NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

1190 Saint Francis Drive / PO Box 5469
Santa Fe, NM 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.env.nm.gov

Michelle Lujan Grisham
Governor

Howie C. Morales
Lieutenant Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

MEMORANDUM

Date: June 10, 2019

To: Holland Shepherd, Program Manager, Mining Act Reclamation Program

Through: Jeff Lewellin, Mining Act Team Leader, Mining Environmental Compliance Section

From: John Moeny, Surface Water Quality Bureau
Rhett Zyla, Air Quality Bureau

Subject: **NMED Comments, Freeport-McMoRan Tyrone Operations, Emma-B Exploration Project, Grant County, New Mexico, MMD Permit No. GR083EM**

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on May 20, 2019 requesting NMED review and provide comments on the above-referenced MMD permitting action. NMED has the following comments.

Background

Freeport-McMoRan Tyrone Operations (Applicant) proposes a minimal impact exploration project to advance up to 17, six-inch diameter borings to a depth of 1,300 feet below ground surface. The project is on land owned by the Applicant and the LT Ranch, LLC in Sections 25 and 36, T19S, R15W. The purpose of the proposed exploration project is to evaluate potential reserves of copper.

Air Quality Bureau

The Air Quality Bureau comments are attached under separate letterhead.

Surface Water Quality Bureau

The Surface Water Quality Bureau comments are attached under separate letterhead.

Mining Environmental Compliance Section

The Applicant provides ground water quality information that indicates the total dissolved solids concentration of the ground water is up to 1,756 mg/l. As indicated in the application, the depth to ground water is estimated to be 500 feet below ground surface. In the likely instance ground water is encountered while advancing the borings to the total depth of 1,300 feet below ground surface, plugging and abandonment of the borings should comply with New Mexico Office of the State Engineer regulations for wet holes as is indicated in the application. In addition, the applicant must contain any water produced from the exploration holes at the drill sites.

NMED Summary Comment

NMED finds that the exploration project is likely to have a minimal impact to the environment if operated and reclaimed with the approved permits, pollution controls, and the comments above.

If you have any questions, please contact Jeff Lewellin at (505) 827-1049.

cc: Michelle Hunter, Bureau Chief, GWQB
Shelly Lemon, Bureau Chief, SWQB
Liz Bisbey-Kuehn, Bureau Chief, AQB
Fernando Martinez, Division Director, EMNRD-MMD
David Ohori, Lead Staff, EMNRD-MMD
Kurt Vollbrecht, Program Manager, MECS
Keith Ehlert, Operational Team Leader, MECS
George Llewellyn, MECS

NEW MEXICO
ENVIRONMENT DEPARTMENT
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505
Phone (505) 476-4300 Fax (505) 476-4375
www.env.nm.gov

Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

MEMORANDUM

DATE: June 5, 2019

TO: Jeff Lewellin, Mining Act Team Leader
Mining Environmental Compliance Section, Ground Water Quality Bureau

FROM: Rhett Zyla, Environmental Scientist & Specialist
Modeling Section, Air Quality Bureau

RE: Request for Comments, Minimal Impact Exploration Project, Freeport-McMoRan Tyrone Operations, Emma-B Exploration Project, Grant County, MMD Permit No. GR083EM

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.

Air Quality Permitting History

The AQB has not issued any air quality permits for this operation.

Details

The applicant proposes to drill up to seventeen (17), 6-inch diameter holes, up to a depth of 1,300 feet, in Grant County, New Mexico, Section 35. The proposed drilling sites are located approximately ½ mile south of the Tyrone Mine. Total excavated material will be less than 1000 cubic yards. A total of 3.43 acres will be disturbed through road improvements (0.166), new road construction (2.17), and drill pad sites (1.09).

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. Current requirements which may be applicable in this mining project include, but are not limited to the following:

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."

In addition, pursuant to Subsection A of 19.10.3.302 NMAC, *Minimal Impact Exploration Operations*:

"A minimal impact exploration operation will not exceed 1000 cubic yards of excavation per permit. Disturbances for constructed roads, drill pads and mud pits shall be no more than 5 acres total and will not be counted in the excavated materials. The type of road construction, the number and type of drill pads, and other disturbances when considered with site specific conditions will be major factors in determining eligibility for minimal impact status which is in the discretion of the director."

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

Although fugitive dust is a common problem at mining sites, the AQB does not have a rule that regulates fugitive dust at this time. Meanwhile, we recommend controls to minimize emissions of particulate matter from fugitive dust sources to limit public health and traffic safety impacts. The following control strategies can be included in a comprehensive fugitive dust control plan (from EPA's *Compilation of Air Pollutant Emission Factors, AP-42*):

Unpaved haul roads and traffic areas: paving of permanent and semi-permanent roads, application of surfactant, watering, and traffic controls, such as speed limits and traffic volume restrictions.

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 AQB has no objection to the current request for a permit.

The applicant is expected to comply with all requirements of federal and state laws pertaining to air quality. 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) 476-4304.

NEW MEXICO
ENVIRONMENT DEPARTMENT

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-2855
www.env.nm.gov

Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

MEMORANDUM

DATE: June 7, 2019

TO: Jeff Lewellin, Mining Act Team Leader
Mining Environmental Compliance Section
Ground Water Quality Bureau (GWQB)

FROM: John Moeny
Watershed Protection Section
Surface Water Quality Bureau (SWQB)

RE: **Request for Comments, Minimal Impact Exploration Project, Freeport-McMoRan Tyrone Mining, LLC, Emma-B Exploration Project, Grant County, MMD Permit No. GR083EM**

On May 20, 2019, NMED received a request for comments regarding a minimal impact exploration permit submitted by Freeport McMoRan-Tyrone Mining. The project is located in Grant County on lands owned by Freeport-Tyrone, just south of the existing Tyrone facility.

Summary of Proposed Action

The Applicant intends to drill up to seventeen, 6.0" exploratory drill holes to a maximum depth of 1,300 feet. Each drill site will have an associated ground disturbance for the sump pit and drill pad totaling 2,840 square feet at each location. Drill cuttings will be collected and buried at each drill location. Access to drill sites will be a combination of new and existing roads and the total estimated disturbance for the exploration is 3.43 acres.

Relevant State and Federal Water Quality Regulations

Intermittent water quality standards under 20.6.4.98 NMAC apply to all unclassified waters of the state including ephemeral drainages in the project area, until a hydrology protocol (HP) survey is conducted and a Use Attainability Analysis (UAA) is approved by the Water Quality Control Commission (WQCC) in accordance with 20.6.4.15 NMAC.

Construction activities in support of the drilling, mining or hauling in ephemeral drainages may require a federal Clean Water Act Section 404 Dredge and Fill Permit and the corresponding Section 401 State of New Mexico Certification of the federal permit. For details contact the US Army Corps of Engineers Las Cruces Regulatory Office at 575.268.8612.

This Project will disturb one or more acres and storm water discharges may be covered under either the U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) or under the Multi-Sector General Permit (MSGP) under Sector G Metal Mining.

Among other things, a SWPPP must be prepared for the site and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (revegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters.

Operators of certain small construction activity (disturbance of one to five acres) may be waived from permit requirements under limited circumstances. To be eligible for this waiver, operators must certify to EPA that they are eligible (see Section 9 Appendix C of the CGP). Waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). If this Project transitions into mining activities, MSGP coverage would be required at that time.

The CGP was re-issued January 11, 2017 and is effective February 16, 2017. The CGP and the eReporting tool (NeT-CGP) to apply for coverage or waivers is available at: https://www.epa.gov/npdes/2017-construction-general-permit-cgp. The MSGP was re-issued effective June 4, 2015, that Permit information is available at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

In addition to the regulations above, the following best management practices are recommended to protect surface water quality.

- Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must have a secondary containment system to prevent spills.

- Ground water sump pits may not be used as disposal locations for hydraulic fluids, oils, contaminated drilling mud or other materials that may pose a pollution risk to surface and ground water.

- Ground water sump pits must be setback from drainages by a minimum of 100 feet.

Appropriate spill clean-up materials such as absorbent pads must be available on-site at all times during road construction, site preparations, drilling and reclamation to address potential spills.

Report all spills immediately to the NMED as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203 NMAC). For non-emergencies during normal business hours, call 505-428-2500. For non-emergencies after hours, call 866-428-6535 or 505-428-6535 (voice mail, twenty-four hours a day). For emergencies only, call 505-827-9329 twenty-four hours a day (NM Dept of Public Safety).
Impacts to Surface Water Quality

The SWQB finds Freeport McMoRan's proposed exploration is likely to have a minimal impact to surface waters if operated and reclaimed with the approved permits and pollution controls and the comments above.

If you have any questions, please phone me at (575) 956-1545.

GOVERNOR
Michelle Lujan Grisham

DIRECTOR AND SECRETARY
TO THE COMMISSION
Michael B. Sloane

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

Post Office Box 25112, Santa Fe, NM 87504

Tel: (505) 476-8000 | Fax: (505) 476-8123

For information call: (888) 248-6866

www.wildlife.state.nm.us

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Placitas

11 June 2019

David Ohori, Permit Lead
Permit Lead, Mining Act Reclamation Program
Mining and Minerals Division (MMD)
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Emma-B Exploration Project, Freeport-McMoRan Tyrone Mining, LLC, Permit No. GR083EM; NMDGF No. 19129

Dear Mr. Ohori,

The New Mexico Department of Game and Fish (Department) has reviewed the project referenced above. Freeport-McMoRan (FMI) is proposing to drill 17 exploratory holes to a maximum depth of approximately 1,300 feet. The drilling sites will be located in Grant County, Township 19S, Range 15W, Sections 25 and 36. The project will disturb an estimated area of 3.43 acres. The Department, MMD, and FMI conducted an inspection of the site on 30 May 2019.

The permit application states that in order to prevent wildlife entrapment, plastic tarps will be placed over the project's drilling mud pits. The Department believes that placing plastic tarps over the mud pits will not adequately prevent wildlife from entrapment. In order to eliminate the potential for wildlife to become entrapped in mud pits, the Department recommends the use of closed loop drilling systems. Closed loop systems eliminate the need to build fences or install netting to exclude wildlife, reduce the amount of surface disturbance associated with the well pad site, and consume significantly less water. If a closed loop system is not used, drilling mud pits should be fenced and netted to exclude flying and terrestrial animals. Extruded plastic, knit, or woven netting material is preferred. Monofilament netting should not be used due to its tendency to ensnare wildlife and cause injury or death. The Department recommends a mesh size of $^{3}/_{8}{}^{th}$ inch to exclude smaller animals. Netting material must be held taught over a rigid and adequately supportive frame to prevent sagging into the drilling fluids.

The permit application states that "...a breeding bird survey will be conducted just prior to construction, if construction occurs during the period of 1 May thru 31 August". To minimize the likelihood of adverse impacts to migratory bird nests, eggs or nestlings, the Department recommends that ground disturbance and vegetation removal activities be conducted outside of the primary breeding season for migratory songbirds and raptors (1 March – 1 September). If ground disturbing and clearing activities during the breeding season cannot be avoided, the area should be surveyed for active nest sites (with birds or eggs present in the nesting territory), and when occupied, nest disturbance should be avoided until young have fledged. For

active nests, adequate buffer zones should be established to minimize disturbance to nesting birds. Buffer distances should be ≥100 feet from songbird and raven nests, and 0.25 mile from raptor 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 for consultation regarding nest site mitigation, and can facilitate contact with qualified personnel.

The Department concurs with the proposed seed mix, and the use of triticale as a quick-growing annual cover crop to improve short-term reclamation success. If the mix includes triticale, it should be a sterile variety which is non-reseeding and will not persist in subsequent years. The Department also recommends that the seed mix and mulch be certified weed-free, and that seed test results are requested from the vendor to avoid inadvertently introducing non-native species to the reclamation site. Any alternate seeds 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.

The Department recommends that during road and drill pad construction, large mature trees are left undisturbed to the maximum extent feasible. These species include alligator juniper *(Juniperus deppeana)*, piñon pine *(Pinus edulis)*, and Gambel oak *(Quercus gambelii)*.

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) 476-8159 or ronald.kellermueller@state.nm.us.

Sincerely,

Matt Wunder, Ph.D.
Chief, Ecological and Environmental Planning Division

cc: USFWS NMES Field Office

MEMORANDUM
OFFICE OF THE STATE ENGINEER
Hydrology Bureau

DATE: **June 11, 2019**

TO: **David Ohori, Permit Lead, NMEMNRD – Mining and Minerals Division**

THROUGH: **Ghassan Musharrafieh, Ph.D., P.E., Chief, Hydrology Bureau** GRM

FROM: **Douglas Rappuhn, P.G., Hydrology Bureau**

SUBJECT: **NMOSE Hydrology Bureau review of MMD GR083EM Part 3 Minimal Impact Exploration Operation Permit Application for Emma-B Exploration Project, Freeport-McMoRan Tyrone Mining, Grant County**

The NMOSE Hydrology Bureau has reviewed the MMD GR083EM Part 3 Minimal Impact Exploration Operation Permit Application for the Freeport-McMoRan Tyrone Mining Emma-B Exploration Project. The project will consist of the drilling and evaluation of up to 17, approximately 1,300 ft-deep borings, exploring for copper resources. Upon completion of exploratory drilling and any testing, the Applicant ("FMTM") proposes to fully cement the borehole to within two-feet of ground surface, then back-cover with topsoil. Cement slurry will provide a low-permeability plug capable of permanently attenuating any hydrologic cross-connection that may have temporarily occurred during drilling.

The drilling may encounter groundwater; if so the NMOSE shares jurisdiction of well drilling and plugging. NMOSE WRD District 3 Manager has confirmed receipt of necessary *Permit to Drill a Well with No Water Right* for the proposed borings and will address plugging as part of their review process. NMOSE File Nos. have not yet been assigned.

The exploratory drilling for copper resources will occur at a location in Sections 25, 26, 35, 36 – Township 19S – Range 15W, approximately 11 miles southwest of Silver City. I did not attend a joint regulatory site inspection for the proposed project.

Surface water

The proposed boreholes will be drilled southeast of the southeast corner of the Tyrone Pit Mine, in the general Oak Grove area. USGS 1:24000 topographic map of the project area indicates 100 – 200 feet of topographic relief over the project area, resulting in a multi-channel drainage system running east off the project area as tributaries of either Oak Grove Creek or Cherry Creek. Although the Applicant notes in the MMD application Section 6, Sections E and F that the drilling will not occur within, or within 100 feet of any intermittent or ephemeral stream, it is noted that boreholes 14 – 16 appear to plot close to the headland axis of an unnamed channel tributary to Oak Grove Creek, albeit not a jurisdictional matter for the NMOSE.

Two unnamed springs are mapped in Section 3, along Cherry Creek. Springs at this elevation may be contact springs, which may be quickly depressurized by openly-flowing boreholes, or dewatering of boreholes during air-drilling. It is unlikely that the flow system associated with a contact spring would be permanently damaged from the proposed exploratory drilling, although the drillholes intersect the flow system, it may be some period of time and amount of recharge before the springs recover, after drillhole discharge ceases and borehole plugging is complete. Alternately, although perhaps less likely at the Continental Divide in hard-rock terrain, the springs may vent from an artesian system.

Groundwater

In general, water wells may tap locally-perched groundwater, an unconfined local aquifer, or a regional unconfined or confined groundwater system. All represent forms of groundwater subject to the application of NMOSE regulations and required Water Rights Division filings, whether drilling for water or having encountered it by drilling.

Although wells already drilled in the immediate vicinity of the proposed exploratory holes appear to also be (dry) FMTM exploratory holes, there exist water wells drilled to a variety of depths, including in excess of 1,000' within a half-mile south of the proposed boreholes (Apache Mound Road / Burro Lane area), most all drilled entirely through and into variations of granite.

It is possible that even shallow project exploratory drilling may encounter groundwater, particularly with springs mapped in the locality. Since the proposed borehole will be drilled to desired depth, then completely plugged in quick succession, there exists little possibility of a hydrologic effect of any consequence to the exercise of existing water rights, provided the plugging is competently and promptly conducted. Improperly plugged, the proposed borehole might allow 24/7 loss of shallow groundwater to a deeper stratum and affect local shallow aquifer viability. Per NMAC 19.27.4, the drilling and plugging must be conducted by the firm of a New Mexico-licensed water well driller.

Exploratory Drilling and Decommissioning – NMOSE Considerations

Prior to initiation of drilling, NMOSE District 3 Water Rights Division must be contacted (321 West Spruce Street, Deming, NM 88031; 575-546-2851), and the Applicant must file for and receive approval of NMOSE *Application for Permit to Drill a Well with No Water Right*: (http://www.ose.state.nm.us/WR/Forms/Current/WR-07%20Application%20for%20Permit%20to%20Drill%20a%20Well%20with%20No%20Consumptive%20Use_2016-11-17_final.pdf).

The permit will require submittal of NMOSE *Well Record and Log* for the borehole within 30 days of completion of well construction: (http://www.ose.state.nm.us/WR/Forms/Current/WR-20%20Well%20Record%20and%20Log_2017-06-30Final.pdf)

Plugging of the exploratory well with neat cement slurry is proposed upon completion of exploratory drilling. Submittal of a NMOSE *Well Plugging Plan of Operations* may be required if the permit to drill is not automatically conditioned with plugging requirements: http://www.ose.state.nm.us/WR/Archive/Forms/WD-08%20Well%20Plugging%20Plan%20of%20Operations_2017-06-30_final.pdf

Submittal of NMOSE *Plugging Record* for the decommissioned borehole is required within 30 days of completion of well plugging: (http://www.ose.state.nm.us/STST/Forms/WD-11%20Plugging%20Record_2009-09-08_final.pdf)

NMAC 19.27.4.29.A. requires that a currently-licensed New Mexico Well Driller or New Mexico-registered Drill Rig Supervisor be present at the drilling site during well drilling activities (including well decommissioning).

A listing of general NMOSE exploratory drilling project comments otherwise potentially pertinent to the project is also included with this NMOSE review.

General Concerns Related to NMOSE Regulation of Exploratory Borehole Drilling Encountering Groundwater and Associated Plugging of those Borings

Well drilling activities, including exploratory borehole drilling (drilling of "mine drill holes") that penetrate a water-bearing stratum, and well plugging, are regulated in part under 19.27.4 NMAC (New Mexico Administrative Code) promulgated 6/30/2017, which requires 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.

Additionally, all onsite well drilling activities 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.

Exploration drilling where a water-bearing stratum is encountered will be subject to pertinent sections of those rules and regulations contained in 19.27.4 NMAC (6/30/2017), including but not limited to Sections 19.27.4.30.C NMAC for plugging and abandonment of non artesian wells; 19.27.4.31 NMAC for artesian wells; 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:
http://164.64.110.134/parts/title19/19.027.0004.html

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 19.27.4 NMAC Regulations. 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 caving overburden or unconsolidated geologic units, use of temporary casing may be desired. Any temporary casing should be installed with the full intention of its removal before well plugging, therefore it 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 prudent.

If temporary casing lacking an appropriate annular seal becomes stuck in-place, the potential for commingling of aquifers or surface water drainage may occur via an unsealed annulus. In these cases, remedial casing perforation and squeeze-cementing may be required as part of the well decommissioning. Steps should be taken 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.

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 (Mining and Minerals Division) 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. 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. 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.