

**Resolution Copper Project and Land Exchange
Environmental Impact Statement**

USDA Forest Service
Tonto National Forest
Arizona

August 6, 2018

Process Memorandum to File

Livestock and Grazing Resource Analysis: Assumptions; Methodology Used; Relevant Regulations, Laws, and Guidance; and Key Documents

This document is deliberative and is prepared by the third-party contractor in compliance with the National Environmental Policy Act and other laws, regulations, and policies to document ongoing process and analysis steps. This document does not take the place of any Line Officer's decision space related to this project.

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Revision History

Date	Personnel	Revisions Made
08/06/18	Emily Newell	Process memorandum created.
10/29/18	Emily Newell	Revisions to memorandum title, revision history table added, edits to purpose of process memorandum section, references and key documents section added.
11/15/18	Emily Newell	Edits to land ownership and access, removal of realty and boundary markers section.
8/1/19	Emily Newell	Update to process memorandum per draft environmental impact statement.
12/30/20	Chris Garrett	Final update for consistency prior to final environmental impact statement release.

Purpose of Process Memorandum

In order to provide a concise and accessible summary of resource impacts, certain detailed information has not been included directly in the environmental impact statement (EIS). The purpose of this process memorandum is to describe additional supporting resource information in detail. The livestock and grazing section of chapter 3 of the EIS includes brief summaries of the information contained in this process memorandum. This process memorandum covers the following topics:

- Resource analysis area
- Analysis methodology
- Regulations, laws, and guidance
- Key documents and references cited

Detailed Information Supporting Environmental Impact Statement Analysis

Resource Analysis Area

The analysis area for land use consists of grazing allotments or parcels that overlap spatially, in full or in part, with the primary general plan of operations proposed mine components (West Plant Site, East Plant Site, Magma Arizona Railroad Company corridor, and Near West tailings storage facility) and each of the alternative tailings storage facility locations analyzed in this EIS (represented in figure 3.16.2-1 in section 3.16.2 of the final EIS). The temporal analysis includes all portions of the mine life where impacts to grazing allotments could occur, including the construction, operations, closure and reclamation, and postclosure phases.

Analysis Methodology

This analysis aims to document the potential for acreages of livestock grazing allotments to change, the potential for animal unit months (AUMs)¹ to be reduced, the potential for loss of grazing-related facilities, the potential for increased livestock mortality, and the potential for reduced economic viability of ranching communities.

We determined the grazing allotments in the analysis area through geospatial data we obtained from the Tonto National Forest, Bureau of Land Management (BLM), and Arizona State Land Department (ASLD). We then calculated the acreage of impacted grazing allotments where the perimeter of the project area overlapped those allotments. We further analyzed impacts to springs with geospatial maps containing spring locations, as well as various biological evaluations, surveys, and catalogs prepared for Resolution Copper Mining LLC. To analyze existing rangeland conditions, we used environmental assessments and allotment management plans, where available. Current rangeland conditions and available AUMs were not available for all BLM-managed allotments, or the Devil's Canyon allotment under U.S. Forest Service (Forest Service) management. In addition, current rangeland conditions were not available for grazing parcels leased out by the ASLD.

Note that in the EIS it is stated that ASLD does not maintain detailed documentation on rangeland conditions for specific grazing permit areas; therefore, the analysis assumes that rangeland conditions for State lands would be similar to those found on neighboring National Forest System and BLM lands. This is based on available public data.

Reductions in Animal Unit Months

The reduction in AUMs due to the project is a simple calculation based on percentage of acres lost. Water sources were reviewed to account for large areas that would be impacted by loss of water sources or loss of access to those sources and included in the acreage if impacted. For instance, an example for Alternative 2:

- Original acreage of Devil's Canyon (Forest Service) allotment: 18,700 acres
- Original AUMs for Devil's Canyon allotment: 1,104
- Impacted acreage = 3,980 acres, representing 21.3 percent of the allotment
- Reduction in AUMs for Devil's Canyon allotment: 235 (21.3 percent of original AUMs)

Regulations, Laws, and Guidance

Mining operations are subject to a wide range of Federal, State, and local requirements. Table 1 provides a summary of livestock and grazing laws, regulations, policies, and plans at the Federal, State, and local level.

¹ An "animal unit month" is defined as the amount of forage required to feed one mature cow weighing approximately 1,000 pounds and a calf up to weaning age.

Table 1. Livestock and Grazing Laws, Regulations, Policies, and Plans

Laws, Ordinances, Regulations, and Standards	Description	Applicability
Multiple-Use Sustained-Yield Act of 1960	Establishes the policy and purpose of the national forests to provide for multiple use and sustained yield of products and services.	Livestock grazing is a permitted land use under the Multiple-Use Sustained-Yield Act and occurs on Forest Service land throughout the analysis area. Impacted grazing allotments managed by the Forest Service consist of the Millsite, Superior, and Devil's Canyon allotments.
Taylor Grazing Act of 1934	Provides for the regulation of grazing on public lands to improve rangeland conditions and regulate their use.	Affected grazing allotments include those on public land that are subject to management under the Taylor Grazing Act.
Forest and Rangeland Renewable Resources Planning Act of 1974	Authorizes long-range planning by the Forest Service to ensure the future supply of forest resources while maintaining a quality environment. It requires that a renewable resource assessment and a Forest Service plan be prepared every 10 and 5 years, respectively, to plan and prepare for the future of natural resources.	Each Forest Service grazing allotment within the analysis area (Millsite, Devil's Canyon, and Superior) currently operates under its respective allotment management plan. Each individual allotment management plan outlines a monitoring program with the intention to determine whether the currently prescribed management practices are properly implemented and effective for the improvement of rangeland conditions.
Federal Land Policy and Management Act of 1976	Reorganized, expanded, and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on National Forest System lands. The Federal Land Policy and Management Act requires the Secretary of Agriculture to assess forest lands, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the National Forest System. It is the primary statute governing the administration of national forests.	The Tonto National Forest uses the "Tonto National Forest Land Management Plan" (Forest Service 2023) to outline and guide management of livestock grazing and rangeland on Tonto National Forest lands.

Laws, Ordinances, Regulations, and Standards	Description	Applicability
Public Rangelands Improvement Act of 1978	Establishes and reaffirms the national policy and commitment to inventory and identify current public rangeland conditions and trends; manage, maintain, and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process; charge a fee for public grazing use that is equitable; continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros that pose a threat to themselves and their habitat and to other rangeland values.	<p>Millsite, Superior, and Devil’s Canyon allotments are all available as public rangeland for grazing and currently operate under their respective allotment management plans.</p> <p>Permits are paid for by the lessee and distributed by Federal and State agencies for all public rangeland within the analysis area.</p>
Tonto National Forest Land Management Plan	In general, the goal of the Tonto National Forest for every allotment is to manage livestock in a manner that allows for the attainment of sustainable multiple-use resource objectives that are compatible with the standards and guidelines in the forest plan and the principles of ecosystem management.	<p>Within the analysis area, three grazing allotments are under Tonto National Forest management and, therefore, its land and resource management plan.</p> <p>The Tonto National Forest implements compliance monitoring to ensure livestock are distributed correctly and to inspect improvement maintenance and forage utilization, among other variables, with an inspection scheduled each grazing year.</p>

Laws, Ordinances, Regulations, and Standards	Description	Applicability
Arizona Revised Statutes 37-281.01, Lease of State lands for grazing purposes	<p>All State lands are subject to lease as provided in this article for a term of not more than 10 years for grazing purposes without public auction.</p> <p>The department shall give notice of the availability of expiring grazing leases on State lands by advertisement, published in December of each year, at least 1 year in advance of the expiration date of any grazing lease.</p>	Rendering of current grazing conditions from available to unavailable or partially available would require notice at least 1 year in advance to be given by ASLD to the affected lessee.
Arizona Standards for Rangeland Health and Guidelines for Grazing Administration	Standards and guidelines for grazing administration.	Arizona Standards and Guidelines and the final rule apply to grazing administration on public lands. Public lands managed by the BLM within the analysis area include the Teacup Ranch, A-Diamond, Helmwheel, and LEN grazing allotments.

Key Documents and References Cited for Livestock and Grazing

The following list is meant to highlight key process or analysis documents available in the project record. It should not be considered a full list of all available documentation considered within this process memorandum or the EIS analysis.

- Arizona State Land Department (ASLD). 2019. Grazing lease information obtained from online mapping portal. Available at: <http://gis.azland.gov/webapps/parcel/>. Accessed June 1, 2019.
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- WestLand Resources Inc. 2018. *Survey of Surface Water Features in the Resolution Project Area and Vicinity: Resolution Copper*. Project No. 807.132 04 01. Prepared for Resolution Copper. Tucson, Arizona: WestLand Resources Inc. March.
- WestLand Resources Inc., and Montgomery and Associates Inc. 2018. *Spring and Seep Catalog, Resolution Copper Project Area, Upper Queen Creek and Devils Canyon Watersheds*. Prepared for Resolution Copper. Version 2.0. Tucson, Arizona: WestLand Resources Inc. and Montgomery and Associates. June 15.