

# **SUNDAY MINE ORE BLENDING OPERATION AND AUXILLIARY STRUCTURES CONSTRUCTION**

**Technical Revision No. 5  
Mine Permit No. M-1977-285**

Prepared for

**Pinon Ridge Mining LLC**  
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WWL Project No. 12100.01

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## **1.0 Introduction**

Western Water & Land, Inc. (WWL), on behalf of Pinon Ridge Mining LLC (PRM) is submitting this technical revision (TR) to present proposed changes to the original Sunday Mine Permit (No. M-1977-285), a 112 operation. The proposed changes may impact Exhibit D and E, Reclamation Plan and Map or “Plan” of the permit.

This Technical Revision (TR-05) covers several proposed changes to the existing permit. The main process change is a proposed plan for ore blending at the mine to prepare ore for shipment to the White Mesa Mill (White Mesa) in Blanding, Utah. Secondary items involve the demolition of one building and the installation of a surface water tank and other structures at the mine.

The purpose of this TR is to describe new proposed construction activities and equipment or structure installation within the existing affected area of the Sunday Mine. No new acreage will be disturbed at the mine site. In addition, reclamation methods are proposed. This TR presents background information and project rationale in Section 2.0. Section 3.0 describes the project work, and Section 4.0 describes reclamation methods.

### **Operator Information**

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## **2.0 Background and Rationale**

The Sunday Mine is one of five mines within the Sunday Mine Complex (SMC). All five mines lie within mineral claims held by PRM. The Sunday Mine is located in E ½ SW ¼ and W ½ SE ¼, Section 13, Twp 44N, Rng 18W, N.M P.M., San Miguel County, Colorado.

PRM is in the process of mining operations at the Sunday Mine. Uranium and vanadium ore is being mined and stored underground. While PRM has not stored any ore on the surface, a Low-Grade Ore Stockpile (LGS) exists on the mine site, a historical artifact of past operations from other operators of the mine (see Figure 1). It is anticipated that ore may be transported to the White Mesa in the coming months. To meet mill processing grade requirements for White Mesa, PRM will blend higher grade ore being mined with lower grade ore from the stockpile prior to

hauling ore to the mill. This will be done by using excavation equipment to blend the ores directly on top of the LGS.

As part of preparation for ore blending, PRM will first remove the waste rock cover (cap) placed on the LGS in 2019, the result of Technical Revision No. 4 (TR-04). The cap material was sourced from the Waste Rock Area at the mine. This work was done at the request of DRMS to provide a revision to the mine Environmental Protection Plan, and meet a requested threshold level of 500 parts per million (ppm) uranium on the surface.

Other subjects of this Technical Revision include the following:

- Demolition of the existing water tank and building
- Installation of a new 8,800 gallon steel water tank
- Installation of a two Conex storage containers

### **3.0 Project Description**

The project consists of the construction and operation of an ore-blending area as well as the demolition and removal of the existing water tank and associated building, and the installation of a new water tank and other needed storage structures within the mine surface operation area. No new disturbance will occur outside of the permitted affected area.

#### **3.1 Ore Blending**

Ore blending of mined higher grade ore with stored lower grade ore will occur directly on top of the existing LGS. Access to the LGS will occur along the existing mine operations road south of the Mine Office building. Portions of this road will be improved, as needed, by placing additional fill, grading, and compaction. Fill may consist of waste rock material currently stored at the west Waste Rock Area (WRA). No topsoil material will be used for road construction. The haul road will extend from the existing ore storage pad on top of the WRA to the west of the mine portal, to the LGS, east of the Mine Office building (see Figure 1).

The ore blending area will consist of the southern portion of the LGS. The area will be prepared by first removing the two-foot thick waste rock cover material that was placed on top of the LGS in 2019. If needed, the actual depth of removal may be gaged by using a portable scintillometer to determine the cover-ore interface. The waste-rock cover material will be hauled and stored to the WRA.

Once the LGS cover material has been removed, the boundary of the ore blending area will be marked with high-visibility markers. A pre-blending radiological survey will be conducted on the newly exposed LGS surface using an established grid with 20-foot centers. Gamma readings will be measured and recorded at each grid point. Uranium (and radium-226, if needed) concentrations will be assessed using a portable XRF instrument, or up to six samples will be collected at grid points that represent the range of observed gamma readings and analyzed by a

laboratory for uranium content. These data will be used to confirm the radiological characteristics of the LGS prior to ore blending and to assess post-blending conditions upon completion of the ore blending operations.

Low-grade ore will be salvaged from the north-central portion of the LGS by removing two to three feet of material per pass. This process will result in the formation of a series of benches, depending on how much material is required for optimum blending with the higher-grade ore.

The ore blending process will employ the use of the following equipment:

1. Front-end Loader
2. Excavator
3. Mine Dump Truck(s)
4. Skid-Steer
5. Grizzley (possibly)
6. Dozer
7. Surface haul truck (tandem-axle, approx. 20 ton capacity)

The blended ore will be trucked to and staged at the main Ore Storage Pad located on the WRA, west of the mine portal. The blended ore will be stored for a period not-to-exceed 180 days prior to shipment to White Mesa Mill.

The anticipated general ore blending process will include the following steps:

1. Strip Cover Material. A dozer, loader and surface haul truck (tandem axle) will strip the top cover off (approx. 2-ft, presumed cover thickness)
2. The cover material will be loaded into the haul truck and placed in an isolated area of the WRA for future reuse as cover for the LGS.
3. The blending area will occupy approximately the southwest half of the LGS.
  - a. This area will be dozed relatively flat, but designed to maintain precipitation runoff within the blending area.
  - b. To mitigate the steep slope of the north face of the LGS, the excavator will pull low-grade material from the north face for blending with the higher-grade ore. The material will be pulled from across the north face in lifts, ultimately reducing the slope angle to a more acceptable angle.
  - c. Low-grade material will be trucked to the blending area and stockpiled for grade determination before being blended with high grade material.
4. Higher grade ore will be brought to the surface by mine truck and dumped in windrow piles on the prepared blending area surface (south-west half).

- a. Once grades are determined, the low and high-grade materials will be blended by dozer or loader. The grizzly may be used at this time, to remove oversize rock, if necessary.
- b. Blending will be accomplished by a surface sampling crew (gamma readings or percent ore readings) working with the loader operator. Once blended, the material will be loaded into the haul truck and stockpiled on the ore pad.
- c. Once sufficient material is accumulated on the ore pad, it will be loaded into end-dump trucks for transport to the mill.

Near completion of the blending operations, the surface of blending area will be bladed and cleaned of the blended ore mixture; this material will be incorporated into the final ore shipment. A radiological confirmation survey will be conducted similar to the initial survey using a gridded area. The purpose of the radiological survey is to assure the contents of the LGS remain as low-grade material. In situ gamma readings and surface sampling for uranium content will be conducted as was done for the pre-blending survey.

Should the results of the post-blending survey indicate that substantial higher uranium grades are present compared to grades measured for the pre-blending survey, additional ore removal will be conducted at the blending area until the average gamma reading is equal to or less than the pre-blending levels.

After ore blending is completed, the waste rock cover that was removed before blending operations will be replaced over the ore blending area to meet the 500 mg/kg criteria required by DRMS.

### **3.2 Ore Hauling Schedule**

It is assumed there are 3,000 to 6,000 tons of high-grade ore stored in the mine. Based on grade approximations, it is further assumed that 9,000 to 18,000 tons of low-grade ore will be needed to arrive at an average grade of 0.2 to 0.25% uranium content as required by White Mesa. The final ore product is anticipated to be between 12,000 and 24,000 tons of total blended ore to be shipped to White Mesa.

Ore blending will take place in batches, based on the anticipated grades and volumes. A limited volume of high-grade ore can be staged at the blending area at a time. The two ores must then be mixed and hauled to the ore pad on the WRA. Then, the blending process starts again.

The production rate for the surface truck (LGS to ore pad) is estimated to be 50 tons per hour.

The length of time to stage the high grade ore at the blending area will likely be between 120 and 150 days based on time to haul 6,000 tons of ore from the mine.

The anticipated ore haulage schedule to the mill will be between 200 and 250 tons per day with 4 end dump trucks making two trips per day. The addition of a fifth truck would see up to 10

trucks total per day truck on country road CR 20R. In accordance with the Plan of Operations, haulage will not exceed two trucks per hour on CR 20R and the limit under the San Miguel County Special Use Permit is 12 trucks per day. The anticipated ore haulage time to the mill would be 120 days.

### **3.3 Auxiliary Structures**

Three auxiliary structures are proposed for use on the mine surface, an 8,800 gallon steel water tank, and two steel Conex storage containers. The proposed locations for these structures are shown on Figure 1.

The installation of the new water tank will upgrade and modernize the water supply to the existing dry room and office building with a reliable and larger volume supply system. The tank will be placed on a prepared earthen surface approximately 150 feet south of the dry/office building. The ground will be prepared by grading a flat surface and amending the top surface with uniform aggregate. The bottom 5 to 10 feet of the tank will be buried with soil fill for insulation purposes. A 2-inch insulated polyethylene supply line will extend from the tank to the dry/office building, buried to a depth of at least 2 feet.

The existing water tank building that is located just west of the dry/office building is to be demolished, with exception of the concrete pad which will remain in place for potential future use.

Two new steel Conex storage containers will be installed for storage of mine tools and equipment. One container will be placed approximately 20 feet south of the warehouse building and the other container will be placed approximately 50 feet south of the dry/office building. Existing ground surface will be assessed for stability prior to container placement. If necessary, an aggregate base will be placed as a pad for each container.

## **4.0 Reclamation**

Modifications to the mine reclamation plan are considered minor as all areas of disturbance discussed in this TR are within the affected mine area. Uranium-vanadium ore will only be placed in areas designated for ore storage; the historical LGS area, and the ore pad located on the main WRA.

### **4.1 Ore Blending Area**

As described in Section 3.1, ore blending will occur directly within the existing LGS area and the blending area will be restored to radiological levels recorded prior to blending operations. Waste rock material will be placed over the LGS to meet the DRMS threshold criteria of 500 ppm (mg/Kg) uranium. Stormwater best management practices will be modified if necessary and maintained at the LGS. Final reclamation of the LGS will be as described in the current

reclamation plan (Exhibit E). It is likely that the entire LGS will be transported off site and milled at some future date.

#### **4.2 Auxiliary Structures**

The three auxiliary structures, the water tank and two Conex storage containers, are not fixed structures and will be removed and transported from the mine site by truck and trailer at mine closure. The associated water supply line will be buried in place and aggregate base materials will be buried or blended with other soils during final site grading.

Reclamation of the mine site will proceed as described in Exhibit E of the mine permit, including but not limited to closure/plugging of the mine portal, recontouring of the affected area to better blend with surrounding grade, placement of topsoil where applicable, and revegetation seeding with USBLM-approved seed mix.