

State of New Mexico
Energy, Minerals and Natural Resources Department

Michele Lujan Grisham
Governor

Melanie A. Kenderdine
Cabinet Secretary Designate

Ben Shelton
Acting Deputy Secretary

Albert C.S. Chang, Director
Mining and Minerals Division



Electronic Transmission
December 12, 2024

Sherry Burt-Kested, Environmental Services Manager
Freeport-McMoRan Tyron Inc.
P.O. Box 571
Tyrone, New Mexico 88065

RE: NM Mining and Minerals Division (MMD) and Agency Comments, Tyrone Peak,
Regular (Part 4) Exploration Permit Application, Permit No. GR093EM

Dear Ms. Burt-Kested,

Pursuant to §19.10.4.402 F. NMAC, the New Mexico Mining and Minerals Division (MMD) has determined that the Regular Exploration Permit Application (Application) submitted on August 29, 2024, is Administratively Complete. The application was submitted by Freeport-McMoRan (FMI) for its Tyrone Peak Project and proposes to drill 36 boreholes and disturb a total of up to 40 acres of private property owned by FMI within the boundaries of the claim numbers identified in the application for exploration located approximately 10 miles south of Silver City, NM in Grant County, New Mexico. The application has been distributed to the following agencies for technical comment. Please respond accordingly to the attached comments from these agencies.

- NM Environment Dept. (NMED)
- NM Dept. of Game and Fish (NMDGF)
- NM State Forestry (NMSF)
- NM State Historic Preservation Office (SHPO)
- NM Office of the State Engineer (OSE)

The following Tribes have been notified of the Administratively Complete status of this application. One response has been received from the White Mountain Apache Tribe and is included as an attachment to this letter.

- Acoma Pueblo
- Fort Sill Apache Tribe
- Hopi Tribe
- Isleta Pueblo
- Mescalero Apache Tribe

RE: NM Mining and Minerals Division (MMD) and Agency Comments, Tyrone Peak Project, Regular (Part 4) Exploration Permit Application, Permit No. GR093ER

Page 2

December 12, 2024

- Navajo Nation
- White Mountain Apache Tribe
- Zuni Pueblo

Public Comments for this application were received from two individuals in the community and are attached to this letter. The two individuals have requested a public hearing. Once this application is deemed Technically Complete, MMD will work with FMI to set up a date and time for the Public Hearing.

MMD Comments Addressing the Amended Application, Page 1

In letter dated August 29, 2024, RE: Permit GR093ER – Part 4 Exploration Permit; Application Amendment for the Tyrone Peak Project, FMI stated that “While the overall scope of the project and planned disturbance remains much the same, Tyrone has amended the application in the following ways:

“Added surface disturbance contingencies for reclamation, road improvements, unforeseen road or pad adjustments, borrow areas, re-designs for pads and roads on steep slopes. This brought the proposed permitted disturbance from 4.5 acres to 40 acres.”

MMD Comment:

1. This is a significant increase in acres as “planned disturbance” that is not specifically indicated on a map. Any disturbance following the planned 4.5 acres consisting of roads and drill pads, would need written notification to MMD to be considered a part of the 35.5 acres of contingency reflected in the current draft estimate of Financial Assurance calculation. The 35.5 acres of “Other Disturbances”, described on page 8 Section E. of PAP is described as “cut and fill disturbances, borrow areas if needed, reclamation/regrading to match original topography, and unforeseen improvements or changes to roads or designs as a disturbance contingency.” MMD rules state planned disturbance shall be indicated. Unplanned disturbance could be covered in the Financial Assurance calculation but would not be considered approved until a review by MMD through a written notification process. A review would include a map of the area that has not been previously indicated in the PAP as disturbance and associated acreage.

If “Other Disturbances” is intended for another phase of exploration, this will need to be noticed in writing to MMD and the PAP will need to reflect the intention of the use of “Other Disturbances” for this current exploration application, GR093EM. If other phases of exploration can be identified or are anticipated, state so in the response to MMD comments.

MMD Mapping Requirements

1. Mapping and Location – Section 4 page 6 - provide a detailed map including what is required in MMD rule 19.10.4.402 D (5):

“A map at a scale of at least 1-inch equals 2,000 feet (1:24,000) showing the areas of land to be disturbed by the proposed exploration and reclamation. The map shall specifically show the boundary of the proposed permit area, proposed and existing roads, previously disturbed areas, occupied dwellings, and pipelines; existing bodies of surface water, springs, wetlands, and riparian areas; topographic and drainage features; and oil, gas and water wells on the permit area. Areas and types of proposed disturbance shall be indicated. The anticipated depth of each proposed method of exploration shall also be provided.”

2. Drill pads should be to close to scale on provided map or given a “buffer” around the pad to indicate where disturbance is anticipated. This may require multiple, smaller maps to be provided that focus on each individual drill pad. If during drilling, a new disturbance, not indicated on the map, is needed, this will need to be noticed to MMD prior to creation of any new disturbance. A map will need to be submitted of the proposed new disturbance.
3. Provide MMD with shapefiles compatible with ArcGIS or KML/KMZ files with all indicated planned disturbance and the permit area.
4. Section 5 E. Label existing borrow area on map. There is contradictory wording stating no new borrow areas in the application, but it is later listed under “other disturbances” as a potential for a new borrow source.
5. Provide table with updated associated planned disturbance breakdown. FA may be recalculated based on disturbance provided on the map.
6. Differentiate, delete or color code TP23-I pad that is within Tyrone Mine Permit. MMD would be okay removing this pad from the application map since it is within the Tyrone Mine permit area.
7. Section 3B. Provide GPS coordinates or label claims on map that are within the permit area.

MMD General Comments

1. Because only 10,000 ft. of bonding is being provided for the exploration drill hole portion of the FA, only 10,000 ft. of open boreholes can be left un-plugged at one

RE: NM Mining and Minerals Division (MMD) and Agency Comments, Tyrone Peak Project, Regular (Part 4) Exploration Permit Application, Permit No. GR093ER

Page 4

December 12, 2024

time. To move past the 10,000 ft. limit, approved OSE borehole plugging reports must be provided to MMD.

2. Attachment A: Provide an update on OSE POD's when available. MMD will need these prior to issuance of the permit.
3. Section 8 B. MMD recommends the use of berms and embankments on drill pads that will be left un-reclaimed for more than 6 months to help minimize erosion.
4. The proposed pad TP23-G may be within 100 feet of an arroyo. If feasible, provide a buffer of 100 feet from this arroyo when constructing this drill pad.
5. The "road improvement" segment to TP23-Q. MMD considers this a new road due to the mature vegetation established in the proposed road. Any bladed vegetation is considered disturbance. Change on map and correct the disturbance calculation to reflect this change.
6. Access to TP23-K is a very steep powerline road. MMD requests a topographic map of the final placement of the road access to this pad before permit approval.

If you have any questions, please contact me at (505) 490-0967 or at alaina.osimowicz@emnr.dnrm.gov

Sincerely,

Alaina Osimowicz
Permit Lead
Mining Act Reclamation Program (MARP)

cc: DJ Ennis, Program Manager, MARP
Raechel Roberts, Senior Environmental Scientist, Tyrone Mine

Attachments: State Agency Comments
Tribal Comments

Mine File (GR093ER)



MEMORANDUM

DATE: October 31, 2024

TO: Amber Rheubottom, Mining Environmental Compliance Section, Ground Water Quality Bureau, New Mexico Environment Department

FROM: Davena Crosley, Watershed Protection Section, Surface Water Quality Bureau, New Mexico Environment Department

SUBJECT: **Request for Comments on Minimal Impact Exploration Amended Application, Tyrone Peak Exploration Project, Permit No. GR093EM, Freeport-McMoRan Tyrone Mining, LLC**

The New Mexico Environment Department (NMED)-Surface Water Quality Bureau (SWQB) received the subject request for comments on September 9, 2024. The application proposes to drill up to thirty-six (36) drill holes up to 2,500 feet deep on seventeen (17) drill pads, creating 40 acres of total disturbance. SWQB is providing the following comments pursuant to 19.10.4 New Mexico Administrative Code (NMAC):

The 2024 Tyrone Peak Exploration Project includes drilling locations that are located within close proximity to tributaries of Oak Grove Creek, Mangas Creek, and Pipeline Draw. The Subject application reports that no drilling is anticipated to occur within 100 feet of any ephemeral, intermittent, or perennial stream. Non-perennial portions of Oak Grove Creek, Mangas Creek, and Pipeline Draw are subject to New Mexico surface water quality standards at 20.6.4.13 NMAC and 20.6.4.98 NMAC and have designated uses for livestock watering, wildlife habitat, marginal warmwater aquatic life, and primary contact. Surface waters of the state shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or unreasonably interfere with the public welfare or the use of property (20.6.4.13 NMAC). Mine exploration activities that have the potential to contribute pollutants to waters of the state must be implemented with appropriate and reasonable Best Management Practices (BMPs) in order to prevent impacts to water quality. Any discharge of a water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, must be reported to the Environment Department within twenty-four hours (20.6.2.1203 NMAC).

Appropriate and reasonable BMPs include, but are not limited to, the following:

- Freeport-McMoran Tyrone Inc currently has NPDES MSGP coverage under facility ID NMR053073. FMI should update the SWPPP for the facility to include exploration project area.
- Spill clean-up materials such as absorbent pads must be available on-site at all times during road construction, site preparations, and drilling activities to address potential spills.
- Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must have a secondary containment system to prevent spills. Store these materials outside of the flood-prone zone.
- Process water must be contained within a closed-loop system or lined pits. A discharge of process water may require a discharge permit from NMED or the U.S. Environmental Protection Agency.

- Drilling cores and drilling mud must be collected and disposed of properly.
- Pressure wash and/or steam clean all mobile equipment used in the project area before the start of the project and inspect daily for leaks. A written log of inspections and maintenance should be completed.

- The use of overland travel and site selection, design, and construction of drill pads, reserve pits, and roads should comply with the guidelines described in the Bureau of Land Management “Gold Book” ¹. Suspend construction, maintenance activities, or off-road travel during periods when the soil is too wet to adequately support heavy equipment without causing surface disturbance. The operator should commit to repair any surface disturbance they caused.
 - The 2024 Tyrone Peak Exploration Project includes 36 acres of cut and fill disturbances, borrow areas, reclamation and regrading to match original topography, and possible improvements or changes to roads or designs. Structures and culverts at stream crossings must allow for the passage of sediment, bedload, woody debris, aquatic life, and prevent erosion problems such as headcuts, incision, bank erosion, and the diversion of the stream from its natural channel during flood events.

- Implement Best Management Practices to prevent direct impacts to watercourses, including springs, wetlands, and arroyos. For temporary surface disturbances during exploration and reclamation activities, the operator should implement erosion control measures that are designed, constructed and maintained using professionally recognized standards (e.g., Natural Resource Conservation Service standards or the Bureau of Land Management “Gold Book”).

- The applicant should ensure that stormwater entering the project area (“run-on”) is diverted from soil storage piles and should place piles uphill of excavations when possible.

- Roads, pads, and other facility structures should be set back a minimum of 100 feet from any watercourses, including springs, wetlands, and arroyos.

¹ <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/operations-and-production/the-gold-book>



Electronic Transmission

MEMORANDUM

Date: November 22, 2024

To: David Ennis, Program Manager, Mining Act Reclamation Program

Through: Amber Rheubottom, Acting Mining Act Coordinator, Mining Environmental Compliance Section (MECS)

From: Davena Crosley, Surface Water Quality Bureau (SWQB)
Sufi Mustafa, Air Quality Bureau (AQB)
Sean Madden (MECS)

Subject: **New Mexico Environment Department (NMED) Comments, Tyrone Peak Project, Grant County, New Mexico, Mining Act Permit No. GR093EM**

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) September 5, 2024, requesting that NMED review and provide comments on the above-referenced MMD permitting action. Pursuant to the Mining Act, this is an exploration project. MMD requested comments on the application within 60 days of receipt of the request for comments. NMED requested an extension to November 22, 2024.

Background

Freeport-McMoRan Tyrone Inc., (Applicant) requested to amend an existing application to increase the number of proposed drill holes and the total acreage of disturbance.

Air Quality Bureau

The AQB comments are attached.

Surface Water Quality Bureau

The SWQB comments are attached.

Mining Environmental Compliance Section

Mr. David Ennis
Tyrone Peak
November 22, 2024
Page 2 of 2

MECS does not have any comments.

NMED Summary Comment

NMED has determined the proposed activities will be protective of the environment if done in accordance with the approved permits and pollution controls as presented.

If you have any questions, please contact Amber Rheubottom at (505) 660-2379.

cc: Joseph Fox, Program Manager, NMED-MECS
Brad Reid, Copper Team Lead, NMED-MECS
Sean Madden, NMED-MECS
Shelly Lemon, Bureau Chief, NMED-SWQB
Cindy Hollenberg, Acting Bureau Chief, NMED-AQB
Alaina Osimowicz, EMNRD-MARP



MICHELLE LUJAN GRISHAM
GOVERNOR

JAMES C. KENNEY
CABINET SECRETARY

MEMORANDUM

DATE: November 21, 2024

TO: Amber Rheubottom, Acting Mining Act Team Leader, Mining Environmental Compliance Section, NMED

FROM: Sufi Mustafa, Staff Manager, Air Dispersion Modeling and Emission Inventory Section, Air Quality Bureau.

Request for Review and Comment, Tyrone Peak, New Minimal Impact Exploration Permit Amended Application, Grant County, New Mexico Mining Act Permit No. GR093EM

The New Mexico Air Quality Bureau (AQB) has completed its review of the above-mentioned mining project. Pursuant to the New Mexico Mining Act Rules, the AQB provides the following comments.

Details

Freeport-McMoRan Tyrone Inc. (Tyrone) submitted a permit application request for the Tyrone Peak exploration project in a letter dated January 22, 2024. The application is being amended in this request in response to additional studies, discussions with MMD, and requests or recommendations made during the field inspection that occurred on February 12, 2024. The overall scope of the project and planned disturbance remains much the same.

Air Quality Requirements

The New Mexico Mining Act of 1993 states that "Nothing in the New Mexico Mining Act shall supersede current or future requirements and standards of any other applicable federal or state law." Thus, the applicant is expected to comply with all requirements of federal and state laws pertaining to air quality.

20.2.15 NMAC, *Pumice, Mica and Perlite Processing*. Including 20.2.15.110 NMAC, *Other*

Particulate Control: "The owner or operator of pumice, mica or perlite process equipment shall

Request for Review and Comment, Tyrone Peak, New Minimal Impact Exploration Permit Amended Application, Grant County, New Mexico Mining Act Permit No. GR093EM

Page 2

not permit, cause, suffer or allow any material to be handled, transported, stored or disposed of or a building or road to be used, constructed, altered or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne."

Paragraph (1) of Subsection A of 20.2.72.200 NMAC, *Application for Construction, Modification, NSPS, and NESHAP - Permits and Revisions*, states that air quality permits must be obtained by:

"Any person constructing a stationary source which has a potential emission rate greater than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico Ambient Air Quality Standard. If the specified threshold in this subsection is exceeded for any one regulated air contaminant, all regulated air contaminants with National or New Mexico Ambient Air Quality Standards emitted are subject to permit review."

Further, Paragraph (3) of this subsection states that air quality permits must be obtained by:

"Any person constructing or modifying any source or installing any equipment which is subject to 20.2.77 NMAC, *New Source Performance Standards*, 20.2.78 NMAC, *Emission Standards for Hazardous Air Pollutants*, or any other New Mexico Air Quality Control Regulation which contains emission limitations for any regulated air contaminant."

Also, Paragraph (1) of Subsection A of 20.2.73.200 NMAC, *Notice of Intent*, states that:

"Any owner or operator intending to construct a new stationary source which has a potential emission rate greater than 10 tons per year of any regulated air contaminant or 1 ton per year of lead shall file a notice of intent with the department."

The above is not intended to be an exhaustive list of all requirements that could apply. The applicant should be aware that this evaluation does not supersede the requirements of any current federal or state air quality requirement.

Fugitive Dust

Air emissions from this project should be evaluated to determine if an air quality permit is required pursuant to 20.2.72.200.A NMAC (e.g. 10 lb/hour or 25 TPY). Fugitive dust is a common problem at mining sites and this project will temporarily impact air quality as a result of these emissions. However, with the appropriate dust control measures in place, the increased levels should be minimal. Disturbed surface areas, within and adjacent to the project

Request for Review and Comment, Tyrone Peak, New Minimal Impact Exploration Permit Amended Application, Grant County, New Mexico Mining Act Permit No. GR093EM

Page 3

area, should be reclaimed to avoid long-term problems with erosion and fugitive dust. EPA's *Compilation of Air Pollutant Emission Factors, AP-42, "Miscellaneous Sources"* lists a variety of control strategies that can be included in a comprehensive facility dust control plan. A few possible control strategies are listed below:

Paved roads: covering of loads in trucks to eliminate truck spillage, paving of access areas to sites, vacuum sweeping, water flushing, and broom sweeping and flushing.

Material handling: wind speed reduction and wet suppression, including watering and application of surfactants (wet suppression should not confound track out problems).

Bulldozing: wet suppression of materials to "optimum moisture" for compaction.

Scraping: wet suppression of scraper travel routes.

Storage piles: enclosure or covering of piles, application of surfactants.

Miscellaneous fugitive dust sources: watering, application of surfactants or reduction of surface wind speed with windbreaks or source enclosures.

Recommendation

The Air Quality Bureau does not have any objection to this project.

This written evaluation does not supersede the applicability of any forthcoming state or federal regulations.

If you have any questions, please contact me at 505 629 6186.



STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 NM.SHPO@dca.nm.gov

Michelle Lujan Grisham,
Governor

Courtney Wands

November 4, 2024

Ms. Alaina Osimowicz
Energy, Minerals and Natural Resources Department
Mining and Minerals Division
Minig Act Reclamation Program
1220 South St. Francis Drive
Santa Fe, NM 87505
Alaina.Osimowicz@emnrd.nm.gov

Via Email Only

RE: HPD Log #123329—Comments on Minimal Impact Exploration Application, Tyrone Peak
Exploration Project, Permit No. GR093ER, Freeport-McMoRan Tyrone Mining, LLC

*NMCRIS 154679 A Cultural Resources Inventory of 17 Proposed Drill Pads and Associated Access
Roads on Private Lands near Tyrone, Grant County, New Mexico*

Dear Ms. Osimowicz:

Thank you for *A Cultural Resources Inventory of 17 Proposed Drill Pads and Associated Access Roads on Private Lands near Tyrone, Grant County, New Mexico* to the New Mexico State Historic Preservation Office (SHPO) for review and comment. We received the information on September 5, 2024, via email. The project was reviewed under the New Mexico Cultural Properties Act (NM Statute §§ 18-6-1 through 18-6-17); the New Mexico Cultural Properties Protection Act (NM Statute §§ 18-6A-1 through 18-6A-6); and 19.10.4.403.B NMAC.

Based on the information provided in the report, the SHPO finds LA 204189 and LA 204192 are eligible for listing in the National Register of Historic Places (NRHP), under Criterion D.

The SHPO finds LA 204191 is not eligible for listing in the NRHP.

The SHPO finds more information is needed to determine whether LA 204190 is eligible for listing in the NRHP. For the purposes of this review, LA 204190 should be treated as eligible for listing in the NRHP until additional information is known.

The SHPO finds the avoidance measures proposed in the report, flagging a 100-foot buffer for avoidance around eligible and potentially eligible (undetermined) sites will result in a determination of no adverse effect on historic properties.

In order to complete my review, Westland Resources will need to upload the survey and site shapefiles into the NMCRIS database. The LA forms for each site will also need to be uploaded into the NMCRIS database.

If you have any questions or concerns, please contact me at cortney.wands@dca.nm.gov.

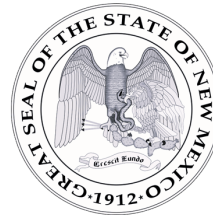
Sincerely,



Cortney Wands
Archaeological Reviewer



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
Hydrology Bureau



MMD REVIEW MEMORANDUM

DATE: October 18, 2024

TO: Alaina Osimowicz, Permit Lead, Mining Act Reclamation Program
Lloyd Valentine, District III Manager, Deming, New Mexico

THROUGH: Katie Zemlick, Ph.D., Hydrology Bureau Chief *KZ*

FROM: Christopher E. Angel, PG, Senior Hydrologist, Hydrology Bureau *CEA*

SUBJECT: Tyrone Peak Exploration Project – Minimal Impact Exploration Application,
Tyrone Peak, GR093ER, Grant County

KEYWORD: Tyrone Peak, District No. III, Grants, Gila-San Francisco Underground Water
Basin (GSF), Mimbres Underground Water Basin (M), Silver City, Granite,
Minimal Impact Exploration

ID: MMD_2024_008_GR093ER

INTRODUCTION

The New Mexico Office of the State Engineer (OSE) Hydrology Bureau received the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Mining and Minerals Division's (MMD's) September 5, 2024, request for comments on the subject Tyrone Peak Exploration Project - Minimal Impact Exploration Application (Tyrone Peak). The MMD permit number is GR093ER. The application materials were downloaded from <https://www.emnrd.nm.gov/mmd/gr093er-tyrone-peak-exploration-project-regular-exploration-project-part-4/>

The Tyrone Peak Part 4 Application is requesting a MMD permit to drill thirty-six (36) mineral exploratory boreholes from nineteen pads (17). Each borehole is to have a maximum total depth up to 2,500 feet. Based on surface hole location, these boreholes are to be drilled in both the Gila - San Francisco Underground Water Basin (GSF) and Mimbres Underground Water Basin (M) of Grant County, New Mexico. More specifically, the surface hole locations are to be located in Section 13, Township 19 South, Range 15 West (GSF) and Sections 17 and 18 of Township 19 South Range 14 West (M). It cannot be determined where the bottom hole locations are located as no azimuth, inclination, and measured depth have been provided in the application. In addition, the true vertical depth has not been supplied. Based on the OSE application all the boreholes are identified by permit M-11627-POD107 through POD142.

This review is to evaluate the area for possible hydrogeologic concerns and the materials used in drilling and plugging the boreholes.

COMMENTS

The OSE Hydrology Bureau has completed a review of the Tyrone Peak - Minimal Impact Exploration Project (GR093ER) Part 4 Application and provides the following comments:

Drilling Comments

Boreholes

The MMD application indicates that thirty-six (36) exploratory boreholes are to be drilled from 17 drill pads. Pad drilling indicates that the boreholes will be drilled as angled/directional boreholes. However, this was not explicitly stated in the application. Angled/directional boreholes have bottom hole locations that are different than the surface hole location. Therefore, when drilling angled/directional boreholes the measured total depth will be greater than the true vertical depth. The planned azimuth and inclination is necessary (but not provided) to adequately evaluate these boreholes. As drilled azimuths and inclinations should also be included on the official OSE Well Record and Log submitted to the OSE.

The MMD Part 4 application indicates that the boreholes are going to be 3.5-inches when drilled with air and 5.5-inches when drilled with fluid. The maximum depth of each borehole is going to be 2,500 feet. The attached and approved OSE “*WR-07 Application for Permit to Drill a Well with No Water Right*” indicates each borehole will be 5.5 inches in diameter and have a total depth of 1,200 feet. Based on the OSE permitted depth being significantly shallower than the requested MMD depth, a new permit will need to be submitted (Valentine, 2024). The current WR-07 requires the applicant to select a check box for angled/directional wells. When this check box is selected, additional information is required for each borehole that is going to be drilled at an angle or directionally. The as drilled angle or directional information is to be submitted with the official OSE Well Record and Log (official well record).

Each borehole is to be plugged and not converted for use as water wells.

Drilling Fluid Comments

This application indicates that the boreholes are to be drilled by both air and fluid drilling methods. It is common to use additives in air drilling. Some of the additives are water, polymers surfactants etc. No Material Safety Data Sheets (MSDS) for the drilling fluids were provided with this application. Based on Baroid Product Data Sheets obtained by the OSE, all these products are NSF 60 certified (Baroid, 2012a, 2012b, 2012c, 2014).

According to the RC Drilling section, EZ Mud Gold and Quick Gel are to be used in the drilling of these boreholes. EZ Mud Gold is a clay stabilizer that is broken down with bleach (Baroid, 2012a). Quick-Gel is a viscosifier that can build a mud cake that has low permeability (Baroid, 2012b). When these materials are used, they need to be identified on the official well record. Should the EZ Mud Gold and Quick Gel not be properly broken down and removed from the borehole it is not possible to conclusively say that the borehole is “Dry”. Should the borehole be developed, then the development procedure should also be documented on the official well record.

According to the Core Drilling section, EZ Mud Plus, Quick Trol Gold and Quick Gel are to be used in the drilling of these boreholes. EZ Mud Plus is a polymer emulsion that is broken down with bleach (Baroid, 2014). Quick-Gel is a viscosifier that can build a mud cake that has low permeability (Baroid, 2012b). Quick Trol Gold is a polymer that is used for filtration control (Baroid, 2012c). When these materials are used, they need to be identified on the official well record. Should the EZ Mud Plus, Quick Trol Gold and Quick Gel not be properly broken down and removed from the borehole it is not possible to conclusively say that the borehole is “Dry”. Should the borehole be developed, then the development procedure should also be documented on the official well record.

Borehole Abandonment

According to the MMD application and the approved OSE application all dry and wet boreholes are to be plugged from the bottom up. There is a difference in plugging materials between the MMD application and the OSE application. The cements identified are a Portland Type II and Portland Type I/II, respectively.

According to the MMD application the Portland cement is to be mixed in accordance with a plugging variance issued to Tyrone on December 14, 2010. This variance request uses a neat Type I/II cement mixed with 5.0 gallons of water per 94-pound sack (gal/sk). This mixture uses 0.2 gallons of water less than the minimum amount stated in OSE (2020). This design is acceptable. The variance request to plug wells without a plugging permit will need to be determined by OSE District III.

Hydrology Comments

Surface Water

Thirty-six exploratory boreholes are to be drilled from 17 drill pads between and along three unnamed ephemeral streams. It is unlikely that the ephemeral streams will be affected by the drilling of these exploratory boreholes if they are appropriately plugged and abandoned. However, all drilling fluids and cuttings must be contained on-site and cannot be discharged into the ephemeral streams (NMAC, 2017)19.27.4.29.P(2)).

Groundwater

Trauger (1972) contoured groundwater elevations in feet above sea level (fasl). These elevations were used to estimate the depth to groundwater. Groundwater elevations around this application are between 5,900 and 5,600 fasl.

The Tyrone Peak exploratory borehole true vertical total depths cannot be determined as no azimuths and/or inclinations were provided in the application. However, if fractures or porous intervals are encountered in any of the boreholes below 5,900 fasl, there is a potential to encounter groundwater. There is a possibility that groundwater may not be observed during the drilling process. This occurs when drilling fluids (including air) enter a fracture pushing water back into the formation. The drilling mud and/or cuttings may prevent the inflow of water making the borehole appear dry. If the borehole is adequately developed by removing the drilling fluids and cuttings from the fractures and/or porous intervals, then the borehole cannot be fully described as

“Dry”. As these boreholes are to be plugged before the drill rig leaves the site, it is unlikely that the boreholes will be adequately developed to determine if the borehole is officially “Dry”. In the case of this application, wet and dry borehole plugging materials are the same and can be used on wet and/or dry boreholes.

Inclination and azimuth of angled/directional boreholes or wells is extremely important to determine the true vertical depth of groundwater (encountered and static), and lithologic information. This application will need to be resubmitted on the most recent WR-07 (Valentine, 2024) and will need to include at a minimum the azimuth, inclination, measured depth and true vertical depth.

Miscellaneous Comments

The Tyrone Water Fill Station is to supply water for the drilling of these exploratory boreholes. It is recommended that the District III Office of the State Engineer be contacted to determine if the specific source of water to be used in the drilling of the Tyrone Peak exploratory boreholes is appropriately permitted.

CONCLUSIONS

In conclusion,

- 1) A new WR-07 will need to be submitted to the District III Office of the State Engineer on the most recent WR-07 Application form. This form requires directional wells to be identified and directional information to be provided to the OSE prior to drilling.
- 2) As directional information was not provided, an evaluation of the potential for the boreholes to encounter groundwater is incomplete.
- 3) As built, directional drilling information will need to be attached the official well record to be considered complete.
- 4) No material safety data sheets were provided for the drilling additives.
- 5) Marking the wells as “Dry” on the official well record is acceptable if no water is seen during the drilling process. However, it should be noted on the official Well Record that the borehole was not developed to remove drilling fluids and drill cuttings.
- 6) If the borehole is developed, the development methods need to be identified on the official well record along with any fluids used to breakdown and remove the fluids and cuttings.
- 7) Utilizing a tremie pipe and either a Type I/II or Type II cement is acceptable. The OSE District III Office of the State Engineer will need to be notified if any additives are used in the plugging materials.
- 8) The District III OSE should be contacted to confirm that the Tyrone Water Fill Station has adequate water rights to supply water for the drilling of these boreholes.

REFERENCES

Baroid (2012a) 'EZ Mud Gold - Clay/Shale Stabilizer'. Haliburton - Baroid Industrial Drilling Products. Available at: https://cdn.brandfolder.io/3RYPUX6K/at/q8kt5u-13fyts-3au5fk/EZ-MUD_GOLD.pdf.

Baroid (2012b) 'EZ Mud Quik Gel - Viscosifier'. Haliburton - Baroid Industrial Drilling Products. Available at: <https://cdn.brandfolder.io/3RYPUX6K/at/q8kt5u-13fyts-1bg6j0/QUIK-GEL.pdf>.

Baroid (2012c) 'EZ Mud Quik Trol Gold - Highly Dispersible Filtration Control Additive'. Haliburton - Baroid Industrial Drilling Products. Available at: https://cdn.brandfolder.io/3RYPUX6K/at/q8kt5u-13fyts-ctur3n/QUIK-TROL_GOLD.pdf.

Baroid (2014) 'EZ Mud Plus - Polymer Emulsion'. Haliburton - Baroid Industrial Drilling Products. Available at: https://cdn.brandfolder.io/3RYPUX6K/at/q8kt5u-13fyts-64nn9r/EZ-MUD_PLUS.pdf.

NMAC (2017) 'New Mexico Annotated Code Title 19 -Natural Resources and Wildlife; Chapter 27 – Underground Water; Part 4: Well Driller Licensing; Construction, Repair and Plugging of Wells', in *New Mexico Register*. Issue 11. New Mexico.

OSE (2020) 'Office of the State Engineer Sealant Guidelines for Well Construction and Plugging (for use in non-contaminated conditions)'.

Trauger, F.D. (1972) *Water resources and general geology of Grant County, New Mexico*. New Mexico Bureau of Geology and Mineral Resources. Available at: <https://doi.org/10.58799/HR-2>.

Valentine, L. (2024) 'Discussion with Lloyd Valentive, District III Manager, Deming New Mexico, regarding OSE Permit M-11627-POD107 through M-11627-POD142 Dated January 26, 2024.'

APPENDICES

Appendix A

GENERAL CONCERNS RELATED TO NMOSE REGULATION OF EXPLORATORY BOREHOLE DRILLING

Encountering Groundwater and Associated Plugging of Those Borings

Well drilling activities (including mineral exploration borehole drilling ("mine drill holes") that penetrate a water-bearing stratum) and well plugging, are regulated in part under 19.27.4 NMAC. Most recently promulgated in 6/30/2017, these regulations require any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the NMOSE (New Mexico Office of the State Engineer). Therefore, a New Mexico licensed Well Driller shall perform the drilling and plugging of exploratory boreholes that encounter groundwater.

Exploration drilling where any form of groundwater is encountered will be subject to pertinent sections of 19.27.4 NMAC, including but not limited to Sections 19.27.4.30.C NMAC for plugging and abandonment of non-artesian wells/borings; 19.27.4.31 NMAC for artesian wells/borings; and 19.27.4.36 NMAC for mine drill holes that encounter water. A complete version of the NMOSE 19.27.4 NMAC regulations can be found on the NMOSE website at: <https://www.ose.state.nm.us/Statewide/wdRules.php>.

MMD will likely place additional conditions on the drilling and plugging of all mineral exploration borings via the MMD project permit.

All onsite drilling and plugging activities where groundwater is encountered shall be conducted under the supervision of the New Mexico licensed Well Driller or a NMOSE-registered Drill Rig Supervisor under the direction of the licensed Well Driller.

Additional NMOSE filings will be required where it is requested that an exploratory borehole be converted to a water well. The well design and construction shall be subject to the provisions of NMOSE regulations 19.27.4 NMAC. Appropriation of water from such a conversion may require a water right. The MMD may disallow the conversions of exploratory borings to water wells if not permitted specifically in the MMD permit.

Use/Extraction of Temporary Casing

When drilling through overburden or caving, poorly consolidated, or karst geologic units, use of temporary casing may be desired. Any temporary casing should be installed with the full intention of its removal before borehole plugging, therefore temporary casing should be inserted into a borehole of sufficiently large diameter to allow easy extraction upon termination of drilling. NMAC 19.27.4 regulations dictate methodology for the installation of permanent well casing, including the installation of required annular seal, should that option be more prudent.

If temporary casing lacking a rule-compliant annular seal or casing grade becomes stuck in-place down hole, the potential for permanent commingling of aquifers or down hole surface water drainage may occur via an unsealed annulus. In these cases, staged casing cutting and extraction,

or remedial casing perforation and squeeze-cementing will be required to the satisfaction of the State Engineer as part of final well decommissioning. Steps should be taken during drilling to prevent deleterious fall-in or drainage of cuttings/sediments into the annulus outside the temporary casing to best allow for full retrieval and proper borehole plugging.

When setting of temporary casing occurs or is expected, appropriate detail of the proposed casing extraction and borehole clean-out process prior to plugging will be required in the NMOSE Well Plugging Plan of Operations form. If exploratory drilling through stratified or artesian aquifer systems, filing a NMOSE Artesian Well Plan of Operations may be required to preemptively assess and address NMOSE concerns regarding best borehole decommissioning practices.

Exploratory Borehole Plugging

Terms of borehole plugging will be established jointly by the evaluation of the NMOSE Well Plugging Plan of Operations and the review of the relevant MMD application for water-bearing boreholes. Approved high-solids bentonite abandonment-grade sealants and/or approved cement slurries will be required for plugging as deemed hydrogeologically appropriate by the agencies. NMOSE-authorized cement slurries will be required for the decommissioning of flowing artesian boreholes. If the exploratory borings do not encounter groundwater, MMD plugging regulations (19.10.3 NMAC) prevail over those of 19.27.4 NMAC.

NMOSE well plugging regulations require tremie placement of the column of well sealant, which shall extend from the bottom of the borehole to ground surface. By regulation, pumping decommissioning sealants into the top of the borehole is not allowed. The NMOSE defers to the discretion of the MMD for the choice of sealant versus natural fill in the uppermost portion of a borehole plug to facilitate site restoration.

Required plugging of water-bearing exploratory borings shall occur within the timeframe specified by either the NMOSE or MMD to minimize cave-in and the potential for incomplete plugging due to blockages in the borehole.

Drill Rig Fuels, Oils and Fluids

Drill rigs contain and consume fuels, oil, and hydraulic fluids, and are subject to leaks. Drill rigs often remain in-place longer than other pieces of exploration equipment onsite, are frequently running, and are positioned immediately above and adjacent to the open borehole. As a standard practice to prevent contamination and reduce site cleanup activities, it may be beneficial to use bermed, impermeable ground sheeting under the drill rig. Consideration of bermed containment volume sufficient to accommodate a high-intensity precipitation event is also a good practice.



DIRECTOR AND SECRETARY
TO THE COMMISSION
Michael B. Sloane

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507
Tel: (505) 476-8000 | Fax: (505) 476-8180
For information call: (888) 248-6866

wildlife.dgf.nm.gov

STATE GAME COMMISSION

RICHARD STUMP
Chair
Santa Fe

SHARON SALAZAR HICKEY
Vice Chair
Santa Fe

FERNANDO CLEMENTE, JR.
Sunland Park

GREGG FULFER
Jal

TIRZIO J. LOPEZ
Cebolla

DR. SABRINA PACK
Silver City

28 October 2024

Alaina Osimowicz, Permit Lead
Mining Act Reclamation Program
New Mexico Mining and Minerals Division (MMD)
1220 South St. Francis Drive
Santa Fe, NM 87505

**RE: Regular (Part 4) Exploration Permit Application, Tyrone Peak Exploration Project,
Permit No. GR093ER; NMDGF No. NMERT-3803.**

Dear Ms. Osimowicz,

The New Mexico Department of Game and Fish (Department) has reviewed the exploration project referenced above. Freeport-McMoRan Tyrone Mining, LLC (Tyrone) is proposing to drill 36 exploratory bore holes, to a maximum depth of approximately 2,500 feet, from a total of 17 drill pad sites. The project area is in Grant County, Township 19S, Range 14W, Sections 7 and 17- 18 and Township 19S, Range 15W, Sections 12-13. The proposed drilling project would disturb a total area of approximately 40 acres. Staff from the Department, MMD, New Mexico Environment Department, and Tyrone conducted a site inspection on 22 October 2024. The Department provides the following recommendations to minimize potential impacts of the proposed action to wildlife and wildlife habitat.

The permit application states that, to prevent wildlife entrapment, plastic tarps will be placed over the drilling mud pits. The Department believes that placing plastic tarps over the mud pits may not adequately prevent wildlife from entrapment and recommends that, if tarps are used, they be securely anchored over the pits. The mud pits should also be adequately fenced to prevent larger animals from walking onto the tarps and potentially becoming injured or entrapped. To exclude mule deer (*Odocoileus hemionus*) and other large animals, the above-ground fence height should be a minimum of 8 feet. The Department continues to recommend that Tyrone use a closed loop drilling system. Closed loop systems eliminate the need to build fences or install netting or similar materials to exclude wildlife from mud pits, reduce the amount of surface disturbance associated with the drill pad sites, and consume significantly less water.

During drilling operations, it is also important to prevent wildlife from entering and becoming trapped in stockpiled drill pipes. Capping piping is the most effective way to prevent wildlife entry. At a minimum, the Department recommends that each section of pipe be visually inspected prior to use to verify that wild animals are not inside.

To minimize the likelihood of adverse impacts to migratory bird nests, eggs, or nestlings during road and drill pad construction activities, the Department recommends that ground disturbance

and vegetation removal activities be conducted outside of the primary breeding season. This breeding season is 1 March – 1 September for migratory songbirds and most raptors; for golden eagle (*Aquila chrysaetos*) and great horned owl (*Bubo virginianus*) it is 1 January – 15 July. If ground-disturbing and clearing activities must be conducted during the breeding season, the area should be surveyed for active nest sites (with birds or eggs present in the nesting territory) and avoid disturbing active nests until young have fledged. For active nests, establish adequate buffer zones to minimize disturbance to nesting birds. Buffer distances should be a minimum of 100 feet from songbird and raven nests; 0.25 miles from most raptor nests; and 0.5 miles for American goshawk (*Accipiter atricapillus*), golden eagle, peregrine falcon (*Falco peregrinus*), and prairie falcon (*Falco mexicanus*) nests. Active nest sites in trees or shrubs that must be removed should be mitigated by qualified biologists or wildlife rehabilitators. Department biologists are available to consult on nest site mitigation and can facilitate contact with qualified personnel.

The Department recommends that, to the maximum extent feasible, large mature trees be left undisturbed during road and drill pad construction. Tree species that should be left undisturbed include alligator juniper (*Juniperus deppeana*), piñon pine (*Pinus edulis*), and all species of oak (*Quercus* spp.).

The Department concurs with the proposed seed mix. The Department also recommends that only certified weed-free seed be used to avoid inadvertently introducing non-native species to the reclamation site. Any alternate plant species, used to substitute for primary plant species that are unavailable at the time of reclamation, should also be native. When possible, the Department recommends using seeds that are sourced from the same region and habitat type as the reclamation site and suggests including seeds from a region that represents potential future climatic conditions at the site.

During the site inspection at hole #TP-23G, Department staff observed two banner-tailed kangaroo rat (*Dipodomys spectabilis*) burrow mounds along the proposed overland access route and near the proposed drill pad site. Tyrone agreed with the Department recommendation to avoid disturbing these banner-tailed kangaroo rat burrow mounds during road and drill pad construction by establishing, at minimum, a 20-foot buffer zone around the burrow complex.

Thank you for the opportunity to review and comment on the proposed exploration project. If you have any questions, please contact Ron Kellermueller, Mining and Energy Habitat Specialist, at (505) 270-6612 or ronald.kellermueller@dgf.nm.gov.

Sincerely,

Virginia Seamster, Ph.D.
Assistant Chief for Technical Guidance, Ecological and Environmental Planning Section

cc: USFWS NMES Field Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Melanie A. Kenderdine
Cabinet Secretary Designate

Benjamin Shelton
Acting Deputy Cabinet Secretary

Laura McCarthy, State Forester
Forestry Division



October 28, 2024

Alaina Osimowicz
Mining and Minerals Division
Energy, Minerals and Natural Resources Department (EMNRD)
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: Request for Agency Comments, New Minimal Impact Exploration Permit Application, Tyrone Peak Exploration Project, Grant County, New Mexico, Permit Tracking No. GR093ER

Thank you for the opportunity to comment on the above referenced project. I do not anticipate any impacts to New Mexico State Listed Endangered Plants, Federally Listed Endangered or Threatened plants, or other species of concern as a result of this exploratory drilling project. However, according to the Amended Permit Application from August 2024, a biological evaluation noted no "critical habitat" was present in the area, but that *Agave parryi* was present and would be transplanted (page 15) when found. However, *Agave parryi* is not a state endangered plant species, therefore, EMNRD has no statutory authority for regulating or protecting this species, although EMNRD's Botany Program appreciates any efforts to transplant critically important pollinator species.

As noted in a previous letter with reference to this project (**Permit Tracking No. GR093EM**), it should be noted that an occurrence of *Scrophularia macrantha* (Mimbres figwort), a state endangered plant, has been documented approximately 20 miles northeast of the project area, adjacent to the Chino Mine. Mimbres figwort typically occurs within the lower slopes of steep, rocky, north-facing igneous cliffs, along canyon bottoms, within pinon-juniper woodlands or mixed coniferous forest (6,500-8,200 ft). While the habitat, coincident with proposed disturbance, does not appear appropriate for this species, it should not be assumed that *Scrophularia* does not therefore exist if no biological surveys have been done to specifically search for this species.

A botanical survey conducted by a person or private consulting company with expertise in the field botany and qualified to identify any state endangered plants (usually when plants are in flower and fruit) is recommended prior to disturbance. If *Scrophularia* is found, an incidental take permit will be required if plants are destroyed or harmed, or mitigation measures developed to minimize disturbance.

Please let me know if I can be of further help.

Sincerely,



Erika Rowe; Endangered Plant Program Coordinator
EMNRD-Forestry Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505
erika.rowe@emnrd.nm.gov / (505)699-6371



White Mountain Apache Tribe

Office of Historic Preservation

PO Box 1032

Fort Apache, AZ 85926

Ph: (928) 338-3033 Fax: (928) 338-6055

To: Alaina Osimowicz, Permit Lead – Mining and Minerals Division

Date: August 23, 2024

Re: *Exploration Permit Application Tyrone Peak Permit No. GR093ER*

.....

The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the project dated; July 25, 2024. In regards to this, please refer to the following statement(s) below.

Thank you for allowing the White Mountain Apache tribe the opportunity to review and respond to the above proposed exploration project for the one mine location minimal impact exploratory permits, for Grant County, New Mexico.

Please be advised, we have reviewed the information provided, and we have determined the drilling project will have a **“No Adverse Effect”** to the tribe’s cultural heritage resources. We concur with the exploratory project plans.

Thank you for the continued tribal engagement and consultation, and collaborations in protecting and preserving places of cultural and historical importance.

Sincerely,

Mark Altaha

White Mountain Apache Tribe – THPO
Historic Preservation Office