

# Grazing Management Supplemental Environmental Report Goldrush Mine Project

August 2023

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## List of Acronyms and Abbreviations

<b>ACEPM</b>	Applicant-Committed Environmental Protection Measure
<b>AUM</b>	Animal Unit Month
<b>BEA</b>	Bank Enabling Agreement
<b>BLM</b>	Bureau of Land Management
<b>BMP</b>	Best Management Practice
<b>CFR</b>	Code of Federal Regulations
<b>EIS</b>	Environmental Impact Statement
<b>HC/CUEP</b>	Horse Canyon/Cortez Unified Exploration Project
<b>kV</b>	Kilovolt
<b>MLFO</b>	Mount Lewis Field Office
<b>NEPA</b>	National Environmental Policy Act of 1969
<b>NGM</b>	Nevada Gold Mines LLC
<b>Plan</b>	Plan of Operations
<b>RIB</b>	Rapid Infiltration Basin
<b>SER</b>	Supplemental Environmental Report
<b>SIR</b>	Supplemental Information Report
<b>TFO</b>	Tuscarora Field Office

## Executive Summary

Nevada Gold Mines LLC (NGM) submitted a Plan of Operations (Plan) (N-97532) and Nevada Reclamation Permit Application for the proposed underground Goldrush Mine to the Mount Lewis Field Office (MLFO) of the Battle Mountain District Bureau of Land Management (BLM) (NGM 2021). The Goldrush Mine is located approximately 30 miles south of Beowawe, Nevada, in both Lander and Eureka counties, Nevada, and includes the construction, operation, reclamation, and closure of a new underground mine. The Goldrush Mine Plan boundary would include approximately 19,853 acres, with approximately 772 acres of private land consisting of portions of patented mining claims and the Horse Ranch owned by NGM and approximately 19,081 acres of unpatented mining claims would be on public lands administered by the BLM MLFO and in part the BLM Elko District, Tuscarora Field Office (TFO). The proposed Goldrush Mine would include approximately 1,694.2 acres of new proposed disturbance and approximately 1,075.5 acres of existing/authorized and reclassified disturbance, for a total disturbance of approximately 2,769.7 acres.

### Affected Environment

The area of analysis for grazing management for the Proposed Action, Wildlife Alternative, and No Action Alternative includes the Carico Lake, Grass Valley, JD, and South Buckhorn allotments. Portions of the proposed Goldrush Mine Plan boundary occur within each of these allotments.

The Carico Lake, Grass Valley, and JD allotments are located within the BLM Battle Mountain District and are managed by the MLFO. The South Buckhorn Allotment is located in the BLM Elko District and is managed by the TFO, with the exception of the South Buckhorn pasture, which is managed by the MLFO. There are 70,430 active Animal Unit Months (AUMs) permitted in the area of analysis. The Carico Lake, Grass Valley, and South Buckhorn allotments are in the Improve category, meaning that they are managed with a high priority for improving the current unsatisfactory conditions (BLM 1987, 1988). The Carico Lake Allotment was last evaluated in 2005 while the Grass Valley and South Buckhorn allotments were last evaluated in 1987. The JD Allotment is in the Maintain category (as of the last analysis in 1988), meaning the objective is to maintain current satisfactory conditions (BLM 1988). Numerous range improvement projects have been installed in these allotments, including fences, exclosures, and watering infrastructure (e.g., pipeline and troughs). Other range improvements and infrastructure may also occur within the area of analysis; however, may not be accounted for through standard identification. In addition to these projects, hundreds of seeps/springs and numerous perennial streams occur within the area of analysis (USGS 2020).

Within the areas of analysis, several other mining and mineral exploration activities including the Cortez Mine, Horse Canyon Mine, Horse Canyon/Cortez Unified Exploration Project (HC/CUEP), and West Pine Valley are present. In addition, utilities, infrastructure, roads, livestock grazing, dispersed recreation, and wildland fires also occur throughout the areas of analysis. Past and present activities within the areas of analysis have resulted in removal of vegetation, dispersal or displacement of local wildlife, including special status species, populations, and fragmentation of certain wildlife habitats and populations. The Barrick Bank Enabling Agreement (BEA) Public Land Polygons are present in portions of the area of analysis. If activities associated with the BEA take place on the authorized areas within the area of analysis, the goal would be to restore and/or enhance habitat to benefit greater sage-grouse (*Centrocercus urophasianus*) and sagebrush ecosystems and generate credits under the BEA (BLM 2020a).

### Environmental Consequences

#### Proposed Action

When a single public purpose (i.e., mining) is permitted on BLM-administered land, permitted AUMs are sometimes adjusted to reflect the loss of area or loss of access to forage in the area. Temporarily reduced (i.e., suspended) AUMs can be reinstated once reclamation has been successfully completed. Impacts to AUMs are based on proposed disturbance and impacts from boundary fencing. While forage productivity varies widely across allotments, AUM impacts for BLM-administered land were estimated based on an average stocking rate. For the purposes of calculating impacts to AUMs, a value of 23 acres per AUM was used for the Carico Lake Allotment, 14 acres per AUM for the Grass Valley Allotment, 17 acres per AUM



for the JD Allotment, and 11 acres per AUM for the South Buckhorn Allotment; these values were calculated using the acres administered by the BLM and the total permitted use on the permit. AUM impacts were only analyzed for disturbance or fencing to BLM-administered lands. Under the Proposed Action, a total of 1,694 acres (1,616 public acres, 78 private acres) of surface disturbance may impact forage utilized by livestock. Any actual reduction in permitted grazing would be done through a subsequent BLM decision based on livestock carrying capacity and resource conditions (see 43 Code of Federal Regulations [CFR] 4100.0-5), accounting for actual forage unavailable for grazing.

A total of 124.5 AUMs would be impacted in the Carico Lake, Grass Valley, JD, and South Buckhorn allotments by proposed new disturbance. The 210 acres of proposed exploration disturbance would occur within the proposed Goldrush Mine Plan boundary, with potential short-term impacts ranging from nine to 19 AUMs, depending on the allotment within which it occurs. However, exploration could occur throughout the life of the Goldrush Mine; meaning potential impacts would be temporally spaced.

Proposed fencing would encompass a total of 123.4 acres within the TFO-administered portion of the South Buckhorn Allotment and 185.2 acres within the JD Allotment, precluding livestock access to approximately 11.2 and 10.9 AUMs, respectively. Proposed fencing is mainly associated with the rapid infiltration basins, which would be individually fenced to prevent livestock access. Other fenced facilities include the portal cut slope, the water treatment plant and yard, multi-use shop, paste plant, ventilation raises, and substations. Fencing would preclude livestock access and reduce potential impacts from interactions with these facilities.

Under the Proposed Action, a total of 2,326 acres of total surface disturbance (existing, authorized, proposed, and reclassified) would be reclaimed. The portions of proposed disturbance occurring outside of proposed fencing that would be reclaimed are as follows: 43.5 acres in the Carico Lake Allotment, 199.5 acres in the Grass Valley Allotment, 49.1 acres in the JD Allotment, 586.1 acres in the South Buckhorn pasture, and 244.2 acres in the TFO-administered portion of the South Buckhorn Allotment. The disturbance occurring outside of proposed fencing would impact a total of 99.3 AUMs. If suspended, AUMs may be reinstated once reclamation has been successfully completed.

The 444 acres of permanent, unreclaimed disturbance (including the portions of the Mount Tenabo access road and 120 kilovolt (kV) power line that fall outside of the Goldrush Mine Plan boundary) within the four allotments would create a permanent impact to 33.8 AUMs. These AUMs would likely be cancelled from the allotment permits because they may not be reinstated after mine closure.

The 210 acres of proposed exploration disturbance would occur within the proposed Goldrush Mine Plan boundary, with potential short-term impacts ranging from nine to 19.1 AUMs, depending on the allotment within which it occurs. However, exploration would occur throughout the life of the Goldrush Mine; meaning potential impacts would be temporally spaced.

In total, the Proposed Action would have permanent impacts to 33.8 AUMs from permanent, unreclaimed disturbance and short-term impacts to as many as 22.1 AUMs from fenced acres (308.6 acres), 99.3 AUMs from unfenced proposed disturbance (1,175.5 acres) that would be reclaimed, and up to 19.1 AUMs from exploration (210 acres). Overall, impacts to AUMs would be minor, short-term to permanent, and regional; if AUMs are suspended, impacts would be considered moderate. Any reductions to permitted AUMs would conform with 43 CFR 4110.4-2 and be issued through a 43 CFR 4160 Grazing Decision.

Impacts from proposed disturbance to rangeland improvements include the following: one water well, and 1.9 miles of fence within the Grass Valley Allotment; one spring and 0.6 miles of fence in the South Buckhorn pasture; and 1.4 miles of fence in the JD Allotment. Additionally, other range improvements and infrastructure not officially accounted for may be impacted under the Proposed Action. NGM has committed to protecting fences, gates, stock ponds, and other range improvements within the Plan boundary; therefore, impacts to range improvements would be negligible, short-term, and regional.

If hydraulically connected to the affected aquifer, dewatering under the Proposed Action may potentially impact up to 34 seeps and springs in the Carico Lake Allotment, 20 in the Grass Valley Allotment, 93 in the South Buckhorn Allotment (TFO-administered portion), and 39 in the South Buckhorn pasture (MLFO-administered) if these features are hydraulically connected to the affected aquifer. In addition, water-related

rangeland improvements may also be impacted by the proposed dewatering. Mine-related groundwater drawdown may impact forage and AUMs dependent on surface water flows. Within the groundwater drawdown contour, one spring and 11 water wells occur within the Carico Lake Allotment, two spring developments and one water well occur within the Grass Valley Allotment, 11 springs occur within the TFO-administered portion of the South Buckhorn Allotment, and three springs and one water well occur within the South Buckhorn pasture. No water-related range improvements in the JD Allotment are located in areas of potential groundwater drawdown.

Potential flow reductions in seeps, springs, and perennial streams attributable to mine-induced drawdown would be addressed through the implementation of existing mitigation, as described in the Cortez Hills Expansion Project Final Environmental Impact Statement (BLM 2008) and Technical Memorandum, Contingency Mitigation Plans for Surface Waters, Deep South Expansion Project, Lander and Eureka Counties, Nevada (BCI and Stantec 2018). All contingency mitigation measures would comply with Nevada Water Law and would involve the Nevada Office of the State Engineer. With this mitigation, overall impacts to water-related sources and rangeland improvements are anticipated to be negligible, long-term, and localized to regional.

Economic impacts from the potential reduction in AUMs would occur under the Proposed Action. The Nevada Grazing Statistics Report and Economic Analysis for Federal Lands in Nevada (RCI 2001) valued total economic impacts of one AUM at \$87.51 in 2020 dollars (U.S. Inflation Calculator 2021). The total economic impact from one AUM includes industry (\$66.20) and value-added (\$21.30) impacts. In total, \$12,566.44 in economic impacts would be realized annually based on the temporary loss of 143.6 AUMs from the Proposed Action. Temporary loss of a total of 143.6 AUMs would equate to up to \$376,993.08 based on a 30-year period of combined active mining and post-mining reclamation (assumed to be six years of reclamation after cessation of the 24-year mining operations). Interim reclamation may reduce the economic impact of the temporary loss of AUMs. A total of 33.8 AUMs would be permanently impacted, resulting in the loss of \$2,957.84 annually. The economic impact would be minor, temporary to permanent, and regional to the ranching community and agricultural or grazing sector of Nevada's or Eureka County's economy; however, the economic impact to the affected permittees may be moderate, long-term (lasting through reclamation) to permanent, and regional.

#### Revised Proposed Action for Reduced Wildlife Impacts Alternative (Wildlife Alternative)

Under the Wildlife Alternative, 1,626 acres (1,346 public acres, 70 private acres, and 210 acres of exploration that could occur anywhere within the Plan boundary) of surface disturbance may impact forage utilized by livestock. Under the Wildlife Alternative, a total of 2,350 acres of total surface disturbance (existing, authorized, proposed, and reclassified) would be reclaimed. The portions of proposed disturbance occurring outside of proposed fencing that would be reclaimed are as follows: 41.7 acres in the Carico Lake Allotment; 154.6 acres in the Grass Valley Allotment; 46.2 acres in the JD Allotment; 585.7 acres in the South Buckhorn pasture; and 238.2 acres in the TFO-administered portion of the South Buckhorn Allotment. The disturbance occurring outside of proposed fencing would impact a total of 99.3 AUMs. If suspended, AUMs may be reinstated once reclamation has been successfully completed.

Under the Wildlife Alternative, proposed activities would result in 345 acres of permanent, unreclaimed disturbance (including the portions of the Mount Tenabo access road and 120-kV power line that fall outside of the Goldrush Mine Plan boundary) within the four allotments and would result in permanent impact to 25.2 AUMs. These AUMs would likely be cancelled from the allotment permits because they may not be reinstated after mine closure.

In total, the Wildlife Alternative would have permanent impacts to 25.2 AUMs from permanent unreclaimed disturbance, short-term impacts to as many as 27.1 AUMs from fenced acres (361.0 acres), 90.3 AUMs from unfenced proposed disturbance (1,062.9 acres) that would be reclaimed, and up to 19.1 AUMs from exploration activities (210 acres). Implementation of the Wildlife Alternative would have slightly reduced impacts to AUMs compared to the Proposed Action because of the overall reduction in disturbance acres.

Under the Wildlife Alternative, temporary loss of a total of 135.1 AUMs would equate to up to \$354,678.03 based on a 30-year period of combined active mining and post-mining reclamation (assumed to be six years of reclamation after cessation of the 24-year mining operations). Interim reclamation may reduce the

economic impact of the temporary loss of AUMs. A total of 25.2 AUMs would be permanently impacted, resulting in the loss of \$2,205.25 annually. The economic impact due to the temporary and permanent loss of AUMs would be slightly reduced compared to the Proposed Action due to the overall reduction in AUMs.

Other impacts to grazing as a result of the Wildlife Alternative would be the same as described under the Proposed Action.

#### No Action Alternative

Under the No Action Alternative, the proposed Goldrush Mine would not be developed and the associated impacts to range resources would not occur. The existing mining and exploration activities and reclamation activities in the authorized Horse Canyon Mine Plan (N-66896), HC/CUEP Plan (N-66621), West Pine Valley Exploration Plan (N-77213), and Cortez Mine Plan (N-67575) (Section 1.2) would continue under current terms of approvals and permits as previously authorized by the BLM and the State of Nevada.

Overall, the types of impacts to range resources are similar in nature to those disclosed for the Proposed Action and impacts are related to ground disturbance and mine dewatering activities. These impacts are summarized by mine plan below and impacts that are different in nature than those identified for the Proposed Action are identified. Additionally, NGM would continue to implement applicant-committed environmental protection measures for range resources as authorized under previous National Environmental Policy Act actions which would help to further reduce impacts to range resources (BLM 2023).

Horse Canyon Mine: Under the No Action Alternative, up to 424.7 acres are authorized to be disturbed at the Horse Canyon Mine, which may impact range resources. Of the total authorized/existing disturbance, 413.8 acres occurs on BLM-administered lands as follows: 3.8 acres in the Carico Lake Allotment, 29.5 acres in the Grass Valley Allotment and 380.4 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of 0.2 AUMs in the Carico Lake Allotment, 2.1 AUMs in the Grass Valley Allotment, and 34.6 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. In addition, the majority of impacts from the Horse Canyon Mine have already occurred, and NGM is presently using the existing and authorized disturbance in the Horse Canyon Mine Plan for sumps and to store materials and equipment consistent with the authorized Horse Canyon Mine Plan. Overall, impacts to range resources from the Horse Canyon Mine Plan would be minor, long-term to permanent, and regional.

HC/CUEP Plan: Under the No Action Alternative, up to 589 acres are authorized to be disturbed at HC/CUEP, with an additional 99.1 acres of pre-1981 disturbance that would be reclaimed for a total of 688.1 acres, which may impact range resources. The authorized/existing 543.2 acres of disturbance on BLM-administered lands occurs as follows: 0.1 acres in the Carico Lake Allotment, 25.1 acres in the Grass Valley Allotment, and 517.9 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of less than one AUM of in the Carico Lake Allotment, 2.1 AUMs in the Grass Valley Allotment, and 47.1 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. As determined by the BLM, roads on public lands suitable for public access or which continue to provide public access consistent with pre-exploration conditions and the cut slope above the portal pad would not be reclaimed. Overall, impacts to range resources under the No Action Alternative from the HC/CUEP Plan would be minor, long-term to permanent, and regional.

West Pine Valley Exploration Plan: Under the No Action Alternative, up to 150.0 acres are authorized to be disturbed under the West Pine Valley Exploration Plan, which may impact range resources. The authorized/existing 82.9 acres of disturbance on BLM-administered lands occurs as follows: 61.1 acres in the Grass Valley Allotment, 13.2 acres in the JD Allotment, and 8.5 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of 4.4 AUMs in the Grass Valley Allotment, 0.8 AUMs in the JD Allotment, and 0.8 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. Overall impacts to range resources No Action Alternative from the West Pine Valley Exploration Plan would be minor, long-term to permanent, and regional.

Cortez Mine Plan: Under the No Action Alternative, 21,170.4 acres are authorized to be disturbed at the Cortez Mine, which may impact range resources. The 18,382.0 acres of authorized disturbance on BLM-administered lands occurs as follows: 17,937.5 acres in the Carico Lake Allotment, 300.6 acres in the Grass Valley Allotment, and 143.8 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of 779.9 AUMs in the Carico Lake Allotment, 21.5 AUMs in the Grass Valley Allotment, and 13.1 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. As determined by the BLM, some roads that allow public access may not be reclaimed. In addition, certain major stormwater diversion ditches may not be reclaimed. Overall, impacts to range resources No Action Alternative from the Cortez Mine Plan would be major, long term to permanent, and regional.

## 1.0 Introduction

In January 2020, Nevada Gold Mines LLC (NGM) submitted a Plan of Operations (Plan) (N-97532) and Nevada Reclamation Permit Application for the proposed underground Goldrush Mine to the Mount Lewis Field Office (MLFO) of the Battle Mountain District Bureau of Land Management (BLM). Following review by the BLM and consultation between BLM and NGM, revised plans were submitted in May 2020, August 2020, October 2020, and June 2021 (NGM 2021). The Plan was submitted to comply with Title 43 Code of Federal Regulations (CFR), subpart 3809 (43 CFR 3809.401 et seq., as amended), State of Nevada regulations governing the reclamation of mined lands (Nevada Administrative Code 519A.010-635), and BLM Instruction Memorandums No. NV-2014-019 and NV 2017-103. The 43 CFR 3809 regulations require that the BLM fulfill its obligation under the National Environmental Policy Act of 1969 (NEPA) by analyzing and disclosing the potential environmental impacts of the Goldrush Mine.

The Goldrush Mine is located approximately 30 miles south of Beowawe, Nevada, in both Lander and Eureka counties, Nevada, and includes the construction, operation, reclamation, and closure of a new underground mine (**Figures 1-1 and 1-2**). The sections below provide a short description of the Proposed Action and alternatives.

### 1.1 Proposed Action

NGM is proposing to construct, operate, and close a new underground mining project in the Cortez Mining District of Lander and Eureka counties, Nevada. The proposed underground mining and surface support activities for the Goldrush Mine would include (**Figure 1-3**):

- A materials handling system for transporting ore and waste rock from the underground workings to the surface and transporting aggregate and supplies to the underground workings and surface backfill plant;
- A dewatering system;
- Contact water pipeline;
- Ventilation raises;
- A backfill aggregate paste plant and crusher;
- A shotcrete/cemented rock fill plant;
- Two new power lines;
- New ancillary surface facilities including: bulk material storage, access roads, power supply, stormwater controls, laydown and parking areas, lighting, growth media stockpiles, dewatering and monitoring wells, gravel pit expansion, potable water and septic systems, dry facilities (change rooms), service boreholes for electrical and fuel delivery, septic and potable water systems, fire suppression system, water truck refill stations, emergency helipads, fencing, and modular information technology and communications buildings;
- Dual use of authorized facilities with the close-by Cortez Mine Plan;
- Continued surface and underground exploration activities; and
- Over-the-road haul trucks for direct transportation to either the NGM-operated Goldstrike or Gold Quarry off-site processing facilities.

The Proposed Action would result in changes to the Horse Canyon Mine Plan, Horse Canyon/Cortez Unified Exploration Project (HC/CUEP) Plan, West Pine Valley Exploration Plan, and Cortez Mine Plan. Proposed new disturbance would consist of approximately 1,694.2 acres and approximately 1,075.5 acres of existing/authorized and reclassified disturbance for a total of 2,769.7 acres of disturbance.

A more detailed description of the Proposed Action, including proposed applicant-committed environmental protection measures (ACEPMs), can be found in Section 2.0 of the Project Alternatives Supplemental Information Report (SIR) for the Goldrush Mine Project (BLM 2023).

## **1.2 Revised Proposed Action for Reduced Wildlife Impacts Alternative (Wildlife Alternative)**

In the summer of 2022, NGM further evaluated the project to develop a design that would minimize impacts to greater sage-grouse (*Centrocercus urophasianus*) habitat. NGM met with representatives from the Nevada Department of Wildlife and BLM at the Goldrush site on May 18, 2022, to examine the proposed infrastructure and disturbance for the Project and to identify and discuss additional avoidance and minimization actions that could further reduce impacts to greater sage-grouse leks in the area. The Nevada Department of Wildlife and NGM further discussed the areas for improvement and potential for further avoidance and minimization of impacts from the construction and operation of the Goldrush Project. As a result of those discussions, site visits, and public comments, NGM agreed to propose certain modifications to the Goldrush Project, expressed in this document as the Wildlife Alternative to reduce impacts to GRSG habitat and leks. The Wildlife Alternative would include construction, operation, reclamation, and closure of a new underground mining project in the Cortez Mining District of Lander and Eureka counties, Nevada (**Figure 1-4**). All activities would be as described under the Proposed Action except as outlined below (NGM 2023):

- Eliminate the water treatment plant and multi-use shop.
- Eliminate the surface paste plant in Horse Canyon, paste plant access road to Horse Canyon, and associated aggregate haulage.
- Relocate the laydown yard, which under the Proposed Action is located at the bottom of Horse Canyon along Lower Horse Canyon Road. The laydown yard would be constructed adjacent to the West Pine Valley Rapid Infiltration Basin (RIB) under the Wildlife Alternative.
- Adjust the alignment of the 13.8 kilovolt (kV) power line to relocate the poles below the crest of the canyon wall in Horse Canyon.
- The Wildlife Alternative Plan boundary is 18 acres larger than the Proposed Action, consisting of 19,871 acres compared to 19,853 acres for the Proposed Action.
- The total disturbance associated with the Wildlife Alternative is 68 acres less than the Proposed Action. The Wildlife Alternative would disturb 1,626 acres compared to 1,694 acres for the Proposed Action.

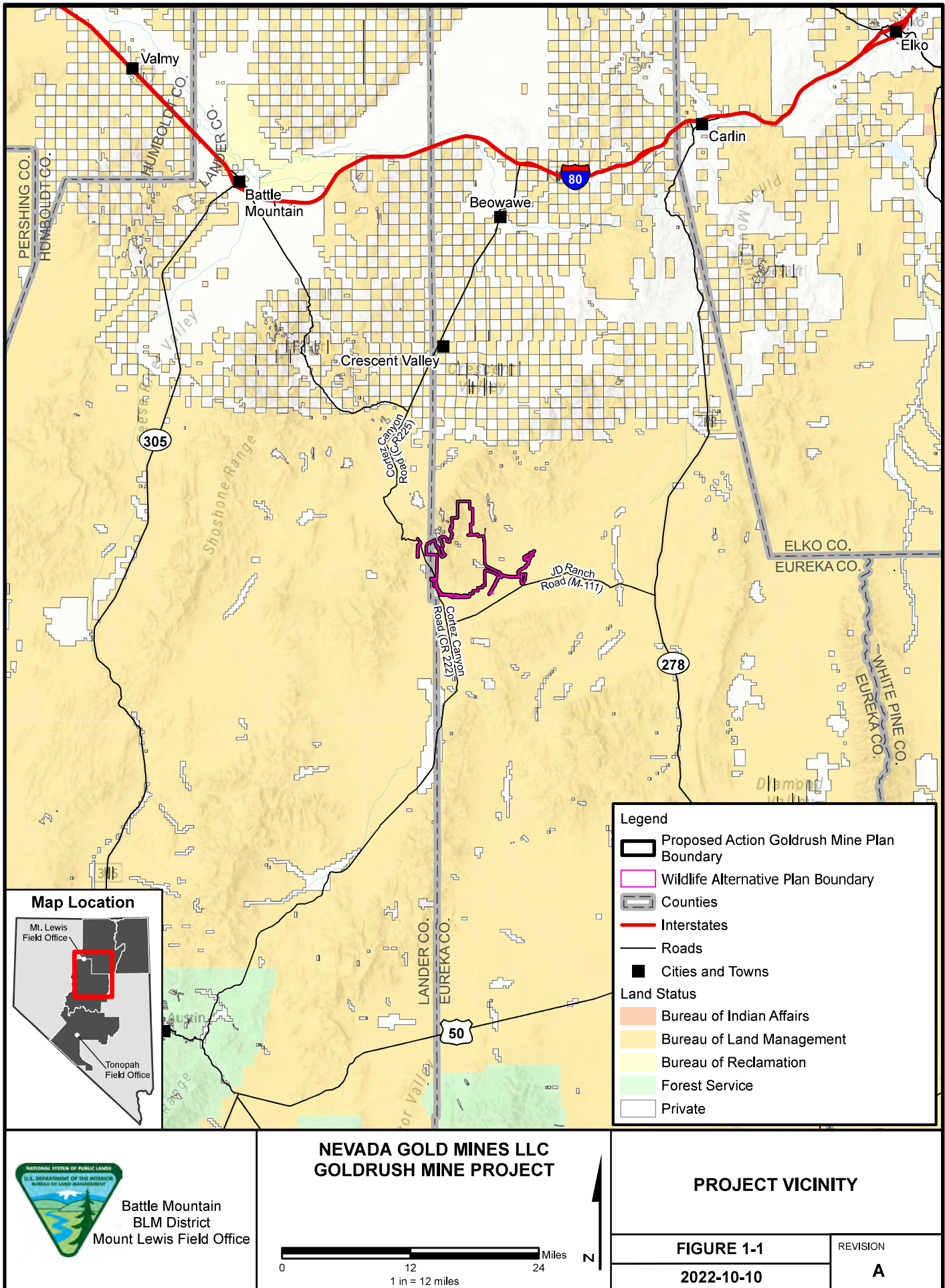
## **1.3 No Action Alternative (Currently Authorized Activities)**

Under the No Action Alternative, the development of the Goldrush Mine would not be authorized and NGM would not construct, operate, and close a new underground mine (i.e., the Goldrush Mine). Modifications or reclassification of disturbance as proposed under the Proposed Action would not occur and NGM would be permitted to continue the current authorized mining and exploration activities under the existing authorizations. NGM is presently conducting authorized mining and exploration activities within or close by to the Goldrush Mine Plan boundary under four separate Plans (**Figure 1-5**):

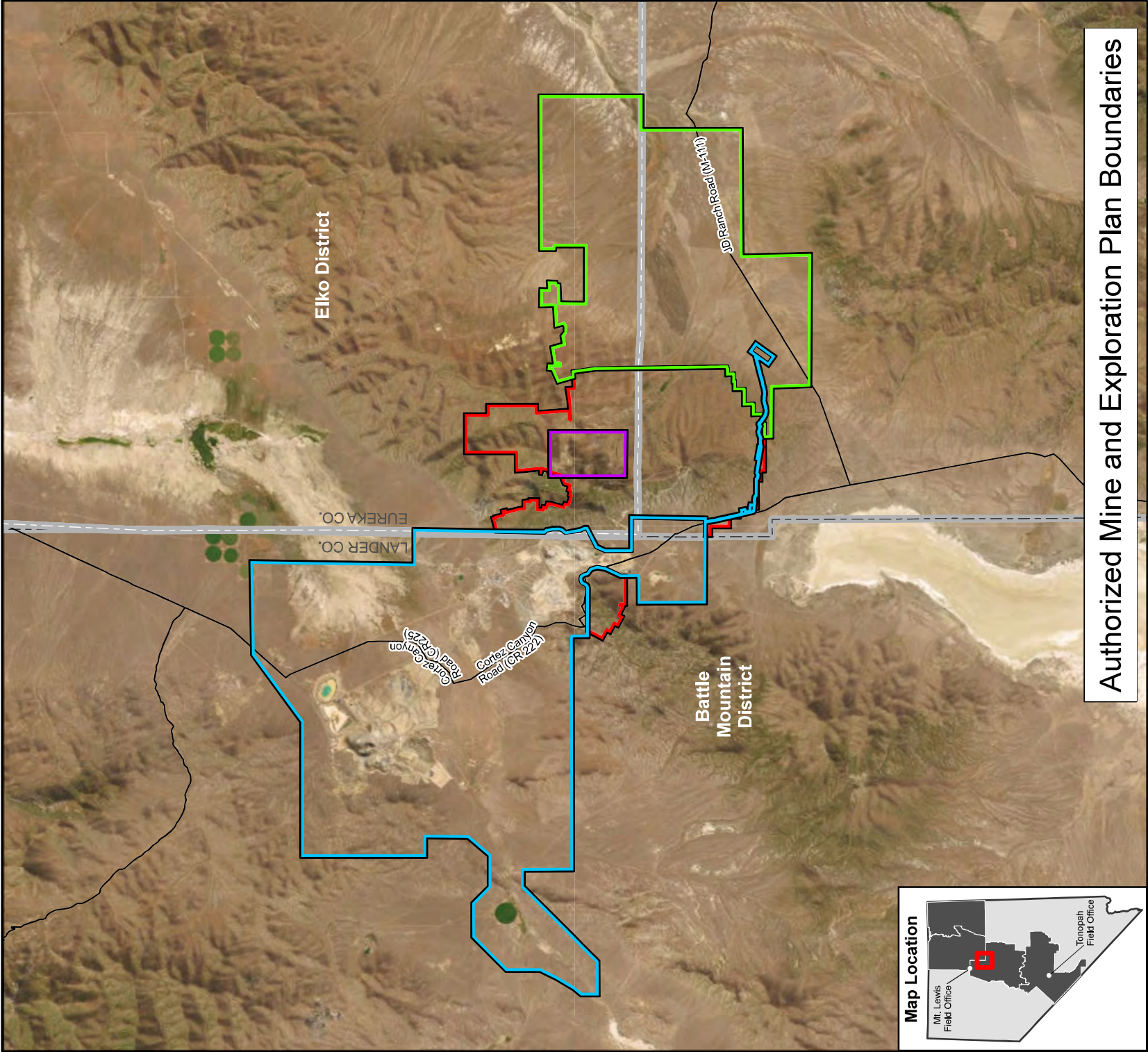
- The Horse Canyon Mine Plan (N-66896) has an authorized disturbance of 424.7 acres, a portion of which has been recontoured and reclaimed. The Horse Canyon Mine consists of the historic Horse Canyon Pit, South Extension Pit, South Silicified Pits, waste rock facility, and the Horse Canyon Haul Road;

- The HC/CUEP Plan (N-66621) has an authorized disturbance of approximately 589 acres with an additional 99.1 acres of pre-1981 improved disturbance which would be reclaimed for a total of 688.1 acres. The HC/CUEP Plan includes underground twin declines, exploration drifts and portal entrances, a portal pad with associated facilities, power and water supply, underground exploration and associated infrastructure, overland access, trenching, and exploration drill pads, roads, and sumps;
- The West Pine Valley Exploration Project Plan (N-77213) has an authorized disturbance of approximately 150 acres. The West Pine Valley Exploration Project includes overland travel, drill pads and sumps, exploration roads, and a drill supply and laydown yard area; and
- The Cortez Mine Plan (N-67575) has an authorized disturbance of approximately 21,170 acres. The Cortez Mine consists of four complexes: the Pipeline Complex, the Gold Acres Complex, the Cortez Complex, and the Cortez Hills Complex. All four complexes include various mining facilities. The Pipeline and Gold Acres Complex have surface mining, waste rock facilities, an oxide ore mill, tailings impoundments, heap leach facilities, dewatering system, RIBs, Class II-waivered landfill, laboratory, maintenance shop, fuel islands, and offices. The Cortez Hills Complex has surface and underground mining, waste rock facilities, heap leach facility, dewatering system, RIBs, maintenance shop, fuel islands, fresh water pond, and offices.

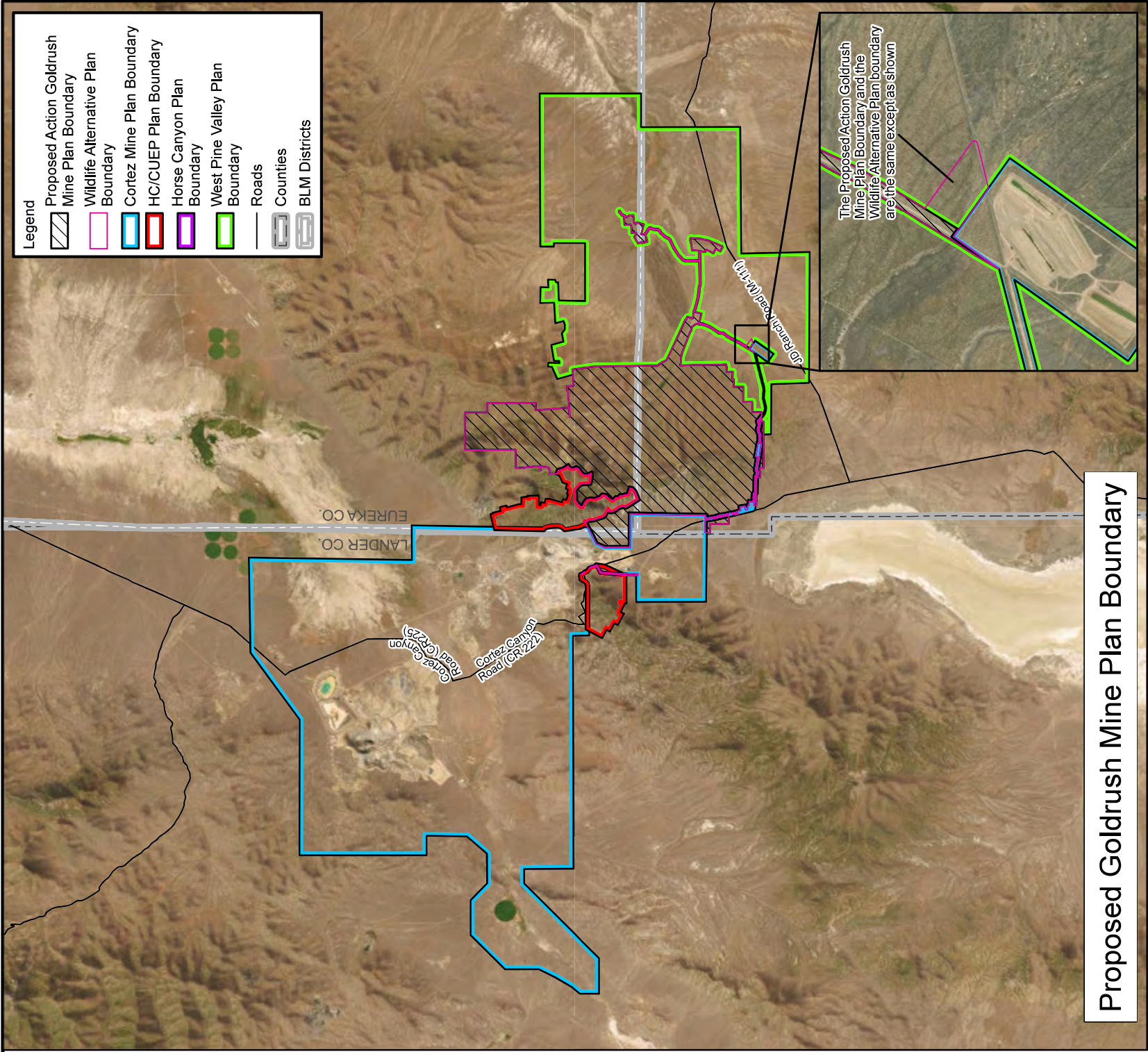
A more detailed description of the No Action Alternative, including authorized ACEPMs and existing authorizations, permits, and mitigation plans, can be found in Section 3.0 of the Project Alternatives SIR for the Goldrush Mine Project (BLM 2023).








Authorized Mine and Exploration Plan Boundaries



Proposed Goldrush Mine Plan Boundary



Battle Mountain  
BLM District  
Mount Lewis Field Office

NEVADA GOLD MINES LLC  
GOLDRUSH MINE PROJECT

1 in = 4 miles

0 4 8 Miles

North Arrow

**AUTHORIZED MINE AND EXPLORATION  
PLAN BOUNDARIES  
AND PROPOSED GOLDRUSH  
MINE PLAN BOUNDARY**

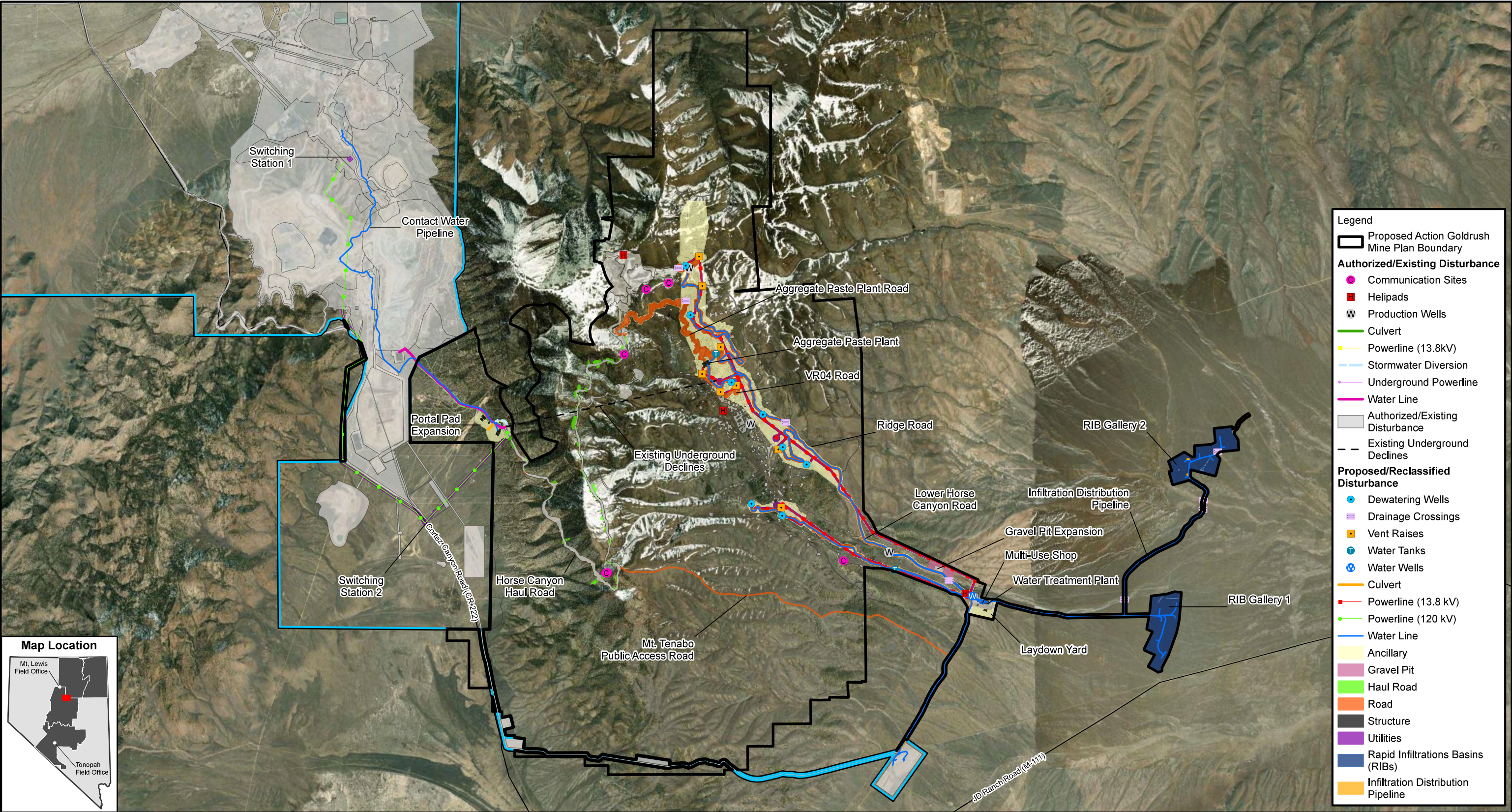
FIGURE 1-2

DATE: 2022-12-28

REVISION A

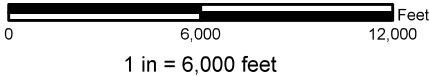
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.





Battle Mountain  
BLM District  
Mount Lewis Field Office

NEVADA GOLD MINES LLC  
GOLDRUSH MINE PROJECT



PROPOSED PROJECT FACILITIES

FIGURE 1-3

REVISION

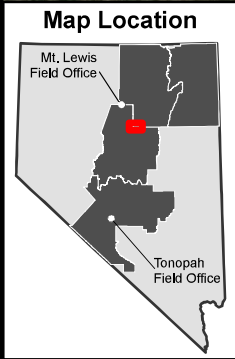
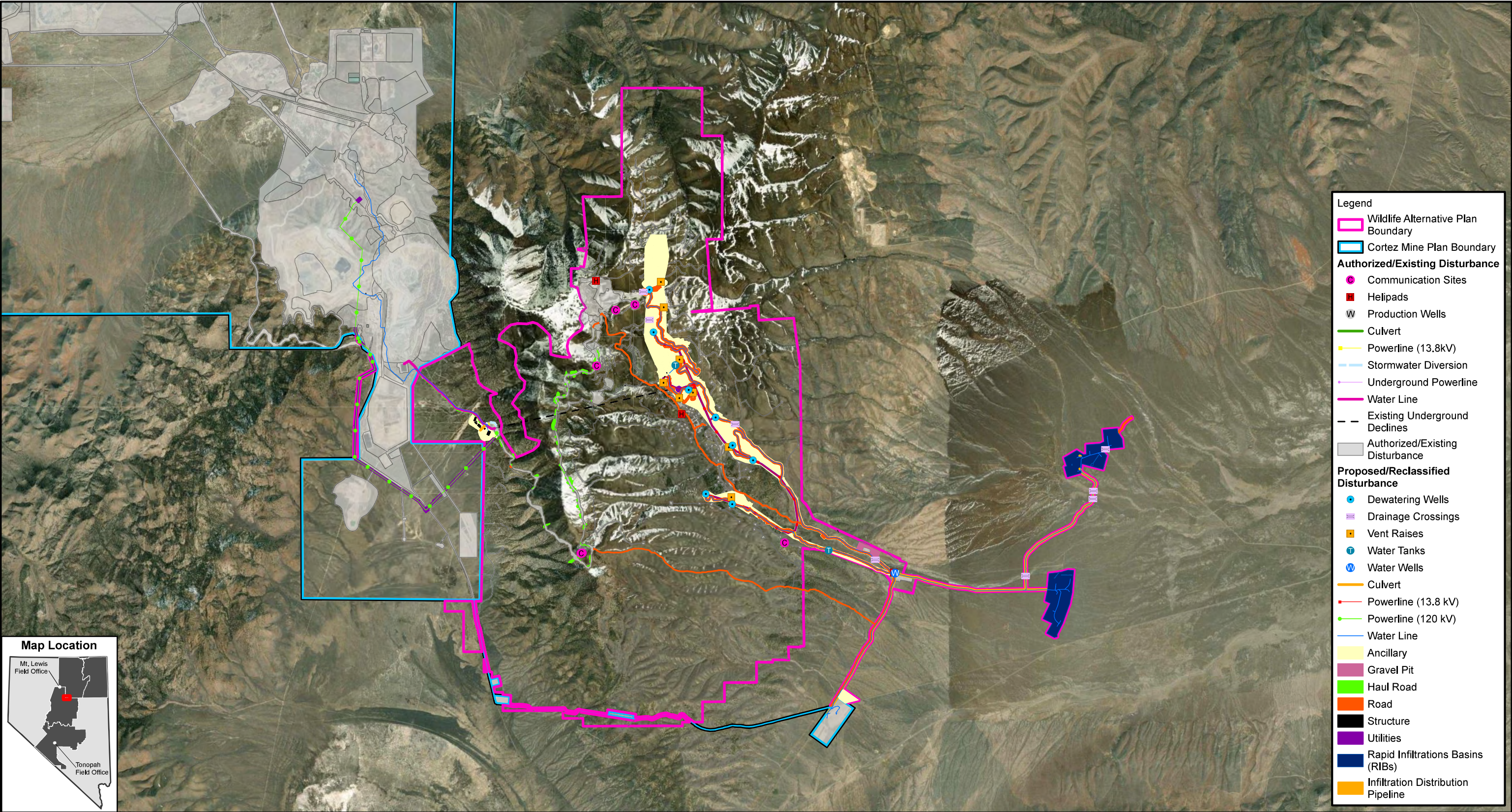
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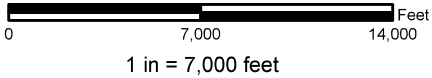
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GOLDRUSH MINE PROJECT

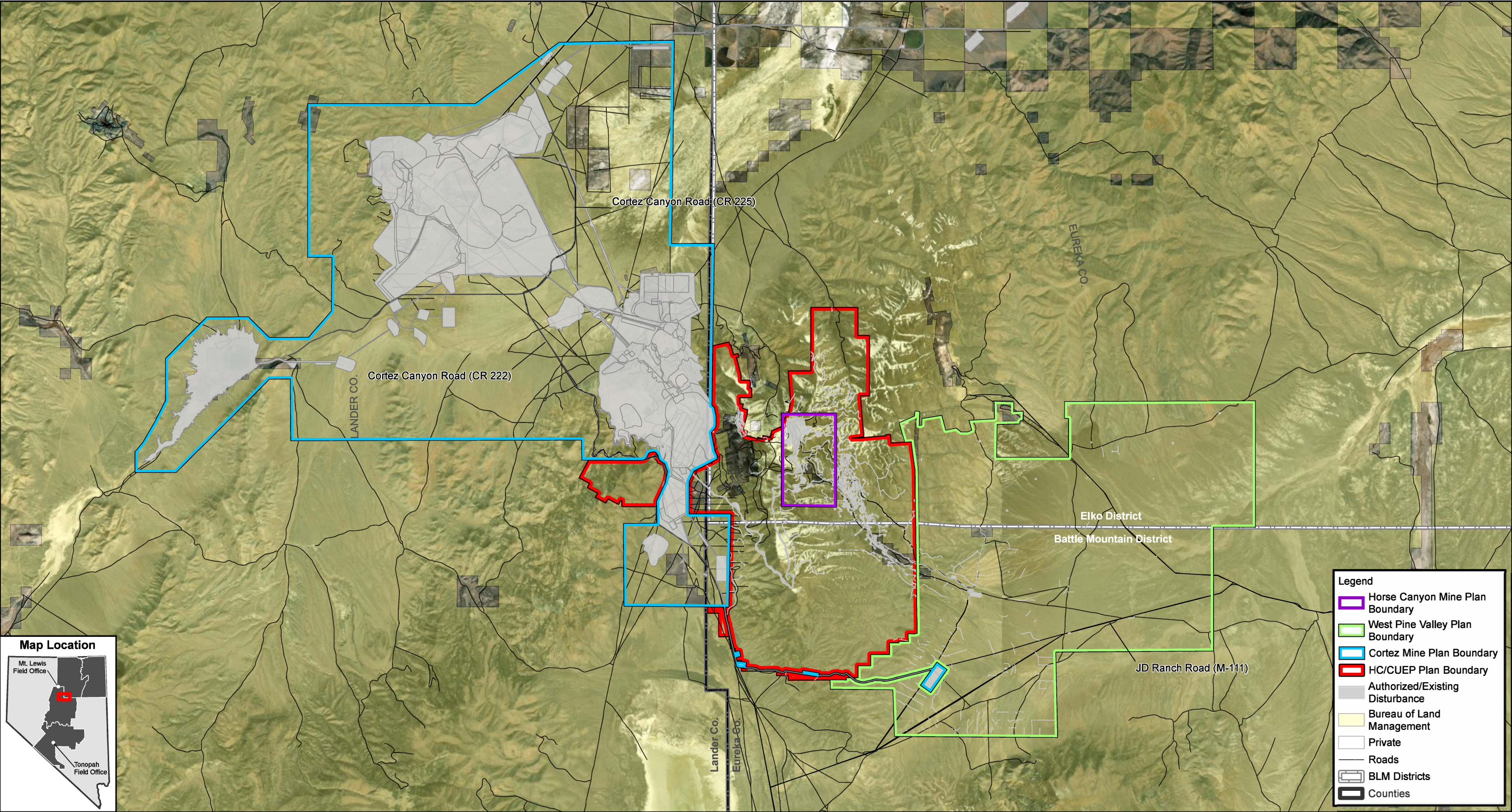


WILDLIFE ALTERNATIVE

FIGURE 1-4		REVISION <b>A</b>
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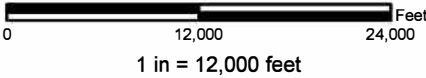
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BLM District  
Mount Lewis Field Office

NEVADA GOLD MINES LLC  
GOLDRUSH MINE PROJECT



NO ACTION ALTERNATIVE

FIGURE 1-5

DATE: 2022-10-10

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## **2.0 Affected Environment**

### **2.1 Area of Analysis**

The area of analysis for the Proposed Action, Wildlife Alternative, and No Action Alternative includes the Carico Lake, Grass Valley, JD, and South Buckhorn allotments. Portions of the proposed Plan boundary occur within each of these allotments (**Figure 2-1**).

### **2.2 Regulatory Framework**

#### **2.2.1 Bureau of Land Management**

Per 43 CFR 3809.420 (6), the Plan must be in compliance with other federal and state laws including those discussed below per CFR 3809.5 (1) to not cause unnecessary or undue degradation. The BLM administers grazing on public land in accordance with the Taylor Grazing Act of 1934, Federal Land Policy and Management Act, 43 CFR 4000, and the Public Rangeland Improvement Act of 1978, and currently manages in a manner aimed at achieving and maintaining local rangeland health standards. BLM utilizes local standards and guidelines to achieve desired conditions (43 CFR 4180.2). Standards describe specific conditions needed for land health and guidelines are one of the tools used to achieve the standards. The MLFO allotments are managed to achieve objectives in the Shoshone-Eureka Rangeland Program summary (BLM 1988). The Tuscarora Field Office (TFO) allotments are managed to achieve the objectives in the Elko Resource Management Plan Rangeland Program Summary (BLM 1987).

The BLM conducts allotment assessments to determine if the standards are being achieved. If an area is determined to not be meeting the standards for rangeland health, the BLM shall take appropriate action to make significant progress as soon as practicable (43 CFR 4180.2(c)). BLM also is mandated by the Public Rangeland Improvement Act of 1978 to “manage, maintain and improve the condition of the rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process (43 United States Code §1901).” BLM administers livestock grazing through leases, which authorize a certain amount of animal unit months (AUMs) for a type of livestock during specific dates. An AUM is the amount of forage needed to sustain a 1,000-pound cow, with or without a calf, for a period of one month (approximately 26 pounds of forage per day). AUMs can be used for other livestock types using an animal unit conversion.

#### **2.2.2 Lander County**

The Lander County Master Plan provides specific land use goals for livestock grazing specifically to “facilitate orderly development consistent with available resources and services in Lander County and Minimize conflicts among land uses (Lander County 2010).” Additionally, the Lander County Policy Plan for Federally Administered Lands specifies the plan policy for grazing includes (Lander County 2005):

- Grazing should utilize sound management practices. Range assessments and capacity determinations should be based on an allotment-by-allotment basis, based on site-specific monitoring. The procedures described in the Nevada Rangeland Monitoring handbook should be followed to establish proper levels of grazing.

#### **2.2.3 Eureka County**

Forage and Livestock Grazing included in the Eureka County Master Plan Natural Resources & Federal or State Land Use Element as a topic. Open space agriculture is the single greatest land use (2.4 million acres) in Eureka County, which includes livestock grazing and crops (Eureka County 2010). The defined goal for forage and livestock grazing is to provide for landscape vegetation maintenance and improvement that will:

1. Support restoration of suspended AUMs;
2. Support allocation of continuously available temporary non-renewable use as active preference;

3. Support allocation of forage produced in excess of the original adjudicated amounts where greater amounts of forage are demonstrated to be present;
4. Restore livestock numbers of individual ranches to at least the full levels at the time of grazing allotment adjudications; and
5. Restore wildlife populations to those peak levels of the mid-1990s.

Relevant goals and objectives include:

- Identify and implement all economically and technically feasible livestock distribution, forage production enhancement, and weed control programs before seeking changes in livestock stocking rates.
- Identify and initiate reductions in stocking levels only after monitoring data demonstrates that grazing management including range improvements and specialized grazing systems are not supporting basic soil, vegetation and watershed goals.
- Assure that all grazing management actions and strategies fully consider impact on property rights of inholders and adjacent private land owners and consider the potential impacts of such actions on grazing animal health and productivity.
- Authorize as needed the use of those lands, not currently authorized, for rights-of-way, leases and permits. Fully recognize and protect existing property rights including rights-of-way, easement, water rights, forage rights, mineral rights, and other such property.

Primary guidance for natural resource and land use planning is found in Title 9, Chapters 30, 40, and 50 of the Eureka County Code. Chapter 30 of the Eureka County Code provides guidance with respect to natural resource issues and to safe-guard property rights and other customary usage rights for Eureka County. The guidance includes:

- Prior existing property rights including, but not limited to water rights based on the doctrine of prior appropriation, forage rights based on the ownership of water rights and land, rights-of-way, and ownership of real property, are explicitly preserved by all federal land laws. Preservation of these rights demonstrates their importance to the custom, culture and economy of Eureka County and the west.

Additionally, the Eureka County Master Plan provides the following planning guidance specific to mining (Eureka County 2010):

"Mining. It is critical to the welfare of the citizens of Eureka County and the nation that mining on state and federal lands remains an open and free enterprise. Eureka County upholds the tenet that mining claims are compensable property belonging to individuals or groups of individuals. Eureka County supports:

1. retention of and compliance with the 1872 Mining Law as amended;
2. mine reclamation activities as per Nevada Revised Statutes Chapter 519A;
3. streamlining of the permitting process;
4. reasonable bonding requirements that promote small business investment in mine exploration, development, and reclamation;
5. use of the best available science and technology to ensure adequate protection of land, air, and water resources;

6. mitigation of mining activities that may impair the economic future of Eureka County citizens through bilateral or multi-lateral consultations with the Board of Eureka County Commissioners;
7. disposal of mine dewatering water in a manner that returns water to the ground in the same basin it is withdrawn with minimal evaporation and transpiration loss;
8. immediate curtailment of temporary dewatering rights at the cessation of permitted mining and reversion of all temporary change applications supporting dewatering to the permitted use of the originating water right."

As the Natural Resource and Federal or State Land Use element is an executable policy for natural resource management and land use on federal and state administered lands in Eureka County, some of the goals of this element pertain to grazing management in addition to other resources listed here. These include the following:

- To maintain and improve the soil, vegetation and watershed resources in a manner that perpetuates and sustains a diversity of uses while fully supporting the custom, culture, and economic stability and viability of Eureka County and its individual citizens;
- Facilitate environmentally responsible exploration, development and reclamation of oil, gas, geothermal, locatable minerals, aggregate and similar resources on federal lands;
- Prevent significant deterioration of the superior air quality found in Eureka County;
- Maintain, improve or mitigate wildlife impacts to habitat in order to sustain viable and harvestable populations of big game and upland game species as well a wetland/riparian habitat for waterfowl, fur bearers and a diversity of other game and non-game species;
- Keeping open all existing access roads and the ability to maintain those same roads or accesses;
- Describe methods of minimizing or mitigating documented use conflicts or damage and define the manner in which each method is expected to accomplish minimization or mitigation; and
- Investigate, validate and document all use conflicts reported to Eureka County and or federal agencies.

### 2.3 Existing Conditions

The Carico Lake, Grass Valley, and JD allotments are located within the BLM Battle Mountain District and are managed by the MLFO. The South Buckhorn Allotment is located in the BLM Elko District and is managed by the TFO, with the exception of the South Buckhorn pasture, which is managed by the MLFO (**Figure 2-1**). **Table 2-1** presents the acres and authorized use for each allotment. There are 70,430 active AUMs permitted in the area of analysis.

**Table 2-1 Permitted Grazing in the Area of Analysis**

Allotment	Permittee/Authorization Number	Active AUMs	Suspended AUMs	Pastures	Public Acres	Private Acres
Carico Lake	Ellison Ranching Co./2700168 (leased from NGM)	10,463	0	19	562,465	36,752
	JWF Ranching, LLC/2700369 (leased from NGM)	1,741	0			
	JWF Ranching, LLC/2700370 (leased from NGM)	9,880	0			
	Nevada Gold Mines LLC/2700373	1,209	0			
	Silver Creek Ranch, Inc./2706023	884	0			
	Filippini Ranching Co./2706031	777	0			
<b>Subtotal</b>		<b>24,954</b>	<b>0</b>			

Allotment	Permittee/Authorization Number	Active AUMs	Suspended AUMs	Pastures	Public Acres	Private Acres
Grass Valley	Conley Land & Livestock/2700371 (leased from NGM)	4,551	0	19	267,201	21,292
	Grass Valley Ranch, LLC/2702890	9,472	586			
	University of Nevada/2706015	3,048	0			
	Dry Creek Ranch/2706054	630	180			
<b>Subtotal</b>		<b>17,701</b>	<b>766</b>			
JD	K&N Livestock, LLC/2700372 (leased from NGM)	8,086	0	8	140,367	5,194
<b>Subtotal</b>		<b>8,086</b>	<b>0</b>			
South Buckhorn	Conley Land & Livestock/2700371 (leased from NGM)	595	0	18	222,822	73,491
	Nevada Gold Mines LLC/2700375	3,041	126			
	Rebel Creek Ranch LLC/2700388	3,774	157			
	JWF Ranching, LLC/2700435	3,522	147			
	Slagowski Ranches Inc./2701583	7,497	345			
	Ray & Jacqueline Bailey/2704049	1,260	52			
<b>Subtotal</b>		<b>19,689</b>	<b>827</b>			
<b>Total</b>		<b>70,430</b>	<b>1,593</b>	<b>64</b>	<b>1,193,627</b>	<b>135,354</b>

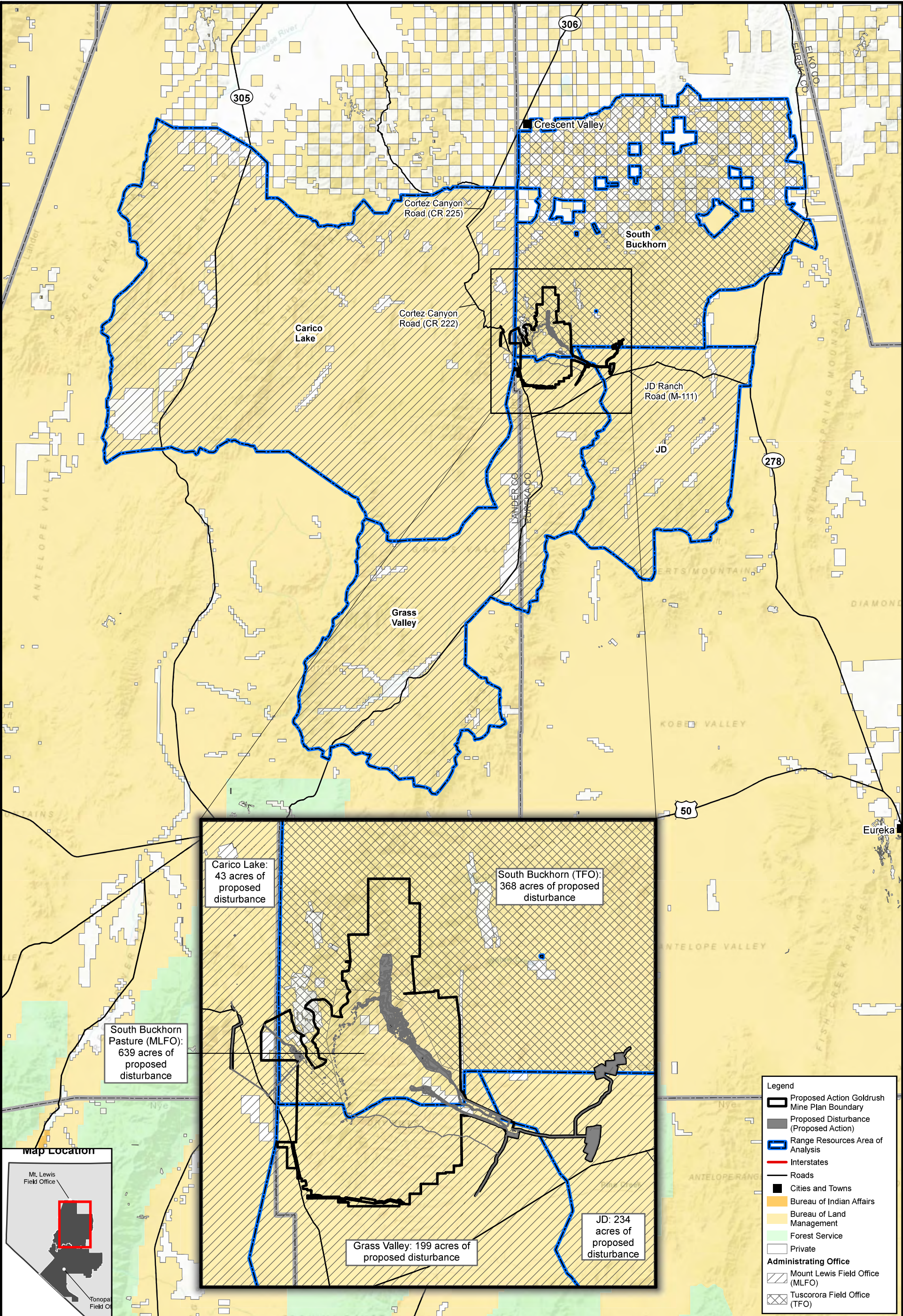
Source: BLM 2020b

The Carico Lake, Grass Valley, and South Buckhorn allotments are in the Improve category, meaning that they are managed with a high priority for improving the current unsatisfactory conditions (BLM 1987; 1988). The Carico Lake Allotment was last evaluated in 2005 while the Grass Valley and South Buckhorn allotments were last evaluated in 1987. The JD Allotment is in the Maintain category (as of the last analysis in 1988), meaning the objective is to maintain current satisfactory conditions (BLM 1988). These allotment categories do not apply only to grazing, but also to non-grazing causal factors that may degrade the landscape.

Numerous range improvement projects have been installed in these allotments, including fences, exclosures, and watering infrastructure (e.g., pipeline and troughs) (**Figure 2-2**). Other range improvements and infrastructure may also occur within the area of analysis however may not be accounted for through standard identification. In addition to these projects, numerous seeps/springs and numerous perennial streams occur within the area of analysis (USGS 2020).

Within the areas of analysis, several other mining and mineral exploration activities including the Cortez Mine, Horse Canyon Mine, HC/CUEP, and West Pine Valley are present. In addition, utilities, infrastructure, roads, livestock grazing, dispersed recreation, and wildland fires also occur throughout the areas of analysis. Past and present activities within the areas of analysis have resulted in removal of vegetation, dispersal or displacement of local wildlife, including special status species, populations, and fragmentation of certain wildlife habitats and populations. The Barrick Bank Enabling Agreement (BEA) Public Land Polygons are present in portions of the area of analysis. If activities associated with the BEA take place on the authorized areas within the area of analysis, the goal would be to restore and/or enhance habitat to benefit greater sage-grouse and sagebrush ecosystems and generate credits under the BEA (BLM et al. 2015; BLM 2020a).

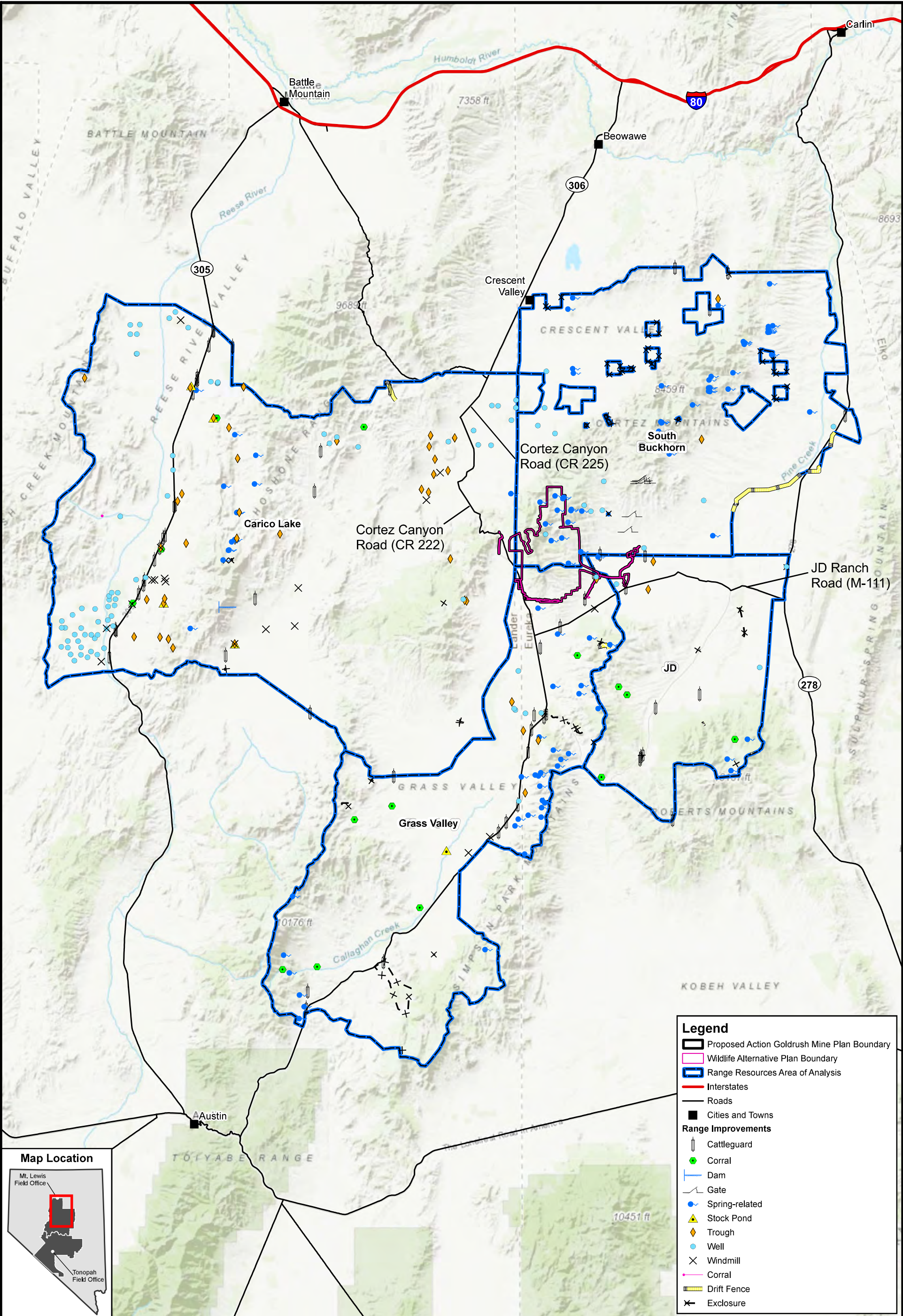





 <div>Battle Mountain BLM District Mount Lewis Field Office</div>	<div>NEVADA GOLD MINES LLC GOLDRUSH MINE PROJECT</div> <div><div><div></div><div>0</div><div>8</div><div>16</div><div>Miles</div></div><div>1 in = 8 Miles</div></div> <div>N</div>	RANGE RESOURCES AREA OF ANALYSIS (PROPOSED ACTION)	
		FIGURE 2-1	REVISION
		2022-10-12	A

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Battle Mountain

BLM District

Mount Lewis Field Office

NEVADA GOLD MINES LLC

GOLDRUSH MINE PROJECT

0

7

14

Miles

1 in = 7 Miles

N

RANGE IMPROVEMENTS

FIGURE 2-2

2022-10-12

REVISION

A

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## 3.0 Environmental Consequences

### 3.1 Effect Assessment Methodology

Primary issues related to range resources includes the potential loss of AUMs within the Carico Lake, Grass Valley, JD, and South Buckhorn allotments due to the loss of forage as a result of the Goldrush Mine or the potential for reduced forage production following reclamation and potential loss of range improvements (e.g., cattle guards).

#### 3.1.1 Effects Level Definitions

The Proposed Action and action alternatives may cause changes in the human environment. This Supplemental Environmental Report (SER) assesses and analyzes these potential changes and discloses the effects to the BLM and public. There are many concepts and terms used when discussing impacts assessment that may not be familiar to the average reader. The following sections attempt to clarify some of these concepts.

The terms “effect” and “impact” are synonymous in NEPA documents. Effects may refer to adverse or beneficial ecological, aesthetic, historical, cultural, economic, social, or health issues caused by the Proposed Action or action alternatives (40 CFR 1508.1).

Intensity refers to the severity or level of magnitude of impact. Public health and safety, proximity to sensitive areas, level of controversy, unique risks, or potentially precedent-setting effects are all factors to be considered in determining intensity of effect. This SER primarily uses the terms major, moderate, minor, or negligible in describing the intensity of effects.

Context means that the effect(s) of an action must be analyzed within a framework, or within physical or conceptual limits. Resource disciplines; location, type, or size of area affected (e.g., local, regional, national); and affected interests are all elements of context that ultimately determine significance. Both long- and short-term effects are relevant. Duration of effects typically refers to the time-frame, or length of time, that a project's effects would occur relative to specific resources.

Impact indicators are used to determine change (and the intensity of change) in a resource. Working from an established existing condition (i.e., baseline conditions described in Section 2.0) this indicator would be used to predict or detect change in a resource related to causal effects of the Proposed Action or action alternatives.

The impacts definitions for range resources for intensity, duration, and context are provided in **Table 3-1**.

**Table 3-1 Impact Definitions**

Attribute	Term	Description
Intensity (severity or levels of magnitude of an impact)	Negligible	Effects to livestock grazing would be slight and no reductions to AUMs or change in livestock management would be required.
	Minor	Effects to livestock grazing would alter the availability of resources that livestock grazing depends on. Small reductions to AUMs may be necessitated. No adjustments to grazing management should be required.
	Moderate	Effects to livestock grazing affect livestock access to limiting resources. Reductions to AUMs are necessary and adjustments to livestock grazing should be considered. Adverse effects would be minimized with implementation of ACEPMS, best management practices (BMPs), but reclamation would require long-term monitoring and maintenance.
	Major	Effects to livestock grazing management occur on a pasture or allotment level. Reductions in AUMs and a significant change in authorized use would be required. Adverse effects may be minimized with implementation of ACEPMS, BMPs, but reclamation would require long-term monitoring and maintenance.

Attribute	Term	Description
Duration (the length of time an effect would occur)	Temporary	Effects would occur during construction activities (i.e., six months to one year), or during maintenance activities.
	Short-Term	Effects would last for the duration of the Goldrush Mine.
	Long-Term	Effects would last after active mining for the Goldrush Mine is completed and following reclamation.
	Permanent	Effects on available forage for livestock would be permanent.
Context (effect[s] of an action must be analyzed within a framework, or within physical or conceptual limits)	Localized	Effects would be limited to one allotment.
	Regional	Effects would occur throughout one or more allotments; multiple lessees may be affected.

### 3.2 Proposed Action

When a single public purpose (i.e., mining) is permitted on BLM-administered land, permitted AUMs are sometimes adjusted to reflect the loss of area or loss of access to forage in the area. Temporarily reduced (i.e., suspended) AUMs can be reinstated once reclamation has been successfully completed. Impacts to AUMs are based on proposed disturbance and impacts from boundary fencing. While forage productivity varies widely across allotments, AUM impacts for BLM-administered land were estimated based on an average stocking rate. For the purposes of calculating impacts to AUMs, a value of 23 acres per AUM was used for the Carico Lake Allotment, 14 acres per AUM for the Grass Valley Allotment, 17 acres per AUM for the JD Allotment, and 11 acres per AUM for the South Buckhorn Allotment; these values were calculated using the acres administered by the BLM and the total permitted use on the permit. AUM impacts were only analyzed for disturbance or fencing to BLM-administered lands. Any actual reduction in permitted grazing would be done through a subsequent BLM decision based on livestock carrying capacity and resource conditions (see 43 CFR 4100.0-5), accounting for actual forage unavailable for grazing.

Under the Proposed Action, an additional 1,694 acres (1,616 public acres, 78 private acres) of surface disturbance may impact forage utilized by livestock. **Table 3-2** shows the acres and potential AUM impacts from the proposed unfenced surface disturbance that would be reclaimed and proposed fenced surface disturbance that would be reclaimed by allotment. **Table 3-3** shows the unfenced and permanent unreclaimed surface disturbance by allotment and **Table 3-4** shows the total proposed fencing by allotment. Surface disturbance is proposed inside the fencing; however, impacts are analyzed based on the fenced area because the fence would preclude the area from livestock use.

**Table 3-2 Proposed Project Disturbance-Related Impacts to BLM-Administered Rangeland Under the Proposed Action**

Allotment <sup>1</sup>	Administering BLM Field Office	Proposed Surface Disturbance Outside of Proposed Fencing			Proposed Surface Disturbance Inside of Proposed Fencing		
		BLM Acres	Private Acres	AUMs	BLM Acres	Private Acres	AUMs
Carico Lake	Mount Lewis	41.7 <sup>2</sup>	1.8	1.9	0.0	0.0	0.0
Grass Valley	Mount Lewis	185.9 <sup>3</sup>	13.6	14.2	0.0	0.0	0.0
JD	Mount Lewis	49.1	0.0	2.9	185.2	0.0	10.9
South Buckhorn	Mount Lewis (South Buckhorn Pasture)	586.1	53.1	58.1	0.0	0.0	0.0
	Tuscarora (all pastures except South Buckhorn)	244.2 <sup>4</sup>	0.0	22.2	123.4	0.0	11.2
<b>Total</b>		<b>1,107.0</b>	<b>68.5</b>	<b>99.3</b>	<b>308.6</b>	<b>0.0</b>	<b>22.1</b>

<sup>1</sup> 210 acres of exploration disturbance could occur within any allotment.

<sup>2</sup> Total includes approximately 20.5 acres of proposed surface disturbance within the footprint of the proposed 120-kV power line and switching stations that occurs outside of the proposed Goldrush Mine Plan boundary.

<sup>3</sup> Total includes approximately 5.6 acres of proposed surface disturbance within the footprint of the proposed Mount Tenabo access road, infiltration distribution pipeline, and Lower Horse Canyon Road that occur outside of the proposed Goldrush Mine Plan boundary.

<sup>4</sup>Total includes approximately 9.2 acres of proposed surface disturbance within the footprint of the proposed 120-kV power line and switching stations that occurs outside of the proposed Goldrush Mine Plan boundary.

**Table 3-3 Total Unreclaimed Disturbance Related Impacts to BLM-Administered Rangeland Under the Proposed Action**

Allotment	Administering BLM Field Office	Proposed Surface Disturbance – Permanent Unreclaimed						
		BLM Acres			Private Acres	AUMs		
		Goldrush Mine	West Pine Valley <sup>1</sup>	Cortez Mine <sup>2</sup>	Goldrush Mine	Goldrush Mine	West Pine Valley <sup>1</sup>	Cortez Mine <sup>2</sup>
Carico Lake	Mount Lewis	25.6	0.0	53.3	5.4	1.1	0	2.3
Grass Valley	Mount Lewis	69.6	2.8	0.9	1.8	5.0	0.2	0.1
JD	Mount Lewis	0.0	0.0	0.0	0.0	0	0	0
South Buckhorn	Mount Lewis (South Buckhorn Pasture)	197.7	0.0	0.0	6.2	18.0	0	0
	Tuscarora (all pastures except South Buckhorn)	70.9	0.0	9.2	0.0	6.4	0	0.7
<b>Total</b>		<b>363.8</b>	<b>2.8</b>	<b>63.4</b>	<b>13.4</b>	<b>30.5</b>	<b>0.2</b>	<b>3.1</b>

<sup>1</sup>Includes the portion of the Mount Tenabo access road that falls outside of the Goldrush Mine Plan boundary.

<sup>2</sup>Includes the portions of the 120-kV powerline and switching stations and Lower Horse Canyon Road that fall outside of the Goldrush Mine Plan boundary.

**Table 3-4 Proposed Fencing Total Area Under the Proposed Action**

Allotment	Administering BLM Field Office	Proposed Fencing		
		BLM Acres	Private Acres	AUMs
Carico Lake	Mount Lewis	1.8	0.0	0.1
Grass Valley	Mount Lewis	22.5	0.0	1.6
JD	Mount Lewis	185.2	0.0	11.0
South Buckhorn	Mount Lewis (South Buckhorn Pasture)	8.7	8.1	1.5
	Tuscarora (all pastures except South Buckhorn)	129.4	0.0	11.0
<b>Total</b>		<b>347.6</b>	<b>8.1</b>	<b>25.2</b>

Proposed fencing would encompass a total of 347.6 acres within the four impacted allotments, precluding livestock access to approximately 25.2 AUMs (**Table 3-4**). Proposed fencing is mainly associated with the RIBs, which would be individually fenced to prevent livestock access. Other fenced facilities include the portal cut slope, the water treatment plant and yard, multi-use shop, paste plant, ventilation raises, and substations. Fencing would preclude livestock access and reduce potential impacts from interactions with these facilities.

Under the Proposed Action, a total of 2,326 acres of total surface disturbance (existing, authorized, proposed, and reclassified) would be reclaimed. The portions of proposed disturbance occurring outside of proposed fencing that would be reclaimed are as follows: 43.5 acres in the Carico Lake Allotment, 199.5 acres in the Grass Valley Allotment, 49.1 acres in the JD Allotment, 586.1 acres in the South Buckhorn pasture, and 244.2 acres in the TFO-administered portion of the South Buckhorn Allotment. The disturbance occurring outside of proposed fencing would impact a total of 99.3 AUMs (**Table 3-2**). If suspended, AUMs may be reinstated once reclamation has been successfully completed.

The 444 acres of permanent, unreclaimed disturbance (including the portions of the Mount Tenabo access road and 120-kV power line that fall outside of the Goldrush Mine Plan boundary) within the four allotments would create a permanent impact to 33.8 AUMs. These AUMs would likely be cancelled from the allotment permits because they may not be reinstated after mine closure.

The 210 acres of proposed exploration disturbance would occur within the proposed Goldrush Plan boundary, with potential short-term impacts ranging from nine to 19.1 AUMs, depending on the allotment within which it occurs. However, exploration would occur throughout the life of the Project; meaning potential impacts would be temporally spaced.

In total, the Proposed Action would have permanent impacts to 33.8 AUMs from permanent unreclaimed disturbance and short-term impacts to as many as 25.2 AUMs from fenced acres (355.7 acres), 99.3 AUMs from unfenced proposed disturbance (1,175.5 acres) that would be reclaimed, and up to 19.1 AUMs from exploration (210 acres). Overall, impacts to AUMs would be minor, short-term to permanent, and regional; if AUMs are suspended, impacts would be considered moderate. Any reductions to permitted AUMs would conform with 43 CFR 4110.4-2 and be issued through a 43 CFR 4160 Grazing Decision.

Impacts from proposed disturbance to rangeland improvements include the following: one water well, and 1.9 miles of fence within the Grass Valley Allotment; one spring and 0.6 miles of fence in the South Buckhorn pasture; and 1.4 miles of fence in the JD Allotment. Additionally, other range improvements and infrastructure not officially accounted for may be impacted under the Proposed Action. NGM has committed to protecting fences, gates, stock ponds and other range improvements within the Plan boundary; therefore, impacts to range improvements would be negligible, short term, and regional.

Other potential impacts include mortality from livestock-vehicle collisions. NGM has committed to posting speed limits around areas of disturbance to protect livestock and reducing the risk to livestock. Impacts from vehicle collisions are anticipated to be negligible, short term, and regional.

Potential impacts to livestock may include changes to livestock distribution or use patterns within allotments due to facility construction or locations. NGM has committed to installing earthen ramps over the pipelines to alleviate restrictions to livestock movement around these features.

Dewatering under the Proposed Action may potentially impact up to 34 seeps and springs in the Carico Lake Allotment, 20 in the Grass Valley Allotment, 93 in the South Buckhorn Allotment (TFO-administered portion), and 39 in the South Buckhorn pasture (MLFO-administered) if these features are hydraulically connected to the affected aquifer. In addition, water-related rangeland improvements may also be impacted by the proposed dewatering. Mine-related groundwater drawdown may impact forage and AUMs dependent on surface water flows. Within the groundwater drawdown contour, one spring and 11 water wells occur within the Carico Lake Allotment, two spring developments and one water well occur within the Grass Valley Allotment, 11 springs occur within the TFO-administered portion of the South Buckhorn Allotment, and three springs and one water well occur within the South Buckhorn pasture. No water-related range improvements in the JD Allotment are located in areas of potential groundwater drawdown.

Potential flow reductions in seeps, springs, and perennial streams attributable to mine-induced drawdown would be addressed through the implementation of existing mitigation, as described in the Cortez Hills Expansion Project Final Environmental Impact Statement (EIS) (BLM 2008) and Technical Memorandum, Contingency Mitigation Plans for Surface Waters, Deep South Expansion Project, Lander and Eureka Counties, Nevada (BCI and Stantec 2018). All contingency mitigation measures would comply with Nevada Water Law and would involve the Nevada Office of the State Engineer. With this mitigation, overall impacts to water-related sources and rangeland improvements are anticipated to be negligible to minor, long-term to permanent, and localized to regional.

Through the Deep South Expansion Project EIS and Record of Decision (BLM 2019), NGM committed to monitoring the water-related range improvements that may be affected by mine-related groundwater drawdown. If mine-related effects to these water sources are identified, NGM would coordinate with the BLM to determine the appropriate placement and type of water-related range improvement to be developed. NGM would routinely inspect the replaced water-related range improvements to ensure that they are

operating in an appropriate manner. With these ACEPMs and mitigation, potential impacts to water-related range improvements would be negligible, long term to permanent, and localized to regional.

Economic impacts from the potential reduction in AUMs would occur under the Proposed Action. The Nevada Grazing Statistics Report and Economic Analysis for Federal Lands in Nevada (RCI 2001) valued total economic impacts of one AUM at \$87.51 in 2020 dollars (U.S. Inflation Calculator 2021). The total economic impact from one AUM includes industry (\$66.20) and value-added (\$21.30) impacts. In total, \$10,623.71 in economic impacts would be realized annually based on the temporary loss of 121.4 AUMs from the Proposed Action. Temporary loss of a total of 121.4 AUMs would equate to up to \$318,711.42 based on a 30-year period of combined active mining and post-mining reclamation (assumed to be six years of reclamation after cessation of the 24-year mining operations). Interim reclamation may reduce the economic impact of the temporary loss of AUMs. A total of 33.8 AUMs would be permanently impacted, resulting in the loss of \$2,957.84 annually. The economic impact would be minor, temporary to permanent, and regional to the ranching community and agricultural or grazing sector of Nevada's or Eureka County's economy; however, the economic impact to the affected permittees may be moderate, long-term (lasting through reclamation) to permanent, and regional. NGM has committed to protecting fences, gates, stock ponds, and other range improvements within the Plan boundary; therefore, impacts to range improvements would be negligible, short-term, and regional.

### 3.3 Wildlife Alternative

Under the Wildlife Alternative, 1,626 acres (1,346 public acres, 70 private acres, and 210 acres of exploration that could occur anywhere within the Plan boundary) of surface disturbance may impact forage utilized by livestock (**Figure 3-1**). **Table 3-5** identifies the acres and potential AUM impacts from the proposed unfenced surface disturbance that would be reclaimed and proposed fenced surface disturbance that would be reclaimed by allotment. **Table 3-6** shows the unfenced and permanent unreclaimed surface disturbance by allotment and **Table 3-7** shows the total proposed fencing by allotment. Impacts to grazing are analyzed based on the entire fenced area since the fence would preclude the area from livestock use, even though the area within the fence would not be entirely disturbed by proposed activities.

**Table 3-5 Proposed Project Disturbance-Related Impacts to BLM-Administered Rangeland Under the Wildlife Alternative**

Allotment <sup>1</sup>	Administering BLM Field Office	Proposed Surface Disturbance Outside of Proposed Fencing			Proposed Surface Disturbance Inside of Proposed Fencing		
		BLM Acres	Private Acres	AUMs	BLM Acres	Private Acres	AUMs
Carico Lake	Mount Lewis	39.9 <sup>2</sup>	1.8	1.8	1.8 <sup>5</sup>	0.0	0.1
Grass Valley	Mount Lewis	141.0 <sup>3</sup>	13.6	11.0	19.9 <sup>6</sup>	0.0	1.4
JD	Mount Lewis	42.6	0.0	2.5	185.2	0.0	10.9
South Buckhorn	Mount Lewis (South Buckhorn Pasture)	539.5	46.2	53.2	8.7	8.1	1.5
	Tuscarora (all pastures except South Buckhorn)	238.2 <sup>4</sup>	0.0	21.7	129.4	0.0	11.8
<b>Total</b>		<b>1,001.3</b>	<b>61.6</b>	<b>90.3</b>	<b>345.1</b>	<b>8.1</b>	<b>25.7</b>

<sup>1</sup> 210 acres of exploration disturbance could occur within any allotment.

<sup>2</sup> Total includes approximately 21.2 acres of proposed surface disturbance within the footprint of the proposed 120-kV power line and switching stations that occurs outside of the proposed Goldrush Mine Plan boundary.

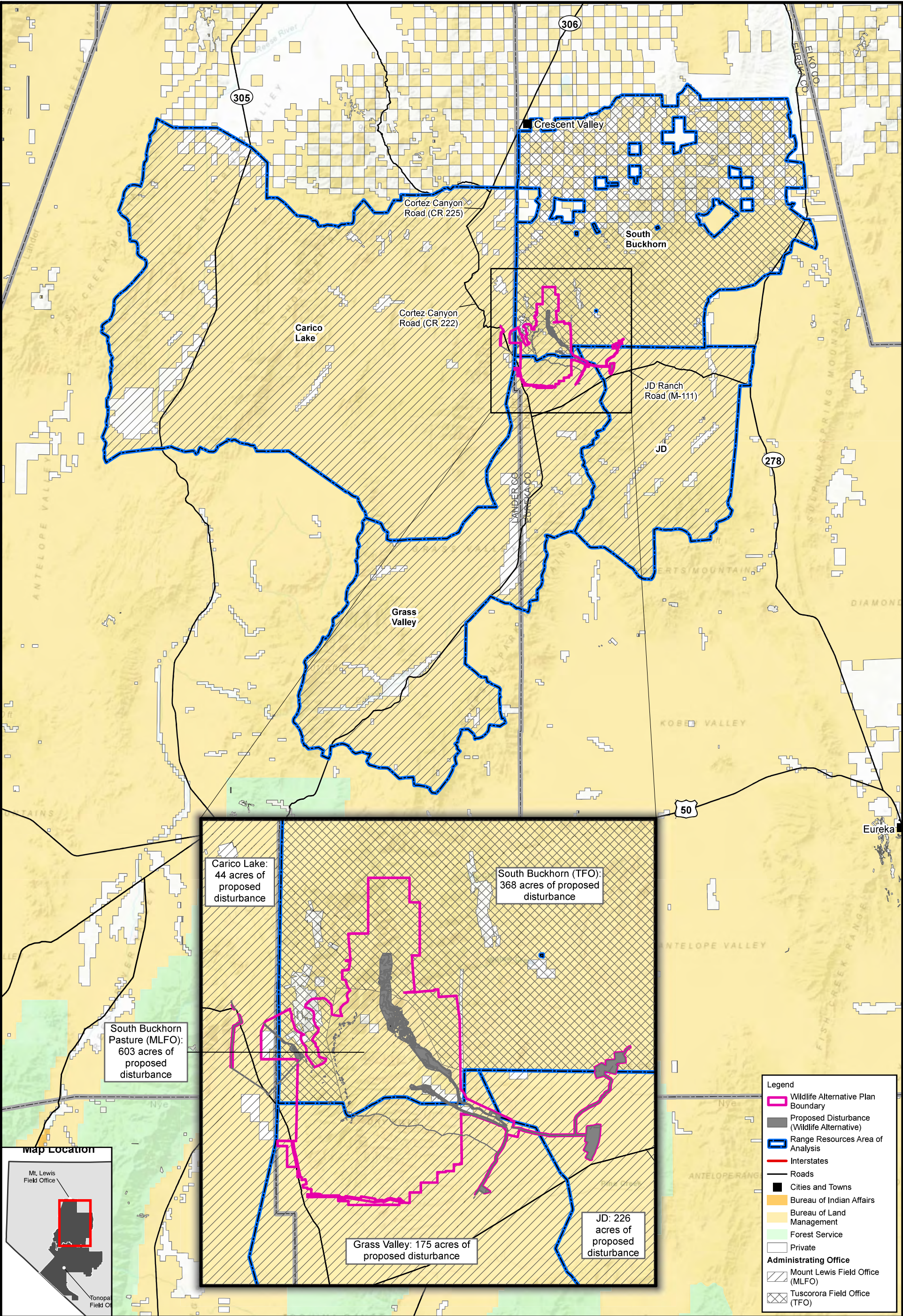
<sup>3</sup> Total includes approximately 5.4 acres of proposed surface disturbance within the footprint of the proposed Mount Tenabo access road, infiltration distribution pipeline, and Lower Horse Canyon Road that occur outside of the proposed Goldrush Mine Plan boundary.

<sup>4</sup> Total includes approximately 9.2 acres of proposed surface disturbance within the footprint of the proposed 120-kV power line and switching stations that occurs outside of the proposed Goldrush Mine Plan boundary.

<sup>5</sup> Total includes approximately 1.8 acres of proposed surface disturbance within the footprint of the proposed 120-kV power line and switching stations that occurs outside of the proposed Goldrush Mine Plan boundary.

<sup>6</sup> Total includes approximately 2.9 acres of proposed surface disturbance within the footprint of the proposed laydown yard that occurs outside of the proposed Goldrush Mine Plan boundary.







**Table 3-6 Total Unreclaimed Disturbance Related Impacts to BLM-Administered Rangeland Under the Wildlife Alternative**

Allotment	Administering BLM Field Office	Proposed Surface Disturbance – Permanent Unreclaimed						
		BLM Acres			Private Acres	AUMs		
		Goldrush Mine	West Pine Valley <sup>1</sup>	Cortez Mine <sup>2</sup>	Goldrush Mine	Goldrush Mine	West Pine Valley <sup>1</sup>	Cortez Mine <sup>2</sup>
Carico Lake	Mount Lewis	25.6	0.0	53.3	5.4	1.1	0.0	2.3
Grass Valley	Mount Lewis	69.6	2.8	0.9	0.6	5.0	0.2	0.1
JD	Mount Lewis	0.0	0.0	0.0	0.0	0.0	0.0	0
South Buckhorn	Mount Lewis (South Buckhorn Pasture)	101.4	0.0	0.0	4.7	9.2	0.0	0
	Tuscarora (all pastures except South Buckhorn)	71.9	0.0	9.2	0.0	6.5	0.0	0.8
<b>Total</b>		<b>268.6</b>	<b>2.8</b>	<b>63.5</b>	<b>13.4</b>	<b>21.8</b>	<b>0.2</b>	<b>3.2</b>

<sup>1</sup> Includes the portion of the Mount Tenabo access road that falls outside of the Goldrush Mine Plan boundary.

<sup>2</sup> Includes the portions of the 120-kV powerline and switching stations and Lower Horse Canyon Road that fall outside of the Goldrush Mine Plan boundary.

**Table 3-7 Proposed Fencing Total Area Under the Wildlife Alternative**

Allotment	Administering BLM Field Office	Proposed Fencing		
		BLM Acres	Private Acres	AUMs
Carico Lake	Mount Lewis	4.1	0.0	0.2
Grass Valley	Mount Lewis	20.0	0.0	1.4
JD	Mount Lewis	185.2	0.0	10.9
South Buckhorn	Mount Lewis (South Buckhorn Pasture)	15.7	9.1	2.3
	Tuscarora (all pastures except South Buckhorn)	135.7	0.0	12.3
<b>Total</b>		<b>361.0</b>	<b>9.1</b>	<b>27.1</b>

Proposed fencing would encompass a total of 361.0 acres within four allotments, precluding livestock access to approximately 27.1 AUMs (**Table 3-7**). Under the Wildlife Alternative, the following features would be fenced: RIBs, ventilations raises, substations, and the laydown yard. Fencing would preclude livestock access and reduce potential impacts from interactions with these facilities.

Under the Wildlife Alternative, a total of 2,350 acres of total surface disturbance (existing, authorized, proposed, and reclassified) would be reclaimed. The portions of proposed disturbance occurring outside of proposed fencing that would be reclaimed are as follows: 41.7 acres in the Carico Lake Allotment; 154.6 acres in the Grass Valley Allotment; 46.2 acres in the JD Allotment; 585.7 acres in the South Buckhorn pasture; and 238.2 acres in the TFO-administered portion of the South Buckhorn Allotment. The disturbance occurring outside of proposed fencing would impact a total of 99.3 AUMs (**Table 3-5**). If suspended, AUMs may be reinstated once reclamation has been successfully completed.

Under the Wildlife Alternative, proposed activities would result in 345 acres of permanent, unreclaimed disturbance (including the portions of the Mount Tenabo access road and 120-kV power line that fall outside of the Goldrush Mine Plan boundary) within the four allotments and would result in permanent impact to

25.2 AUMs. These AUMs would likely be cancelled from the allotment permits because they may not be reinstated after mine closure.

In total, the Wildlife Alternative would have permanent impacts to 25.2 AUMs from permanent unreclaimed disturbance and short-term impacts to as many as 27.1 AUMs from fenced acres (361.0 acres), 90.3 AUMs from unfenced proposed disturbance (1,062.9 acres) that would be reclaimed, and up to 19.1 AUMs from exploration (210 acres). Implementation of the Wildlife Alternative would have slightly reduced impacts to AUMs compared to the Proposed Action because of the overall reduction in disturbance acres.

Under the Wildlife Alternative, temporary loss of a total of 135.1 AUMs would equate to up to \$354,678.03 based on a 30-year period of combined active mining and post-mining reclamation (assumed to be six years of reclamation after cessation of the 24-year mining operations). Interim reclamation may reduce the economic impact of the temporary loss of AUMs. A total of 25.2 AUMs would be permanently impacted, resulting in the loss of \$2,205.25 annually. The economic impact due to the temporary and permanent loss of AUMs would be slightly reduced compared to the Proposed Action due to the overall reduction in impacted AUMs. Economic impacts from the Wildlife Alternative are anticipated to be minor, temporary to permanent, and regional to the ranching community and agricultural or grazing sector of Nevada's or Eureka County's economy; however, the economic impact to the affected permittees may be moderate, long-term (lasting through reclamation) to permanent, and regional.

Other impacts to grazing as a result of the Wildlife Alternative would be the same as described under the Proposed Action.

### **3.4 No Action Alternative**

Under the No Action Alternative, the development of the Goldrush Mine would not be authorized and NGM would not construct, operate, and close a new underground mine (i.e., the Goldrush Mine). Modifications or reclassification of acres as proposed under the Proposed Action would not occur, the dual use of facilities between the Cortez Mine and Goldrush Mine operations would not occur, and NGM would be permitted to continue the current authorized mining and exploration activities under the existing authorizations.

The impacts of the continuation of these operations has been previously analyzed in documents and authorizations identified in Appendix A of the Project Alternatives SIR for the Goldrush Mine Project (BLM 2023). Overall, the types of impacts to range resources are similar in nature to those disclosed for the Proposed Action and impacts are related to ground disturbance and mine dewatering activities. These impacts are summarized by previously authorized mine and exploration plan below and impacts that are different in nature than those identified for the Proposed Action are identified. The detailed discussion of impacts under the No Action Alternative can be found in the documents identified in Appendix A of the Project Alternatives SIR for the Goldrush Mine Project (BLM 2023). Additionally, NGM would continue to implement EPMs for range resources as authorized under previous NEPA actions which would help to further reduce impacts to range resources (BLM 2023).

#### **3.4.1 Horse Canyon Mine Plan**

Under the No Action Alternative, up to 424.7 acres are authorized to be disturbed at the Horse Canyon Mine, which may impact range resources. Potential impacts to forage availability from this disturbance were calculated in the same manner as discussed for the Proposed Action. Of the total authorized/existing disturbance, 413.8 acres occurs on BLM-administered lands as follows: 3.8 acres in the Carico Lake Allotment, 29.5 acres in the Grass Valley Allotment and 380.4 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of 0.2 AUMs in the Carico Lake Allotment, 2.1 AUMs in the Grass Valley Allotment, and 34.6 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. The potential impacts to range resources would continue as authorized for the Horse Canyon Mine Plan. In addition, the majority of impacts from the Horse Canyon Mine have already occurred, and NGM is presently using the existing and authorized disturbance in the Horse Canyon Mine Plan for sumps and to store materials and equipment consistent with the authorized Horse Canyon Mine Plan. Overall, impacts to range resources from the Horse Canyon Mine Plan under the No Action Alternative would be minor, long term to permanent, and regional.

### **3.4.2 HC/CUEP Plan**

Under the No Action Alternative, up to 589 acres are authorized to be disturbed at HC/CUEP, with an additional 99.1 acres of pre-1981 disturbance would be reclaimed for a total of 688.1 acres, which may impact range resources. Potential impacts to forage availability from this disturbance were calculated in the same manner as discussed for the Proposed Action. The authorized/existing 543.2 acres of disturbance on BLM-administered lands occurs as follows: 0.1 acres in the Carico Lake Allotment, 25.1 acres in the Grass Valley Allotment, and 517.9 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of less than one AUM of in the Carico Lake Allotment, 2.1 AUMs in the Grass Valley Allotment, and 47.1 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. The potential impacts to range resources would continue as authorized for the HC/CUEP. As determined by the BLM, roads on public lands suitable for public access or which continue to provide public access consistent with pre-exploration conditions and the cut slope above the portal pad would not be reclaimed. Overall, impacts to range resources from the HC/CUEP Plan under the No Action Alternative would be minor, long term to permanent, and regional.

### **3.4.3 West Pine Valley Exploration Plan**

Under the No Action Alternative, up to 150.0 acres are authorized to be disturbed under the West Pine Valley Exploration Plan, which may impact range resources. Potential impacts to forage availability from this disturbance were calculated in the same manner as discussed for the Proposed Action. The authorized/existing 82.9 acres of disturbance on BLM-administered lands occurs as follows: 61.1 acres in the Grass Valley Allotment, 13.2 acres in the JD Allotment, and 8.5 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of 4.4 AUMs in the Grass Valley Allotment, 0.8 AUMs in the JD Allotment, and 0.8 AUMs in the South Buckhorn Allotment. All disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. The potential impacts to range resources would continue as authorized for the West Pine Valley Exploration Plan. Overall, impacts to range resources from the West Pine Valley Exploration Plan under the No Action Alternative would be minor, long term, and regional.

### **3.4.4 Cortez Mine Plan**

Under the No Action Alternative, 21,170.4 acres are authorized to be disturbed at the Cortez Mine, which may impact range resources. Potential impacts to forage availability from this disturbance were calculated in the same manner as discussed for the Proposed Action. The 18,382.0 acres of authorized disturbance on BLM-administered lands occurs as follows: 17,937.5 acres in the Carico Lake Allotment, 300.6 acres in the Grass Valley Allotment, and 143.8 acres in the South Buckhorn Allotment. This disturbance equates to lost productivity of 779.9 AUMs in the Carico Lake Allotment, 21.5 AUMs in the Grass Valley Allotment, and 13.1 AUMs in the South Buckhorn Allotment. The majority of disturbance would be reclaimed, allowing for grazing to resume once reclamation is deemed successful. The potential impacts to range resources would continue as authorized for the Cortez Mine Plan. As determined by the BLM, some roads that allow public access may not be reclaimed. In addition, certain major stormwater diversion ditches may not be reclaimed. Impacts to range resources from the Cortez Mine Plan under the No Action Alternative would be major, long term to permanent, and regional.

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