exclusively pinyon [*Pinus edulis*] and juniper (*Juniperus monosperma*). Juniper was the most dominant with 5.8 percent cover or 68.7 percent relative cover. Pinyon accounted for the remaining 31.3 percent relative cover with 2.54 percent cover.

TABLE 3. Cover values for the Pinyon-Juniper-Blue Grama Community at the Rocky Mountain Pumice Mine in Rio Arriba County, New Mexico.

Species	% Cover	Relative Cover
Forts		
<i>flstnerspp.</i>		
Aster	0.90	7.0
<i>tpomopsis longiftora</i> Trumpet gilia	0.45	3.7
Grass		
<i>Bouteloua gracilis</i> Blue grama	11.16	87.1
<i>Sitaniori hystrix</i> Bottlebrush squirreltail	0.06	0.6
<i>Sporobolus cryptandrus</i> Sand drapseed	0.20	1.6
Total	12.82	100.0
Shrubs		
<i>Gutierrezia saniothrae</i> Broom snakeweed	3.04	38.4
<i>Opuntia spp.</i> "	0.40	1.5
Flickfv pear	0.40	1.5
Total	3.44	100.0
Trees		
<i>Juniperous monosperma</i> One-seed juniper	5.60	68.7
<i>Pinua adults</i> Pfnvon	2.64	31.3
Total	8.44	100.0

Production in the pinyon-juniper-blue grama community was 709.8 pounds per acre for all lifeforms combined. Grass was the most dominant with 310.6 pounds per acre. Shrubs account for 293.9 and forbs account for 105.3 pounds per acre.

Blue Grama - Broom Snakeweed Community

The blue grama - broom snakeweed community is the most dominant vegetation community within the project area comprising 38.4 percent of the area (PLATE 1). This community was selected to represent the post-mining reclamation standard since it will best accommodate the post-mining land use of livestock and wildlife grazing. A 3.6 acre reference area was established in the southeast corner of the project area within this community for future success comparisons (PLATE 1).

The soils on this area are in the Oriie fine sandy loam and Oelop fine sandy loam series. Both of these soils are deep, well drained, and medium to coarse textured series. They were formed in alluvium and eolian material derived from sandstone and shale. Both soil series have moderately slow permeability, medium surface run-off, and high available water holding capacity.

Vegetation within this community is considerably more abundant and diverse than the pinyon-juniper-blue grama community. The herbaceous stratum was dominated by blue grama with 22.34 percent cover and 80.8 percent relative cover (TABLE 4). The two most dominant species in the herbaceous stratum following blue grama were bottlebrush squirreltail (*Sitanion hystrix*) and ring muhley (*Muhlenbergia torreyii*) with 2.10 and 1.58 percent cover and 7.6 and 5.7 percent relative cover, respectively.

The shrub stratum was dominated by broom snakeweed with 8.64 percent cover and 903.0 percent relative cover. The next dominant shrub species was immature pinyon pine trees with 0.64 percent cover and 6.7 percent relative cover.

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TABLE 4. Cover values for the Blue Grama-Broom Snakeweed Community at the Rocky Mountain Pumice Mine in Rio Arriba County, New Mexico.

Species	% Cover	Relative Cover
<u>Forbs</u>		
<i>Astragalus nuttallianus</i> Nuttall loco	0.18	0.7
<i>Helianthus</i> spp. Sunflower	0.10	0.4
<i>Ipomopsis longiflora</i> Trumpet gilia	0.32	1.2
<i>Kochia scoparia</i> Kochia	0.32	1.2
<i>Sphaeralcia coccinea</i> Globemallow	0.02	0.1
<u>Grass</u>		
<i>Aristida longiseta</i> Red three-awn	0.34	1.2
<i>Bouteloua gracilllis</i> Blue grama	22.34	80.8
<i>Muhlenbergia torreyi</i> Ring muhley	1.58	5.7
<i>Sitanion hystrix</i> Bottlebrush squirreltail	2.10	7.6
<i>Sporobolus cryptandrus</i> Sand dropseed	0.36	1.3
Total	27.66	100.0
<u>Shrubs</u>		
<i>Gutierrezia sarothrae</i> Broom snakeweed	8.64	90.0
<i>Opuntia</i> spp. Prickly pear	0.18	1.9
<i>O. imbricata</i> Cholla	0.14	1.5
<i>Pinus edulis</i> Pinvon	0.64	6.7
Total	9.60	100.0

Production in the blue grama-broom snakeweed community was 1,931.5 pounds per acre for all lifeforms combined. Grass accounted for 921.1 pounds per acre. Shrubs and forbs accounted for 781.9 and 228.5 pounds per acre, respectively.

Appendix D

CRM - Rocky Mountain Mine

Overburden Modification

16-01

Permit RA004RE

WILDLIFE SURVEY REPORT
FOR
CR MINERALS' PROPOSED
ROCKY MOUNTAIN MINE EXTENSION

Sections 33 and 34, T. 21 N., R. 7 E.
Rio Arriba County, New Mexico



OCTOBER 1, 2010

PREPARED BY:

CHARLES BLACK

OF

PERMITS WEST.,,C
PROVIDING PERMITS for LAND USERS

PERMITS WEST, INC.

37 VERANO LOOP

SANTA FE, NM 87508

1.0 INTRODUCTION

Threatened, endangered, and special status wildlife surveys were conducted at the proposed Rocky Mountain Mine extension properties on BLM land in Sections 33 and 34, T. 21 N., R. 7 E., Rio Arriba County, New Mexico. The proposed extension project area is located on BLM- administered surface and is approximately 380.5 acres in size. The project area is divided into two parcels, BLM-East (=349 acres) and BLM-West (=31.6 acres). The smaller BLM-West parcel is entirely located in Section 33. The larger BLM-East parcel is located in Sections 33 and 34.

2.0 METHODS

Prior to the field surveys, the following databases were reviewed:

- U.S. Fish and Wildlife Service Listed and Sensitive Species in Rio Arriba County (downloaded and reviewed September 1, 2010)
- New Mexico Department of Game and Fish BISON-M threatened, endangered, and sensitive taxa wildlife species in Rio Arriba County (downloaded and reviewed September 1, 2010)

Refer to the tables below that identify and address the species identified in these databases. Following the database review, the project area was inspected for the potential presence of threatened, endangered, or special status wildlife species.

2.1 WILDLIFE

On September 10, 12 and 16, 2010, Wildlife Biologist Charles Black conducted a pedestrian survey of the proposed site to inspect for the potential presence of threatened, endangered, or special status species. Weather during surveys was clear and warm with daytime highs around 85 F.

The area surveyed consisted of the two proposed BLM parcels. An additional 1.0-mile line-of- sight survey was conducted from the project area for raptor nests. The surveyor used 10x40 binoculars for the line-of-sight survey.

3.0 DESCRIPTION OF EXISTING HABITAT

The project area consists of =380.5 acres of BLM land. 31-Mile Road runs through the middle of the BLM-East project area and is fenced on both the north and south side of the road. 31-Mile Road runs just north of the BLM-West parcel and is fenced at this boundary. The fenced area, including 31-Mile Road and the right-of-way, is approximately 200 feet wide and is not proposed for future mining.

Terrain throughout the project area is relatively flat to gently rolling. Vegetation is dominated by pinyon (*Pinus edulis*)-juniper (*Juniperus spp.*) woodland and open juniper savanna grassland. Dominant shrubs throughout the site are rabbitbrush (*Chrysothamnus spp.*) and broom snakeweed (*Gutierrezia sarothrae*). Elevations within the project area range from approximately 6,630 to 6,775 feet.

Existing disturbance in the project area includes the existing RMM pumice extraction operation on private lands located in Section 34. 31-Mile Road also exists and cuts across the project area to lands beyond. Grasslands throughout the project area are moderately grazed even though there are no active grazing leases in the area. There are several areas where the fence between Santa Clara Pueblo and

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adjacent BLM lands has fallen and this is likely the source of access for cattle found on the proposed extension properties from time to time.

4.0 THREATENED, ENDANGERED, AND SPECIAL STATUS WILDLIFE SPECIES

4.1 FEDERAL T&E, CANDIDATE, AND SPECIES OF CONCERN WITH POTENTIAL TO OCCUR

The following table contains federally listed and candidate species, that are known to or have the potential to occur in Rio Arriba County, New Mexico. The table also lists Federal Species of Concern with potential to occur within the project area.

SPECIES	STATUS*	HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR**
MAMMALS			
Townsend's big-eared bat <i>(Corynorhinus townsendii)</i>	SC	Arid western shrub and pine forest. Maternity colonies in mines, caves, and buildings. Sensitive to disturbance.	S
New Mexican jumping mouse <i>(Zapus hudsonius luteus)</i>	C	Found close to habitat with free-flowing water, riparian zones, or in wet meadows.	NP
Black-footed ferret <i>(Mustela nigripes)</i>	E	Open grasslands with year-round prairie dog colonies. Strongly associated with black-tailed prairie dogs.	NP
BIRDS			
American peregrine falcon <i>(Falco peregrinus anatum)</i>	SC	Rare breeders (NM) in rocky, steep cliff areas, generally near water or mesic canyons. Also migrates statewide, mostoften near wetland habitats	S
Yellow-billed cuckoo <i>(Coccyzus americanus)</i>	C	Extensive, mature riparian corridors.	NP
Mexican spotted owl <i>(Strix occidentalis lucida)</i>	T	Rocky canyons in mature montane forests below 9500 feet in elevation.	NP
Interior least tern <i>(Sterna antillarum)</i>	E	Nests in small colonies on mudflats and sandbars on the lower Pecos River in Southeast New Mexcio. Possible as a rare vagrant in wetland habitats Statewide.	NP
Southwestern willow flycatcher <i>(Empidonax trillii extimus)</i>	E	Breeds in dense stands of willows in riparian corridors with native riparian vegetation, usually in close proximity to surface water or saturated soil.	NP
FISH			
Rio Grande silvery minnow <i>(Hybognathus amarus)</i>	E	Inhabits variety of habitats in the Rio Grande river with shifting sand or silty bottoms.	NP
Rio Grande Cutthroat trout <i>(Oncorhynchus clarki virginalis)</i>	C	High elevation, swift-flowing free stone streams	NP

Status*

E: Endangered T: Threatened

C: Candidate

SC: Species of Concern

Potential to Occur**

K: Known, documented observation within project area.

S: Habitat suitable and species suspected to occur within the project area.

NS: Habitat suitable but species is not suspected to occur within the project area.

NP: Habitat not present and species unlikely to occur within the project area.

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4.2 STATE OF NM LISTED, CANDIDATE, AND SENSITIVE TAXA WITH POTENTIAL TO OCCUR

The following table contains State of New Mexico listed species that are known to or have the potential to occur in the project vicinity. The table also lists State of New Mexico Sensitive Taxa with potential to occur within the project area.

Species	Status*	Habitat Associations	Potential to Occur**
MAMMALS			
Spotted bat (<i>Euderma maculatum</i>)	T	This little known bat is presumed the forage in high montane habitats, > 8500.	NP
Pine Marten (<i>Martes Americana origenes</i>)	T	This member of the weasel family occurs in coniferous woodland in Northern New Mexico generally > 9000 feet	NP
Red fox (<i>Vulpes vulpes fulva</i>)	ST	This species occurs in a variety of open habitats including deserts, grasslands and prairies.	S
BIRDS			
Bald eagle (<i>Haliaeetus leucocephalus alascanus</i>)	T	In Northern New Mexico, this species migrates and winters along rivers and lakes, with large trees and snags.	NP
Gray vireo (Vireo vicinior)	T	Open pinyon-juniper woodland and juniper- grassland savanna	S
Loggerhead shrike (<i>Lanius ludovicianus excubitorides</i>)	ST	This species occurs in a variety of open habitats including deserts, grasslands and prairies, usually with some shrub component present	S
Bald eagle (<i>Haliaeetus leucocephalus alascanus</i>)	T	In Northern New Mexico, this species migrates and winters along rivers and lakes, with large trees and snags.	NP
FISH			
Round-tailed chub (<i>Gila borusta</i>)	T	Riverine habitats	NP

Status*

E: Endangered T: Threatened C: Candidate ST: Sensitive Taxa

Potential to Occur**

K: Known, documented observation within project area.

S: Habitat suitable and species suspected to occur within the project area.

NS: Habitat suitable but species is not suspected to occur within the project area. NP: Habitat not present and species unlikely to occur within the project area.

5.0 SURVEY RESULTS AND DISCUSSION

No threatened, endangered, or special status wildlife species were observed within or adjacent to the project area during the September 10, 12 and 16, 2010 wildlife surveys.

5.1 TOWNSEND'S BIG-EARED BAT

The project site provides suitable forage habitat for Townsend's big-eared bat. This species occurs in dry grasslands and coniferous and deciduous forests. Foraging habitat includes insect- rich riparian areas, wetlands, forest edges, and open woodland. Summer day and night roosts include caves, old mines and buildings which also provide suitable hibernating sites. No bats or bat sign were observed during the survey. Given the small scale of the proposed disturbance and lack of ideal habitat in the project area, this species will not be adversely impacted by the proposed project.

5.2 AMERICAN PEREGRINE FALCON

No suitable nest structures for this raptor are present anywhere near the proposed project area. The project area is suitable migration habitat for peregrines. Given the small scale of the proposed disturbance, this species will not be adversely impacted by the proposed project.

5.3 RED FOX

The project site is suitable habitat for this nocturnal species. No fox sign or burrows were observed during surveys. It is likely that red foxes occasionally occur within the project area. Given the relatively small scale of the proposed disturbance relative to overall available habitat in the area, this species will not be adversely impacted by the proposed project.

5.4 GRAY VIREO

The project contains areas of suitable habitat for nesting gray vireos. No vireos were observed during surveys, although gray vireos generally vacate their breeding grounds by September 1. If measures outlined in the Recommendations section of this report are followed, this species will not be adversely impacted by the proposed project.

5.5 LOGGERHEAD SHRIKE

The project area contains suitable habitat for Loggerhead shrikes. Shrikes are probably a fairly common breeder and migrant in more shrubby parts of the project area. Given the relatively small scale of the proposed disturbance, no take is anticipated and this species will not be adversely impacted by the proposed project.

5.6 MIGRATORY BIRDS

Migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from a "take". Take is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as these is not

a direct taking of birds, nests, eggs, or parts thereof.

Twenty-one species observed during the wildlife surveys are protected under the Migratory Bird Treaty Act. No take of migratory birds is anticipated from the proposed project.

6.0 SPECIES OBSERVED DURING THE SURVEYS

While the field visits focused on T&E species, observations of non-listed species were also noted. The following lists include all wildlife species observed:

6.1 AVIAN SPECIES OBSERVED

- Red-tailed hawk (*Buteo jamaicensis*)
- American kestrel (*Falco sparverius*)
- Mourning dove (*Zenaida macroura*)
- Barn swallow (*Hirundo rustica*)
- Horned lark (*Eremophila alpestris*)
- Common raven (*Corvus corax*)
- Black-billed magpie (*Pica hudsonia*)
- Bewick's wren (*Thryomanes bewickii*)
- Blue-gray gnatcatcher (*Polioptila caerulea*)
- Western scrub jay (*Aphelocoma californica*)
- Western bluebird (*Sialia mexicana*)
- American robin (*Turdus migratorius*)
- Juniper titmouse (*Baeolophus ridgwayi*)
- Yellow-rumped warbler (*Dendroica coronata*)
- Townsend's warbler (*Dendroica townsendi*)
- Spotted towhee (*Pipilo maculatus*)
- Dark-eyed junco (*Junco hyemalis*)
- Chipping sparrow (*Spizella passerina*)
- Vesper sparrow (*Pooecetes gramineus*)
- Lark sparrow (*Chondestes grammacus*)
- Pine siskin (*Carduelis pinus*)
- Western meadowlark (*Sturnella neglecta*)

6.2 MAMMALIAN SPECIES OBSERVED:

- Rocky Mountain Elk (*Cervus canadensis*)
- Mule Deer (*Odocoileus hemionus*)
- Desert cottontail (*Sylvilagus audubonii*)
- Black-tailed jackrabbit (*Lepus californicus*)
- Coyote (*Canis latrans*)

Mammalian observations tend to be from tracks, scat, and other sign.

6.3 REPTILIAN AND AMPHIBIAN SPECIES OBSERVED:

- Whiptail spp. (*Cnemidophorus spp.*)

7.0 RECOMMENDATIONS

- The project site contains sizeable area of suitable habitat for the State of New Mexico Threatened Gray Vireo. However, this is not the only migratory bird species with suitable habitat in the project area. As such, it is recommended that no tree removal associated with the proposed project be conducted during the gray vireo or any other migratory bird nesting season (March 1-August 1). If this recommendation is followed, it will ensure there will be no deliberate take of gray vireos or other protected migratory bird species.

8.0 REFERENCES

New Mexico Department of Game and Fish. BISON-M threatened, endangered, and sensitive taxa wildlife species in Rio Arriba County (downloaded and reviewed September 1, 2010) <http://www.bison-m.org/reports>.

U.S. Fish and Wildlife Service Listed and Sensitive Species in Rio Arriba County (downloaded and reviewed September 1, 2010) <http://www.fws.gov/southwest/es/NewMexico>

Overburden Modification

16-01

Appendix F

CRM - Rocky Mountain Mine

E-3 Modification

19-01

Receipt from New Mexico Mining and Minerals Division

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT **EEE0007647**

Date: 9/10/2019

OFFICIAL RECEIPT

Received From: CR Minerals



One thousand dollars & no/100 Dollars

Center Code	Revenue Code	Amount	Work Order No.
<u>0640</u>	<u>416905</u>	<u>1,000⁰⁰</u>	

Center Code	Revenue Code	Amount	Work Order No.

State Treasurer Deposit Number _____

Total \$ 1,000⁰⁰

Description: Permit Modification
19-1 h.m. Permit No.
RAC04RE
CR# 1122

Signed: [Signature]