

ENVIRONMENTAL ASSESSMENT

DOI-BLM-NV-B010-2013-0062-EA

Copper Basin Exploration Project



September 2013

**U.S. Bureau of Land Management
Mount Lewis Field Office
Battle Mountain District
50 Bastian Road
Battle Mountain, Nevada 89820-2332**



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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**NEWMONT MINING CORPORATION
COPPER BASIN EXPLORATION PROJECT
ENVIRONMENTAL ASSESSMENT**

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Appendix A: Visual Contrast Rating Worksheets

LIST OF ACRONYMS AND ABBREVIATIONS

°	degrees
amsl	above mean sea level
APE	area of potential effect
AUM	animal unit month
BAPC	Bureau of Air Pollution Control
BLM	Bureau of Land Management
BMP	best management practice
BMRR	Bureau of Mining Regulation and Reclamation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CESA	cumulative effects study area
CFR	Code of Federal Regulations
CO	carbon monoxide
District	Battle Mountain Historic Mining District
EA	Environmental Assessment
EDRR	Early Detection/Rapid Response
EMT	Emergency Medical Technicians
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended
F	Fahrenheit
FLPMA	Federal Land Policy and Management Act of 1976
GHG	greenhouse gas
gpm	gallons per minute
H	Horizontal
HFRA	Healthy Forests Restoration Act of 2003
I-80	Interstate 80
IM	Instruction Memorandum
IPCC	Intergovernmental Panel on Climate Change
LCSD	Lander County School District
LCSO	Lander County Sheriff Office
MBTA	Migratory Bird Treaty Act of 1918
µg/m ³	micrograms per cubic meter
Ma	million years ago
MDB&M	Mount Diablo Base and Meridian
Mining Law	General Mining Law of 1872, as amended
MLFO	Mount Lewis Field Office
MSHA	Mine Safety and Health Administration
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NDE	Nevada Department of Education
NDOA	Nevada Department of Agriculture
NDOT	Nevada Department of Transportation
NDEP	Nevada Division of Environmental Protection
NDETR	Nevada Department of Employment, Training, and Rehabilitation
NDOW	Nevada Department of Wildlife

NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act of 1969
Newmont	Newmont Mining Corporation
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NSAAQS	Nevada State Ambient Air Quality Standards
NSDO	Nevada State Demographer's Office
O ₃	ozone
P.L.	Public Law
PGH	preliminary general habitat
Plan	Plan of Operations/Nevada Reclamation Permit Application
PM _{2.5}	particulate matter less than 2.5 microns in size
PM ₁₀	particulate matter less than 10 microns in size
PPH	preliminary priority habitat
Project	Copper Basin Exploration Project
RC	reverse circulation
RFFAs	reasonably foreseeable future actions
RMP	Resource Management Plan
ROW	right-of-way
RV	recreational vehicle
SAD	Surface Area Disturbance
SIP	State Implementation Plan
SR	State Route
TCPs	Traditional Cultural Properties
U.S.	United States
USC	United States Code
USDC BEA	United States Department of Commerce Bureau of Economic Analysis
USFWS	United States Fish and Wildlife Service
V	Vertical
VFD	volunteer fire department
VRM	visual resource management

COPPER BASIN EXPLORATION PROJECT ENVIRONMENTAL ASSESSMENT

1 INTRODUCTION / PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

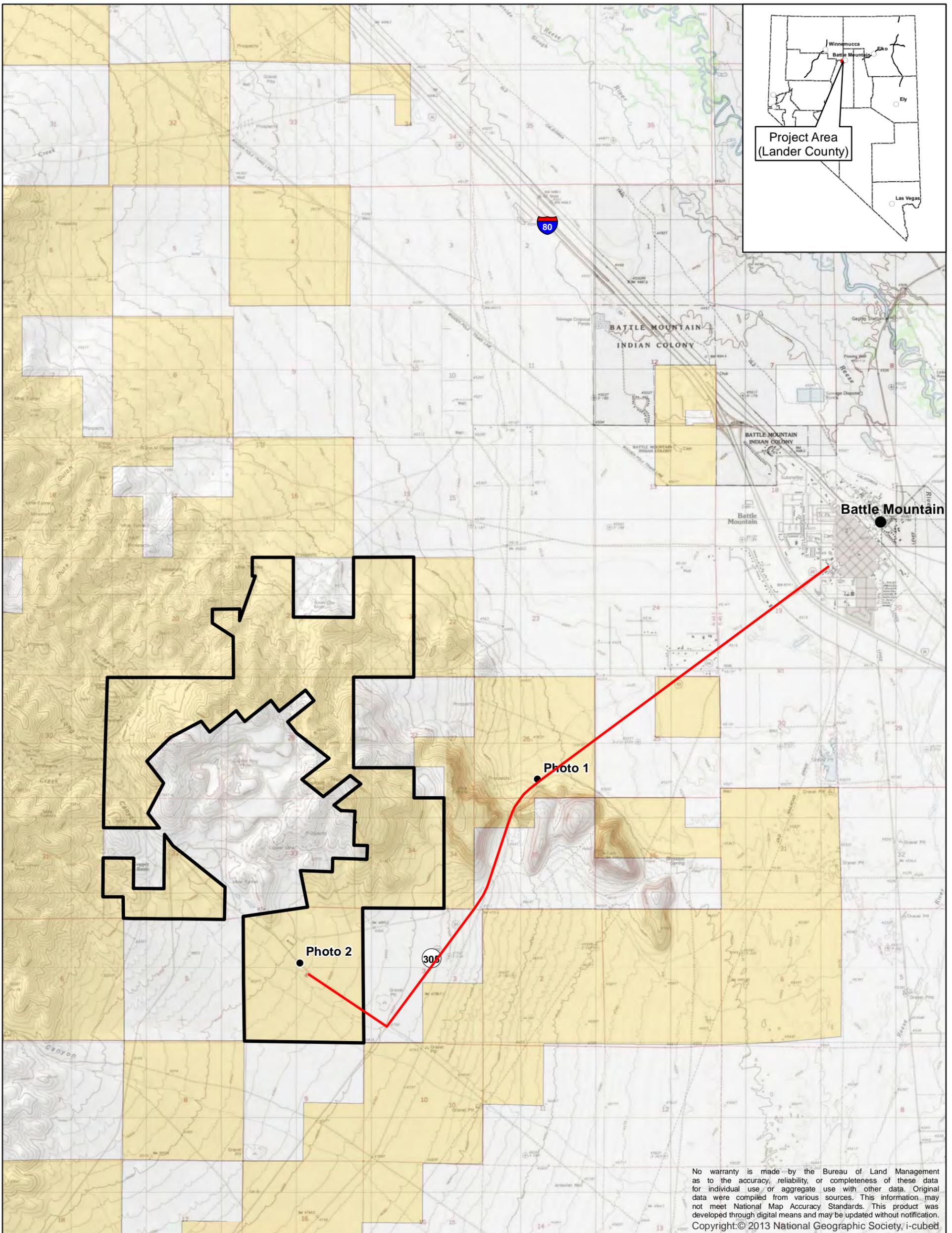
Newmont Mining Corporation (Newmont) proposes to conduct surface exploration activities at the Copper Basin Exploration Project (Project) located in north-central Nevada approximately five miles south of Battle Mountain, Nevada, in Lander County. The Project is located on public lands administered by the Bureau of Land Management (BLM), Mount Lewis Field Office (MLFO) within portions or all of Sections 20 through 22, 27-29, 32-34, Township 32 North (T32N), Range 44 East (R44E), and Section 4, T31N, R44E, Mount Diablo Base and Meridian (MDB&M) (Project Area). Access to the site is by traveling south from Battle Mountain approximately five miles on Nevada State Route 305 (SR 305) then turning right onto Copper Basin Road. Figure 1.1.1 shows the Project location, access, and land status.

The Project Area boundary covers approximately 3,169 acres and includes adjacent portions of land permitted under Newmont's Five Exploration Areas Plan of Operations NRP-0180 and NVN-067450 (11-1A) (Sections 21 and 28, T32N, R44E). The existing disturbance (9.5 acres) from land annexed from the Five Exploration Areas Plan of Operations is shown on Figure 1.1.2. Surface disturbance associated with Project activities, as well as bonding, would occur in phases. Newmont has conducted Notice-level exploration activities on public land within the Project Area under the Vail Ridge and Clipper Notices (NVN-90800 and NVN-91014). Authorized Notice-level surface disturbance is shown on Figure 1.1.2.

The Plan of Operations/Nevada Reclamation Permit Application (Plan) was submitted to the BLM and the Nevada Division of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR) in accordance with BLM Surface Management Regulations 43 Code of Federal Regulations (CFR) 3809, as amended, and Nevada reclamation regulations at Nevada Administrative Code (NAC) 519A. Newmont proposes to conduct the following activities associated with the Project: a) drilling reverse circulation (RC) and core holes; b) geologic and geophysical mapping; c) construction of exploration roads, drill sites, sumps, and staging areas; d) use of overland travel for access to Project activities; e) construction of trenches for the collection of bulk samples and ground condition testing; f) installation and operation of ground water monitoring wells; g) maintenance of the pre-1981 roads within the Project Area and the Project access roads; and h) reclamation of Project-related surface disturbance.

1.2 Purpose of and Need for Action

On lands open to location under the General Mining Law of 1872, as amended (Mining Law), the BLM administers the surface of public land and federal subsurface mineral estate under the Mining Law and the Federal Land Policy and Management Act of 1976 (FLPMA). The FLPMA also governs the BLM's administration of public land not open to location under the Mining Law. The purpose of the Proposed Action is to authorize Newmont's proposal to explore, locate, and delineate metal deposits on its mining claims on public lands, as provided under the Mining Law. The need for the action is established by the BLM's responsibility under Section 302 of the FLPMA and the BLM Surface Management Regulations at CFR 3809 to respond to a plan of operations to allow an operator to prospect, explore, and assess locatable mineral resources on public lands, and take any action to prevent unnecessary or undue degradation of the public lands.



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Explanation

Project Boundary

Land Status

Bureau of Land Management

Private

Copper Basin Access / Nevada Route 305

Photo View Point

BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office LLNVB0100
 50 Bastian Road
 Battle Mountain, Nevada 89820



BUREAU OF LAND MANAGEMENT

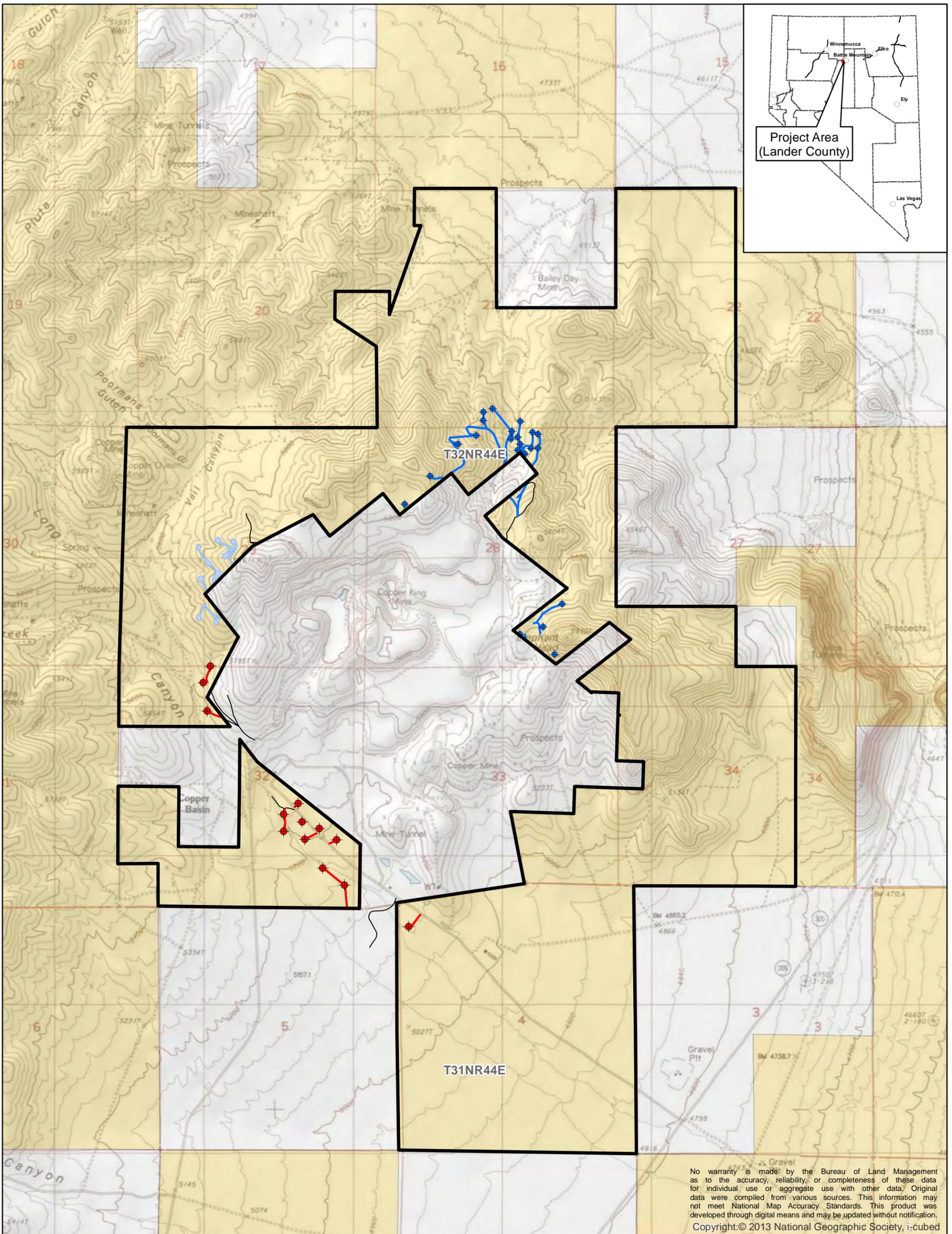
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**General Location, Access,
 and Land Status Map**

Figure 1.1.1



09/13/2013



Explanation

- Project Boundary
 - Authorized Notice-Level**
 - ◆ Authorized Drill Sites (Not Constructed)
 - Authorized Roads (Not Constructed)
 - Existing Roads
 - Authorized Disturbance (As-built)
 - Land Status**
 - Bureau of Land Management
 - Private
-
- Annexed Five Exploration Areas**
 - Approved Disturbance**
 - Constructed Road
 - Overland Travel
 - Existing Road
 - ◆ Constructed Drill Sites



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COPPER BASIN EXPLORATION PROJECT

Existing Authorized / Approved Disturbance

Figure 1.1.2

09/13/2013

1.2.1 Decision to be Made

The decision the BLM would make, based on the National Environmental Policy Act of 1969 (NEPA), includes the following options: 1) approve the Plan with no modifications; 2) approve the Plan with additional mitigation measures that are needed to prevent unnecessary or undue degradation of public lands; or 3) deny the approval of the Plan as currently written and not authorize the Project if it is found that the Proposed Action does not comply with the 3809 regulations and the FLPMA mandate to prevent unnecessary or undue degradation.

1.3 BLM Responsibilities and Relationship to Planning

The BLM is responsible for the preparation of this Environmental Assessment (EA), which was prepared in conformance with the policy guidance provided in the BLM NEPA Handbook H-1790-1 (BLM 2008). Under 43 CFR 3809.415, the operator of a plan of operations must prevent unnecessary or undue degradation to the public lands.

1.3.1 Conformance with Land Use Plans

The Proposed Action conforms with the BLM's Shoshone-Eureka Resource Management Plan, as amended (RMP) dated February 26, 1986 (BLM 1986a). Specifically, on page 29 in the RMP Record of Decision, under the heading "Minerals" subtitled "Objectives" number 1:

"Make available and encourage development of mineral resources to meet national, regional, and local needs consistent with national objectives for an adequate supply of minerals."

Under "Management Decisions," "Locatable Materials," number 1:

"All public lands in the planning areas will be open for mining and prospecting unless withdrawn or restricted from mineral entry."

Under "Management Decisions," "Current Mineral Production Areas," number 5:

"Recognize these areas as having a highest and best use for mineral production and encourage mining with minimum environmental disturbance..."

1.3.2 Local Land Use Planning and Policy

The Lander County 2005 Policy Plan for Federally Administered Lands (originally developed between 1983 and 1984) developed in response to Nevada Senate Bill 40 (1983), directs counties to develop plans and strategies for resources that occur within lands managed by federal and state agencies. Policy 13-1 states: "Retain existing mining areas and promote the expansion of mining operations and areas."

1.4 Scoping and Issues

1.4.1 Scoping

The Project was internally scoped by the BLM interdisciplinary team at a meeting held on May 8, 2013, at the BLM office in Battle Mountain.

1.4.2 Issues

During this meeting, BLM resource specialists identified the elements associated with supplemental authorities and other resources and uses to be addressed in this document as outlined in Chapter 3. Specific resources related to the Proposed Action were identified:

- Air Resources
- Cultural Resources
- Environmental Justice
- Fire Management
- Geology and Mineral Resources
- Rights-of-Way (ROWs)
- Migratory Birds
- Native American Traditional Values
- Noxious Weeds, Invasive Non-native Species
- Paleontological Resources
- Rangeland Management
- Recreation
- Social and Economic Values
- Soils
- Special Status Species
- Access
- Public Safety
- Vegetation
- Visual Resources
- Hazardous and Solid Waste
- Water Quality, Surface and Ground Water
- Wildlife

The BLM conducted Native American scoping on September 11, 2012, by contacting the Battle Mountain Band Council, the Elko Band Council, The Te-Moak Tribe of the Western Shoshone, and the Yomba Shoshone Tribe.

2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

2.1.1 Mineral Exploration

The Proposed Action consists of phased exploration activities on 3,169 acres of public land administered by the BLM. The Project is located in part or all of Sections 20 through 22, 27-29, 32-34, T32N, R44E, and Section 4, T31N, R44E, MDB&M. Newmont conducted Notice-level exploration activities on public land within the Project Area under the Vail Ridge and Clipper Notices (NVN-90800 and NVN-91014) within the Project Area.

Newmont proposes to create a total of 200 acres of surface disturbance under this Plan, including authorized Notice-level disturbance. Project-related activities would consist of the following: a) drilling RC and core holes; b) geologic and geophysical mapping; c) construction of exploration roads, drill sites, sumps, and staging areas; d) use of overland travel for access to Project activities; e) construction of trenches for the collection of bulk samples and ground condition testing; f) installation and operation of ground water monitoring wells; g) maintenance of the pre-1981 roads within the Project Area and the Project access roads; and h) reclamation of Project-related surface disturbance.

Project-related activities associated with exploration would occur in phases. Newmont is unable to predict the exact locations of the exploration roads, drill sites, and sumps. In order to provide BLM relevant data concerning surface disturbance, Newmont would provide work plans for each phase of exploration prior to initiating activities under that phase. Exploration activities would avoid features that are contributing elements to the Battle Mountain Historic Mining District (District) to the maximum extent possible. However, if features that are contributing elements to the District could not be avoided, then those features would be mitigated through an approved treatment plan.

The total acreage of authorized and proposed surface disturbance, by type of disturbance, for the phased Project is shown in Table 2.1-1. The 7.9 acres of authorized Notice-level and 9.5 acres of existing surface disturbance on public lands, annexed from the Five Exploration Areas Plan of Operations (a total of 17.4 acres), are included in the total surface disturbance under this Plan. Under Phase I, approximately 81.2 acres of new surface disturbance on public lands are included in the total surface disturbance in Table 2.1-1. The remaining surface disturbance (101.4 acres) would be utilized through exploration under subsequent phases over approximately ten years. These phased activities would consist of the same type of activities as in the Plan but the locations would be submitted as work plans to the BLM. All phases of exploration activities would include exploration drilling, road, drill pad and sump construction, utilization of overland travel and overland drill sites, and the maintenance of existing pre-1981 roads. The locations would depend on the success of initial Phase I activities or subsequent phased activities. By using a phased approach to drilling, Newmont would assess the expansion needs of the Project based on current drill results and other pertinent data.

Table 2.1-1: Existing/Authorized and Proposed Project Surface Disturbance

Disturbance Component	Surface Disturbance (acres)			
	Existing/ Authorized	Proposed Phase I	Subsequent Phases	Total
Constructed Road*	9.3	35.9	57.0	102.2
Overland Travel*	0.1	5.0	5.0	10.1
Constructed Drill Sites including Sumps and Spoil piles	8.0	32.3	23.4	63.7
Trenches and Bulk Sampling	0.0	3.0	1.0	4.0
Temporary Structures / Staging Areas / Well Sites	0.0	5.0	15.0	20.0
Total	17.4	81.2	101.4	200.0

*A five percent contingency has been added to the exploration road surface disturbance calculation to account for turnouts.

2.1.2 Equipment and Workforce

Newmont anticipates the following types of equipment and facilities would be used at the Project:

- Two motor graders;
- Two tracked excavators;
- Two dozers;
- Two 4x4 backhoes/front-end loaders;
- Two ten-yard dump trucks;
- One rock-breaker;
- Two small low-impact tractors and attachments;
- Up to six drill rigs (RC and core);
- Up to ten 5,000-gallon water trucks;
- Up to five water tanks;
- Up to two water pumps on trailers;
- Up to five pipe trucks;
- Two booster trucks;
- Up to five rod trucks;
- Up to six casing trailers;
- Up to five mud trailers;
- Up to five pipe trailers;
- One office trailer;
- One storage trailer;
- Up to five auxiliary compressor trailers;
- Up to 11 portable light plant/generators;
- Up to five portable drilling shelters;
- Up to two downhole survey trucks;
- Up to three crane trucks;

- Two service trucks; and
- Up to ten pickups or one-ton trucks.

The Project work force would include up to six crews of three drillers each and four geologists. Generally, earthwork would be completed with a Caterpillar motor grader, backhoe, or equivalent equipment, and an all-terrain vehicle with a seed broadcaster, or comparable method. Newmont would take steps to prevent fires by ensuring that each field vehicle carries hand tools and a fire extinguisher. Water trucks at the Project Area would be used in the event of a fire. All portable equipment, including drill rigs, support vehicles, and drilling supplies, would be removed from the Project Area during extended periods of non-operation.

2.1.3 Overland Travel and Constructed Roads

Newmont plans to utilize up to 22,000 linear feet of overland travel in Phase I. The running width for overland travel is estimated at approximately ten feet. Approximately 60,500 linear feet of roads would be constructed with an average running width of 18 feet. Planned disturbance associated with overland travel and road construction is shown in Table 2.1-1. Exploration roads that require earth moving would be constructed using typical construction practices for temporary mineral exploration roads to minimize surface disturbance, erosion, and visual contrast, as well as to facilitate reclamation. Road construction would be implemented using a Caterpillar motor grader, backhoe, dozer, or equivalent equipment. Road grades would be no steeper than ten percent, except for short drill spurs, in order to be consistent with the BLM roads manual. When drainages must be crossed by a road, Best Management Practices (BMPs) established by NDEP and the Nevada Division of Conservation Districts through the State Environmental Commission (1994) would be followed to minimize the surface disturbance and erosion potential. No culverts are anticipated, but would be installed if determined necessary. Blasting is not anticipated to be necessary to construct roadbeds. If drilling and blasting of exploration drill roads should become necessary, prior to blasting, the operator would submit an approved safety plan to the Nevada State Mine Inspector and the BLM. Routine road maintenance may be required and would consist of smoothing ruts, filling holes with fill material, grading, and re-establishing waterbars when necessary. In addition, Newmont may need to blade and gravel roads to minimize excess disturbance. The gravel would be obtained from outside the Project Area at an existing gravel source located on private land.

Balanced cut and fill construction would be used to the extent practicable to minimize the exposed cut slopes and the volume of fill material. Since the depth of the cut would be kept to a minimum, growth media removed during construction would be stockpiled as the fill slope to be used during reclamation. Road construction within drainages would be avoided where possible. When drainages must be crossed by a road, BMPs would be followed to minimize the surface disturbance and erosion potential. Routine road maintenance may be required and would consist of smoothing ruts, filling holes with fill material obtained from a local private source, grading, and reestablishing waterbars when necessary.

2.1.4 Drill Sites and Drilling Procedures

Drill sites would either be overland or constructed. Drill sites would have working areas that measure approximately 55 feet wide by 80 feet long. Newmont proposes to construct drill sites with these surface disturbance dimensions in Phase I. Drill sites would be the minimum size necessary for safe access and to provide a safe working area for equipment and crews. Newmont

would utilize overland drill sites when feasible; however, in order to maintain conservative disturbance calculations, it has been assumed that all drill sites would be constructed (Table 2.1-1). A sump would be constructed within each drill site disturbance with the approximate dimensions of 20 feet wide by 70 feet long by ten feet deep to contain drill cuttings and manage water generated during drilling. The sumps would be built with an incline on one end so that entrapped animals could easily exit the sump.

Newmont would conduct exploration drilling with up to three RC drill rigs and three core drill rigs. Drill holes would be vertical or angled. Drill holes would have an average depth of 750 feet. In general, when the drill rig has completed drilling the hole, the hole would be plugged. Newmont anticipates that up to three drill holes would remain open to 450 feet after the RC rig moves off the drill site and until the core rig moves on the site, completes the drill hole, and then abandons the hole. The drill holes would be plugged in accordance with the regulations at NAC 534.425 through 534.428. Based on previous drilling in the area, the depth to ground water is estimated at 500 feet below ground surface. If casing is set in a borehole, the borehole would be completed as a well pursuant to the provisions of Chapter 534 of the NAC. The borehole would be plugged pursuant to NAC 534.420 if ground water is encountered, or the casing would be removed from the borehole when it is plugged. The upper portion of the borehole would be permanently cased if the annular space between the casing and the walls of the borehole is completely sealed from the bottom of the casing to the surface pursuant to NAC 534.380.

Newmont would follow standard drilling procedures and require a company representative to be on site or on call throughout drilling activities. The company representative would monitor and coordinate the layout and construction of each drill site, the setup of the drill rig, drilling progress, demobilization, and cleanup of the drill site. A company geologist would also coordinate drilling activities, log each hole according to the geologic features encountered, determine the maximum depth of each hole, and advise the drill operator as needed. The company representative and geologist would travel to and from the drill site in separate four-wheel drive pickup trucks.

Standard drill rig crews would consist of a drill operator and one or two helpers. The helpers normally remove and box the recovered core samples, the cuttings from RC rigs, mix drilling fluids in the portable mud tank, operate the water truck, assist with drilling operations, and conduct maintenance as necessary. The crew would be transported to and from the drill site in up to three four-wheel drive vehicles per drill rig or a drilling company operated crew van.

2.1.5 Trenches and Bulk Sampling

Trenches would be constructed for geologic mapping, collection of bulk samples, and the collection of ground condition data. The sampling would consist of developing surface excavations or trenching. The trenches would be up to approximately 50 feet long by ten feet wide and up to ten feet deep. It is estimated that there would be up to approximately 12,900 feet of trenches excavated in Phase I. The locations of the bulk sampling sites have not been identified and would vary based on exploratory drilling results. The trenches would be excavated using a small bulldozer or excavator and would have a temporary 1 horizontal (H):1 vertical (V) slope ratio. Excavated material would be stockpiled along the sides or at the end of the trench. The trenches would be built with an incline on one end so that entrapped animals could easily exit the trench.

Growth media (e.g., topsoil and alluvium) would be salvaged and placed in separate stockpiles from the remainder of the excavated material. The growth media would be redistributed after the trench has been refilled to provide enhanced revegetation potential. To prevent access by humans or animals, Newmont would erect and maintain an orange barrier fence surrounding open trenches until they are filled and reclaimed. The orange barrier fence is typical safety fencing used at construction sites. The fencing is four feet high, bright orange, and with holes two inches to four inches square or oblong in either a square or oval pattern that allows wind to pass unhindered. The fence would be secured at ground level to 66-inch T posts with plastic fasteners.

2.1.6 Other Disturbance

Other surface disturbance associated with the Project includes ground water monitoring wells, piezometer surface casing, and ground water production wells. Each site would measure approximately 50 feet long by 50 feet wide. Any monitoring wells would be plugged in accordance to NAC 534.420 once they are no longer needed. Newmont estimates that a total of 15 ground water monitoring wells would be constructed during the life of the Project. Four ground water monitoring wells are proposed to be constructed in Phase I. Newmont would install up to six piezometers in Phase I. A laydown area (200 feet wide by 500 feet long) would be utilized for contractor supplies.

2.1.7 Surface Occupancy

Under 43 CFR 370 Subpart 3715.0-5, occupancy means full or part-time residence on the public lands. Surface occupancy also means activities that involve residence; the construction, presence, or maintenance of temporary or permanent structures that may be used for such purposes; or the use of a watchman or caretaker for the purpose of monitoring activities. Residence or structures include, but are not limited to, barriers to access, fences, tents, motor homes, cabins, houses, buildings, and storage of equipment or supplies. Surface occupancy activities under this Project, including those activities covered under 43 CFR 3715, include the following:

- The development of ground water monitoring wells, which would each have surface features including casing, well head cover, and protection posts as needed;
- The development of ground water piezometers, which would each have surface features including casing, electrical connections, and protection posts as needed;
- The development of ground water production wells, which would each have surface features including casing, well head covers, electrical connections, and protection posts as needed; and
- Trailers (for logging core), dumpsters, and portable toilets may be located on public land as part of Project activities. These pieces of equipment would be owned and managed by Nevada based contractors.

2.1.8 Water Use and Management

Water would be used for dust suppression and during drilling to cool the drill bit and remove drill cuttings. Water would be utilized with or without nontoxic drilling additives. Water would be obtained from a well on Newmont-controlled private land. Newmont estimates that

approximately 10,000 gallons of water per day would be utilized for core drilling and 5,000 gallons per day would be utilized for RC drilling. The Project could potentially have as many as three RC rigs and three core rigs. As much as 5,000 gallons of water per day may be used for dust control. Therefore, the daily drill water requirement could be as much as 20,000 gallons per day. A 5,000-gallon water truck would be utilized for water transport. This water use would only occur during active drilling. Drill fluids would be managed with the use of sumps at each drill site and all cuttings would be contained. BMPs for sediment control would be utilized during construction, operation, and reclamation to minimize sedimentation from disturbed areas. Proposed construction and drilling activities would avoid springs and seeps, if present. In order to facilitate proper drainage and prevent erosion, all bladed roads would have waterbars constructed, as needed, at BLM-recommended spacing.

Sediment control structures may include, but not be limited to, fabric or certified weed-free straw bale filter fences, siltation or filter berms, sumps, and downgradient drainage channels in order to prevent unnecessary or undue degradation to the environment. Sumps, constructed, as necessary, would be used to contain drill cuttings within the drill pad disturbance.

2.1.9 General Operations from Start through Closure

Exploration activities are ongoing and would continue in the proposed areas as soon as the Project is approved. Operations would be conducted 24 hours per day, seven days per week, except for brief periods during scheduled drilling breaks. During non-daylight drilling, artificial lighting will be directed downward to address the "dark sky initiative", subject to the Mine Safety and Health Administration (MSHA) or other safety concerns. Exploration activities would be expected to occur in a phased manner over a ten-year period; however, the actual length of exploration activities would depend on the results of the exploration. All reclamation work, with the exception of revegetation monitoring, would be completed no later than two years after the completion of Project-related activities. Newmont would conduct concurrent reclamation of disturbed areas once determined that the disturbance is no longer needed for Project-related activities. Table 2.1-3 outlines the anticipated reclamation schedule, on a monthly basis, to achieve the reclamation goals set forth above. Revegetation activities are limited by the time of year during which they can effectively be implemented. Site conditions and/or yearly climatic variations may require modification to this schedule in order to achieve revegetation success.

2.1.10 Solid and Hazardous Materials

All refuse generated by the Project would be disposed of at an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of on site. Water or nontoxic drilling fluids, additives, gels and abandonment materials would be utilized as necessary during drilling and would be stored at the Project Area.

Hazardous materials utilized at the Project Area would include diesel fuel, gasoline, and lubricating grease. Approximately 500 gallons of diesel fuel would be stored in fuel delivery systems on vehicles and drill rigs. Approximately 100 gallons of gasoline would be stored in fuel delivery systems for light vehicles. Approximately 100 pounds of lubricating grease would be stored on the drill rigs or transported by drill trucks. All containers of hazardous substances would be labeled, handled, and stored in accordance with the Nevada Department of Transportation (NDOT) and MSHA. In the event that a reportable quantity of hazardous or regulated materials, such as diesel fuel, was spilled, measures would be taken to control the spill, and the BLM, NDEP, and the Emergency Response Hotline would be notified, as required. Any

oil, hazardous material, or chemicals spilled during operations would be cleaned up in a timely manner. After clean up, the oil, toxic fluids, or chemicals and any contaminated material would be removed from the site and disposed of at an approved disposal facility.

One portable toilet per drill rig would be used for human waste. The human waste and toilet chemicals would be removed on a weekly basis by the contractor who owns the toilets. No waste would be buried on site.

2.1.11 Reclamation

Reclamation would be completed to the standards described in 43 CFR 3809.420 and NAC 519A. Reclamation would meet the reclamation objectives as outlined in the U.S. Department of Interior Solid Minerals Reclamation Handbook #H-3042-1 (BLM 1992), Surface Management of Mining Operations Handbook H-3809-1 (BLM 2012), and revegetation success standards per BLM/NDEP “Revised Guidelines for Successful Mining and Exploration Revegetation” (BLM 1999). Overland travel and existing roads would be utilized as much as possible, minimizing the need for road construction. All Newmont drill sites, sumps, trenches, overland travel, and road construction would be recontoured and reseeded.

Reclamation would be designed to achieve post-exploration land uses consistent with the BLM's land use management plan for the area, which are outlined in the Shoshone-Eureka RMP (BLM 1986). Reclamation is intended to return disturbed land to a level of productivity comparable to pre-exploration levels. Post-exploration land uses include wildlife habitat, livestock grazing, hunting, and dispersed recreation. The post-exploration land uses are not expected to differ from pre-exploration land use.

During exploration activities, reclamation would involve management of drilling to contain cuttings and manage drilling fluids, monitoring road conditions, and keeping sites clean and safe. During seasonal closure of the Project and periods of inactivity between drilling phases, reclamation would involve filling sumps, cleaning sites, and maintaining the overall safety of the Project Area. The BLM and BMRR would be notified prior to any periods of inactivity greater than 120 days.

After exploration activities are terminated, reclamation would involve regrading disturbed areas related to this Project to their approximate original contour. The Project would then be seeded using the approved reclamation seed mixture and application rates furnished by the BLM (Table 2.1-2). Overland travel routes would be scarified and reseeded, if necessary. Yearly visits to the site would be conducted to monitor the success of the revegetation for a period of up to three years or until revegetation success has been achieved.

To prevent and control the introduction and spread of noxious weeds within the Project Area during reclamation activities, Newmont would implement the following prevention and control practices:

- Growth media (soil and alluvium) disturbance would be minimized to the extent practicable, consistent with Project objectives. Growth media would be stockpiled and used in reclamation;
- Disturbed sites would be revegetated as soon as practicable when exploration work is completed. Activities may include topsoil replacement, planting, and seeding; and

- The seed mixture would be certified pure live seed and weed free. Straw bales used for erosion control would also be certified as weed free.

The post-exploration and post-reclamation topography would be essentially the same as the pre-exploration topography because only limited amounts of linear surface disturbance are planned.

Table 2.1-2: Proposed Seed Mix

Species		Application Rate (lbsPLS ¹ /acre)
Common Name	Scientific Name	
Pubescent wheatgrass	<i>Agropyron trichophorum</i>	4.0
Desert wheatgrass	<i>Agropyron desertorum</i>	0.5
Great Basin wildrye	<i>Leymus cinereus</i>	1.5
Palmer penstemon	<i>Penstemon palmeri</i>	0.5
Alfalfa	<i>Medicago sativa</i>	0.5
Prostrate summer cypress	<i>Kochia prostrata</i>	1.0
Rubber rabbitbrush	<i>Chrysothamnus nauseosus</i>	1.0
Douglas rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	1.0
Bluebunch wheatgrass	<i>Agropyron spicatum</i>	4.0
Idaho fescue	<i>Festuca idahoensis</i>	1.0
Big bluegrass	<i>Poa ampla</i>	1.0
Sanberg bluegrass	<i>Poa sandbergii</i>	1.0
Rocky Mountain beeplant	<i>Cleome serrulata</i>	2.0
Basin big sagebrush	<i>Artemisia tridentata</i> var. <i>tridentata</i>	0.75
Fourwing saltbush	<i>Atriplex canescens</i>	0.75
Total		20.5

¹Pure live seed

Exploration activities would occur over approximately ten years. All reclamation work, with the exception of revegetation monitoring, would be completed no later than two years after the completion of activities under this Project. Newmont would conduct concurrent reclamation of disturbed areas once it is determined that the disturbance is no longer required for Project activities.

Table 2.1-3 outlines the anticipated reclamation schedule on a monthly basis, which would be followed to achieve the reclamation goals set forth above. Regrading would occur between April and December and would be done within two years of Project completion. Revegetation activities (seeding) are limited by the time of year during which they can effectively be implemented. Seeding would be completed between October and December and would occur within two years of Project completion. Site conditions or yearly climatic variations can require that this schedule be modified to achieve revegetation success. Monitoring would occur between April and the end of September to determine revegetation success. In general, monitoring would be conducted three years following regrading and reseeding.

Table 2.1-3: Anticipated Exploration Reclamation Schedule

	Jan.- Mar.	April- June	July- Sept.	Oct.- Dec.	Year(s)
Regrading					Within 2 years of Project completion
Seeding					Within 2 years of Project completion
Monitoring					3 years beyond regrading and reseeding

2.1.11.1 Drill Hole Plugging

All drill holes would be plugged in accordance with NAC 534.425 through NAC 534.428. If any drill hole produces artesian flow, the drill hole would be contained pursuant to Nevada Revised Statute (NRS) 534.060 and NAC 534.378 and would be sealed by the method described in Subsection 2 of NAC 534.4371. If casings are set in a drill hole, either the drill hole must be completed as a well and plugged pursuant to NAC 534.420, or the casings would be completely removed from the drill hole and then plugged.

2.1.11.2 Regrading and Reshaping

Regrading and reshaping of all constructed drill sites and exploration roads would be completed to approximate the surrounding topography. Fill material would be pulled onto the roadbeds to fill the road cuts and restore the slope to natural contours. Roads and drill sites would be regraded and reshaped with an excavator. For overland travel roads and overland pads, tire tracks (e.g., trails created by overland travel and track rigs) would be lightly scarified and left in a rough state as necessary to relieve compaction, inhibit soil loss from runoff, and prepare the seed bed.

Should any drainages be disturbed, they would be re-shaped to approach the pre-construction contours. The resulting channels would be of the same capacity as up and downstream reaches and would be made to prevent erosion and ultimately revegetated. Following completion of earthwork, all disturbed areas would be broadcast seeded.

2.1.11.3 Handling of Topsoil

The depth of cut for newly constructed exploration roads would be minimal. Soils capable of serving as growth media would be salvaged and stockpiled as the fill slope. In addition to the soils, as much soil organic matter as possible would be salvaged to minimize compaction and promote aeration. Soil amendments are not considered necessary in those areas where sufficient growth media are available.

2.1.11.4 Revegetation

The seeding would be completed using a broadcast method and then raked by hand or low-impact equipment. The reclaimed surfaces would be left in a textured or rough condition (small humps, pits, etc.). Broadcast seed application would be at the rate of approximately 20.5 pounds of pure live seed per acre and native seed would be used, when available. Only certified weed-free seed would be used for reclamation seeding. Post-reclamation maintenance would consist of remedial dirt work and reseeding if required. Site monitoring for stability and revegetation success would be conducted once a year, during the spring or fall, for a minimum of three years until attainment of the revegetation standards established in the Nevada Guidelines

for Successful Revegetation for the NDEP, the BLM, and the United States Department of Agriculture Forest Service (Instruction Memorandum #NV 99-013).

Changes or adjustments to the reclamation plant list or application rate would be completed in consultation with and approved by the BLM and BMRR. Timing of revegetation activities is critically important to the overall success of the program. Seeding activities would be timed to take advantage of optimal climatic periods and would be coordinated with other reclamation activities. In general, earthwork and drainage control would be completed in the summer or early fall. Seedbed preparation would generally be completed in the fall, either concurrently with or immediately prior to seeding. Seeds would be sown in late fall to take advantage of winter and spring precipitation and optimum spring germination. Early spring seeding may be utilized for areas not seeded in the fall.

2.1.12 Monitoring

Monitoring of the drill sumps includes periodic visual inspections during drilling operations to ensure that the drill cuttings are contained. Should the observed condition indicate that the sump containment is inadequate, additional sump capacity would be built and/or incorporated into the drilling fluid management system. Monitoring associated with reclamation activities is addressed in the Reclamation Plan (Section 4).

The BLM and Newmont would cooperate to inventory and monitor noxious weeds within areas of disturbance related to exploration activities within the Project Area. Noxious weed infestations within the Project Area resulting from Newmont's ground disturbing activities would be promptly reported to the BLM. The extent of the infestation would be recorded and plotted on a map. Newmont would treat any noxious weed infestations that result from ground disturbing activities within the Project Area for at least a three-year period following the completion of the Project. Treatments would be applied and recorded per BLM policy. The BLM and Newmont would cooperate to monitor the effectiveness of treatments on noxious weeds.

Monitoring would include periodic visual inspections during road and drill site construction, drill operations, and reclamation. In order to facilitate drainage and prevent erosion, all bladed roads would have waterbars constructed as specified in the BLM roads manual. BMPs for sediment control would be utilized to minimize sedimentation from disturbed areas. Sediment control structures would include, but not be limited to, fabric or weed-free straw bale filter fences, siltation or filter berms, mud sumps, and downgradient drainage channels in order to prevent unnecessary or undue degradation to the environment. Sumps would be constructed as necessary to ensure that the drill cuttings are contained and fluids are managed. Should the observed condition indicate that the sump containment is inadequate, additional sump capacity would be built and incorporated into the drilling fluid management system.

2.1.13 Applicant-Committed Environmental Protection Measures

Newmont commits to the following environmental protection measures to prevent unnecessary or undue degradation during construction, operation, and reclamation of the Project. These measures are derived from the general requirements established in the BLM's Surface Management Regulations at 43 CFR 3809 and BMRR mining reclamation regulations, as well as water, air quality, and other environmental protection regulations.

Water Quality

- All drill holes would be plugged in accordance with NAC 534.425 through NAC 534.428. If any drill hole produces artesian flow, the drill hole would be contained pursuant to Nevada Revised Statute (NRS) 534.060 and NAC 534.378 and would be sealed by the method described in Subsection 2 of NAC 534.4371. If casings are set in a drill hole, either the drill hole must be completed as a well and plugged pursuant to NAC 534.420, or the casings would be completely removed from the drill hole and then plugged.
- Storm water BMPs (Nevada Division of Environmental Protection and Nevada Division of Conservation 1994) would be used at construction sites to minimize erosion from storm water.
- Drill cuttings would be contained on site and the fluids managed utilizing appropriate control measures. Sediment traps would be used as necessary and filled at the end of the drill program.
- Newmont would follow the Spill Contingency Plan included in Appendix D of the Plan.
- Only nontoxic fluids would be used in the drilling process.

Wildlife

- In order to avoid potential impacts to breeding migratory birds (including golden eagles [*Aquila chrysaetos*]), a nest survey would be conducted by a BLM approved biologist prior to any surface disturbance associated with exploration activities during the avian breeding season (March 1 through July 31 for raptors, and April 1 through July 31 for other avian species). Pre-disturbance surveys for migratory birds are only valid for 14 days. If the disturbance for the specific location does not occur within 14 days of the survey another survey would be needed. If active nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) would be delineated after consultation with the BLM resource specialist, and the buffer area avoided to prevent destruction or disturbance to nests or birds until they are no longer actively breeding or rearing young. The site characteristics to be used to determine the size of the buffer area are as follows: 1) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; d) sensitivity of the species to nest disturbances; and e) the protection status of the species.
- During biological surveys, raptor nests were located within the Project (Figure 3.2.13). Land clearing or other surface disturbance associated with the activities within the Project Area would be conducted outside of the raptor nesting season, whenever feasible, to avoid potential destruction or disturbance of nesting raptors at known nests. When surface disturbance occurs during the raptor nesting season (March 1 – July 31) within 0.25 miles of the known raptor nests (Figure 3.2.13) a qualified biologist would survey the nest to determine if it is occupied. If raptor nests are occupied during the raptor

nesting season (March 1 – July 31), no surface disturbing activities would occur within 0.25 mile of the nest during the raptor nesting season.

- If raptor nests are occupied during the raptor nesting season (March 1 – July 31), no surface disturbing activities would occur within 0.25 mile of the nest during the raptor nesting season.
- If the golden eagle nest is determined to be active during the breeding season (March 1 – July 31), no surface disturbing activities would occur within 0.5 mile of the nest (Figure 3.2.13).
- During the lekking period (March 1 to May 15), surveys would occur at the only known lek (Battle Mountain lek 7) if the disturbance would occur within three miles of the lek. Surveys would be performed to determine if the leks are active per the Nevada Department of Wildlife (NDOW) lek survey protocol guidelines (NDOW 2004). Prior to conducting surveys, the BLM and NDOW would be consulted. If the sage grouse lek is active, no surface disturbing activities would occur within three miles of the lek during the lekking season (March 1 – May 15).
- Road-killed wildlife within the Project Area would be promptly removed in order to control raven numbers.
- Applicant committed practices at abandoned mine shafts, old buildings, or structures within the Project Area would include a 200-foot buffer for drilling activity (excluding vehicle operation) to avoid bat roosting and foraging habitat.
- In order to avoid damage or disturbance to riparian areas, no surface disturbing activities would be conducted within 300 feet of a stream channel, meadow, or spring.

Cultural and Paleontological Resources

- Pursuant to 43 CFR 10.4(g), Newmont would notify the BLM authorized officer, by telephone, and with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2). Further pursuant to 43 CFR 10.4 (c) and (d), the operator would immediately stop all activities in the vicinity of the discovery and not commence again for 30 days or when notified to proceed by the BLM authorized officer.
- In the event that previously undiscovered paleontological resources are discovered in the performance of any surface disturbing activities, the item(s) or condition(s) would be left intact and immediately brought to the attention of the authorized officer of the BLM. If significant paleontological resources are found, avoidance, recordation, and data recovery would be required.
- Any cultural resource discovered by the permit holder, or any person working on their behalf, during the course of activities on federal land would be immediately reported to the authorized officer by telephone, with written confirmation. The permit holder would suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery can be made by the authorized officer. This evaluation would

determine the significance of the discovery and what mitigation measures are necessary to allow activities to proceed. The holder is responsible for the cost of evaluation and mitigation. Operations may resume only upon written authorization to proceed from the authorized officer.

- Newmont's exploration activities would avoid features that are contributing elements to the District to the maximum extent possible. However, if features that are contributing elements to the District could not be avoided, then those features would be mitigated through an approved treatment plan.

Public Safety, Recreation, and Access

- Public safety would be maintained throughout the duration of the Project. All equipment and other facilities would be maintained in a safe and orderly manner.
- Sumps and trenches would be reclaimed as soon as practical after the completion of sampling and logging.
- Any survey monuments, witness corners, or reference monuments would be protected to the extent economically and technically feasible.
- All solid wastes would be disposed of in a state, federal, or local designated site.
- Pursuant to 43 CFR 8365.1-1(b)(3), no sewage, petroleum products, or refuse would be dumped from any trailer or vehicle.
- Newmont would comply with all applicable state and federal fire laws and regulations and all reasonable measures (i.e. vehicle hand tools, extinguisher, contact BLM concerning fire controls on welding) would be taken to prevent and suppress fires in the Project Area.
- Newmont would position active drilling equipment so that mountain bike trails would not be restricted (except for the time it would take to cross the trail with drilling equipment and supply deliveries [approximately ten minutes]) and mountain bikers would be allowed ingress and egress to trails. Newmont would provide notice at the trailhead that active drilling was occurring in the area and would also post temporary signage near the impacted trail stating "Caution, Drilling Activities Ahead" or something similar.

Air Quality

- Emissions of fugitive dust from disturbed surfaces would be minimized by the application of water from a water truck as a method of dust control.
- In addition, Newmont may need to gravel some existing pre-1981 roads and the exploration roads to minimize excess disturbance and control dust. A Surface Area Disturbance (SAD) Permit would be required for the Project because the proposed surface disturbance exceeds five acres. A Dust Control Plan would be included in the SAD Permit.

Noxious Weeds

- Noxious weeds would be controlled through implementation of the following BMPs: concurrent reclamation efforts; schedule weed management activities to maximize the effectiveness of control efforts on reclaimed areas; washing heavy equipment prior to entering the Project Area; and avoiding areas of known invasive, non-native, and noxious weeds during periods when the weeds could be spread by vehicles.
- Noxious weeds can readily invade disturbed areas associated with exploration projects. Newmont would be responsible for the following: 1) identifying noxious weeds in the Project Area (noxious weed information would be provided by the BLM); 2) excluding noxious weeds from disturbed areas until reclamation has been accepted and released; and 3) ensuring that all equipment is “weed free” before traveling to and from the Project Area so that noxious weeds are not spread to new locations. All vehicles originating from outside northern Nevada would be cleaned in a powerwash in Battle Mountain. When noxious weeds are encountered in the Project Area, documentation of their location and extent would be provided to the BLM as soon as possible. Newmont would obtain approval from the BLM-authorized officer prior to any herbicide application. Newmont would contact the BLM’s noxious weed program lead regarding any issues concerning noxious weeds.
- To minimize the introduction of noxious weeds into the Project Area, the following preventative measures would be implemented by Newmont: 1) stay on existing roads to and from the Project Area and in the Project Area; 2) use a certified weed-free seed mix during reclamation; 3) conduct concurrent reclamation when feasible; and 4) implement a weed monitoring and control program. The BLM would provide Newmont with a color brochure, “Nevada Noxious Weed Field Guide.” Through Early Detection/Rapid Response (EDRR), Newmont would survey the Project Area annually to reduce the risk that invasive species become established. Control method(s) will be determined by a range of factors, even for small infestations. For more intensive infestations, Newmont would consult with the BLM on containment or eradication measures.

Wildland Fire Protection

- All vehicles would carry fire extinguishers, and a minimum of ten gallons of water.
- Adequate fire-fighting equipment, i.e., shovel, Pulaski, extinguisher(s), and a minimum ten gallons of water would be kept at the drill site(s).
- Vehicle catalytic converters would be inspected often and cleaned of all brush and grass debris.
- Welding operations would be conducted in an area free from or mostly free from vegetation. A minimum of ten gallons water and a shovel would be on hand to extinguish any fires created from the sparks. Extra personnel would be at the welding site to watch for fires created by welding sparks.
- Wildland fires would immediately be reported to the BLM Central Nevada Interagency Dispatch Center (CNIDC) at (775) 623-3444. Information reported would include the

location (latitude and longitude if possible), fuels involved, time started, who or what is near the fire, and the direction of fire spread.

- When conducting operations during the months of May through September, the BLM Battle Mountain District Office, Division of Fire and Aviation would be contacted at (775) 635-4000 to determine if any fire restrictions are in place for the Project and to provide approximate beginning and ending dates for Project activity.

2.2 No Action Alternative

In accordance with BLM NEPA guidelines H-1790-1, Chapter V (BLM 1988), this EA evaluates the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the Proposed Action were not implemented. The No Action Alternative forms the baseline for which the impacts of all other alternatives can be measured.

Under the No Action Alternative, Newmont would not conduct additional surface exploration activities. Newmont would continue operations of their Notice-level exploration activities on public lands within the Project Area under the Vail Ridge and Clipper Notices (NVN-90800 and NVN-91014). The area would remain available for future mineral exploration and mining activities or for other purposes, as approved by the BLM.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

As part of the NEPA process the BLM considered several alternatives to the Proposed Action. The following is a discussion of those alternatives that have been eliminated from detailed consideration in this EA because they did not meet the purpose and need for the Project.

2.3.1 Cross Country or Overland Travel Only Alternative

This alternative would utilize only overland or cross country travel and would not allow for construction of new roads. Utilization of cross country travel exclusively for the Project would eliminate much of the exploration area due to topographic constraints. However, the Proposed Action incorporates the use of cross country travel and would utilize this method where feasible.

2.3.2 Use Only Existing Roads Alternative

Under this alternative, all exploration activities would use only existing roads and no new roads would be constructed. Utilization of existing roads only would eliminate portions of the exploration area. Furthermore, an alternative that eliminates access to portions of the exploration area would deny the claimant the opportunity to fully evaluate and characterize the mineral potential.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

The purpose of this section of the EA is to describe the existing environment of the Project Area, as well as environmental consequences from implementation of the Proposed Action.

The Project Area includes 9.5 acres of disturbance on lands annexed from the Five Exploration Areas Plan of Operations (Figure 1.1.2) for this Project. Newmont is currently authorized to conduct 7.9 acres of surface disturbance within the Project Area under the Vail Ridge and Clipper Notices. The existing/authorized surface disturbance includes 17.4 acres of constructed roads and drill sites. This existing baseline condition of the Project Area serves as the basis for the analysis of the Proposed Action.

Supplemental authorities subject to requirements specified by statute or Executive Order must be considered in all BLM environmental documents. The elements associated with the supplemental authorities identified in the NEPA Handbook (BLM 2008, Appendix 1) and in the Nevada Instruction Memorandum (IM) 2009-030, Change 1, are listed in Table 3.1-1. The table lists the elements and the determination whether the element is present in the Project Area and whether the Proposed Action would affect the element.

Table 3.1-1: Elements Associated with Supplemental Authorities and Rationale for Detailed Analysis for the Proposed Action

Supplemental Authority Element	Not Present	Present/ Not Affected	Present/May be Affected	Rationale/Reference Section
Air Quality		X		Air quality would not be affected by the Proposed Action. See Section 3.2.1.
Areas of Critical Environmental Concern (ACEC)	X			This element is not present within the Project Area or vicinity and is not further analyzed in this EA.
Bald and Golden Eagles			X	There are no bald eagles in the Project Area and golden eagles could be temporarily affected by activities associated with the Proposed Action. Newmont has committed to a 0.5 mile buffer around the eagle nest, located on private land not included in the Project Area, during nesting and fledging season. See Section 3.2.13 (Special Status Species).
Cultural Resources			X	Cultural resources could be impacted by the Proposed Action. See Sections 2.2.13 and 3.2.2.
Environmental Justice	X			No minority or low-income groups would be disproportionately affected by health or environmental effects as a result of the implementation of the Proposed Action. This element is not present within the Project Area or vicinity and is not further analyzed in this EA.

Supplemental Authority Element	Not Present	Present/ Not Affected	Present/May be Affected	Rationale/Reference Section
Farm Lands (Prime or Unique)	X			This element is not present within the Project Area or vicinity and is not further analyzed in this EA.
Fish Habitat	X			Native fish habitat is not present within the Project Area or vicinity and is not further analyzed in this EA.
Floodplains	X			This element is not present within the Project Area or vicinity and is not further analyzed in this EA.
Forests and Rangelands (Healthy Forest Restoration Act [HFRA] projects only)	X			This Project does not meet the requirements to qualify as an HFRA project and is not further analyzed in this EA.
Human Health and Safety (Herbicide Projects)	X			The Project may use herbicides to eradicate noxious weeds; however, Executive Order (EO) 13045, "Protection of Children from Environmental Health Risks and Safety Risks", would not apply to this Project as there would be no children on the site During application of herbicides.
Migratory Birds			X	See Section 3.2.6.
Native American Traditional Values			X	See Section 3.2.7.
Noxious Weeds, Invasive and Non-native Species			X	See Section 3.2.8.
Threatened or Endangered Species	X			Federally threatened and endangered species have been determined not to be present within the Project Area. See Section 3.2.13 (Special Status Species) for a further discussion.
Wastes – Hazardous/Solid		X		See Section 3.2.16.
Water Resources		X		See Section 3.2.17.
Wetlands and Riparian Zones		X		This element is discussed in Section 3.2.20.
Wild and Scenic Rivers	X			This element is not present within the Project Area or vicinity and is not further analyzed in this EA.
Wilderness/Wilderness Study Areas (WSAs)/Lands with Wilderness Characteristics	X			Wilderness or WSAs are not present within the Project Area or vicinity. The Project Area has been substantially affected by human activities as the area has been actively mined in the past. The area does not have opportunities for solitude or primitive recreation, and does not have an adequate size to contain land with wilderness characteristics. These elements are not further analyzed in this EA.

Elements present are analyzed in Section 3.2, and include justification for the resources present and determined not to be affected by the Proposed Action. In addition, two elements not present

are discussed in Section 3.2 as to how they were determined not to be present. Those elements listed under the supplemental authorities not occurring in the Project Area and not affected are not discussed further in this EA, based on the rationale provided in Table 3.1-1.

In addition to the elements listed under supplemental authorities, the BLM considers other resources and uses occurring on public lands and the issues that may result from the implementation of the Proposed Action. Other resources or uses of the human environment considered for this EA are listed in Table 3.1-2 below.

Table 3.1-2: Resources or Uses Not Associated with Supplemental Authorities

Other Resources or Uses	Not Present	Present/ Not Affected	Present/May Be Affected	Rationale/Reference Section
Fire Management		X		See Section 3.2.3.
Forestry and Woodland Resources	X			This element is not present within the Project Area or vicinity and is not further analyzed in this EA.
Geology and Mineral Resources		X		Geology and mineral resources are discussed in Section 3.2.4. There are no impacts to these resources.
Land Use and Realty		X		See Section 3.2.5.
Paleontological Resources	X			Based on the geology described in Section 3.2.4, paleontological resources would not occur in the Project Area due to igneous rock types, metamorphosed sediments, and associated alteration. In addition, Section 2.2.13 includes a protection measure should paleontological resource be discovered during exploration activities. See Section 3.2.19.
Rangeland Management		X		See Section 3.2.9.
Recreation			X	See Section 3.2.10.
Socioeconomic Values		X		See Section 3.2.11.
Soils			X	See Section 3.2.12.
Special Status Species (Plants and Wildlife)			X	See Section 3.2.13.
Vegetation			X	See Section 3.2.14.
Visual Resources		X		See Section 3.2.15.
Wild Horses and Burros	X			The Project Area is not located in a Herd Management Area; therefore, this resource is not further addressed in this EA.
Wildlife			X	See Section 3.2.18.

Resources or uses present in the Project Area are discussed and analyzed in Section 3.2, and include justification for the resources present and determined not affected by the Proposed Action. Those other resources listed that do not occur in the Project Area and would not be affected are not discussed further in this EA, based on the rationale provided in Table 3.1-2. The

potential effects of the No Action Alternative on both supplemental authorities and other resources or uses are discussed in Section 3.3.

3.2 Effects of the Proposed Action

3.2.1 Air and Atmospheric Values

3.2.1.1 Affected Environment

Air Quality

The Federal Clean Air Act is the primary controlling legislation over air quality. Ambient air quality and the emission of air pollutants are regulated under both federal and state laws and regulations. Regulations potentially applicable to the Proposed Action include the following: National Ambient Air Quality Standards (NAAQS) and the Nevada State Ambient Air Quality Standards (NSAAQS).

The Bureau of Air Pollution Control (BAPC) is the agency in the State of Nevada that has been delegated the responsibility for implementing a State Implementation Plan (SIP) (excluding Washoe and Clark Counties, which have their own SIP). Included in a SIP are the State of Nevada air quality permit programs (NAC 445B.001 through 445B.3791, inclusive). Also part of a SIP is the NSAAQS. The NSAAQS are generally identical to the NAAQS, with the exception of the following: (a) an additional standard for carbon monoxide (CO) in areas with an elevation in excess of 5,000 feet above mean sea level (amsl); (b) a hydrogen sulfide standard; and (c) a violation of state standards occurs with the first annual exceedance of an ambient standard, while federal standards are generally not violated until the second annual exceedance. In addition to establishing the NSAAQS, the BAPC is responsible for permit and enforcement activities throughout the State of Nevada (except Clark and Washoe Counties).

The Project Area is located in the Lower Reese River Valley and the Clovers Area hydrographic basins, which are considered in attainment/unclassifiable relative to the federal air quality standards. The existing air quality is typical of largely undeveloped regions of the western United States with limited sources of pollutants.

Climate and Meteorology

The Project Area is located on the eastern flank of Battle Mountain. The climate and vegetation in the Project Area are typical of the arid climate of the central portion of the northern Basin and Range Province. The climate receives low to moderate levels of precipitation, with moderate fluctuations in seasonal temperatures, and the average annual precipitation is 6.3 inches. Temperatures during the winters are cool with periods of very cold weather with the lowest average temperature in January of 15.7 degrees Fahrenheit (°F). The summers are hot and dry with the highest average monthly temperature in July of 96.1 °F. These temperatures represent data collected in Battle Mountain, Nevada, located five miles north of the Project Area (WRCC 2012). The elevation in the Project Area ranges between 4,575 to 6,165 feet amsl.

Climate Change

Scientific research has identified the potential impacts of anthropogenic (man-made) greenhouse gas (GHG) emissions and changes in biological carbon sequestration due to land management activities on global climate. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide equivalent concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. The Intergovernmental Panel on Climate Change (IPCC) recently concluded that “warming of the climate system is unequivocal” and “most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations” (IPCC 2007).

Several activities contribute to the phenomena of climate change, including emissions of GHGs (especially carbon dioxide and methane) from fossil fuel development, large wildfires and activities using combustion engines; changes to the natural carbon cycle; and changes to radioactive forces and reflectivity (albedo). It is important to note that GHGs would have a sustained climatic impact over different temporal scales. For example, recent emissions of carbon dioxide can influence climate for 100 years.

Current emissions within the vicinity of the Project Area include vehicle combustion emissions and fugitive dust from travel on unimproved roads and ranch activities, and wildland fires, mining and reclamation, and recreational activity. Emissions of all pollutants are generally expected to be low due to the extremely limited number of sources in the vicinity of the Project Area. Existing climate prediction models are global in nature; therefore, they are not at the appropriate scale to estimate potential impacts of climate change within the Lower Reese River Valley airshed in which the Project is located. Due to the nature and scale of the Proposed Action, effects on climate change are not further analyzed in this EA.

3.2.1.2 Environmental Consequences

The Project has the potential to disturb approximately 200 acres. Travel on access roads and Project-related activities within the Project Area would create emissions, which would have a potential impact on air quality. Fugitive dust, in the form of PM₁₀ and PM_{2.5}, would be caused by the operation of the equipment listed in Section 2.1.3. Vehicle emissions, in the form of sulfur dioxide, nitrogen oxide, CO, and volatile organic compounds, would occur anytime the internal combustion engines on the vehicles are operating.

All exploration activities with surface disturbance exceeding 20 acres are required to obtain a SAD permit from the BAPC. This permit includes a Dust Control Plan to control the emissions of fugitive dust at the Project. The BAPC’s issuance of the SAD permit and requirement that the Project operate in compliance with the Dust Control Plan are intended to ensure that fugitive dust emissions are minimized to the maximum extent possible using BMPs. The Dust Control Plan stipulates that travel on roads within the Project Area would be conducted at prudent speeds. The Dust Control Plan includes watering roads to suppress dust to minimize the potential effects of fugitive dust on air quality. Additionally, as outlined in Section 2.1.13, Newmont may need to

gravel some existing pre-1981 roads and the exploration roads to minimize excess disturbance and to control dust.

3.2.2 Cultural Resources

3.2.2.1 Affected Environment

The area of potential effects (APE) consists of approximately 3,169 acres. Between 1976 and 2012, seventeen cultural resource inventories have been conducted within the APE, and within the vicinity of the APE. Of the 3,169 acres comprising the APE, all have been inventoried to Class III standards. Class I document research indicated the Battle Mountain Historic Mining District was identified in 1979 as an Historical Archaeological District comprised of approximately 38,580 acres, including the entire Project Area.

A total of 268 District elements, including both sites and loci, have been identified within the APE, the majority of which are within two distinct Landscape areas. Landscape “A”, centered around the Bailey Day mine, contains 41 cultural resources, including one previously-recorded eligible site, and 40 newly-identified loci. In addition to the site, 13 of those resources are considered contributing elements. The Copper Basin Landscape – Landscape “B” – includes 161 resources; four eligible sites and 157 loci, 67 of which are contributing elements. Mining related resources outside the boundaries of the Bailey Day and Copper Basin Landscapes include an eligible site and 59 loci; 17 of those loci are contributing elements. The final six sites are not District elements, being prehistoric and/or ethnohistoric in nature. Although relatively uncommon, four of these are considered eligible for nomination to National Register of Historic Places, based on their potential to contribute additional data to extant research questions regarding past lifeways.

3.2.2.2 Environmental Consequences

As outlined in the environmental protection measures in Section 2.1.13, Newmont’s exploration activities would avoid features that are contributing elements to the District to the maximum extent possible. However, if features that are contributing elements to the District could not be avoided, then those features would be mitigated through an approved treatment plan. This measure would minimize impacts to cultural resources.

3.2.3 Fire Management

3.2.3.1 Affected Environment

No fuel reduction or habitat enhancement projects have been conducted or are proposed within the Project Area; however, the BLM has ongoing hazardous fuels reduction and habitat enhancement projects in the Project Area vicinity.

3.2.3.2 Environmental Consequences

Implementation of the Proposed Action would be coordinated with the BLM's MLFO Manager in order to ensure the safety of Newmont personnel during all periods of prescribed fire activity in the area. Based on the environmental protection measures outlined in Section 2.1.13, and the fact that the Project Area would continue to be accessible, impacts to fire management are not

anticipated. In addition, reclamation measures include seeding with vegetation types that may be more favorable than other vegetation types to fire avoidance and suppression in the long term.

No impacts to fire management from the Proposed Action are anticipated; therefore, fire management is not further analyzed in this EA.

3.2.4 Geology and Mineral Resources

3.2.4.1 Affected Environment

The Battle Mountain Mining District is a world class district containing over 50 different intrusive events (Roberts 1964). As a result of this anomalous intrusive history and diverse metal endowment, the district has been the subject focus of mineral discovery and mining for over 120 years (Roberts 1964; Roberts and Arnold 1965; Theodore et al. 1973; Theodore and Blake 1975; Doebrich 1995). Intrusive rocks were predominantly emplaced during two major episodes: Late Cretaceous (92-98 million years ago [Ma]) and Eocene (38-41 Ma) (Theodore et al. 1973). In addition to Copper Basin, there are three other major felsic intrusive centers in the Battle Mountain mining district: Copper Canyon (~39 Ma), Elder Creek (~39 Ma), and Trenton Canyon (~89 Ma)(McKee 1992).

The Paleozoic rocks in the district can be subdivided according to their positions with respect to regional thrust faults and form three distinct plates. The lowest plate is composed of the Ordovician Valmy and Devonian Scott Canyon Formations. The Scott Canyon Formation, which is the only member that crops out at Copper Basin, consists predominantly of chert with interbeds of carbonaceous shale, argillite, and greenstone (Roberts 1964). The thickness of the Scott Canyon Formation has not been adequately constrained because of incomplete sections of rock, repetition of sections from folding, and the absence of good marker beds (Theodore et al. 1992).

The second plate, composed of the Cambrian Harmony Formation, is separated from the underlying Scott Canyon Formation by the Dewitt thrust. The Harmony Formation consists of interbedded quartz arenite, subarkose, arkose, shale, and limestone (Theodore et al. 1992). The stratigraphic thickness is estimated to be 2,000 to 4,000 feet, with 3,000 feet measured in the region (Stewart and Suczek 1977; Roberts 1964). In the eastern portions of Copper Basin, recent drilling shows the Harmony Formation is at least 1,800 feet thick.

The third plate, the Antler overlap sequence, unconformably overlies the other two plates and consists of the Middle Pennsylvanian Battle Formation and Upper Pennsylvanian and Lower Permian Antler Peak Limestone Formation. The Battle Formation is further subdivided into lower, middle, and upper units. The lower unit is composed of reddish brown, calcareous conglomerate with clasts of chert, quartzite, sandstone, limestone, and volcanic fragments. The middle unit consists of calcareous shale with occasional conglomerate interbeds. The upper unit is another conglomerate with clasts of quartzite and chert (Theodore et al. 1992). The thickness of the Battle Formation at Copper Basin ranges from approximately 30 to 250 feet thick. The Antler Peak Limestone consists of two major facies: a carbonate-dominant sequence composed primarily of dark gray micrite, and a silica-dominated facies composed primarily of lighter gray, well bedded, carbonate-rich siltite (Theodore et al. 1992). In the eastern portion of Copper Basin, the formation reaches thicknesses greater than 500 feet. Paleozoic sedimentary rocks form the regional basement throughout the area and have undergone a complex history of sedimentation

and deformation, preserving no fossils. Figure 3.2.4 shows the geology within and surrounding the Project Area.

3.2.4.2 Environmental Consequences

The Proposed Action would not involve the removal of large volumes of earth that could potentially lead to structural instability. Only a small amount of material would be removed from drill holes and trenches and would not affect potential mineral resources in the ground. These activities are not anticipated to result in negative impacts to geology and mineral resources. These resources are not analyzed further in this EA.

3.2.5 Land Use and Realty

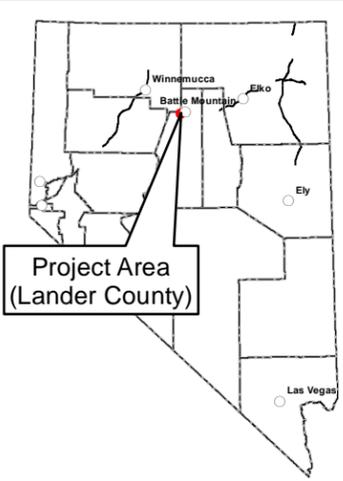
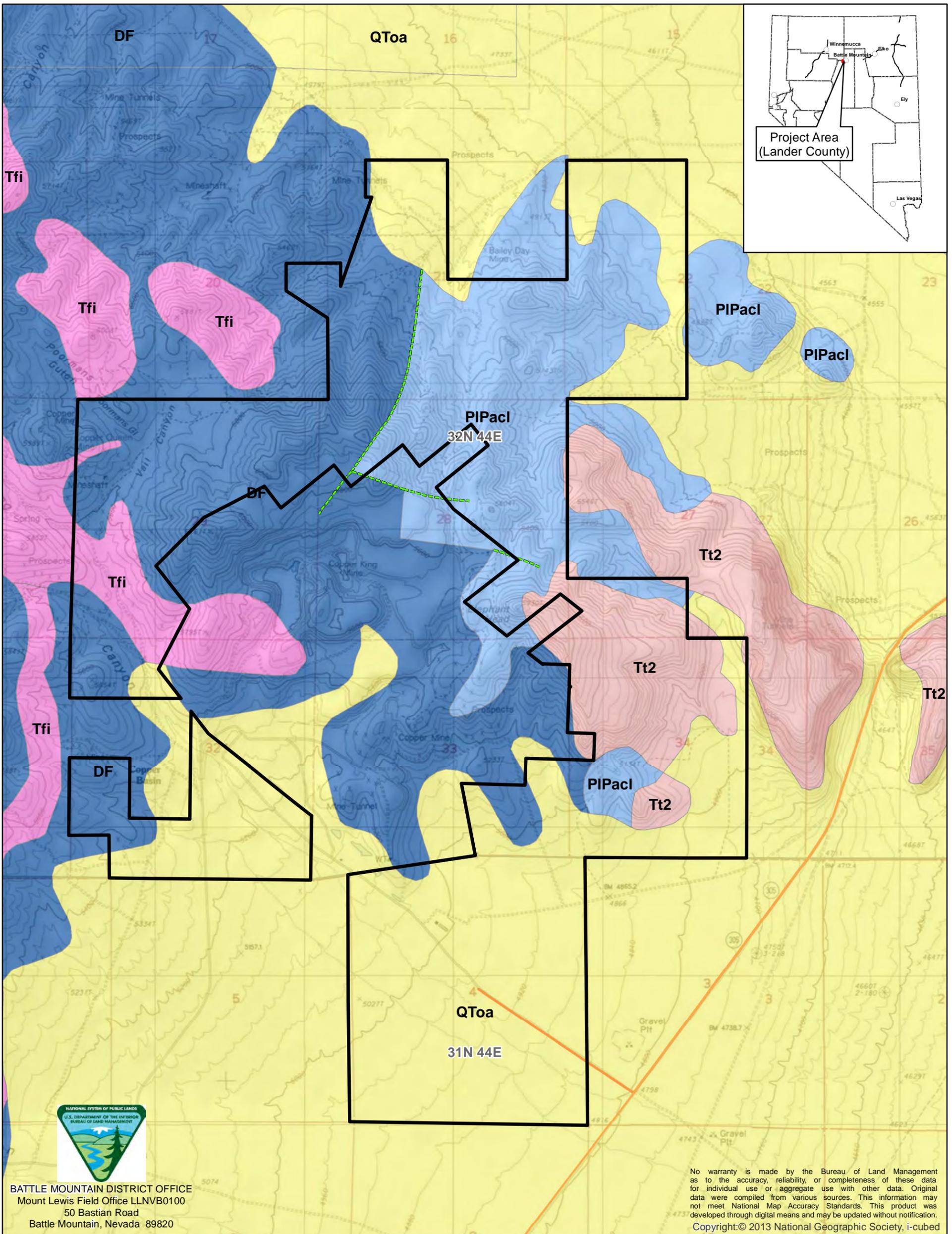
3.2.5.1 Affected Environment

The entire Project Area is located on public lands administered by the BLM MLFO, consisting of unpatented claims controlled by Newmont. Figure 1.1.1 shows the Project Area, access roads, and land ownership status. The current land uses in the vicinity of the Project Area consist primarily of open pit mining, mineral exploration, livestock grazing, wildlife habitat, and recreational use. Authorized ROWs within the Project Area are shown in Table 3.2-1.

Table 3.2-1: Authorized ROWs within the Project Area

ROW Number	ROW Location		Authorized Acres	ROW Type	ROW Holder
	Section	Township & Range			
NVN- 000245	04	31N, 44E	6.256	Power Facilities	NMC
NVN-075863	20, 21, 22, 27, 28, 29, 32, 33, 34	32N, 44E	77	Other Federal Facility	BLM, Battle Mountain
	04	31N, 44E			
NVN-088067	04	31N, 44E	1.090	Power Transmission Line	Sierra Pacific Power Company
	32	32N, 44E			
NVN-0066619	04	31N, 44E	35.685	Power Transmission Line	Sierra Pacific Power Co.
	33, 34	32N, 44E			
NVN-0066919	04	31N, 44E	8.85	Telephone Line	Nevada Bell
	32	32N, 44E			
NVN-0067017	32	32N, 44E	45.65	Roads	NMC
NVN-0067372	04	31N, 44E	12.25	Water Plants	NMC

The Project is accessed from Battle Mountain via SR 305 and existing roads. Newmont would construct roads disturbing approximately 92.9 acres during Phase I and subsequent phases. Constructed roads would have an average running width of 18 feet.



BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office LLNVB0100
 50 Bastian Road
 Battle Mountain, Nevada 89820

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. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
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Explanation

- Project Boundary
- Copper Basin Access / State Highway 305
- Known fault

Geology

- QToa - Older alluvium and alluvial fan deposits (Pleistocene and Pliocene)
- Tt2 - Intermediate silicic ash flow tuff (lower Miocene and Oligocene)
- Tfi - Felsic phaneritic intrusive rocks (Miocene to Eocene)
- PIPacl - Conglomerate, sandstone, siltstone, and limestone (Permian to Middle Pennsylvanian)
- DF - Dutch Flat terrane - Feldspathic sandstone, shale, and turbiditic limestone (Upper Devonian)

Source of Information: Nevada Bureau of Mines and Geology



BUREAU OF LAND MANAGEMENT

COPPER BASIN EXPLORATION PROJECT

Geologic Map of Project Boundary and Vicinity

Figure 3.2.4

09/13/2013

3.2.5.2 Environmental Consequences

No change in land use in the Project Area would result from the Proposed Action and no real estate transactions are proposed. Therefore, no impacts to land use and realty would result from the Proposed Action; therefore, land use and realty are not further analyzed in this EA.

3.2.6 **Migratory Birds**

3.2.6.1 Affected Environment

"Migratory bird" means any bird listed in 50 CFR 10.13. All native birds found commonly in the U. S., with the exception of native resident game birds that do not migrate, are protected under the Migratory Bird Treaty Act of 1918 (MBTA). The MBTA prohibits taking of migratory birds, their parts, nests, eggs, and nestlings. EO 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices into projects.

Baseline surveys for wildlife species, including migratory birds and raptors, were conducted by Enviroscientists, Inc. (Enviroscientists) in 2012 for the Project Area (Enviroscientists 2013). A total of 29 migratory species were identified within the Project Area (Table 3.2-2).

Approximately 104 acres of the 3,169-acre Project Area (approximately four percent of the Project Area) has limited to no migratory bird nesting and foraging habitat due to historic mining surface disturbance that has had minimal reclamation.

Table 3.2-2: Migratory Bird Species Detected in the Project Area

Common Name	Scientific Name
Barn swallow	<i>Hirundo rustica</i>
Black-billed magpie	<i>Pica hudsonia</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bushtit	<i>Psaltiriparus minimus</i>
Chipping sparrow	<i>Spizella passerina</i>
Common nighthawk	<i>Chordeiles minor</i>
Common poorwill	<i>Phalaenoptilus nuttallii</i>
Common raven	<i>Corvus corax</i>
Golden eagle	<i>Aquila chrysaetos</i>
Great horned owl	<i>Bubo virginianus</i>
Horned lark	<i>Eremophila alpestris</i>
House finch	<i>Carpodacus mexicanus</i>
Lark sparrow	<i>Chondestes grammacus</i>
Long-eared owl	<i>Asio flammeus</i>

Common Name	Scientific Name
Prairie falcon	<i>Falco mexicanus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Rock wren	<i>Salpinctes obsoletus</i>
Say's phoebe	<i>Sayornis saya</i>
Spotted towhee	<i>Pipilo maculatus</i>
Turkey vulture	<i>Cathartes aura</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western meadowlark	<i>Sturnella neglecta</i>

The NDOW, Nevada Natural Heritage Program (NNHP), and the U. S., Fish and Wildlife Service (USFWS) were contacted to request information regarding wildlife use and nesting raptors in the area. In a response letter provided by the NDOW on October 30, 2011 for the proposed Project, the NDOW identified the following migratory birds as being known to reside in the vicinity of the Project Area: American kestrel (*Falco sparverius*); barn owl (*Tyto alba*); western burrowing owl; Cooper's hawk (*Accipiter cooperii*); ferruginous hawk (*Buteo regalis*); great horned owl; long-eared owl; merlin (*Falco columbarius*); northern goshawk (*Accipiter gentilis*); northern harrier (*Circus cyaneus*); northern saw-whet owl (*Aegolius acadicus*); osprey (*Pandion haliaetus*); peregrine falcon (*Falco peregrinus*); prairie falcon; red-tailed hawk; rough-legged hawk (*Buteo lagopus*); sharp-shinned hawk (*Accipiter striatus*); short-eared owl (*Asio flammeus*); Swainson's hawk (*Buteo swainsoni*); turkey vulture; and western screech-owl (*Megascops kennicottii*).

Additionally, the NDOW identified that the following raptor species have been directly observed in the vicinity of the Project Area: bald eagle; barn owl; Cooper's hawk; great horned owl; prairie falcon; red-tailed hawk; rough-legged hawk; and sharp-shinned hawk (NDOW 2012). Baseline studies for the Project Area conducted by Enviroscientists observed the following raptor species: golden eagle; great horned owl; long-eared owl; prairie falcon; red-tailed hawk; and turkey vulture. An active long-eared owl nest and an active prairie falcon nest were also located within the Project Area (Enviroscientists 2013).

Migratory bird species that have additional protection or management attention are discussed in detail in Section 3.2.13. These species include the following: greater sage-grouse (*Centrocercus urophasianus*); golden eagle (*Aquila chrysaetos*); Brewer's sparrow (*Spizella breweri*); western burrowing owl (*Athene cunicularia*); loggerhead shrike (*Lanius ludovicianus*); and sage sparrow (*Amphispiza belli*).

3.2.6.2 Environmental Consequences

The Proposed Action would create surface disturbance and associated removal of vegetation, which could potentially result in the destruction of active nests or disturb the breeding behavior of migratory bird species. Vegetation removal and ground disturbance would result in a temporary reduction of 200 acres of foraging and breeding habitat for migratory birds and foraging habitat for raptors within the Project Area. This acreage would not be disturbed all at one time due to the phased nature of the exploration activities associated with the Proposed Action. All surface disturbance associated with Project-related activities would be reclaimed, and post-exploration land use is expected to return disturbed land to a level of productivity

comparable to pre-exploration levels. As outlined in environmental protection measures under Section 2.1.13, Newmont has committed to providing a qualified biologist to conduct nest surveys prior to any surface disturbance activities associated with exploration activities during the avian breeding season. This measure would ensure that no direct impacts to migratory birds are likely to occur under the Proposed Action. Indirect impacts, as a result of the Project, and vegetation removal could lead to temporary spatial redistribution of individuals or habitat-use patterns during the life of the Project. Such redistribution would not have a long-term effect because undisturbed and suitable habitat exists outside of the Project Area. It is unlikely that implementing the Proposed Action would result in a decline in local or regional migratory bird populations.

3.2.7 Native American Religious Concerns

3.2.7.1 Affected Environment

Located within the traditional territory of the Western Shoshone, the MLFO administrative boundary contains spiritual, traditional, and cultural resources, and sites to engage in social practices that aid in maintaining and strengthening the social, cultural, and spiritual integrity of the Tribes. Recognized Tribes with known interests near the Project Area include the following: Te-Moak Tribe of Western Shoshone; the Battle Mountain Band Council of the Te-Moak Tribe of Western Shoshone; Elko Band Council; and the Yomba Shoshone Tribe.

Social activities of Native Americans continue to define places of cultural importance across lands currently administered by the BLM. Some Western Shoshone maintain cultural, spiritual, and traditional activities, visit their sacred sites, hunt game, and gather available medicinal and edible plants. Through oral history (the practice of handing down knowledge from the elders to the younger generations), some Western Shoshone continue to maintain a world view similar to that of their ancestors.

Cultural, traditional, and spiritual sites and activities of importance to Tribes include, but are not limited to the following:

- Existing animal traps;
- Certain mountain tops used for vision questing and prayer;
- Medicinal and edible plant gathering locations;
- Prehistoric and historic village sites and gravesites;
- Sites associated with creation stories;
- Hot and cold springs;
- Collection of materials used for basketry and cradle board making;
- Locations of stone tools such as points and grinding stones (mano and matate);
- Chert and obsidian quarries;
- Hunting sites;
- Sweat lodge locations;
- Locations of pine nut ceremonies, traditional gathering, and camping;
- Rock collecting for use in offerings and medicine gathering;
- Tribally identified Traditional Cultural Properties (TCPs);
- TCPs found eligible to the NRHP;
- Rock shelters;
- Rock art locations;
- Lands or resources that are near, within, or bordering current reservation boundaries; and
- Actions that conflict with tribal land acquisition efforts.

In accordance with the National Historic Preservation Act of 1966 (Public Law [P.L.] 89-665), the NEPA, the FLPMA (P.L. 94-579), the American Indian Religious Freedom Act of 1978 (P.L. 95-341), the Native American Graves Protection and Repatriation Act (NAGPRA) (P.L. 101-601) and EO 13007, the BLM must provide affected Tribes an opportunity to comment and consult on the proposed Project. The BLM must attempt to limit, reduce, or possibly eliminate any negative impacts to Native American traditional/cultural/spiritual sites, activities, and resources.

3.2.7.2 Environmental Consequences

Various Tribes and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and religion as they consider the landscape as sacred and as a provider. Various locations throughout the BLM MLFO administrative area host certain traditional, spiritual, and cultural use activities today, as in the past. TCPs, designated by the Tribes, are not known to exist within the vicinity of the Project Area. The BLM continues to solicit input from local tribal entities. The BLM is continuing to coordinate with the Tribes to identify any other sites or artifacts, or cultural, traditional, and spiritual use resources and activities that might experience an impact.

If any TCPs, tribal resources, sacred sites, etc. are identified within or in close proximity to the Project boundary, a protective “buffer zone” may be acceptable, if doing so satisfies the needs of the BLM, the proponent, and affected Tribe. The size of any “buffer zone” would be determined through coordination and communication between all participating entities.

The BLM Cultural Resource Specialist, accompanied by designated tribal observers, may periodically visit identified cultural resources sites within or near the mineral exploration activity boundary. Native American Consultation and monitoring by the BLM and Tribal Representatives may occur throughout the life of a project to ensure that any identified traditional cultural properties are not deteriorating.

If a subsequent development plan or amendment to the Plan is submitted to the BLM as a result of an approval of this specific mineral exploration proposal, the BLM would again initiate consultation with the local Tribes and utilize any data collected during this mineral exploration proposal.

During the Project's activities, if any cultural properties, items, or artifacts (i.e., stone tools, projectile points, etc.) are encountered, it must be stressed to those involved in the proposed Project activities that such items are not to be collected. The environmental protection measure in Section 2.1.13 states that all activities would be halted immediately in the event of a discovery of a cultural resource. Cultural and archaeological resources are protected under the Archaeological Resources Protection Act (16 United States Code [USC] 470ii) and the FLPMA.

Though the possibility of disturbing Native American gravesites within most project areas is extremely low, inadvertent discovery procedures must be noted. Under the NAGPRA, Section (3)(d)(1), the discovering individual must notify the authorized officer in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

At this time, no impacts related to Native American Religious Concerns have been identified and are not anticipated from the Proposed Action; therefore, Native American Religious Concerns is not further analyzed in this EA.

3.2.8 Noxious Weeds, Invasive, and Non-native Species

3.2.8.1 Affected Environment

A noxious weed is a plant species that has been defined as a pest by law or regulation. The BLM's policy relating to the management and coordination of noxious weed activities is set forth in the BLM Manual 9015 – Integrated Weed Management (BLM 1992). In implementing weed management within the State, BLM utilizes the NRS definition of noxious weed. The Nevada Department of Agriculture (NDOA) has the responsibility for the jurisdiction, management, and enforcement of the state's noxious weed law. The Nevada Noxious Weed List, which includes 48 species, is found in NRS 555 and maintained by the NDOA. BLM utilizes this list when identifying noxious weeds. An "invasive species" is defined as a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (EO 13112, signed February 3, 1999). Noxious weeds, invasive and non-native species are species that are highly competitive, highly aggressive, and spread easily.

In 1997, the *Cooperative Agreement for Noxious Weed Management in Lander County* was developed, which recognized the existence and threat of noxious weeds in Lander County, as well as served as an agreement to work together and share information. The agreement involved the NDOT, the NDOA, the Battle Mountain and Elko districts of the BLM, the U.S. Forest Service, the University of Nevada Cooperative Extension, Lander County, and the Lander County Conservation District.

The following invasive, non-native species were observed within the Project Area during 2012 field surveys: pale madwort (*Alyssum desertorum*); prickly lettuce (*Lactuca seriola*); curvseed butterwort (*Ceratocephala testiculata*); halogeton (*Halogeton glomerata*); tansy mustard (*Descurainia pinnata*); and cheatgrass (*Bromus tectorum*). These species were primarily observed in previously disturbed areas intermixed with native species, and no large populations or monocultures of these species were noted in the Project Area. Approximately four percent of the Project Area (142 acres) has limited native vegetation due to historic mining activities. Additionally, no noxious weeds, non-native invasive species were observed within the Project Area (Enviroscientists 2013).

3.2.8.2 Environmental Consequences

New surface disturbance of approximately 200 acres within the Project Area as a result of implementation of the Proposed Action could increase the potential for the spread and establishment of noxious weeds, invasive and non-native species. Newmont would implement the following BMPs to control the introduction of noxious weeds within the Project Area: schedule weed management activities to maximize the effectiveness of control efforts on reclaimed areas; removal of invasive, non-native, and noxious weeds on reclaimed areas; washing heavy equipment prior to entering the Project Area; and avoiding areas of known invasive, non-native, and noxious weeds during periods when the weeds could be spread by vehicles. The implementation of the environmental protection measures outlined in

Section 2.1.13 would minimize the introduction of noxious weeds, non-native invasive species into the Project Area.

3.2.9 Rangeland Management

3.2.9.1 Affected Environment

The Project Area is located entirely within the Copper Canyon Allotment. The allotment contains 60,948 acres and the permitted animal unit months (AUMs) are 5,023. The number of acres per AUM is 12. The Project Area contains 3,169 acres or five percent of the allotment.

3.2.9.2 Environmental Consequences

The Project would disturb 200 acres within five percent of the entire allotment. This disturbance would equal a total of 16 AUMs or 0.3 percent of the total AUMs in the allotment.

3.2.10 Recreation

3.2.10.1 Affected Environment

Recreation within the Project Area is managed according to various federal, state, and local laws, regulations, and procedures that include the following: Lander County Master Plan (2010); Nevada Statewide Comprehensive Outdoor Recreation Plan (SCORP); FLMPA; and Shoshone-Eureka RMP.

The primary recreational activities near Battle Mountain include dispersed recreational activities such as mountain biking, hunting, hiking, fishing, camping, and off-road vehicle use (Lander County 2010). Recreational opportunities within the Project Area include dispersed recreation such as hunting and OHV use.

The concept of a mountain bike trail system originated from general discussions between the BLM and Newmont and progressed to the development of the Copper Basin Mountain Bike Trail System. This occurred at the time Newmont was developing closure plans for the Surprise Heap Leach Pad and was independently investigating the development of a mountain bike trail in the area.

Planning for the trail system began in late 2001 and continued through early 2002. The planning team (BLM, Newmont, and Lander County) determined that the “progressive loop” approach to trail configuration and a phased approach to construction would be most appropriate. Preliminary routes were scouted and delineated and a cooperative agreement between the BLM, Newmont, and Lander County was established. The BLM, in consultation with Lander County and Newmont, prepared an EA (N63-EA02-036) (BLM 2002) for the proposed project. In May 2002, the BLM concluded the environmental evaluation and issued a Decision Record and Finding of No Significant Impact for the Copper Basin Mountain Bike Trail System. Construction of portions of the trail commenced utilizing volunteers, including residents of Battle Mountain, the BLM, residents of Winnemucca, and Newmont employees. An innovative construction approach was developed by the BLM: fire suppression crews constructed some of the trail as a training exercise for building firelines. Lander County constructed a trailhead parking area and donated gravel for the parking surface. BLM constructed a cattle guard for easy access to the trailhead.

Newmont employees constructed a trailhead signboard and contributed several signs. On June 5, 2003, the trail system was officially dedicated.

The resulting trail system currently consists of approximately 20 miles of a combination of single and double track trails. The trails traverse sagebrush hillsides and canyons, rocky ridge tops, reclaimed mine waste rock facilities, and provides a view of an historic mine pit. The trail system is marked with a series of trail signs to provide clear guidance for users. A color brochure was developed and made available at the BLM offices in Battle Mountain and Winnemucca as well as other locations. A total of 7.2 miles of these trails occur within the Project Area (Figure 3.2.10). A description of each trail is in Table 3.2-3. Mountain bike trails that occur within the Project Area include the Dill Canyon, Limestone Wash, and the Poormans Gulch trails.

The cooperative agreement between the BLM, Lander County, and Newmont expires in September 2013.

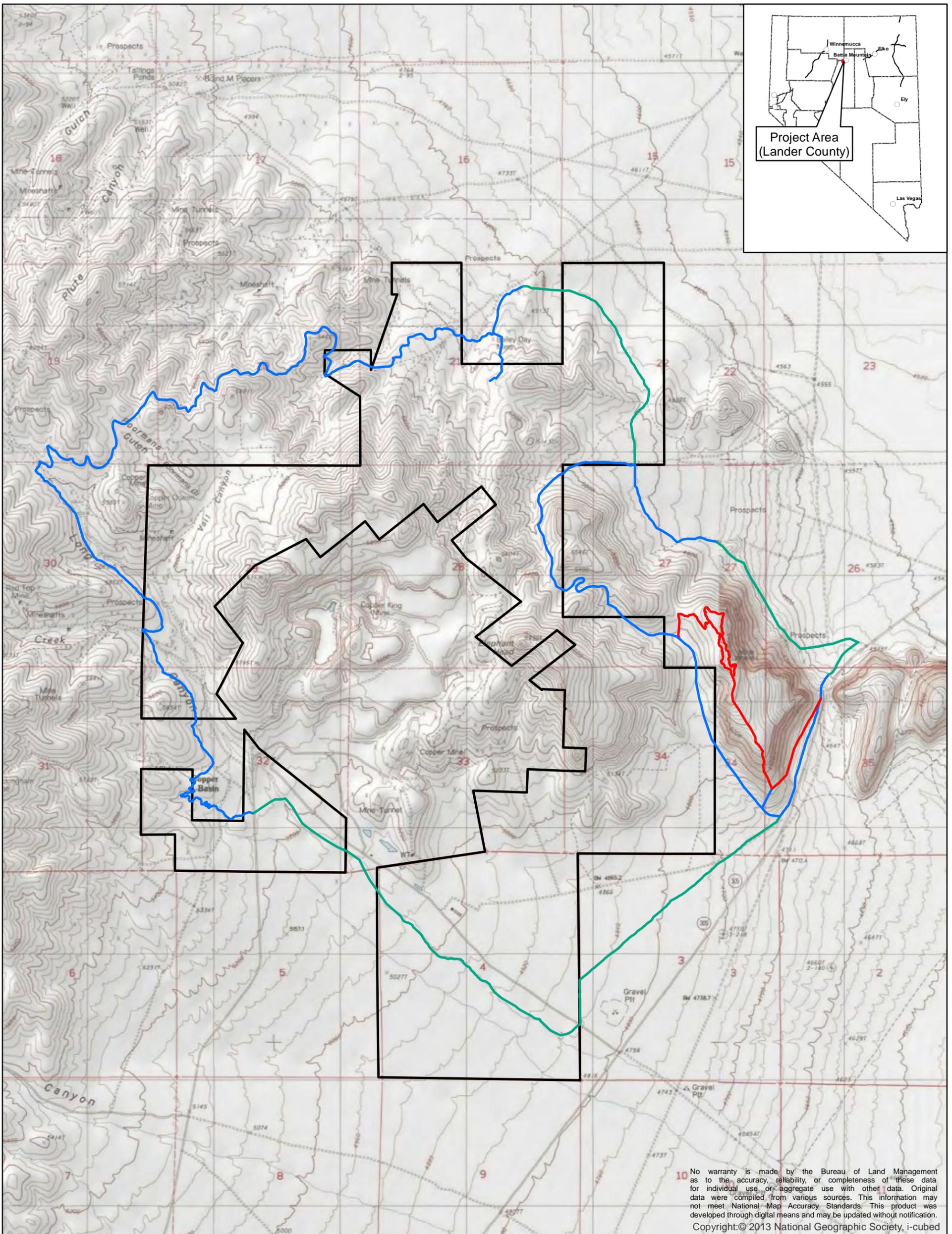
Table 3.2-3: Mountain Bike Trails within the Project Area

Trail	Type	Total Trail Distance (miles)	Elevation Gain (feet)	Skill Level
Dill Canyon	2-track, singletrack	6	825	More Difficult
Limestone Wash	2-track, singletrack	8.25	1,035	More Difficult
Poormans Gulch	2-track, singletrack	10.4	1,550	More Difficult
The Playground	2-track, singletrack	5	500	Most Difficult

Source: BLM 2006

3.2.10.2 Environmental Consequences

Implementation of the Proposed Action would affect recreation through the temporary loss of public lands managed for multiple uses, including dispersed recreation and mountain biking, for the duration of the Project (ten years). However, the loss of dispersed recreational opportunities within the Project Area would likely result in the utilization of other surrounding areas for recreational use. Impacts to the mountain bike trails (detailed in Table 3.2-4) would be temporary (the amount of time that it would take drilling equipment and supply deliveries to cross the trails [approximately ten minutes]). Newmont would position active drilling equipment so that mountain bike trails would not be restricted and mountain bikers would be allowed ingress and egress to trails. Newmont would provide notice at the trailhead that active drilling was occurring in the area and would also post temporary signage near the impacted trail stating “Caution, Drilling Activities Ahead” or something similar. In addition, Newmont would renew the Memorandum of Agreement, which will end in September 2013.



Explanation

-  Project Boundary
- Copper Basin Bike Trails**
-  Easiest
-  More Difficult
-  Most Difficult



BUREAU OF LAND MANAGEMENT

COPPER BASIN EXPLORATION PROJECT

Mountain Bike Trails System

BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office LLNVB0100
 50 Bastian Road
 Battle Mountain, Nevada 89820

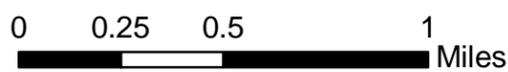


Figure 3.2.10

09/13/2013

Table 3.2-4: Mountain Bike Trails within the Project Area Subject to Potential Surface Disturbance

Skill Level	Trails	Total Length (miles)	Total Miles within Project Area
Easy	Limestone Wash, Poormans Gulch	6.2	3.0
More Difficult	Dill Canyon, Limestone Wash, Poormans Gulch	11.9	4.2
Most Difficult	The Playground	2.4	0.0
Total		20.5	7.2

Source: BLM 2006

3.2.11 Social Values and Economics

3.2.11.1 Affected Environment

The Project Area is located in Lander County approximately five miles south of the town of Battle Mountain, Nevada. Lander County is located in north central Nevada and encompasses approximately 5,621 square miles. Lander County is the analysis area for Social Values and Economics. The federal government administers over 85 percent of the land in Lander County. Interstate 80 (I-80) traverses the county in an east-west direction on the northern end, as does U.S. Highway 50 on the southern end. The Project Area is accessed from I-80 near the Town of Battle Mountain off SR 305.

Surface exploration associated with the Proposed Action would continue until approximately 2023. The Proposed Action is anticipated to employ up to 22 people over the life of the Project at any given time during surface exploration activities. The individuals involved with the Project could impact the local community in the following ways: impacts to the labor force and unemployment rates; impacts to personal income; impacts to population; impacts to housing; impacts to community facilities and services, including public safety, schools, health care and social services, utilities, recreational facilities, and county administrative functions; and Lander County fiscal conditions. The existing conditions within Lander County are discussed below.

3.2.11.1.1 Population and Demography

Population in Lander County has fluctuated between 2002 and 2012, increasing overall by 674 persons or approximately 12 percent. Lander County saw two decreases in population during that timeframe between 2002 and 2003 and between 2009 and 2010. The largest decrease was between 2002 and 2003 with a loss of 270 persons, or approximately five percent of the population (Table 3.2-5).

Table 3.2-5: Lander County Population, 2002-2011

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
5,547	5,277	5,357	5,509	5,655	5,747	5,891	6,003	5,775	5,988	6,221

Source: Nevada State Demographer's Office (NSDO) 2012

At the time of the 2010 decennial census, approximately 91 percent of Lander County's residents (5,247) lived in Battle Mountain. The median age of Lander County's residents was 37.1

compared to 36.3 for the State of Nevada. Residents 15 to 19 years of age comprised the single largest group reported by the U.S. Census Bureau, with 453 residents, and made up approximately 7.8 percent of Lander County’s population (U.S. Census Bureau 2012). Seniors aged 65 and over comprised approximately 11.8 percent of the County’s population, similar to 12 percent of the State of Nevada’s overall population. The average household size in Lander County was 2.6, slightly below the statewide average of 2.65.

The racial composition of Lander County’s population is more predominately white than that of the State of Nevada as a whole. In 2010, 86.3 percent of Lander County residents identified themselves as white, alone or in combination with one or more other races, which compares to 70 percent at the statewide level.

3.2.11.1.2 Economy and Employment

The majority of employment in Lander County is related to farming, mining, construction, retail, and government jobs. Between 1990 and 2011, the total employment remained relatively constant in Lander County (Table 3.2-6), increasing approximately 20 percent between 1990 and 2011. Lander County did experience a drop in employment between 1990 and 1995, and between 1995 and 2000; however, the total employment saw steady growth each year starting in 2005.

Table 3.2-6: Lander County Employment Trends

Year	Farm	Mining	Other Private	Government	Total
1990	139	1,428	1,244	477	3,288
1995	136	1,141	1,416	519	3,212
2000	172	883	1,208	573	2,836
2005	146	1,077	1,376	534	3,133
2006	141	1,110	1,356	534	3,141
2007	130	1,227	1,425	532	3,314
2008	132	1,368	1,471	552	3,523
2009	129	1,549	1,496	562	3,736
2010	132	1,682	1,435	562	3,811
2011	124	1,904	1,579	548	4,155

Source: U.S. Department of Commerce Bureau of Economic Analysis (USDC BEA) 2012a; USDC BEA 2012b

Labor force and employment statistics for 2006 to 2012 for Lander County and the State of Nevada are presented in Table 3.2-7. The resident labor force in Lander County is limited based on the small population base. However, as the economic downturn occurred in the rest of the nation in 2008, the total labor force and employment in Lander County continued to increase as shown in 2006 and 2007. Between 2006 and 2012, total employment in Lander County grew by approximately 64 percent. The unemployment rates did increase in 2009 and 2010, but reduced back down to less than 2009 levels. This pattern did not reflect the pattern in the entire State of Nevada, as the unemployment rate in the State of Nevada increased by approximately 87 percent between 2008 and 2009, slowly increased in 2010 and 2011, and then only reduced 1.4 percent in 2012.

Table 3.2-7: Lander County Labor Force and Unemployment Rates, 2006 to 2012

Labor Force	2006	2007	2008	2009	2010	2011	2012
Lander County							
Total Labor Force	2,752	3,323	3,603	4,053	4,276	4,458	4,521
Employment	2,640	3,211	3,439	3,810	3,973	4,165	4,264
Unemployment	112	112	164	243	303	293	257
Unemployment Rate (percent)	4.5	3.4	4.6	6.0	7.1	6.6	5.7
State of Nevada							
Total Labor Force	1,276,387	1,307,321	1,336,309	1,354,126	1,385,729	1,385,872	1,366,99
Employment	1,222,277	1,247,491	1,246,696	1,184,431	1,195,309	1,198,140	1,201,277
Unemployment	54,110	59,830	89,613	169,695	190,420	187,732	165,022
Unemployment Rate	4.2	4.6	6.7	12.5	13.7	13.5	12.1

Source: Nevada Department of Employment, Training, and Rehabilitation (NDETR) 2012

Local personal income trends in Lander County are shown in Table 3.2-8. Personal earnings showed a slight decrease from 2006 to 2007 then showed steady increases from 2007 to 2011. This increase went against the national trend and economic downturn in 2008. The adjustment for residence value is reflected as negative numbers, as most of the labor earnings flow out of Lander County and the local economy, as a majority of workers commute into Lander County for work from other areas. In 2011, a net outflow of \$38,327 occurred, equivalent to approximately 14 percent of the total wages and salaries paid in Lander County.

Table 3.2-8: Lander County Personal Income and Place of Residence, 2006-2010

Description	2006	2007	2008	2009	2010	2011
Earnings by Place of Work	\$175,851	\$171,600	\$201,652	\$227,385	\$245,282	\$270,615
Less: contributions for government social insurance	\$16,972	\$16,825	\$19,064	\$22,914	\$25,015	\$14,309
Plus: adjustment for residence	-\$17,402	-\$14,415	-\$23,304	-\$32,694	-\$34,082	-\$38,327
Equals: net earnings by place of residence	\$141,477	\$140,360	\$159,284	\$171,777	\$186,185	\$206,989
Plus: dividends, interest, and rent	\$20,872	\$23,526	\$28,542	\$24,140	\$24,723	\$26,103
Plus: personal current transfer receipts	\$21,546	\$23,428	\$25,868	\$29,941	\$31,299	\$31,912

Source: USDC BEA 2012c

Lander County's per capita personal income was less than the State of Nevada and the nationwide income between 2006 and 2008 (Table 3.2-9). Following the nationwide economic downturn in 2008, the per capita income in Lander County was greater than the State of Nevada as a whole from 2009 through 2011, which reflected the higher than average wages and salaries

paid by the mining industry. Lander County’s per capita income was relatively similar to the nationwide per capita income for 2009.

Table 3.2-9: Per Capita Personal Income, 2006-2011

Jurisdiction	2006	2007	2008	2009	2010	2011
Lander County	\$34,651	\$34,439	\$38,706	\$39,904	\$41,818	\$45,370
Nevada	\$38,786	\$39,872	\$39,879	\$36,533	\$36,938	\$36,964
United States	\$37,725	\$39,506	\$40,947	\$38,846	\$39,937	\$41,560

Source: USDC BEA 2012c

3.2.11.1.3 Housing

According to the 2010 U.S. Census, there were 2,575 housing units in Lander County, in which 2,213 units were occupied and 362 were vacant. There were 100 units available to be rented and 42 units available to be purchased (U.S. Census Bureau 2010). As discussed in the 2010 Lander County Master Plan, the majority of housing units were mobile homes and only a small portion were single-family detached structures (Lander County 2010).

In addition to the permanent residences, there are temporary residences throughout the County, which include motels, recreational vehicle (RV) parks, and campgrounds. There are three motels in Austin with a combined total of 39 rooms, two bed and breakfast facilities, and two RV parks (Austin, Nevada 2012). There are three hotels in Battle Mountain and two RV parks (Battle Mountain Chamber 2012). There is also one bed and breakfast in the community of Kingston (Nevada Bed & Breakfast Guild 2010).

3.2.11.1.4 Community Facilities and Services

Public Safety

The Lander County Sheriff’s Office (LCSO) provides law enforcement services for Lander County. There are two patrol areas within Lander County including the northern patrol area which serves out of the Battle Mountain headquarters, and the southern patrol area which serves out of the Austin station. The LCSO provides administration, patrol, jail, dispatch, and animal control services in the county (LCSO 2006).

Fire protection services on private land in Lander County are provided by three local volunteer fire departments (VFDs) located in Battle Mountain, Austin, and Kingston. There are approximately 25 fire fighters in Battle Mountain, between eight and 11 in Austin, and approximately seven in Kingston. Each VFD has at least three pieces of mobile fire fighting vehicles (Lander County 2010). Fire protection services on public land are primarily the responsibility of the BLM and Nevada Division of Forestry.

Emergency medical services and transportation in Lander County are provided by the Battle Mountain Ambulance Department and the Austin Volunteer Ambulance Department. The Battle Mountain Ambulance Department has 11 Emergency Medical Technicians (EMTs) and two ambulance units, and the Austin Volunteer Ambulance Department has one EMT (Lander County 2010).

Public Education

Public education in Lander County is provided by the Lander County School District (LCSD). There are five schools in Lander County; one is located in Austin and four are located in Battle Mountain. Austin K-12 School located in Austin had a student enrollment of approximately 35 students for the 2011/2012 school year. Battle Mountain Elementary School located in Battle Mountain had a student enrollment of approximately 329 students, Eleanor Lemaire Elementary School in Battle Mountain had a student enrollment of approximately 230 students, Battle Mountain Junior High School had a student enrollment of approximately 144 students, and Battle Mountain High School had a student enrollment of approximately 368 students (Nevada Department of Education [NDE] 2011). Student enrollment remained relatively constant in Lander County between the 2003/2004 school year and the 2007/2008 school year (Table 3.2-10). The LCSD saw a decrease in student enrollment each year between the 2007/2008 school year and the 2011/2012 school year.

Table 3.2-10: Lander County School District Enrollment

Grade	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Pre- Kindergarten - 6	635	604	638	612	620	588	507	569	579
7-12	612	622	650	646	653	605	624	546	527
Total	1,247	1,226	1,288	1,258	1,273	1,193	1,131	1,115	1,106

Source: NDE 2003; NDE 2004; NDE 2005; NDE 2006; NDE 2007; NDE 2008; NDE 2009; NDE 2010; NDE 2011

Health Care

Health care in Lander County is provided from two medical clinics. One clinic is located in Battle Mountain and the other clinic is located in Austin. There is also a community health nurse located in Battle Mountain. Battle Mountain General Hospital provides emergency services, clinical laboratory services, and x-ray services, and includes a large day room for long-term care (Lander County 2012; Battle Mountain General Hospital 2012).

Utilities

Water Service

Municipal water service in Lander County is provided by three water systems including the Battle Mountain Water System – Lander County Sewer and Water District #1 (District #1), the Austin Water System – Lander County Sewer and Water District #2 (District #2), and the Kingston Water System. The District #1 water system serves approximately 200 residential customers and a few small commercial customers. This system includes three main ground water wells located in Battle Mountain, with the largest and main production well producing up to 2,000 gallons per minute (gpm), and the other two wells producing up to 1,000 gpm. Water is pumped into two storage tanks with a combined storage capacity of 2.3 million gallons (Lander County 2010).

The District #2 water system serves approximately 126 residential and 40 commercial customers. The current capacity of this system including two underground water wells and springs is up to 700 gpm. The total water storage capacity includes three above ground storage tanks and two underground storage tanks for a total capacity of 500,000 gallons (Lander County 2010).

The Kingston water system serves approximately 144 customers, which includes primarily residential customers and a few commercial customers. The water originates from two wells that produce a combined total of approximately 350 gpm. Water is stored in one storage tank with a capacity of 225,000 gallons (Lander County 2010).

Wastewater Service

Municipal wastewater service is provided only in the communities of Battle Mountain and Austin. The remaining rural areas in Lander County are served by septic systems. The sewer system in Battle Mountain includes the following: 19,500 linear feet of vitrified clay pipe; 5,500 linear feet of asbestos cement pipe; and a sewer plant currently treating approximately 0.8 million gallons per day. The domestic wastewater facility in Austin is capable of treating approximately 240,000 gallons per day. This facility serves approximately 166 residential and commercial connections (Lander County 2010).

Electricity

NV Energy provides the majority of Lander County's electrical service. The eastern portion of Lander County is primarily undeveloped, so does not have electrical services provided in the area that is adjacent to Eureka County.

Library

Lander County is part of the Elko-Lander-Eureka County library system. There are two libraries in Lander County located in Austin and Battle Mountain. The library in Austin is open three days per week, approximately four hours per day. The library in Battle Mountain is open six days a week (Elko-Lander-Eureka County Library System 2012a and 2012b).

Recreation Facilities

Lander County provides many recreational opportunities for its residents. The urban-focused recreational activities are located in the communities of Battle Mountain, Austin, and Kingston. Within the Town of Battle Mountain there are the following types of recreational facilities: a nine hole golf course with driving range; a race track and motocross course; a shooting range; a rodeo arena and grounds; Elquist Park including high school ball fields and a swimming pool; adult ball fields; a sports complex at LeMaire School including baseball and soccer fields, a skate park, and two tennis courts; and three neighborhood parks. The community of Austin includes a roping arena, swimming pool, a community park, tennis courts, an outside exercise circuit, and a youth center. There is a park and ball field and fishing pond in the community of Kingston (Lander County 2010).

3.2.11.1.5 Public Finance

The primary governing bodies in Lander County are the Lander County Commissioners and the LCSD. The five-member Lander County Commission is each elected to an overlapping four-year term. The County Commissioners oversee County operations, including administration, law enforcement, judicial, public works, and economic development. The LCSD serves Lander County and is governed by an elected board of trustees, with the superintendant and administration responsible for day-to-day operations.

Local government and school finances in Nevada involved locally derived and state-shared revenues. Locally derived finances consist primarily of ad valorem property taxes on real and personal property and the net proceeds of mines located within Lander County. The state-shared revenues include sales, motor vehicle, fuel, and gaming tax revenues. Current fiscal conditions of the two primary entities, Lander County and the LCSD, are summarized below.

Lander County

Lander County’s fiscal structure reflects a heavy dependence on ad valorem taxes. Lander County’s assessed valuation saw a steady increase between fiscal years 2002/2003 to 2005/2006. The assessed valuation declined by approximately \$44 million (approximately 13 percent) between fiscal years 2005/2006 to 2006/2007, and again between 2007/2008 to 2008/2009 by approximately \$30 million (approximately nine percent). There was a large increase between fiscal years 2009/2010 and 2010/2011 of approximately \$800 million (approximately 190 percent), and another substantial increase between fiscal years 2010/2011 and 2011/2012 of approximately \$860 million (approximately 70 percent) in line with the increasing value of gold prices. Table 3.2-11 summarizes the net proceeds generated in the County.

Table 3.2-11: Trends in Net Proceeds and Property Assessments

Fiscal Year	Net Proceeds from Mining	Real and Personal Property Assessments	Total Taxable Value
2002/2003	\$140,000,000	\$191,470,130	\$331,470,130
2003/2004	\$150,000,000	\$177,452,411	\$327,452,411
2004/2005	\$165,000,000	\$165,892,259	\$330,892,259
2005/2006	\$175,000,000	\$166,607,546	\$341,607,546
2006/2007	\$28,800,000	\$268,828,588	\$297,628,588
2007/2008	\$80,000,000	\$265,990,214	\$345,990,214
2008/2009	\$30,000,000	\$286,119,956	\$316,119,956
2009/2010	\$86,202,418	\$336,175,994	\$422,378,412
2010/2011	\$874,231,080	\$351,271,987	\$1,225,503,067
2011/2012	\$1,724,362,256	\$364,420,737	\$2,088,782,993

Source: Division of Assessment Standards (DOAS) 2002; DOAS 2003; DOAS 2004; DOAS 2005; DOAS 2006; DOAS 2007; DOAS 2008; DOAS 2009; DOAS 2010; DOAS 2011; DOAS 2012

The volatility in taxable value carries over to ad valorem tax revenues. Ad valorem taxes levied on that tax base by Lander County increased by approximately \$5.6 million between fiscal years 2009/2010 and 2010/2011, and then decreased by approximately \$6,645,106 million between fiscal years 2010/2011 and 2011/2012 (Table 3.2-12).

Intergovernmental revenues account for most of Lander County’s remaining revenues. The intergovernmental revenues declined by \$11,055.00 between the 2010/2011 and 2011/2012 fiscal years (Table 3.2-13). Intergovernmental revenues include federal and state grants, motor vehicle property taxes, and fuel taxes.

Table 3.2-12: Lander County Revenues for Fiscal Years 2009/2010, 2010/2011, and 2011/2012

Types of Revenue	Fiscal Years		
	2009/2010	2010/2011	2011/2012
Taxes (property and other)	\$7,915,486	\$13,537,045	\$6,891,939
Licenses and Permits	\$489,640	\$273,325	\$666,225
Intergovernmental	\$4,124,919	\$3,854,209	\$3,843,154
Charges for Services	\$658,130	\$702,226	\$749,606
Fines and Forfeits	\$280,495	\$300,429	\$258,028
Earnings on investments	\$63,255	\$67,228	\$496,934
Miscellaneous	\$95,580	\$94,850	103,843
Total Revenue	\$13,627,505	\$18,829,312	\$13,009,729

Source: Lander County Finance Department 2010, 2011, and 2012

The overlapping ad valorem tax rates of all entities imposed on property in the town of Battle Mountain is \$0.05 per \$100 of assessed valuation (Table 3.2-13). This is approximately one percent of the state-mandated maximum of \$3.64. Lander County's levy is \$1.9243, approximately 50 percent of the total. LCSD's levy is \$0.75, a uniform statewide levy for public education. Other levies include the following: \$0.2213 for the town of Austin; \$0.3048 for the town of Kingston; \$0.5109 for the Lander County Hospital District; and \$0.0677 for the Lander County Sewer & Water District #2.

Table 3.2-13: Tax Rates in Lander County for 2011/2012

Taxing Entity	Tax Rate
Lander County	\$1.9243
Lander County School District	\$0.7500
Austin Town	\$0.2213
Battle Mountain Town	\$0.0500
Kingston Town	\$0.3048
Lander County Convention & Tourism Authority	--
Lander County Hospital District	\$0.5109
Lander County Sewer & Water District #2	\$0.0677
Total	\$3.8290

Source: DOAS 2011

Lander County total expenditures decreased by \$482,032 between fiscal years 2009/2010 and 2010/2011, and increased from 2010/2011 and 2011/2012 fiscal years by \$221,014. Expenditures for judicial and public safety decreased between fiscal years 2010/2011 and 2011/2012 (Table 3.2-14). Expenditures for general government and intergovernmental both increased between fiscal year 2010/2011 and 2011/2012 by seven and five percent, respectively.

Table 3.2-14: Lander County Budgeted Expenditures for Fiscal Years 2009/2010, 2010/2011 and 2011/2012

Function/Department	Fiscal Years		
	2009/2010	2010/2011	2011/2012
General Government	\$3,232,449	\$2,971,490	\$3,192,504
Judicial	\$1,589,534	\$1,584,495	\$1,505,944
Public Safety	\$3,075,129	\$3,396,823	\$3,947,358
Intergovernmental	\$922,302	\$384,574	\$404,116

Function/Department	Fiscal Years		
	2009/2010	2010/2011	2011/2012
Total Expenditures	\$8,819,414	\$8,337,382	\$909,049,922

Source: Lander County Finance Department 2010, 2011, and 2012

3.2.11.2 Environmental Consequences

Surface exploration activities associated with the Proposed Action would continue until approximately 2023. The Proposed Action is anticipated to employ up to 22 people over the life of the Project at any given time (during surface exploration). Employees would consist of contractors that would stay primarily in Battle Mountain. Impacts may occur to public services, including public safety, schools, and health care, as well as recreational facilities. However, based on the small number of employees and the ten-year Project life, these impacts are considered minimal and temporary. In addition, Project employees would contribute to the local economy by the purchase of goods and services.

3.2.12 Soils

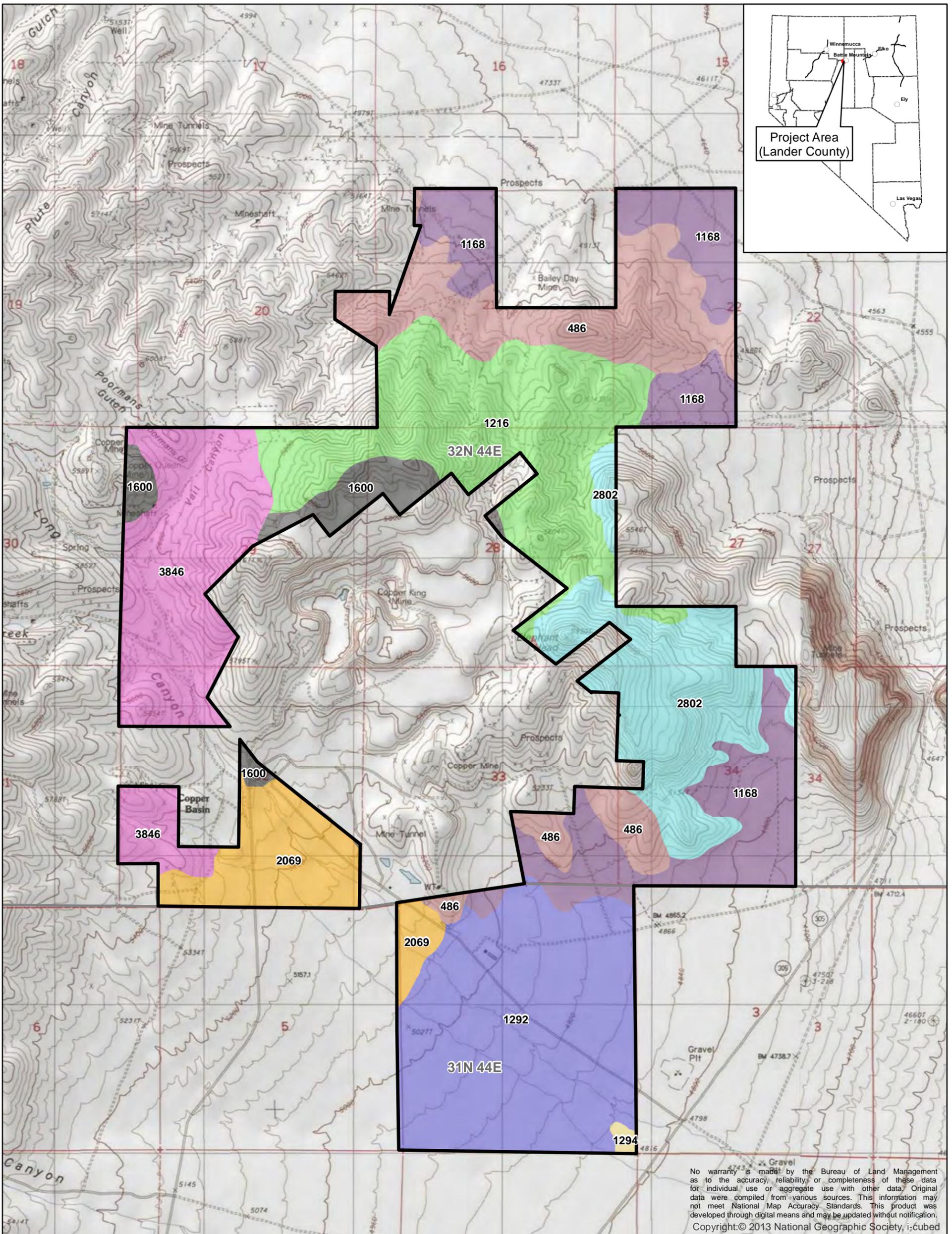
3.2.12.1 Affected Environment

Information regarding soils within the Project Area was obtained from the United States Department of Agriculture National Resources Conservation Service (NRCS). The soils within the Project Area consist of Havingdon-Burrita (486), Jung-Wiskan (3846), Kingingham-Golconda-Whirlo (1292), Kingingham-Whirlo-Beoska (1294), Old Camp-Rock outcrop-Colbar (2802), Oxcorel-Rednik-Veta (2069), Whirlo-Oxcorel (1168), and Wiskan-Linrose (1216) associations (Figure 3.2.12).

The Havingdon-Burrita association is comprised of 45 percent Havingdon gravelly loam and 30 percent Burrita extremely cobbly loam. This association occurs in approximately 384 acres of the Project Area. The Havingdon series consists of moderately deep, well drained soils that formed in residuum derived from chert and shale with some influence from loess and volcanic ash. The Burrita series consists of shallow, well drained soils formed in residuum and colluviums derived from interbedded chert, quartzite, sandstone, shale and volcanic rocks (NRCS 1992; NRCS 2013).

The Jung-Wiskan association is comprised of 55 percent Jung very gravelly loam, and 30 percent Wiskan very gravelly silt loam. This association occurs in approximately 434 acres of the Project Area. The Jung series consists of shallow, well drained soils that formed in residuum from metavolcanic and volcanic rocks. The Wiskan series consists of moderately deep, well drained soils that formed in a thin loess layer over residuum and colluvium derived from chert, argillite and other mixed rocks (NRCS 1992; NRCS 2013).

The Kingingham-Golconda-Whirlo association is comprised of 45 percent Kingingham, gravelly very fine sandy loam, 20 percent Golconda, gravelly very fine sandy loam, and 20 percent Whirlo, gravelly very fine sandy loam. This association occurs in approximately 620 acres of the Project Area. The Kingingham association consists of moderately deep, well drained soils that formed in thin loess mantles over alluvium derived from mixed rocks. The Golconda series consists of moderately deep to a duripan, well drained soils that formed in alluvium derived from mixed rocks with a mantle of loess high in volcanic ash. The Whirlo series consists of very deep



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Explanation

- Project Boundary
- NRCS Soil Survey NV775**
- 1600, Dumps and Pits, mine
- 486, Havingdon-Burruta association
- 3846, Jung-Wiskan association
- 1292, Kingingham-Golconda-Whirlo association
- 1294, Kingingham-Whirlo-Beoska association
- 2802, Old Camp-Rock outcrop-Colbar association, steep
- 2069, Oxcorel-Rednik-Veta association
- 1168, Whirlo-Oxcorel association
- 1216, Wiskan-Linrose association



BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office LLNVB0100
 50 Bastian Road
 Battle Mountain, Nevada 89820



BUREAU OF LAND MANAGEMENT

COPPER BASIN EXPLORATION PROJECT

NRCS Soil Units Map

Figure 3.2.12

09/13/2013

well drained soils that formed in alluvium derived from mixed rocks with a component of loess (NRCS 1992; NRCS 2013).

The Kingingham-Whirlo-Beoska association is comprised of 40 percent Kingingham gravelly very fine sandy loam, 25 percent Whirlo fine sandy loam, and 20 percent Beoska gravelly very fine sandy loam. This association occurs in approximately seven acres of the Project Area. The Kingingham and Whirlo soil series are discussed in detail above. The Beoska series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks with surficial mantles of loess and volcanic ash (NRCS 1992; NRCS 2013).

The Old Camp-rock outcrop-Colbar association is comprised of 45 percent Old Camp extremely cobbly loam, 25 percent rock outcrop, and 20 percent Colbar very cobbly loam. This association occurs in approximately 368 acres of the Project Area. The Old Camp series consists of shallow, well drained soils that formed in residuum and colluvium derived from volcanic ash. The Colbar series consists of moderately deep, well drained soils that formed in residuum and colluviums derived from rhyolitic and andesitic rocks (NRCS 1992; NRCS 2013).

The Oxcorel-Rednik-Veta association is comprised of 40 percent Oxcorel gravelly silt loam, 25 percent Rednik very gravelly sandy loam, and 20 percent Veta very gravelly fine sandy loam. This association occurs in approximately 214 acres of the Project Area. The Oxcorel series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks with surficial deposits of loess. The Rednik series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. The Veta series consists of very deep, well drained soils that formed in alluvium derived from mixed igneous rocks (NRCS 1992; NRCS 2013).

The Whirlo-Oxcorel association is comprised of 50 percent Whirlo gravelly very fine sandy loam and 35 percent Oxcorel very fine sandy loam (NRCS 1992; NRCS 2013). This association occurs in approximately 486 acres of the Project Area. These series are discussed in more detail above.

The Wiskan-Linrose association is comprised of 60 percent Wiskan very gravelly silt loam, and 25 percent Linrose gravelly silt loam (NRCS 1992; NRCS 2013). This association occurs in approximately 551 acres of the Project Area. The Wiskan series is discussed in detail above. The Linrose series consists of moderately deep, well drained soils that formed in residuum and colluviums derived from shale, chert, and quartzite.

Additionally, a small portion of the Project Area is associated with dumps and pits from past mining activities. These features account for approximately 104 acres within the Project Area. Soil associations within the Project Area are shown on Figure 3.2.12 and listed in Table 3.2-15.

Wind erosion hazard is slight for all soil classifications. Erosion hazard from water ranges from slight to severe.

3.2.12.2 Environmental Consequences

The total surface disturbance associated with the Proposed Action would impact up to 200 acres, or approximately six percent of the Project Area, and could occur in any of the soil series within the Project Area (Table 3.2-15). The potential surface disturbance to each soil series as a result of the implementation of the Proposed Action is shown in Table 3.2-16.

Table 3.2-15: Soil Associations

Association	Soil Series	Range in Depth to Restrictive Surface	Landscape position/ % Slope	Profile Soil Texture	Permeability	Erosion Hazard	
						Wind	Water
Havingdon-Burrita (486)	Havingdon	20 to 26 inches (bedrock)	Mountain and foothill side slopes and shoulders; 15 to 50%	Gravelly loam	Slow	Slight	Severe
	Burrita	14 to 20 inches (bedrock)	Plateaus, mountains and hill crests, summits shoulders and side slopes; 4 to 75%	Extremely cobbly loam	Slow	Slight	Moderate
Jung-Wiskan (3846)	Jung	14 to 20 inches (bedrock)	Mountains and hill crests and side slopes; 4 to 50%	Very gravelly loam	Slow	Slight	Moderate
	Wiskan	20 to 39 inches (bedrock)	Mountain crests, shoulders and side slopes; 15 to 75%	Very gravelly silt loam	Moderately Slow	Slight	Moderate
Kingingham-Golconda-Whirlo (1292)	Kingingham	20 to 30 inches (duripan)	Fan piedmonts; 2 to 15%	Gravelly very fine sandy loam	Slow	Slight	Slight
	Golconda	20 to 39 (duripan)	Fan piedmonts; 2 to 30%	Gravelly very fine sandy loam	Slow	Slight	Slight
	Whirlo	< 60 inches (seasonal water table)	Insert fans, fan aprons, fan collars and fan skirts; 0 to 15%	Gravelly very find sandy loam	Moderately Rapid	Slight	Slight
Kingingham-Whirlo-Beoska (1294)	Kingingham	20 to 30 inches (bedrock)	Fan piedmonts; 2 to 15%	Gravelly very fine sandy loam	Slow	Slight	Slight
	Whirlo	< 60 inches (seasonal water table)	Insert fans, fan aprons, fan collars and fan skirts; 0 to 15%	Fine sandy loam	Moderately Rapid	Slight	Slight

Association	Soil Series	Range in Depth to Restrictive Surface	Landscape position/ % Slope	Profile Soil Texture	Permeability	Erosion Hazard	
						Wind	Water
	Beoska	< 60 inches (seasonal water table)	Fan remnants; 0 to 15%	Gravelly very fine sandy loam	Moderately rapid to moderately slow	Slight	Slight
Old Camp-rock outcrop-Colbar (2802)	Old Camp	10 to 20 (bedrock)	Hills, mountains and plateaus; 2 to 75%	Extremely cobbly loam	Moderately Slow	Slight	Slight
	Rock outcrop	NA	NA	NA	NA	NA	NA
	Colbar	20 to 39 inches (bedrock)	Mountains, hills; 8 to 50%	Very cobbly loam	Moderately Slow	Slight	Moderate
Oxcorel-Rednik-Veta (2069)	Oxcorel	< 60 inches (seasonal water table)	Fan remnants and plateaus; 2 to 50%	Gravelly silt loam	Very slow to moderately rapid	Slight	Slight
	Rednik	< 60 inches (seasonal water table)	Fan remnants; 2 to 75%	Very gravelly sandy loam	Moderately slow to very rapid	Slight	moderate
	Veta	< 60 inches (seasonal water table)	Insert fans, alluvial fans, fan remnants, lake plains, and stream terraces; 0 to 15%	Very gravelly fine sandy loam	Moderately rapid	Slight	slight
Whirlo-Oxcorel (1168)	Whirlo	< 60 inches (seasonal water table)	Insert fans, fan aprons, fan collars and fan skirts; 0 to 15%	Gravelly very fine sandy loam	Moderately Rapid	Slight	Slight
	Oxcorel	< 60 inches (seasonal water table)	Fan remnants and plateaus; 2 to 50%	Very fine sandy loam	Very slow to moderately rapid	Slight	Slight
Wiskan-Linrose (1216)	Wiskan	20 to 39 inches (bedrock)	Mountain crests, shoulders and side slopes; 15 to 75%	Very gravelly silt loam	Moderately slow	Slight	Moderate

Association	Soil Series	Range in Depth to Restrictive Surface	Landscape position/ % Slope	Profile Soil Texture	Permeability	Erosion Hazard	
						Wind	Water
	Linrose	20 to 39 inches (bedrock)	Mountains; 30 to 75%	Gravelly silt loam	Moderate	Slight	Severe
Dumps and Pits (1600)	NA	< 60 inches (seasonal water table)	NA	NA	NA	NA	NA

Source: NRCS 1992; NRCS 2013.

Notes: NA = not applicable

Table 3.2-16: Potential Surface Disturbance to each Soil Series in the Project Area

Soil Series	Acres in the Project Area	Potential Surface Disturbance	
		Acres	Percent
Havingdon-Burrita (486)	384	0 to 200	0 to 52
Jung-Wiskan (3846)	435	0 to 200	0 to 45
Kingingham-Golconda-Whirlo (1292)	620	0 to 200	0 to 32
Kingingham-Whirlo-Beoska (1294)	7	0 to 7	0 to 100
Old Camp-rock outcrop-Colbar (2802)	368	0 to 200	0 to 54
Oxcorel-Rednik-Veta (2069)	214	0 to 200	0 to 94
Whirlo-Oxcorel (1168)	486	0 to 200	0 to 41
Wiskan-Linrose (1216)	551	0 to 200	0 to 36
Dumps and Pits (1600)	104	0 to 104	0 to 100

Potential impacts to soils would be reduced by the environmental protection measure outlined in Section 2.1.13 requiring the use of BMPs to limit soil erosion and to reduce sediment runoff from disturbed areas during construction and operations. Topsoil cut for new exploration roads would result in the mixing of soil associations and the loss of soil characteristics. Soils would be cut and used as temporary construction fill as part of the road and drill pad construction. Subsequent reclamation efforts would place the soils back in the temporary cuts. Furthermore, as a result of reclamation of all drill sites, sumps, overland travel and road construction, the post-exploration topography is expected to be similar to pre-Project conditions, which would reestablish the site characteristics of slope and aspect of soil associations within the Project Area.

3.2.13 Special Status Species

The BLM’s policy for management of special status species is in the BLM Manual Section 6840. Special status species include the following:

- Federally Threatened or Endangered Species: Any species that the USFWS has listed as an endangered or threatened species under the Endangered Species Act (ESA) throughout all or a significant portion of its range.

- Proposed Threatened or Endangered Species: Any species that the USFWS has proposed for listing as a federally endangered or threatened species under the ESA.
- Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the ESA.
- BLM Sensitive Species-2011 List: 1) Species that are currently under status review by the USFWS; 2) Species whose numbers are declining so rapidly that federal listing may become necessary; 3) Species with typically small and widely dispersed populations; or 4) Species that inhabit ecological refugia or other specialized or unique habitats.
- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

Nevada BLM policy is to provide State of Nevada listed species and Nevada BLM sensitive species with the same level of protection as are provided to candidate species in BLM Manual 6840.06C. Per the wording in Table IIa in BLM Information Bulletin No. NV-2003-097, Nevada protected animals that meet BLM's 6840 policy definition are those species of animals occurring on BLM-managed lands in Nevada that are: 1) 'protected' under authority of the NAC; 2) have been determined to meet BLM's policy definition of "listing by a state in a category implying potential endangerment or extinction;" and 3) are not already included as federally listed, proposed, or candidate species.

Baseline surveys for biological resources including special status species wildlife and plant species were conducted by Enviroscientists in June and July 2012 for the Project Area (Enviroscientists 2013). Figure 3.2.13 shows the biological survey results for the Project.

To further support the preparation of this EA, the USFWS, the NNHP, and the NDOW were contacted to obtain a list of threatened and endangered and sensitive species that have the potential to occur within the Project Area. In addition, an additional evaluation of the most recent BLM Sensitive Species List and Special Status Species lists for the Battle Mountain District were evaluated to determine if any new species that had been added to the list subsequent to the baseline biology surveys conducted by Newmont had the potential to occur within the Project Area (Enviroscientists 2013). The special status wildlife and plant species that have the potential to occur with the Project Area are listed in Appendix A and are further discussed below.

3.2.13.1 Affected Environment

Federally Listed Species

The response letter received from the USFWS, dated February May 22, 2012, did not identify any federally listed or proposed species with the potential to occur within the Project Area (USFWS 2012).

The NNHP response letter, dated May 3, 2012, reported that in a three mile radius search surrounding the townships and ranges of the Project Area, there were no at risk or federally listed species recorded within the Project Area. NNHP did report that habitat may be available for the winged milkvetch (*Astragalus pterocarpus*), a NNHP vulnerable species.

The NDOW response letter, dated October 30, 2012, did not identify any listed or proposed species occurring within a four-mile radius around the Project Area (NDOW 2012).

Enviroscientists performed biological surveys of the Project Area and did not detect any federally listed or candidate species (Enviroscientists 2013).

BLM Sensitive Species

In addition to federally listed species (i.e., protected by the ESA) discussed above, the BLM also protects special status species by policy (BLM 1988). The list includes certain species designated by the State of Nevada, as well as species designated as “sensitive” by the Nevada BLM State Director.

Various BLM sensitive raptor, bird, and bat species that have the potential to occur within the Project Area as discussed below.

Additionally, approximately 104 acres of wildlife habitat within the Project Area has been diminished by past mining activities (approximately four percent of the Project Area).

Greater Sage-Grouse

Greater sage-grouse is a candidate for listing under the ESA, and on March 23, 2010, the USFWS’s 12-month status review of the species determined that the species warrants the protection under the ESA. The listing of the greater sage-grouse at this time is precluded by the need to address higher priority species, and the State of Nevada and BLM are responsible for management of the species.

Greater sage-grouse, an upland game bird, is largely dependent on sagebrush for nesting and brood rearing and feed almost exclusively on sagebrush leaves during the winter. Greater sage-grouse are found in 11 western states and two Canadian provinces. In Nevada, the greater sage-grouse habitat includes sagebrush, montane shrubland, and wet meadow. The greatest threats to the greater sage-grouse in Nevada are loss of habitat due to fire and piñon-juniper encroachment and a decline in habitat quality due to invasive plants and inadequate grazing management systems, which can particularly impact brood-rearing meadows (GBBO 2010). In 2010 the population in Nevada was estimated to be 68,000-88,000, which represented approximately 50 percent of the global population (GBBO 2010). Greater sage-grouse have specific habitat requirements to carry out their life cycle functions. Greater sage-grouse breeding habitats are defined as those where lek attendance, nesting, and early brood-rearing occur (Connelly et al. 2004).

Early spring habitat or breeding sites called “leks” are usually situated on ridge tops or grassy areas surrounded by a substantial brush and herbaceous component (Schroeder et al. 1999). In early spring, males gather in leks where they strut to attract females. Leks are a traditional courtship display and mating areas attended by greater sage-grouse in or adjacent to sagebrush dominated nesting habitat (Connelly et al. 2004). Leks have less herbaceous and shrub cover than surrounding areas. Spring is a period when birds are changing diets from sagebrush to forbs, as forbs become available (Connelly et al. 2004).

Greater sage-grouse nesting habitat is often a broad area within or adjacent to winter range or between winter and summer range (Connelly et al. 2004). Late spring habitat or nesting sites are located in thick cover in sagebrush habitat beneath sagebrush or other shrubs. Nests are situated on the ground in a shallow depression with an average distance between nest sites and nearest leks of 0.7 mile to 3.9 miles; however, females may move greater than 12.4 miles from a lek to nest (NatureServe 2012). Selection of specific habitat features, such as sagebrush height and canopy cover within a landscape by nesting sage-grouse has been extensively documented. It is suggested that nesting habitat within sagebrush stands should contain between 15 and 25 percent canopy cover. Females preferentially selected areas with sagebrush 14 to 25 centimeters tall and with canopies 15 to 50 percent for nesting in Utah (Connelly et al. 2004).

Early brood-rearing habitat is defined as sagebrush habitat within the vicinity of the nest used by sage-grouse hens with chicks up to three weeks following hatch. Early brood rearing habitat may be relatively open with approximately 14 percent canopy cover of sagebrush and abundant forbs, which attract insects to feed young chicks. Denser sagebrush is often on the periphery to provide shelter from predators. Early brood-rearing locations had less live sagebrush (15.8 vs. 20.2 percent) and total shrub (19.3 vs. 24.1 percent) canopy cover, more residual grass (2.9 vs. two percent), total forb (9.3 vs. 6.6 percent), and total herbaceous (37.3 vs. 29.4 percent) cover, relative to available habitats (Connelly et al. 2004). Late brood-rearing habitats are those habitats used by greater sage-grouse following desiccation of herbaceous vegetation in sagebrush uplands (Connelly et al. 2004). Late brood rearing habitat includes sagebrush vegetation with plants that are more succulent and have a perennial water source nearby such as meadows with streams (NatureServe 2010).

In fall and winter months the birds shelter under mature sagebrush. In the winter, males and females separate into different groups. Winter habitats of sage-grouse generally are dominated by big sagebrush; however, low sagebrush and silver sagebrush communities also are used during winter (Schroeder et al. 1999). The canopy cover of sagebrush in both arid and mesic sites ranges from ten to 30 percent in wintering habitat and greater sage-grouse use shrub heights of 9.8-13.8 inches above the snow. They increase the proportion of sagebrush in their diet during the winter and rely on sagebrush exposure above the snow (Connelly et al. 2004).

The BLM has issued two IMs for the protection of greater sage-grouse, IM 2012-043 “Interim Management Policies and Procedures” and IM 2012-044 “Land Use Planning Strategy.” These IMs provide the BLM with interim policies, procedures, and conservation measures to be applied to ongoing and proposed authorizations that affect greater sage-grouse. The IMs incorporate the following principles:

- Protection of unfragmented habitats;
- Minimization of habitat loss and fragmentation; and
- Management of habitats to maintain, enhance, or restore conditions that meet greater sage-grouse life history needs.

To provide guidance to field offices about how to promote these principles, IM 2012-043 transmits policies and procedures that apply to ongoing and proposed BLM actions (such as Salable Minerals) within Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). PPH comprises areas that have been identified as having the highest conservation value, and PGH comprises areas of occupied seasonal or year-round habitat outside of priority habitat.

In Nevada, these areas have been identified and mapped in coordination with the NDOW. There is no PPH located within the Project Area.

For locatable minerals (described in IM 2012-043), the BLM is instructed that new plans of operation include measures to avoid or minimize adverse effects to greater sage-grouse populations and its habitat. Compliance with this policy, however, is not mandatory.

The NDOW identified greater sage-grouse essential habitat west of the Project Area. Two known leks have been reported within four miles of the Project Area (NDOW 2012). The Battle Mountain 7 lek is located approximately 2.3 miles from the Project Area, and the Battle Mountain 1 lek is located approximately 3.5 miles from the Project Area. The Battle Mountain 1 lek was surveyed by JBR Environmental Consultants Inc. (JBR) on April 20, April 27, and May 4, 2012, and was found to be active, with up to five males and one unknown bird on the lek. The Battle Mountain 7 lek was not surveyed in the spring of 2013 during the greater sage-grouse breeding season, per BLM protocol. Each lek site is separated from the Project Area by numerous ridges and valleys as well as approximately 3,000 feet in elevation (Figure 3.2.13).

Golden Eagle

Golden eagles are protected by the MBTA and the Bald and Golden Eagle Protection Act, both of which prohibit take, and is a Nevada BLM sensitive species. The USFWS overall management objective for golden eagle populations is to ensure no declines in breeding populations (USFWS 2010). Golden eagles nest in high densities in open and semi-open habitat, but may also nest at lower densities in coniferous habitat when open space is available. Golden eagles currently breed in and near much of the available open habitat in North America west of the 100th meridian. Golden eagles avoid nesting near urban habitats. In the Great Basin, golden eagles nest on cliffs and in scrub forest habitat. Golden eagles forage both close to and far from their nests (up to 5.6 miles from the center of their territory). Foraging distances may be greater in xeric habitats (USFWS 2010).

No golden eagle nests were found in the Project Area; however, the entire Project Area is considered suitable foraging habitat for golden eagles (Enviroscientists 2013). The NDOW identified two golden eagle nests within a ten-mile radius of the Project Area. The nests are located approximately six and ten miles from the Project Area, respectively (NDOW 2012). An active nest, was identified in 2011 on private land owned by Newmont in the inactive Western Northern Lights Pit. This nest site was previously unknown to NDOW. The nest is located approximately 0.4 mile from portions of the eastern edge of the Project Area. On the north, south, and west, the nest is up to one mile distant from the Project Area. One golden eagle was observed in the east central portion of the Project Area during the biological survey (Enviroscientists 2013). This active nest site, located on private land, is shown on Figure 3.2.13.

Brewer's Sparrow

The Brewer's sparrow is typically associated with montane shrubland, sagebrush, and salt desert scrub habitats. This species prefers high shrub density and relatively large habitat patches and mosaics of varying shrub densities. Nesting habitat often consists of dense crown tall shrubs (GBBO 2010). The Brewer's sparrow was observed in the Project Area during the 2012 biological survey performed by Enviroscientists (Enviroscientists 2013).

Western Burrowing Owl

Western burrowing owls breed throughout the western United States in open grassland areas. In northern Nevada, the burrowing owl occurs as a summer breeder and migrates south during the winter (Herron et al. 1985). Burrowing owl breeding sites are strongly dependent on the presence of burrows constructed by prairie dogs, ground squirrels, or badgers but may also create their own burrows. Prime burrowing owl habitat must be open, have short vegetation, and contain an abundance of burrows. The locations of burrows are shown on Figure 3.2.13.

During the 2012 biological survey conducted by Enviroscientists, two active western burrowing owl territories with six active burrows were found within the shallow loam 10-14" P.Z. ecological site that is located within the Project Area. An additional western burrowing owl territory was identified within the Project Area; however, no recent sign, or active or potential burrows were found in this territory. A total of two western burrowing owls were identified within the Project Area during the biological survey (Enviroscientists 2013).

Loggerhead Shrike

Loggerhead shrikes are typically associated with greasewood and sagebrush communities. They also frequent open country in valleys and foothills. Dense stands of trees and shrubs are used for nesting and roosting sites, as well as for hunting perches (NatureServe 2012). Loggerhead shrike was observed within the Project Area by Enviroscientists during the 2012 biological survey (Enviroscientists 2013).

Sage Sparrow

The sage sparrow is typically associated with sagebrush and salt desert scrub habitat. They are known to frequent treeless sagebrush or salt desert scrubland with little or no cheatgrass invasion. They tend to nest in dense crowns in tall shrubs or on the ground under the canopy of shrubs (GBBO 2010). The sage sparrow was observed within the Project Area during the 2012 biological survey (Enviroscientists 2013).

Bats

The Project Area consists of roosting habitat in discrete locations consisting of two mine shafts, old buildings and large rock outcrops within the Project Area. The NDOW identified that BLM sensitive bat species have been observed within the Project Area (NDOW 2012). These bat species include the pallid bat (*Antrozous pallidus*), Brazilian free-tailed bat (*Tadarida brasiliensis*) Townsend's big-eared bat (*Corynorhinus townsendii*), and the western small-footed myotis (*Myotis ciliolabrum*).

The pallid bat inhabits low desert shrubland, juniper woodlands, and grasslands. Pallid bats most commonly occur in low, dry regions with rock outcrops that are usually near water. The Brazilian free-tailed bat is known to primarily roost in buildings in tightly packed groups, and may use rock crevices, and bridges during migration (NatureServe 2013). Townsend's big-eared bat may roost in buildings, and often has been found to utilize mine shafts and adits as maternity roosts and hibernacula. Habitats in the vicinity of roosts most commonly include pine forests, piñon-juniper woodland, and cottonwood bottomland. The western small-footed myotis inhabits

desert habitats and utilizes rock crevices, caves, buildings, and abandoned mine workings for roosting, maternity and hibernation (NatureServe 2013).

Consistent with the Battle Mountain wildlife survey protocols, acoustic surveys were conducted for bat species using Pettersson ultrasonic detectors (Model D240X). Bat detectors were turned on between approximately 7:00 to 8:00 p.m. and operated throughout the night to sample the temporal activity of bats. To increase species detection, detectors were placed in two riparian areas (Figure 3.2.13), which can attract foraging and drinking bats from a considerable distance, ecotones, and near rock outcrops, as well as roosting sites such as adits. Table 3.2-17 summarizes the locations where bat detectors were placed in the Project Area. The locations of bat detectors and the presence or absence of bats is shown on Figure 3.2.13.

Echolocation calls were downloaded and analyzed using SonoBat software (DNDesign, Arcata, CA). Recorded calls were compared to reference calls available within the SonoBat software. Characteristics of echolocation calls can be used to distinguish between even closely related species. While intraspecific variation in call characteristics is large relative to interspecific variation, separation of some species can be problematic, especially when only a few call samples are available.

Good call sequences contained more than one and usually many (i.e., more than ten) calls in which the signal was clearly distinguishable from noise, appeared fully formed (i.e., no missing call components), and might display harmonics that indicated that calls were well recorded. Poor quality recordings had poor signal-to-noise ratios and were of short duration (i.e., less than 2.5 milliseconds), reduced bandwidth, or oversimplified shapes. Poor quality recordings are reported in the results as possible identifications and/or are provided as a percent confidence on identification.

Table 3.2-17: Bat Detector Locations for the Copper Basin Project Area

Detector Number	Date	Easting	Northing	Description
1	June 19, 2012	495582	4496546	Shaft with headframe
2	June 19, 2012	495711	4496669	Shaft
3	June 19, 2012	495892	4495071	Riparian
4	June 19, 2012	495187	4495812	Spring, about 1,000 yards outside Project Area
5	June 19, 2012	495444	4496589	Old building near shaft with headframe
6	June 19, 2012	496238	4494380	Road through sagebrush
7	June 20, 2012	495582	4496546	Shaft with headframe
8	June 20, 2012	495711	4496669	Shaft
9	June 20, 2012	495444	4496589	Old houses
10	June 20, 2012	496327	4494631	Willows below overburden and adjacent road
11	June 20, 2012	495187	4495812	Spring, about 1,000 yards outside project area
12	June 20, 2012	495308	4496689	Small pit near the Copper Queen Mine
13	June 21, 2012	499261	4494662	Large rock outcrops
14	June 21, 2012	499114	4494245	Large rock outcrops
15	June 21, 2012	499316	4495717	Steep sagebrush draw with large rocks
16	June 21, 2012	499416	4495110	Large rock outcrops

Detector Number	Date	Easting	Northing	Description
17	June 21, 2012	499113	4495866	Large boulders below rock outcrops
18	June 21, 2012	499257	4495780	Large rock outcrop

Note: Coordinates are in NAD 83

The following three bat species were detected during the acoustic surveys: big brown bat (*Epescus fuscus*); Brazilian free-tailed bat (*Tadarida brasiliensis*); and small-footed myotis (*Myotis ciliolabrum*) (Table 3.2-18). In addition, the little brown bat (*Myotis lucifugus*) was likely detected, but the call sequences were not adequate for positive identification. The California myotis (*Myotis californicus*) and/or Yuma myotis (*Myotis yumanensis*) were also detected. The calls of the latter two species are very similar and can be difficult to differentiate.

Bats were recorded at only seven of the 18 sites where detectors were placed for three nights. The two shafts in the Project Area did not appear to have day-roosting bats using them during the survey period. Although bat calls were recorded in the vicinity of the shaft with the headframe (UTM coordinates: 0495582E, 4496546N), the calls came from bats at a distance. If bats were exiting or entering the shaft, the calls would have been clear enough for identification. Moreover, calls were only recorded on June 19 and not on the subsequent night. The recorded bats could have been foraging in the vicinity of the shaft. Bats were not recorded on either night (June 19 and 20) at the second shaft (UTM coordinates: 0495711E, 4496669N).

Also of note is that no bats were recorded at the spring located in Section 30, T32N, R44E (Figure 3.2.13). The spring had water and abundant willows and bats are often recorded foraging or drinking at such sites. The old buildings located at the Project had the greatest number of bat species recorded. These buildings could provide roosting habitat as well as foraging habitat.

The Project Area provides considerable roosting habitat in discrete locations consisting of the two shafts, old buildings, and large rock outcrops.

Table 3.2-18: Bat Species Detected via Acoustic Surveys in the Copper Basin Project Area

Location Number	Date	Species Detected	Notes
1	June 19, 2012	Bats present	- Poor recording (e.g., bats at a distance)
3	June 19, 2012	Small-footed myotis (<i>Myotis ciliolabrum</i>)	- 15 files
9	June 20, 2012	Big brown bat (<i>Epescus fuscus</i>)	- 3 file
		Small-footed myotis (<i>Myotis ciliolabrum</i>)	- 12 files
10	June 20, 2012	Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)	- 3files
		Big brown bat (<i>Epescus fuscus</i>)	- 1 file
		Small-footed myotis (<i>Myotis ciliolabrum</i>)	- 10 files

Location Number	Date	Species Detected	Notes
17	June 21, 2012	Small-footed myotis (<i>Myotis ciliolabrum</i>) California myotis (<i>Myotis californicus</i>) AND/OR Yuma myotis (<i>Myotis yumanensis</i>)	- 10 files - 3 files (identification uncertain)
16	June 21, 2012	Big brown bat (<i>Eptesicus fuscus</i>) Small-footed myotis (<i>Myotis ciliolabrum</i>)	- 1 file - 10 files
18	June 21, 2012	Small-footed myotis (<i>Myotis ciliolabrum</i>)	- 15 files

Special Status Plant Species

The NNHP identified potential habitat in the Project Area for winged milkvetch. A systematic survey was performed by Enviroscientists for potential habitat within the Project Area. Known habitat affiliations for this species include seasonally moist clay soils of saltgrass meadows, shrubby bottomlands and low knolls. The survey was conducted during the appropriate time of the year; however, the winged milkvetch was not observed within the Project Area (Enviroscientists 2013).

3.2.13.2 Environmental Consequences

Several BLM sensitive raptor, bird, and bat species have been observed or are likely to occur in the Project Area. Approximately 200 acres of habitat would be disturbed over the potential ten-year Project life as a result of implementation of the Proposed Action. Of the 200 acres of disturbance proposed, 17.4 acres are currently disturbed by Notice-level exploration activities and existing surface disturbance. Approximately 182.6 acres of proposed surface disturbance activities are associated with phased mineral exploration activities that could occur anywhere within the Project Area. Vegetation removal, including ground disturbance, would result in a temporary reduction of breeding habitat for sensitive birds in the Project Area. Project-related disturbance would result in a temporary loss of foraging habitat for raptor species. However, this acreage would not all be disturbed at one time due to the phased nature of mineral exploration activities. In addition, noise and disturbance activities generated from Project operations would have the potential to cause special status wildlife species to avoid foraging or utilizing the Project Area. Also, sumps associated with drill sites would be built with an incline on one end so entrapped animals could easily exit the sump.

The Proposed Action includes measures to avoid nesting migratory birds and raptors (Section 2.1.13); therefore, the destruction of active nests or disruption of breeding behavior of sensitive bird species would not occur as a result of the Proposed Action. Newmont would conduct concurrent reclamation of disturbed areas once it is determined that disturbance is no longer required for Project activities. Short-term indirect impacts to special status species would occur due to the short-term temporary loss of vegetation as a result of Project-related surface disturbance.

Surface disturbance activities may also increase the spread of noxious weeds and invasive plant species. Pale madwort, prickly lettuce, curvseed butterwort, halogeton, tansy mustard, and cheatgrass, all invasive non-native species, were observed within the Project Area. The quality of the habitat may be reduced for sensitive species if noxious weeds and invasive plant species increase within the Project Area. Newmont would utilize BMPs, as outlined in Section 2.1.13, to reduce the potential for the increase of noxious weeds and invasive plant species both during surface disturbance and reclamation.

Impacts to the individual sensitive species that are known or have the potential to occur in the Project Area are discussed further below.

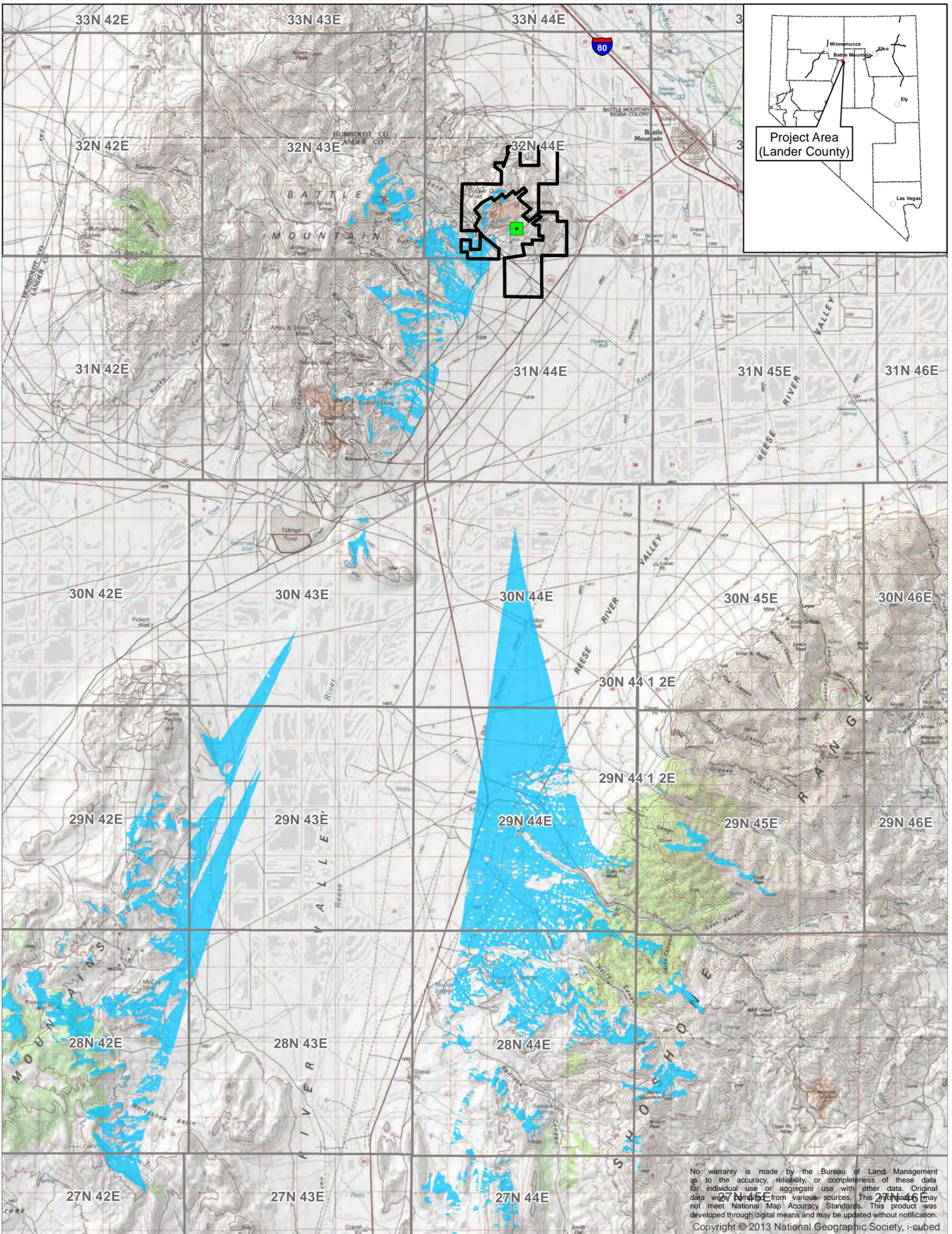
Greater Sage-Grouse

Greater sage-grouse scat was observed in six locations in the northwest corner of the Project Area. These scat piles were not located within designated PPH as there is no PPH mapped within the Project Area. Greater sage-grouse can be sensitive to discrete disturbances, which are defined as disturbances that have a distinct measurable impact in time and space (BLM 2012). Also, studies suggest greater sage-grouse tend to avoid developed areas (BLM 2012); however, this is not the case in the Snowstorm Exploration Project located in Humboldt County where a new lek was formed on a reclaimed exploration drill site and actively traveled road (BLM 2013). The impacts associated with this Project are temporary. Potential impacts to foraging habitat may occur as a result of exploration activities; however, disturbance would be created incrementally and dispersed throughout the Project Area and would be reclaimed and revegetated. Impacts to Battle Mountain Leks 1 and 7 are unlikely due to the distance (3.5 and 2.3 miles, respectively), difference in elevation, and the undulation of ridges and valleys. Each lek is shielded naturally by topography. Any noise from the drilling would likely be attenuated prior to reaching the lek. Newmont has committed to the protection measures for sage grouse as detailed in Section 2.1.13.

Golden Eagle

No golden eagle nests were found in the Project Area. One individual was observed flying in the Project Area during the 2012 biological survey (Enviroscientists 2013). A survey conducted by JBR in 2011 confirmed that both NDOW identified golden eagle nests, within ten miles of the Project Area, were inactive. An active golden eagle nest is located on Newmont private land approximately 0.4 to one mile from the Project Area boundary within the inactive Western Northern Lights Pit. Project-related disturbance in the southwest portion of the Project Area would create direct visual impacts to the golden eagle nest (Figure 3.2.14). However, the nest is located within an existing mining pit that has a considerable level of disturbance and human intrusion. The impacts from the Proposed Action could create incremental, short-term visual impacts to golden eagles using the active nest. Newmont has monitored the nest for the past three years to determine if there was an effect from exploration activities within 0.25 mile. The nest has continued to be active and the nestlings successfully fledged each of the three years regardless of surface disturbing activities.

Surface disturbing activities associated with the Proposed Action would temporarily impact up to 200 acres of golden eagle foraging habitat. Project-related activities would result in the indirect reduction of foraging habitat for the life of the Project and until the completion of reclamation.



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Explanation

- Project Boundary
- Golden Eagle Nest
- Golden Eagle Nest Viewshed**
- Not Visible
- Visible

BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office LLNVB0100
 50 Bastian Road
 Battle Mountain, Nevada 89820

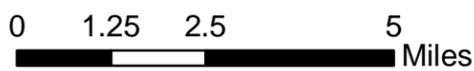


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Golden Eagle Nest Viewshed

Figure 3.2.14



09/13/2013

Reclamation would be completed within two years of the termination of Project activities. Therefore, impacts to golden eagles as a result of the Proposed Action would be temporary and short term. In addition, Newmont has committed the following protection measure: if the golden eagle nest is determined to be active during the breeding season (March 1 – July 31), no surface disturbing activities would occur within 0.5 mile of the nest (Figure 3.2.13).

Brewer's Sparrow

Brewer's sparrow was observed in the Project Area. Project-related activities would directly affect potential Brewer's sparrow habitat through removal of vegetation in areas proposed for surface disturbance. A maximum of 200 acres of habitat would be directly removed over the potential ten-year Project life as a result of implementation of the Proposed Action. Potential impacts to breeding from the Project would include possible direct loss of nests (e.g., crushing) or indirect effects (e.g., abandonment) from increased noise and human presence within close proximity to an active nest site. Implementation of the environmental protection measure outlined in Section 2.1.13 for migratory birds would ensure that prior to surface disturbance a nesting survey for migratory birds (including Brewer's sparrow) would be conducted and nests avoided if exploration activities would occur during the avian breeding season. Vegetation removal would result in a reduction of breeding habitat for Brewer's sparrow in the Project Area. This acreage would not all be disturbed at one time due to incremental disturbance and concurrent reclamation of the surface exploration disturbance.

Western Burrowing Owl

Western burrowing owls were observed in the Project Area. Project-related activities would directly affect western burrowing owl habitat through removal of vegetation in areas proposed for surface disturbance. Rolling foothills, sagebrush flats, and sparsely vegetated side-slopes within the Project Area is considered western burrowing owl burrowing habitat. The entire Project Area is considered suitable foraging habitat. All areas with suitable burrow sites (characterized by burrows dug out by coyotes, and other small mammals) are considered as suitable nesting habitat for western burrowing owls. Potential impacts to breeding from the Project would include possible direct loss of nests (e.g., crushing) or indirect effects (e.g., abandonment) from increased noise and human presence within close proximity to an active nest site. Implementation of the environmental protection measure outlined in Section 2.1.13 for migratory birds would ensure that prior to surface disturbance a nesting survey for migratory birds (including western burrowing owl) would be conducted and active burrows and nests avoided.

Loggerhead Shrike

Loggerhead shrike was observed in the Project Area. Project-related activities would directly affect loggerhead shrike habitat through removal of vegetation in areas proposed for surface disturbance. A maximum of 200 acres of habitat would be directly removed over the potential ten-year Project life as a result of implementation of the Proposed Action. Potential impacts to breeding from the Project would include possible direct loss of nests (e.g., crushing) or indirect effects (e.g., abandonment) from increased noise and human presence within close proximity to an active nest site. Implementation of the environmental protection measure outlined in Section 2.1.13 for migratory birds would ensure that prior to surface disturbance a nesting survey for migratory birds (including loggerhead shrike) would be conducted and nests avoided if

exploration activity would occur during the avian breeding season. Vegetation removal would result in a reduction of breeding habitat for loggerhead shrike in the Project Area. This acreage would not all be disturbed at one time due to incremental disturbance and concurrent reclamation of the surface exploration disturbance.

Bats

The Project provides roosting and foraging habitat in discrete locations consisting of two mine shafts, old buildings, and large rock outcrops. Project-related disturbance is unlikely to occur in these locations; and therefore, the Project would not directly affect bat roosting and foraging habitat. Applicant committed practices at abandoned mine shafts, old buildings, or structures within the Project Area would include a 200-foot buffer for drilling activity (excluding vehicle operation) to avoid bat roosting and foraging habitat. Furthermore, the Project Area would be reclaimed and reseeded following exploration activities. Therefore, impacts to bats from the Proposed Action would be minimal.

Winged Milkvetch

No populations of winged milkvetch are present in the Project Area. Therefore, this species would not be impacted by the Project.

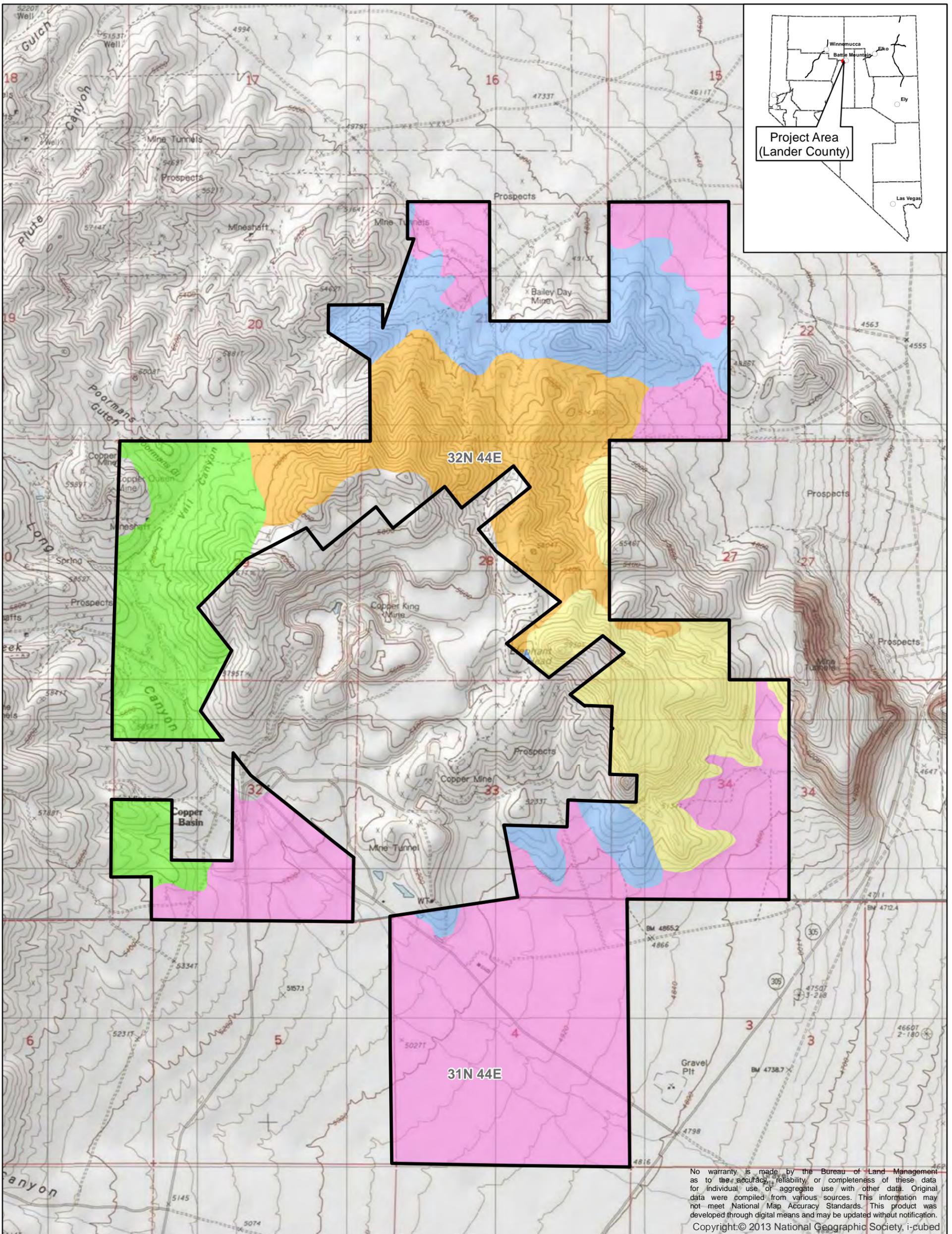
3.2.14 Vegetation

3.2.14.1 Affected Environment

Five ecological sites were observed within the Project Area during the 2012 survey performed by Enviroscientists: Loamy 5-8" P.Z.; Shallow Loam 8-10" P.Z.; Shallow Loam 10-14" P.Z.; Shallow Calcareous Loam 8-10" P.Z.; and Shallow Calcareous Loam 10-14" P.Z. (Figure 3.2.15). The following is a brief description of each ecological site.

Loamy 5-8" P.Z.

The Loamy 5-8" P.Z. ecological site (Ecological Site ID #R024XY002NV) covers approximately 1,327 acres of the Project Area and is located on alluvial flats, fan skirts, and low hills in the southern portion of the Project Area. The dominant species observed during the 2012 survey performed by Enviroscientists were shadscale (*Atriplex confertifolia*), budsage (*Picrothamnus desertorum*), and Indian ricegrass (*Achnatherum hymenoides*). Forbs were interspersed with the shrubs and included Humboldt River milkvetch (*Astragalus iodanthus*), woolly milkvetch (*Astragalus purshii*), orange globemallow (*Sphaeralcea munroana*), pale madwort (*Alyssum desertorum*), and halogeton (*Halogeton glomerata*). Grasses noted within this community included Sandberg's bluegrass (*Poa secunda*) and bottlebrush squirreltail (*Elymus elimoides*). Inclusions of Loamy 8-10" P.Z. are present along drainages and in low areas in this community. These inclusions are dominated by Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) and bluebunch wheatgrass (*Pseudoroegneria spicata*) (Enviroscientists 2013).



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Explanation

Project Boundary

NRCS Soil Survey NV775

R024XY002NV, LOAMY 5-8 P.Z.

R024XY030NV, SHALLOW CALCAREOUS LOAM 8-10 P.Z.

R024XY031NV, SHALLOW CALCAREOUS LOAM 10-14 P.Z.

R024XY035NV, SHALLOW LOAM 10-14 P.Z.

R024XY047NV, SHALLOW LOAM 8-10 P.Z.

no data

BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office LLNVB0100
 50 Bastian Road
 Battle Mountain, Nevada 89820



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Eco Sites Located within the Project Area

Figure 3.2.15



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Shallow Loam 8-10" P.Z.

The Shallow Loam 8-10" P.Z. ecological site (Ecological Site ID #R024XY047NV) covers approximately 368 acres of the Project Area and is located on steep slopes and ridges in the eastern portion of the Project Area. The dominant species observed during the 2012 survey performed by Enviroscientists were Wyoming big sagebrush, rubber rabbitbrush (*Ericameria nauseosus*), Sandberg's bluegrass, bottlebrush squirreltail, and Indian ricegrass, with littleleaf horsebrush (*Tetradymia glabrata*), four-wing saltbrush (*Atriplex canescens*), broom snakeweed (*Gutierrezia sarothrae*), and Nevada jointfir (*Ephedra nevadense*) in lower abundance. Forbs were interspersed with the shrubs and included woolly milkvetch, matted buckwheat (*Eriogonum caespitosum*), prickly phlox (*Leptodactylon pungens*), Douglas dustymaiden (*Chaenactis douglasii*), and tufted evening primrose (*Oenothera caespitosa*) (Enviroscientists 2013).

Shallow Loam 10-14" P.Z.

The Shallow Loam 10-14" P.Z. ecological site (Ecological Site ID #R024XY035NV) covers approximately 384 acres of the Project Area and is located on sideslopes of middle and upper piedmont slopes ranging from four to 75 percent with most sites between 15 and 50 percent. The dominant species observed during the 2012 survey performed by Enviroscientists were Wyoming big sagebrush, four-wing saltbrush, yellow rabbitbrush (*Chrysothamnus viscidiflorus*), shadscale, and Sandberg's bluegrass. Forbs were interspersed within the shrubs and included arrowleaf balsamroot (*Balsamorhiza sagittata*), Indian paintbrush (*Castilleja angustifolia*), spiny phlox (*Phlox hoodii*), orange globemallow, woolly milkvetch, umbrella desert buckwheat (*Eriogonum umbellatum*), and prince's plume (*Stanleya pinnata*). Grasses noted within this community included bottlebrush squirreltail, Indian ricegrass, Great Basin wild rye (*Leymus cinereus*), and cheatgrass (*Bromus tectorum*) (Enviroscientists 2013).

Shallow Calcareous Loam 8-10" P.Z.

The Shallow Calcareous Loam 8-10" P.Z. ecological site (Ecological Site ID #R024XY030NV) covers approximately 435 acres of the Project Area and is located on summits and sideslopes of fan remnants with slopes ranging from two to 75 percent with most sites between 30 and 50 percent. The dominant species observed during the 2012 survey performed by Enviroscientists were black sagebrush, Wyoming big sagebrush, Nevada jointfir, Indian ricegrass, and Sandberg's bluegrass. Forbs were interspersed within the shrubs and included arrowleaf balsamroot, Hooker's balsamroot (*Balsamorhiza hookeri*), sego lily (*Calochortus nutallii*), long-leaf hawksbeard (*Crepis acuminatus*), Indian paintbrush, spiny phlox, orange globemallow, woolly milkvetch, umbrella desert buckwheat, lava aster (*Lonactis alpina*), daggerpod (*Phoenicaulis cheiranthoides*), and prince's plume. Grasses noted within this community included bottlebrush squirreltail, Indian ricegrass, Great Basin wild rye, bluebunch wheatgrass, and cheatgrass. An inclusion of Loamy 8-10" P.Z. is present in the drainages and low areas within this community and is dominated by Wyoming big sagebrush, bluebunch wheatgrass, and Indian ricegrass (Enviroscientists 2013).

Shallow Calcareous Loam 10-14" P.Z.

The Shallow Calcareous Loam 10-14" P.Z. ecological site (Ecological Site ID #R024XY031NV) covers approximately 551 acres of the Project Area and is located on summits and sideslopes of hills, fan remnants, and lower mountains with slopes ranging from two to 75 percent with most sites between 15 and 50 percent. The dominant species observed during the 2012 survey

performed by Enviroscientists were black sagebrush, Wyoming big sagebrush, Sandberg’s bluegrass, Thurber’s needlegrass (*Achnatherum thurberiana*), and shadscale. Forbs were interspersed within the shrubs and included arrowleaf balsamroot, Hooker’s balsamroot, pale madwort, long-leaf hawksbeard, Indian paintbrush, spiny phlox, orange globemallow, curvseed butterwort (*Ceratocephala testiculata*), woolly milkvetch, parsnip flower buckwheat (*Eriogonum heracleoides*), rock buckwheat (*Eriogonum sphaerocephalum*), daggerpod, bitterroot (*Lewisia rediviva*), mountain ball cactus (*Pediocactus simpsonii*), stemless mock goldenweed (*Stenotus acaulis*), and prince’s plume. Grasses noted within this community included Sandberg’s bluegrass, bottlebrush squirreltail, Indian ricegrass, and cheatgrass (Enviroscientists 2013).

Additionally, approximately 104 acres of vegetation within the Project Area has been diminished by past mining activities (four percent of the Project Area).

3.2.14.2 Environmental Consequences

Approximately 200 acres would be disturbed over the ten-year Project life as a result of implementation of the Proposed Action. Of the 200 acres of proposed disturbance, 17.4 acres are currently disturbed by Notice-level exploration activities and existing surface disturbance on public lands. Approximately 182.6 acres of proposed disturbance is associated with phased surface exploration activities that could occur anywhere within the Project Area. The surface exploration disturbance would be created incrementally and would be dispersed throughout the Project Area.

The potential surface disturbance to each ecological site as a result of the implementation of the Proposed Action is shown in Table 3.2-19. The surface disturbance associated with exploration activities within the Project Area would be reclaimed and reseeded concurrently whenever feasible. Any surface disturbance related to the Proposed Action would not result in the loss of any unique vegetation community, but would still result in a temporary loss of vegetation. Reclamation associated with the Proposed Action would begin upon completion of Project activities using the BLM-approved seed mixture shown in Table 2.1-2. Monitoring activities are included in the Proposed Action, which would ensure that the revegetation meets reclamation standards.

Table 3.2-19: Potential Surface Disturbance to Ecological Sites within the Project Area

Ecological Site ¹	Soil Series	Acres in Project Area	Potential Surface Disturbance	
			Acres	Percent
Loamy 5-8” P.Z. (#R024XY002NV)	Whiro-Oxorel	486	0 to 200	0 to 15
	Oxcorel-Rednk-Veta	214		
	Kingingham-Golconda-Whirlo	620		
	Kingingham-Whirlo-Beoska	7		
TOTAL		1,327		
Shallow Loam 8-10” P.Z. (#R024XY047NV)	Old Camp-rock outcrop-Colbar	368	0 to 200	0 to 54
Shallow loam 10-14” P.Z. (#R024XY035NV)	Havingdon-Burrita	384	0 to 200	0 to 52

Ecological Site ¹	Soil Series	Acres in Project Area	Potential Surface Disturbance	
			Acres	Percent
Shallow Calcareous Loam 8-10" P.Z. (#R024XY030NV)	Jung-Wiskan	435	0 to 200	0 to 38
Shallow Calcareous Loam 10-14" P.Z. (#R024XY031NV)	Wiskan-Linrose	551	0 to 200	0 to 36

¹104 acres of the Project Area are associated with mining dumps and pits that do not fall within an ecological site designation.

3.2.15 Visual Resources

3.2.15.1 Affected Environment

The Visual Resource Management (VRM) system designates classes for BLM-administered lands in order to identify and evaluate scenic values to determine the appropriate levels of management during land use planning (Table 3.2-20). Each management class portrays the relative value of the visual resources and serves as a tool that describes the visual management objectives (BLM 1986b).

Lands within the Project Area are designated as VRM Class IV. The activities associated with mining and surface disturbance may require modifying the existing character of the landscape; however, there have been prior mining activities in the Project Area and the surface has previously been modified. The Project Area has existing mined areas and reclaimed waste rock disposal facilities and roads that have affected the form, line, color and texture of the natural features that existed prior to past mining activities as illustrated in the photograph on the cover of this EA. Two locations were photographed as shown on Figure 1.1.1 for the preparation of the Visual Contrast Rating Forms included as Appendix A.

Table 3.2-20: BLM Visual Resource Management Classes

Class	Description
I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any change must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the character should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Source: BLM 1986b

3.2.15.2 Environmental Consequences

The Project would result in short-term visual impacts principally affecting the visual elements of line and color with the construction of surface support facilities (roads, drill sites, sumps, etc.). Disturbance of vegetation would cause moderate, temporary color contrasts. With successful reclamation and revegetation, long-term visual impacts would be minimized. The impact created as a result of the Project to visual resources would be consistent with BLM prescribed Visual Resource Inventory Class IV objectives.

3.2.16 Wastes, Solid or Hazardous

3.2.16.1 Affected Environment

Federal and State of Nevada hazardous material and waste laws and regulations are applicable to hazardous substances used, stored, or generated by the Project. Applicable federal laws would include the following: the Resource Conservation and Recovery Act of 1976; Hazardous and Solid Waste Amendments; Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA [aka Superfund]); and the Superfund Amendments and Reauthorization Act of 1986. Pursuant to regulations promulgated under Section 102 of CERCLA, as amended, release of a reportable quantity of a hazardous substance to the environment in a 24-hour period must be reported to the National Response Center (40 CFR Part 302). A release of a reportable quantity on public land must also be reported to the BLM.

Similarly, Nevada hazardous material and waste laws and regulations are applicable to hazardous substances used, stored, and generated by the operation of the Project. NAC 445A.240 requires immediate reporting of a release of a reportable quantity of a hazardous substance to the NDEP, based on Table 302.4 in 40 CFR Part 302.

The Lander County Master Plan includes a Safety Plan Element. The Safety Plan Element identifies the transportation of hazardous and volatile materials through communities in Lander County as a primary safety problem. The Lander County Department of Emergency Management developed an Emergency Response Plan (adopted in 1994) to comprehensively plan for effective mitigation, preparation, response, and recovery of any natural, technological/man-made, or war-related disaster.

Hazardous materials utilized at the Project Area would include diesel fuel, gasoline, and lubricating grease. Approximately 500 gallons of diesel fuel would be stored in fuel delivery systems on vehicles and drill rigs. Approximately 100 gallons of gasoline would be stored in fuel delivery systems for light vehicles. Approximately 100 pounds of lubricating grease would be stored on the drill rigs or transported by drill trucks. All containers of hazardous substances would be labeled, handled, and stored in accordance with NDOT and MSHA standards.

All refuse generated by the Project would be disposed of at an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of on site. Water or nontoxic drilling fluids, additives, gels and abandonment materials would be utilized as necessary during drilling and would be stored at the Project Area. Portable toilets would be used for human waste. The human waste and toilet chemicals would not be buried on site.

3.2.16.2 Environmental Consequences

The generation of wastes and the use of hazardous materials as a result of the Proposed Action may result in the release of these wastes or materials. Vehicles traveling on public roads in the Project Area would result in the presence of other hazardous materials and wastes (e.g., fuel, antifreeze, battery acid, lead tire weights, mercury switches, or catalytic converters) for the duration of travel. Section 2.1.10 of this EA outlines how these wastes and materials would be managed and stored.

Through the implementation of the spill measures outlined in Section 2.1.13 of this EA, no impacts to the environment from wastes are anticipated as a result of the Proposed Action. This element is not analyzed further in this EA.

3.2.17 **Water Resources**

3.2.17.1 Affected Environment

Surface Water

Surface water within the Project Area is dependent on seasonal precipitation. The Project Area received moderate levels of precipitation, with moderate fluctuations in seasonal temperatures. The average annual precipitation is approximately 6.3 inches and tends to peak in January in the form of snow that can accumulate up to two inches in depth (WRCC 2012). Most of the rainfall in north central Nevada occurs as high-intensity, convective thunderstorms in spring and autumn (NRCS 2012).

The Project is located within the Clovers Area and Lower Reese River Valley hydrographic basins. These hydrographic basins are typical of arid drainage basins in northern Nevada, where precipitation is generally insufficient to support perennial stream flow except where they are spring fed.

Several ephemeral drainages traverse the southwestern corner of the Project Area in a west-east trend. Surface water runoff from the Project Area flows south to the Reese River Valley and a small portion flows to the north to the Humboldt River, a major surface water source in Lander County, located approximately six miles north of the Project Area.

One spring, shown on Figure 3.2.20, is located 1,000 feet northwest and outside of the Project Area boundary. The spring was documented in Little Giant Mill Creek during the biological survey that was conducted in 2012 (Enviroscientists 2013). The spring had water and abundant willows.

Ground Water

The bedrock assemblage consists of a structurally complex assemblage of Paleozoic sedimentary, metasedimentary, and metavolcanic and Tertiary intrusive rocks. These rocks are exposed in the Battle Mountain Range and underlie the basin fill sediments in the valley. The ground water surface tends to mimic the topography, with steep gradients in the mountain ranges and gentler gradients in the basins. Based on previous drilling in the area, the depth to ground

water is estimated at 500 feet below ground surface. There is no information for ground water quantity.

3.2.17.2 Environmental Consequences

Surface Water

Surface water features within the Project Area are limited to several ephemeral drainages that traverse the Project Area in a west-east trend. The Proposed Action could result in impacts to surface water quality as a result of spills and sedimentation or erosion from surface disturbance. The potential impacts to surface water quality from spilled petroleum products would be minimized by the implementation of the Spill Contingency Plan included in Appendix D of the Plan. The potential impacts to surface water quality from sedimentation would be minimized by the implementation of the environmental protection measures outlined in Section 2.1.13.

3.2.17.2.1 Ground Water Quantity

No hydrological areas would be affected by the Proposed Action. The Proposed Action would be expected to require water only for dust suppression and drilling fluids. That water would be acquired from existing sources with existing valid water rights. No new water developments or water rights applications are anticipated; therefore, no impacts to ground water quantity are expected.

3.2.17.2.2 Ground Water Quality

No ground water quality data are available from water encountered in drill holes within the Project Area. The Proposed Action is not expected to impact ground water quality because the drill holes would be abandoned in accordance with NRS 534, NAC 534.4369 and NAC 534.4371. In addition, no drill holes would be left open at the end of the Project.

3.2.18 Wildlife

3.2.18.1 Affected Environment

Wildlife habitat in the Project Area is similar to habitat throughout the Great Basin Region. Approximately 104 acres of wildlife habitat within the Project Area has been diminished by past mining activities (four percent of the Project Area).

In June and July of 2012 Enviroscientists performed a general wildlife survey in the Project Area (Enviroscientists 2013). In addition, the USFWS and NDOW were contacted regarding the presence of wildlife species within and near the Project Area. The following discussion summarizes the results of the survey including which species were observed or detected within the Project Area as well as species likely to be present or to utilize the Project Area based on the information provided by the USFWS and NDOW (USFWS 2012; NDOW 2012).

Mammals

In addition to the special status species discussed in Section 3.2.13, Enviroscientists observed the following wildlife within the Project Area during the 2012 biological survey: mule deer

(*Odocoileus hemionus*); pronghorn antelope (*Antilocapra americana*); coyote (*Canis latrans*); black-tailed jackrabbit (*Lepus californicus*); desert cottontail (*Sylvilagus auduboni*), white-tailed antelope ground squirrel (*Ammospermophilus leucurus*); kangaroo rat (*Dipodomys* spp.); woodrat (*Neotoma* spp.); and the yellow-bellied marmot (*Marmota flaviventris*) (Enviroscientists 2013). The NDOW does not report any mule deer use in the Project Area. The year-round pronghorn antelope habitat is shown on Figure 3.2.13 and covers approximately 1,747 acres.

Game Birds

The chukar partridge (*Alectoris chukar*) and mourning dove (*Zenaida macroura*) occur in the Project Area (Enviroscientists 2013).

Amphibians and Reptiles

Several species of reptiles have been observed within the Project Area. Species observed by Enviroscientists included: desert spiny lizard (*Sceloporus magister*); Great Basin collared lizard (*Crotaphytus collaris*); Great Basin gopher snake (*Pituophis catenifer*); Great Basin rattlesnake (*Crotalus viridis*); leopard lizard (*Gambelia wislizenii*); sagebrush lizard (*Sceloporus graciosus*); striped whipsnake (*Masticophis taeniatus*); western fence lizard (*Sceloporus occidentalis*); and western whiptail (*Aspidoscelis tigris*) (Enviroscientists 2013).

The closest perennial water source is located approximately 1.26 miles southwest of the Project Area. It is unlikely that amphibians are present in the Project Area, due to the lack of surface waters.

Fish

No perennial streams or native fish habitat occur in the Project Area.

3.2.18.2 Environmental Consequences

Direct impacts to wildlife would consist of temporary habitat loss and disturbance from human activity and noise. Approximately 200 acres would be disturbed over the potential ten-year Project life as a result of implementation of the Proposed Action. Of the 200 acres of disturbance proposed, 17.4 acres are currently disturbed by Notice-level exploration activity and existing surface disturbance activities. Approximately 182.6 acres of proposed disturbance associated with surface exploration activities could occur anywhere within the Project Area. The surface exploration disturbance would be created incrementally and would be dispersed throughout the Project Area.

No long-term impacts to wildlife habitat are likely to occur within the Project Area since reclamation would be designed to return disturbed lands to a level of productivity comparable to pre-exploration levels. After exploration activities have been terminated, reclamation would involve regrading disturbed areas related to this Project to their approximate original contour and would be completed no later than two years after the completion of activities under the Proposed Action. Additionally, sumps associated with drill sites would be built with an incline on one end so entrapped animals could easily exit the sump.

Exploration activities, including the construction of roads and overland travel, could disturb wildlife due to the presence of humans and by creating noise and dust. However, wildlife foraging activities within the Project Area could continue since the proposed surface disturbance activities only cover approximately six percent of the entire Project Area (200 acres out of a total of 3,169 acres). Indirect, short-term impacts to wildlife would occur due to the temporary loss of vegetation as a result of Project-related surface disturbance.

Pale madwort, prickly lettuce, curvseed butterwort, halogeton, tansy mustard, and cheatgrass, all invasive non-native species were observed within the Project Area. These species were primarily observed in previously disturbed areas intermixed with native species, and no large populations or monocultures of these species were noted in the Project Area. These invasive, non-native species reduce the quality of habitat for wildlife. Project-related activities increase the potential for the spread of these species; thus further reducing the quality of wildlife habitat in the Project Area. Newmont would implement environmental protection measures for noxious weeds, outlined in Section 2.1.13, which would mitigate or reduce the impact of noxious weeds and invasive species to wildlife habitat.

Impacts to specific wildlife groups are discussed in detail below.

Small mammals

Due to ground disturbance activities, there would be a potential of direct mortality to small mammals (e.g., being crushed by vehicles or equipment). Ground disturbance activities would also impact small mammal habitat by removing vegetation and rocks and disturbing burrows. These impacts would be short-term, and habitat could be restored during reclamation.

Large mammals

Large mammals, such as mule deer and pronghorn antelope, may avoid the Project Area due to noise generated by the Project. Other large mammals, such as coyotes, could adapt to the noise and disturbance from the Project. These impacts would temporarily reduce the available habitat area for large mammals. Additionally, fences would be constructed around open trenches that would restrict wildlife access.

Reptiles

Reptiles would be impacted by surface disturbance activities, which would remove vegetation and disturb soil. Surface disturbance would remove potential areas for the desert spiny lizard, Great Basin collared lizard, sagebrush lizard, western fence lizard, and the western whiptail to lay their eggs or could destroy eggs laid within disturbance areas. Loss of vegetative cover and burrows could result in greater mortality due to predators. Snakes would be impacted by disturbance to dens and soils and potential destruction of eggs during breeding season. Temporary disturbance would reduce forage area. Impacts would be temporary, and vegetation would be restored subsequent to reclamation.

3.2.19 Paleontological Resources

3.2.19.1 Affected Environment

Paleontological resources are protected by the Paleontological Resources Protection Act (OPLA-PRP: Omnibus Public Land Management Act of 2009 Paleontological Resources Preservation Subtitle 123 Stat. 1172, 16 U.S.C. 470aaa et seq.), which establishes criminal and civil penalties. The geology of the area is discussed in Section 3.2.4.

3.2.19.2 Environmental Consequences

Paleontological resources are associated with sedimentary rocks. Although there are rocks that are sedimentary in origin, these rocks are between 458 to 543 million years old (Ordovician to Cambrian) and have been subjected to extreme structural events. In addition to these structural events, and sometimes concurrently with the events, the sediments have undergone up to 50 intrusive events. The intrusive events have completely altered the sedimentary rocks into metamorphic rocks in which no fossils could survive. In addition to metamorphism, there has been hydrothermal alteration associated with structural and intrusive events. There would be no impact to paleontological resources; however, there is an environmental protection measure that states “In the event that previously undiscovered paleontological resources are discovered in the performance of any surface disturbing activities, the item(s) or condition(s) would be left intact and immediately brought to the attention of the authorized officer of the BLM. If significant paleontological resources are found, avoidance, recordation, and data recovery would be required”. This resource is not further analyzed in the EA.

3.2.20 Wetlands and Riparian Areas

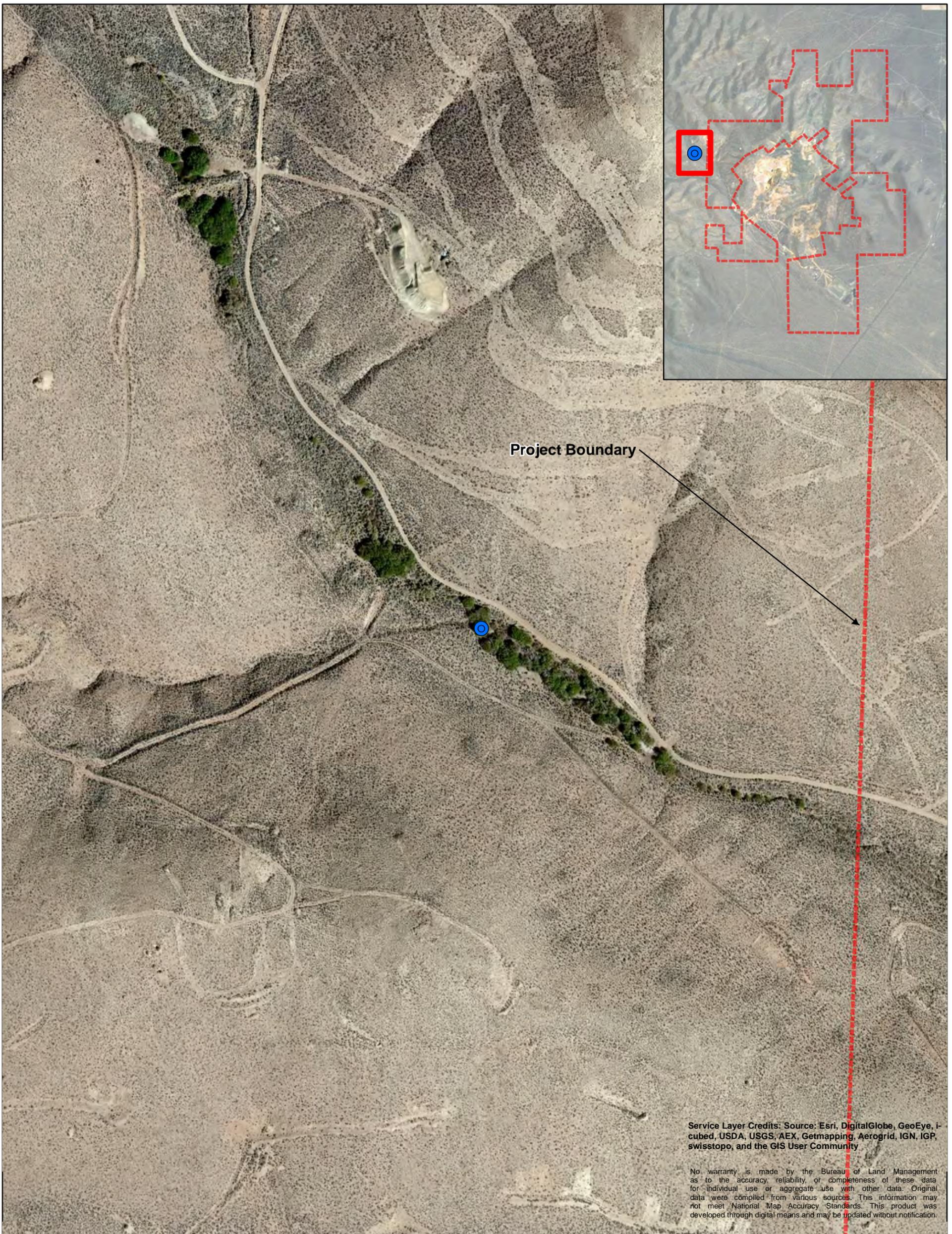
3.2.20.1 Affected Environment

There are no wetlands or riparian areas identified within the Project Area boundary. One spring, shown on Figure 3.2.20, is located 1,000 feet northwest and outside of the Project Area boundary (Section 30, T32N, R44E). The spring was documented in Little Giant Mill Creek during the biological survey that was conducted in 2012 (Enviroscientists 2013). The spring had water and abundant willows. Based on review of a 2013 air photo, (Figure 3.2.20) the vegetation associated with the spring ends west of the Project boundary.

There is a second area (Figure 3.2.21) along the same Little Giant Mill Creek ephemeral stream that contains 11 trees (likely willows) approximately 130 feet within the Project Area boundary (Section 32, T32N, R44E). The trees extend along the drainage outside of the Project boundary and lie between an improved access road and a reclaimed mine feature (likely a haul road).

3.2.20.2 Environmental Consequences

The Project activities would not likely impact the spring or the riparian vegetation associated with the spring because the spring is 1,000 feet away from the Project boundary. The second area currently has existing disturbance within 50 feet of the trees within the drainage. There does not appear to be any impacts associated with this earlier disturbance. In order to avoid damage or disturbance to riparian areas, no surface disturbing activities would be conducted within 300 feet of a stream channel, meadow, or spring.

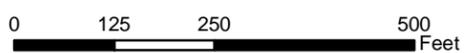


Explanation

-  Project Boundary
-  Spring



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**Spring and Vegetative Response
 Outside of Project Area**

Figure 3.2.20

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Project Boundary

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Vegetative Response to Ephemeral Stream

Figure 3.2.21

09/13/2013

3.3 Effects of the No Action Alternative

Under the No Action Alternative, none of the impacts associated with the Proposed Action would occur. However, Newmont would continue exploration activities under Newmont's Five Exploration Area Plan of Operations (NRP-0190 and NVN-067450 (11-1A)). Additionally, Newmont would continue Notice-level exploration under the Vail Ridge (NVN-90800) and Clipper (NVN-91014) authorized Notices. Authorized surface disturbance associated with Notice-level exploration would total 7.9 acres.

3.3.1 Air and Atmospheric Values

Air Quality

Under the No Action Alternative, Notice-level exploration activities under Notice NVN-090800 and NVN-0091014 would continue and include surface disturbance of 7.9 acres on public land. There were no air quality stipulations for the Clipper or Vail Ridge Notices.

Under the No Action Alternative, dust would be generated by travel on dirt roads and emissions would be generated from drill rigs, support equipment, and vehicles during exploration activities. These emissions would cause a minor short-term localized impact to air quality. The reclamation of surface disturbance would gradually eliminate long-term impacts to air quality from wind erosion of disturbed soils. In addition, Newmont would control dust by minimizing surface disturbance and observing prudent speed limits. Although impacts are similar under the No Action Alternative, impacts would be less than under the Proposed Action, as there would be 192.1 fewer acres of new surface disturbance under the No Action Alternative.

3.3.2 Cultural Resources

Under the No Action Alternative, there would be no impacts to cultural resources because they would be avoided. Therefore, impacts under the No Action Alternative would be the same as under the Proposed Action.

3.3.3 Fire Management

Under the No Action Alternative, no impacts to fire management would occur, as there are no active fuel treatment areas within the existing Project Area boundary. Therefore, impacts under the No Action Alternative would be the same as under the Proposed Action.

3.3.4 Geology and Mineral Resources

Under the No Action Alternative, exploration drilling would be conducted, which would only result in the removal of small amounts of rock from the borings. Impacts to geology and mineral resources under the No Action Alternative would be the same as under the Proposed Action.

3.3.5 Land Use and Realty

Under the No Action Alternative, which consists of Notice-level surface exploration activities, Newmont did not propose any changes or alterations to existing roads outside the Project Area.

Therefore, there would be no anticipated impacts to land use, access, or realty resulting from the No Action Alternative.

3.3.6 Migratory Birds

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration activities. This could result in the temporary loss of approximately 7.9 acres of migratory bird nesting or foraging habitat. Reclamation of surface disturbance would gradually eliminate potential impacts to migratory birds. Impacts to migratory birds as a result of the No Action Alternative would be similar, but proportionally less than the Proposed Action (approximately 7.9 acres of surface disturbing activities versus approximately 200 acres).

3.3.7 Native American Religious Concerns

Under the No Action Alternative, Newmont would continue their Notice-level surface mineral exploration activities. The BLM MLFO has continual consultation with the local Tribes with regard to ongoing and proposed projects and land management activities. No concerns pertaining to the existing Notice-level exploration activities have been brought to the BLM's attention; therefore, at this time there would be no impacts to Native American Religious Concerns as a result of the No Action Alternative.

3.3.8 Noxious Weeds, Invasive and Non-native Species

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration activities and existing surface disturbance. The impacts associated with the No Action Alternative could result from establishment of noxious weeds, invasive, and non-native species. Invasive, non-native species that were identified within the Project Area that would have the potential to spread as reclamation and revegetation efforts described in the Proposed Action would not occur under the No Action Alternative. Reclamation of surface disturbance, including reseeding, associated with Notice-level exploration activities, would gradually decrease potential impacts of noxious weeds, invasive, and non-native species.

3.3.9 Rangeland Management

Under the No Action Alternative, impacts to Rangeland Management would be minimal. Less than one AUM would be impacted under the No Action Alternative.

3.3.10 Recreation

Under the No Action Alternative, ongoing mineral exploration activities are currently permitted in the Project Area. There are some mountain biking trails in the Notice-level areas but these areas would not be blocked and riders would be able to utilize the trails. Impacts to mountain biking from the No Action Alternative would be similar to the Proposed Action.

3.3.11 Social Values and Economics

Under the No Action Alternative, ongoing mineral exploration activities are currently permitted in the Project Area, which consist of surface drilling activities. This type of exploration requires less of a work force and is more intermittent in nature. The No Action Alternative would result in beneficial impacts to the local economies, as the workers would obtain lodging, meals, and supplies in these local communities. However, under the No Action Alternative, impacts to public services and housing would be less than under the Proposed Action, as there would be fewer employees needing services in impacted communities.

3.3.12 Soils

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration. The potential for wind and water erosion of disturbed soils would be increased until reclamation is successfully completed. The potential impacts to soils would be reduced by BMPs and environmental protection measures that currently exist for these Notice-level operations. Impacts associated with the Proposed Action would be similar, but less than the Proposed Action (7.9 acres of disturbed soils versus 200 acres under the Proposed Action).

3.3.13 Special Status Species

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration activities. Impacts to special status species and their habitat under the No Action Alternative would be similar to but less than the Proposed Action (approximately 7.9 acres of surface disturbing activities versus approximately 200 acres).

3.3.14 Vegetation

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration. Reclamation of surface disturbance, including reseeding, associated with Notice-level exploration activities, would minimize impacts to vegetation. Under the No Action Alternative, impacts would be similar to but less than the Proposed Action (approximately 7.9 acres of surface disturbing activities versus approximately 200 acres).

3.3.15 Visual Resources

Under the No Action Alternative, no facilities or structures would be constructed and reclamation of the temporary disturbance from drill pads and roads would occur shortly after disturbance. The Project Area is already disturbed and altered from past mining activities, therefore, the No Action alternative would have no impact to visual resources based on this existing condition. The No Action Alternative would meet Class IV objectives.

3.3.16 Wastes, Hazardous or Solid

The generation of wastes and the use of hazardous materials as a result of the No Action Alternative may result in the release of these wastes or materials. The No Action Alternative

only involves surface exploration drilling and does not include the storage of hazardous or regulated materials. The source of spills or leaks would be from the drill rigs operating at the site. Therefore, the No Action Alternative has proportionally less potential for spills because the scale of activities is less than the Proposed Action.

3.3.17 Water Resources

The No Action Alternative would result in the disturbance of up to 7.9 acres within the Project Area and with the use of BMPs to prevent erosion and sediment transport, would not result in impacts to water resources. Should the drill holes encounter ground water, they would be plugged in accordance with NAC 534.420.

3.3.18 Wildlife

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration. Reclamation of existing surface disturbance would gradually eliminate impacts to wildlife. Impacts to wildlife as a result of the No Action Alternative would be similar, but proportionally less than the Proposed Action (approximately 7.9 acres of surface disturbing activities versus approximately 200 acres).

3.3.19 Paleontological Resources

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration. Paleontological resources are protected by the Paleontological Resources Protection Act (OPLA-PRP: Omnibus Public Land Management Act of 2009 Paleontological Resources Preservation Subtitle 123 Stat. 1172, 16 U.S.C. 470aaa et seq.) which establishes criminal and civil penalties. The geology of the area is the same as the Proposed Action and there would be no impact to paleontological resources.

3.3.20 Wetlands and Riparian Areas

Under the No Action Alternative, 7.9 acres of surface disturbance would continue within the Project Area under currently authorized Notice-level exploration. Under the No Action Alternative, impacts would be similar to but less than the Proposed Action (approximately 7.9 acres of surface disturbing activities versus approximately 200 acres).

4 CUMULATIVE IMPACT ANALYSIS

4.1 Introduction

For the purpose of this EA, the cumulative impacts are the sum of all past, present, and reasonably foreseeable future actions (RFFAs) resulting primarily from mining, commercial activities and public uses. The purpose of the cumulative analysis in the EA is to evaluate the significance of the Proposed Action's contributions to cumulative impacts. A cumulative impact is defined under federal regulations as follows:

"...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 actions. Cumulative impacts can result from individual minor but collectively significant actions taken place over a period of time" (40 CFR 1508.7).

As required under the NEPA and the regulations implementing the NEPA, this chapter addresses those cumulative effects on the environmental resources in the Cumulative Effects Study Areas (CESAs) that could result from the implementation of the Proposed Action and reasonable alternatives, past actions, present actions, and RFFAs. The extent of the CESA will vary by each resource, based on the geographic or biological limits of that resource. As a result, the list of projects considered under the cumulative analysis may vary according to the resource being considered. In addition, the length of time for cumulative effects analysis will vary according to the duration of impacts from the Proposed Action on the particular resource.

For the purposes of this analysis and under federal regulations, 'impacts' and 'effects' are assumed to have the same meaning and are interchangeable. The cumulative impacts analysis was accomplished through the following three steps:

Step 1: Identify, describe, and map CESAs for each resource evaluated in this chapter.

Step 2: Define timeframes, scenarios, acreage, and activity estimates for cumulative impact analysis.

Step 3: Identify and quantify the location of possible specific impacts from the Proposed Action and judge the significance of these contributions to the overall impacts.

4.2 Cumulative Effects Study Areas

Environmental consequences of the Proposed Action were previously evaluated in Chapter 3 for the various environmental resources. Discussed in the following sections are the resources that have the potential to be cumulatively impacted by the Proposed Action within the identified CESAs. The discussions are based upon the previous analysis in Chapter 3 for each environmental resource. Based on the preceding analysis, the Proposed Action would not impact the following resources and would therefore not have cumulative impacts: Air Quality; Environmental Justice; Fire Management; Geology and Mineral Resources; Lands and Realty; Native American Religious Concerns; Visual Resources; Wastes (hazardous and solid); and Water Resources. These resources are not discussed further in the cumulative impacts section.

The following ten elements or resources have been brought forward for cumulative impact analysis: Cultural Resources; Migratory Birds; Noxious Weeds, Invasive and Non-native Species; Rangeland Management; Recreation; Social Values and Economics; Soils; Special Status Species; Vegetation; Visual Resources; and Wildlife. The geographic areas considered for further analysis of cumulative effects vary in size and shape to reflect each evaluated environmental resource and the potential area of impact to each from the Proposed Action as determined through the analysis in Chapter 3.

The Cultural Resources CESA is based on the BLM Battle Mountain Mining District boundary (Figure 4.2.1). This CESA boundary was used to analyze impacts to Cultural Resources.

The Rangeland Management CESA is based on Copper Canyon, North Buffalo, and Buffalo Valley Grazing Allotments (Figure 4.2.1). The Project is located within the Copper Canyon Grazing Allotment. This CESA is used to analyze impacts to Noxious Weeds, Invasive, and Non-native Species, Rangeland Management, Soils, and Vegetation.

The Wildlife CESA was developed based on NDOW Hunt Unit 151 (Figure 4.2.1). This CESA boundary is used to analyze impacts to Migratory Birds, Special Status Species, and Wildlife.

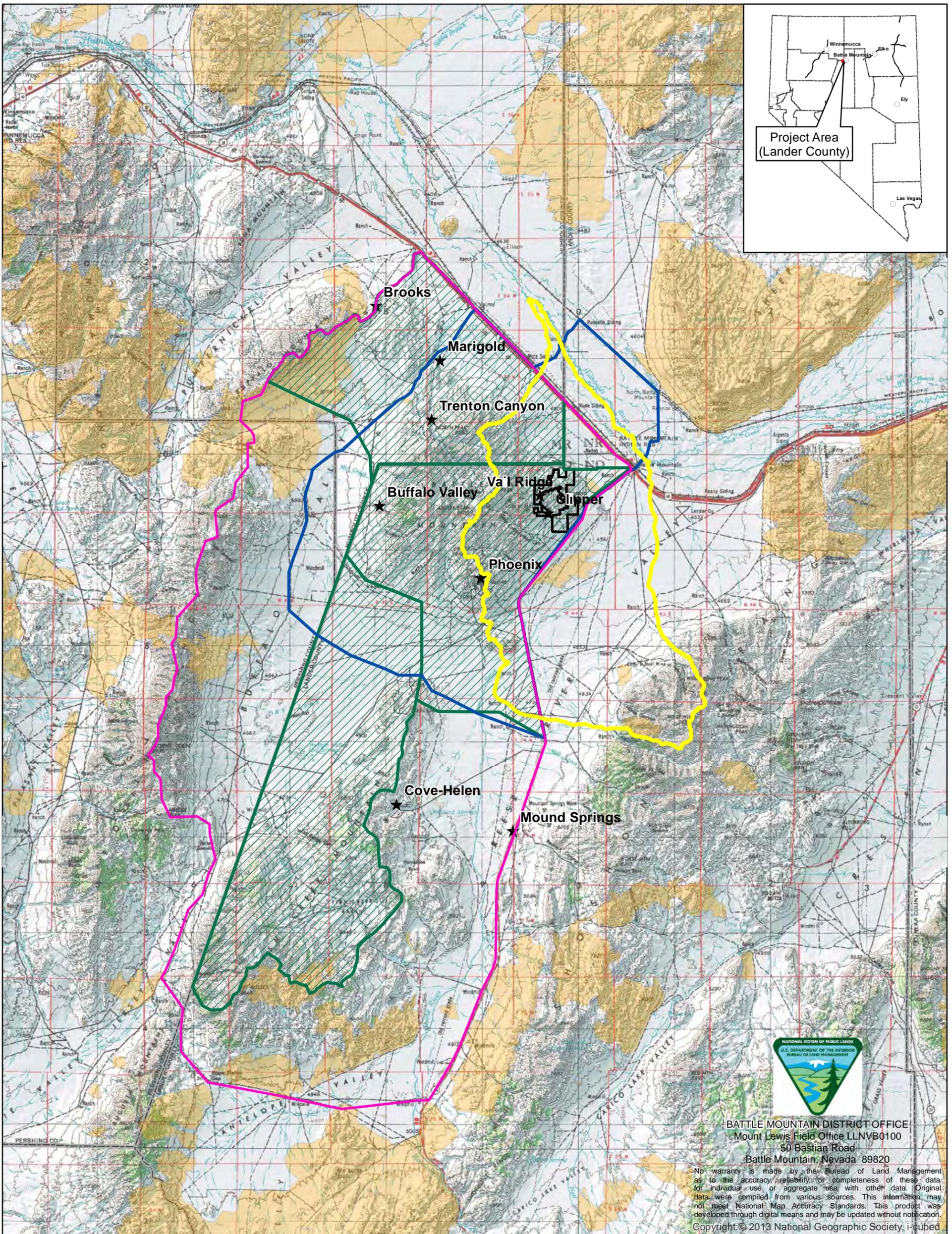
The Recreation CESA was developed based on known recreational opportunities in the area. The boundary utilizes hydrologic unit code 12 watershed boundary unit (HUC 12) that follows the ridgeline of the Battle Mountain range at its western bounds within Humboldt and Lander Counties, and eastward towards Mount Lewis in the Shoshone range within Lander County. The northern limits of the Recreation CESA boundary are the Humboldt River within Humboldt and Lander Counties (Figure 4.2.1). This CESA boundary is used to analyze impacts to Recreation.

The Social Values and Economics CESA is Lander County (Figure 4.2.2). This CESA boundary was chosen for the cumulative impact analysis for Social Values and Economics, as the majority of the impacts would occur in Lander County as discussed in Chapter 3.

Table 4.2-1 describes each CESA area by resource.

Table 4.2-1: Cumulative Effects Study Areas

Resources Analyzed	CESA	Description of CESA	Size of CESA (acres)
Cultural Resources	Cultural Resources CESA	Battle Mountain Historic Mining District	686,442
Noxious Weeds, Invasive and Non-native Species, Rangeland Management, Vegetation, Soils	Rangeland Management CESA	North Buffalo, Copper Canyon, and Buffalo Valley Grazing Allotments	344,833
Migratory Birds, Special Status Species, Wildlife	Wildlife CESA	Segment of Hunt Unit 151	234,771
Recreation	Recreation CESA	HUC 12	155,104
Socioeconomic Values	Socioeconomic Values CESA	Lander County	3,529,614



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Explanation

- Project Boundary
- Recreation CESA
- Rangeland Management CESA
- Cultural Resources CESA
- Wildlife CESA
- Fire History 1910 to 2012
- Existing Mine Project

- Resources:
- Cultural
 - Migratory Birds
 - Noxious Weeds, Invasive and Nonnative Species
 - Soils
 - Rangeland Management
 - Recreation
 - Special Status Species
 - Vegetation
 - Wildlife



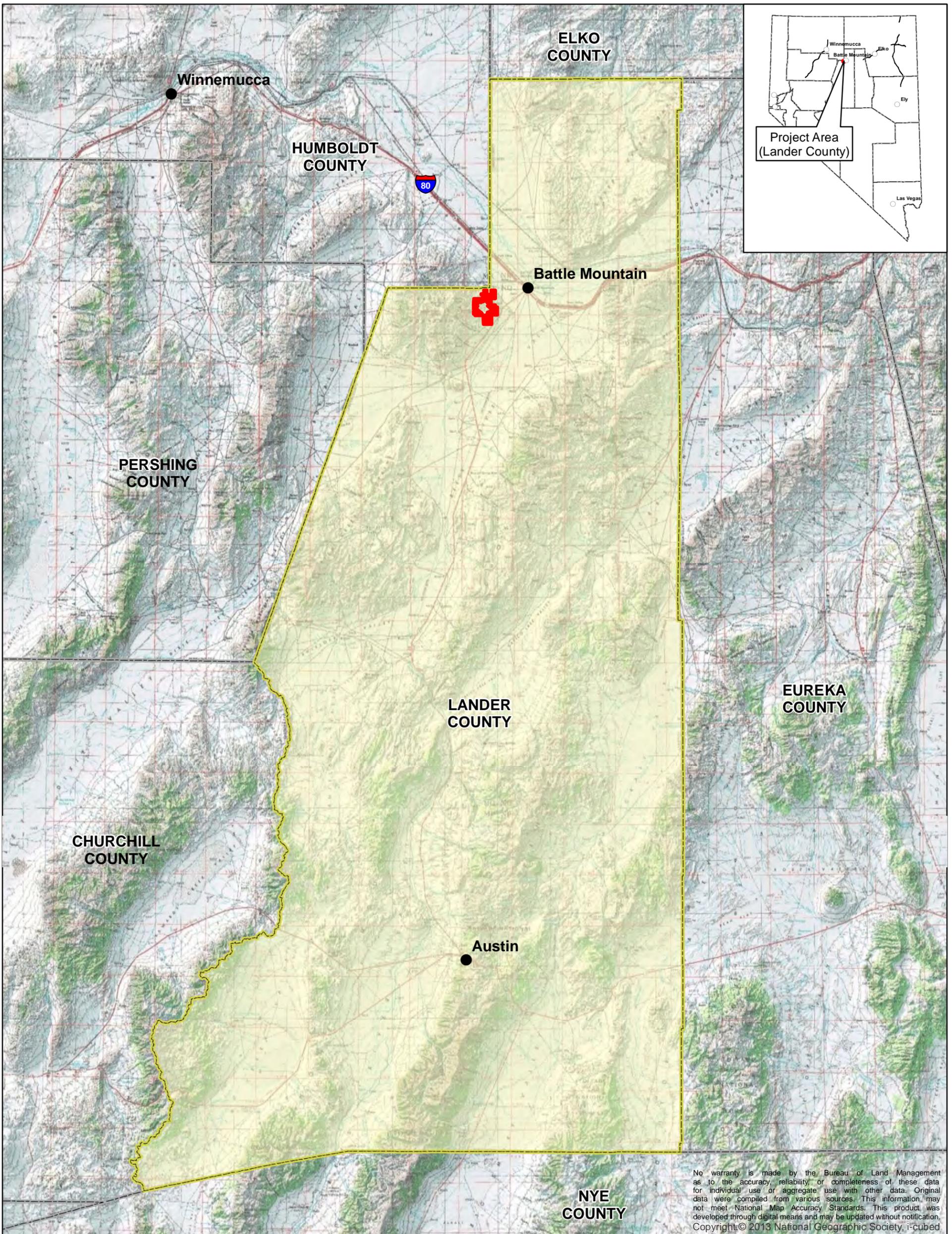
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Cummulative Effects Study Area

Figure 4.2.1

09/13/2013



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Explanation

- Project Boundary
- Social Values and Economics CESA
- County



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**Social Values and Economics
 CESA Map**

Figure 4.2.2

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4.2.1.1 Past and Present Actions

Past and present actions in the five CESAs include the following: wildland fires; mineral exploration and mining; and other non-mining activities including utility corridors, state highways, roads, railroad stations, oil and gas pipelines, mineral material disposal sites, ROWs, the Town of Battle Mountain, and other public land authorizations.

Wildland Fires

There was one fire that has burned 11.6 acres of the Project Area. The BLM has identified that several fires occur within each CESA. The total acreages of fires may include areas outside of the CESA boundaries. Fires that occur in one CESA may also occur in others as well. The wildland fire disturbance in the CESAs are shown on Figure 4.2.1. The total number of fires and acres burned in each CESA is shown in Table 4.2-2 below.

Table 4.2-2: Wildland Fires within CESAs

CESA	Number of Fires	Total Acres Burned
Rangeland Management	11	55,088
Wildlife	4	5,710
Recreation	6	5,912
Cultural Resources	29	228,449

Rights-of-Way

The LR2000 database that is maintained by the BLM was queried by Township, Range and Section to show the past and present ROWs that have been approved within the Wildlife, Recreation, Rangeland Management, and Cultural CESAs. These ROWs include the following: telecommunications; power transmission; roads and highways; oil and gas pipelines; communication sites; irrigation and water facilities; wind projects; mineral material disposal sites; railroad stations; and other ROWs. The approximate total acreage of existing and approved ROWs within each CESA is listed in Table 4.2-3. The exact acreage of surface disturbance associated with these ROWs cannot be quantified; however, it is assumed that these types of ROWs and the construction and maintenance associated with these facilities would create a level of surface disturbance that would contribute to cumulative impacts to various resources. In addition, certain types of ROWs can fragment habitat or create barriers or hazards for wildlife passage. The LR2000 database was queried on May 21, 2013 for the Wildlife CESA; May 22, 2013 for the Rangeland Management CESA; June 4, 2013 for the Cultural Resources CESA; and June 5, 2013 for the Recreation CESA. Any newly approved ROWs that have been added to the LR2000 database after these dates are not included in the analysis.

Table 4.2-3: Past and Present Rights-of-Way Acres in the CESAs

ROW Type	Wildlife CESA (acres)	Recreation CESA (acres)	Rangeland Management CESA (acres)	Cultural Resources CESA (acres)
Roads and Highways	1,744	899	1,698	2,108
Telecommunications	1,421	1,379	1,750	1,463

ROW Type	Wildlife CESA (acres)	Recreation CESA (acres)	Rangeland Management CESA (acres)	Cultural Resources CESA (acres)
Power Transmission	2,086	1,166	4,713	4,996
Communication Sites	18	150	48	49
Oil and Gas Pipelines	279	278	1	284
Irrigation/Water Facilities and Pipelines	71	39	809	872
Mineral Material Disposal Sites	2,183	962	1,454	1,996
Wind Energy Facilities	0	0	0	3
Railroad Station	0	0	613	613
Other	87	80	87	92
Total	7,889	4,953	11,173	12,476

Mineral Exploration and Mining

The LR2000 database was queried by Township, Range, and Section to show the past and present mineral exploration or mining activities (i.e., authorized Notices, closed Notices, and authorized and closed plans of operation) that have been issued within the four CESAs. Past and present mineral exploration and mining activities in the Wildlife, Recreation, Rangeland Management, and Cultural Resources CESAs include historic exploration and mining operations. Table 4.2-4 shows the results of the LR2000 query, in acres, of the exploration and mining activities within each CESA. The LR2000 database was queried on May 21, 2013 for the Wildlife CESA; May 22, 2013 for the Rangeland Management CESA; June 4, 2013 for the Cultural Resources CESA; and June 5, 2013 for the Recreation CESA. Any newly authorized Notices or plans of operation that have been added to the LR2000 database after these dates are not included in the analysis. These activities include mineral exploration activities currently being conducted by Newmont within the Project Area that consists of authorization to disturb up to 7.9 acres. There are several other gold mines in proximity to the Project Area. The active Newmont Phoenix and Goldcorp’s Marigold Mines, the idle Newmont Treton Mine, and Newmont’s Buffalo Valley Mine are shown on Figure 4.2.1. Other recently authorized projects in the vicinity of the Project Area include the Cove-Helen Underground Mine Project.

Past mining operations also include copper and gold mining in the Copper Basin area southwest of Battle Mountain, the Hilltop Barite Mine east of Battle Mountain, the Hilltop Gold Mine, and the Betty O’Neal/Marysville Mine at Mount Lewis.

Table 4.2-4: Past and Present Minerals Disturbance Acres in the CESAs

CESA	Authorization Status	Total Acres of Disturbance
Wildlife CESA	Closed Notices (221)	368
	Authorized Notices (8)	22
	Authorized and Closed Plans of Operation (18)	13,635

CESA	Authorization Status	Total Acres of Disturbance
	Wildlife CESA Total	14,025
Recreation CESA	Closed Notices (113)	191
	Authorized Notices (5)	15
	Authorized and Closed Plans of Operation (11)	4,896
	Recreation CESA Total	5,102
Rangeland Management CESA	Closed Notices (274)	447
	Authorized Notices (11)	36
	Authorized and Closed Plans of Operation (25)	22,464
	Rangeland CESA Total	22,947
Cultural Resources CESA	Closed Notices (332)	529
	Authorized Notices (12)	38
	Authorized and Closed Plans of Operation (23)	22,289
	Cultural CESA Total	22,856

Recreation

Historical and present recreational activities that have occurred within the Recreation CESA include hunting, fishing, camping, mountain biking, and other dispersed recreation activities. Within the Recreation CESA, there are approximately 29.6 miles of the Copper Basin Mountain Bike Trails. Dispersed recreation sites within this CESA include Galena Canyon and the ghost town of Galena, Lewis Canyon and Mount Lewis. The activities have the potential to impact wildlife habitat, water quality, and air quality. Figure 3.2.10 displays the trail systems.

4.2.1.1 Reasonably Foreseeable Future Actions

RFFAs in the CESAs include livestock grazing, wildland fires, wildlife and game habitat management, ROW maintenance, mineral exploration and mining, state highways, roads, material sites, other public land authorization, and recreation. Pending mining projects in these CESAs include the Independence Mine, and the Buffalo Valley Mine.

4.3 Evaluation of Potential Cumulative Impacts

4.3.1 Cultural Resources

The CESA for cultural resources in the Cultural Resources CESA, which includes approximately 686,442 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past and present actions that could have impacted cultural resources include wildland fires, wildlife habitat management, utility and other ROWs, mineral exploration, mining, livestock grazing, and recreation. Some past mining operations have become cultural sites, which increases the number of cultural resources.

Authorized and closed mineral exploration and mining Notices and plans of operation total approximately 22,856 acres (approximately three percent of the CESA) of surface disturbance. Approximately 12,476 acres of ROWs were issued within the Cultural Resources CESA that had the potential to create surface disturbance that would impact cultural resources.

RFFAs: Potential impacts to cultural resources from grazing, recreation, new roads, ROWs, and mineral activities could occur. There is no way to quantify the potential impacts to cultural resources within the CESA as a result of recreation. There are four pending ROW projects reported in LR2000 in the Cultural Resources CESA for a total of 13 acres. Pending material sites contribute to approximately 50 acres within the Cultural Resources CESA. There are approximately 2,085 acres of pending mineral projects. All pending mineral project are required to incorporate protection measures for cultural resources and therefore, would not be expected to directly impact cultural resources.

4.3.1.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 37,480 acres, which is an impact to approximately five percent of the CESA (686,442 acres). The Proposed Action (200 acres) would impact approximately 0.03 percent of the CESA. Due to the small impact within the CESA, the impacts to cultural resources from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the implementation of environmental protection measures outlined in Section 2.1.13. Based on the above analysis and findings, incremental impacts to cultural resources as a result of the Proposed Action, when compared with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.1.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 37,480 acres, which is an impact to approximately five percent of this CESA. This alternative (7.9 acres) would impact less than 0.001 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to cultural resources from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.2 Migratory Birds

The CESA for migratory birds is the Wildlife CESA, which includes approximately 234,771 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past and present actions that could have impacted migratory birds include wildland fires, wildlife habitat management, utility and other ROWs, mineral exploration, mining, livestock grazing, and recreation. Impacts to migratory birds could have resulted from the following: 1) destruction of habitat associated with building roads and clearing vegetation; 2) disruption from human presence or noise from drill rigs, water trucks, and four

wheel drive pickups; or 3) direct impacts or harm to migratory birds that would result if trees and shrubs containing viable nests were cut down or ground nests destroyed by construction or ranching equipment. Impacts to migratory birds from recreation activities would include destruction of native vegetation or nesting areas from off-road vehicles that traveled off established roadways. Impacts to migratory birds from livestock grazing include trampling of vegetation or nesting areas near streams, springs, or riparian areas within the Wildlife CESA.

Historic fires (1910–2012) have burned approximately 5,710 acres in this CESA (approximately two percent of the CESA). Authorized and closed mineral exploration and mining Notices and Plans of Operation total approximately 14,025 acres (approximately six percent of the CESA) of surface disturbance. Approximately 7,889 acres of ROWs were issued within the Wildlife CESA that had the potential to create surface disturbance and disturb migratory bird habitat and vegetation. The Wildlife CESA includes portions of the North Buffalo, Copper Canyon, and Buffalo Valley Grazing Allotments. Livestock grazing and associated management contributes to the spread of invasive species which can have an indirect effect on migratory birds. However, disturbance to migratory birds from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species. The past and present actions that are quantifiable have disturbed approximately nine percent of the CESA. There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have naturally revegetated over time.

RFFAs: Potential impacts to migratory birds from grazing, recreation, new roads, ROWs, mineral activities, or loss of native vegetation associated with potential wildland fires could occur. There is no way to quantify acreage of potential impacts to migratory birds or their habitat within the CESA as a result of dispersed recreation, grazing, or potential wildland fires. There are three pending ROW projects reported in LR2000 in the Wildlife CESA for a total of 13 acres. There are approximately 1,666 acres of pending minerals projects. All pending minerals projects are required to incorporate protection measures for migratory birds and therefore not expected to directly harm migratory birds, but may result in habitat removal or alteration.

4.3.2.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 23,593 acres, which is an impact to approximately ten percent of the CESA (234,771 acres). The Proposed Action (200 acres) would impact approximately 0.09 percent of the CESA. Due to the small impact within the CESA, the impacts to migratory birds from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures outlined in Section 2.1.13. Based on the above analysis and findings, incremental impacts to migratory birds as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.2.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 23,593 acres, which is an impact to approximately ten percent of this CESA. This alternative (7.9 acres) would impact approximately 0.001 percent of this CESA. Due to the small impact

within this CESA, the incremental cumulative impacts to migratory birds from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.3 Noxious Weeds, Invasive and Non-native Species

The CESA for Noxious Weeds, Invasive and Non-native Species is the Rangeland Management CESA, which includes approximately 344,833 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past actions that could have impacted rangeland management include wildland fires, livestock grazing, mineral exploration and mining, ROW construction and maintenance, and recreation.

Historic fires (1910–2012) have burned approximately 55,088 acres in this CESA (approximately 16 percent of the CESA). Authorized and closed mineral exploration and mining Notices or Plans of Operation total approximately 22,947 acres of surface disturbance (approximately seven percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have been naturally revegetated over time. Approximately 11,173 acres of ROWs were issued within the CESA that had the potential to create surface disturbance. The Rangeland Management CESA encompasses the North Buffalo, Copper Canyon and Buffalo Valley Grazing Allotments, and livestock grazing and associated management likely contributes to changes in vegetation structure and the spread of invasive species.

RFFAs: Potential impacts to rangeland management could result from grazing, recreation, wildfires, ROWs, and mineral activities. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 1,985 acres of pending minerals projects were reported in the LR2000 database within the Rangeland Management CESA, and approximately nine acres of pending ROW projects. Impacts to rangeland management from the potential impacts from recreation, grazing, and wildland fires could include the removal of vegetation and compaction, mixing, and erosion of soils, and changes in plant community structure and diversity.

4.3.3.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 36,114 acres, which is an impact to approximately ten percent of the CESA (344,833 acres). The Proposed Action (200 acres) would impact approximately 0.06 percent of the CESA. Due to the small impact within the CESA, the impacts to rangeland management from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures outlined in Section 2.1.13. Based on the above analysis and findings, incremental impacts to rangeland management as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.3.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 36,114 acres, which is an impact to approximately ten percent of this CESA. This alternative

(7.9 acres) would impact approximately 0.007 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to rangeland management from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.4 Rangeland Management

The CESA for Rangeland Management is the Rangeland Management CESA, which includes approximately 344,833 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past actions that could have impacted rangeland management include wildland fires, livestock grazing, mineral exploration and mining, ROW construction and maintenance, and recreation.

Historic fires (1910–2012) have burned approximately 55,088 acres in this CESA (approximately 16 percent of the CESA). Authorized and closed mineral exploration and mining Notices or Plans of Operation total approximately 22,947 acres of surface disturbance (approximately seven percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have been naturally revegetated over time. Approximately 11,173 acres of ROWs were issued within the CESA that had the potential to create surface disturbance. The Rangeland Management CESA encompasses the North Buffalo, Copper Canyon and Buffalo Valley Grazing Allotments, and livestock grazing and associated management likely contributes to changes in vegetation structure and the spread of invasive species.

RFFAs: Potential impacts to rangeland management could result from grazing, recreation, wildfires, ROWs, and mineral activities. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 1,985 acres of pending minerals projects were reported in the LR2000 database within the Rangeland Management CESA, and approximately nine acres of pending ROW projects. Impacts to range resources from the potential impacts from dispersed recreation, grazing, and wildland fires could include the removal of vegetation and compaction, mixing, and erosion of soils, and changes in plant community structure and diversity.

4.3.4.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 36,114 acres, which is an impact to approximately ten percent of the CESA (344,833 acres). The Proposed Action (200 acres) would impact approximately 0.06 percent of the CESA. Due to the small impact within the CESA, the impacts to rangeland management from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures outlined in Section 2.1.13.

4.3.4.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 36,114 acres, which is an impact to approximately ten percent of this CESA. This alternative (7.9 acres) would impact approximately 0.007 percent of this CESA. Due to the small impact

within this CESA, the incremental cumulative impacts to rangeland management from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.5 Recreation

The CESA for recreation is the Recreation CESA, which includes approximately 155,104 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past actions that could have impacted vegetation include wildland fires, livestock grazing, mineral exploration and mining, ROW construction and maintenance, and recreation.

Historic fires (1910–2012) have burned approximately 5,912 acres in this CESA (approximately four percent of the CESA). Authorized and closed mineral exploration and mining Notices or Plans of Operation total approximately 5,102 acres of surface disturbance (approximately three percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have been naturally revegetated over time. Approximately 4,953 acres of ROWs were issued within the CESA that had the potential to create surface disturbance.

RFFAs: Potential impacts to vegetation could result from grazing, recreation, roads, wildfires, ROWs, and mineral activities. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 116 acres of pending minerals projects were reported in the LR2000 database within the Recreation CESA, and approximately eight acres of pending ROW projects.

4.3.5.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 10,179 acres, which is an impact to approximately seven percent of the CESA (155,104 acres). The Proposed Action (200 acres) would impact approximately 0.1 percent of the CESA. Due to the small impact within the CESA, the impacts to vegetation from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures outlined in Section 2.1.13.

Although the cumulative surface disturbance would be considerably greater than the direct disturbance from the proposed project, the vast acreage of public lands in the CESA would be more than sufficient to accommodate dispersed recreation activities displaced by past and present actions and RFFAs within the CESA. Cumulative development has adversely impacted both small and big game populations as a result of displacement, some of which has been, or would be, short-term in nature. Cumulative development also has resulted in increased access to public lands from the construction of roads, which could be considered beneficial to hunting opportunities.

The Proposed Action would contribute to a cumulative disturbance of the Copper Mountain Bike Trails. The Proposed Action could temporarily impact 7.2 miles of the Copper Mountain Bike Trails (29.6 miles total), approximately 24 percent of the Copper Basin Bike Trails within the CESA. Newmont has committed to positioning active drilling equipment so that mountain bike

trails would only be temporarily impacted and mountain bikers would be allowed ingress and egress to trails. In addition, not all trails would be impacted at the same time.

The Proposed Action could result in a minor short-term incremental increase in cumulative effects for developed recreational facilities. It is not known at this time whether the RFFAs would result in a substantial increase in local population such that demand would exceed the current supply of developed recreation facilities. If the cumulative demand for developed recreational opportunities were to exceed the available supply, additional facilities would need to be developed.

4.3.5.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 10,179 acres, which is an impact to approximately seven percent of this CESA. This alternative (7.9 acres) would impact less than 0.005 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to recreation from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.6 **Social Values and Economics**

The CESA for social values and economics is the Social Values and Economics CESA, or Lander County, which encompasses approximately 3,529,614 acres and is shown on Figure 4.2.2.

Past and Present Actions: Past and present actions within the Social Values and Economics CESA include the following: grazing and agriculture; utilities and infrastructure; wildland fires; recreation; and mineral development and exploration. Impacts to social values and economics from these activities include increased population, increased demand for public services, increased employment opportunities, increased revenues within the CESA, and increased expenditures by the communities within the CESA. The extent of these impacts vary with the type of activity and have not been quantified; however, the majority of these impacts from past and present activities do not have any ongoing impacts and are considered to be part of the existing social and economic climate within the CESA. Mining projects play an important role in the social and economic climate in the CESA, with employees traveling 50 miles or more from their residence to a potential job site. Some of the major mines and exploration projects within this 50-mile traveling radius include the following: the Pipeline/South Pipeline Pit Expansion; Twin Creeks Mine; Gold Quarry Mine; Barrick Goldstrike Mine; Marigold Mine; Cove-Helen Underground Mine Project; and Genesis-Bluestar Mine.

RFFAs: Social values and economic impacts would result from the following RFFAs: grazing and agriculture; utilities and infrastructure; wildland fires; recreation; and mineral development and exploration. Specific mineral development projects that are planned within the CESA include the Buffalo Valley Mine Project and the Independence Mine.

4.3.6.1 Proposed Action

The identified projects within the CESA, including the Proposed Action, would have an impact on social values and economics. The Proposed Action would employ up to approximately 22 individuals, and is expected to have a duration of approximately ten years. Based on the

short-term duration of the Project and the relatively small number of anticipated employees, and combined with the past and present actions and the RFFAs in the CESA, cumulative impacts from the Proposed Action are anticipated to be minimal.

4.3.6.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be approved and ongoing mineral exploration activities in the Project Area would continue. The cumulative impacts resulting from the No Action Alternative would be less than those associated with the Proposed Action because the authorized operations would result in the need for fewer employees than the Proposed Action.

4.3.7 Soils

The CESA for soils is the Rangeland Management CESA, which includes approximately 344,833 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past and present actions that could have impacted soils include livestock grazing, fire management, mineral exploration and mining, ROW construction and maintenance, and recreation that disturbed or impacted soils, or that increased erosion or sedimentation. Soil disturbance may also have been associated with wildland fires; however, fire rehabilitation and natural revegetation have potentially occurred, stabilizing soil loss. Impacts from these activities include loss of soils productivity due to changes in soil physical properties, soil fertility, soil movement in response to water and wind erosion, and loss of soil structure due to compaction.

Historic fires (1910–2012) have burned approximately 55,088 acres in this CESA (approximately 16 percent of the CESA). Authorized and closed mineral exploration and mining Notices or Plans of Operation total approximately 22,947 acres of surface disturbance (approximately seven percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have been naturally revegetated over time. Approximately 11,173 acres of ROWs were issued within the CESA that had the potential to create surface disturbance. The Rangeland Management CESA encompasses the North Buffalo, Copper Canyon and Buffalo Valley Grazing Allotments, and livestock grazing and associated management likely contributes to changes in vegetation structure and the spread of invasive species.

RFFAs: Potential impacts to rangeland management could result from grazing, recreation, wildfires, ROWs, and mineral activities. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 1,985 acres of pending mineral projects were reported in the LR2000 database within the Rangeland Management CESA, and approximately nine acres of pending ROW projects. Impacts to soils from the potential impacts from recreation, grazing, and wildland fires could include the removal of vegetation and compaction, mixing, and erosion of soils, and changes in plant community structure and diversity.

4.3.7.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 36,114 acres, which is an impact to approximately ten percent of the CESA (344,833 acres). The Proposed Action (200 acres) would impact approximately 0.06 percent of the CESA. Due to the small impact within the CESA, the impacts to migratory birds from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures outlined in Section 2.1.13. Based on the above analysis and findings, incremental impacts to soils as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.7.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 36,114 acres, which is an impact to approximately ten percent of this CESA. This alternative (7.9 acres) would impact approximately 0.002 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to soils from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.8 Special Status Species

The CESA for special status species is the Wildlife CESA, which includes approximately 234,771 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past and present actions that could have impacted special status species include wildland fires, wildlife habitat management, utility and other ROWs, mineral exploration, mining, livestock grazing, and dispersed recreation. These activities had the potential to have impacted water resources and wildlife habitat, or result in direct impacts to individuals in travel routes. Impacts to special status species from these activities include loss of forage, cover, and habitat, as well as disturbance of mating and brood rearing practices.

Historic fires (1910–2012) have burned approximately 5,710 acres in this CESA (approximately two percent of the CESA). Authorized and closed mineral exploration and mining Notices and Plans of Operation total approximately 14,025 acres (approximately six percent of the CESA) of surface disturbance. Approximately 7,889 acres of ROWs were issued within the Wildlife CESA that had the potential to create surface disturbance and disturb special status species habitat and vegetation. The Wildlife CESA includes portions of the North Buffalo, Copper Canyon, and Buffalo Valley Grazing Allotments. Livestock grazing and associated management contributes to the spread of invasive species which can have an indirect effect on special status species. However, disturbance to special status species from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species. The past and present actions that are quantifiable have disturbed approximately ten percent of the CESA. There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have naturally revegetated over time. There are no specific data that quantify the acreage of impacts to special status species habitat that have resulted from grazing or dispersed recreation within the CESA. Disturbance to special status species habitat from past and present actions may have been reduced through reclamation and

seeding of disturbed areas and natural recolonization of native species; however, reclamation activities did not necessarily always occur on old mine sites, resulting in continued impacts to special status species.

RFFAs: Potential impacts to special status species from grazing, recreation, roads, ROWs, mineral activities, or loss of native vegetation associated with potential wildland fires could occur. There is no way to quantify acreage of potential impacts to migratory birds or their habitat within the CESA as a result of recreation, grazing, or potential wildland fires. Impacts associated with RFFAs would be similar to impacts described for past and present actions. There are three pending ROW projects reported in LR2000 in the Wildlife CESA for a total of 13 acres. There are approximately 1,666 acres of pending minerals projects. Pending minerals projects all are required to incorporate protection measures and mitigation measures for special status species, which would reduce any cumulative impacts to special status species.

4.3.8.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 23,593 acres, which is an impact to approximately ten percent of the CESA (234,771 acres). The Proposed Action (200 acres) would impact approximately 0.09 percent of the CESA. Due to the small impact within the CESA, the impacts to special status species from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11. Based on the above analysis and findings, incremental impacts to special status species as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.8.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 23,593 acres, which is an impact to approximately ten percent of this CESA. This alternative (7.9 acres) would impact approximately 0.003 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to special status species from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.9 **Vegetation**

The CESA for vegetation is the Rangeland Management CESA, which consists of the North Buffalo, Copper Canyon, and Buffalo Valley Allotments, encompasses approximately 344,833 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past and present actions that could have impacted vegetation include livestock grazing, fire management, mineral exploration and mining, ROW construction and maintenance, and recreation that disturbed or impacted vegetation, or that increased erosion or sedimentation. Vegetation disturbance may also have been associated with wildland fires; however, fire rehabilitation and natural revegetation have potentially occurred, stabilizing soil loss. Impacts from these activities include loss of soils productivity due to changes in soil physical properties, soil fertility, soil movement in response to water and wind erosion, and loss of soil structure due to compaction.

Historic fires (1910–2012) have burned approximately 55,088 acres in this CESA (approximately 16 percent of the CESA). Authorized and closed mineral exploration and mining Notices and Plans of Operation total approximately 22,947 acres of surface disturbance (approximately seven percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have been naturally revegetated over time. Approximately 11,173 acres of ROWs were issued within the CESA that had the potential to create surface disturbance. The Rangeland Management CESA is located within the North Buffalo, Copper Canyon and Buffalo Valley Grazing Allotments, and livestock grazing and associated management likely contributes to changes in vegetation structure and the spread of invasive species.

RFFAs: Potential impacts to rangeland management could result from grazing, dispersed recreation, wildfires, ROWs, and mineral activities. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 1,985 acres of pending minerals projects were reported in the LR2000 database within the Rangeland Management CESA, and approximately nine acres of pending ROW projects. Impacts to vegetation from the potential impacts from recreation, grazing, and wildland fires could include the removal of vegetation and compaction, mixing, and erosion of soils, and changes in plant community structure and diversity.

4.3.9.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 36,114 acres, which is an impact to approximately ten percent of the CESA (344,833 acres). The Proposed Action (200 acres) would impact approximately 0.06 percent of the CESA. Due to the small impact within the CESA, the impacts to vegetation from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures outlined in Section 2.1.13. Based on the above analysis and findings, incremental impacts to vegetation as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.9.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 36,114 acres, which is an impact to approximately ten percent of this CESA. This alternative (7.9 acres) would impact approximately 0.004 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to vegetation from this alternative in combination with past and present actions and RFFAs would be minimal.

4.3.10 **Visual Resources**

The Project Area has been mined previously and has obvious existing disturbance that currently affects the line, color, texture, and form of the landscape. The additional impacts anticipated from the Proposed Action, as described in section 3.2.15, would be minimal when added to the existing visual disturbances in the area.

4.3.11 Wildlife

The CESA for wildlife is the Wildlife CESA, which includes approximately 234,771 acres and is shown on Figure 4.2.1.

Past and Present Actions: Past and present actions that could have impacted wildlife include wildland fires, wildlife habitat management, utility and other ROWs, mineral exploration, mining, livestock grazing, and recreation. Impacts to wildlife could have resulted from the following: 1) destruction of habitat associated with building roads and clearing vegetation; 2) disruption from human presence or noise from drill rigs, water trucks, and four wheel drive pickups; or 3) direct impacts or harm to wildlife that would result if trees and shrubs containing viable nests were cut down or ground nests destroyed by construction or ranching equipment. Impacts to wildlife from recreation activities would include destruction of native vegetation or nesting areas from off-road vehicles that traveled off established roadways. Impacts to wildlife from livestock grazing include trampling of vegetation or nesting areas near streams, springs, or riparian areas within the Wildlife CESA.

Historic fires (1910–2012) have burned approximately 5,710 acres in this CESA (approximately two percent of the CESA). Authorized and closed mineral exploration and mining Notices and plans of operation total approximately 14,025 acres (approximately six percent of the CESA) of surface disturbance. Approximately 7,889 acres of ROWs were issued within the Wildlife CESA that had the potential to create surface disturbance and disturb wildlife habitat and vegetation. The Wildlife CESA includes portions of the North Buffalo, Copper Canyon, and Buffalo Valley Grazing Allotments. Livestock grazing and associated management contributes to the spread of invasive species which can have an indirect effect on wildlife. However, disturbance to wildlife from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species. The past and present actions that are quantifiable have disturbed approximately ten percent of the CESA. There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have naturally revegetated over time.

RFFAs: Potential impacts to wildlife from grazing, recreation, roads, ROWs, mineral activities, or loss of native vegetation associated with potential wildland fires could occur. There is no way to quantify acreage of potential impacts to wildlife or their habitat within the CESA as a result of recreation, grazing, or potential wildland fires. There are three pending ROW projects reported in LR2000 in the Wildlife CESA for a total of 13 acres. There are approximately 1,666 acres of pending minerals projects. All pending minerals projects are required to incorporate protection measures for migratory birds and therefore not expected to directly harm wildlife, but may result in habitat removal or alteration.

4.3.11.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 23,593 acres, which is an impact to approximately ten percent of the CESA (234,771 acres). The Proposed Action (200 acres) would impact approximately 0.9 percent of the CESA. Due to the small impact within the CESA, the impacts to wildlife from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.11 and the environmental protection measures

outlined in Section 2.1.13. Based on the above analysis and findings, incremental impacts to wildlife as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

4.3.11.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 23,593 acres, which is an impact to approximately ten percent of this CESA. This alternative (7.9 acres) would impact approximately 0.004 percent of this CESA. Due to the small impact within this CESA, the incremental cumulative impacts to wildlife from this alternative in combination with past and present actions and RFFAs would be minimal.

5 CONSULTATION AND COORDINATION

This EA was prepared at the direction of the BLM MLFO, Battle Mountain District, Nevada, by Enviroscientists, Inc., under a contract with Newmont. The following is a list of persons, groups, and agencies consulted, as well as a list of individual responsible for the preparation of this EA.

5.1 Persons, Groups, and Agencies Consulted

Federal Agencies

Marcy Haworth (for Catrina Martin), USFWS

State Agencies

Eric Miskow, NNHP
Timothy Herrick, NDOW
Todd Suessmith, NDEP BMR

Native Americans

Te-Moak Tribe of Western Shoshone
Te-Moak Tribe of Western Shoshone
Battle Mountain Band Council
Yomba Shoshone Tribe

5.2 List of Preparers and Reviewers

Bureau of Land Management, MLFO

Joseph Moskiewicz	NEPA Compliance, Environmental Justice, Social Values and Economics
David Djikine	Mining Engineer, Native American Religious Concerns and Consultation, Geology and Minerals
Jon Sherve	Native American Religious Concerns and Consultation
Cheryl LaRoque	Wastes, Hazardous and Solid
Adam Cochran	Rangeland Management, Vegetation, Soils
Kent Bloomer	Noxious Weeds, Invasive and Non-native Species
Jon Kramer	Lands and Realty
Chris Kula	Wildlife, Migratory Birds, Special Status Species
Ethan Ellsworth	Wildlife, Migratory Birds, Special Status Species
Kat Russell	Cultural Resources, Paleontology
Ethan Arky	Recreation, Wilderness Characteristics Inventory
Alden Shallcross	Floodplains, Wetlands, Riparian
Dorothy Harvey	Public Outreach

Enviroscientists, Inc.

Rich DeLong	Project Principal
Opal Adams	Project Manager, Visual Resources, Paleontology
Kaitlin Sweet	Geology and Minerals, Soils
Catherine Lee	Social and Economic Values, Recreation, Editing

Daniel Robison	Wildlife, Special Status Species, Noxious Weeds, Invasive and Non-native Species, Migratory Birds
Jess Kohler	GIS Specialist

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APPENDIX A

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date : June 13, 2013

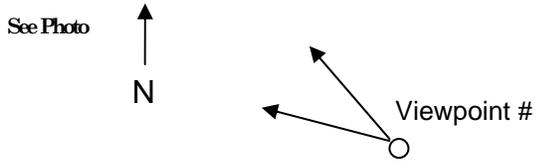
District: Battle Mountain/Mt. Lewis Field Office

Resource Area: Eureka-Shoshone RMP

Activity (program): 43 CFR 3809

VISUAL CONTRAST RATING WORKSHEET

SECTION A. PROJECT INFORMATION

1. Project Name: Copper Basin Exploration Project	4. Location	5. Location Sketch: 501142E 4495715N See Photo 
	Township 32North	
	Range 44East	
2. Photo Viewpoint: # 1	Section 26	
3. VRM Class: Class IV		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	FG- flat MG- flat BG- rolling, moderately steep	FG- sparse to uniform MG- uniform BG- uniform to patchy	FG- vertical and S shaped road MG- horizontal to angular roads BG- horizontal roads
LINE	FG- vertical to S shaped MG- horizontal BG- angular - horizontal-undulating	FG- horizontal to indistinct MG- horizontal BG- undulating to horizontal	FG- S shaped MG- horizontal BG- horizontal to slightly diagonal
COLOR	FG- gray - tan MG- gray to sage green BG- brown to tan	FG- light tan MG- sage green BG- brown	FG- gray MG- gray to tan BG- tan
TEXTURE	FG- fine to coarse grained MG- medium to coarse grained BG- fine grained	FG- fine to medium grained MG- coarse to medium grained BG- fine grained	FG- coarse grained MG- fine grained BG- fine grained

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	FG- flat MG- flat BG- rolling, moderately steep	FG- sparse to uniform MG- uniform BG- uniform to patchy	FG- vertical and S shaped road MG- horizontal to angular roads BG- horizontal roads
LINE	FG- vertical to S shaped MG- horizontal BG- angular - horizontal-undulating	FG- horizontal to indistinct MG- horizontal BG- undulating to horizontal	FG- S shaped MG- horizontal BG- horizontal to slightly diagonal
COLOR	FG- gray - tan MG- gray to sage green BG- brown to tan	FG- light tan MG- sage green BG- brown	FG- gray MG- gray to tan BG- tan
TEXTURE	FG- fine to coarse grained MG- medium to coarse grained BG- fine grained	FG- fine to medium grained MG- coarse to medium grained BG- fine grained	FG- coarse grained MG- fine grained BG- fine grained

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1.	DEGREE OF CONSTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
					X				X				X	
					X				X				X	
ELEMENTS	Form				X				X				X	3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)
	Line				X				X				X	
	Color				X				X				X	
	Texture				X				X				X	
Evaluator's Names												Date		
Opal Adams												6/13/2013		
Photos taken by Richard DeLong														

SECTION D. (Continued)

Comments from item 2.

There is existing similar disturbance to the proposed activities in the form of previous exploration activity, access roads, and exploration roads. The new exploration activities will be similar in that exploration roads will be linear and horizontal to vertical. The exploration activities will also be temporary and disturbance will be reclaimed when no longer needed. The disturbance will look the same as the existing landscape. Therefore, the Project will meet the VRM Class IV objectives, and there is no need for further mitigation.



Additional Mitigating Measures (See item 3)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

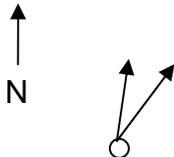
Date : June 13, 2013

District: Battle Mountain District Office
Mt. Lewis Field Office

Resource Area: Eureka-Shoshone RMP

Activity (program): 43 CFR 3809

SECTION A. PROJECT INFORMATION

1. Project Name: Copper Basin Exploration Project	4. Location Township 31 North Range 44 East Section 4	5. Location Sketch: 497972E 4493259N See Photo 
2. Photo Viewpoint: # 2		
3. VRM Class: Class IV		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	FG- flat MG- flat BG- rolling, moderately steep	FG- bold, rounded MG- bold to patchy BG- indistinct to patchy	FG- angular road MG- angular linear fence w/ vertical posts BG- horizontal to vertical roads
LINE	FG- horizontal - angular MG- horizontal BG- angular - horizontal knobby	FG- angular MG- horizontal BG- undulating to horizontal	FG- angular MG- angular linear fence w/ vertical posts BG- horizontal to vertical
COLOR	FG- gray - tan, sage green MG- gray - tan, sage green BG- brown, beige, tan	FG- sage to medium green MG- sage to medium green BG- gray to dark gray	FG- gray MG- dark brown to black BG- tan to green to white
TEXTURE	FG- medium to coarse grained MG- fine to medium to coarse grained BG- fine grained	FG- coarse grained MG- coarse to medium grained BG- fine grained	FG- coarse grained MG- fine grained BG- fine grained

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	FG- flat MG- flat BG- rolling, moderately steep	FG- bold, rounded MG- bold to patchy BG- indistinct to patchy	FG- angular road MG- angular linear fence w/ vertical posts BG- horizontal to vertical roads
LINE	FG- horizontal - angular MG- horizontal BG- angular - horizontal knobby	FG- angular MG- horizontal BG- undulating to horizontal	FG- angular MG- angular linear fence w/ vertical posts BG- horizontal to vertical
COLOR	FG- gray - tan, sage green MG- gray - tan, sage green BG- brown, beige, tan	FG- sage to medium green MG- sage to medium green BG- gray to dark gray	FG- gray MG- dark brown to black BG- tan to green to white
TEXTURE	FG- medium to coarse grained MG- fine to medium to coarse grained BG- fine grained	FG- coarse grained MG- coarse to medium grained BG- fine grained	FG- coarse grained MG- fine grained BG- fine grained

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

1.	DEGREE OF CONSTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
					X				X				X	
					X				X				X	
ELEMENTS	Form				X				X				X	3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)
	Line				X				X				X	
	Color				X				X				X	
	Texture				X				X				X	
Evaluator's Names												Date		
Opal Adams												6/13/2013		
Photos taken by Richard DeLong														

Comments from item 2.

There is existing similar disturbance to the proposed activities in the form of previous mining activity, mine roads, access roads, and exploration roads. The new exploration activities will be similar in that exploration roads will be linear and horizontal to vertical. The exploration activities will also be temporary and disturbance will be reclaimed when no longer needed. The disturbance will look the same as the existing landscape. Therefore, the Project will meet the VRM Class IV objectives, and there is no need for further mitigation.



Additional Mitigating Measures (See item 3)