

Copper Flat Mine Draft EIS Evaluation

Comments from the Elephant Butte Irrigation District of New Mexico

To the U.S. Bureau of Land Management, Las Cruces
District Office.

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Contents

Table of Figures.....	2
Executive Summary.....	2
Background.....	4
EIS Document Quality.....	5
Water Rights and Water Use.....	5
Surface and Groundwater Management.....	7
Groundwater Contamination Migration.....	8
Groundwater Flow Model.....	9
Air Quality.....	10
Surface Hydraulics and Hydrology.....	11
Cumulative Impacts.....	13
Post-closure Monitoring, Care, and Maintenance.....	15
Flood Control Dam Construction.....	15
Offsite Copper Migration.....	16
Wildlife.....	18
Conclusions and Recommendations.....	19
Bibliography.....	21

Table of Figures

Figure 1. Copper Flat Mine Location and Caballo Dam.....	4
Figure 2. Approximate Watersheds and Arroyo in Mine Area.....	12

Executive Summary

The Elephant Butte Irrigation District (EBID) supports the responsible, safe and sustainable development and profitable use of natural resources occurring on and/or beneath public and private lands. As the largest water user in the region, the EBID also naturally supports the use of water, but only to the extent that valid water rights exist to support the use without detriment to other, senior rights to water. This is a major problem with the New Mexico Copper Corporation’s proposal to resurrect the Copper Flat project because they simply do not have water rights in quantities anywhere close to sufficient to move forward.

The EBID is keenly aware of and appreciates the importance of creating, and perhaps more importantly maintaining in perpetuity good-paying jobs in NM and the associated tax benefits that our local and state economy certainly needs, especially as such benefits may help more rural parts of our great state that have been suffering for many years. Such suffering is unmistakable in the area in and around Truth or Consequences, NM where the local economy has been stricken by hydrologic drought conditions in

recent years that have tended to keep water levels at Elephant Butte and Caballo Reservoirs at or near historic lows, and therefore impairing to some extent the recreational opportunities in this area that are otherwise largely dependent on seasonal proceeds from recreational water activities (marinas, boating, fishing, etc.). The EBID and the farming community it serves is similarly, largely dependent on water in storage in these reservoirs and likewise has been hit hard by hydrologic drought. These reservoirs are a feature of the U.S. Bureau of Reclamation (USBR) Rio Grande Project that the EBID membership and irrigators in El Paso County, Texas have long since repaid the construction debt for, but not for recreation, but rather for the survival of farming businesses that have persisted (and paid taxes and created jobs) throughout the Lower Rio Grande Valley for over a century. The EBID further supports the notion of job creation as a result of private investment, rather than local, state or federal tax dollars being committed to expanding government bureaucracies at virtually every level. However, the market for copper and precious metals (including some gold and silver) that happen to exist to one degree or another in the area known as Copper Flat that is the subject of this draft EIS is apparently rather whimsical, and it will not last (i.e., mining is a non-sustainable resource). One has only to consider the history of the Copper Flat Mine, formerly owned/operated briefly by Quintana Minerals, Inc. (~1977-1982), thereafter owned/operated briefly by Gold Express Corporation (~1991-1993), thereafter owned/operated briefly by Alta Gold Company (~1994-1999), and presently owned and proposed to be operated by New Mexico Copper Corporation (subsidiary of THEMAC Resources Group Limited out of Canada) and the fact that from the mid-late 1970's to date that a variety of corporate interests looking at the Copper Flat site and related project have not been able to produce any substantive, staying stimulus to the area economy. The EBID is skeptical that the present owners and would-be operators, New Mexico Copper Corporation (NMCC), funded by foreign (Canadian) investors can be expected to create a circumstance at the Copper Flat site and attendant local community that will be much different than what has been observed and documented with the corporate (not local), speculative activities in this area for at least the last forty years. Even if a plausible, staying degree of promise to stimulate the local economy of southern Sierra County for a reasonable duration while making some contributions to the coffers in Santa Fe can be guaranteed from the salesmanship offered by NMCC, the risks that are abundantly clear that the draft EIS does not effectively address of potentially contaminating at some point a major water supply (Caballo Reservoir) that the EBID and other benefactors of the Rio Grande Project depend on, including the downstream irrigation interests of the El Paso County Water Improvement District No. 1 and an average of about half of the domestic water supply for the City of El Paso, Texas, far outweighs these benefits, to say nothing for the economic benefits that the EBID farming membership has brought to southern NM and the coffers in Santa Fe for the last 100 years that will be severely constrained, if not terminated, if the water supply is contaminated with copper and associated sulfate byproducts. The comments in this report substantiate these concerns on a technical basis, and the conclusion that the current draft EIS is deficient to support anything other than the No Action Alternative.

Background

The New Mexico Copper Corporation, NMCC, proposes reestablishing a poly-metallic mine and processing facility to be located 13.5 miles west from Caballo Reservoir, as shown by the white line in Figure 1.

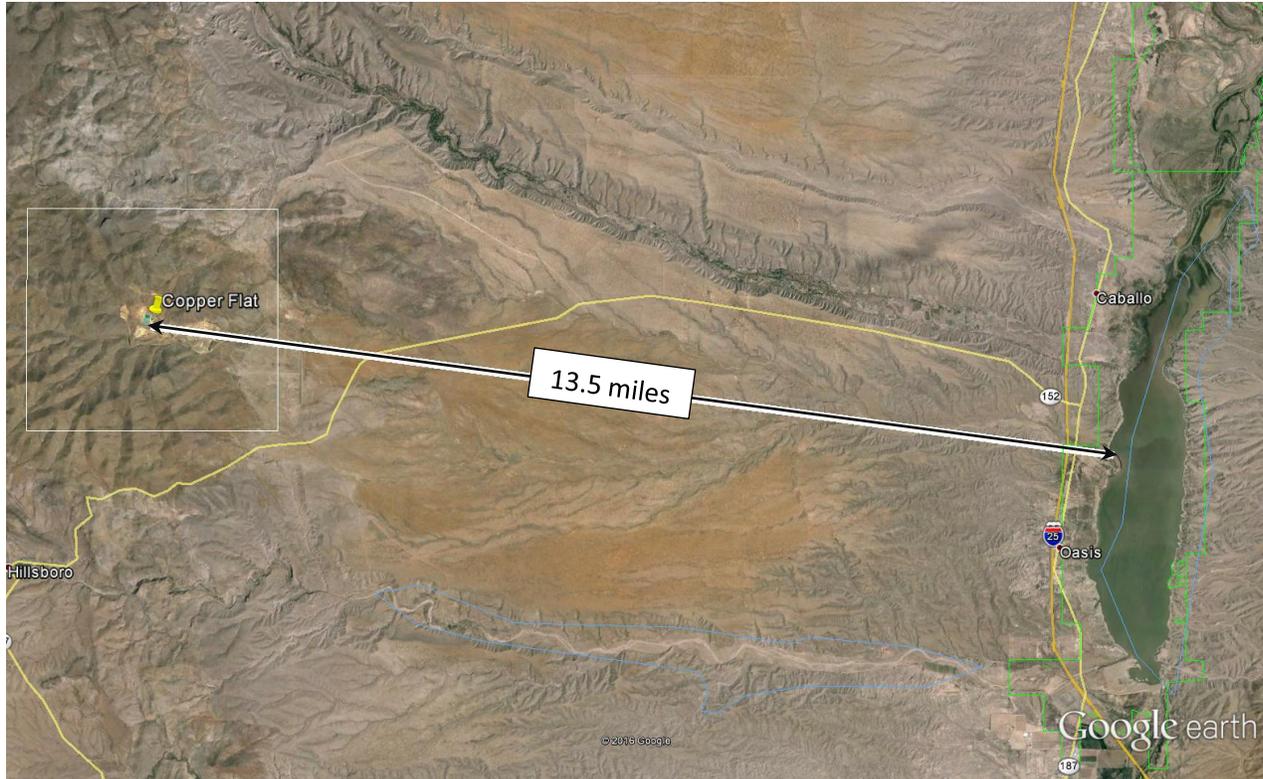


Figure 1. Copper Flat Mine Location and Caballo Dam

The draft EIS assessment discussed in this document is based on the document presented by the U.S. Bureau of Land Management, 2016. The proposed 2,190 acre mine would be located in both public land and private property and is a continuation of a former mining operation by Quintana Minerals Corporation. This very lengthy draft EIS (3 volumes, with about 500 pages each volume) was prepared by the BLM (using advice from several other agencies and consultants). The BLM will evaluate feedback from the public, including EBID, in the decision making process on whether to approve the operational plan prepared by the BLM. The public will have until March 4, 2016, to submit their comments on the proposed EIS to the BLM. The EIS evaluates three proposed alternatives (BLM, 2016, p 2-93, Table 2-31):

- Alternative 1, proposed in the draft EIS assumes a throughput of 25,000 tpd (tons per day) with a mine life of 11 years (EIS, p 2-93)
- Alternative 2, as defined in the draft EIS and the BLM's Preferred Alternative, has a 30,000 tpd plan with an 11-year mine life, but remains within the mine area evaluated under the Proposed Action.
- No action Alternative

The purpose of this report is to consider the potential impact of Alternatives 1 and 2, particularly Alternative 2 (BLM's Preferred Alternative) upon water rights, water quality and other natural resources that may affect the EBID's operations.

EIS Document Quality

Though abundant in information, the document submitted for review by the public is very deficient in technical details. For example, the maps associated with the surface features of the area do not present critical elevation information (contour lines or cross sections) required to truly assess the impact of terrain on surface hydraulics or hydrology on water quality, flood control, air pollutant transport, etc., as described later in this report. There is, therefore, inadequate and incomplete data for the EBID to make accurate conclusions on much of the results presented in the draft EIS. Many of the EBID's conclusions could be improved should the draft EIS have the required information available for scientific and engineering assessment.

Water Rights and Water Use

As indicated in Chapter 1.6.3, on page 1-11 of the draft EIS, the fact that a major disparity exists between NMCC's groundwater right claim and what the NM Office of the State Engineer (OSE) has determined for administrative permitting purposes, is ample evidence that tremendous uncertainty exists regarding whether or not and when NMCC will have sufficient rights to water to proceed with the mining proposal at any operational scale. The OSE's determination as per the repair and deepen wells permit¹ in 2014 reflecting a maximum amount of 888.783 acre-feet per year is presently the limit of NMCC's groundwater right. This amount is of course grossly inadequate to fit with NMCC's plans, most especially the water requirements associated with the BLM's preferred Alternative 2 of the draft EIS. The judicial proceedings that are noted on page 1-11, including the presumed "contingency option" of water rights adjudication could very well take years to resolve. Similarly, the "contingency option" of leasing surface water rights and/or the option of purchase and transfer of groundwater rights as noted are both formal activities subject to due process and related public advertisement as a matter of law. Either option can therefore potentially (if not all but certainly) be expected to be met with opposition of a litigious nature that could likewise protract for years. Neither the lease option or purchase and transfer contingency have been initiated in terms of public filings with the OSE known to the EBID at this time. Noting these possible contingencies at this juncture and in the draft EIS is therefore little more than conjecture and does nothing to secure any confidence that NMCC has sufficient rights to water, or when or if they ever will. Accordingly, neither the proposed action nor operational alternatives can even be considered unless and until NMCC secures valid water rights in sufficient quantities as evidenced by an appropriate permit from the OSE and/or a court order. The EBID expressly advised the BLM of this necessity, among other concerns, when the EBID timely provided scoping comments in March, 2012. The statement included on page 1-11 of the draft EIS that "The OSE will ultimately approve the availability of adequate water rights in accordance with the ongoing process described above." is altogether misleading because it presupposes that whatever the OSE may eventually approve will be sufficient for the mine.

¹ An OSE application to repair and deepen a well does not require formal publication as a matter of law to allow for potential public protest as required in other types of applications (replace a well, transfer or lease water rights, etc.), but it is certain that protests will occur when/if NMCC seeks such an application that does require advertisement.

Indeed, the current draft EIS does not represent the first time that the EBID has raised concerns with the BLM about water rights issues associated with the Copper Flat project, and the current draft EIS does not represent, either, that the BLM has adequately addressed these issues. The EBID provided timely, substantive comments to the BLM by way of letter dated April 15, 1996 reflecting a time when Alta Gold Company had proposed to activate the Copper Flat mining facility, some fourteen years after Quintana Mineral Corporation had completely abandoned the site, and a large sulfate plume that Quintana had created in the groundwater of the area that persists to this day. Among other things, the EBID pointed out then, and again raises the critical issue now that any water rights associated with this site are at best questionable (if not abandoned long ago), and again reminds the BLM that in the absence of an appropriate permit from the OSE and/or a court order establishing water rights in a sufficient quantity, neither the proposed action or alternatives (other than No Action) can be considered.

According to the proposed EIS, the preferred alternative is Alternative 2 (maximum accelerated production) and necessarily results in the greatest water use relative to the other alternatives. The noted efforts on page 2-83 of Chapter 2.3.7.1 to recycle as much water as possible are noble (also a cost-saving measure for NMCC), but are not explained in sufficient detail to reasonably conclude that 70% of the suggested average annual water use of 22,210 acre-feet as inferred from Table 2-28 as recycled water is correct, or even close to correct. A margin of error certainly exists in these projections, however the draft EIS does not address what such a margin of error might be. If the margin of error is as great as 50%, which might be quite plausible, then the recycled component of the projected annual water use might actually be no more than about 20%. Should this be the case, then the actual consumptive use that necessarily would demand new water under the preferred alternative might be as high as 17,768 acre-feet, or more. Even if NMCC's claim of groundwater rights of 7,376 acre-feet per year were somehow, someday found by an adjudication court to be valid, the actual water requirements at the Copper Flat mine under the preferred alternative may be over twice this amount. Regardless, even if about 70% of the suggested average annual water use purported in Table 2-28 and further described in Table 2-29 is taken as not consumed (recycled during the life of the mine), diverting and/or extracting this water from the ore material to begin with constitutes a new appropriation of water (in a system that is already fully-appropriated) of which a proper permit from the OSE is required. No such permit exists or even proper application before the OSE for the same, and indeed new appropriations of water cannot be legally adjudicated in the absence of due process of law. The OSE repair and deepen wells permit that does exist in this matter is of course grossly insufficient in the amount of 888.783 acre-feet per year. While NMCC understandably was not satisfied with this, the OSE's efforts in this case reflect an exhaustive account and review of the groundwater claim in question and must be taken to reflect the OSE's position at this time. The BLM cannot overlook this consideration for purposes of this draft EIS, most especially since access to water and valid water rights are essential to any and every aspect of the Copper Flat project. Accordingly, the No Action Alternative is the only alternative that can be supported at this time.

The predicted surface water depletion rates suggested in Table 3-15 as found on page 3-55 of Chapter 3.5.2 of the draft EIS, assuming that the associated modeling efforts undertaken by John Shomaker and Associates (JSAI) on behalf of NMCC are appropriately conservative, reveal that depletions of senior Rio Grande Project surface water rights are expected to persist for some time over 100 years following the closure of the mine. These depletions to the Rio Grande Project directly impair the senior water rights

of the EBID members in NM, El Paso Water Improvement District no. 1 members in Texas, and also flows of the Rio Grande obligated to the Republic of Mexico as per international treaty. Quite significantly, the draft EIS does not provide any clear plan, other than a very brief mention on page 1-11 regarding possible leasing of surface water, as to how these depletions and resultant impairment of senior water rights are going to be made whole at any time, let alone assured for the next 100 years and beyond. Even if NMCC were to pursue a lease at some point of Rio Grande Project surface water rights as casually suggested on page 1-11, overlooked in the draft EIS is the fact that such a lease would require that the USBR 1920 Miscellaneous Purposes Act be observed because NMCC would in this instance be seeking a change in the purpose of use of Rio Grande Project surface water rights that are otherwise authorized for the single purpose of irrigation. The 1920 Act would also invoke NEPA, and therefore NMCC and the BLM may very well be subject to yet another EIS.

The persistence of surface water depletions in this case, regardless of alternative (other than No Action) for some time beyond 100 years is further troubling because post-closure monitoring and maintenance by NMCC is said (on page 2-73 and elsewhere in the draft EIS) to only be planned for 12 years after NMCC has exhausted the economic potential of the Copper Flat site. Thereafter and even to begin with, the draft EIS does not offer a clear, let alone reasonable plan for how the impairment of Rio Grande Project water rights is to be addressed, or how the impairment of several flowing springs (of which livestock and wildlife in the area depend on) and a number of artesian wells along Las Animas Creek and Percha Creek will be made whole. There is no indication whatsoever that NMCC is committed to the long-term maintenance of impacts from the proposed mining activity, some of which (such as the impairment of senior water rights) are expected to persist essentially indefinitely.

The predicted cumulative surface depletion volumes offered in Table 3-16 relative to the predicted depletion rates identified in Table 3-15 do not make sense. Specifically, comparison of the results between the two tables does not mass balance as it should, not even close. For example, summation of the predicted annual surface water depletion rates for Alternative 2 at the end of mining as reported in Table 3-15 amounts to 2,066 acre-feet per year, and expressed cumulatively over the 11 years that the mine is proposed to be in production amounts to 22,726 acre-feet, yet summation of the predicted cumulative surface water depletions for Alternative 2 as reported in Table 3-16 is only 15,384 acre-feet. The accounting in this instance does not mass balance and therefore casts doubt on the accuracy of the data generated here, and perhaps elsewhere throughout the draft EIS.

Surface and Groundwater Management

The draft EIS offers the statement on page 3-56 within Chapter 3.5.2.1 that “Stormwater management at the mine is not expected to have a substantial effect on surface water quantities in the Greyback and Greenhorn Arroyos.” Altogether missing from this statement and the ensuing paragraph is any attention to stormwater quality, which indeed is a major concern of the EBID and perhaps other beneficiaries of the Rio Grande Project because the Greyback and Greenhorn Arroyos ultimately discharge into Caballo Reservoir. The statement offered in the last paragraph on page 3-57 of the draft EIS that “Mining and concentrating operations would not discharge to surface water courses in the Greenhorn Arroyo Basin, such as the Greyback and Greenhorn Arroyos.” is of very little comfort to the EBID because the draft EIS is sorely lacking specificity regarding how stormwaters above, below and/or immediately adjacent to the mining operation are expected to be managed. While this and related points are explored in much greater detail as part of EBID’s concerns articulated elsewhere in this

report, long after the NMCC has exhausted the economic potential of the Copper Flat site for mining, stormwater management and the potential for transport of some amount of what is expected to be massive accumulated tonnage of mine tailings occupying the site into, and thus contamination of the closely neighboring Caballo Reservoir will persist indefinitely. Despite NMCC's suggested efforts upon mine closure to pursue a degree of remediation, contamination of Caballo Reservoir as a consequence of the mine could occur at any point in the future, including subsurface percolation of contaminants from what will be a mountain of tailings left at the site when (not if) the proposed liner for the TSF deteriorates.

Table 3-17 of the draft EIS is moot, again for the reason that NMCC simply does not have water rights in sufficient quantity in the form of a permit from the OSE, or a water rights adjudication subfile order, or even a reasonable plan for how such water rights will be secured or when. Until such water rights are secured, the only alternative the draft EIS can support is No Action.

The draft EIS discloses in the last sentence of the first paragraph on page 3-57 that "Water removed from the open pit would be used for dust suppression on roads." The draft EIS is not sufficient in providing absolute assurances with appropriate detail that the quality of water contained in the open pit will be positively void of contaminants originating from mine activities. Consequently, applying this water of a questionable chemical and mineral composition for dust suppression on roads in the area where exposure to stormwater flows and subsequent transport of sediment inherent to soil erosion from earthen roads can be expected is a concern that must be adequately addressed. This point is further underscored and without escape because the second sentence of the first paragraph of Chapter 3.6.1.3 on page 3-62 of the draft EIS admits that "Local hydrologic conditions in this area have been extensively studied as part of a program to abate elevated levels of dissolved solids in groundwater caused by seepage from the existing tailings." A sulfate plume contaminating the site already exists, and can be expected to increase substantially with a substantially increased accumulation of tailings that is unavoidable if NMCC's Proposed Action or either of the operational alternatives are adopted. The No Action alternative is surely the best hope for containment of the existing sulfate plume. Since the BLM has apparently allowed contamination of groundwater to occur at this site previously, the EBID has no confidence that further contamination will be prevented.

Groundwater Contamination Migration

The second paragraph of Chapter 3.6.1.3 on page 3-62 further reveals an existing problem with groundwater contamination in the area from the existing TSF. The fourth sentence of this paragraph states that "Seepage from the eastern part of the TSF flows eastward through the gravels that overlie the clay, creating a water level mound that is higher than the regional water table." This is quite a serious concern because the hydraulic gradient that exists eastward of the TSF is likely to readily induce eastward migration of the existing sulfate plume, particularly as the immediate aquifer responds to the NMCC's production wells each pumping at rates up to or perhaps in excess of 2,000 gallons per minute, concentrated in an area not but about six miles east of the TSF. It is understood that dewatering of the mine's pit lake while the mine is in active production might be argued to abate to some extent the eastward hydraulic gradient that positively will be greatly expanded by the production well pumping, but because the hydraulic conductivity of the bedrock material that has been and will be substantially further exposed at the pit lake is relatively low (1 to 5 feet per day), this is highly unlikely. The production well pumping will certainly expand an existing eastward hydraulic gradient, and the existing

sulfate plume (that is highly likely to become exponentially larger as consequence of NMCC's proposed activities) will most likely continue to migrate eastward.

The third paragraph of Chapter 3.6.1.3 of the draft EIS attempts to speculate that a fault east of the TSF "may" act as a barrier to groundwater flow from the existing contaminant mound and "may" limit the extent of the sulfate plume that extends east of the TSF. Caballo Reservoir exists due east, immediately down gradient of the Copper Flat site and the existing and proposed TSF as shown in Figure 1 of this report. The fact is that NMCC has not and nor has the BLM provided any reasonable assurance or reasonable technical and compelling geophysical evidence in this critically important part of the draft EIS that migration of the existing sulfate plume, which is highly likely to expand to one degree or another if the mine goes into production as proposed or in keeping with either proposed operational alternative, will not eventually make its way to and contaminate the major water supply of Caballo Reservoir. The EBID respectfully demands that this concern be addressed fully and completely, otherwise the No Action alternative is the only defensible option for the BLM at this juncture.

Groundwater Flow Model

The EBID is well aware that available well and pumping data, and associated aquifer testing results necessary to support a genuinely calibrated regional groundwater flow model in this area is necessarily limited almost exclusively to data derived from the NMCC's existing production and monitoring wells maintained by the NMCC in very near proximity to the mine site. Apart from a collection of older, classic hydrogeology studies that reflect efforts back in the late 1970's and early 1980's to map the basic geology of the area, which JSAI has appropriately referred to in order to generally inform the groundwater model described in the draft EIS, it is acknowledged on page 3-70 (first paragraph below Table 3-18) of the draft EIS that judgment constrained by limited data is the basis for much of the model construction. In other words, the groundwater model described in the draft EIS is based largely on a collection of estimates of hydrologic properties of the aquifer system in the area to provide further estimates of what hydrologic impacts as a consequence of the mine's groundwater pumping might be. This is basically a model of a model, and therefore necessarily a guess (albeit educated) at what the impacts of the mine on water resources might really be. Importantly, this is a groundwater flow model, not a contaminant transport model.

The EBID is well aware that groundwater flow model development often begins with limited field data and is typically a response to litigation or anticipated litigation, but that model refinement and more appropriate calibration on a regional basis is expected, if not demanded as actual field measurements and monitoring observations are obtained. The groundwater flow model described in the draft EIS is lacking in this regard because there is no stated plan to expand field measurements, such as additional exploratory wells and/or nested piezometers at appropriate depths, to refine and more appropriately calibrate the model on the regional basis by which the model platform and grid are intended. Requirements that may eventually be imposed by state agencies (NMED and OSE) as suggested in the last paragraph on page 3-97 of the draft EIS **need to be addressed now**, otherwise the No Action alternative is the only defensible option available to the BLM at this time.

A good example of where and why some of the data and claims asserted by NMCC may not reflect some of the most important aquifer system properties may be seen in the fourth paragraph on page 3-63 of Chapter 3.6.1.4 of the draft EIS wherein it is stated that "Aquifer tests of the supply wells conducted by

NMCC in 2012 resulted in a generalized estimate of the transmissivity of the upper 1,000 feet of the Santa Fe Group to be 20,000 square feet per day.” From this estimate and as it is inferred in parenthesis immediately following this statement, hydraulic conductivity is said to be estimated at 20 feet per day. Hydraulic conductivity and knowledge of saturated thickness within an aquifer are among the absolute most important subsurface properties necessary to determine transmissivity, and which will tend to govern any groundwater flow model. Certainly, aquifer properties of this significance should not be assumed credible as a “generalized estimate” for forecasting longer term pumping effects. NMCC’s own paid consultants (JSAI) apparently recognize the weaknesses in this assumption in the groundwater flow model described in the draft EIS. Evidence to this effect may be found in Table 3-18 on page 3-70 of the draft EIS wherein JSAI has identified a transmissivity of only 10,000 square feet per day for the Santa Fe Group Palomas Graben in Layer 2 of the model domain, which indeed is where the NMCC production wells pump from. The EBID concurs with JSAI in this instance, and notes that a higher calculated transmissivity, particularly for groundwater modeling purposes, will tend to result in lesser drawdowns at the NMCC production well field and thus less capture of groundwater at depth otherwise migrating eastward and ultimately discharging into Caballo Reservoir and the Rio Grande down gradient.

Air Quality

Air quality modeling (p B-10) was done using AERMOD assuming “flat terrain sources.” The EBID assumes this to mean that terrain elevations and other topographical features were ignored in the modeling process. The EBID strongly disagrees with this modeling strategy since this computer model can be used for both, simple and complex terrain (USEPA, 2006). In fact, the USEPA points out in the prior reference that there are two input data processors that are regulatory components of the AERMOD modeling system: AERMET, a meteorological data preprocessor that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, and AERMAP, a terrain data preprocessor that incorporates complex terrain using USGS Digital Elevation Data. The EBID, therefore, questions the numerical values presented on pp B-14 and B-15 and the corresponding interpretation of results on pp 3-3 through 3-10 of the proposed EIS report. In fact, EBID believes that once topographic features are included in the model, the concentrations of pollutants should be considerably greater during certain times of the year than the present model predicts as a result of the box-canyon conditions that exist at the proposed mine site (see Figure 2 and EIS report Fig. 3.5 on p 3-51), where the prevailing winds are westerlies and would not carry away the air contamination by dilution as freely as if these topographic features were not considered.

The draft EIS discusses the air quality impacts of the proposed mining activities on section 3.2 (EIS p, 3-3 to 3-10). The draft EIS (EIS, p Es-4) proposes to use Alternative 2 as the “Preferred alternative.” Yet, the same document clearly mentions on p 3-7 that “Alternative 2 (the preferred alternative) is not covered under the current construction permit, and would require a permit revision.” Thus there is no validation that Alternative 2 could meet the permit requirements. The EBID finds, therefore, this EIS incomplete and deficient in validation that the preferred alternative was not considered in the permitting process. Further, the EBID questions whether Alternative 1, which is expected to generate less fugitive air emissions than Alternative 2, would pass the scrutiny of complex terrain modeling (see paragraph above). Therefore, the EBID does not believe that once the modelling is expanded to include the use of AERMAP and AERMET the proposed air quality plan would pass the scrutiny of the air pollutant permitting process for either Alternative 1 or 2.

Surface Hydraulics and Hydrology

The Copper Flat Copper Mine Draft Environmental Impact Statement (EIS), section 2.1.3.4 (EIS pp 2-18 through 2-20), titled “Tailing Storage Facility” mentions that:

“Based on the rule and regulation of the New Mexico Office of the State Engineer (OSE), the Copper Flat TSF would be classified as a large dam having significant hazard potential” (EIS, p 2-18). And that “All considerations regarding dam design addressed in this section of the document would require approval under a permit granted by the OSE Dam Safety Bureau. As such, the TSF would be designed to contain the equivalent of 100 percent of the probable maximum precipitation (PMP) during operations. A spillway capable of passing 75 percent of the PMP would be required upon closure.”

Figure 2-4 of the proposed EIS report (EIS, p 2-15), titled “Mine Facilities – Proposed Action, provides the location of new plant facilities and shows the upper- left corner of the Tailing Storage Facilities, TSF.

New Mexico Administrative Code, NMAC, Title 19, Chapter 25, Part 12 (19.25.12) addresses the requirement for Dam Design, Construction and Dam Safety. Specifically, 19.25.12.11.C states that:

- 3) “ ... For perimeter embankment dams with no spillway and no external drainage area, the dam must be capable of impounding the spillway design flood without failure.” and,
- (3.c) “Dams classified as large, with a significant hazard potential rating shall have spillways design to pass a flood resulting from 75 percent of the probable maximum precipitation.”

EBID agrees that the perimeter embankment must be capable of impounding 100% of the runoff generated by the probable maximum precipitation, PMP, storm event during operations and that the spillway design requires passing 75% of the “PMP” storm event upon closure. EBID also agrees that the 24-hr PMP is in the order of 26-inches in this location (EIS, p 2-19).

However, EBID recommends assessment of two separate watersheds²:

- 1) The upper watershed above the new mine facility (shown approximately in red in Figure 2)
- 2) The lower watershed at the TSF itself (shown approximately in blue in Figure 2)

The draft EIS does not present, to EBID’s knowledge, an estimate of the watershed area above the proposed operations. EBID estimates that the watershed area above the new plant facilities site (based on arroyos shown on Google Earth) is approximately 4.75 mi² as illustrated by the red line in Figure 2. Assuming 100% runoff from a PMP event, the total (un-attenuated) runoff volume is:

$$\left(4.75 \text{ mi}^2\right)(26 \text{ in})\left(\frac{640 \text{ acre}}{\text{mi}^2}\right)\left(\frac{\text{ft}}{12 \text{ in}}\right) = 6,580 \text{ acre} - \text{ft} .$$

Because the upper watershed is a compact shape with high slopes the peak flow rate from a PMP on the upper watershed is anticipated to be very high and could generated volumes of water close to the value shown above. It appears that the upper watershed has not been a consideration because an arroyo is located below the new plant facilities site and north of the proposed new TSF (see green line in Figure 2).

² The volume of water generated during a PMP event are obtained using Figure 2. The EIS, to our knowledge, does not present this information.

The topography available to EBID’s researchers indicates that normal runoff flows will be intersected by the arroyo (green line in Figure 2) and divert flows away from the TSF site. However, EBID is concerned future developments at the new plant facilities may fill the arroyo and allow high flows from the upper watershed generated by a PMP event to flood the new TSF jeopardizing its integrity. Copper laden sediments could, under this scenario, be transported to Caballo Dam under the PMP.

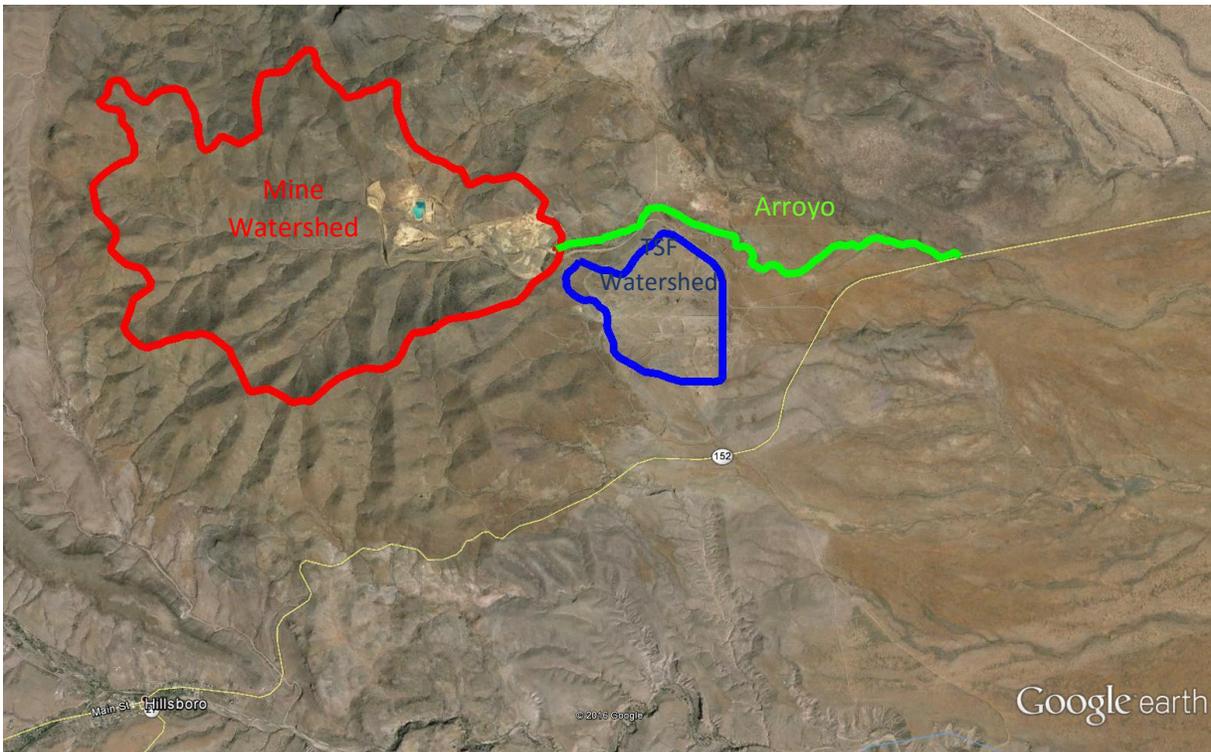


Figure 2. Approximate Watersheds and Arroyo in Mine Area

The area of the lower watershed (see blue line in Figure 2) is approximately 0.7 mi² located south of Gold Dust Road. The natural topography at the site has been modified by previous mining operations (Quintana Mine). The “watershed” for the new proposed TSF site is essentially the TSF site itself (assuming no external drainage area). The construction of a perimeter embankment that could contain the full PMP storm event does appear to be feasible, as indicated below.

Proposed Action and Alternatives section 2.1.3.4 indicates the tailing deposition is expected to rise at a rate “up to 80 feet per year in the initial 2 years of TSF operation (EIS p 2-18).” In order to contain the PMP event, the perimeter embankment must also rise at a rate equal to, or exceeding the tailing deposition. This will quickly make the TSF one of the largest earth filled embankment in the state of NM. The elevation of the perimeter embankment have to be increased continuously throughout the TSF operations to provide storage for the PMP storm event while maintaining the required freeboard. The storage requirement must also be constantly re-evaluated as the perimeter embankment rises. EBID is concerned that a failure to maintain the proper perimeter embankment elevation will place the safety of the dam at risk. Copper laden sediments could be transported to Caballo Dam under this scenario (see comments on offsite copper migration later in this report).

NMAC section 19.25.12.18, Emergency Action Plan provides the requirements for an Emergency Action Plan (EAP) required for the TSF. The EAP requires the generation of at least one inundation map below the dam site. Previous EBID experience with the OSE Dam Safety Bureau shows that the OSE may not be willing to accept simple 24-hr PMP values, but require the evaluation of inflow hydrographs generated using the following PMP storm event hyetographs:

- The 72-hr General Storm, center peaking
- The 72-hr General Storm, late peaking
- The 6-hr Local Storm, center peaking
- The 6-hr Local Storm, late peaking

The information provided in the draft EIS is inadequate to formulate a hydrograph resulting from a PMP storm event in the upper watershed. Substantially more information on watershed basin topography, soils and vegetation is required to generate a hydrograph for a PMP storm event. An inundation plan should also be presented in the EIS to clarify this potential catastrophic event. An evacuation plan must be prepared in consultation with the corresponding Emergency Management Agency in Sierra County using the inundation plan developed in this section of the application. The draft EIS fails to provide any of these logical requirements for OSE Dam Safety Office approval of the proposed operations.

The OSE has responsibility for ensuring the embankment is designed and constructed in accordance with the provisions of NMAC 19.25.12.11, but the BLM and NMCC should be familiar with these requirements and should have addressed them in the draft EIS.

Cumulative Impacts

Cumulative impacts must be addressed in the proposed EIS. This implies that an action on its own that might not appear significant is actually significant when analyzed in conjunction with the other components of the EIS. The EBID has reviewed extensively the draft EIS and found it to be lacking in required engineering and science data that are needed to perform a fair assessment of the proposed EIS. In addition, the draft EIS fails to address the cumulative impacts of certain aspects of the proposed mining operation. Furthermore, the lack of relevant data in the report has forced our team of scientists and engineers to make several assumptions in this draft EIS evaluation, which are presented elsewhere in this report, in order to establish adverse environmental impacts of the proposed mining operations.

The BLM is very explicit in establishing that any EIS prepared by this agency must comply with cumulative effects analyses. This agency provides guidance on how to ensure that a proposed EIS complies with these cumulative requirements (US Bureau of Land Management, 2010a). The proposed EIS discusses, in general terms, this cumulative impact analysis (Chapter 4, pp 4-1 to 4-15). Yet, this analysis is quite deficient in implementation of this concept to the actual proposal, as discussed below.

Air Quality: The air pollution modeling did not consider the impact of prior mining operations by Quintana Minerals (EIS, pp ES-1, 2-48, 3-3 to 3-10 and 4-1 to 4-15) on air quality provides another failure to compliance with NEPA's cumulative requirements as pointed out by the BLM, 2010a. We cannot determine the quality of modeling results because we are unable to establish, from the draft EIS or Appendix B, the magnitude of the area (i.e., airshed) used to model air pollutant concentrations (BLM, 2010b).

According to the draft EIS, both prevention of significant deterioration, PSD, Class I and II increment modeling was performed (for Alternative 1) and that no model results were above USEPA-proposed Significant Impact Levels (see comments immediately before) (draft EIS, p 3-9). The draft EIS report cites that if Alternative 2 were ultimately selected, an air permit revision, including an updating dispersion modeling analysis, would be required (draft EIS, p 3-9). Page 3-10 of the draft EIS mentions that “no mitigation measures for air resources beyond best management practices, BMPs, and regulatory requirements described in the Proposed Action have been identified for any alternative.” The EBID questions how the use of BMPs would prevent violations to the Clean Air Act for Alternative 2, since they have not been modeled, according to the report itself (draft EIS, p 3-9). The EBID also believes that predicted air contaminant values ignore present concentrations of contaminants (mainly particulate matter) which is another violation of the NEPA process in regards to the criterion that cumulative effects represent the total effect, including both direct and indirect effects on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, nonfederal, or private³) has taken the actions (BLM, 2010a). We remind the BLM of the natural air opacity created by natural particulate air pollutants and the cumulative effects of the former Quintana Mining operations on ambient air quality.

Impacts to Air Quality: The Greyback Arroyo is a sub-basin of Hydrologic Unit Code, HUC, 13030101 (USGS, 2016). Based on this BLM recommendation, it is the opinion of the EBID that a water quality model must include the whole Greyback Arroyo watershed, from its heading (at the mine site) to Caballo Dam since the impact of the mining activities on water quality of the Rio Grande could be quite severe.

The watersheds for the probable maximum precipitation, PMP dam design for flood control are not clearly defined in the EIS document, as described below (draft EIS pp 2-18, 2-19). After spending innumerable hours reading the EIS proposal, we have concluded that the PMP flood control dam would be limited to the TSF itself, and not to the watershed above the mining operations. This analysis is deficient regarding NEPA’s cumulative analysis (BLM, 2010a) in that:

- a. It fails to consider that prior mining operations by Quintana Mining and their corresponding measures to control its runoff are unaddressed in this EIS proposal.
- b. The watersheds for mining operations and for the TSF area are not assessed at a level that required permits could be attained from the Dam Safety Office of the OSE (see corresponding section below).
- c. The environmental impacts on water quality of the areas that are not included in the TSF watershed could be quite severe on the Greyback Creek as discussed below.

Impacts from Previous Operations: The proposed EIS mentions on pp ES-3, I-1, and 1-1 that the “Proposed land reclamation efforts during mine operations and following mine closure would result in significant improvement to an existing brownfield site.” A similar statement “Additionally, the Proposed Action would reuse existing infrastructure on an existing brownfield site” is mentioned on p 2-4. Yet, the proposed EIS fails to mention why there is a brownfield at the site (i.e., what activities during the Quintana Mining Operation caused hazardous waste contamination to soil, water or air). This proposed EIS also fails to mention the location of the brownfield, contaminants in the brownfield, and their

³ Quintana Mining, in this case.

containment approach. Further, no references are given in the proposed document to elucidate this mystery throughout the report.

The rest of the draft EIS fails to mention the existence of such brownfield at the site and the cumulative effect of the proposed EIS over the existing brownfield. The EBID reminds the BLM that the statutory cumulative effects **are the total effect, including both direct and indirect effects on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, nonfederal, or private) has taken the actions, and that cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects** (in this case the synergism that could potentially occur as a result of mining a brownfield area).

Equally important under NEPA, in the opinion of EBID, is the statement **that cumulative effects may last for many years beyond the life of the action that caused the effects** (BLM 2010a). In fact, the U.S. Bureau of Land Management, 2010b **encourages EIS development by putting “together the effects of past, present, reasonably foreseeable actions with the effects of the proposed action and describe the interaction among the combined effects.”** The EBID strongly believes that the proposed EIS fails to describe the interaction among past operations (Quintana Mining) and future plans. In fact, the report concentrates exclusively on the future aspects of the proposed mining operation and ignores the effects of past activities.

The EBID is also concerned that “the basic methods of copper production have remained unchanged for 65 years” with the exception of leaching-solvent extraction-electrowinning⁴ (U.S. Congress, Office of Technology Assessment, 1988). Thus, if Quintana Mining created a hazardous waste site (which is now considered a brownfield) what new methodology would be presented in the EIS to prevent the same outcome from occurring, to a greater extent, by implementation of the identical technologies?

Post-closure monitoring, care, and maintenance

The BLM proposes a 12-year period for post-closure monitoring, care and maintenance (EIS, p 2-59). EBID considers this period to be inadequate for post-closure operations. A period of at least 100 years would be more adequate for this facility than the proposed short term duration, particularly given that depletions of surface water resources in the neighboring area are expected for over 100 years as a consequence of NMCC’s proposed production well pumping.

Flood Control Dam Construction

EBID is concerned about the potential for piping failure of the perimeter embankment. The Proposed Action and Alternatives section on TSF Design states that (EIS, p 2-18):

“The tailing used to form the initial beaches would have a permeability coefficient of approximately 1×10^{-6} cm/sec after consolidation occurs, due to progressive loading.” But, this permeability may not apply to material used in the perimeter embankment as mentioned in the following EIS statement:

“The coarse material deposited at the periphery of the TSF would be used to construct embankment rises from the new starter embankment (EIS, p 2-18).”

⁴ It is important to mention that the merits (or demerits) of electrowinning are not questioned in this response report.

No information is provided about the permeability of the coarse material that will be used to construct the embankment itself or what methodology is used to establish the permeability of the beaches after consolidation occurs.

The TSF Design section on page 2-64 indicates that:

“The TSF would be constructed with a synthetic high density polyethylene, HDPE liner and drainage system to limit the opportunity for seepage to impact the groundwater, as required by NMED”

It is unclear if, or how the HDPE liner will extend up the perimeter embankments. Even if the HDPE liner extends up the perimeter embankment, the ability of the HDPE liner to maintain protection from piping is questionable. Interestingly, the Geomembrane Research Institute predicts that the half-life of covered HDPE geomembranes (formulated according to the current GRI-GM13 Specification) is estimated to be 200 years at 20°C (Koerner et al., 2011) to 712-years (Koerner and Hsuan, 2003). This timeframe, though long from a human life perspective, is short compared to the *ad infinitum* lifetime of the metal waste materials in the TSF.

Groundwater contamination by copper and other metals is likely to occur after HDPE geomembrane rupture because:

- a. The proposed flood control dam is not expected to behave as a dry dam (it is not expected to have a regular spillway that should empty the dam within the regulated OSE timeframe), and
- b. The liquid wastes within the dam will be driven by hydraulic head into the underlying aquifer.

The proposed EIS does not consider that the geomembrane will ever fail (EIS p 2-64), in spite of technical literature to the contrary (Koerner and Hsuan, 2003, Koerner et al., 2011, Peggs 2010).

Offsite Copper Migration

Once again, the EBID finds the draft EIS to be deficient in the lack of explanations on possible migration routes and environmental impact of these migration events. EBID has identified three potential migration routes for the copper in the TSF that can have considerable impact upon the waters of the Rio Grande. These waters are presently used for both irrigation (EBID, El Paso County Water Improvement District Number 1, EP1) and municipal drinking water use (City of El Paso’s two surface water treatment plants, LRGPPWA, which is under NMED review for construction):

1. Surface water migration into Caballo Dam
2. Groundwater contamination
3. Fugitive air emissions of heavy metals from mining operations.

This section of the EBID’s report and comments to the BLM are concentrated on migration route no. 1, which represents the route that is most likely to produce deleterious effects upon the water quality of the Rio Grande at Caballo Reservoir. It has been mentioned that the proposed EIS does not provide sufficient information to make these determinations, thus we have obtained surrogate information from best available literature sources, which we have referenced below.

According to the U.S. Congress, Office of Technology Assessment, 1988, the “deposits in the southwestern United States ... contain ... 0.4 to 0.8 percent copper ore.” For the purposes of these computations we have chosen an average value of 0.6% copper in the ore. Recovery of copper in the

TSF is approximately 67.1% according to Pitt and Wadsworth, 1980. Thus, approximately 32.9% of the copper is expected to remain, *ad infinitum*, in the TSF. This fact is confirmed by the lack of a principal spillway in the flood control dam, which could be used to periodically drain the accumulated sediments and concomitant copper out of the dam (EIS p 2-18 and 2-19). Yet, this drainage is likely to contaminate the Rio Grande beyond the 1.3 mg/L copper indicated in the primary drinking water standards listed in the safe drinking water act, SDWA, as mentioned and discussed later in this report.

Assuming that Alternative 2 is used (30,000 tpd for 12 years) EBID estimates that the mine would produce close to 500,000 metric tons (i.e., 500,000 tonnes = 1.1 billion pounds) of copper. This figure is quite similar to the 1.0 billion pounds reported by the Albuquerque Journal, 2012. This newspaper article also provides a clue to the rationale for the mining operation, as the mining operation is also expected to recover 30 million pounds of molybdenum⁵, 430,000 ounces of gold and 9 million ounces of silver. Precious and semiprecious metal recovery represents the key to the economic feasibility of the mining operation during these times when the price of copper is depressed. Current prices for these metals, excluding copper, would equal \$140M for gold, \$520M for silver, and \$220M for Molybdenum Dioxide. Total revenues for sale of these metals would be approximately equal to \$1B in 2016 dollars.

The unrecovered copper in the TSF would be approximately 235,000 tonnes (or 2.35×10^{14} mg Cu). This value may be on the low side as we anticipate that the recovery of this metal is not the economic driving force behind this mining project. In fact, the price of this metal hovered around \$4.00/lb at the time the Albuquerque Journal article was published in 2012. Today, the price of this metal is close to half of the previously reported value (\$2.08/lb).

The USEPA has determined that copper is toxic in drinking waters and has established a primary standard of 1.3 mg/L (action level MCLG = 1.3 mg/L⁶) for this contaminant in potable waters (USEPA, 1995). This federal agency, reports that:

“Some people who drink water containing copper in excess of the action level may, with short term exposure, experience gastrointestinal distress, and with long-term exposure may experience liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level (USEPA, 2016).”

Fipps, 2003, discusses toxicity of various ions to irrigated crops. Impact depends on exposure time and type of crop. This reference recommends that copper in irrigation waters should not exceed 0.2 mg/L for long-term irrigation and 5.0 mg/L for short-term applications. These limits are consistent with toxicity determinations for this metal in potable (i.e., drinking) water. Therefore, we use the 1.3 mg/L for drinking and irrigation waters in the following computations.

The maximum volume of water at Caballo is approximately equal to 133,428 Ac-ft for normal conservation storage operation (1.65×10^{11} liters) as reported by the US Bureau of Reclamation, 2016. Using the MCLG above, the volume of water in Caballo Dam and the estimated copper levels in the TSF remaining in post-closure, EBID computes that less than 0.1% of the TSF materials would have to

⁵ The EBID assumes that this metal is produced as MO

⁶ When the concentration of copper reaches the action level in 10% or more of the samples, the water treatment system is required to carry out the water treatment requirements of the lead and copper rule. These treatment requirements are enforceable.

migrate to Caballo Dam (assuming perfect mixing conditions, i.e., assuming perfect mix in a completely full reservoir) in order to render the water unsafe for both human consumption and for irrigation as the average concentration of copper in the water would exceed the action level for this contaminant. Greater concentrations could be attained on an intermittent basis should one assume the more realistic case of imperfect mixing conditions and partial fill volume of water in the lake.

Considering that the non-extractable copper would remain in the TSF *ad infinitum* (as pointed out before) and that the post-closure period is limited to 12-years, one would expect that catastrophic conditions (leading to releases of 0.1% of the copper in the TSF) could be easily met even during regular rainstorm events as a result of sheet flow carryover over the flood control dam. The concentration of this metal in Caballo Reservoir would be much greater during and immediately after PMP flow conditions and rainfalls, and after major earthquake events that could lead to impoundment failure.

Wildlife

The proposed EIS reports on p 3-124 that “Forty-six species of birds were identified on the assessment transects during the breeding season, and 8 additional species were encountered during other work and a winter bird survey (Parametrix 2011). The number of bird species recorded in the Parametrix study was 39 in the Arroyo habitat, 15 in the creosote rolling uplands, 38 in the grass mountain, 4 in the pit lake habitat, and 21 in the disturbed area/waste rock pit habitat (Parametrix 2011). Thirty-four species were recorded during the mill site surveys (THEMAC 2015⁷).” The same report discusses that: “Seven cactus wren bird nest were identified within the mine area during the 2010 and 2011 biological surveys. During an August 2011 survey, an active raptor nest was observed in the windmill at well site MW-2, and there are additional structures on the project site that provide habitat for nesting birds (EIS p 3-124).”

It is noted above that only 7 cactus wren nests were observed but the reader is not told whether the nests are active/inactive. It is also unclear whether the surveys were done to identify species and not to observe or locate possible active nest sites. Also, the report from Parametrix 2011 is now 5+ years old and work has not started on the site. The logical question is: are there any provisions to collect additional data in the affected area? Breeding and nesting patterns are not static but dynamic due to climatic changes (mainly moisture) in the area.

The proposed EIS states on p 3-138: “Losses of mammals, birds, or wildlife in general are not expected to be significant as a result of the project. Proposed project activities may cause minor disruptions to foraging, migratory movement, or breeding behavior of some species. A few animals may be killed during these activities because they are driven out of their foraging territories and are made more susceptible to predation, but these losses will not be expected to impact the species as a whole. There is currently a vast amount of undeveloped land in nearby areas where wildlife can temporarily relocate for cover and foraging.” EBID is concerned by the implications of the statement that “there exists a vast amount of undeveloped nearby land” which implies that the land in the mining operation area is not suitable for either foraging or breeding for the species displaced by the construction or operation at the mine. If surrounding areas are indeed useful for supporting displaced wildlife they should already have

⁷ This publication is not listed on the EIS list of references, so we are forced to infer that the information provided in the EIS report is correct at this citation and multiple other locations throughout the document (this missing reference is cited in at least eight different locations through the EIS on pp 2-28, 2-69, 2-85, 3 times on page 3-123, 2 times on page 3-124).

similar, or identical species occupying the territory. If species are displaced into this an already occupied territory, both breeding and foraging competition could result in population and species reduction.

The EBID does not believe that this draft EIS takes into consideration the cumulative effect of the displacement of both birds and mammals. The draft EIS mentions that the changes are minor and temporary and yet the EIS does not allow for what may happen with multi-generational relocation of these birds and mammals to areas that are presently occupied by similar or identical species as the ones being displaced. By not doing a better job of identifying breeding and nesting locations on their surveys, the EIS has not acquired a good baseline upon which the long lasting effects can be predicted.

The time frame, 10-16 years of mine operation, plus construction and an unspecified time for reclamation of the land is not temporary or short term for most bird species. Further, the location downstream of Percha and Caballo State Parks, both designated as Audubon Important Bird Areas, could also be adversely affected by the displacement of the birds in the mining area. The Caballo Christmas Bird Count (Audubon, 2014), done for over 30 years, shows this area to have a higher number of species at this time of year than most everywhere else in the state. This area along with the Animas Creek corridor are unique to Southern NM and provide both a biological and economic resource to the area. Any disturbance from the mine operation would have long range effect, lasting far longer than the mine lifespan.

The reclamation plan does not describe in enough detail how the disturbed landscape will be converted back to suitable habitat (EIS, p 2-36 to 2-42) and identical to the one that was originally disturbed. Consequently, no one can predict what will the long-term impact to wildlife will be. If their surveys were correct on the previous reclaimed areas, then the EIS shows that the disturbed areas have created a poor habitat, which is not suitable for wildlife development. Why, therefore, continue to have the same negative results? These reasons show a lack of overall planning for successful return of normal species to the reclaimed area.

Conclusions and Recommendations

1. NMCC does not have sufficient rights to water to proceed with the project, therefore the project cannot proceed and the BLM's draft EIS as released is premature, most especially since the only defensible action at this time is the No Action alternative.
2. The draft EIS prepared by the BLM contains much information but it is deficient in cross referencing relevant information to the corresponding sections. The maps and figures presented in critical sections of the EIS are deficient in technical information such as slopes, vegetative cover, types of soil, contour lines, complete mining operation map, erosivity of the produced materials and undisturbed soils, watershed evaluation, etc. EBID strongly recommends that these data be added or cross referenced to the corresponding sections in the EIS document.
3. The proposed flood control dam is not clearly discussed in the EIS so EBID must assume that the EIS refers to a perimeter dam around the TSF facilities. Regardless, the BLM draft EIS presents an oversimplified panorama on flood control dam approval by the OSE Dam Safety Office. EBID speculates that engineering either dam may take several years and would require multiple resources that are not discussed in the draft EIS.

- a. EBID cannot find in the EIS where a larger dam, capable of controlling PMP flows for the whole mine watershed could be placed. Construction of such dam would be very onerous and complex but would result in more adequate flood control and would limit sediment transport downstream to Caballo Dam.
- b. Considering costs, EBID anticipates that the draft EIS refers to the much smaller flood control dam to be built immediately below the TSF. EBID questions the wisdom of this facility because:
 - The uncontrolled flood waters from the large watershed may erode the toe of the TSF, thus carrying contaminated water to Caballo Dam.
 - It is not clear from the EIS where this flood control dam would be located. We are concerned about erosion of the TSF slopes should it be designed to capture the waters from the TSF cap.
 - EBID has concerns, also, regarding the location of the emergency spillway and the nature of the waters that it may carry to Caballo Dam.
4. EBID believes that a 12-year post-closure period is insufficient to properly maintain the remaining facilities. EBID proposes a period of at least 100 years for adequate post-closure maintenance, care and monitoring.
5. EBID opposes construction of a flood control dam using TSF materials or other non-cohesive and non-impervious rock or sandy materials as they are likely to breach (most likely by piping) during or after the post-closure period. Use of a liner, as proposed in the draft EIS, should be effective for the first few years after building the dam but considering that elastomeric materials have a lifetime, this engineering approach may lead to failure after the liner has worn out.
6. EBID expresses concerns regarding the durability of the HDPE liner proposed for the flood control dam. This material has proven to have limited life, which in essence is much shorter than the infinite life of the TSF metals. Rupture of this liner could result in irreparable damage to underlying groundwater and surface waters, including the waters from Caballo Reservoir and lower portions of the Rio Grande.
7. EBID anticipates that mining activities would result in contamination of Caballo Reservoir, rendering the waters unsuitable for human consumption and crop irrigation, even after relatively minor precipitation events. Catastrophic collapse of the flood control dam would have much greater impact upon the water quality at the reservoir. Thus, EBID opposes approval of the EIS, which in EBID's opinion has failed to clearly demonstrate the potential impact of the proposed mining activities upon the waters of the Rio Grande.
8. EBID has serious reservations regarding the air pollution modeling used in the EIS. EBID also believes that this draft EIS does not take into consideration the cumulative effects of prior mining operations on air pollutant modeling, hydraulics, hydrology, hazardous pollutants, water quality in HUC 13030101 and lower watersheds and wildlife. EBID believes that the lack of cumulative effects assessment in the proposed EIS makes it non-compliant with the mandates and intent of NEPA. Therefore, EBID strongly opposes approval of this EIS document.

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