

DRAFT ENVIRONMENTAL EVALUATION
FOR THE
COPPER FLAT MINE
SIERRA COUNTY, NEW MEXICO
PERMIT TRACKING NO. SI027RN

Energy, Minerals & Natural Resources Department
Mining and Minerals Division
Mining Act Reclamation Program

July 2018



INTRODUCTION

The New Mexico Mining Act (“Act”) and associated New Mexico Administrative Code (“NMAC” or “Rules”) require that the Director prepare a Draft Environmental Evaluation (“EE”) for all new mining operations applying under Part 6 of the Rules. Specifically, §19.10.6.605.D NMAC states:

The Director shall prepare a draft environmental evaluation which shall include an analysis of the reasonably foreseeable impacts of proposed activities on the pre-mining and post-mining environment and the local community, including other past, present and reasonably foreseeable future actions, regardless of the agency or persons that undertake the other action or whether the actions are on private, state or federal land. The Director may contract with, and the applicant should pay for, a third party to prepare the analysis and assessment.

The federal Council on Environmental Quality implemented regulations for the National Environmental Policy Act (“NEPA”), which defines cumulative impacts as:

...the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action. (40 CFR 1508.7).

When 40 CFR 1508.7 is compared to §19.10.6.605.D NMAC, it is apparent that the language is very similar; there is substantial overlap between these requirements.

This Draft EE is prepared by the Mining and Minerals Division (“MMD”) Mining Act Reclamation Program (“MARF”) pursuant to §19.10.6.605.D NMAC.

METHODOLOGY

In February 2013, MMD developed a guidance document entitled *Environmental Evaluation Guidance Document for Part 6 New Mining Operations* (“EE Guidance Document”; Revised February 2013). This guidance document generally reflects the New Mexico Environment Department (“NMED”) State Environmental Review Process. The Copper Flat Mine occurs partially on federal land managed by the Bureau of Land Management (“BLM”), and the BLM prepared the Copper Flat Mine Draft Environmental Impact Statement (“EIS”), pursuant to NEPA. MMD participated in the EIS process as a Cooperating Agency through a Memorandum of Understanding signed with BLM, signed on October 4, 2011. The Draft EIS analyzes and evaluates the potential physical, biological, economic, and social consequences that would likely result from implementing the project.

The BLM's Draft EIS is an important document for MMD's methodology in developing this Draft EE. MMD is partially relying on the data collected and analyses conducted in the Draft EIS pursuant to Title 19, Chapter 10, Part 13 NMAC which requires MMD to coordinate with other agencies and, importantly, avoid duplication with those agencies. Specifically, the following Rules were considered in the development of this Draft EE:

- *§19.10.13.1303.A - Avoidance of duplicative and conflicting requirements will be accomplished through the coordinated procedures that address the following:*
 - *§19.10.13.1303.A(1) - Avoid imposing requirements which are duplicative of or which conflict with any other applicable state or federal law, regulation or standard.*
 - *§19.10.13.1303.A(3) - Information provided to other agencies may be provided to the Director to partially or completely meet these requirements.*

Furthermore, §19.10.13.1303.B NMAC states:

Coordination of review: The Director shall, as appropriate, consult with the staff of other federal and state agencies responsible for the review of mining operations for compliance with other applicable laws and the issuance of permits for the mining operations, for the purpose of avoiding duplication and conflicting requirements of the Act and 19.10 NMAC.

This Draft EE relies primarily on the Permit Application Package submitted by New Mexico Copper Corporation ("NMCC") for the Copper Flat Mine, and secondarily on the BLM's Draft EIS. These and other documents produced by NMCC for other federal and state agencies will be referenced relative to the EE Guidance Document. This Draft EE is a "road map" to the location of data provided and analyses conducted for the Copper Flat Mine project. Citations and references in this Draft EE may not capture the entirety of data or analysis collected; however, the citations to existing documents are representative of the extent of data and analyses.

Section 1.0 Project Overview

1.1 Project Description

1.1.1 Purpose and Need for Project

Guideline: Describe the conditions that create a need for the project and how the project will meet this need.

The purpose and need for the Copper Flat Mine project is documented within, but not limited to:

- Page ES-3 in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 1.1 Purpose and Need, page 1-1 through 1-3, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 1.5 Relationship to Policies, Plans, and Programs, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

1.2 Project Location

Guideline: Provide a description of the proposed project location including items such as township, range and section, maps, GPS coordinates, aerial photographs, etc.

The Copper Flat Mine project location is documented within, but not limited to:

- Section 1.0 Introduction to the Copper Flat Sampling and Analysis Plan, pages 1-1 through 1-7, in *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010. Examples include:
 - Figure 1-1 Site Location.
 - Figure 1-2 Proposed Copper Flat Permit Area with Topography.
 - Figure 1-3 Proposed Copper Flat Permit Area with Air Photography.
 - Figure 1-4 Proposed Copper Flat Permit Area with Land Ownership and Claims.
 - Figure 1-5 Proposed Copper Flat Permit Area with the Pit, Three Waste Piles, a Tailings Impoundment Area, and a Plant-Facilities Area.
- Section 1.0 Introduction, page 1-1, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012, including:
 - Figure 1-1 Site Location.

- Section 3 Topography, page 3-1, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012, including:
 - Figure 3-1 Aerial Photograph of the Site.
 - Figure 3-2 Topographic Map of the Site and Surrounding Area.
- Section 1.0 Introduction, page 1-1 through 1-3, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017, including:
 - Figure 1-1 Copper Flat Project Site Location Map.
- 2017-09-27 letter from NMCC to Surface Water Quality Bureau entitled *BLM Review and Concurrence with NMCC-Commissioned Surveys in the Area of the Copper Flat Pit, Sierra County, New Mexico* and associated maps and figures.
- 2018-01-25 letter from NMCC to Surface Water Quality Bureau entitled *Private Land Status of Open Pit Lake* and associated maps and figures.
- Section 1.3 General Location, page 1-1 through 1-6, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including, but not limited to:
 - Figure 1-1 Copper Flat Federal Mineral Ownership.
 - Figure 1-2 Copper Flat Vicinity Map.
 - Figure 1-3 Copper Flat Mine Area and Mine Associated Facilities.

1.3 History

Guideline: Provide a brief history of the area/county in which the proposed permit area occurs.

A brief history of the Hillsboro, New Mexico area and project area is documented in, but not limited to:

- Section 1.1 Background, page 1-1, in *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- Section 1.4 Summary of Historical Mining Operations, page 1-4 through 1-6, in *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- Section 3 Topography, page 3-1, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012, including:
 - Figure 3-1 Aerial Photograph of the Site.
 - Figure 3-2 Topographic Map of the Site and Surrounding Area.

- Section 11 Present and Historic Land Use, pages 11-1 through 11-3, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Chapter 2 Proposed Action and Alternatives, pages 2-1 through 2-2, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.7 Mineral and Geologic Resources, pages 3-98 through 3-144, in the *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.13.1.3 Historical Context of the Mine Area, pages 3-164 through 3-166, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Additional historical information of the Hillsboro, New Mexico area is documented at <https://www.hillsboronmhistory.info/>.

1.4 Proposed Mining Operation and Reclamation Techniques

Guideline: Provide a brief description of the mine operations plan and reclamation plan.

The mine operations plan is documented within, but not limited to:

- Section 2.0 Mine Operations Plan, page 2-1 through page 2-63, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.3 Alternative 2: Accelerated Operations – 30,000 Tons per Day, page 2-71 through 2-87 in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

The reclamation plan for the mining operation is documented within, but not limited to:

- Section 3.0 Proposed Reclamation Plan, page 3-1 through 3-12, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.2 Contemporaneous Reclamation, page 4-19, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- 2017-10-13 letter from New Mexico Copper Corporation regarding MMD's October 5, 2017 Request for Additional Information on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- 2017-11-30 letter from New Mexico Copper Corporation regarding NMCC Response to MMD Additional Technical Comments on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017, Response for Additional Information dated October 13, 2017.
- 2018-01-05 letter from New Mexico Copper Corporation in Response to MMD Technical Comment December 27, 2017.
- Section 2.1.15 Reclamation and Closure – Proposed Action, pages 2-34 through 2-47, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 2.3.15 Reclamation and Closure – Alternative 2: Accelerated Operations – 30,000 Tons per Day, page 2-86, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe construction procedures, operation, and closure/reclamation plans.

Construction procedures and operation of the mine is documented within, but not limited to:

- Section 2.0 Mine Operations Plan, page 2-1 through page 2-63, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.3 Alternative 2: Accelerated Operations – 30,000 Tons per Day, page 2-71 through 2-87, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

The reclamation plan for the mining operation is documented within, but not limited to:

- Section 3.0 Proposed Reclamation Plan, page 3-1 through 3-12, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and*

Reclamation Plan For Its Copper Flat Mine, Revision 1, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- Section 4.2 Contemporaneous Reclamation, page 4-19, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- 2017-10-13 letter from New Mexico Copper Corporation regarding MMD's October 5, 2017 Request for Additional Information, *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- 2017-11-30 letter from New Mexico Copper Corporation regarding NMCC Response to MMD Additional Technical Comments on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- 2018-01-05 letter from New Mexico Copper Corporation in Response to MMD Technical Comment December 27, 2017.

1.5 Past, Present and Foreseeable Future Actions in the Local Community

Guideline: Provide a brief analysis of past, present and reasonably foreseeable future actions in the local community, regardless of the agency or persons that undertake the action, or whether the actions are on private, state or federal land.

Past and present actions in the local community are documented within, but not limited to:

- Section 4.1 Past and Present Actions, page 4-1 through 4-2, in the *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Reasonably foreseeable future actions in the local community are documented within, but not limited to:

- Section 4.2 Reasonably Foreseeable Future Action, pages 4-2 through 4-6, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Section 2.0 Alternatives

2.1 Alternative A – No Action

Guideline: Describe the no action (baseline) alternative.

The no action (baseline) alternative is described within, but not limited to:

- Section 2.4 No Action Alternative, page 2-87, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe potential benefits and consequences of the no action alternative.

Potential benefits and consequences of the no action alternative are described within, but not limited to:

- Section 3.2.2.4 No Action Alternative, page 3-10, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 4.3.4 No Action Alternative, page 4-15, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

2.2 Alternative B – The Proposed Action

Guideline: Describe the proposed action.

For the Mining and Minerals Division permitting process, the “proposed action” is defined in the Permit Application Package, specifically the *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017. This is equivalent to “Alternative 2: Accelerated Operations – 30,000 Tons per Day” within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

The proposed action for the Draft EE is documented within, but not limited to:

- Section 2.0 Mine Operations Plan, page 2-1 through page 2-63, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and*

Reclamation Plan For Its Copper Flat Mine, Revision 1, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- Section 2.1 Proposed Action, page 2-4 through 2-56, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM. This section provides the basis for evaluation of:
 - Section 2.3 Alternative 2: Accelerated Operations – 30,000 Tons per Day, page 2-71 through 2-87.

Guideline: Describe the potential benefits and consequences of the proposed action alternative.

Potential benefits and consequences of the proposed action are documented within, but not limited to:

- Table ES-3 Summary of Impacts, page ES-9, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.27 Short-Term Uses and Long-Term Productivity, page 3-304, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.28 Irreversible and Irretrievable Commitment of Resources, page 3-305, *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 4.3 Environmental Consequences, page 4-6 through page 4-15, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Air Quality, page 4-6 and 4-7.
 - Climate Change and Sustainability, page 4-7.
 - Water Quality, page 4-7 and 4-8.
 - Surface Water Use, page 4-8 and 4-9.
 - Groundwater Use, page 4-9.
 - Mineral and Geological Resources, page 4-9.
 - Hazardous Materials and Solid Waste, page 4-9 and 4-10.
 - Wildlife and Migratory Birds, page 4-10.
 - Vegetation and Non-native Invasive Species, page 4-10.
 - Threatened and Endangered Species and Special Status Species, page 4-11.
 - Land Use and Land Ownership, page 4-11.
 - Recreation, page 4-11 and 4-12.
 - BLM Special Management Areas, page 4-12.
 - Range and Livestock, page 4-12.
 - Transportation and Traffic, page 4-12.

- Noise, page 4-12.
- Socioeconomics, Public Services, and Economic Development, page 4-12 and 4-13.
- Environmental Justice, page 4-13.
- Cultural Resources, page 4-13.
- Visual Resources, page 4-14.
- Humane Health and Public Safety, page 4-14.
- Utilities and Infrastructure, page 4-14.
- Paleontological Resources, page 4-14 and 4-15.
- Section 4.3.3 Alternative 2, page 4-15, refers back to Section 4.3 Environmental Consequences for the proposed action in in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Section 3.0 Analysis of Environmental Impacts and Mitigation Measures of the Proposed Action and Past, Present and Reasonably Foreseeable Future Actions on the Local Community.

Guideline: Describe the reasonably foreseeable environmental impacts of (1) the proposed action and (2) past, present and reasonably foreseeable future actions on the pre-mining and post-mining environment.

3.1 Geographical Setting

3.1.1 Geology and Soils

Guideline: Describe the geology and stratigraphy of the proposed permit area.

The geology and stratigraphy of the proposed permit area is documented within, but not limited to:

- Section 7 Geology, pages 7-1 through 7-3, in *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- Section 7 Geology, pages 7-1 through 7-3, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Geochemical Characterization Report for the Copper Flat Project, New Mexico, Volumes 1 (Text) and 2 (Appendices)*, prepared by SRK Consulting, dated May 2013.
 - Section 2.4 Geologic Setting and Mineralization, page 8 and 9.
- Section 3.7 Mineral and Geologic Resources, pages 3-98 through 3-104, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:
 - Table 3-23 Geologic History of the Copper Flat District, page 3-99.
 - Figure 3-23 Geologic Map of the Project Area, page 3-100
- Section 1.2.4 Geology and Mineralization, page 5 through 9, in *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, dated May 2018, prepared by SRK Consulting, Inc.
- *Copper Flat PFS and DFS Gap Analysis Memorandum*, dated February 13, 2014, prepared by SRK Consulting, Inc.

Guideline: Describe the nature of the targeted ore body.

The ore body of the Copper Flat project is documented within, but not limited to:

- Section 7.3 Description of the Ore Body, page 7-3 through 7-5, in *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- Section 7.3 Description of the Ore Body, page 7-3 through 7-5, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 7.4 Copper Flat Material Types, page 7-5 through 7-11, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Geochemical Characterization Report for the Copper Flat Project, New Mexico, Volumes 1 (Text) and 2 (Appendices)*, prepared by SRK Consulting, dated May 2013.
 - Section 2.4.3 Geology of the Copper Flat Orebody, page 9 through 15.
- Section 3.7 Mineral and Geologic Resources, pages 3-98 through 3-104, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:
 - Table 3-23 Geologic History of the Copper Flat District, page 3-99.
 - Figure 3-23 Geologic Map of the Project Area, page 3-100.
- *Copper Flat PFS and DFS Gap Analysis Memorandum*, dated February 13, 2014, prepared by SRK Consulting, Inc.
- Section 1.2.4 Geology and Mineralization, page 5 through 9, in *Predictive Geochemical modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, dated May 2018, prepared by SRK Consulting, Inc.

Guideline: Describe the soils of the proposed permit area.

Soils of the proposed permit area are documented within, but not limited to:

- Section 6 Topsoil Survey and Sampling Results, pages 6-1 through 6-2, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 6-A: Copper Flat Mine Order 1 Soil Survey of Permit Area*, prepared by Stetson Engineers, Inc., dated September 14, 2011, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Copper Flat Mine Baseline Data Report Addendum*, dated July 17, 2013, prepared by THEMAC Resources Group, Ltd.
 - *Attachment 1 - Supplemental Soils Investigation, Copper Flat Project*, prepared by Golder Associates, Inc., dated July 8, 2013.
- Section 3.8 Soils, pages 3-105 through 3-114, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:

- Figure 3-25 Soils at the Proposed Copper Flat Mine Area, page 3-106.
- Table 3-24 Summary of Soils in the Copper Flat Mine Area, pages 3-107 and 3-108.

Guideline: Discuss how the proposed action will affect erosion and disturbance of the area.

Erosion and disturbance effects of the proposed project are documented within, but not limited to:

- Section 2.0 Mine Operations Plan, pages 2-1 through 2-53, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 3.8.2 Environmental Effects, pages 3-109 through 3-114, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any proposed mitigation measures.

Proposed mitigation measures related to geology and soils are documented within, but not limited to:

- Section 2.4 Sediment Control, pages 2-57 through 2-62, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 3.0 Proposed Reclamation Plan, pages 3-1 through 3-11, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.5 Topsoil (Topdressing or Cover Material), page 4-33 through 4-36, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

3.2 Lands: Soils and Land Use

3.2.1 General Land Use

Guideline: Discuss any zoning and land use of the proposed permit area.

Zoning and land use of the proposed permit area is documented within, but not limited to:

- Section 11 Present and Historic Land Use, pages 11-1 through 11-3, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 3.15 Land Ownership and Land Use, pages 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.18 Lands and Realty, pages 3-205 through 3-210, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.19 Range and Livestock, pages 3-211 through 3-215, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Discuss total land area required for the project.

Total land area required for the project is documented within, but not limited to:

- Section 1.0 Introduction, page 1-1, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 2.0 Mine Operations Plan, pages 2-1 through 2-63, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.3 Alternative 2: Accelerated Operations – 30,000 Tons Per Day, page 2-73, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:
 - Table 2-24 Summary of Proposed Disturbance Within the Mine Area, page 2-73.
 - Figure 2-11 Mine Layout – Alternative 2, page 2-75.
- Section 3.15 Land Ownership and Land Use, pages 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:

- Table 3-33, page 3-188, entitled *Acreage and Percent Ownership for Surface Landowners in State, Counties, Area of Potential Effect, and Project Site*.

Guideline: Discuss any homes and businesses that may be affected by the proposed action.

Residential homes and businesses that may be affected by the proposed action are documented within, but not limited to:

- *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, revised May 22, 2018, prepared by John Shomaker & Associates, Inc.
- Section 3.6 Groundwater Resources, page 3-61 through 3-97, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:
 - Section 3.6.1.6 Existing Uses of Groundwater, page 3-66 and 3-67.
 - Section 3.6.2 Environmental Effects, page 3-67 through 3-73.
- Section 3.14 Visual Resources, pages 3-178 through 3-185, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.15 Land Ownership and Land Use, pages 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.16 Recreation, pages 3-194 through 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.18 Lands and Realty, pages 3-205 through 3-210, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.19 Range and Livestock, pages 3-211 through 3-215, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.20 Transportation and Traffic, pages 3-216 through 3-224, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.21 Noise and Vibration, pages 3-225 through 3-234, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.22 Socioeconomics, pages 3-235 through 3-272, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Section 3.23 Environmental Justice, pages 3-273 through 3-283, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.24 Human Health and Public Safety, pages 3-284 through 3-293, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.25 Utilities and Infrastructure, pages 3-294 through 3-300, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any know or potentially recreational uses of the proposed permit area and surrounding area.

Recreational potential of the proposed permit area and surrounding area is documented within, but not limited to:

- Section 3.16 Recreation, pages 3-194 through 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:
 - Figure 3-35 Recreational Resources Within the Project Vicinity, page 3-195.
- Section 3.17 Special Management Areas, pages 3-202 through 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any best management practices and mitigation measures proposed.

Best management practices and mitigation measures related to general land use are documented within, but not limited to:

- Section 3.14 Visual Resources, pages 3-178 through 3-185, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.14.3 Mitigation Measures, page 3-185.
- Section 3.15 Land Ownership and Land Use, pages 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.15.3 Mitigation Measures, page 3-193.
- Section 3.16 Recreation, pages 3-194 through 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Section 3.16.3 Mitigation Measures, page 3-201.
- Section 3.18 Lands and Realty, pages 3-205 through 3-210, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.18.3 Mitigation Measures, page 3-210.
- Section 3.19 Range and Livestock, pages 3-211 through 3-215, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.19.3 Mitigation Measures, page 3-215.
- Section 3.20 Transportation and Traffic, pages 3-216 through 3-224, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.20.3 Mitigation Measures, page 3-224.
- Section 3.21 Noise and Vibration, pages 3-225 through 3-234, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.21.3 Mitigation Measures, page 3-234.
- Section 3.22 Socioeconomics, pages 3-235 through 3-272, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.22.3 Mitigation Measures, page 3-270 through 3-272.
- Section 3.23 Environmental Justice, pages 3-273 through 3-283, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.23.3 Mitigation Measures, page 3-283.
- Section 3.24 Human Health and Public Safety, pages 3-284 through 3-293, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.24.3 Mitigation Measures, page 3-293.
- Section 3.25 Utilities and Infrastructure, pages 3-294 through 3-300, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.25.3 Mitigation Measures, page 3-300.

3.2.2 Land Ownership

Guideline: Provide a list of land owners within a ½ mile radius of the proposed permit area.

Landowner information is documented within, but not limited to:

- Section 3.15, pages 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Table 3-33 Acreage and Percent Ownership for Surface Landowners in State, Counties, APE, and Project Site.

Guideline: Provide any best management practices or mitigation measures to be implemented with respect to land ownership.

Best management practices and mitigation measures regarding land ownership are documented within, but not limited to:

- Section 3.15 Land Ownership and Land Use, pages 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.15.3 Mitigation Measures, page 3-193.
- Section 3.16 Recreation, pages 3-194 through 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.16.3 Mitigation Measures, page 3-201.
- Section 3.18 Lands and Realty, pages 3-205 through 3-210, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.18.3 Mitigation Measures, page 3-210.
- Section 3.19 Range and Livestock, pages 3-211 through 3-215, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.19.3 Mitigation Measures, page 3-215.

3.2.3 Important Farmland/Rangeland

Guideline: Consult with the National Resource Conservation Service (NRCS) to determine if soils have been classified as prime farmlands, prime rangelands, or prime forest land.

Prime Farmland

The National Resource Conservation Service (“NRCS”) defines prime farmland as:

Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil

quality, growing season, and moisture supply need to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood or are protected from flooding. [SSM, USDA Handbook No. 18, October 1993; accessed via www.nrcs.usda.gov.]

MMD utilized the USDA NRCS Web Soil Survey (www.websoilsurvey.sc.egov.usda.gov; accessed on 02/21/2018) to analyze the presence/absence of prime farmland within the Copper Flat project area and vicinity. Using the web soil survey mapping, an area of interest of approximately 86,799 acres was drawn, encompassing land west of the proposed permit area and east to Caballo Lake. The area of interest was drawn north to Seco Creek and south past Percha Creek (see Figure 1 Farmland Classification Map – Sierra County Area, New Mexico). The results of the investigation show that no prime farmland is present within the area of interest. However, approximately 443 acres of land designated as “Farmland of statewide importance” is present in the southeast corner of the area of interest, as shown in Figure 1.

Guideline: Discuss how the proposed project will affect these lands.

Prime farmland is not present within the Copper Flat project area; however, farmland of statewide importance is a minor component of the area investigated. The distance from the farmland of statewide importance from the Copper Flat project area makes it unlikely that the proposed project will affect this farmland.

Guideline: Describe any proposed best management practices or mitigation measures.

Prime farmland is not present within the Copper Flat project area therefore no best management practices or mitigation measures are anticipated or identified.

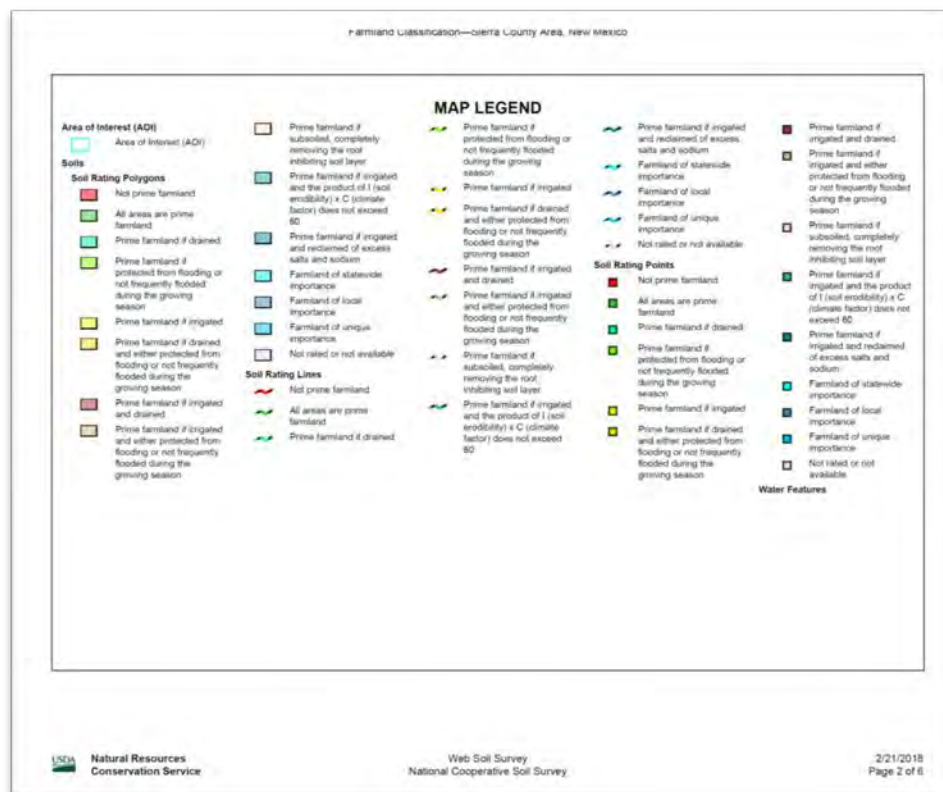
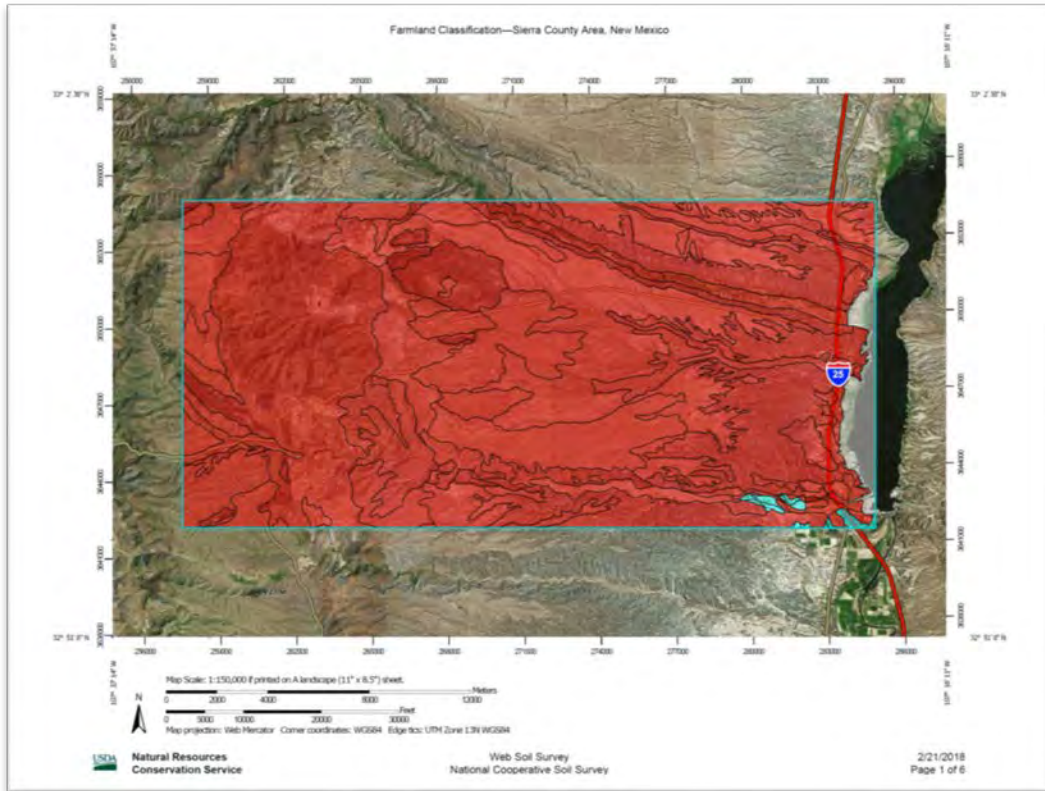


Figure 1: Farmland classification and legend. From USDA NRCS website.

Prime Rangeland

Anticipated rangeland effects and mitigation measures are documented within, but not limited to:

- Section 3.19 Range and Livestock, pages 3-211 through 3-215, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.19.3 Mitigation Measures, page 3-215.

Prime Forest Land

MMD utilized the USDA NRCS Web Soil Survey (www.websoilsurvey.sc.egov.usda.gov; accessed on 02/21/2018) to analyze the presence/absence of prime forest land within the Copper Flat project area and vicinity. Using the web soil survey mapping, an area of interest of approximately 86,799 acres was drawn, encompassing land west of the proposed permit area and east to Caballo Lake. Forest productivity was investigated under the soil suitabilities and limitations for land use tab on the website. The NRCS website states “cannot run forest productivity (cubic feet per acre per year): necessary data not available for specified area of interest.” This demonstrates that no prime forest land is present within the Copper Flat project area.

3.2.4 Formally Classified Lands

Guideline: Identify any national parks, state parks, landmarks, historic sites, wilderness areas, environmentally sensitive areas, wildlife refuges, wild and scenic rivers, grasslands, and Native American owned lands.

Formally classified lands such as national parks, state parks, landmarks, historic sites, wilderness areas, environmental sensitive areas, wildlife refuges, wild and scenic rivers, grasslands and Native American owned lands are documented within, but not limited to:

- Section 3.15 Land Ownership and Land Use, page 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM, including:
 - Figure 3-34 Surface Landowners in the Area of Potential Effect, page 3-189.
- Section 3.16 Recreation, page 3-194 through 3-198, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Section 3.17 Special Management Areas, page 3-202 through 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Identify any formally classified lands that may exist in or near the proposed project area and discuss any impacts from the proposed project.

Potential impacts to formally classified lands are documented within, but not limited to:

- Section 3.15 Land Ownership and Land Use, page 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.15.2 Environmental Effects, pages 3-191 and 3-192.
- Section 3.16 Recreation, page 3-194 through 3-198, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - 3.16.2 Environmental Effects, pages 3-199 through 3-201.
- Section 3.17 Special Management Areas, page 3-202 through 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - 3.17.2 Environmental Effects, pages 3-203 and 3-204.

Guideline: Discuss any proposed mitigation measures or best management practices to be implemented.

- Section 3.15 Land Ownership and Land Use, page 3-186 through 3-193, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.15.3 Mitigation Measures, page 3-193.
- Section 3.16 Recreation, page 3-194 through 3-198, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - 3.16.3 Mitigation Measures, page 3-201.
- Section 3.17 Special Management Areas, page 3-202 through 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - 3.17.3 Mitigation Measures, page 3-204.

3.3 Floodplains

Guideline: Consult with FEMA and any local administrations to determine if the project is within a floodplain.

- Figure 11M-1 within *Ground Water Discharge Permit Application*, New Mexico Environment Department, December 9, 2015.
- *Appendix D Site Diversion Analysis Report*, dated December 5, 2015, prepared by M3 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- The FEMA Flood Map Service Center website (www.fema.gov) was utilized by MMD to evaluate floodplains within the Copper Flat project vicinity. The Flood Insurance Rate Map was downloaded for the Copper Flat project vicinity: Community-panel number 350071 0675B (effective dated June 3, 1986). This flood map indicates that the majority of the project vicinity is within Zone C, which is defined as “areas of minimal flooding.” A portion of Grayback Arroyo located east of the Copper Flat permit area is within Zone A, which is defined as “areas of 100-year flood.” The well field for the Copper Flat project is located within Zone C. See Figure 2.

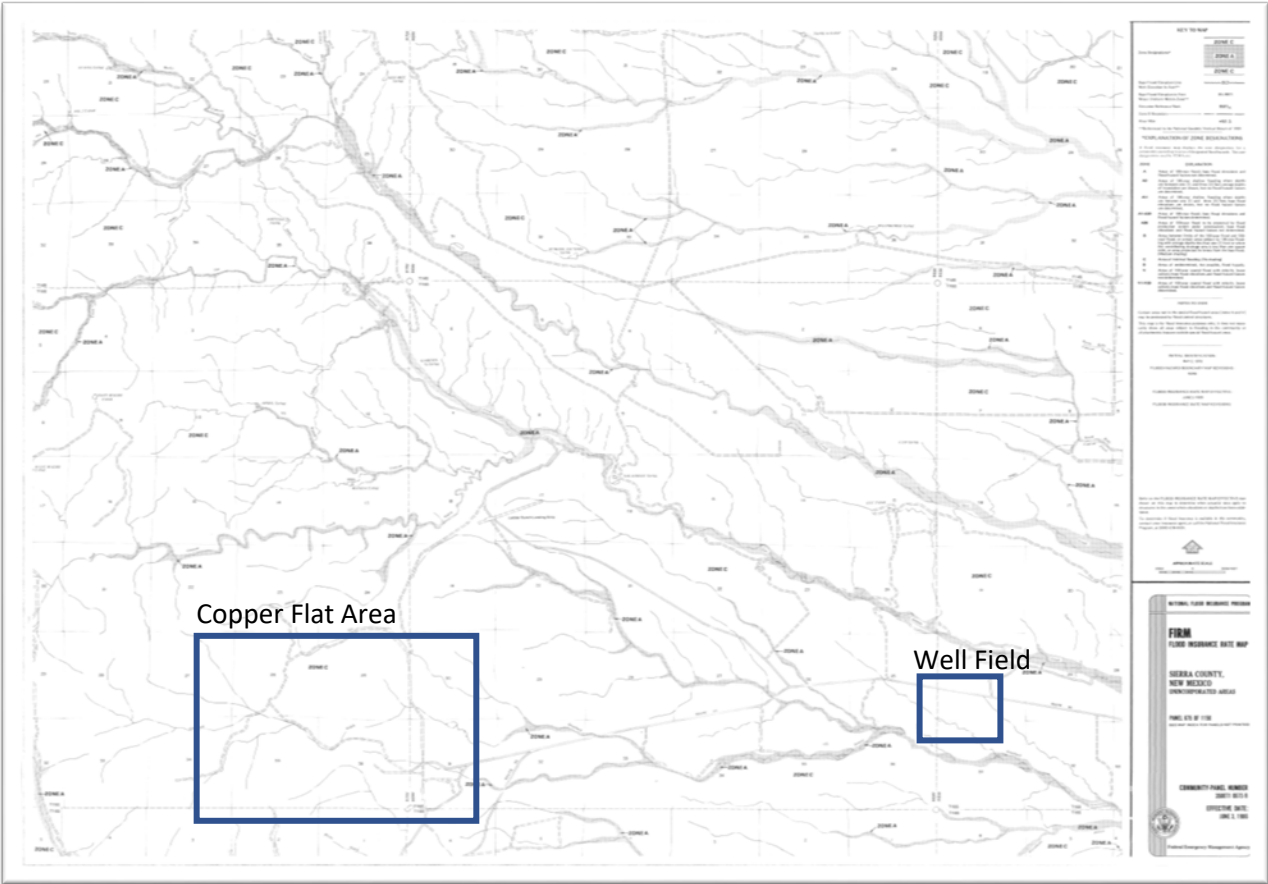


Figure 2: FEMA map of the Copper Flat project area. From FEMA website.

Guideline: Describe any potential impacts of the proposed action to floodplains.

No impacts to floodplains from the proposed action are anticipated.

Guideline: Describe any best management practices or proposed mitigation measures to be implemented.

No best management practices or proposed mitigation measures related to floodplains have been identified.

3.4 Wetlands

Guideline: Research and consult with the US Army Corp of Engineers to determine if any wetlands exist in the project area or project vicinity.

Data regarding wetlands is documented within, but not limited to:

- Section 4.3.1.7 Detailed Riparian Vegetation and Wetlands Mapping, page 4-7 and 4-8, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 4.4.1.9 Wetlands and Jurisdictional Waters of the U.S., page 4-22, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 4-D Hink and Ohmart Vegetation Mapping in the Copper Flat Mine Permit Area* located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 5-A Biological Resources Survey Report, Copper Flat Pipeline and Well Sites, Sierra County, New Mexico*, dated August 2011, prepared by Parametrix, located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Section 4.7 Wetlands and Jurisdictional Waters, page 13 and 14, which describes examination of U.S. Army Corp of Engineers data.
- *Approved Jurisdictional Determination – Action No. SPA-2014-00364-LCO, Open Pit Water Body Inclusive of the Associated 230 Acre Watershed at Copper Flat Mine in Sierra County, New Mexico*, dated October 6, 2014, from the Department of the Army, Albuquerque District, Corps of Engineers, Las Cruces Regulatory Field Office.
- Section 3.11 Vegetation, Invasive Species, and Wetlands, pages 3-140 through 3-152, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any impacts the project action will have on wetlands.

Potential impacts to wetlands from the project action are documented within, but not limited to:

- Section 4.3.8 Riparian and Wetland Areas, page 4-28 and 4-29, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- *Appendix 5-A Biological Resources Survey Report, Copper Flat Pipeline and Well Sites, Sierra County, New Mexico*, dated August 2011, prepared by Parametrix, located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Section 4.7 Wetlands and Jurisdictional Waters, page 13 and 14, which describes examination of U.S. Army Corp of Engineers data.
- Section 3.11 Vegetation, Invasive Species, and Wetlands, pages 3-140 through 3-152 in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Section 3.11.2 Environmental Effects, pages 3-147 through 3-152.

Guideline: Discuss any proposed best management practices or mitigation measures to be implemented.

Best management practices and mitigation measures for wetlands are documented within, but not limited to:

- *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
 - Table E1 Proposed Copper Flat Reclamation Design Criteria, pages 3 through 7.
- Section 3.11 Vegetation, Invasive Species, and Wetlands, pages 3-140 through 3-152, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.11.2.1.2 Mine Closure/Reclamation, page 3-150.

3.5 Water Resources

3.5.1 *Surface Water*

Guideline: Consult with NMED Surface Water Quality Bureau and Drinking Water Bureau to determine stream standards and surface water quality and quantity.

Consultations with NMED (e.g., Mining Environmental Compliance Section, Surface Water Quality Bureau, Air Quality Bureau, and/or Drinking Water Bureau) are documented within, but not limited to:

- 2010-11-10 memorandum from NMED Ground Water Quality Bureau and NMED Surface Water Quality Bureau providing comments on *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- 2014-06-02 letter from Surface Water Quality Bureau to Operator regarding preliminary aquatic life and recreational use UAA outline.
- 2014-10-06 letter from Department of the Army, Albuquerque District, Corps of Engineers, Las Cruces Regulatory Field Office to Operator regarding a Jurisdictional Determination that the site is not jurisdictional or subject to regulation under Section 404 of the Clean Water Act.

- 2016-10-16 letter from Surface Water Quality Bureau to Operator regarding the current and proposed pit water body.
- 2017-09-27 letter from THEMAC to Surface Water Quality Bureau regarding BLM review and concurrence with NMCC-commissioned surveys in the area of the Copper Flat pit.
- 2018-01-25 letter from THEMAC to Surface Water Quality Bureau regarding private land status of open pit lake.
- 2018-04-17 letter from Surface Water Quality Bureau to BLM providing comments on the *Administrative Final Environmental Impact Statement for the Copper Flat Mine*.
- 2018-04-26 letter from Surface Water Quality Bureau to BLM providing clarifying points on the *Administrative Final Environmental Impact Statement for the Copper Flat Mine*.

Surface water quality and quantity data are documented within, but not limited to:

- Section 8.0 Surface Water and Groundwater Information, pages 8-1 through 8-17, in *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Section 8.1.2.1 Outlet Las Animas Creek Drainage Basin, page 8-2 through 8-6, of the BDR describes historical data, baseline data, and seasonal data for Las Animas Creek.
 - Section 8.1.2.2 Percha Creek Drainage Basin, pages 8-6 through 8-10, of the BDR describes historical data, baseline data, and seasonal data for Percha Creek.
 - Section 8.1.2.3 Greenhorn Arroyo Drainage Basin, pages 8-11 through 8-16, describes historical data, baseline data, and seasonal data for Greenhorn and Grayback arroyos as well as the existing pit lake.
- *Appendix 8-A Surface Water and Seepage Measurement Location Field Data* located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 8-B Seepage Study Report*, dated August 25, 2011, prepared by Intera Inc., located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 8-C Surface Water Analytical Results* located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 8-D Surface Sediment Analytical Results* located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 8-E Pit Lake Analytical Results* located within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.

- *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Addendum E – John Shomaker & Associates Technical Memorandum, Baseline data characterization report comment resolution and amendment*, prepared by John Shomaker & Associates, Inc. dated June 25, 2013.
 - *Water Quality Survey Summary for the Lower Rio Grande Tributaries 2004*, prepared by the New Mexico Environment Department Surface Water Quality Bureau, dated November 2009.
- *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, dated May 2018, prepared by SRK Consulting, Inc.
 - *Appendix J Aquatic Consultants Inc. Biological Assessment of the Existing Copper Flat Pit Lake*, November 2014.
- Section 3.4 Water Quality, pages 3-18 through 3-49, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
 - Section 3.4.1.3 Description of Affected Environment, page 3-20 through 3-25.
 - Section 3.4.2 Environmental Effects, pages 3-30 through 3-36.
- Section 3.5 Surface Water Use, pages 3-50 through 3-60 in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
- *Appendix C: Surface Water Analysis Data* within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

Guideline: Discuss any proposed mitigation measures or best management practices to be implemented.

Mitigations for surface water quality are documented within, but not limited to:

- Section 3.0 Proposed Reclamation Plan, pages 3-1 through 3-12, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.0 Performance & Reclamation Standards & Requirements, page 4-1 through 4-36, in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and*

Reclamation Plan For Its Copper Flat Mine, Revision 1, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- Section 2.4 Open Pit, page 16.
- Addendum to Mining Operation and Reclamation Plan, entitled *October 5, 2017 Request for Additional Information, Updated MORP Rev. 1, 2017*, dated October 12, 2017 submitted by New Mexico Copper Corporation.
 - Copper Flat Open Pit Reclamation/Revegetation Plan, dated October 2017.
- *Response to MMD Technical Comment December 27, 2017*, submitted by New Mexico Copper Corporation, dated January 5, 2018, which commits to characterizing and reclaiming approximately 6.7 acres near the proposed laydown yard and concentrator within the permit area.
- *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, dated May 2018, prepared by SRK Consulting, Inc.
- *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, revised May 22, 2018, prepared by John Shomaker & Associates, Inc.
- Section 3.4.2 Environmental Effects, pages 3-30 through 3-49, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

3.5.2 Groundwater

Guideline: Describe the aquifer(s) anticipated in the proposed project vicinity including approximate depth to groundwater, and anticipated quality and quantity.

Aquifers in the proposed project vicinity are documented within, but not limited to:

- Section 8.2.2 Regional Hydrogeology, pages 8-17 through 8-20, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 8.2.3 Hydrogeology of the Permit Area Locality, page 8-20, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 3.0 Probable Hydrologic Consequences, page 11 through 37, within *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, revised May 2018, prepared by John Shomaker & Associates, Inc.
- Section 3.6.1.1 Regional Hydrogeology, pages 3-61 and 3-62, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

- Section 3.6.1.2 Hydrogeology of the Mine Pit Area, page 3-62, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
- Section 3.6.1.3 Hydrogeology of the TSF, page 3-62, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
- Section 3.6.14 Hydrogeology of the Palomas Basin in the Vicinity of the Supply Well Field, page 3-63, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
- Section 3.6.1.5 Hydrogeology of Alluvial Valleys in the Vicinity of the Mine and Well Field, page 3-63 through 3-66, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

Approximate depth to groundwater within each aquifer is documented within, but not limited to:

- Section 8.2.4.1 Crystalline Bedrock Aquifer, pages 8-21 through 8-24, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 8-9 Summary of Table Level Measurements.
- Section 8.2.4.2 Santa Fe Group Aquifer System, pages 8-24 through 8-28, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 8-9 Summary of Table Level Measurements.
- Section 8.2.4.3 Quaternary Alluvium, pages 8-28 through 8-31, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 8-9 Summary of Table Level Measurements.
- Section 8.2.4.4 Artesian Well Inventory, pages 8-31 through 8-33, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 8-9 Summary of Table Level Measurements.
- *Appendix E: Projected Groundwater Levels at Selected Locations* within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

Groundwater quality data are documented within, but not limited to:

- Section 8.2.4 Groundwater Data, pages 8-21 through 8-33, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 8-11 Groundwater Quality Analytical Results.
- *Geochemical Characterization Report for the Copper Flat Project, New Mexico, Volumes 1 (Text) and 2 (Appendices)*, prepared by SRK Consulting, dated May 2013.
 - Section 8 Quantitative Numerical Predictions, pages 78 through 108.
- Section 3.4.1.3 Description of Affected Environment, pages 3-25 through 3-30, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
- *Appendix D: Groundwater Analysis Data* within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

Groundwater quantity data are documented within, but not limited to:

- Section 8.2.2.2 Animas Uplift, page 8-18 through 8-19, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 8.2.4.2 Santa Fe Group Aquifer System, page 8-24 through 8-28, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 8.2.6.2 Santa Fe Group Aquifer System, page 8-35 through 8-36, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Table 8-16 Summary of Hydraulic Properties Estimated from Wells in the Vicinity of the Tailing Impoundment within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Model of Groundwater Flow in the Animas Uplift and Palomas Basin, Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, Inc., dated August 15, 2014.
- *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, revised May 22, 2018, prepared by John Shomaker & Associates, Inc.
- Section 3.6 Groundwater Resources, pages 3-61 through 3-97, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Consult with NMED Ground Water Quality Bureau and Drinking Water Bureau and NM Office of the State Engineer.

Consultations with the New Mexico Environment Department include, but are not limited to:

- 2010-11-10 memorandum from NMED Ground Water Quality Bureau and NMED Surface Water Quality Bureau providing comments on the *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- 2012-11-29 memorandum from NMED on the Permit Application Package consisting of:
 - *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012.
 - *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- 2013-09-25 memorandum from NMED on *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
- 2014-09-19 memorandum from NMED on *Geochemical Characterization Report for the Copper Flat Project, New Mexico*, prepared by SRK Consultants, dated May 2013.
- 2017-01-06 memorandum from NMED on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016.
- 2018-06-18 memorandum from NMED on *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, prepared by SRK Consulting Inc., May 2018.
- 2018-06-18 memorandum from NMED on *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, revised May 22, 2018, prepared by John Shomaker & Associates, Inc.

Consultations with New Mexico Office of the State Engineer (“NMOSE”) include, but are not limited to:

- 2010-10-12 letter from NMOSE on the *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- 2011-05-27 letter from NMOSE Dam Safety on inspection of Copper Flat Tailings Dam, OSE File No. D-564.
- 2011-10-21 email message from NMOSE regarding Copper Flats water rights.
- 2012-11-01 letter from NMOSE providing comments on the Permit Application Package consisting of:
 - *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012.
 - *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.

- 2013-11-22 letter from NMOSE on *Model of Groundwater Flow in the Animas Uplift and Palomas Basin, Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, dated August 22, 2013.
- 2017-01-06 letter from NMOSE on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016.
- 2017-09-18 letter from NMOSE Dam Safety regarding Extension of Waiver for Copper Flats Tailings Dam, Sierra County, OSE File No. D-564.
- 2018-01-31 letter from NMOSE Dam Safety regarding Permit to Alter or Repair Copper Flat Tailings Dam, Sierra County, OSE File No. D-564.
- 2018-01-10 letter from NMOSE on *Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, dated December 12, 2017, prepared by John Shomaker & Associates, Inc.

Guideline: Discuss any proposed mitigation measures or best management practices to be implemented.

Mitigation measures or best management practices related to groundwater are documented within, but not limited to:

- Section 2.1.5 Tailings Storage Facility [TSF], pages 2-17 through 2-18, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.1 Leach Pads, Heaps, Ore Dumps and Stockpile, page 2-21 through 2-27, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.6 Tailings Disposal Facilities, page 2-39 through 2-41, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.7 Mills (Process Facilities), page 2-41 through 2-51, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.1.2 Implementation of MAT and BMPs at Copper Flat, page 4-11 through 4-19, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining*

Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- Section 4.3.4 Hydrologic Balance, page 4-25 through 4-27, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.3.6 Impoundments, page 4-27 through 4-28, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.4.4 Acid and Other Toxic Drainage Formation, page 4-32 through 4-33, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 4.4.5 Non-Point Source Releases, page 4-33, within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017:
 - *Appendix A: Feasibility Level Design, 30,000 TPD Tailings Facility and Tailings Distribution and Water Reclaim Systems, Copper Flat Project, Sierra County, New Mexico*, prepared by Golder Associates, dated November 2015 as Revised June 2016.
 - *Appendix B: Impoundment Design Report, Copper Flat Project, M3-PN120085 Revision 0*, prepared by M3 Engineering & Technology Corporation, dated November 2015.
 - *Appendix C: Process Facility Containment Report, Copper Flat Project, M3-PN120085 Revision 0*, prepared by M3 Engineering and Technology Corporation, dated November 2015.
 - *Appendix E: Mine Reclamation and Closure Plan*, prepared by Golder Associates, dated October 7, 2016, Revision 1 dated July 17, 2017.
- Section 3.6.3 Mitigation Measures, page 3-97, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

3.5.3 Hydrothermal Resources

Guideline: Research and discuss potential impacts of the proposed action to any known

geothermal or hydrothermal resources within or in proximity to the permit area.

Hydrothermal and geothermal resources are areas where subsurface heat is generated and stored in the earth. A common method to classify geothermal resources is temperature. Temperatures greater than 350°F are suitable for large-scale electrical generation for distribution on the nationwide transmission grid. Intermediate temperatures of 190° - 350°F can be utilized for small-scale power generation to either the grid or for on-site power. Low-temperature systems, which are the most common in New Mexico, are less than 190°F and can be used for direct-use applications such as greenhouses, fish farms, space heating and other industrial uses (New Mexico Earth Matters, 2006).

The geothermal.org website accessed by MMD on March 12, 2018 indicates that New Mexico has quite a bit of geothermal potential with estimates that geothermal could generate approximately 11% of New Mexico's baseload energy demand and approximately 25% of New Mexico's heat consumption through direct-use (https://geothermal.org/PDFs/New_Mexico.pdf). This information also identifies Hillsboro, Sierra County as an identified geothermal resource site in New Mexico.

A recent scientific article by Kelley et al. (2014) studied the geothermal potential of the Hillsboro-Lake Valley-Palomas Basin region of South-Central New Mexico, specifically the Animas horst and graben system that separates the Palomas basin from the Black Range. The authors logged the thermal profiles of two monitoring wells drilled at the Copper Flat mine and three of the production wells located to the east of the mine in the Palomas basin. Kelley et al. (2014) concludes that the predicted model heat flow value near Hillsboro is much higher than the measured heat flow value at nearby Copper Flat. This difference is potentially due to the slow downward flow of water (recharge) in the vicinity of Copper Flat that then circulates and upwells west toward Hillsboro and the Berrenda fault. Evidence of the downward flow of water at Copper Flat was identified in the two groundwater monitoring wells drilled at the Copper Flat mine. Investigation of the production wells indicated that these wells tapped into an ~30°C (86°F) artesian aquifer, which causes warm water to flow upward in the borehole (Kelley et al, 2014). This report indicates that the geothermal gradient in the Copper Flat is low at 16-30°C/km of depth, and attributes the thermal waters in the Hillsboro area to the presence of deep circulation of groundwater with a semi-long flow path that most likely originates from the Black Range and discharges to the Berrenda fault.

Overall, it appears that Hillsboro and areas west of the Berrenda fault have some potential for geothermal resource use in the future, but there is a low potential for the Copper Flat area to have geothermal resources, which was confirmed in a personal conversation with Dr. Shari Kelley. Dr. Kelley stated that the Hillsboro source has a small footprint and "could make a nice spa" if someone were to develop it. Dr. Kelley confirmed that the Hillsboro resource isn't suitable for

large scale operations such as power generation (personnel communication, March 12, 2018).

References specific to Hydrothermal Resources:

Memorandum, *Interview of Dr. Shari Kelley*, March 12, 2018.

New Mexico Earth Matters, *Geothermal Energy in New Mexico*, Volume 6, Number 2, New Mexico Bureau of Geology and Mineral Resources, Summer 2006.

http://geoinfo.nmt.edu/publications/periodicals/earthmatters/6/n2/em_v6_n2.pdf

Kelley, S., Tewalde, M., Witcher, J., Person, M., 2014, Structural control of warm springs and wells in the Hillsboro-Lake Valley-Palomas Basin Region of South-Central New Mexico, GRC Transactions, Vol. 38, p. 133-142.

Guideline: Describe any proposed mitigation techniques or best management practices to be implemented.

No mitigation or best management practices have been identified due to the lack of significant hydrothermal resources in the project area.

3.7 Biological Resources

3.7.1 Vegetation

Guideline: A habitat evaluation/survey must be conducted to describe and document vegetation within the proposed project area.

Vegetation survey results within the Permit Area are documented within, but not limited to:

- Section 4.4 Baseline Data Results, pages 4-11 through 4-22, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 4-8 Copper Flat Permit Area Plant Species List.
 - Appendix 4-A Detailed Plant Cover Summaries by Stratum and Transect in the Copper Flat Mine Permit Area.
 - Appendix 4-B Detailed Primary Plan Production Summaries by Stratum and Transect in the Copper Flat Mine Permit Area.
 - Appendix 4-C Detailed Shrub Density Summaries by Stratum and Transect in the Copper Flat Mine Permit Area.

- Appendix 4-D Hink and Ohmart Vegetation Mapping of the Copper Flat Mine Permit Area.
- *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Addendum A – Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis, Inc., dated June 25, 2013.
- Section 3.11 Vegetation, Invasive Species, and Wetlands, pages 3-140 through 3-145, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- *Appendix G: Biological Resources Survey Report* within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

Vegetation survey results for the Pipeline Corridor are documented within:

- Section 4.4.2 Pipeline Corridor, page 4-22, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 4-15 Plant Species Encountered in the Pipeline Corridor.
- Section 3.11.1.1 Vegetation, Invasive Species, and Wetlands – Pipeline Corridor and NM-152, page 3-145, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Vegetation survey results for the Millsite Claims are documented within, but not limited to:

- *Biological Resources Survey, Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- *Summary Report: 2015-2016 Biological Surveys at the Mill Site Claims and Proposed Substation Area, Copper Flat Mine, Sierra County, NM*, prepared by GeoSystems Analysis, Inc., dated February 17, 2017.
- Section 3.11.1.1 Mine Area Boundary – Millsites and Substation Site, pages 3-143 and 3-144, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Vegetation survey results for Las Animas Creek are documented within, but not limited to:

- Section 4.4.3 Arizona Sycamores at Las Animas Creek, pages 4-22 through 4-25, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.

- Table 4-16 Structure Type Acreage in the Detailed Arroyo/Riparian Mapping for the Las Animas Creek Study Site.
- Table 4-17 Summary of Acres in which Species were Considered (Co-) Dominants in the Detailed Arroyo/Riparian Mapping for the Las Animas Creek Study Site.
- Table 4-18 Height, Diameter Breast Height, and Condition of Arizona Sycamore Reference Trees in the Las Animas Creek Study Area.
- *Appendix 4-E Hink and Ohmart Vegetation Mapping in the Las Animas Creek Study Area within Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 3.11.1.1 Mine Area Boundary – Las Animas Creek, pages 3-145 and 3-146, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Vegetation survey results for Percha Creek are documented within, but not limited to:

- Section 4.4.4 Percha Creek, pages 4-25 through 4-27, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Table 4-19 Structure Type Acreage in the Detailed Arroyo/Riparian Mapping for the Percha Creek Study Site.
 - Table 4-20 Summary of the Acres in which Species were Considered (Co-) Dominants in the Detailed Arroyo/Riparian Mapping for the Percha Creek Study Site.
- *Appendix 4-F Hink and Ohmart Vegetation Mapping in the Percha Creek Study Area within Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- Section 3.11.1.1 Mine Area Boundary – Percha Creek, page 3-146, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: A habitat evaluation/survey must describe the potential effects of the proposed action to existing vegetation.

Potential effects of the proposed action to existing vegetation within the Permit Area, Pipeline Corridor, Millsite Claims, Las Animas Creek and Percha Creek are documented within, but not limited to:

- Section 2.0 Mine Operations Plan in *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat*

Mine, Revision 1, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- Table 2-3 on page 2-6 summarizes the proposed acreage of disturbance to existing vegetation.
- Figure 2-1 on page 2-2 shows the existing mine site conditions.
- Figure 2-2 on page 2-3 shows the proposed mine site plan, i.e., plans for disturbance to existing vegetation.
- Section 3.11 Vegetation, Invasive Species, and Wetlands in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.11.1 Affected Environment, pages 3-140 to 3-147.
 - Section 3.11.2 Environmental Effects, pages 3-147 to 3-151.

Guideline: Discuss requirements for clearing, any short and long-term effects.

Site clearing, short-term effects, and long-term effects on vegetation are documented within, but not limited to:

- Section 3.11.2.1.1 Mine Development and Operation, pages 3-147 through 3-152, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any best management practices or mitigation measures to be implemented.

Best management practices and mitigation measures for vegetation are documented within, but not limited to:

- *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017 within *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
 - Section 3.2 Revegetation Plan, page 29 through 33.
 - Section 5.7 Revegetation Success, page 44 through 45.
- Section 2.7 Best Management Practices, page 2-98, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.11.3 Mitigation Measures, pages 3-151 and 3-152, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

3.7.2 Wildlife

Guideline: A habitat evaluation/survey must be conducted to describe and document wildlife occurrences, or the potential for wildlife occurrences, within the proposed permit area. Describe fish and wildlife resources within the proposed project area.

Habitat evaluations, wildlife survey results, and fish and wildlife resources within the proposed project area are documented within, but not limited to:

- Section 5.4 Wildlife Survey Results, pages 5-8 through 5-14, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 5-A Biological Resources Survey Report, Copper Flat Pipeline and Well Sites, Sierra County, New Mexico* within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Appendix 5-B Winter Bird Survey Report* within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Addendum B – Copper Flat Mine: Addendum to Section 5 (Wildlife) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis, Inc., dated June 25, 2013.
- *Biological Resources Survey, Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- *Summary Report: 2015-2016 Biological Surveys at the Mill Site Claims and Proposed Substation Area, Copper Flat Mine, Sierra County, NM*, prepared by GeoSystems Analysis, Inc., dated February 17, 2017.
- Appendix J Aquatic Consultants Inc. *Biological Assessment of the Existing Copper Flat Pit Lake*, November 2014 of *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, prepared by SRK Consulting, Inc., May 2018.
- *Appendix G: Biological Resources Survey Report* within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.

Guideline: Consult with NM Game and Fish Department, US Fish and Wildlife, and NM Energy, Minerals and Natural Resources Department.

New Mexico Department of Game and Fish (NMDG&F) was consulted on wildlife issues by MMD as documented below, but not limited to:

- 2010-10-29 letter from NMDG&F on the *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- 2012-10-18 letter from NMDG&F on the Permit Application Package consisting of:
 - *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012.
 - *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- 2013-09-23 letter from NMDG&F on *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Appendix A – Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis Inc., dated June 25, 2013.
 - *Appendix B – Copper Flat Mine: Addendum to Section 5 (Wildlife) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis, Inc., dated June 25, 2013.
- 2015-09-28 letter from NMDG&F on *Biological Resources Survey Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- 2017-01-09 letter from NMDG&F on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016.
- 2017-05-01 letter from NMDG&F on *Summary Report: 2015-2016 Biological Surveys at Mill Site Claims and Proposed Substation Area, Copper Flat Mine, Sierra County, NM*, prepared by GeoSystems Analysis, Inc., dated February 17, 2017.
- 2018-01-17 letter from NMDG&F on *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, prepared by SRK Consulting Inc., dated December 2017.
- 2018-01-19 letter from NMDG&F on *Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, dated December 12, 2017.

U.S. Fish and Wildlife Service (“USFWS”) was consulted by the BLM as documented below:

- 2016-07-06 memorandum to the District Manager, Las Cruces District Office, Bureau of Land Management, Las Cruces, New Mexico from Field Supervisor, USFWS New

Mexico Ecological Services Field Office with the subject *Endangered Species Act Section 7 Consultation on the Proposed Copper Flat Mine Project*.

NM Energy, Minerals and Natural Resources Department (“EMNRD”) was consulted as documented below:

- 2012-10-02 EMNRD Forestry comments on Permit Application Package consisting of:
 - *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012.
 - *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- 2013-09-12 EMNRD Forestry comments on *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Appendix A – Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis Inc., dated June 25, 2013.
- 2015-08-10 EMNRD Forestry comments on *Biological Resources Survey Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- 2016-11-21 EMNRD Forestry comments on the *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016.

Guideline: Discuss any short and long-term impacts, best management practices or mitigation measures to be implemented.

Short and long-term impacts to wildlife are documented within, but not limited to:

- Section 3.10 Wildlife and Migratory Birds in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Best management practices and mitigation measures pertaining to wildlife resources are documented within, but not limited to:

- Section 3.10.3 Mitigation Measures in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

3.7.3 Threatened, endangered, candidate, and species of concern

Guideline: Conduct a habitat evaluation/survey for the proposed permit area to describe, document and evaluate potential habitat for threatened species, endangered species, candidate species and species of concern.

Habitat data for threatened, endangered, candidate, and species of concern are documented within, but not limited to:

- Section 4.0 Vegetation Survey Results, pages 4-1 through 4-28, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Section 4.4.1.7 Rare, Threatened, or Endangered Species, page 4-20.
 - Section 4.4.2 Pipeline Corridor, page 4-22.
 - Table 4-12 Threatened, Endangered, and Plant Species of Concern with Occurrences in Sierra County.
- Section 5.0 Wildlife Survey Results, pages 5-1 through 5-14, within *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
 - Section 5.4 Baseline Data Results, page 5-8.
 - Section 5.4.3 Las Animas Creek, Percha Creek, Percha Box, and Isolated Springs, page 5-11 through page 5-13.
- *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Appendix A – Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis Inc., dated June 25, 2013.
 - *Appendix B – Copper Flat Mine: Addendum to Section 5 (Wildlife) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis, Inc., dated June 25, 2013.
- *Biological Resources Survey Report, Copper Flat Pipeline and Well Sites, Sierra County, New Mexico*, prepared by Parametrix, dated August 2011, presented as Appendix G within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- *Biological Resources Survey Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- *Summary Report: 2015-2016 Biological Surveys at Mill Site Claims and Proposed Substation Area, Copper Flat Mine, Sierra County, NM*, prepared by GeoSystems Analysis, Inc., dated February 17, 2017.

Guideline: Consult with NM Game and Fish Department and US Fish and Wildlife Service and the Endangered Plant Program (within the EMNRD Forestry Division) to identify state and federally listed threatened, endangered, candidate, and species of concern that may occur in the proposed project area.

Consultations with NM Department of Game and Fish are documented in:

- 2010-10-29 letter from NMDG&F on the *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- 2012-10-18 letter from NMDG&F on the Permit Application Package consisting of:
 - *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012.
 - *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- 2013-09-23 letter from NMDG&F on *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Appendix A – Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis Inc., dated June 25, 2013.
 - *Appendix B – Copper Flat Mine: Addendum to Section 5 (Wildlife) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis, Inc., dated June 25, 2013.
- 2015-09-28 letter from NMDG&F on *Biological Resources Survey Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- 2017-01-09 letter from NMDG&F on *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016.
- 2017-05-01 letter from NMDG&F on *Summary Report: 2015-2016 Biological Surveys at Mill Site Claims and Proposed Substation Area, Copper Flat Mine, Sierra County, NM*, prepared by GeoSystems Analysis, Inc., dated February 17, 2017.
- 2018-01-17 letter from NMDG&F on *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, prepared by SRK Consulting Inc., dated December 2017.
- 2018-01-19 letter from NMDG&F on *Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, dated December 12, 2017.

Consultations with U.S. Fish and Wildlife Service by the BLM are documented within:

- 2016-07-06 memorandum to the District Manager, Las Cruces District Office, Bureau of Land Management, Las Cruces, New Mexico from Field Supervisor, USFWS New Mexico Ecological Services Field Office with the subject *Endangered Species Act Section 7 Consultation on the Proposed Copper Flat Mine Project*.

NM Energy, Minerals and Natural Resources Department was consulted as documented below:

- 2012-10-02 EMNRD Forestry comments on Permit Application Package consisting of:
 - *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012.
 - *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.
- 2013-09-12 EMNRD Forestry comments on *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources Group, Ltd., dated July 17, 2013.
 - *Appendix A – Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report*, prepared by GeoSystems Analysis Inc., dated June 25, 2013.
- 2015-08-10 EMNRD Forestry comments on *Biological Resources Survey Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
- 2016-11-21 EMNRD Forestry comments on the *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016.

Guideline: Discuss direct impacts, impacts to designated critical habitat and impacts to any observed preferred habitat within or in proximity to the proposed permit area.

Impacts to threatened, endangered, candidate and flora/fauna species of concern are documented within, but not limited to:

- Section 3.10 Wildlife and Migratory Birds in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Section 3.11 Vegetation, Invasive Species, and Wetlands in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.12 Threatened, Endangered, and Special Status Species in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any proposed mitigation measures or best management practices.

Mitigation measures are documented within:

- Section 3.12.3 Mitigation Measures in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Depending on the results of the surveys, a biological assessment may be required.

A Biological Assessment for consultation with U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, Albuquerque, New Mexico under Section 7 of the Endangered Species Act of 1973 is being prepared by BLM with input from U.S. Fish and Wildlife Services.

3.10 Waste and Waste Disposal

Guideline: Describe any solid waste, liquid waste and hazardous waste that will be generated by the proposed action and how the waste will be managed using best management practices or other mitigation measures.

Solid waste, liquid waste and any hazardous waste that will be generated by the Copper Flat Mine, along with mitigation measures to be implemented, is documented within, but not limited to:

- Section 2.2.4 Disposal Systems, page 2-38 and 2-39, in *New Mexico Corporation new Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.6 Tailings Disposal Facilities, page 2-39 through 2-41, in *New Mexico Corporation new Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.

- Section 2.2.7 Mills (Process Facilities), page 2-41 through 2-51, *New Mexico Corporation new Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.8 Water Treatment Facilities, page 2-51, *New Mexico Corporation new Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.9 Storage Areas, page 2-51, *New Mexico Corporation new Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 2.2.11 Waste Rock Stockpiles, page 2-52 and 2-53, in *New Mexico Corporation new Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- Section 3.9 Hazardous Materials and Solid Waste/Solid Waste Disposal, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Mitigation measures related to solid waste, liquid waste and any hazardous waste are documented within:

- *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017, specifically:
 - *Appendix A - Feasibility Level Design, 30,000 TPD Tailings Storage Facility, Copper Flat Project, Sierra County, New Mexico*, prepared by Golder Associates, dated November 30, 2015.
 - *Appendix B - Impoundment Design Report, Copper Flat Project*, prepared by M3, dated November 24, 2015.
 - *Appendix C – Process Facility Containment Report*, prepared by M3, dated December 4, 2015.
 - *Appendix E - Mine Reclamation and Closure Plan, Copper Flat Mine, Revision 1*, prepared by Golder Associates Inc., dated July 17, 2017.
 - *Attachment E2 – Tailings Storage Facility [TSF] Post-Operations Water Management Plan, Revision 1*, prepared by Golder Associates, dated July 17, 2017.

- Section 3.9 Hazardous Materials and Solid Waste/Solid Waste Disposal, pages 3-115 through 3-122, within *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.9.2.1.2 Mine Closure/Reclamation, page 3-121 and 3-122.

3.11 Traffic

Guideline: Describe the traffic and transportation effects from construction workers and transport of ore and other materials in and out of the proposed permit area using various transportation mechanisms such as roads, highways, railways, etc.

Traffic conditions, capacity of existing roads and highways, and highway conditions are documented within, but not limited to:

- Section 3.20 Transportation and Traffic in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any mitigation measures or best management practices to be implemented.

Traffic mitigation measures are documented within:

- Section 3.20.3 Mitigation Measures in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

3.12 Visual Impacts

Guideline: Describe the visual impacts of the proposed action including effects on aesthetic resources such as scenic vistas and skylines.

Visual impacts of the proposed project are documented within, but not limited to:

- Section 3.14 Visual Resources, page 3-178 through 3-185, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.16 Recreation, pages 3-194 through 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Section 3.17 Special Management Areas, pages 3-202 through 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Describe any proposed best management practices or mitigation measures.

Best management practices and mitigation measures for visual impacts are documented within, but not limited to:

- Section 3.14.3 Mitigation Measures, page 3-185, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.16.3 Mitigation Measures, page 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.17.3 Mitigation measures, page 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

3.13 Noise

Guideline: Describe noise impacts associated with the proposed action.

Noise impacts are documented within, but not limited to:

- Section 3.21 Noise and Vibrations, pages 3-225 through 3-234, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.

Guideline: Describe any best management practices or mitigation measures.

Best management practices and mitigation measures are documented within, but not limited to:

- Section 3.21.3 Mitigation Measures, page 3-234, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.

Section 4.0 Summary of Environmental Impacts from the Proposed Action and Past, Present and Reasonably Foreseeable Future Actions on the Local Community

Guideline: Enumerate and summarize the anticipated environmental impacts identified in Section 3 above of the proposed action.

A summary of the anticipated environmental impacts of the proposed project are documented within, but not limited to:

- *Executive Summary Probable Hydrologic Consequences & Predictive Geochemical Modeling of Pit Lake Water Quality Reports*, Copper Flat Mine, THEMAC Resources Group Ltd., May 2018.
- *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, revised May 22, 2018.
- Section 2.6 Summary, pages 2-92 through 2-95, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.
 - Table 2-32 Summary of Impacts, page 2-95.
- Section 3.27 Short-Term Uses and Long-Term Productivity, page 3-304, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.28 Irreversible and Irretrievable Commitment of Resources, page 3-305, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Summarize the impacts of the past, present and reasonably foreseeable future actions on the pre-mining and post-mining environment and local community (cumulative impacts analysis).

Anticipated cumulative impacts of the past, present and reasonably foreseeable future actions on the pre-mining and post-mining environment and local community are documented within, but not limited to:

- Section 3.27 Short-Term Uses and Long-Term Productivity, page 3-304, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.
- Section 3.28 Irreversible and Irretrievable Commitment of Resources, page 3-305, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

- Chapter 4 Cumulative Impacts, pages 4-1 through 4-15, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.
 - Section 4.1 Past and Present Actions, pages 4-1 through 4-2.
 - Section 4.2 Reasonably Foreseeable Future Actions, pages 4-2 through 4-6.
 - Section 4.3 Environmental Consequences, pages 4-6 through 4-15.

Section 5.0 Summary of Mitigation Measures

5.1 Physical Resource Mitigation Measures

Guideline: Describe the proposed mitigation measures related to land, water and air impacts and how the measures will be implemented.

A summary of proposed mitigation measures is documented within, but not limited to:

- *Copper Flat Groundwater Level Monitoring Plan for Probable Hydrologic Consequences and Predictive Geochemical Modeling of Pit Lake Water Quality Reports*, THEMAC Resources Ltd., May 2018.
- Section 2.7 Best Management Practices, pages 2-95 through 2-98, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Guideline: Include descriptions of required items such as air quality permits, surface water discharge permit, ground discharge permits, pump and treat methods, underground or aboveground storage tank permits, storm water pollution prevention plans, Section 404 permit, radiation surveys, radon release modeling or other best management practices.

Descriptions of permits required are documented within, but not limited to:

- Section 1.6 Permits, Licenses, and Other Entitlements, pages 1-7 through 1-11, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Table 1-1 Major Permits and Approvals, page 1-8.
- Section 2.7 Best Management Practices, pages 2-95 through 2-98, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

5.2 Biological and Threatened and Endangered Species Mitigation Measures

Guideline: Describe the proposed mitigation measures to be implemented related to biological resources such as animal ramps, no construction during breeding season, pond nests or other best management practices.

Mitigation measures related to biological resources are documented within, but not limited to:

- Section 3.12.3 Mitigation Measures in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 2.7 Best Management Practices, pages 2-95 through 2-98, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.
 - Page 2-97 Wildlife and Migratory Birds.
 - Page 2-98 Vegetation and Non-native Invasive Species.
 - Page 2-98 Threatened and Endangered Species and Special Status Species.

5.3 Socioeconomic and Environmental Justice Mitigation Measures

Guideline: Describe any mitigation measures to be implemented.

Socioeconomic and environmental justice mitigation measures are documented within, but not limited to:

- Section 3.22 Socioeconomics, pages 3-235 through 3-272, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1*, dated November 2015, published by the BLM.
 - Section 3.22.3 Mitigation Measures, page 3-270 through 3-272.
- Section 3.23 Environmental Justice, pages 3-273 through 3-283, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
 - Section 3.23.3 Mitigation Measures, page 3-283.

5.4 Archaeological and Cultural Resource Mitigation Measures

Guideline: Describe proposed mitigation and best management techniques such as excavation/documentation, preservation, avoidance, etc.

Mitigation measures and best management techniques regarding archaeological and cultural resources are documented within, but not limited to:

- Section 3.13.3 Mitigation Measures, pages 3-176 through 1-177, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- *Programmatic Agreement Among Bureau of Land Management, Las Cruces District Office, New Mexico State Historic Preservation Officer, New Mexico State Land Office, and THEMAC Resources Group Limited/New Mexico Copper Corporation Regarding*

Resolution of Adverse Effects to Historic Properties From the Copper Flat Mine, Hillsboro, New Mexico.

- *Appendix H: National Historic Preservation Act Section 106 Compliance Correspondence within Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1, dated November 2015, published by the BLM.*

5.5 Environmentally Sensitive Areas

Guideline: Describe proposed mitigation measures such as restorative/replacement wetlands, or other best management practices to be implemented in environmentally sensitive areas and formally classified lands.

No wetlands, farmland, floodplains, or other classified lands have been identified.

5.6 Noise, Visual, Traffic and Waste Disposal Mitigation Measures

Guideline: Describe proposed mitigation measures related to noise, visual, traffic and waste disposal impacts from the proposed action.

Mitigation measures related to noise impacts are documented within, but not limited to:

- Section 3.21.3 Mitigation Measures, page 3-234, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Mitigation measures related to visual impacts are documented within, but not limited to:

- Section 3.14.3 Mitigation Measures, page 3-185, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.16.3 Mitigation Measures, page 3-201, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.
- Section 3.17.3 Mitigation Measures, page 3-204, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Mitigation measures related to traffic impacts are documented within, but not limited to:

- Section 3.20.3 Mitigation Measures in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Mitigation measures related to waste disposal impacts are documented within, but not limited to:

- Section 3.9.3 Mitigation Measures in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

6.0 Consultation, Coordination and Public Involvement

6.1 Agencies Consulted

Guideline: Provide a list of the agencies contacted and a copy of any responses received.

Agencies consulted on the Permit Application Package include, but are not limited to:

- New Mexico Environment Department
 - Groundwater Bureau
 - Surface Water Bureau
 - Air Quality Bureau
- New Mexico Energy, Minerals and Natural Resources Department
 - Forestry Division
- New Mexico Department of Game and Fish
- New Mexico Department of Cultural Affairs
 - Historic Preservation Division
- New Mexico Office of the State Engineer
- Bureau of Land Management, Las Cruces Field Office
 - BLM is consulting with U.S. Fish and Wildlife under Section 7 of the Endangered Species Act of 1973

Copies of responses are available for public review in the Copper Flat Mine project file, identified as Mining and Minerals Division project number SI027RN.

Agencies contacted in preparation of the Draft EIS are documented within:

- Chapter 5 Consultation and Coordination, pages 5-1 through 5-6, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015 published by the BLM.

6.2 Public Involvement

Guideline: Provide evidence of public notice documentation such as proofs of publication, affidavits of publication, copies of returned receipts, meeting minutes, transcripts, etc.

Public involvement in the scoping of the Draft EIS is documented within:

- Section 5.1 Public Involvement, pages 5-1 through 5-4, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

Public involvement in the Permit Application Process through Mining and Minerals Division is documented within, but not limited to:

- Public Notice published in *The Herald*, Volume 84, Number 1, dated July 18, 2012.
- Public Notice sent to MMD interested parties list.
- Permit Application Package was made available for public review at the Truth or Consequences Public Library and the Hillsboro Public Library.
- Permit Application Package was made available for public review on the EMNRD MMD website.

6.3 Responsiveness Summary

Guideline: Provide a summary and response to public comments received during the Environmental Evaluation process.

Public comments received on the Permit Application Package are available for public review in the Copper Flat Mine project file, identified as Mining and Minerals Division project number SI027RN. Public comments received to date address topics including, but not limited to: surface water impacts to quality and quantity, groundwater impacts to quality and quantity, water rights and availability, socioeconomic and tourism concerns, traffic and scenic byway concerns, surveys for biological species, existence of a pit lake at closure, pit backfilling at closure, reclamation, tailing impoundment construction requirements, waste rock leaching concerns, operational concerns, concerns with the Draft Environmental Impact Statement, impacts to cultural resources, blasting concerns, electrical usage concerns, dust control concerns, cumulative impacts, economic viability of the mining operation, and others. These and any other topics will be open for public comment during the public hearing on the Permit Application Package and this Draft EE.

7.0 List of Preparers

Guideline: Identify the names and job titles of persons involved with the preparation of the Environmental Evaluation including signatures and dates.

A list of preparers for the Draft EIS is provided within:

- Table 5-1 List of Preparers, page 5-6, in *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

This Draft Environmental Evaluation was prepared by:



David J. ("DJ") Ennis, P.G.
Senior Reclamation Specialist
Mining and Minerals Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

July 13, 2018

Date

8.0 References

Guideline: Provide a list of the references cited in the Environmental Evaluation.

Sampling and Analysis Plan Documents:

- *Sampling and Analysis Plan for Copper Flat Mine*, prepared by Intera, Inc., dated September 2010.
- *Supplemental Biological Work Plan for Mill Site and Substation Areas*, prepared by GeoSystems Analysis, Inc., dated February 18, 2016.

Baseline Data Report Documents:

General Documents

- *Baseline Data Characterization Report for the Copper Flat Mine, Sierra County, New Mexico*, prepared by Intera, Inc., dated June 2012.

Contains:

- Appendix 2-A Meteorological Monitoring Quarterly Reports, prepared by Class One Technical Services, Inc., dated 2010 through 2011.
- Appendix 2-B Air Quality PM10 Monitoring Quarterly Reports, prepared by Class One Technical Services, Inc., dated 2010 through 2011.
- Appendix 4-A Detailed Plant Cover Summaries by Stratum and Transect in the Copper Flat Mine Permit Area.
- Appendix 4-B Detailed Primary Plant Production Summaries by Stratum and Transect in the Copper Flat Mine Permit Area.
- Appendix 4-C Detailed Shrub Density Summaries by Stratum and Transect in the Copper Flat Mine Permit Area.
- Appendix 4-D Hink and Ohmart Vegetation Mapping in the Copper Flat Mine Permit Area, prepared by Parametrix, dated 2011.
- Appendix 4-E Hink and Ohmart Vegetation Mapping in the Las Animas Creek Study Area, prepared by Parametrix, dated 2011.
- Appendix 4-F Hink and Ohmart Vegetation Mapping in the Percha Creek Study Area, prepared by Parametrix, dated 2011.
- Appendix 5-A Biological Resources Survey Report, Copper Flat Pipeline and Well Sites, Sierra County, New Mexico, prepared by Parametrix, dated August 2011.
- Appendix 5-B Winter Bird Survey Report, prepared by Parametrix, dated January

4, 2012.

- Appendix 6-A Copper Flat Mine Order 1 Soil Survey of Permit Area, prepared by Stetson Engineers, Inc., dated September 14, 2011.
 - Appendix 7-A Geochemical Review of Waste Rock, Pit Lake Water Quality and Tailings, prepared by SRK, dated November 1996.
 - Appendix 7-B Copper Flat Preliminary Waste Management Plan, New Mexico Copper Corporation, prepared by THEMAC Resources/New Mexico Copper Corporation, dated December 2010, Revised June 2011.
 - Appendix 7-C Copper Flat Static and Kinetic Test Recommendations, prepared by SRK Consulting, dated December 6, 2010.
 - Appendix 7-D Copper Flat Geochemical Characterization Program, prepared by SRK Consulting, dated February 7, 2011.
 - Appendix 7-E Copper Flat Geochemical Characterization Program Incorporation of the 1997 Static Test Data, prepared by SRK Consulting, dated March 30, 2011.
 - Appendix 7-F Copper Flat Kinetic Testwork Update, prepared by SRK Consulting, dated July 2011.
 - Appendix 8-A Surface Water and Seepage Measurement Location Field Data
 - Appendix 8-B Seepage Study Report, prepared by Intera Incorporated, dated August 25, 2011.
 - Appendix 8-C Surface Water Analytical Results.
 - Appendix 8-D Surface Sediment Analytical Results.
 - Appendix 8-E Pit Lake Analytical Results.
 - Appendix 8-F Pit Lake Sediment Analytical Results.
 - Appendix 8-G Water Level Data.
 - Appendix 8-H List of Inventoried Wells, prepared by John Shomaker & Associates, Inc., dated September 6, 2011.
- *Copper Flat Mine Baseline Data Report Addendum*, prepared by THEMAC Resources, Ltd., dated July 17, 2013.

Contains:

- Attachment A - Copper Flat Mine: Addendum to Section 4 (Vegetation) of the Baseline Data Characterization Report, prepared by GeoSystems Analysis, dated June 25, 2013.
- Attachment B – Copper Flat Mine: Addendum to Section 5 (Wildlife) of the Baseline Data Characterization Report, prepared by GeoSystems Analysis, dated June 25, 2013.
- Attachment C – Technical Memorandum: Response to MMD Comments on the BDR, prepared by Golder Associates, dated July 9, 2013. Contains:
 - Attachment 1 – Supplemental Soils Investigation, Copper Flat Project,

prepared by Golder Associates, dated July 8, 2013.

- Attachment 2 – Electronic Laboratory Data Provided by Stetson Engineers
 - Attachment D – THEMAC Technical Memorandum: Responses to Select Comments on the Copper Flat Baseline Data Report, prepared by THEMAC Resources, Inc., dated July 17, 2013.
 - Attachment E – John Shomaker & Associates Technical Memorandum: Baseline Data Characterization Report Comment Resolution and Amendment, Copper Flat Mine, prepared by John Shomaker & Associates, Inc., dated July 8, 2013.
Contains:
 - Water Quality Survey Summary for the Lower Rio Grande Tributaries 2004, prepared by New Mexico Environment Department Surface Water Quality Bureau, dated November 2009.
 - Attachment F – M3 Foundations Reports, prepared by M3, dated October 25, 2011 and January 31, 2013.
-
- *New Mexico Copper Corporation Copper Flat Project: Paleontology Resource Survey Summary Report*, prepared by Zeigler Geologic Consulting, LLC, dated April 9, 2015.
 - *Biological Resources Survey Copper Flat Mine: Nine Mill Sites and Two Substation Alternatives*, prepared by GeoSystems Analysis, Inc., dated May 12, 2015.
 - *Summary Report: 2015-2016 Biological Surveys at Mill Site Claims and Proposed Substation Area, Copper Flat Mine, Sierra County, NM*, prepared by Geosystems Analysis, Inc., dated February 17, 2017.

Geochemistry Documents

- *Geochemical Characterization Report for the Copper Flat Project, New Mexico, Volume 1-2*, prepared by SRK Consulting, dated May 2013.
 - Appendix A: Sample List.
 - Appendix B: Waste Rock and Ore Static Test Results.
 - Appendix C: Tailings Static Test Results.
 - Appendix D: Mineralogy Reports.
 - Appendix E: Waste Rock and Ore Humidity Cell Test Results.
 - Appendix F: Tailings Humidity Cell Test Results.
 - Appendix G: Example of WRDF PHREEQC Input File.
 - Appendix H: Example of TSF PHREEQC Input File.
 - Appendix I: Scaling of Laboratory Data to Field Operations.

- *Humidity Cell Termination Report for the Copper Flat Project, New Mexico*, prepared by SRK Consulting, dated February 2014.
 - Appendix A: Humidity Cell Results.
 - Appendix B: Mineralogy Report for Humidity Cell Test Samples.
 - Appendix C: Termination Test Results.

- *Technical Memorandum: Evaluation of Mercury as a COC for Copper Flat Pit Water*, prepared by John Shomaker & Associates, dated June 30, 2014.

- *External Memorandum, Copper Flat PFS (Pre-Feasibility Study) and DFS (Definitive Feasibility Study) Gap Analysis*, prepared by SRK Consulting, dated February 13, 2014.

- *Technical Memorandum: Review of Methods and Assumptions for Predicting Open Pit Water Quality, Copper Flat Project, New Mexico*, prepared by John Shomaker & Associates, dated December 17, 2014.

- *Predictive Geochemical Modeling of Pit Lake Quality at the Copper Flat Project, New Mexico – DRAFT*, prepared by SRK Consulting, dated December 2014*. (*Replaced by subsequent submittal(s).)
 - Appendix A: Review of Methods and Assumptions for Predicting Open Pit Water Quality (JSAI, 2014).
 - Appendix B: Example of PHREEQC Input File.
 - Appendix C: Humidity Cell Elemental Release Rate Graphs.
 - Appendix D: Existing Pit Lake Chemistry.
 - Appendix E: PHREEQC Output File (electronic).
 - Appendix F: Evaluation of Mercury as a COC for Copper Flat pit water (JSAI, 2014).

- *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, prepared by SRK Consulting, dated December 11, 2017* (*Replaced by subsequent submittal(s).)
 - Appendix A. Time-Series Plots of Existing Pit Lake Chemistry.
 - Appendix B. Humidity Cell Elemental Release Rate Graphs.
 - Appendix C. JSAI Evaporation Rate Technical Memorandum.
 - Appendix D: JSAI Groundwater Chemistry Technical Memorandum.
 - Appendix E: Water Supply Well Chemistry.
 - Appendix F: JSAI Review of Methods and Assumptions for Predicting Open Pit Water Quality.
 - Appendix G: JSAI Future Pit Water Balance.
 - Appendix H: PHREEQC Input Files (electronic).

- Appendix I: PHREEQC Output File (electronic).
 - Appendix J: Aquatic Consultants Inc., Biological Assessment of the Existing Copper Flat Pit Lake.
- *Predictive Geochemical Modeling of Pit Lake Water Quality at the Copper Flat Project, New Mexico*, prepared by SRK Consulting, dated May 2018.
 - Appendix A. Time-Series Plots of Existing Pit Lake Chemistry.
 - Appendix B. Humidity Cell Elemental Release Rate Graphs.
 - Appendix C. JSAI Evaporation Rate Technical Memorandum.
 - Appendix D: JSAI Groundwater Chemistry Technical Memorandum.
 - Appendix E: Water Supply Well Chemistry.
 - Appendix F: JSAI Review of Methods and Assumptions for Predicting Open Pit Water Quality.
 - Appendix G: JSAI Future Pit Water Balance.
 - Appendix H: PHREEQC Input Files (electronic).
 - Appendix I: PHREEQC Output File (electronic).
 - Appendix J: Aquatic Consultants Inc., Biological Assessment of the Existing Copper Flat Pit Lake.

Groundwater and Surface Water Documents

- *Model of Groundwater Flow in the Animas Uplift and Palomas Basin, Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, Inc., dated August 22, 2013*. (~~*Replaced by subsequent submittal(s).~~)
 - Appendix A. Geological Bibliography.
 - Appendix B. Well Construction Diagrams.
 - Appendix C1. Initial PW-Well Pumping Tests, 1975-1980.
 - Appendix C2. MW-9 Pumping Test, 1994.
 - Appendix C3. 2012 Aquifer Test Results.
 - Appendix C4. TSF-Area Pumping Test, 1994.
 - Appendix C5. Pit Area Pressure-Injection Tests, September 2011.
 - Appendix D. MODFLOW Code Documentation.
- *Model of Groundwater Flow in the Animas Uplift and Palomas Basin, Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, Inc., dated February 21, 2014*. (~~*Replaced by subsequent submittal(s).~~)
 - Appendix A. Geological Bibliography.
 - Appendix B. Well Construction Diagrams.
 - Appendix C1. Initial PW-Well Pumping Tests, 1975-1980.
 - Appendix C2. MW-9 Pumping Test, 1994.

- Appendix C3. 2012 Aquifer Test Results.
 - Appendix C4. TSF-Area Pumping Test, 1994.
 - Appendix C5. Pit Area Pressure-Injection Tests, September 2011.
 - Appendix D. MODFLOW Code Documentation.
- *Model of Groundwater Flow in the Animas Uplift and Palomas Basin, Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, Inc., dated August 15, 2014.
 - Appendix A. Geological Bibliography.
 - Appendix B. Well Construction Diagrams.
 - Appendix C1. Initial PW-Well Pumping Tests, 1975-1980.
 - Appendix C2. MW-9 Pumping Test, 1994.
 - Appendix C3. TSF-Area Pumping Test, 1994.
 - Appendix C4. 2012 Aquifer Test Results.
 - Appendix C5. Pit Area Pressure-Injection Tests, September 2011.
 - Appendix D. MODFLOW Code Documentation.
- *Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, dated December 2017* (*Replaced by subsequent submittal(s).)
 - Appendix A. Projected Groundwater-Level Hydrographs at Selected Locations.
 - Appendix B. Technical Memo Regarding Liner Leakage Rates.
- *Revision 1.0 Probable Hydrologic Consequences of the Copper Flat Project, Sierra County, New Mexico*, prepared by John Shomaker & Associates, revised May 22, 2018.
 - Appendix A. Projected Groundwater-Level Hydrographs at Selected Locations.
 - Appendix B. Technical Memo Regarding Liner Leakage Rates.
- *Copper Flat Groundwater Level Monitoring Plan for Probable Hydrologic Consequences and Predictive Geochemical Modeling of Pit Lake Water Quality Reports*, THEMAC Resources Ltd., May 2018.
- *Executive Summary Probable Hydrologic Consequences & Predictive Geochemical Modeling of Pit Lake Water Quality Reports*, Copper Flat Mine, THEMAC Resources Group Ltd., May 2018.
- *Ground Water Discharge Permit Application* to New Mexico Environment Department, prepared by New Mexico Copper Corporation, dated December 9, 2015.

Mining Operation and Reclamation Plan Documents:

- *Mine Operation and Reclamation Plan, Copper Flat Mine Project, Sierra County, New Mexico*, prepared by THEMAC Resources Group, Ltd., dated July 18, 2012*. (*Replaced by subsequent submittal(s).)
- *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine*, prepared by Velasquez Environmental Management Services, Inc., dated October 2016*. (*Replaced by subsequent submittal(s).)
- *New Mexico Copper Corporation New Mine Permit No. SI027RN Updated Mining Operation and Reclamation Plan For Its Copper Flat Mine, Revision 1*, prepared by Velasquez Environmental Management Services, Inc., dated July 2017.
- October 13, 2017 letter from THEMAC Resources/New Mexico Copper Corporation regarding October 5, 2017 Request for Additional Information on Updated MORP Rev. 1, 2017, specifically the attachment entitled *Copper Flat Open Pit Reclamation/Revegetation Plan*, dated October 2017.

Contains:

- *Technical Memorandum, Literature Review of Wildlife Use of Mine Pit Walls*, prepared by Geosystems Analysis, Inc., dated September 25, 2017.
- *Appendix A – New Mexico Department of Game and Fish Habitat Guidelines for Mine Operations and Reclamation*.
- *Copper Flat Open Pit Reclamation/Revegetation Plan*, prepared by THEMAC Resources/New Mexico Copper Corporation, dated October 2017.
- November 30, 2017 letter from THEMAC Resources/New Mexico Copper Corporation regarding *NMCC Response to MMD Additional Technical Comments On: Updated Mining Operation and Reclamation Plan, Rev. 1, July 2017; Response for Additional Information dated October 13, 2017*; Copper Flat Mine, Sierra County, Permit Tracking No. SI027RN.
- January 5, 2018 letter from THEMAC Resources/New Mexico Copper Corporation, response to MMD Technical Comment December 27, 2017.

Other References

- *Copper Flat Draft Environmental Impact Statement, Sierra County, New Mexico, Volume 1-3*, dated November 2015, published by the BLM.

9.0 Appendix A – Abbreviated Resumes

David J. (“DJ”) Ennis, P.G.

Senior Reclamation Specialist, Mining and Minerals Division

Mr. Ennis has a B.S. in Geology and M.S. in Geochemistry from New Mexico Institute of Technology, Socorro, New Mexico. He is a Professional Geologist in two states with approximately 20 years of environmental compliance experience in the private sector as well as county and state government. Mr. Ennis has been employed by Mining and Minerals Division as a Senior Reclamation Specialist since 2010 and has been the permit lead on the Copper Flat Mine permit application since approximately 2013.