



Fernando Martinez, Director  
New Mexico Energy, Minerals  
and Natural Resources Department  
Mining and Minerals Division  
Wendell Chino Building, Third Floor  
1220 South St. Francis Drive  
Santa Fe, NM 87505

April 7, 2017

RE: Permit Application No. SI027RN, Copper Flat Copper Mine

Dear Director Martinez:

On behalf of Turner Ranch Properties, L.P., the New Mexico Environmental Law Center (“NMELC”) is requesting that the New Mexico Mining and Minerals Division (“MMD”) rescind the Mining Act Reclamation Program’s January 8, 2011 determination that the Copper Flat Sampling and Analysis Plan (“SAP”) is technically complete for the following two reasons.

First, the New Mexico Mining Act (“Act”) and its implementing regulations require applicants for new mines to submit a sampling and analysis plan (“plan”) identifying data to be collected and the methods of collection. Section 19.10.6.602.D(12) NMAC. The plan must identify what wildlife information for the permit area and the affected area<sup>1</sup> will be collected and how, including “a list of species potentially occurring on the permit or affected area and any additional species potentially impacted by the mining operations.” Section 19.10.6.602.D(13)(d)(ii) NMAC.<sup>2</sup>

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<sup>1</sup> “Affected area” means the area outside of the permit area where the land surface, surface water, ground water and air resources are impacted by mining operations within the permit area. Section 69-36-3.A, NMSA.

<sup>2</sup> See also, MMD’s “Guidance Document for Part 6 New Mining Operation Permitting Under the New Mexico Mining Act,” pages 2-10 (August 2010).

Second, the SAP fails to include in its wildlife data collection fish species in general, and two particular species of fish currently undergoing a 12-month finding by the United States Fish and Wildlife Service (“USFWS”) for listing under the Endangered Species Act: Rio Grande Chub and Rio Grande Sucker. SAP, page 5-4 (September 2010). Therefore, the SAP violates the Act and its implementing regulations and the technical completeness determination must be rescinded.

**I. The Act and Implementing Regulations**

The sampling and analysis plan requirement, which was formulated by the New Mexico Mining Commission (“Mining Commission”) when the Act’s regulations were promulgated, underlines the importance of baseline data collection for new mine permitting. It represents a concern by the Mining Commission that baseline data be collected completely and correctly. Additionally, the reason for the sampling and analysis plan requirement is that an applicant should have certainty as to what baseline data need to be collected and how. This requirement also helps to “ensure protection of human health and safety, the environment, wildlife and domestic animals.” Section 69-36-7.H(2) NMSA.

Furthermore, a key provision of the Act regarding new mines is its requirement that the Director of MMD find “that the permit area will achieve a self-sustaining ecosystem appropriate for the life zone of the surrounding areas following closure unless conflicting with the approved post-mining land use.” Section 69-36-7.H(4) NMSA. Given that the Act does not define the phrase “self-sustaining ecosystem appropriate for the life zone of the surrounding areas,” the Act’s requirement that applicants submit “pre-mining baseline data” as part of new mine applications takes on a very important role in this permitting scheme. Only by thoroughly

understanding the pre-mining condition on and off the permit area can an operator claim to meet this standard.<sup>1</sup>

## **II. Background of the SAP and Subsequent Baseline Data Collection**

The New Mexico Copper Corporation (“NMCC”) submitted its SAP to MMD on September 2010. MMD reviewed the SAP and supporting information, and distributed it to cooperating state agencies and the United States Bureau of Land Management, pursuant to Section 19.10.6.602.D(12)(b) NMAC. Comments submitted by the New Mexico Department of Game & Fish (“NMDGF”) are of particular significance in this matter.

NMDGF expressly advised MMD that “the applicant should monitor and describe the characteristics of riparian vegetation and amphibian, **fish** and invertebrate communities, with special attention to the potential occurrence of special status species.” NMDGF “Copper Flat Sampling and Analysis Plan, Permit SI027RN; NMDGF Project No. 13803,” page 3 (October 29, 2010) (emphasis added). NMDGF attached to its comments a list of “New Mexico Wildlife of Concern,” which included Rio Grande Cutthroat Trout, Gila Trout, Rio Grande Chub, Headwater Chub, and White Sands Pupfish. *Id.*

NMDGF also advised MMD that, “The methods proposed for wildlife baseline monitoring are appropriate, **but insufficient to describe the mine site fauna**<sup>2</sup>,” and referenced its “Baseline Wildlife Study Guideline” as detailed recommendations for the applicant. *Id.*

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<sup>1</sup> “Baseline studies can establish pre-disturbance conditions or an alternate standard against which to evaluate the effects of project activities, identify mitigation measures for construction and operational activities, or serve to establish measurable goals and objectives (desired conditions) for reclamation and/or restoration efforts.” NMDGF, “Baseline Wildlife Study Guideline,” page 1 (June 2010).

<sup>2</sup> “Fauna” means animal life; *especially*: the animals characteristic of a region, period, or special environment. <https://www.merriam-webster.com/dictionary/fauna> (last accessed on March 23, 2017).

(emphasis added). NMDGF's "Baseline Wildlife Study Guideline" is to be used in its entirety for purposes of the Act's new mine permit applications. NMDGF, "Baseline Wildlife Study Guideline," page 1 (June 2010). Special attention is to be given to documenting the presence or potential occurrence of state and federally listed species, candidate species and sensitive species. *Id.* at page 2. Additionally, seasonal data collection is to include data on fishes. *Id.* at page 4.

Finally, new mine applicants are to "Conduct surveys to document the status of fish species for all waters capable of supporting fish. Electro-shocking is appropriate for surveys (contingent upon approval by NMDGF), but this methodology should be supplemented with other methods such as seines, dip and gill nets, depending on water chemistry and other habitat characteristics." *Id.* at page 6.

The SAP was determined to be technically complete on January 18, 2011 by the Mining Act Reclamation Program. New Mexico Energy, Minerals and Natural Resources Department, "Review and Comments on Sampling and Analysis Plan, Copper Flat Mine, New Mexico Copper Corporation, Permit No. SI027RN" (January 18, 2011). However, the approved SAP failed to include documentation of fish in general and of Rio Grande Chub and Rio Grande Sucker, two candidate species, in particular. The plan also failed to include data on fish in its seasonal data collection and techniques for documenting fish in the mine area and affected area.

The plan, therefore, violates Section 69-36-7.H(2) NMSA, Sections 19.10.6.602.D(12) and (13) NMAC, and the NMDGF "Baseline Wildlife Study Guideline." These violations have not been remedied through NMCC's "Baseline Data Characterization Report" submitted to MMD in July 2012, NMCC's "Baseline Data Report Addendum" submitted to MMD in July 2015, or in NMCC's "Supplemental Biological Workplan for Millsite Claims" submitted to MMD in February 2016.

**III. MMD Should Rescind Its Technical Completeness Determination for the SAP and Require NMCC to Conduct Fish Surveys for the Mine's Impact Area.**

The SAP's failure to include documentation of fish in the mine area and affected areas is not only a violation of Section 69-36-7.H(2) NMSA, Sections 19.10.6.602.D(12) and (13) NMAC, and the NMDGF "Baseline Wildlife Study Guideline," it is also arbitrary and capricious for two reasons. The first reason is that MMD required the previous applicant for a new mining permit for the Copper Flat Mine, Alta Gold, to "expand the wildlife baseline data collection to include aquatic species such as fish, amphibians and macroinvertebrates for Las Animas Creek and Warm Springs Canyon such as that provided for Percha Creek for a period of 12-months." New Mexico Energy, Minerals and Natural Resources Department, "Request for Information, Copper Flat Mine, Permit # SI004RN, Sierra County, New Mexico," page 6 (February 11, 1998). *See* attached Exhibit A.

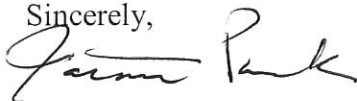
The second reason is that the USFWS recently requested the Bureau of Land Management to provide an assessment of the potential effects of the mine on Rio Grande Chub and Rio Grande Sucker, citing its concern with impacts "in the Las Animas and Percha Creek drainages where there are important fish and wildlife resources." USFWS Memorandum, "Endangered Species Act Section 7 Consultation on the Proposed Copper Flat Mine Project" (July 6, 2016). *See* attached Exhibit B.

Therefore, NMELC is requesting that MMD rescind the Mining Act Reclamation Project's technical completeness determination of the SAP and require NMCC to include in a revised sampling and analysis plan documentation of fish, with particular attention given to Rio Grande Chub and Rio Grande Sucker. If MMD determines that it will not rescind the technical completeness determination, then NMELC requests, in the alternative, that MMD still require

additional sampling of fish, with particular attention given to Rio Grande Chub and Rio Grande Sucker, in the mine's permit area and affected area.

Finally, NMELC is requesting pursuant to Section 19.10.6.602.D(14) NMAC that MMD contract with an independent, third-party qualified expert for the following actions: 1) recommend to the Director additional baseline data that may be necessary in the review of the proposed mining activity; 2) recommend to the Director methodology guidelines for the collection of baseline data; 3) review and comment on the permit application; and 4) prepare an environmental evaluation, analysis and assessment of the permit application which complies with Section 19.10.6.605 NMAC.<sup>3</sup> MMD contracted with an independent, third party expert to complete the above identified tasks, as well as to review and comment to the Director on the adequacy of baseline data prior to submission of Alta Gold's permit application for the Copper Flat Mine. MMD should follow this process for Permit No. SI027RN, Copper Flat Mine.

Sincerely,



Jaimie Park  
Staff Attorney

cc:

Bill Brancard, General Counsel of the New Mexico Energy, Minerals and Natural Resources Department

Gabriel Wade, Attorney for EMNRD Mining and Minerals Division

Holland Shepherd, Program Manager of the Mining Act Reclamation Program

David (DJ) Ennis, Reclamation Specialist with the Mining Act Reclamation Program and Project Lead for the Proposed Copper Flat Copper Mine Project

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<sup>3</sup> See also, MMD's "Guidance Document for Part 6 New Mining Operation Permitting Under the New Mexico Mining Act," page 9 (August 2010).



NEW MEXICO ENERGY, MINERALS  
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February 11, 1998

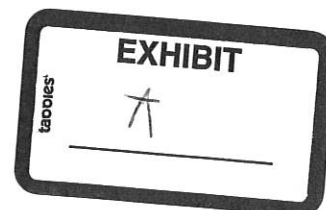
Mr. James Goff, Vice President  
Alta Gold Company  
c/o Larry Ausherman  
Modrall, Sperling, Roehl, Harris & Sisk  
PO Box 2168  
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**RE: REQUEST FOR INFORMATION, COPPER FLAT MINE, PERMIT # SI004RN,  
SIERRA COUNTY, NEW MEXICO**

Dear Jim:

The Mining and Minerals Division (MMD) has received the final report, *Environmental Evaluation Report - Copper Flat Project*, prepared by Daniel B. Stephens and Associates, Inc. (DBS) regarding the permit application for the proposed Copper Flat mine. This report contains comments on the adequacy of the application, and recommendations for future actions to improve it. In addition, MMD conducted a public hearing in February 1997, received post-hearing comments and extensive public input, has solicited comments from other agencies through an environmental evaluation team, and conducted further internal review of all Alta Gold Co. (Alta) Copper Flat materials.

Based on this information and analyses, MMD requests Alta provide the following additional information for the Copper Flat permit application. Alta will only need to address comments that are in this letter from MMD to Alta. Attached are comments submitted by the NM Environment Department (NMED) and the NM Department of Game and Fish (NMGF) for your information only. In addition, MMD believes many issues of concern will be addressed through NMED Discharge Plan-0001 renewal. To avoid duplication, these issues will not be repeated here. MMD suggests that Alta incorporate the approved DP-0001 into the Mining Act permit application as partial fulfillment of Mining Act requirements. Alta should provide MMD with a proposal for timeframes for submitting the requested information. Please note that Section 69-36-12. A. of the NM Mining Act requires one year of baseline data collection prior to permit issuance. While MMD has attempted to address all technical issues identified to date, if other concerns are identified through additional review or outside information, MMD will notify Alta.



Rather than repeat all reasons and justifications for individual requests contained in the DBS report or attached documents, certain information requests will be followed by a reference to such reasoning.

#### **A. Predicted Impacts to Surface Water and Ground Water Supply**

1. MMD agrees with DBS and other assessments regarding shortcomings and conclusions of the numerical ground water flow model ABCFEM for determining potential impacts to surface and ground water, and also agrees that revising ABCFEM at this time would not be productive (see NMED p.5, and DBS 7.1.2.2). Impacts to Las Animas Creek, and possibly to Percha Creek and Warm Springs North, are reasonably foreseeable given the existing data. To address this issue, Alta should follow the DBS recommendation in Section 7.1.2.1 that conservative modeling simulations be performed to assess the potential cone of depression from pit dewatering and the rate of pit refilling once operations cease.
2. Because of similar uncertainties regarding ABCFEM conclusions addressing drawdown from the production well field, Alta should follow DBS recommendations in Sec. 7.1.2.2.
3. MMD also agrees with DBS, NMED and NMGF that the 1994 and 1997 pumping tests and their analyses do not provide reasonable certainty that production well pumping will not impact the hydrologic balance and riparian ecosystem of Las Animas Creek (DBS Sec. 2.7). In addition, this hydrologic system has not been sufficiently characterized to adequately determine potential impacts. Although in-depth characterization of this system will be useful for future modeling efforts, this characterization should primarily serve to design adequate early warning systems to detect impacts and a strong contingency plan to mitigate potential impacts. Characterization efforts should initially focus on the Las Animas Creek system closest to the pumping wells for design of an early warning system. Alta should complete a transect of boreholes across the valley at this location, and possibly other transects or individual wells, to characterize the cross-sectional geometry and characterize the hydraulic parameters of the alluvial system, including the clay layer that supposedly separates the two aquifers. Some of the boreholes should be completed as ground water monitoring wells, preferably nested with completions in each aquifer, and included in the site Monitoring Plan. Alta should submit a work plan for agency approval for further characterization of the Las Animas Creek system and installation of an adequate early warning system to detect potential impacts. In addition, the last three bullets in DBS Sec. 7.1.2.3 should be followed or alternatives proposed to adequately address these issues.
4. MMD agrees with DBS and NMED that numerical modeling will be appropriate in



the future once significant additional hydrologic data has been collected. A commitment for Alta to perform additional modeling or to refine the ABCFEM model after approximately 5 years of additional data collection should be in place (DBS Sec. 7.1.2.4). A work plan should be submitted for agency approval prior to initiating this modeling effort.

## **B. Reclamation and Closure Plan**

While DP-0001 will require that Alta submit a detailed cover design testing plan and revegetation test plot program prior to commencement of operations, MMD will require more detailed information regarding reclamation, soils and revegetation prior to permit approval.

5. DBS Sec. 5.3 (Compaction, Thin Covers and Groundwater Protection) points out that Alta proposes to compact the upper layer of waste materials prior to topsoil application to reduce infiltration of water into the wastes. The compaction of this material will inhibit root penetration and revegetation of these areas. Alta must commit to not compacting the upper layer of these materials if they are to be used for rooting material. If it is determined that these materials will support plant growth, then ripping the top two feet would be preferable to compaction.
6. DBS Sec. 5.2.1 (Waste Rock) indicates that Johnson's 1996 supplemental report to the permit application lacks adequate assessment of the potential acid forming and toxic characteristics of the waste rock to be used as rooting medium. It does not address the issue of selenium uptake by plants thereby making it available for animal consumption. Alta will need to develop a soil sampling program for MMD approval that identifies the parameters lacking identified in DBS Sec. 5.2.1. (See #14 below)
7. DP-0001 identifies a minimum requirement of a 12-inch layer of borrow material from the tailings area to be placed across most of the site at reclamation to be used as topsoil. Alta will need to identify other sources for additional material if it is determined through additional testing that the underlying tailings or waste materials do not support plant growth.
8. The post-mine land uses (PMLUs) identified by Alta are too generic and need to be made specific to various areas of the site. Certain PMLUs may be inappropriate based on the potential availability of toxic metals to plants and animals after reclamation. Alta should identify a separate PMLU for each area of the mine, taking into account potential problems at each site. (DBS Sec. 5.2.4)
9. DBS Sec. 6.3 (Vegetation) questions the use of the Parker Three Step method in that it only provides a vegetation frequency measurement and does not provide

an adequate measurement of cover. Section 603.G of the Mining Act Rules (Rules, or Rule) requires that plant standards address cover, density, production and diversity. Rule 602.D.13 requires that baseline data include cover, density and productivity of individual plant communities in the area. Cover data was not addressed in Alta's *Vegetation Characteristics of the Alta Gold Mining Site Hillsboro, NM.* study, although it is possible that this measure may still be derived from the data collected. Though the report indicates that plant density was evaluated as part of this study, it was not identified and summarized in the report. The Rules indicate that the measurement for density be associated with woody plants found in the area. Woody plant density was not evaluated in this report. DBS also identified these deficiencies. (See # 13 below)

10. DBS Sec. 6.3.1 (Statistical Adequacy) indicates that Alta did not provide a statistical evaluation of the data collected in the Copper Flat Monitoring Plan, and that the current vegetation monitoring plan transects were located in a non-random manner. Alta must provide MMD with a procedure to verify sampling adequacy regarding current baseline vegetation information and future evaluation of reclaimed plant communities. The sampling locations should be located randomly within a given plant community in order to prove statistically that sampling adequacy has been met. The standards required by Section 603.G of the Rules cannot be verified without such an approach.
11. DBS Sec. 6.3.5 (Plant Community) indicates Alta should provide a more specific map of the existing vegetation communities at the site, using an appropriate scale. The reference areas identified by Alta should then be located in specific plant communities. Also, Alta should provide a detailed site specific description of the edaphic and physiographic character of the plant reference areas. Alta should ensure that the reference areas are representative of a specific type of community, are stratified properly, and that there is no overlap of transects onto more than one plant community.
12. DBS Sec. 6.3.6 (Diversity of Life Forms) indicates that the Copper Flat monitoring plan lacks a provision for measuring and identifying a standard for diversity. Section 603.G of the Rules requires that diversity of life forms be considered when reclaiming an area. MMD also requested this of Alta in a letter dated October 4, 1996. Alta needs to establish a methodology for the measurement of diversity and establish a standard for final reclamation. Alta has indicated that monitoring of revegetation reference areas will provide the necessary diversity information. Exactly how this is to be accomplished needs to be established by Alta prior to permit approval. DBS also identified this deficiency.
13. MMD requested on October 4, 1996 that Alta validate their sampling program

statistically by providing us with formulas for identifying that their sampling methodology is statistically verifiable and representative of the plant community under investigation. Alta must now provide this information.

This and certain items identified above can be accomplished by providing MMD with a vegetation monitoring plan that includes: cover, density of woody plants, productivity and diversity. These parameters must be supported by a sample adequacy program. Reference area plots must be randomly located such that plant community stratification is addressed. Alta's current reference area monitoring program can probably be modified to address these requirements. This program should be pre-approved by MMD.

14. The permit application provides information on soils analyses derived from the alluvial material associated with the tailings pond area and samples taken from the existing wastes dumps. Four samples were taken of the alluvial materials, one sample from the tailings materials, and two samples from the waste dumps.

Alta did not describe in the permit application how this sampling strategy was developed in terms of specific sample location, sampling approach, extent of area represented, and the testing methodology used to evaluate the samples. These samples may not be representative of the materials they are designed to characterize. Section 603.E of the Rules requires that samples shall be taken to analyze vegetation suitability and take into account sample spacing and interval necessary to best represent the area and material under investigation (DBS 5.2).

For materials to be used for topsoil or rooting medium, Alta must establish a more rigorous soil sampling methodology which includes: the mapping on a grid system of additional sampling locations; a sampling frequency that allows for adequate representation of the material to be used as topdressing or rooting medium; identification of soil types under investigation (a soil mapping unit would be too general a category for this level of investigation); a comprehensive evaluation of topdressing material which takes into account the physical and chemical parameters likely to support or inhibit plant growth on a specific material; identification of different sampling depths; and identification of testing methodology used to evaluate a given parameter. Alta should submit a plan for MMD approval.

15. Until Alta's test plot program has identified acceptable standards for revegetation success, the standards discussed in Section 603.G of the Rules should be based on the values determined through the reference area program.
16. Regarding the Arizona sycamores in Las Animas Creek, monitoring by Alta should include: establishing a control area; determining the depth of the phreatic

water surface and surface water sources; establishing a control area for infra-red photography comparison; and, providing a schedule for the frequency of monitoring. (DBS Sec. 6.4) In addition, Alta should provide a mitigation plan including measures to be taken if ground water monitoring shows that sycamores or other features of this riparian area are likely to be impacted as a result of mining operations.

17. Rule 603.A requires most appropriate technology or best management practices be used to control erosion on areas of concern, such as during and after reclamation of waste dumps and tailings impoundments. Alta should provide MMD with information describing how this Rule will be met on these facilities.

### C. Wildlife

18. MMD agrees with DBS, NMGF and NMED that additional information must be provided in the wildlife monitoring plan to adequately address its potential effectiveness. The intent of the plan is to establish additional baseline data in order to be able to monitor changes in these populations. Ideally, any impacts attributed to mine operations could be mitigated. Rule 602.D.13.d.(3) states in part: "The quality and quantity of the data must be suitable for measuring the success of reclamation and the impacts of the mining operation."

Alta needs to expand the wildlife baseline data collection to include aquatic species such as fish, amphibians and macroinvertebrates for Las Animas Creek and Warm Springs Canyon such as that provided for Percha Creek for a period of 12-months. The monitoring plan should include appropriate monitoring of select species indicative of habitat health. Alta should propose a plan for MMD approval. Alta should consult the NMGF attachment for suggestions on this plan.

19. Post-closure wildlife use of the final pit lake should be monitored. If water quality standards for wildlife are exceeded, the pit lake should be fenced and netted.
20. Rule 603.2 requires that measures be taken to minimize impacts on wildlife, including restricting wildlife access to toxic chemicals or otherwise harmful materials. Alta should provide information describing the measures that will be taken to protect wildlife from facilities that contain toxic solutions or otherwise harmful materials.

### D. Additional Comments on Monitoring Plans

21. MMD concurs with DBS and NMED that ground water monitoring locations proposed for outside the mine permit area are currently inadequate to

appropriately monitor potential impacts and regional ground water level fluctuations. In particular, additional wells are needed for the Las Animas Creek area in the vicinity of the pumping wells and to monitor drawdown associated with pumping the pit and the proposed pit lake. In the Monitoring Plan it is stated that "...as many as 25 other wells from Hillsboro to Caballo Reservoir will be monitored prior to, during and following operations.". It is not possible to evaluate the adequacy of the Monitoring Plan without specifics regarding these monitoring locations. Alta needs to provide details regarding the monitoring locations, well completion details, and evidence that access to these locations will be granted by land owners. Alta should also specify the specific purpose of each monitoring location (i.e. monitoring the effects of pit or production well pumping).

22. As indicated by DBS, Alta's proposal to measure post-closure water levels until water levels "approach stability" must be clarified. The time frame for post-closure monitoring should be based on the specific area of interest and minimum time frames for monitoring should be established. For instance, steady state water level conditions associated with the proposed pit lake would not be reached for many decades after mining operations cease and the post-closure monitoring period should reflect this. Alta needs to define the term "approach stability" within the context of individual areas of the mine.
23. MMD agrees with NMED and DBS recommendations that Alta perform continuous water level monitoring at Wells MW-5, MW-11, and MW-9 after pumping begins to assist in early detection of potential impacts. Well MW-11 should also be monitored continuously before pumping begins. Criteria for continuous monitoring should be proposed by Alta. Continuous monitoring should continue until established criteria for cessation of continuous monitoring are met.
24. MMD agrees with NMED and DBS that the surface water monitoring plan lacks sufficient detail regarding how sampling will occur and how flow volumes will be determined from springs and surface water drainages. Alta should submit sampling and flow measurement protocols for all sampling locations. Weirs or automated stream gages at several Las Animas Creek locations above and below the production well field should be included.
25. MMD also agrees that the Monitoring Plan fails to address actions to be taken if quantifiable impacts to springs or surface water flows occur that can be attributed to mining operations. Sufficient uncertainty exists to require contingency plans for potential impacts. Potential contingencies could include cessation of pumping from production wells, alternative water supplies, pit backfilling, additional water conservation measures, and delivery of supplemental water to

impacted areas during periods of recovery. A contingency plan is necessary for each potentially impacted area including Las Animas Creek, Percha Creek, and springs in the mine vicinity.

26. It is stated in the Monitoring Plan that the New Mexico Water Quality Control Commission "Standards for Interstate and Intrastate Streams" do not stipulate specific surface water standards for Las Animas Creek, Greyback Arroyo, or Percha Creek. Please note that standards for the designated uses of fish culture, irrigation, livestock watering, wildlife habitat, marginal coldwater fishery, secondary contact, and warmwater fishery apply to perennial reaches of these drainages in accordance with Section 2103 of the *Standards for Interstate and Intrastate Streams*. Section 2103 and 3101 of these regulations should be referred to for the numerical standards that apply to these designated uses. The Monitoring Plan should be amended to reflect these requirements.

#### E. Additional Baseline Data

27. 602.D.13.a. requires Alta to provide a description of the climatological factors representative of the permit area including precipitation, prevailing winds and temperature. MMD recommends establishment of a weather station on site as soon as possible.
28. MMD agrees with NMED and DBS that insufficient baseline data exists for surface water drainages and springs in the mine vicinity. Collection of sufficient baseline data is critical for evaluating potential impacts of the mining operation. The Monitoring Plan summarizes historical surface water data that has been collected, but does not indicate how the miscellaneous studies meet the NMMA Subpart 602.D.13. requirement of at least 12 months of data collection and "a description of surface drainage systems sufficient to identify the seasonal variations in surface water quantity and quality within the proposed permit and affected areas to the extent possible...". Alta has collected baseline data for Animas Creek at only one sampling location on a single occasion and has therefore not established seasonal variations. Additional baseline data indicative of seasonal variations needs to be collected for all pertinent stream segments of Las Animas Creek and springs in the mine vicinity including springs in Warm Springs Canyon, Cold Springs Canyon, Percha Creek, BG Spring, Myers Animas Spring and the spring near Paxton Well. Seasonal variations in surface water flow and quality have also not been adequately established for Percha Creek. Almost no data are available for the lower reaches of Percha Creek, although drawdown from production wells are anticipated to impact this area. Likewise, at least a cursory discussion of the flow regime in Seco Creek (the drainage north of Las Animas Creek) should be presented. Alta should address these 12-month pre-operational baseline data collection needs for surface waters.

With regard to proposed surface water sampling locations, NMED believes that additional locations are necessary in the lower reaches of Las Animas Creek and Percha Creek. In particular a sampling location should be located in Las Animas Creek northeast of the pumping wells (downstream of surface water monitoring station LAC-E). Also, the Monitoring Plan does not justify the selection of the surface water sampling locations. The plan should indicate if locations are within perennial or ephemeral reaches of a given creek. Sampling of the springs within Percha Box should also be included in the Monitoring Plan (NMED attachment).

29. Subpart 602.D.13.g.(1) requires a map delineating all riparian and wetland areas. Subpart 603.C.8 additionally requires that adverse effects to riparian and wetland areas resulting from the mining operation be mitigated. NMED previously commented that baseline documentation of all wetland and riparian areas in the mine vicinity has not been provided and a map delineating the extent of these areas is still needed. Thorough documentation of riparian and wetland areas is necessary to adequately prepare an analysis of reasonably foreseeable impacts of proposed mining activities, and is therefore needed for the environmental evaluation (NMED attachment).
30. Pursuant to Rule 602.D.13.j., Alta needs to provide a description of the present and historic land use of the permit area, the general patterns of land use in the surrounding areas, and a narrative of land capability and productivity based upon U.S. Soil Conservation Service land use capability classes or a similar classification.

Thank you for your attention to this request. I look forward to discussing this with you during our conference call Thursday at 3:00 and at the meeting next week. If you have questions, please call Doug Bland at 827-5988.

Sincerely,



Fernando Martinez, Permitting Coordinator

#### Attachments

cc: Doug Bland, Chief, Mining Act Reclamation Bureau  
Kerrie Neet, NMED  
Mark Watson, NMGF  
Neil Blandford, DBS







United States Department of the Interior

FISH AND WILDLIFE SERVICE



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Albuquerque, New Mexico 87113  
Telephone 505-346-2525 Fax 505-346-2542  
[www.fws.gov/southwest/es/newmexico/](http://www.fws.gov/southwest/es/newmexico/)

July 6, 2016

Consultation Number 02ENNM00-2016-I-0487

Memorandum

To: District Manager, Las Cruces District Office, Bureau of Land Management, Las Cruces, New Mexico

From: Field Supervisor, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, Albuquerque, New Mexico

**WALLY  
MURPHY**

Digitally signed by WALLY  
MURPHY

Date: 2016.07.07 12:53:18  
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Subject: Endangered Species Act Section 7 Consultation on the Proposed Copper Flat Mine Project

Thank you for providing the Copper Flat Mine Project (Project) biological assessment (BA) for consultation under section 7 of the Endangered Species Act of 1973 as amended (16 USC 1531 et seq.) that the U.S. Fish and Wildlife Service (Service) received on March 17, 2016. We are requesting further information on the following issues to help complete our assessment and consultation.

We are most concerned with impacts in the Las Animas and Percha Creek drainages where there are important fish and wildlife resources. It was unclear to us where groundwater withdrawal will affect surface water flows and riparian habitat in these two drainages. It is hard to translate the zones from the cross sectional view in BA Figure 3-3 to the plan view in Figure 3-2. It seems clear on BA page 69 that different zones will have different impacts from groundwater drawdown. A map in plan view identifying the zones and what resources (species, surface water, and riparian habitat) are found there and potential impacts would help with our analysis. We would like to know what areas in each drainage might have no or reduced surface flow and what areas might have a decline in riparian vegetation due to Project impacts.

Both inches of drawdown and acre-feet per year were used as the measures of groundwater depletion. Can these be translated in changes in flow (cubic feet per second) or surface water area that would be easier to relate to species impacts?



On BA page 69 the groundwater depletion is compared to the vegetation evapotranspiration. The vegetation evapotranspiration rate makes a big difference on the calculated amount of drawdown. We would like to know how the evapotranspiration number calculated.

Areas where there may be no or reduced surface flow or a decline in riparian vegetation due to Project activities may have adverse impacts to federally listed species, including Chiricahua leopard frog (*Lithobates chiricahuensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and yellow-billed cuckoo (*Coccyzus americanus*). In these areas we recommend Service-approved surveys be conducted to determine if occupied. Since no standard surveys were conducted it is difficult to evaluate the impacts to these species. If the areas cannot be surveyed they may be assumed occupied. If assumed occupied how much area would potentially be impacted by the Project. How will these impacts be compensated for?

On BA page 69 groundwater modeling is done to model what the direct drawdown would be "after mining ceases." We believe the impact would be greatest during mining when there is active pumping. What is the expected groundwater drawdown level during projected maximum water use and how will this affect surface flows and riparian vegetation in Las Animas and Percha Creeks?

Stock ponds have proven to support Chiricahua leopard frog in other areas (Sredl and Saylor 1998). Presuming artesian well fed irrigation ponds are compromised for frogs does not seem substantiated. It seems just as likely that isolated ponds might provide refugia for Chiricahua leopard frogs. Please provide a map of the pond locations that will be affected. Have the landowner(s) of these ponds been contacted for permission to determine Chiricahua leopard frog status? If the ponds cannot be surveyed they may be assumed occupied. If assumed occupied how much area would potentially be impacted by the Project. How will these impacts be compensated for?

On BA page 70 it is inferred that if groundwater depletion caused a decline the water levels in these ponds the landowners would pump more water to maintain the pond water level. The landowners may not have the necessary water rights to pump more water. Does the Project have senior water rights that would allow impacts to these ponds?

On BA page 74 you determined that water pumping from the deep aquifer by the Project would substantively reduce groundwater discharge to Caballo Reservoir and the Rio Grande decreasing surface water quantities there but we found no estimate of what the depletion would be. This depletion to surface water storage would likely to need a permit from the State Engineer. Does the Project have senior water rights that allow it to deplete these water resources? Is there a permit for this depletion?

You determined on BA page 71 that the reduced groundwater flows to the Caballo Reservoir may adversely affect flycatchers nesting in the vicinity. Can you be more specific about where "the vicinity" is?

It is our understanding that the primary control on the water level of Caballo Reservoir is water releases from Elephant Butte Reservoir and the stored water's primary function is to provide

water delivery to Mexico and irrigation operations. How would these functions be affected by the Project? On BA page 80 you indicated that the cumulative magnitude of the effect can only be determined through a comprehensive mid-basin study of Caballo Reservoir and the Rio Grande. This study seems essential to evaluating the impacts to flycatchers and cuckoos along the Rio Grande.

Discharge from and habitat management at Caballo Reservoir is controlled by the Bureau of Reclamation (2002). As such, effects at the Reservoir and downstream would be a function of the water operations schedule rather than strictly the water level in Caballo Reservoir. The United States International Boundary and Water Commission (USIBWC) manages river habitat below Caballo Reservoir through the Rio Grande Canalization Project (USIBWC 2004). We would like a more detailed explanation of the mechanism by which southwestern willow flycatchers would be impacted on the Rio Grande from the Project groundwater depletion given the other operational aspects of the system.

We completed 90-day findings on the Rio Grande chub (*Gila pandora*) and Rio Grande sucker (*Catostomus plebeius*) in 2016 (Service 2016). We are presently conducting a 12-month finding that may lead to these species being listed. These species are found in small streams, such as Las Animas and Percha Creeks. As such, we recommend you provide an assessment of the potential effects of Project activities on these species.

In addition, Las Animas Creek supports the only population of Rio Grande cutthroat trout (*Oncorhynchus clarkii virginalis*) in the Caballo geographic management unit. This species was not listed because multiple agencies including BLM developed a conservation strategy that was deemed sufficient to avoid listing at the time (Rio Grande Cutthroat Trout Range-wide Conservation Team 2013). Further loss of Rio Grande cutthroat trout populations would likely trigger listing review. As such, we recommend you evaluate the project impacts on this population.

In reviewing the impacts of groundwater depletion the following references cited in the BA would be helpful in our assessment?

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Please feel free to contact George Dennis (505-761-4754, [george\\_dennis@fws.gov](mailto:george_dennis@fws.gov)) of my staff if you have any questions about the issues we have raised.

cc:

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Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division, Santa Fe, New Mexico (electronic copy)

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