

FACT SHEET

(Pursuant to Nevada Administrative Code (NAC) 445A.401)

Permittee Name: **Southern Industrial Minerals L.L.C.**

Project Name: **Jumbo Barite Mine Project**

Permit Number: **NEV2014127 (New 2015, Fact Sheet Revision 00)**

A. Location and General Description

Location: The Jumbo Barite Mine Project is an open pit mine located on the western edge of the Stone Cabin Valley approximately 33 miles east of Tonopah, Nevada. The mine is located on the privately owned 20.66-acre Jumbo Patent Claim (Mineral Survey No. 4784) in Nye County within Sections 3 and 4, Township 2 North, Range 47 East, and Sections 33 and 34, Township 3 North, Range 47 East. Southern Industrial Minerals L.L.C. (Permittee) holds a lease on the claim. All land surrounding the Jumbo Patent Claim is public land administered by the Bureau of Land Management.

Site Access: The Jumbo Barite Mine site is accessed from Tonopah, Nevada by traveling east on U.S. Highway 6 approximately 27 miles. Turn right (south) onto Nye County Ellendale Road (a gravel road) and travel approximately six (6) miles to the site.

General Description: The Jumbo Barite Mine will utilize conventional drilling and blasting on 40-foot benches within the proposed open pit to mine the barite ore deposit. The Permittee will mine up to 100,000 tons of barite ore per year. The barite ore will be handled and loaded as run-of-mine material and deposited to an on-site stockpile. The ore will be transferred from the stockpile to an off-site processing facility. A separate Water Pollution Control Permit application will be required if the off-site processing facility is located in Nevada. If necessary, crushing of the barite ore will be performed using a mobile crusher on the active mine bench within the pit. Processing of the ore on the Jumbo Barite Mine site is not permitted. The use of chemicals will only be permitted within the proposed on-site laboratory. The laboratory will consist of specific gravity measuring devices utilizing kerosene. The facility is designed to not release or discharge any process or non-process contaminants that would result in degradation of waters of the State during operation and closure. Total site disturbance is 15.6 acres, including the existing 2.3 acres of pit disturbance from previous mining activity.

B. Synopsis

Site History

Barite was mined at the Jumbo Barite Mine site from 1939 to 1949 and again in the late 1980s. The existing mine disturbance includes two (2) small waste rock piles and a 2.3-acre open pit approximately 550 feet long, 300 feet wide, and a maximum depth of 65 feet. The existing disturbance is approximately 6 acres within the Project site.

Ore and Waste Rock Characterization

Acid-base Accounting (ABA) has been conducted to estimate the acid generating and acid neutralizing potentials of rock within the proposed mine pit. The Nevada Modified Sobek Procedure protocols were followed for the ABA analysis. Meteoric Water Mobility Procedure (MWMP) testing has been conducted to determine the potential for release of chemical constituents and X-ray Diffraction (XRD) testing was conducted to determine the mineralogical constituents of the rock within the proposed mine pit. Six (6) representative composite samples were collected from drilling at the Project. Two (2) samples are representative of the barite ore material, three (3) are representative of the overburden waste and one (1) sample is representative of the rock pit wall and floor.

The ABA test results show that the waste and pit wall samples displayed a greater potential to neutralize than generate acid in a natural environment. The ABA test results show that one (1) sample of the barite ore has a greater potential to generate acid and the second sample has a greater potential to neutralize acid. The results of the one (1) barite ore sample showing a greater potential to generate acid are likely due to barite's high acid-insolubility. The results from the second sample showing a greater potential to neutralize acid is most likely a more representative sample of the barite ore.

MWMP testing results show all the waste rock samples returned elevated levels of arsenic. One (1) waste rock sample showed elevated levels of aluminum and antimony. MWMP testing results of the ore samples showed elevated levels of arsenic in all ore samples with one (1) sample showing additional elevated levels of antimony and barium.

Mining Components

The mining components include, but are not limited to, a dozer, loader, excavator, haul trucks, portable crusher, 4,000-gallon water truck for dust control, 1,000-gallon water tank for the on-site laboratory, 4,000-gallon fuel tank with containment pad, and ancillary facilities.

Water Supply

Water used for dust control and for the laboratory will be obtained from the City of Tonopah Municipal water supply. Water will be trucked in using a 4,000-

gallon water truck. A 1,000-gallon water tank will be used for the laboratory. Bottled water will be used for drinking by the mine staff.

Mining Plan

The Jumbo Barite Mine will expand the existing mine pit from a depth of 65 feet to a proposed depth of 180 feet at elevation 6,050 feet above mean sea level (AMSL). The proposed pit will be mined utilizing drilling and blasting on 40-foot high benches. The barite ore will be loaded and hauled as run-of-mine material from the pit to the on-site ore stockpile facility. If necessary, crushing of the barite ore will be performed on the pit benches using a mobile track mounted crusher.

The proposed ore stockpile facility consists of a compacted low-permeability clay base layer 146 feet long by 46 feet wide. The clay base layer will be constructed with a maximum permeability of 1×10^{-5} cm/sec. The clay base layer will be graded to retain direct precipitation from a 25-year, 24-hour storm event. A 5-foot wide by 18-inch deep gravel filled collection sump will be placed at the low end of the clay base layer. A 4-inch diameter perforated polyvinyl chloride (PVC) standpipe will be placed in the center of the sump for monitoring and evacuation purposes. Solution in the sump shall be tested and disposed of properly if found to be above the Profile I reference values. The barite ore will be placed at a maximum height of 14 feet. Approximately 1,000 tons per day of barite ore will be trucked to off-site processing facilities. At the end of mining operations, the clay base layer will be removed. The stockpile area will be covered with the stockpiled growth material and reseeded.

Approximately 200,000 cubic yards of waste rock will be generated from the mine operations. Two (2) waste rock facilities will be constructed during the mining operation. Growth material will be cleared and stockpiled prior to placement of the waste rock on the designated waste rock facilities. At the end of mining operations and the commencement of reclamation activities, the waste rock side slopes will be graded to a maximum slope of 3:1 (horizontal to vertical) and the top will be graded to a minimum 2% slope. The waste rock facilities will be covered with the stockpiled growth material and reseeded.

Mineral Processing

Processing of the barite ore will be performed at an off-site facility. A separate Water Pollution Control Permit or modification of an existing Permit for a Nevada-Permitted facility issued by the Division will be required if the processing facility is located in Nevada.

Closure / Reclamation

Closure will include the removal of the fuel storage tanks and containment facility, all ancillary facilities and equipment, and the ore stockpile base layer system. The waste rock facilities and ancillary disturbance areas will be covered the stockpiled growth material and reseeded.

Ancillary Facilities

Ancillary facilities include the following items:

- **Fuel Storage:** Up to 4,000 gallons of diesel fuel will be stored on the site to power equipment and generators. Fuel will be stored in one 4,000-gallon trailer mounted double-walled tank with built in containment sufficient to contain 110% of the tanks volume. An optional standard 4,000-gallon fuel tank will be located on a 60-mil High Density Polyethylene (HDPE) lined fuel containment pad constructed with berms for secondary containment to provide emergency capture of 110% of the fuel storage volume;
- **Explosives Storage:** A blasting powder magazine and blasting-cap storage container will be located on-site;
- **Office:** An office will be located on-site. The office will be composed of a sea-container or portable trailer. The proposed laboratory will be located in the same building;
- **Sanitation Facility:** One porta-potty will be located on-site adjacent to the office;
- **Laboratory:** The laboratory will be located within a portion of the office trailer. It will consist of gravity measuring devices utilizing kerosene for specific gravity testing. No other chemicals will be used in the laboratory. The laboratory will have containment capacity sufficient to contain all kerosene stored in the laboratory;
- **Truck Scale:** A truck scale will be located on-site adjacent to the ore stockpile; and
- **Tool Van:** A semi-trailer tool van up to 40 feet in length will be located on-site.

Petroleum Containment

The Permittee is not authorized to dispose or treat Petroleum-Contaminated Soil (PCS) on the mine site without first obtaining from the Division approval of a PCS management plan. Any PCS will be disposed of at an off-site facility authorized to receive such material.

C. Receiving Water Characteristics

No perennial surface waters exist within one-half mile radius of the Project. The Coyote Hole Spring is approximately three (3) miles downgradient from the site.

There are no groundwater wells within one (1) mile of the Project. The closest well is at the Coyote Hole Spring located approximately three (3) miles southeast of the site. The elevation of the spring is at 5,610 feet AMSL. Exploration drill holes at the site went to a depth of 6,010 feet AMSL and no groundwater was encountered. The ancillary facilities and ore stockpile are approximately at elevation 6,200 feet AMSL. The deepest portion of the proposed pit will be at elevation 6,050 feet AMSL. Therefore, groundwater at the Project site is at least

190 feet and possibly as much as 590 feet below ground surface of the proposed ore stockpile.

D. Procedures for Public Comment

The Notice of the Division's intent to issue a Permit authorizing the facility to construct, operate, and close, subject to the conditions within the Permit, is being sent to the **Tonopah Times-Bonanza** for publication. The Notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date of public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

E. Proposed Determination

The Division has made the tentative determination to issue the Permit.

F. Proposed Limitations, Schedule of Compliance, Monitoring, Special Conditions

See Section I of the Permit.

G. Rationale for Permit Requirements

The facility is located in an area where annual evaporation is greater than annual precipitation. Therefore, it must operate under a standard of performance which authorizes no discharge except for those accumulations resulting from a storm event beyond that required by design for containment.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S. Code 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 Code of Federal Regulations 10, 15 April 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with State permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (e.g., by covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of the toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502-7147, (775) 861-6300, for additional information.

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