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4 April 2016

Doug Haywood, Project Manager
U.S. Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

RE: Copper Flat Copper Mine Draft Environmental Impact Statement; NMDGF Project No. 16864

Dear Mr. Haywood,

In response to the Federal Register Notice of Availability dated 30 November 2015, the New Mexico Department of Game and Fish (Department) has reviewed the Copper Flat Mine Draft Environmental Impact Statement (DEIS). The New Mexico Copper Corporation (NMCC) is proposing to reestablish a poly-metallic mine and processing facility located near Hillsboro, in Sierra County, New Mexico. The mine permit area would encompass approximately 2,190 acres on Bureau of Land Management (BLM) managed public land and private property.

Las Animas Creek

The Department's primary concern throughout the permitting process continues to be the potential for adverse impacts to surface aquatic and riparian habitat resources in Las Animas Creek. These resources could be impaired by the groundwater cone of depression that will be generated by the production wells in the Santa Fe Group aquifer. Hydraulic modeling for the proposed action predicts a groundwater drawdown of at least 20 feet below Las Animas Creek (page 3-77, Fig. 3-13b), and drawdowns up to 40 feet for the preferred Alternative 2 (page 3-92, Fig. 3-19b). Modeling results propose that a shallow clay layer will serve as a perching horizon to effectively isolate the alluvial groundwater flows in Las Animas Creek from the deeper groundwater drawdown that will result from the pumping of the mine production wells. Given that Las Animas Creek is only about one mile north of the mine production well field, the Department has significant concerns regarding the effectiveness of the clay layer in isolating the perched alluvial groundwater once mining operations begin. Potential deviations from the hydrologic modeling projections would not be known until after operations are in place and opportunities to mitigate impacts to surface flows no longer exist.

The Department recommends that water levels be closely monitored along Las Animas Creek, and that mitigation measures are in place in the event that impacts to Las Animas Creek and its associated riparian vegetation are greater than predicted. This monitoring should consider not only modifications to long-term average flows, but also finer-scale changes in seasonal flows that may be important for sustaining the vegetation and wildlife habitat in the area. The Department also recommends that the components of the alternatives consuming the largest amounts of water not be pursued.

Pit Lake Water Quality

The water quality of the existing pit lake does not meet its current designated uses for warmwater aquatic life, wildlife habitat, or livestock watering. Therefore, it is reasonable to assume that the new pit lake may also not meet current water quality standards for these designated uses. SRK Consulting (2013) predicts the new pit lake will exceed current water quality standards for manganese, copper, selenium, lead and zinc if no control measures are taken. The current pit lake exceeded surface water quality standards for manganese, copper, cadmium and selenium during all of the baseline surface water quality sampling tests.

A simulated annual pit water balance predicts inflows via direct precipitation, runoff and groundwater inflow to be approximately 101 acre-feet per year (AFY) and discharge via evaporation from the pit lake water surface to be about 100 AFY, or basically in equilibrium (NMCC 2014). This might suggest that if NMCC rapidly filled the pit with water after mining operations are finished and the pit lake met all water quality standards, ongoing maintenance would not be required. However, current pit lake conditions seem to indicate otherwise, because the current surface area of 5 acres is a significant decrease from a maximum of 14 acres (JSAI 2013). It appears that surface water evaporation currently exceeds inflows, creating a hydrologic evaporative sink that is concentrating the total dissolved solids and adversely impacting water quality. Additionally, future climate change could result in a regionally warmer and drier climate, increasing the potential for evaporative sink conditions.

The Department believes there is a high probability that pit lake water will not meet water quality standards over the long-term, and that a funding mechanism must be in place for implementation of a water quality long-term management plan. The DEIS states that the water quality management plan should be funded for at least 30 years. This minimum duration seems insufficient for effectively addressing a problem that could continue in perpetuity without additional mitigation measures.

Mine Pit Groundwater Cone of Depression

The mine pit will create a deep (>700 feet) and steep-sided cone of depression in the andesite bedrock aquifer. Hydrologic modeling suggests that the hydraulic conductivity of the andesite bedrock is low, and that the areal extent of the drawdown impact will be limited and the effects would not reach Hillsboro or the Percha Creek Box. Again, this conclusion assumes that low hydraulic conductivity will contain the impacts of drawdown, the extent of which will only fully be known after the enlarged pit has been completely excavated, and impacts have become permanent.

Additionally, the Department concerned about impacts to a resident population and important breeding grounds for mule deer located immediately to the west of the Copper Flat Mine. Mule deer populations have been on the decline over the past several decades, and this area is considered to be vital habitat for mule deer in New Mexico. Department biologists have been working with landowners for approximately six years to improve habitat. Mule deer rely upon multiple springs in the area and could be in jeopardy, depending on the final extent of the pit's cone of depression.

Thank you for the opportunity to review and comment on your project. If you have any additional 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
Kevin Rodden, Southwest Regional Game Manager, NMDGF
Jacob Davidson, Habitat Manager, NMDGF

References

John Shomaker and Associates Inc. [JSAI]. 2013. Model of Groundwater Flow in the Animas Uplift and Palomas Basin, Copper Flat Project, Sierra County, New Mexico.

New Mexico Copper Corporation [NMCC]. 2014. Revised Copper Flat Mine Water Balance and Water Conservation Plans. 23 January 2014.

SRK Consulting. 2013. Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico. September 2013.