



Proposed Action

Freeport Minerals Corporation  
Proposed Mine Feature Closures  
Monticello Mining District, Utah

August 2019

Cyprus Amax Minerals Company on behalf of Freeport Minerals Corporation





**Freeport Minerals Corporation  
Proposed Mine Feature Closures  
Bull Canyon, Colorado**

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**Document History and Status**

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## Acronyms and Abbreviations

°	degrees
'	minutes
"	seconds
APE	Area of Potential Effect
BG	bat gate
BLM	U.S. Bureau of Land Management
CY	cubic yard
Cyprus Amax	Cyprus Amax Minerals Company
HMO	Historic Mine Opening
N	North
ND	No Data
NRHP	National Register of Historic Places
PUF	polyurethane foam
UTV	utility terrain vehicle
W	West



# 1. Proposed Action

## 1.1 Overview

Freeport Minerals Corporation (Freeport<sup>1</sup>) on behalf of its subsidiary Cyprus Amax Minerals Company (Cyprus Amax) (collectively, Freeport) proposes to improve public safety and reduce the risk of accidental death or injury by installing minor devices to close (prevent access to) Historic Mine Openings (HMOs) within the Monticello Mining District on public land administered by the Bureau of Land Management (BLM) in San Juan County north of Monticello, Utah. Freeport proposes to close 34 HMOs beginning in October 2019. HMOs unable to be closed in 2019 would be closed beginning in Spring 2020. Surface disturbance required for the closure of the 34 HMOs would total approximately 0.476 acres, which is the sum of the 600 square-foot maximum areas (approximately 0.014 acre) of temporary work space (work area) located immediately adjacent to each of the proposed HMO closures. This document is submitted to support the issuance of a Categorical Exclusion under the National Environmental Policy Act (NEPA) in accordance with 516 Departmental Manual (DM) 11.9, Appendix 4, J.8 which reads “installation of minor devices to protect human life (e.g., grates across mines).”

## 1.2 Contact

Freeport representative and primary point of contact is Michael Steward. Mr. Steward’s contact information is:

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## 1.3 Location

Freeport proposes to close 34 HMOs (3 incline openings, 3 horizontal prospects, and 28 horizontal openings) in San Juan County, Utah (Appendix A, Site Maps). As listed in Table 1, Former Freeport Claims include the following individual claims in the Monticello Mining District:

- Dime Claim (3 HMOs): Township (T) 31 south (N), Range (R) 25 east (W), Section 6
- Bee Claim (8 HMOs): T 31S, R25E, Section 8
- Columbus Nos. 45 and 50 Claims (4 HMOs): T 31S, R25E, Section 18
- Profit No. 1 Claim (1 HMO): T 31S, R25E, Section 19
- Valley View Claim (6 HMOs): T 31S, R24E, Section 10
- None Such Claim (2 HMOs): T 31S, R24E, Section 21
- Midvale Claim (8 HMOs): T 31S, R24E, Section 25

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<sup>1</sup> Formerly known as Freeport-McMoRan Corporation.

- o Loya Ray Claim (2 HMOs): T 32S, R24E, Section 6

The coordinates of the centroid of these claims are 38 degrees (°) 05 minutes (') 15.95 seconds (") North (N) and 109°14'30.58" West (W). The claims range in elevation from approximately 6,340 to 6,800 feet above mean sea level.

**Table 1. Proposed Closure Sites in the Monticello Mining District**

Claim Group	Claim	Feature ID	Feature Type	Dimensions (Height/Width/Depth [feet])	Proposed Closure Method
Dry Valley	Bee	04312508HO204	Horizontal opening	5/17/15	Polyurethane Foam (PUF) with 36" Batgate
Dry Valley	Bee	04312508HO205	Horizontal opening	10/10/50	PUF
Dry Valley	Bee	04312508HO206	Horizontal opening	6/8/15	Wire Rope Net (WRN) with 24" Batgate
Dry Valley	Bee	04312508HO207	Horizontal opening	5/19/15	PUF with 36" Batgate
Dry Valley	Bee	04312508HO208	Horizontal opening	7/12/15	PUF with 36" Batgate
Dry Valley	Bee	04312508HO209	Horizontal opening	7/15/50	WRN with 24" Batgate
Dry Valley	Bee	04312508HO210	Horizontal opening	4/7/20	PUF with 24" Batgate
Dry Valley	Bee	04312508HO203	Incline opening	6/20/50	PUF with 36" Batgate and Fence
Dry Valley	Dime	04312506HO006	Horizontal opening	3/9/20	WRN with 24" Batgate
Dry Valley	Dime	04312506HO008	Horizontal opening	4/4/19	WRN with 24" Batgate
Dry Valley	Dime	04312506HO007	Horizontal opening	3/6/30	WRN with 24" Batgate
Dry Valley	Midvale	04312425HO101	Horizontal opening	4/5/20	WRN with 24" Batgate
Dry Valley	Midvale	04312425HO102	Horizontal opening	4/5/20	WRN with 24" Batgate
Dry Valley	Midvale	04312425HO103	Horizontal opening	11/8/8	Fence
Dry Valley	Midvale	04312425HO104	Horizontal opening	10/8/30	Fence
Dry Valley	Midvale	04312425HO105	Horizontal opening	10/8/10	Fence
Dry Valley	Midvale	04312425HO107	Horizontal opening	9/12/50	PUF with 36" Batgate
Dry Valley	Midvale	04312425HO401	Horizontal opening	5/6/70	PUF with 36" Batgate
Dry Valley	Midvale	04312425HO402	Horizontal opening	2/4/40	PUF
Dry Valley	Valley View	04312410HP101	Horizontal opening	6/6/6	Fence
Dry Valley	Valley View	04312410HP102	Horizontal opening	6/6/6	Fence
Dry Valley	Valley View	04312410HO103	Horizontal opening	2/4/15	PUF
Dry Valley	Valley View	04312410HO104	Horizontal opening	8/10/15	WRN with 24" Batgate
Dry Valley	Valley View	04312410HO105	Horizontal opening	5/10/20	WRN with 24" Batgate
Dry Valley	Valley View	04312410HP106	Horizontal opening	2/3/8	WRN
Columbus-Rim	Columbus No. 50	04312518HO101	Horizontal opening	2/3/15	PUF
Columbus-Rim	Columbus No. 50	04312518HO102	Horizontal opening	6/8/40	WRN with 24" Batgate
Columbus-Rim	Columbus No. 45	04312518HO103	Horizontal opening	3/12/25	PUF



**Table 1. Proposed Closure Sites in the Monticello Mining District**

Claim Group	Claim	Feature ID	Feature Type	Dimensions (Height/Width/Depth [feet])	Proposed Closure Method
Columbus-Rim	Columbus No. 50	04312518HO104	Horizontal opening	3/8/50	PUF
Hyde & Duckett	Loya Ray	04322406HO201	Horizontal opening	3/4/18	PUF
Hyde & Duckett	Loya Ray	04322406HO202	Horizontal opening	2/4/20	PUF with 24" Batgate
Hyde & Duckett	None Such	04312421IO104	Incline opening	5/11/100	WRN with 24" Batgate
Hyde & Duckett	None Such	04312421HO105	Horizontal opening	7/7/100	WRN with 24" Batgate
Windfall-Profit	Profit No. 1	04312519IO101	Incline opening	5/5/100	WRN with 24" Batgate

Notes:

ID = identification

## 1.4 Area of Potential Effect

The area of potential effect (APE) includes the following:

- 34 identified HMOs associated with historical mining-related activities;
- The area of 600 square feet (approximately 0.014 acre) of temporary work space (work area) surrounding each of the proposed HMO closure sites (0.476-acre total for 34 sites);
- Unmaintained, unpaved roads (typically two-track dirt roads), or paths leading from “BLM-designated roads” (paved, gravel, or dirt) to the HMO closure sites; and
- A 50-foot buffer around 600 square foot work areas and non-designated access routes in which direct or indirect impacts such as dispersion of dust or noise could occur.
- APE total: 60.996 acres
  - 54.580 acres associated with proposed access routes
  - 6.416 acres associated with proposed HMO closures and surrounding work area

## 1.5 Methods

The proposed closure methods will involve the installation of minor exclusionary devices such as a solid polyurethane foam (PUF) plug, PUF with an embedded bat gate, wire rope net (WRN), backfill with local materials, or fence. Surface disturbance required for the closure of each HMO will be limited to the existing opening and the previously disturbed area immediately surrounding the opening, with no disturbance to existing vegetation outside the previously disturbed area. Necessary backfill material and rocks from within the work area adjacent to the HMO will be used to complete the closure structures. Existing dirt roads and two-tracks will be used to access HMOs. There are no proposed access route improvements.

Bat compatible closures will be the preferred HMO closure methods. HMOs large enough to accept a bat gate (PUF or WRN) will be assumed to provide potential habitat for bats and will have a bat gate embedded into the PUF or WRN closures. Fences will be the long-lasting method of closure in a limited number of situations where conditions are unsuitable or infeasible for the installation of a PUF or WRN. For instance, fences will be the method of choice at locations where there are trenches leading to HMOs, where a PUF or WRN will not be practical to install due to worker safety, or to mitigate fall hazards.

Closure components will be constructed onsite with materials either brought in or collected within the individual site's work area. Site preparation may require removal of overhanging, loose, or incompetent material. Project materials, precut to the dimensions required to construct the closure, will include:

- Pre-assembled WRNs
- Cable sleeves and clips
- Anchor bolts
- Ventilation pipes with hardware cloth screens
- Bat gates
- Exterior cover materials
- Bulkheads, and
- Geotextiles for bulkheads and backings.

On-site construction of closures will be performed using hand-tools (e.g. shovel, digging bars, stirring rod, hammer or battery-operated hand-tools [e.g., to operate a stirring rod or screw driver]). No heavy equipment will be required. The closure methodology, specifications and details have been stamped by a licensed engineer and are provided in Appendix B.

The proposed closure method selected for each HMO presented in Table 1 were determined in a subsequent survey. Final closure methods will be based on field conditions observed at the time the closures are completed.

### **1.5.1 Polyurethane Foam Plug Closure**

PUF is a two-part chemical system that changes from a liquid to a solid and expands as it cures. PUF is typically a binary, self-contained system, meaning only the two parts have to combine to make it work. No water is required, and it does not react with air. PUF comes in two types of containers: 1) 0.33 cubic yard (CY) bag and 2) 2.0 CY equivalent canister. PUF will not be stored on-site overnight in the event a project extends over a multi-day period.

Backfill will be comprised of rocks and other material collected from the surface proximal to the work area. Waste rock piles, if present, will be avoided for use in backfilling because these rocks may be mineralized and therefore will not be suitable sources of backfill<sup>2</sup>.

### **1.5.2 Bat Gates**

For HMOs where a PUF closure is utilized and a bat gate is determined to be the most appropriate closure method, Freeport will close the HMO with a PUF bulkhead, incorporating a 24- to 36-inch-diameter corrugated pipe bat gate. Bat gates will be constructed using 24- to 36-inch diameter corrugated high-density polyethylene watertight pipe (corrugated pipe). 24-inch pipes will be used on vertical openings and openings which have a height or width smaller than 36 inches. 36-inch pipes will be utilized only on horizontal openings which are large enough to accommodate the 36-inch pipe. Three to five pieces of 0.75-inch by 2-inch flat stock steel bars will be positioned in parallel across the end of the 24- and 36-inch corrugated pipe, respectively, at intervals to allow for 6" of bat ingress and egress, in the middle portions of the bat gate, while excluding access to the public.

### **1.5.3 Wire Rope Nets**

For HMOs where a WRN closure is utilized, ¼" galvanized aircraft cable will be weaved together on six-inch centers. Bat-friendly closures will include installation of a six-inch by 24-inch metal frame (access

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<sup>2</sup> This Proposed Action does not address the clean-up or disposal of waste rock stockpiles.

window) within the WRN. Steel cable intersections will be swaged to hold the cable in position. The cable will be anchored to competent rock via anchor bolts.

#### **1.5.4 Fencing**

Fences will be constructed using BLM approved fencing specifications, where there are trenches leading to HMOs and where PUF will not be practical to install. Installation of fences will include signage reading “FOR YOUR SAFETY—KEEP OUT”. Fences may also be constructed around workings where there is evidence of subsidence.

#### **1.5.5 Access and Overland Travel**

Freeport proposes to access HMOs, to the extent practicable, by utilizing existing routes that have been designated within the BLM Monticello Field Office Resource Management Plan. No improvements or maintenance to access roads are anticipated. In some areas, Freeport will access HMO locations by using existing routes that are not designated. These non-designated existing two-track routes are included in the APE. Freeport does not propose to develop new access routes. Any non-designated existing routes that are utilized for access to HMOs will be raked and restored to pre-access conditions following completion of the work. Depending on distance, small four-wheel drive utility terrain vehicles (UTV) may be utilized in areas where existing access route conditions make it impractical to use a pick-up truck. Materials and supplies will be transported as close as possible utilizing existing access routes. Materials will be packed in on foot from the closest vehicle access points to the HMO. It is anticipated that not more than five vehicle passes will be required during construction for any one opening and that vehicles will only be used to transport bulky materials, such as PUF and water, to the HMO. Outside of accessing the HMO to deliver construction materials, workers will access HMOs on foot from the nearest existing access point regardless of distance.

#### **1.5.6 Reclamation**

Disturbed surfaces will be raked and smoothed using hand tools to resemble preconstruction conditions. Freeport will replace any obstructions (e.g., logs, large rocks) on non-designated access roads used to access the HMO.

#### **1.5.7 Schedule and Duration**

HMO closures are anticipated to begin on October 7, 2019 with one or more crews working successively through the list of closures. Field time required for each closure is expected to average three days. Closure is anticipated to resume in Spring 2020 for HMOs unable to be closed in Fall 2019.

### **1.6 Applicant-Committed Environmental Protection Measures**

#### **1.6.1 Noxious Weeds, Invasive and Nonnative Species**

To eliminate the transport of vehicle-borne noxious weed seeds, roots, or rhizomes, vehicles used for the completion, maintenance, inspection, or monitoring of ground-disturbing activities, or for authorized off-road driving within the Proposed Action area, will be free of soil and debris capable of transporting weeds. Vehicles and equipment will be cleaned with high-pressure washers prior to mobilization to the Proposed Action area.

#### **1.6.2 Cultural and Paleontological Resources**

Based on the direction of the BLM Monticello Field Office, Freeport conducted a literature search and Class III pedestrian surveys for cultural resources in April and May 2019. Cultural resources observed within the APE were recorded and evaluated and a technical report prepared and submitted to BLM by Two Dog CRM for review on July 29, 2019.

Cultural resources surveys completed in 2019 recorded seven sites eligible for listing on the National Register of Historic Places (NRHP).

Freeport will implement and adhere to the following procedures and guidelines to avoid adverse effects to the potentially NRHP-eligible property:

- In advance of mine closure activity, a qualified archaeologist will visit each site to install flagging or temporary fencing to limit pedestrian and vehicle access to archaeologically sensitive areas and demarcate the access route(s) and work area(s) to be used by mine closure work personnel. The archaeologist will photograph the current condition of buildings, structures, features and surface deposits at each site.
- Following completion of mine closure, a qualified archaeologist will visit each site to remove temporary flagging and fencing, and to photograph the condition of buildings, structures, features and surface deposits. The archaeological consultant will prepare a letter report documenting the pre- and post-closure site conditions for submittal to BLM Monticello Field Office.

Adherence to these procedures and guidelines in advance of, during, and following mine closure activity, will ensure that no adverse effects on NRHP-eligible historic properties result from Project activities.

The BLM Monticello Field Office provided the Utah State Historic Preservation Office (SHPO) a Section 106 Informational Letter informing SHPO of the project and stating that the proposed action did not exceed any of the review thresholds that would require SHPO concurrence, and that there would be no adverse effects to historic properties. As of August 6, 2019, no objections or concerns were provided back to the BLM Monticello Field Office by the Utah SHPO.

Freeport will not knowingly disturb, alter, injure, or destroy any scientifically important paleontological deposits. If any paleontological resources are discovered that could be altered or destroyed by closure activities, the discovery would be left intact and reported to the authorized BLM officer.

### **1.6.3 Wildlife**

#### **1.6.3.1 Raptors**

Surface disturbing activities will not be conducted during raptor nesting season, unless a survey by a qualified wildlife biologist demonstrates there are no active nests within the recommended spatial buffers (U.S. Fish and Wildlife Service, 2002). The BLM Monticello Field Office communicated that raptor surveys were not required for work performed outside of raptor nesting season (i.e. October 2019). For remaining HMOs planned for closure in Spring 2020, raptor surveys will be conducted at the direction of the BLM Monticello Field Office.

#### **1.6.3.2 Bats**

Freeport performed external bat surveys in June 2019 to evaluate bat species present in and around HMOs, and the potential use type of HMOs by bats. Results of the bat surveys were reported to the BLM Monticello Field Office wildlife biologist and AML manager on July 25, 2019 by Swaim Biological. Based on present conditions and dimensions at each HMO, Freeport, in coordination with BLM, will utilize bat-friendly closure methods for HMOs where possible, in accordance with the report. At HMOs where bat gates are not recommended or are not installed because of dimensional constraints (Table 1), bat exclusions will be installed prior to the start of construction to allow any bats to exit safely and be prevented from re-entering, as specified in Sections 3.1 and 6.1 of the closure specifications (Appendix B).

## **2. References**

Bureau of Land Management. 2008. Monticello Field Office Record of Decision and Approved Resource Management Plan. Monticello Field Office. November.

U.S. Fish and Wildlife Service. 2002. Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances. Utah Field Office, Salt Lake City. January 2002 Update.



# Appendix A Site Maps





# Appendix B

## Closure Methodology and Specifications