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**Newmont Mining Corporation
Phoenix Mine
Philadelphia Canyon Waste Rock Facility
and Minnie Pit Expansion**

ENVIRONMENTAL ASSESSMENT

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LIST OF ACRONYMS

ABA	Acid Base Accounting
amsl	Above Mean Sea Level
BLM	Bureau of Land Management
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DOI	Department of the Interior
EA	Environmental Assessment
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
KOP	Key Observation Point
MWMP	Meteoric Water Mobility Procedure
NAGPRA	Native American Graves Protection and Repatriation Act
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
PAG	Potentially Acid Generating
PoO	Plan of Operations and Reclamation Plan
RMP	Resource Management Plan
ROD	Record of Decision
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Property
USFWS	U.S. Fish and Wildlife Service
WRF	Waste Rock Facility
WRMaP	Waste Rock Management Plan

CHAPTER 1 INTRODUCTION

1.1 INTRODUCTION

The Phoenix Mine is located in north-central Nevada in Lander County, 12 miles southwest of Battle Mountain (Figure 1). Newmont USA Ltd dba Newmont Mining Corporation (Newmont) proposes to amend the current Phoenix Mine Plan of Operations and Reclamation Plan (PoO). The *Minnie Pit and Philadelphia Canyon Expansion Plan of Operations Amendment Version 4* (Revised March 2010) proposes to (1) expand the Philadelphia Canyon Waste Rock Facility (WRF) both inside and outside the current PoO boundary, (2) deepen, but not widen, the Minnie Pit, and (3) amend the PoO boundary to contain the Philadelphia Canyon WRF expansion. The existing Philadelphia Canyon WRF is located on private land within portions of Sections 22, 23, 26, and 27 within Township 31 North (T31N), Range 43 East (R43E), Mount Diablo Base and Meridian (MDBM). The Minnie Pit is located on both private and public land within portions of Section 27 and 34, T31N, R43E, MDBM (Figures 2 and 3).

Specifically, the Philadelphia Canyon WRF would be expanded by 45.9 acres in two areas (Figure 2). On its east side, the Philadelphia Canyon WRF would be expanded by 39.0 acres on land owned by Newmont, outside the current PoO boundary. On its south side, the WRF would be expanded by 6.9 acres on land owned by Newmont, inside the current PoO boundary. Deepening of the 44-acre Minnie Pit (6.6 acres public/37.4 acres private) would not create new surface disturbance beyond what is currently permitted.

The Philadelphia Canyon WRF and the Minnie Pit are permitted facilities, and their impacts have been previously analyzed. Current operations at the Phoenix Mine were analyzed in the Phoenix Project Final Environmental Impact Statement (Phoenix FEIS) (BLM 2002). After completion of the Phoenix FEIS, the Bureau of Land Management (BLM) prepared a Record of Decision (ROD) approving the Phoenix Project PoO, as modified with mitigation and monitoring requirements (BLM 2003). The ROD authorized 4,295 acres of new disturbance, including the construction of the Philadelphia Canyon WRF. In 2005, the PoO was subsequently amended (Newmont 2005) which was approved through Documentation of National Environmental Policy Act (NEPA) Adequacy in August 2006. This 2005/2006 PoO Amendment allowed the expansion of the Minnie Pit surface disturbance by 7.8 acres (6.7 acres public/1.1 acres private) and the deepening of the pit depth to the 5625 foot elevation. This expansion was to recover ore contained primarily in the high wall that resulted in a 15-foot increase in pit depth.

The BLM has prepared this Environmental Assessment (EA) as part of its decision-making process in consideration of the request to amend the Phoenix Project PoO case file number NVN-067930 (09-3A). Through this decision-making process, BLM meets its obligations under NEPA and respective Department of Interior and agency implementing regulations.

1.2 PURPOSE AND NEED

1.2.1 Agency Purpose and Need

The purpose of the proposed action is to authorize Newmont the ability to exercise their rights under the General Mining Law of 1872 to mine locatable minerals within their approved plan of operations as provided for under the BLM surface management regulations at 43 CFR 3809. The 1872 Mining Law and BLM surface management regulations are described in further detail in Section 1.3.

The need for the proposed action is to respond to a PoO application submitted under 43 CFR 3809 and permit Newmont mining activities in such a manner as to limit impacts to cultural and natural resources in compliance with applicable statutes and regulations and to prevent any undue or unnecessary degradation of public lands as required under FLPMA and the surface management regulations.

The decision to be made by the BLM is to: 1) approve Newmont's PoO as written; or 2) based on the environmental analysis, modify the PoO approval to prevent undue or unnecessary degradation of public lands.

1.2.2 Background

The project is a part of the Phoenix Mine and thus has the same purpose and need stated for the Phoenix Project: "to economically extract recoverable mineral reserves that are known to exist at the Phoenix Mine" needed to "allow continued mining to recover precious metals to meet national and world demands" (BLM 2008). The Phoenix FEIS stated the following economically driven objectives of the project:

- Extract economically recoverable gold, silver, and copper determined to exist in the area.
- Expand existing mining and processing facilities, and construct new facilities.
- Optimize ore recovery and minimize new surface disturbances.

The Philadelphia Canyon WRF expansion is specifically needed to accommodate additional waste rock generated by mining activity authorized in the 2005/2006 PoO Amendment (Newmont 2005). Expansion of the Minnie Pit is needed to mine gold reserves that are known to exist in the Minnie Pit.

1.3 RELATIONSHIP TO PLANNING AND CONFORMANCE WITH PLANS

The BLM is responsible for administering mineral rights access on certain federal lands as authorized by the General Mining Law of 1872. Under the law, qualified prospectors are entitled to reasonable access to mineral deposits on public domain lands that have not been withdrawn from mineral entry.

The BLM has the responsibility and authority to manage the surface and subsurface resources on public lands, and it has designated public lands surrounding the project area as open for mineral

exploration and development. In its Record of Decision for the Shoshone-Eureka Resource Management Plan (BLM 1986), the BLM states in objectives 1.0 and 2.0 under Minerals that it will:

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.”
2. “Assure that mineral exploration, development and extraction are carried out in such a way as to minimize environmental and other resource damage and to provide, where legally possible, for the rehabilitation of lands.”

In order to use public lands managed by BLM, Newmont must comply with the BLM surface management regulations (43 CFR 3809) and other applicable statutes, including the Mining and Mineral Policy Act of 1970, as amended, and the Federal Land Policy Management Act of 1976, as amended. The BLM must review Newmont’s proposal to ensure the following:

- Adequate provisions are included to prevent unnecessary or undue degradation of federal lands and to protect the non-mineral resources of the federal lands.
- Measures are included to provide for reclamation of disturbed areas.
- Compliance with applicable state and federal laws is achieved.

The Proposed Action evaluated in this EA is in conformance with the Shoshone-Eureka Resource Management Plan (RMP) and Record of Decision for the Battle Mountain District (BLM 1984, 1986). The RMP is in compliance with the Federal Land Policy Management Act of 1976, as amended. Although the RMP does not specifically address the action proposed, the project is consistent with the Management Actions and Objectives.

The project does not conflict with any known state or local planning, ordinance, or zoning. The project is consistent with Lander County policy regarding natural resources. Specifically, Policy P2-10 contained in the Lander County Master Plan states, “Exploration for and development of mineral resources in Lander County should be encouraged” (Lander 1997).

CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The proposed PoO amendment (Case File NVN-067930) would allow the following project components (Figures 2 and 3).

1. 45.9-acre expansion of the Philadelphia Canyon WRF in two areas:
 - 39.0 acres within NW¼ Section 26, T31N, R43E. This area is located on private land owned by Newmont outside the current PoO boundary.
 - 6.9 acres within SE¼ Section 27, T31N, R43E. This area is located on private land owned by Newmont inside the current PoO boundary and was previously approved for surface disturbance as a Utility Corridor. No utilities currently exist or are planned at the specific location of the proposed expansion.
2. Deepening of the 44-acre Minnie Pit within SE¼ Section 27, NE¼ Section 34, T31N, R43E to the 5560 feet amsl elevation.
3. Amendment of the PoO boundary to contain the Philadelphia Canyon WRF expansion within NW¼ Section 26, T31N, R43E.

The 45.9-acre expansion of the Philadelphia Canyon WRF would provide approximately 92 million tons of additional capacity. The majority of the waste rock would come from the Phoenix (Fortitude) Pit, but smaller amounts of waste rock may come from other currently approved pits. The expanded portions of the Philadelphia Canyon WRF would be constructed in five lifts. The first lift would have a height of approximately 400 feet, and each of the remaining four lifts would have a height of approximately 200 feet, for a maximum design height of approximately 1,200 feet. The height of the Philadelphia Canyon WRF would not be increased beyond its currently approved height.

At closure the Philadelphia Canyon WRF would be graded to a final slope of 2.3 horizontal to 1 vertical (2.3H:1V), capped, and revegetated. The 2.3H:1V reclaimed slope is in accordance with 2003 Phoenix Project Reclamation Plan (Table 11, page 58). Slopes designated for each facility in the 2003 Reclamation Plan were based on an analysis of long term post-reclamation stability. A buttress would be constructed at the toe of the WRF to prevent any waste rock or capping material from rolling onto public land. Additionally, a buffer would be provided between the reclaimed toe of the Philadelphia Canyon WRF and the proposed PoO boundary.

Plan views of existing project area disturbance, proposed disturbance and proposed reclamation topography are presented in Figures 3, 4, and 5, respectively. A cross section view of the existing

Philadelphia Canyon WRF slope face, final as-built slope face, and reclaimed slope face is presented in Figure 6. The existing PoO boundary, proposed PoO boundary, and the private land/public land boundary, and PoO boundary buffer zone (455 feet) are also shown. Location and orientation of the cross section is noted on Figures 3, 4, and 5.

The Minnie Pit would be deepened to an elevation of 5560 feet amsl. Although the current depth of the pit is 5640 amsl, the previously approved depth of the Minnie Pit is 5625 feet amsl. Deepening of the pit would produce an additional 231,000 tons of ore to be processed in the Phoenix Mill and 271,000 tons of waste rock, which would be placed on a currently approved waste rock facility. As required by the 2003 Phoenix Project ROD and PoO approval, the Minnie Pit would be completely backfilled upon closure. The pit backfill would be constructed to a height between 5750 and 5900 feet amsl. The backfilled pit would be regraded to a geotechnically stable slope then capped, and revegetated. The slopes of the Minnie Pit Backfill would be contoured according to the slopes specified in the 2003 Phoenix Project Reclamation Plan and are intended to blend into the existing topography and remain geotechnically stable.

Plan views of existing project area disturbance, proposed disturbance and proposed reclamation topography are presented in Figures 3, 4, and 5, respectively. A cross section view of the Minnie Pit existing limits, proposed deepening, and final reclamation topography is presented in Figure 7. Location of the cross section is noted on Figures 3, 4, and 5.

As shown in Figure 7, during mining operations the floor of the Minnie Pit is not expected to intercept the water table. The original Baker groundwater model used to support the Phoenix FEIS (Baker 2000) predicted the groundwater elevation between 5190-5265 feet amsl. Drilling in the area has revealed the actual water table elevation is approximately 5530 feet amsl, 30 feet lower than the proposed Minnie Pit floor elevation. Although the Minnie Pit is not expected to intercept the water table, the 2003 Phoenix Project ROD and PoO approval requires that the Minnie Pit be monitored. If standing water is observed in the Minnie Pit prior to backfill or the projected post-mining water table is projected to saturate backfill material, the backfill material placed in the potential ground water saturation zone would be amended to preclude ground water quality impacts.

Although not anticipated, if water is encountered during mining in the Minnie Pit, Newmont would verify through drilling, whether the water table had been reached or if perched water had been encountered. A drainage system throughout the pit would be established and any water in the pit would be captured in sumps and pumped out of the pit. If mine operations were unable to maintain an adequate floor and/or catch bench due to water in the pit, Newmont would cease mining and evaluate the economics associated with a dewatering effort.

To prevent acid rock drainage, the expansion of the Philadelphia Canyon WRF and the backfill of the Minnie Pit would be completed using practices detailed in the Phoenix Mine Waste Rock Management Plan WRMaP (Newmont 2008), summarized below (Section 2.2).

Slope recontouring and reclamation of both facilities would be completed in accordance with the 2003 Phoenix Project Reclamation Plan to meet the stated reclamation goals described in the Phoenix FEIS. The 2003 Phoenix Project Reclamation Plan addresses the use of appropriate growth media, soil amendments, and proven revegetation practices. Weed control and monitoring are also addressed in the reclamation plan.

2.2 WASTE ROCK MANAGEMENT PLAN

The development and implementation of the WRMaP was a condition of BLM's 2003 ROD and PoO approval. The WRMaP describes techniques that are used to avoid acid rock drainage and is applicable to the Philadelphia Canyon WRF, the Minnie Pit backfill, as well as all other Phoenix Mine waste rock facilities. The WRMaP was last updated in 2008 and has been reviewed and approved by the BLM and NDEP. The plan covers waste rock material characterization, segregation, and handling; design and construction of WRFs; cover material selection; cover material placement; and monitoring and reporting requirements.

Following the WRMaP, acid rock drainage is avoided by isolating Potentially Acid Generating (PAG) rock from oxygen. Practices used to construct WRFs include:

- Using BMPs on uncapped WRFs to manage stormwater runoff during construction or temporary closure. The Phoenix Mine Stormwater Pollution Prevention Plan is kept current and describes specific BMPs employed;
- Using BMPs on capped facilities to promote sheet flow and prevent formation of erosion channels and rills. Final stormwater controls are installed after lifts are covered with cap material and contoured to the final facility topography;
- Minimizing the rehandling of PAG rock;
- Optimizing facility design for five types of WRFs: (1) single lift construction over existing facilities; (2) multiple lift construction over existing facilities; (3) multiple lift construction over undisturbed areas; (4) complete pit backfill; (5) partial pit backfill with buffer zone. The WRMaP states that the Philadelphia Canyon WRF would be expanded using construction techniques for multiple lift construction over existing facilities. The Minnie Pit would be backfilled using techniques for complete backfill; and
- Utilizing concurrent reclamation of completed portion of a WRF. Completed lifts are to be recontoured and capped with benign (net neutralizing) capping materials within twelve months of their completion.

The WRMaP acknowledges the possibility that waste rock in backfilled pits may be partially submerged below a post-mining water table after dewatering operations have ended. The WRMaP (page 4-4) states:

During the recovery of groundwater within the backfilled pits, residual oxygen or soluble sulfate complexes can react with groundwater and/or sulfides to generate acidic leachate. In order to eliminate these potential adverse effects of groundwater recovery into PAG waste rock, Newmont would amend the backfilled waste rock with lime (or limestone) and/or organic material to at least 40 feet above the predicted recovery groundwater elevation. Once fully submerged, the amended PAG waste rock will have no access to additional oxygen and, therefore, remain environmentally inert. The application of lime or limestone will neutralize the acidity initially formed in the recovering groundwater as it contacts the PAG waste rock.

According to the WRMaP, the Minnie Pit backfill would be constructed by dumping non-PAG or amended PAG waste rock to at least 40 feet above the predicted groundwater recovery elevation. Placement of the cap materials and subsequent revegetation would follow.

Caps for the Phoenix Mine WRFs would be designed to minimize meteoric water infiltration and promote vegetative growth (and thus transpiration). The WRMaP (page 5-1) states:

After the facility has been contoured to the final reclamation topography, cap materials (non-PAG waste rock or alluvium) are placed on the facility and spread to a minimum thickness of five feet. Cap monitoring devices and stormwater BMP's are constructed as soon as possible, but not later than the next construction season following contouring of capping materials. Also, depending on conditions and time of year, reseeding may occur before or after installation of stormwater BMPs and cap monitoring test stations. Temporary and permanent stormwater BMPs vary in design and location, depending on the needs for the particular location. BMPs for final reclaimed WRFs may include ditches, retention basins, sediment basins, and diversion channels, as well as the final configuration of the WRF surface (swales, slope breaks, etc.). These BMPs are designed to prevent channel flow off the top of the WRF, promote sheet flow across the WRF to diversion channels connected to sediment basins to limit movement of sediment. The BMP's also include maintenance and inspections of the stormwater control facilities in order to ensure that storm water off of and around the WRFs is managed in accordance with applicable permit requirements.

According to the WRMaP, 32 percent of the estimated capping material available would come from non-PAG waste rock. Alluvium taken from a number of borrow sources would be used to meet the remaining capping material needs. Before placement, the suitability of capping materials is

demonstrated to the NDEP and BLM through studies and testing ensuring that no unsuitable material would be placed on the WRFs.

To better ensure the protection of water resources and proactively guide management, the WRMaP specifies that WRFs include surface and ground water monitoring. The water elevation and quality of groundwater are monitored for each Phoenix Mine WRF, and is described in detail in the mine's Water Resources Monitoring Plan (Newmont 2008b). Surface (stormwater runoff) water down gradient of WRFs is monitored for flow (volume) and field parameters, also in accordance with Water Pollution Control Permit NEV87061 and ROD requirements.

Post reclamation monitoring of WRFs required by the WRMaP includes cap and toe monitoring. Cap monitoring stations would measure the moisture content in the upper 5 to 6 feet of the WRF at the top of a reclaimed WRF. This will allow the close monitoring of cap effectiveness in minimizing moisture infiltration into the PAG waste rock of the WRF. Comparing the results of these monitoring points over time will help prove the effectiveness of the caps in preventing water infiltration. Similarly, toe monitoring stations are similar in design which would record moisture within 25 to 30 feet above the toe of the slope. Installation at three elevation depths should allow the differentiation of any water emanating from the WRF.

2.3 EXISTING OPERATIONS

The Phoenix Mine is located on public and private land within portions of Sections 15, 16, 21, 22, 23, 26, 27, 27, 28, 32, 33, and 34 of T31N, R43E and portions of Sections 2, 3, 4, 8, 9, 10, 16, and 21 of T30N, R43E. The Phoenix Mine began operation in 2004 subsequent to issuance of a ROD and PoO Approval by the BLM. Mining at the Phoenix Mine is accomplished through conventional open pit methods. Waste rock generated by existing operations is disposed of either as pit backfill material or in the constructed waste rock facilities.. Permitted facilities and operational features at the Phoenix Mine include:

- Open pits
- Stockpiles
- Waste rock facilities
- Tailings facilities
- Heap leach pad/process facilities
- Ancillary facilities
- Access roads
- Haul roads
- Utility corridors
- Drill sites

Appendix A contains a table listing the allowable acreage of ground disturbances for each permitted facility and operational feature. Proposed disturbance associated with the Proposed

Action are also included in the table. The Proposed Action would increase the Phoenix Mine surface disturbance by 39 acres to a cumulative total of 7,230.3 acres. Approximately 39 acres of new disturbance would result rather than 45.9 acres because 6.9 acres of disturbance would occur within a utility corridor that has been previously approved for surface disturbance.

2.4 ENVIRONMENTAL PROTECTION MEASURES

Newmont would implement the following Environmental Protection Measures as a part of the Proposed Action and permit requirements in order to avoid and/or minimize potential adverse effects.

Water Quality

1. Newmont would continue to implement the Phoenix Mine WRMaP to manage and place waste rock materials in order to prevent acid rock drainage. The WRMaP addresses waste rock material characterization, segregation, and handling, design and construction of WRFs, cover material, and monitoring and reporting requirements.
2. Potential for water quality impacts to groundwater from backfill of the Minnie Pit was previously addressed in the Phoenix FEIS, and measures to prevent water quality impacts were required by BLM's 2003 Phoenix Project ROD and PoO approval. Newmont would follow mitigation measure WR-7 set forth in the ROD: "If standing water is observed in the Minnie Pit prior to backfill, or the projected post-mining water table is projected to saturate backfill material, the backfill material placed in the potential ground water saturation zone will be amended to preclude ground water quality impacts."
3. Newmont would implement BMPs at all times during construction. BMPs are defined by NDEP in State of Nevada Non-Designated Area Water Quality Management Plan, Handbook of Best Management Practices (1994). Newmont will revise the current Stormwater Pollution Prevention Plan (SWPPP) to include the Proposed Action area.

Soils, Reclamation, Vegetation, Wildlife, and Visual Resources

4. Newmont would continue to implement the 2003 Phoenix Project Reclamation Plan and the current WRMaP to mitigate for the loss of native soils and to create productive post-mining land uses, primarily grazing and wildlife habitat. Both plans will also ensure re-establishment of aesthetically pleasing vegetation and WRF slope configurations.

2.5 PROJECT MONITORING

The Proposed Action is a relatively small expansion of the Phoenix Mine. Newmont would incorporate the proposed expansion areas into its on-going environmental monitoring and compliance program. Specific monitoring practices applicable to the Proposed Action are the same monitoring tasks required by BLM's 2003 Phoenix Project ROD and PoO approval.

Monitoring practices are described in the following plans:

1. Phoenix Project Reclamation Plan (Newmont 2003) establishes a monitoring program to assure successful reestablishment of vegetation to meet reclamation objectives.
2. WRMaP (Newmont 2008a) establishes a monitoring program of waste rock facilities.
3. SWPPP (Newmont 2009) establishes monitoring to ensure appropriate placement and effectiveness of BMPs.
4. Water Resource Monitoring Plan (Newmont 2008b) establishes a groundwater monitoring program.
5. Phoenix Project Contingent Long-term Groundwater Management Plan (Brown and Caldwell 2000) establishes monitoring of waste rock facility caps for early detection of water migration.

2.6 PERMITS AND APPROVALS

Newmont is responsible for obtaining valid permits and approvals from all relevant federal, state, and local agencies to construct the proposed project.

Table 1. Permits and Approvals

Authorizing Action/Permit	Agency
Plan of Operations	U.S. D.O.I., Bureau of Land Management, Mount Lewis Field Office
Reclamation Permit - PoO and Reclamation Plan Modification	Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation
Water Pollution Control Permit- Modification	Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation
Mining General Stormwater Permit- SWPPP update	Nevada Division of Environmental Protection, Bureau of Water Pollution Control
Air Quality Operating Permit Surface Area Disturbance	Nevada Division of Environmental Protection, Bureau of Air Pollution Control

Newmont will obtain BLM approval prior to any disturbance beyond that described in the PoO and EA for the expansion of the Philadelphia Canyon WRF and the deepening (but not widening) of the Minnie Pit.

2.7 SCOPING

The project was internally scoped by the BLM Interdisciplinary Team in August 2009. BLM personnel identified the supplemental authorities and other resources to be addressed in this document as outlined in Section 3.2. No specific issues of controversy related to the Proposed Action were identified.

2.8 ALTERNATIVES TO THE PROPOSED ACTION

No alternatives other than the required No Action Alternative will be analyzed in this EA.

2.8.1 No Action Alternative

The No Action Alternative is required to be considered by NEPA and the Council of Environmental Quality implementing regulations (40 CFR 1500-1508). Under the No Action Alternative, the BLM would not approve an amendment to the PoO. The Philadelphia Canyon WRF would not be expanded and the Minnie Pit would not be deepened.

2.8.2 Potential Alternatives Considered but Eliminated

The use of other approved WRFs was considered as an alternative to the Proposed Action but was eliminated because use of currently active WRFs would result in hauling costs that are economically unreasonable.

CHAPTER 3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 GENERAL SETTING

The Phoenix Mine is located in the southern portion of the Battle Mountain Range, which trends north-south and is approximately 18 miles long and 12 miles wide. The highest peak is North Peak at 8,550 feet amsl. The Battle Mountain Range is an uplifted block with a circular footprint located between the Buffalo Valley and Reese River Valley alluvial basins. Buffalo Valley is located to the west, the Reese River Valley to the east, and the Humboldt River is located to the north and northeast. Buffalo Valley is a closed basin with a valley floor elevation of approximately 4,600 feet amsl. The tributaries in Buffalo Valley drain toward a playa lake in Buffalo Valley; drainages in the Reese River Valley flow toward the Reese River, a tributary of the Humboldt River. The Humboldt River near Battle Mountain is situated at an approximate elevation of 4,500 feet amsl.

The current Phoenix Mine encompasses the Copper Canyon area of the Battle Mountain Mining District. According to the Phoenix FEIS, “Copper Canyon has a long history of copper and precious metals mining dating back to the initial discovery of copper ore in 1864. Mining and beneficiation operations have been conducted through a steady succession of owners/operators and production periods. Mineral development in the Battle Mountain range has included mining and shipping of copper ores in the 19th century, mining and milling of copper ores in the early 20th century, intermediate precious metal lode mining throughout the first half of this century [*sic*], placer dredge operations in the 1940s and early 1950s, copper mining and flotation milling from 1940 through the 1970s, mining and recovery of precious metal ores beginning in the late 1970s and continuing through 1993, and mining and heap leaching of disseminated precious metal ores beginning in 1990 and continuing through the present” (BLM 2003).

3.2 RESOURCES/CONCERNS CONSIDERED FOR ANALYSIS

To comply with NEPA, BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order. The following table lists the elements that must be addressed in all environmental analyses, as well as other resources deemed appropriate for evaluation (BLM 2008). Table 2 indicates whether the Proposed Action affects those elements. Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward for analysis or discussed further in the document. Supplemental Authorities determined to be Present/May Be Affected must be carried forward for analysis.

Table 2. Supplemental Authorities Considered for Analysis

Supplemental Authority	Not Present	Present/ Not Affected	Present/ May Be Affected	Rationale
Air Quality			✓	. Impacts are assessed in Section 3.12.
Area of Critical Environmental Concern (ACEC)	✓			Resource is not present.
Cultural/Historical	✓			No historic properties are known to occur within the proposed Project Area. The Project Area, including the WRF expansion area outside the current PoO boundary, has been surveyed extensively (Cultural Report BLM 6-1399).
Environmental Justice	✓			No minority or low-income groups would be disproportionately affected by health or environmental effects.
Farmlands Prime or Unique	✓			Resource is not present.
Noxious Weeds/Invasive Non-native Species			✓	Impacts are assessed in Section 3.13.
Native American Religious Concerns		✓		Consultation is ongoing. Religious Concerns are likely not present. Section 3.6 discusses broader Native American concerns (not limited to religious sites) and protection measures which must be followed in the event that Native American resources are discovered.
Floodplains	✓			Resource is not present.
Riparian/Wetlands	✓			Resource is not present.
Threatened, Endangered Species	✓			Resource is not present. The Project Area contains potential habitat for a limited number of BLM sensitive animals that are not federally-listed. Impacts to BLM sensitive wildlife are assessed in Section 3.7.
Migratory Birds			✓	Impacts are assessed in Section 3.8.
Waste – Hazardous/Solid		✓		The Proposed Action would not increase the transportation, delivery volumes, handling, storage, use, generation, or disposal of hazardous or solid waste over the condition previously analyzed in the Phoenix Project EIS. If regulated materials are spilled, measures would be taken to control the extent of the spill and cleanup activities (including hauling the material off site and disposal in a permitted facility) would be performed. The appropriate agencies would be notified in accordance with the applicable federal and state regulations.
Water Quality			✓	Impacts are assessed in Section 3.4.

Supplemental Authority	Not Present	Present/ Not Affected	Present/ May Be Affected	Rationale
Wild & Scenic Rivers	✓			Resource is not present.
Wilderness	✓			Resource is not present.
Forests and Rangelands (HFRA only)	✓			Resource is not present.
Human Health and Safety		✓		Public access would be excluded by perimeter fencing. All state and federal safety regulations would continue to be enforced. To ensure worker safety in the event of an accidental spill or release of hazardous materials, Emergency Response Plan would be implemented to minimize health risk.

Other resources of the human environment that have been considered for EA are listed in Table 3 below. Elements that may be affected are further described in the EA. Rationale for those elements that would not be affected by the proposed action and alternative is listed in the table.

Table 3. Other Resources/Concerns Considered for Analysis

Other Resources	Not Present	Present/ Not Affected	Present/ May Be Affected	Rationale
Grazing Management	✓			No grazing occurs in the project area. The expansion of the Philadelphia Canyon WRF would occur on private lands and would not be subject to grazing management by BLM.
Land Use Authorization		✓		Expansion of the WRF would occur on private land owned by Newmont.
Minerals			✓	Impacts are assessed in Section 3.3.
Paleontological Resources	✓			Paleontological resources are found in sedimentary structures, like limestone and calcareous shale, which are not present in the project area.
Recreation	✓			Resource is not present. Perimeter fencing excludes human access and prevents recreational use of the proposed action area.
Socio-Economic Values		✓		The Proposed Action would not require an increase in the labor force and would not increase the life of the mine. Therefore, no changes in population, worker earnings, housing demand, or demand for public services would occur.
Soils			✓	Impacts are assessed in Section 3.5.
Vegetation			✓	Impacts are assessed in Section 3.6.

Other Resources	Not Present	Present/ Not Affected	Present/ May Be Affected	Rationale
Visual Resources			✓	Impacts are assessed in Section 3.11.
Wild Horses and Burros	✓			Resource is not present.
Wildlife			✓	The Project Area contains potential habitat for a limited number of BLM sensitive animals. Impacts are assessed in Section 3.7. General wildlife impacts are assessed in Section 3.10.

As noted in the tables above, the following resources will not be brought forward for further analysis in this EA because they are either not present within the project area or are not affected by the Proposed Action: Areas of Critical Environmental Concern, Cultural Resources, Environmental Justice, Prime and Unique Farmlands, Floodplains, Riparian and Wetlands, Wastes (Hazardous or Solid), Threatened and Endangered Species, Wild or Scenic Rivers, and Wilderness, Forest and Rangelands, Human Health and Safety, Grazing Management, Land Use Authorizations, Paleontological Resources, Recreation, Socio-economic Values, and Wild Horses and Burros. Native American Religious Concerns are not expected to be affected by the Proposed Action, but broader Native American concerns are brought forward for discussion in Section 3.6 in order to discuss measures that would be implemented should Native American resources be discovered during construction.

The following resources have been determined to be present and affected by the proposed action: Geology and Minerals, Water Quality, Soils and Reclamation, Vegetation, Special Status Species, Migratory Birds, Wildlife, Visual Resources, Air Quality, and Noxious Weeds.

The following sections describe the affected environment followed by the environmental consequences resulting from the construction and operation of the proposed action. This information was derived from the Phoenix FEIS; files or correspondence of the BLM; Minnie Pit and Philadelphia Canyon Expansion Plan of Operations Amendment Version 5 (Newmont 2010), information provided by Newmont, and information provided by other federal, state, and local agency resource personnel. Mitigation Measures needed to mitigate impacts to less than significant are described in Section 3.14. Effects of the No Action Alternative and an analysis of cumulative effects and residual impacts are discussed at the end of this chapter.

This EA describes that the Philadelphia Canyon WRF would be expanded by 45.9 acres and uses 45.9 acres to quantify impacts to land-based resources (e.g., wildlife habitat, soils, and vegetation). It should be recognized that 6.9 acres of the Philadelphia Canyon WRF expansion would occur inside the current PoO boundary within an utility corridor, where disturbance has been previously analyzed and approved.

3.3 GEOLOGY AND MINERALS

3.3.1 Affected Environment

As described in the Phoenix FEIS, the Battle Mountain area is characterized by Paleozoic marine sedimentation, multiple episodes of complex pre-Cenozoic large-scale folding and thrust faulting, Cretaceous and Tertiary magmatism and associated metasomatic and hydrothermal alteration, Tertiary extensional block faulting and volcanism, and late Tertiary-Quaternary volcanism and basin-fill sedimentation. The oldest rocks in the area consist of dominantly arkosic to quartzitic sandstone, shale, and minor limestone of the Cambrian-age Harmony Formation. Total thickness of the formation, exposed on the eastern flank of Battle Mountain, is estimated to be 3,000 feet. The Harmony Formation rests unconformably above the younger Ordovician Valmy and Devonian Scott Canyon formations, in contact with the DeWitt Thrust Fault.

The Valmy Formation is primarily exposed on the north end of Battle Mountain and consists of massive quartzite and chert, with minor interbeds of siltstone and shale. The thickness of the Valmy Formation is estimated to be as much as 8,000 feet, resulting from structural thickening due to thrust faulting. The Scott Canyon Formation is exposed in windows through the Harmony Formation in the southeastern margin of Battle Mountain. This formation, estimated to be more than 5,000 feet thick, consists mainly of chert, argillite, and greenstone with minor sandstone, quartzite, and limestone (BLM 2003).

3.3.2 Environmental Consequences

The effects on geologic and mineral resources identified in the Phoenix FEIS applicable to the Proposed Action include (1) generation and permanent disposal of millions of tons of tailings material and waste rock; (2) permanent alteration of geologic terrain; and (3) recovery of gold, silver, and copper. The expansion of the Philadelphia Canyon WRF would allow an additional disposal capacity of approximately 92 million tons of waste rock. The continued mining of the Minnie Pit would produce an additional 231,000 tons of ore and 271,000 tons of waste rock.

The Phoenix FEIS concluded that geologic information and drilling results indicate that placement of Phoenix Project facilities would not conceal known or inferred minable ore or inhibit future attempts to recover minerals because the mineralization below the facilities is low grade and constitutes non-minable ore. Based on this conclusion, the expansion of the Philadelphia Canyon WRF and backfill of the Minnie Pit would not conceal known or inferred minable ore. With regard to effects to the geologic terrain, the Philadelphia Canyon WRF expansion would add 45.9 acres to an existing 343.7-acre facility, and the Minnie Pit expansion would not cause additional surface disturbance. The Proposed Action would add a minor modification of geologic terrain to the previously analyzed condition.

In the analysis of effects to geology and minerals, the Phoenix FEIS evaluated the potential risk of facility damage due to slope instability and risk of slumping or sliding under both static and seismic conditions. The Phoenix FEIS stated that although there are no known active or

potentially active earthquake faults or landslides exist in the vicinity, all mine facilities are designed to remain functional after an Operational Basis Earthquake and not fail catastrophically during a Maximum Credible Earthquake. Based on previous stability analysis, proposed final slopes for the Philadelphia WRF and Minnie Pit backfill slopes are expected to remain stable. The likelihood of disruptions to reclamation covers or caps caused by mass slope instability is also expected to be low.

3.4 WATER QUALITY

3.4.1 Affected Environment

Mining of the ore bodies would expose transitional and sulfide-bearing ores and waste rock that could potentially generate acid through weathering of certain rock types. Geochemical characterization of waste rock was performed during the preparation of the Phoenix FEIS to evaluate potential impacts on groundwater and is performed as a part of Newmont's ongoing waste rock monitoring program. Specifically, Acid Base Accounting (ABA), Inductively Coupled Plasma, Meteoric Water Mobility Procedure (MWMP), and Humidity Cell Tests have been conducted on waste rock from the Phoenix (Fortitude), Midas, and Reona Pits (Water Quality Consultants 2006a, 2006b). Whole Rock Analytical, ABA, MWMP, and Minnie Pit Water Analytical results were conducted by Brown and Caldwell (Brown and Caldwell 1999) to characterize extracted rock types and pit conditions for the Minnie Pit. More recent analyses of samples collected during exploration/development drilling of the Minnie Pit have also been completed. The majority of waste rock was found to be net acid-generating.

Mining in the Minnie Pit would not require dewatering as the floor of the Minnie Pit is not expected to intercept the water table (Figure 7). Groundwater modeling used in the analysis for the Phoenix FEIS estimated the water table between 5190 to 5265 feet amsl (Baker 2000). Based on drilling in the Minnie Pit and vicinity, the groundwater elevation is at approximately 5530 feet amsl (Figure 7). The proposed deepening of the Minnie Pit would result in a pit floor elevation 5560 amsl, 30 feet higher than the known water table elevation.

3.4.2 Environmental Consequences

The Philadelphia Canyon WRF expansion and the Minnie Pit backfill WRF would be constructed, managed, and monitored in accordance with the WRMaP; see Section 2.2. The implementation of the WRMaP was required by the 2003 Phoenix Project ROD and PoO approval in order to address concerns regarding acid rock drainage. The WRMaP is currently implemented by Newmont for existing WRFs and the continued implementation of the WRMaP under the Proposed Action (e.g. amending backfilled waste rock) would be an environmental protection measure used to minimize potential adverse effects to surface and ground water quality.

As described in Section 2.2, the WRMaP avoids acid rock drainage by preventing exposure of potentially acid-generating rock to oxygen and water. Under the WRMaP, caps for the

Philadelphia Canyon WRF and Minnie Pit backfill are designed to encapsulate waste rock, minimize infiltration of precipitation, and promote vegetative growth. After the facility has been contoured to the final reclamation topography, cap materials (non-PAG waste rock or alluvium) are placed on the facility and spread to a minimum thickness of five feet. According to the WRMaP, 32 percent of the estimated capping material available would come from non-PAG waste rock. Alluvium taken from a number of borrow sources would be used to meet the remaining capping material needs. Cap monitoring devices and stormwater BMPs would be constructed as soon as possible, but not later than the next construction season following contouring of capping materials.

Long-term water quality impacts to the groundwater from infiltration of acidic leachate were also evaluated and addressed in the Phoenix FEIS. The Phoenix FEIS modeled sulfate concentrations in groundwater beneath WRFs to predict long term trends in groundwater quality. Groundwater quality impacts at the mine were predicted to occur beginning 60 years after mine start-up. At the Philadelphia Canyon WRF and Minnie Pit, modeling predicted impacts to occur between 130 to 1,000 years after mine start up. To address the potential impacts, implementation of a Contingent Long-term Groundwater Management Plan in conjunction with the WRMaP were required by BLM's 2003 Phoenix Project ROD and PoO approval. Both plans include unsaturated zone monitoring for all waste rock facility caps for early detection of water migration. If evidence of seepage infiltration toward groundwater is detected, then the affected groundwater is to be captured within the project boundary, treated, and re-injected.

The potential for water quality impacts specific to the backfill of the Minnie Pit was addressed in the Phoenix FEIS. As a condition of BLM's 2003 Phoenix Project ROD and PoO approval Newmont expanded the Water Resource Monitoring Plan and the WRMaP to specify that if Newmont observes standing water in the Minnie Pit prior to backfill, or the projected post-mining water table is projected to saturate backfill material, any potentially PAG waste rock material placed below predicted post-mining water levels would be amended with hydrated lime or limestone to prevent chemical reactions that generate acid leachate.

To further minimize potential for water quality concerns, during construction of facilities, Newmont would implement BMPs at all times during construction and continue to implement the Phoenix Mine SWPPP. BMPs are defined by the NDEP in State of Nevada Non-Designated Area Water Quality Management Plan, Handbook of Best Management Practices (1994). The current Phoenix Mine SWPPP describes specific Stormwater BMPs to prevent stormwater runoff and erosion across the uncapped WRF during WRF construction and final stormwater facilities installed after lifts are covered with cap material. The SWPPP would be revised to include new areas of disturbance associated with the Proposed Action. Implementation of the SWPPP is further discussed in the next section.

3.5 SOILS AND RECLAMATION

3.5.1 Affected Environment

Soils in the Project Area are described from the Soil Survey of Lander County, Nevada, North Part. The Project Area is mapped as Bregar-Roca-Quarz association (map unit 3432). This soil unit corresponds to the Order 3 level soils map presented in the Phoenix FEIS.

The Bregar-Roca-Quarz association includes 35 percent Bregar very cobbly loam, 50 to 75 percent slopes on east- and west-facing side slopes of mountains; 30 percent Roca very gravelly loam, 30 to 50 percent slopes, on south-facing side slopes of mountains; and 20 percent Quarz extremely gravelly loam, 15 to 30 percent slopes, on north-facing side slopes of mountains. Inclusions comprise the remaining 15 percent of this map unit.

The Bregar soil series consists of very shallow and shallow well-drained soils derived from residuum from extrusive volcanic rock and supports black sagebrush, low sagebrush, and Idaho fescue. The soil surface is covered with 45 percent cobbles and 20 percent pebbles. The Roca soil series is a moderately deep, well-drained soil derived from residuum of chert and shale, and supports bluebunch wheatgrass and mountain big sagebrush. The Quarz soil series is a moderately deep, well-drained soil derived from residuum of shale and sandstone and typically supports mountain big sagebrush, antelope bitterbrush, and blue bunch wheatgrass.

3.5.2 Environmental Consequences

The Proposed Action would disturb 45.9 acres of soil substrate, resulting in the loss of productivity associated with native soil. Disturbance to 6.9 acres would occur within a designated utility corridor that has been previously permitted for disturbance. Minimal impacts are expected from lost soil productivity, slope instability, or soil erosion, since Newmont would continue to implement erosion control, appropriate slope design, and reclamation measures as described in the Phoenix Project Reclamation Plan, Phoenix Mine SWPPP, and WRMaP.

Loss of soil productivity would be temporary upon successful reclamation and revegetation of the Philadelphia Canyon WRF and Minnie Pit. Implementation of the WRMaP and Phoenix Project Reclamation Plan will include the use of appropriate growth media, soil amendments, and proven revegetation practices used successfully under similar conditions. Native soil material would be salvaged and re-used when substrate characteristics meet growth media suitability criteria. No salvage of topsoil is planned for Philadelphia Canyon WRF expansion area. Risk of soil instability will be minimized by regrading the Philadelphia WRF to a final slope of 2.3H:1V and the Minnie Pit backfill slopes to a stable slope. The stability of the final reclaimed slopes for Phoenix Mine WRF, including the Philadelphia Canyon WRF were analyzed in a waste dump stability analysis in support of the Phoenix FEIS (Golder 1999a, 1999b, 1999c, 2000), and is noted in Table 11, Page 58, in the Phoenix Project Reclamation Plan.

Implementation of the SWPPP and appropriate BMPs described therein would minimize impacts to water quality from stormwater runoff during construction and operations. For example, the SWPPP specifies that during operations active WRF facilities include use of drainage ditches along the uphill margins of the waste rock facility surfaces that would be maintained to prevent precipitation collection and inhibit sheet erosion along the down gradient slope surfaces. The use of berms, straw bales, or sedimentation/retention ponds to channel and control flow velocities also would be used, when necessary.

BMPs for final reclaimed WRFs may include ditches, retention basins, sediment basins, and diversion channels, as well as the final configuration of the WRF surface (swales, slope breaks, etc.). These BMPs are designed to prevent channel flow off the top of the WRF and to promote sheet flow across the WRF to diversion channels connected to sediment basins to limit movement of sediment. The BMPs also include maintenance and inspections of the stormwater control facilities in order to ensure that stormwater running off and around the WRFs is managed in accordance with applicable permit requirements.

3.6 NATIVE AMERICAN CONCERNS

3.6.1 Affected Environment

Various tribes and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects on their culture and religion as they consider the landscape as sacred and as a provider. The proposed action lies within the traditional territory of the Western Shoshone. Sites and resources considered sacred or detrimental to the continuation of tribal traditions include, but are not limited to, prehistoric and historic village sites, sources of water (hot and cold springs), pine nut gathering locations, sites of ceremony and prayer, archaeological sites, burial locations, “rock art” sites, medicinal/edible plant gathering locations, areas associated with creation stories, or any other tribally designated Traditional Cultural Property (TCP).

During the preparation of the Phoenix Project EIS, BLM coordinated with Northern Paiute and Western Shoshone tribal governments and organizations. Coordination included site tours, meetings, and interviews with Shoshone elders. Representatives included the Battle Mountain Band, the Lovelock Paiute Colony, the Shoshone-Paiute Tribes of Duck Valley, the Wells Band, the Western Shoshone Defense Project, and the Western Shoshone Historic Preservation Society.

For the preparation of this EA, consultation/coordination letters to Northern Paiute and Western Shoshone tribal governments were sent on October 6, 2009, requesting comments and participation in Native American resource concern identification. Consultation opportunities are still available. Within the vicinity of the Philadelphia Canyon WRF expansion area, tribally-identified TCPs and specific Native American cultural, traditional, or spiritual activity sites, or resources are not known to exist or have not been identified by tribal participants.

3.6.2 Environmental Consequences

Tribally-identified TCPs or specific Native American cultural, traditional, or spiritual use sites, activities, or resources are not known to exist in the Project Area or have not been identified by tribal participants. Based on results of previous and ongoing consultation the Proposed Action does not appear to have the ability to compromise the physical integrity of any specific traditional/spiritual/cultural site, activity or associated resource. Existing access throughout the area would also be maintained. Archaeological site CrNV-62-7028, documented during the previous cultural resource inventory would continue to be avoided.

Sites attached to previous avoidance commitments may be periodically monitored by BLM Cultural Resource Specialists, accompanied by a designated tribal representative, to ensure avoidance. Cultural Resources site monitoring can occur throughout the life of the project.

Though the possibility of disturbing Native American gravesites within most project areas is extremely low, inadvertent discovery of gravesites would require Newmont to implement procedures in compliance with NAGPRA which is codified at 43 CFR 10. Section (3)(d)(1). NAGPRA states that the discovering individual must notify the land manager in writing of such a discovery. Procedures are further described in Section 3.14 Mitigation Measures.

3.7 SPECIAL STATUS SPECIES

3.7.1 Affected Environment

The Endangered Species Act (ESA) prohibits the “take” of threatened or endangered species (listed species) unless a permit is obtained from U.S. Fish and Wildlife Service (USFWS) or National Marines Fisheries Service. "Take" is defined in the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species. Harm may include significant habitat modification where it actually kills or injures a listed species through impairment of essential behavior (e.g., nesting or reproduction). Based on recent correspondence from USFWS and other resource agencies, no federally listed or state-protected threatened, endangered, proposed, or candidate plant or wildlife species are known to occur in the Project Area. Appendix B contains correspondence from USFWS, Nevada Department of Wildlife (NDOW), and the Nevada Natural Heritage Program.

Species identified by the BLM as sensitive species are afforded protection as if they are candidates for federal listing. BLM’s policy for sensitive species is to avoid authorizing actions that would contribute to listing species under the ESA as threatened or endangered. According to the Phoenix FEIS, no habitat for BLM-designated sensitive plants occurs on the Phoenix Mine area, which included the proposed Project Area. However the Phoenix FEIS identified a number of BLM sensitive animals that occur or have the potential to occur on the Phoenix Mine (Table 4). The Project Area, including the WRF Expansion area outside the current PoO boundary, was previously surveyed during the preparation of the Phoenix Project EIS.

Table 4. Special Status Species Potentially Occurring at the Phoenix Mine

Common Name	Scientific Name	Status	Occurrence at Phoenix Mine*	Occurrence within Proposed Action Area
Amphibians				
Columbia spotted frog	<i>Rana luteiventris</i>	ESA Candidate	Possible	No Potential
Mammals				
Spotted bat	<i>Euderma maculatum</i>	BLM Sensitive	Possible	Foraging Habitat
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM Sensitive	Present	Foraging Habitat
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM Sensitive	Present	Foraging Habitat
Long-eared myotis	<i>Myotis evotis</i>	BLM Sensitive	Possible	Foraging Habitat
Fringed myotis	<i>Myotis thysanodes</i>	BLM Sensitive	Possible	Foraging Habitat
Long-legged myotis	<i>Myotis volans</i>	BLM Sensitive	Present	Foraging Habitat
Yuma myotis	<i>Myotis yumanensis</i>	BLM Sensitive	Present	Foraging Habitat
Birds				
Ferruginous hawk	<i>Buteo regalis</i>	BLM Sensitive	Possible	Foraging Habitat
Swainson's hawk	<i>Buteo swainsoni</i>	BLM Sensitive	Possible	Marginal Foraging Habitat
Burrowing owl	<i>Athene cunicularia</i>	BLM Sensitive	Present	No Potential for nesting habitat
Golden eagle	<i>Aquila chysaetos</i>	BLM Sensitive	Present	No Potential for Nesting Habitat
Greater sage grouse	<i>Centrocercus urophasianus</i>	BLM Sensitive	Present	Unlikely
Invertebrates				
Springsnails	<i>Pyrgulopsis spp.</i>	BLM Sensitive	Present	No Potential

*Source: Phoenix Project FEIS

The Phoenix FEIS identified the potential for Columbia spotted frog to occur in streams, ponds, or springs. However the Project Area contains no aquatic sites there is no potential for occurrence of the spotted frog. Other BLM sensitive species noted by NDOW as having the potential to occur include golden eagle, Townsend's big-eared bat, and greater sage grouse. Golden eagles have been historically known to nest in the surrounding area, and important bat habitat, including maternity roosts, is also present near the project area. Active sage grouse leks are located within a few miles from the project. The NDOW considers protection of these sites a very high priority.

Golden eagle nesting habitat does not occur within the Project Area as golden eagles typically nest on projections or ledges of cliff faces. Townsend's big-eared bat is generally found in desert scrub and pinyon-juniper habitats but dwells in caves, commonly utilizing mine shafts and adits. No caves, shafts, or adits are found in the Project Area, but foraging habitat for the Townsend's bat and other types of bats is present. Habitat within the Project Area for sage grouse is marginal based on the sparse vegetation community characteristics.

As noted, Table 4 was derived from information contained in the Phoenix Project FEIS. In recent correspondence NDOW indicated that loggerhead shrike, a BLM Sensitive Species may be present in the Project Area, and both the USFWS and NDOW noted that pygmy rabbit

(*Brachylagus idahoensis*), a BLM sensitive species, may occur in the area if dense sagebrush habitat is present in soils suitable for burrowing. However, the Project Area does not contain suitable habitat for the pygmy rabbit. The vegetation within the Project Area is a sparse black sagebrush-mountain sagebrush/grassland community. The soil type present in the Project Area is Bregar-Roca-Quarz association, which is characterized by steep slopes, shallow depth to bedrock, and an upper profile of stones and gravels. No inclusions (i.e. small islands) of dense sagebrush are present.

3.7.2 Environmental Consequences

The Proposed Action would result in up to 45.9 acres of permanent disturbance to black sagebrush-mountain sagebrush/grassland habitat. Habitats that may support federally listed species do not occur in the Project Area, and therefore, the proposed action is not expected to impact any populations of listed species. The Townsend's big-eared bat and other BLM sensitive bat species may forage in the Project Area, but the project is not expected to impact roosting habitat. The disturbance to bat foraging habitat is expected to have minimal impacts on BLM sensitive bats because of the availability of suitable foraging habitat outside of the Phoenix Mine area and because loss of habitat would be temporary upon successful reclamation and revegetation of the Philadelphia Canyon WRF and Minnie Pit. Impacts to habitat of BLM sensitive species would be minimized through Newmont's continued implementation of the Phoenix Project Reclamation Plan and the WRMaP as a part of the Proposed Action. Implementation of these plans would better ensure successful reclamation and establishment of productive wildlife habitat.

3.8 MIGRATORY BIRDS

3.8.1 Affected Environment

Migratory birds include birds that may breed in the Project Area but migrate south as far as Central and South America prior to the onset of winter. Migratory bird species are protected under the Migratory Bird Treaty Act of 1918. This act prohibits killing or taking migratory bird species without a permit. Protection under the act extends to nesting birds and their eggs.

NDOW indicated that western kingbirds, horned larks, mountain bluebirds, western meadowlarks, and loggerhead shrikes as typical migratory bird species that would be expected to be present in the Project Area. NDOW also noted that raptors have been located within and beyond the project boundary and are known to forage within the Project Area. Specifically, there is a historic Cooper's hawk nest in the surrounding area.

3.8.2 Environmental Consequences

The Proposed Action would result in up to 45.9 acres of permanent disturbance to black sagebrush-mountain sagebrush/grassland habitat which may be used for nesting by migratory birds. The loss of 45.9 acres of migratory bird habitat is expected to have minimal impacts because of the availability of migratory bird habitat outside of the Phoenix Mine area and

because loss of habitat would be temporary. Upon closure the WRF would be reclaimed through revegetation following the Phoenix Project Reclamation Plan which would reestablish suitable habitat.

Disturbance to nesting migratory birds or possibly the destruction of bird nests or young would occur if land clearing or other surface disturbance takes place during the avian breeding season, which is generally from April 15 to August 1. During the avian nesting season, Newmont would implement mitigation measures described in Section 3.14 Mitigation Measures to reduce impacts to nesting migratory birds.

3.9 VEGETATION

3.9.1 Affected Environment

The Phoenix FEIS identifies vegetation within the Project Area as black sagebrush-mountain sagebrush/grassland community. Rubber and green rabbitbrush, buckwheats, bottlebrush squirreltail, cheatgrass, and Sandberg's bluegrass and needlegrass, as well as a variety of forbs, also occur in this vegetation type. This plant community is typically found at elevations between 5,000 and 6,500 feet amsl. Black sagebrush-mountain sagebrush/grassland community is found in the northern portion of the Phoenix Mine and was the third most extensive plant community type on the Phoenix Mine covering approximately 22 percent of the Phoenix Mine Area.

3.9.2 Environmental Consequences

The Proposed Action would result in the loss of native vegetation within the 45.9-acre expansion area. Portions of the Project Area that is currently a designated utility corridor (6.9 acres) has been previously disturbed. The consequences of vegetation loss that were identified in the Phoenix FEIS applicable to the Project Area include the potential for (1) establishment of noxious weeds; (2) failure of reclamation to meet objectives to provide erosion control and wildlife forage; and (3) risk to herbivores from forage should reclamation establish plants that may bioaccumulate metals or trace elements above background levels.

The continued implementation of the Phoenix Project Reclamation Plan to achieve successful establishment of stable, perennial vegetation cover would minimize the consequences of vegetation loss. The Reclamation Plan describes site preparation, site recontouring, growth media criteria and handling, seed mixes, planting techniques, maintenance, drainage and erosion control, weed control, monitoring, and evaluation of success. Regular evaluations are used to assess reclamation effectiveness and refine reclamation techniques. Seed mixes may vary from the original mixes described in the Phoenix Project Reclamation Plan based on seed availability or results from data generated from reclamation studies.

The potential for plant uptake and bioaccumulation of dissolved metals from reclamation substrate in excess of irrigation or livestock watering standards was evaluated in the Phoenix FEIS. To address potential risk to livestock and wildlife from chemical constituents in the

capping material used for reclamation and revegetation, testing of all growth media and capping materials are required by BLM's 2003 Phoenix Project ROD and PoO approval and is incorporated in the WRMaP. Testing ensures that no unsuitable material would be placed on the WRFs.

3.10 WILDLIFE

3.10.1 Affected Environment

The project area supports habitat for a variety of game and nongame species. The Phoenix FEIS mapped the Project Area as mule deer winter range. In recent correspondence, NDOW indicated that dispersed deer use occurs in the Battle Mountain Range. In addition, NDOW noted that chukar occur in abundance in the rocky habitats within and around the Project Area. The relatively sparse and steep habitat supports black-tailed jackrabbits (*Lepus californicus*) and mountain cottontails (*Sylvilagus nuttallii*), with the later occurring near outcrops or other cover. Avian species occurring in the area include horned larks (*Aphelocoma alpestris*), rock wrens (*Salpinctes obsoletus*), and lark sparrows (*Chondestes grammacus*). Common ravens (*Corvus corax*) forage over the area.

3.10.2 Environmental Consequences

The Proposed Action would result in the loss of up to 45.9 acres of wildlife habitat. Loss of wildlife habitat would be temporary and have minimal impacts. While some species such as rock wrens may tolerate human activity, active use of the WRF probably inhibits utilization by wildlife, making these areas not as important for wildlife as other locations more distant from active mining. The successful implementation of the Phoenix Project Reclamation Plan would reestablish productive post-mining land uses, primarily grazing and wildlife habitat. Impact to mule deer is expected to be minimal because the Project Area does not contain summer range which, according to the Phoenix Project EIS, is considered most limiting for the mule deer population in the Battle Mountain Range.

3.11 VISUAL RESOURCES

3.11.1 Affected Environment

The Proposed Action is located entirely within a Class IV visual resource management area. The objectives of the Class IV visual resource management designation is to provide for management activities that require major modification of the landscape. "The level of change to the characteristic landscape can be high. The management activities may dominate the view and be the major focus of attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements" of the landscape.

The Phoenix Project EIS used a total of three key observations points (KOP) which were selected as critical viewpoints due to their proximity to the mine in addition to the volume and sensitivity of the users (Figure 8). KOP 1 and 2 are located on State Highway 305 with a northbound and southbound view, respectively. KOP 3 is located on Willow Creek Road. The Philadelphia Canyon WRF is visible from KOP 1 (Northbound Highway 305 vantage point) but not at KOP 2 (Southbound Highway 305 vantage point). The simulations made for the Phoenix Project EIS show that the Philadelphia Canyon WRF is barely visible from the Willow Creek Road vantage point in its existing and post-reclamation condition. Simulation of the post-reclamation condition of the Philadelphia Canyon WRF from Highway 305 northbound shows the Philadelphia Canyon WRF as a visible feature in the viewshed, but not as prominent as the 997-acre Natomas WRF and other facilities south of Philadelphia Canyon. The post-reclamation condition of the Philadelphia Canyon WRF is not visible from Highway 305 northbound.

3.11.2 Environmental Consequences

The Phoenix Project EIS analyzed post-reclamation conditions of the 344-acre Philadelphia Canyon WRF. The Phoenix Project EIS stated that visible rock slopes would be expanded and extended, and the degree of color contrast would be noticeably reduced following successful revegetation of the waste rock slopes. The proposed 45.9-acre expansion of the Philadelphia Canyon WRF is contiguous with the existing 343.7-acre WRF facility previously analyzed and would add minimal new construction or modification of landforms that would affect the viewshed. Although impacts to visual resources are expected to be minimal, they would be further reduced by the continued implementation of the Phoenix Project Reclamation Plan and the WRMaP, which would ensure re-establishment of aesthetically pleasing vegetation and WRF slope configurations.

3.12 AIR QUALITY

3.12.1 Affected Environment

The Project Area is located within Lower Reese River Air/Hydrographic Basin 59. Basin 59 is unclassified by NDEP, which means the basin does not have sufficient ambient air quality monitoring data but is considered to be in attainment with Nevada air quality standards for suspended particulates and other criteria pollutants.

3.12.2 Environmental Consequences

Phoenix FEIS identified a temporary increase in particulate matter during project construction would occur but Nevada air quality standards would not be exceeded. For the Proposed Action, equipment would be mobilized from other areas of the Phoenix Mine resulting in no increase in particulate matter over the condition previously analyzed in the Phoenix Project EIS. Prior to project construction, Newmont will obtain a Surface Area Disturbance permit from the NDEP Bureau of Air Pollution Control which will require implementation of a dust control plan to minimize fugitive dust during construction.

3.13 NOXIOUS WEEDS AND NON-NATIVE INVASIVE SPECIES

3.13.1 Affected Environment

The Project Area, including the WRF expansion area outside the current PoO boundary, was addressed in a previous weed inventory and weed risk assessment completed for the Phoenix Project EIS (EMA1999). No noxious weed locations were identified inside or neighboring the Project Area. Six Class B noxious weeds were found within and adjacent to the larger Phoenix Project area, which required the development and implementation of management measures along with a monitoring system.

3.13.2 Environmental Consequences

The Proposed Action would result in an increased risk of establishment of noxious weeds as a consequence of the loss of native vegetation within the 45.9-acre expansion area. The continued implementation of the Phoenix Project Reclamation Plan to achieve successful establishment of stable, perennial vegetation cover would minimize the consequences of vegetation loss and risk of noxious weed establishment. Regular evaluations of weed establishment and immediate control of weeds is a part of the Phoenix Project Reclamation Plan which will continue to be implemented as a part of the Proposed Action.

3.14 MITIGATION MEASURES

The following mitigation measures would be implemented in conjunction with the Proposed Action. The measures are designed to reduce the severity of impacts associated with the Proposed Action to below potentially significant thresholds.

Native American and Cultural Resources

1. The Archaeological Resources Protection Act, as well as the Native American Graves Protection and Repatriation Act both provide protection for historic properties, cultural resources, and Native American funerary items, gravesite, and/or physical remains located on federal land. Section (3)(d)(I) of NAGPRA states that the discovering individual must notify the land manager in writing of such a discovery. In addition, ARPA provides for the assessment of criminal and/or civil penalties for damaging cultural resources. Any unplanned discovery of surface and/or subsurface cultural properties, items, or artifacts (e.g., stone tools, projectile points, etc.), human remains, items of cultural patrimony, sacred objects, or funerary items, requires that all activity in the vicinity of the find cease and protected with a minimum 30 meter (98.4 feet) buffer, and notification be made to Doug Furtado, Field Manager, Mt Lewis Field Office, 50 Bastian Way, Battle Mountain, NV 89820 (775-635-4000), by telephone, with written confirmation to follow, immediately upon such discovery. The location of the find should not be publically disclosed and any human remains must be secured and preserved in place until a Notice to Proceed is issued by the authorized officer.

Migratory Birds

2. Constructing the project during the migratory bird nesting season (approximately April 15 to August 1) could potentially disturb nesting migratory birds. If the project is constructed during the migratory bird nesting season, a preconstruction survey for nesting migratory birds will be conducted by a qualified biologist. If 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 and the entire area avoided preventing destruction or disturbance to nests until they are no longer active.

3.15 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not approve the PoO amendment. The Philadelphia Canyon WRF would not be expanded beyond what has been previously authorized. An alternative disposal area for waste rock would be needed. The Minnie Pit would not be mined deeper than what was previously authorized, allowing available minerals to remain unrecovered. No new environmental effects would occur under the No Action Alternative because no new permanent or temporary construction disturbance would take place.

3.16 CUMULATIVE EFFECTS

The CEQ regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 CFR Parts 1500-1508). Cumulative impacts are an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Section 1508.7).

The vicinity of the Phoenix Mine was identified by BLM as the cumulative effects area of analysis because the Proposed Action is unlikely to have measurable effects beyond the Phoenix Mine area (Figure 9). The most important past and present actions affecting environmental resources in the cumulative effects area are the Copper Canyon mining disturbance, pre-dating the Phoenix Mine, and the current Phoenix Mine. Recently completed actions causing smaller, minor disturbance include road and power line projects. The Copper Leach Project is a reasonably foreseeable action inside of the existing PoO boundary and consists of the construction and operation of a copper beneficiation facility and development of new leaching facilities at the Phoenix Mine.

Table 5. Cumulative Actions in the Vicinity of the Phoenix Mine

Project	Acres of Disturbance
Past and Present Actions	
Phoenix Project (including pre-project disturbance)	7,012
Willow Creek Road	27
Buffalo Valley Power Line	3
Philadelphia Canyon Power Line	2
<i>subtotal</i>	<i>7,044</i>
Reasonably Foreseeable	
Phoenix Copper Leach Project	902

Resource effects of the Proposed Action are minimal and include affects to geology and minerals, water quality, soils, vegetation, wildlife, sensitive species, migratory birds, and visual resources. The 7,044 acres of landscape-level disturbance from past and present actions has caused large scale loss and degradation of these resources. Additional loss is expected if the 902-acre Copper Leach Project is approved and implemented.

Construction of the Proposed Action would result in 45.9 acres of ground disturbance, of which 6.9 acres of disturbance has been previously approved for utility corridor construction. The relative effects of the Proposed Action compared with historic and recent changes would be small and incremental.

Geology and Minerals

The Proposed Action would be a relatively minor expansion of the Phoenix Mine located in a long-established mining area where existing geology and mineral resources have been mined since the 1860s. The Proposed Action would be a minor 0.5 percent increase in mining-related disturbance. The Proposed Action would incrementally add to the recovery of gold, silver, and copper and would cause a negligible change in the existing geologic terrain.

Water Quality

The Proposed Action would be a relatively minor expansion of the Phoenix Mine, where all WRFs are constructed, managed, and monitored in accordance with mitigation measures and a WRMaP to protect water quality required by the 2003 Phoenix Project ROD and PoO approval. The cumulative impact to water quality is expected to be minor because the Philadelphia Canyon WRF expansion area and Minnie Pit backfill would be incorporated into the Phoenix Mine waste rock management program and other monitoring programs designed to monitor and protect water quality.

Vegetation and Wildlife, Including BLM Sensitive Species and Migratory Birds

The Proposed Action would be a relatively minor expansion of the Phoenix Mine located in a long-established mining area where landscape level losses of native vegetation and wildlife habitat have already occurred. The cumulative impact to vegetation and wildlife habitat is expected to be minor because 45.9 acres of habitat loss is relatively small compared with current and historic losses. Additionally, loss of vegetation and wildlife resources would be temporary once facilities are successfully reclaimed and revegetated.

Visual

The Proposed Action would be a relatively minor expansion of the Phoenix Mine located in a long-established mining area where landscape level modifications to the viewshed have already occurred. The currently permitted Philadelphia Canyon WRF is 343.7 acres. The cumulative visual impact is expected to be minor because the Proposed Action would be a minor addition to an existing visual feature and would be reclaimed to appear more natural and blend into the existing topography.

The contribution of the Proposed Action to cumulative losses would be extremely small when compared with the effects of past, present, and reasonably foreseeable actions in the assessment area. The contribution of the cumulative losses by the Proposed Action would be further reduced with the implementation of the Reclamation Plan, WRMaP, and SWPPP. For all projects requiring BLM approval including this proposed action, BLM would require the project applicant to avoid and/or mitigate potential adverse effects, thus minimizing cumulative losses.

3.17 RESIDUAL IMPACTS

With the successful implementation of the environmental protection measures, including implementation of the Reclamation Plan, WRMaP, and SWPPP incorporated into the Proposed Action, the Proposed Action would result in only minimal residual impacts. Residual effects would be limited to loss of geologic resources and changes in topography.

CHAPTER 4 LIST OF PREPARERS AND SOURCES

4.1 REPORT PREPARERS

This Environmental Assessment was prepared by the following individuals:

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Mike Derby, GIS and AutoCad Support
Chris Johnson, GIS and AutoCad Support

Allied Nevada Gold Corporation
Debbie Lassiter, Environmental Manager

Newmont Mining Corporation
Robert Orr, Environmental Coordinator

Bureau of Land Management
Christopher Worthington, NEPA Specialist
Dave Davis, NEPA Coordinator
Steve Drummond, Mining Engineer
Larry Turner, Mining Engineer
Casey Johnson, Vegetation and Soils
Gerald Dixon, Native American Coordinator
Mike Stamm, Wildlife Biologist
Ryan Sandefur, Wildlife Biologist
Michael Vermeys, Weed Management Specialist
Janice George, Archaeologist
Jon Sherve, Hydrologist

4.2 PERSONS, GROUPS, AND AGENCIES CONSULTED

Katie Miller, Eastern Region Mining Biologist, Nevada Department of Wildlife
Eric Miskow, Biologist/Data Manager, Nevada Natural Heritage Program
U.S. Fish and Wildlife Service Ecological Services

4.3 REFERENCES

- Baker Consultants, Inc. 2000. *Addendum to Baseline Hydrologic Characterization Report. Phoenix Project. Lander County, Nevada.*
- Brown and Caldwell. 1999. *Work Plan for Minnie Pit. Battle Mountain Complex. Lander County, Nevada.*
- Brown and Caldwell. 2000. *Contingent Long-term Groundwater Management Plan. Battle Mountain Complex Lander County, Nevada.*
- Bureau of Land Management [BLM]. 1984. *Shoshone - Eureka Resource Management Plan, Environmental Impact Statement; Final.* Battle Mountain, Nevada: U.S. Bureau of Land Management, Battle Mountain District Office. TIC: 241507.
- _____. 1986. *Shoshone - Eureka Resource Area Record of Decision.* Battle Mountain, Nevada: U.S. Bureau of Land Management, Battle Mountain District Office.
- _____. 2002. *Environmental Impact Statement, Phoenix Project.* Battle Mountain Field Office, Battle Mountain, Nevada.
- _____. 2003. *Record of Decision and Plan of Operations Approval Battle Mountain Gold Phoenix Project.* Battle Mountain Field Office, Battle Mountain, Nevada. November 28, 2003.
- _____. 2008. *National Environmental Policy Act Handbook.* United States Department of the Interior, Bureau of Land Management. BLM Manual Handbook. H-1790-1, Rel. 1-1710. January 2008.
- Environmental Management Associates, Inc [EMA]. 1999. *Noxious Weed Inventory and Risk Assessment for the Phoenix Project, Battle Mountain complex, Lander County, Nevada. EMA Report No. 1603-01.*
- Golder Associates. 1999a. *Report of Waste Dump Stability Analyses. Phoenix Project.*
- _____. 1999b. *Response to June 15, 1999 EIS Review comments waste dump stability analyses.*
- _____. 1999c. *Waste Dump Stability Analyses Copper Canyon Waste Dump, Phoenix Project.*
- _____. 2000. *Technical Responses to December 20, 1999 EAS memo. BM Waste Dump and Tailings Impoundment Design. Phoenix Project.*
- Natural Resources Conservation Service. 1992. *Web Soil Survey of Lander County, Nevada, North Part).* <http://websoilsurvey.nrcs.usda.gov>
- Newmont Mining Corporation. 2003. *Reclamation Plan – Phoenix Project.*

_____. 2005. *Phoenix Project NVN-067930 Plan of Operations Modification*.

_____. 2008a. *Phoenix Mine Waste Rock Management Plan*.

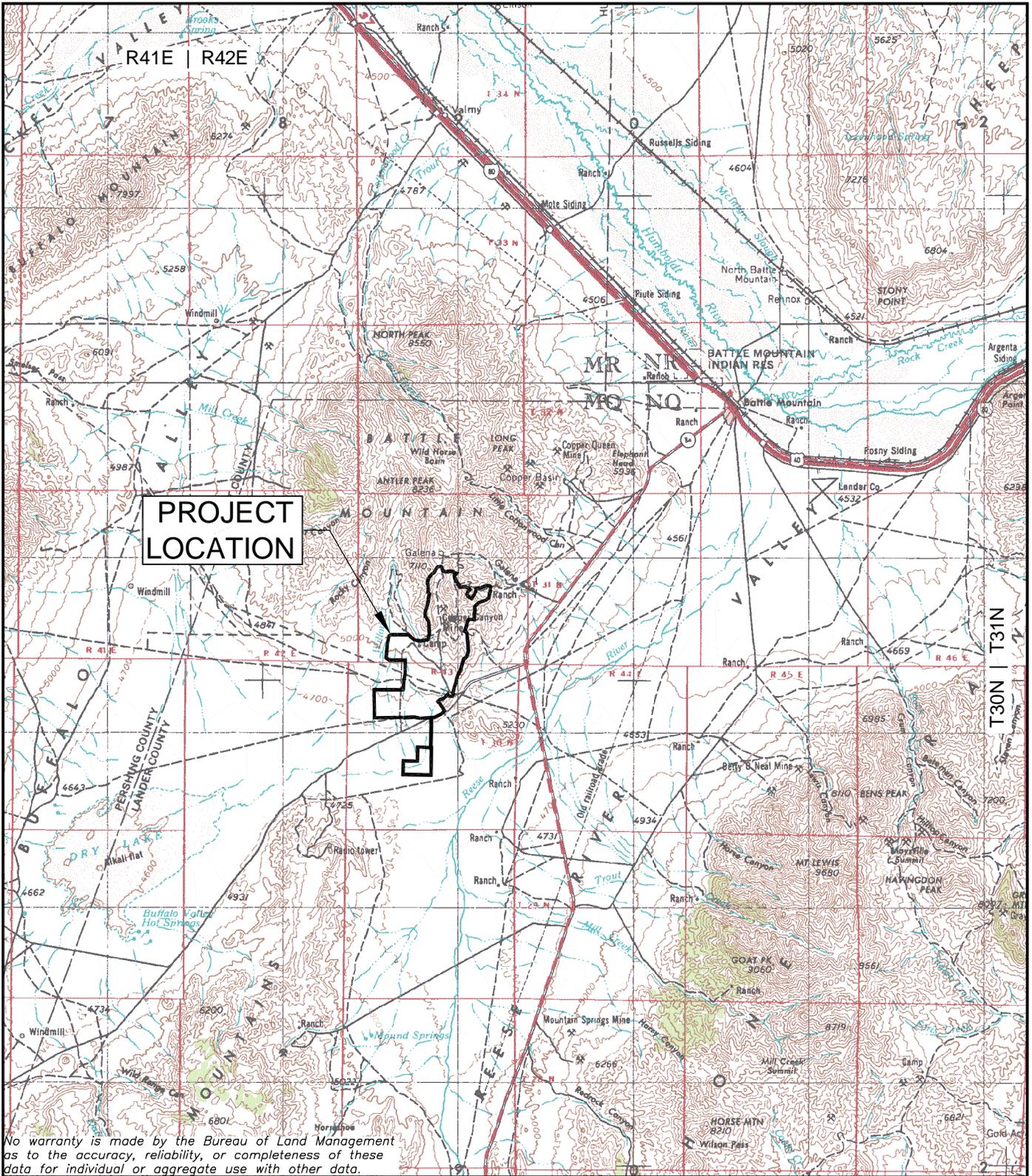
_____. 2008b. *Water Resource Monitoring Plan*.

_____. 2009. *Phoenix Mine – Stormwater Pollution Prevention Plan*.

_____. 2010. *Minnie Pit and Philadelphia Canyon Expansion Plan of Operations Amendment Version 5*

State of Nevada. 1994. *Best Management Practices Handbook*. Nevada Division of Environmental Protection, Carson City, Nevada.

FIGURES



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

Base Image: USGS DRG 250 K

— Proposed PoI Boundary



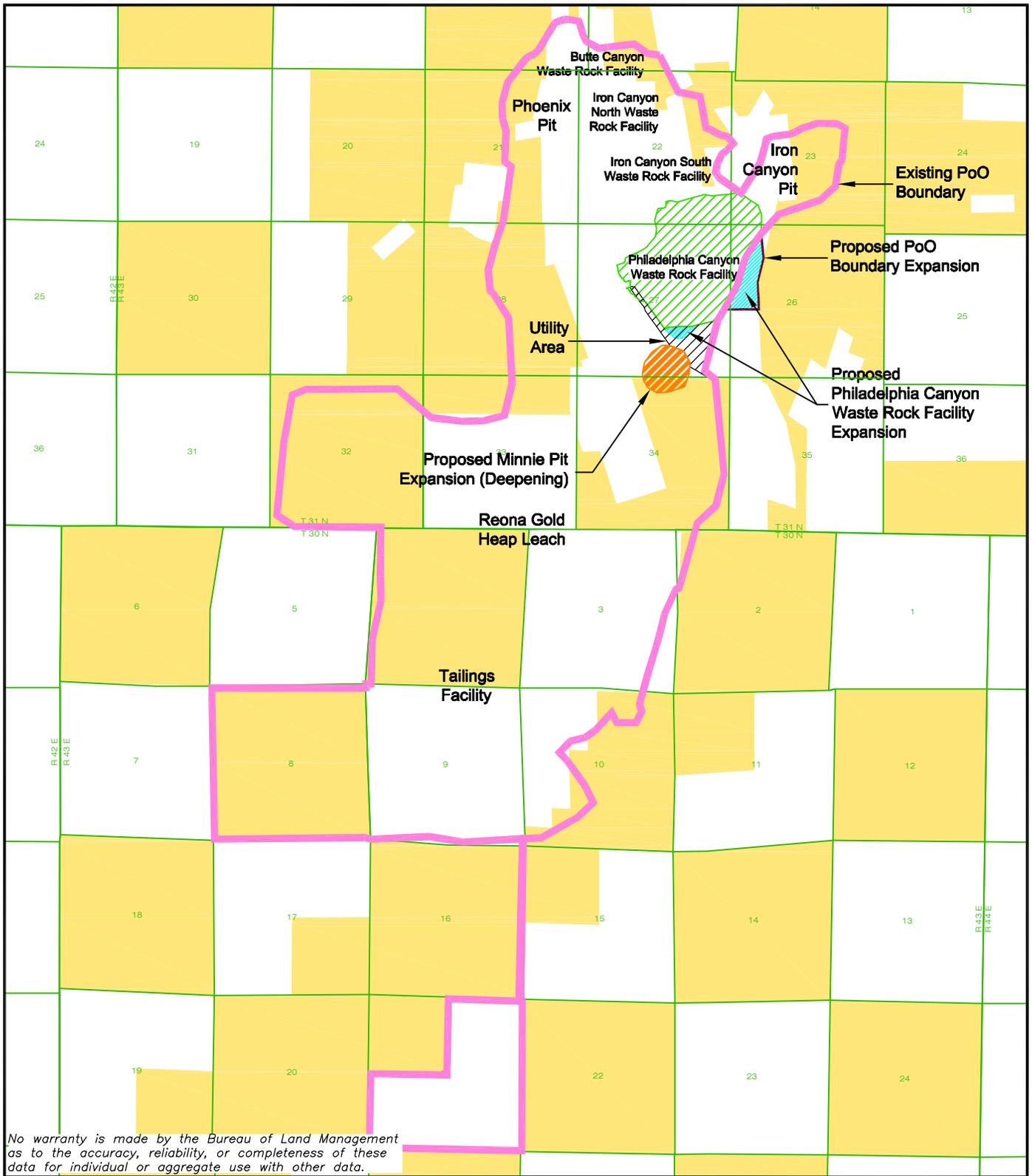
DATE DRAWN 10/26/09

NEWMONT PHOENIX PROJECT
PHILADELPHIA CANYON / MINNIE PIT EXPANSION EA

FIGURE 1
GENERAL LOCATION



Battle Mountain District Office
 50 Bastian Road
 Battle Mountain, NV 89820



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Base Image: Newmont Fig2-5_PoO_Existing Disturbance.dwg

Existing PoO Boundary	Public Land
Proposed PoO Boundary Expansion	Private Land
Philadelphia Canyon WRF	Section Line
Proposed WRF Expansion	
Proposed Pit Expansion	
Utility Area	

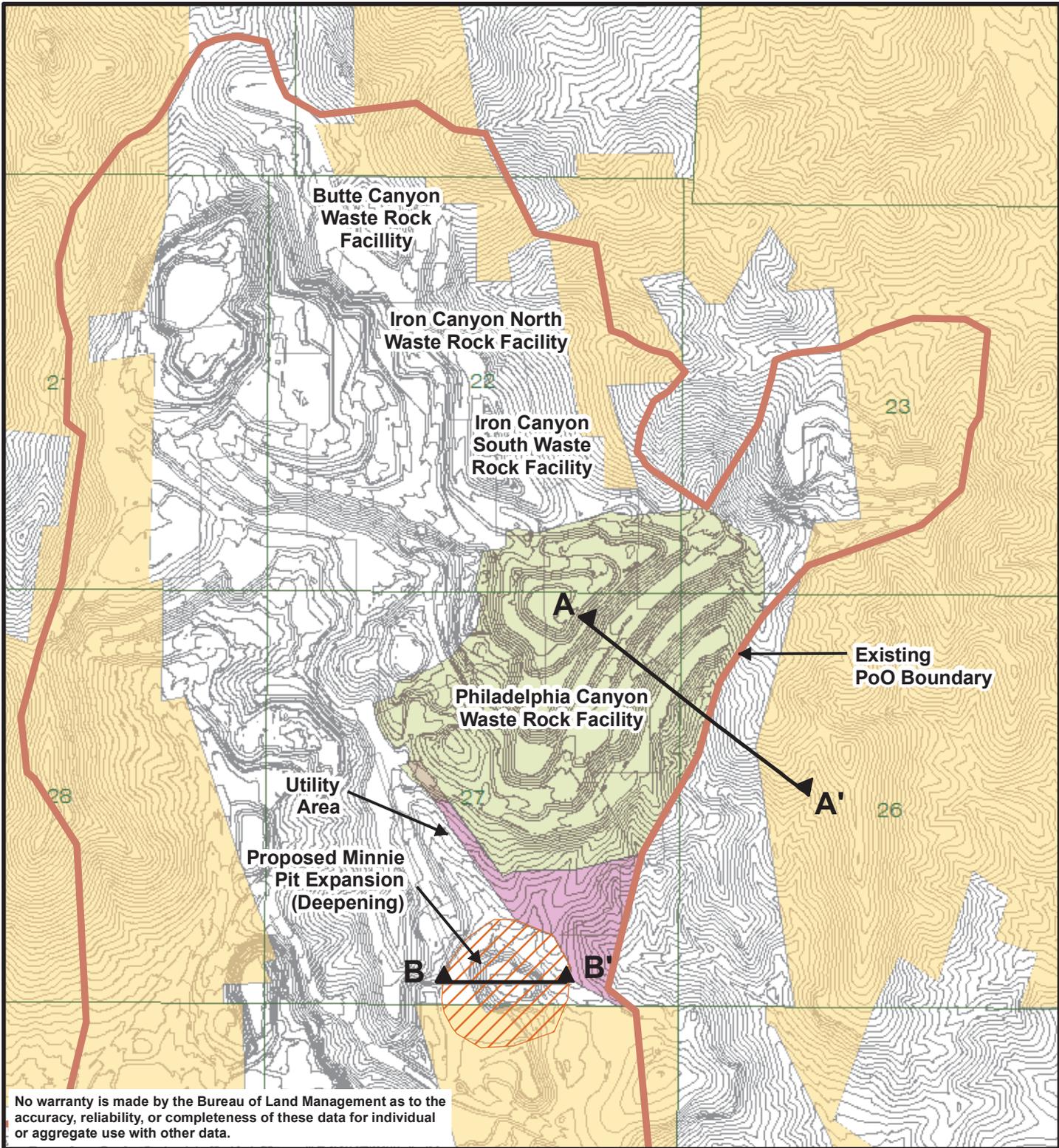
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DATE DRAWN 03/09/10

NEWMONT PHOENIX PROJECT
PHILADELPHIA CANYON / MINNIE PIT EXPANSION EA

FIGURE 2
LOCATION OVERVIEW

Battle Mountain District Office
 50 Bastian Road
 Battle Mountain, NV 89820

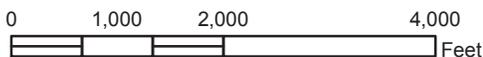


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BASE IMAGE: Newmont Fig2-5_PoO_Existing Disturbance.dwg

MAP DATE: May 26, 2010

- PoO Boundary
 - Proposed Pit Expansion
 - Philadelphia Canyon WRF
 - Public Land
 - Private Land
 - Utility Area
- T31N, R45E

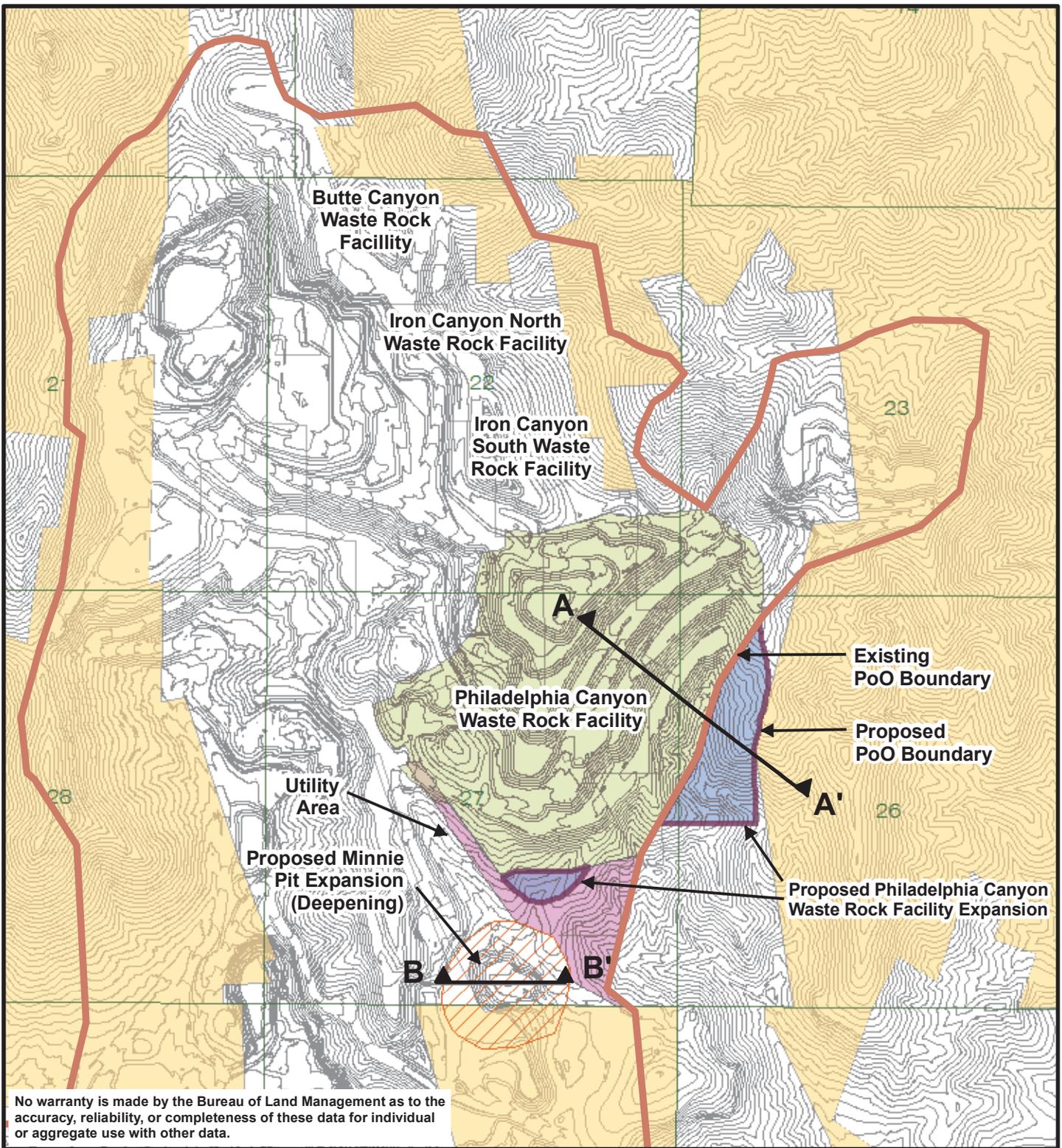


NEWMONT PHOENIX PROJECT
**PHILADELPHIA CANYON/
 MINNIE PIT EXPANSION EA**

FIGURE 3
EXISTING DISTURBANCE



BLM Battle Mountain District
 50 Bastian Road
 Battle Mountain, NV 89820



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BASE IMAGE: Newmont Fig2-5_PoO_Existing Disturbance.dwg

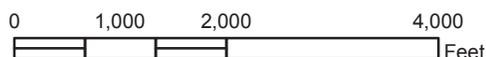
MAP DATE: May 26, 2010

- PoO Boundary
- Proposed PoO Boundary
- Proposed Pit Expansion
- Philadelphia Canyon WRF T31N, R45E
- Proposed WRF Expansion
- Public Land
- Private Land
- Utility Area

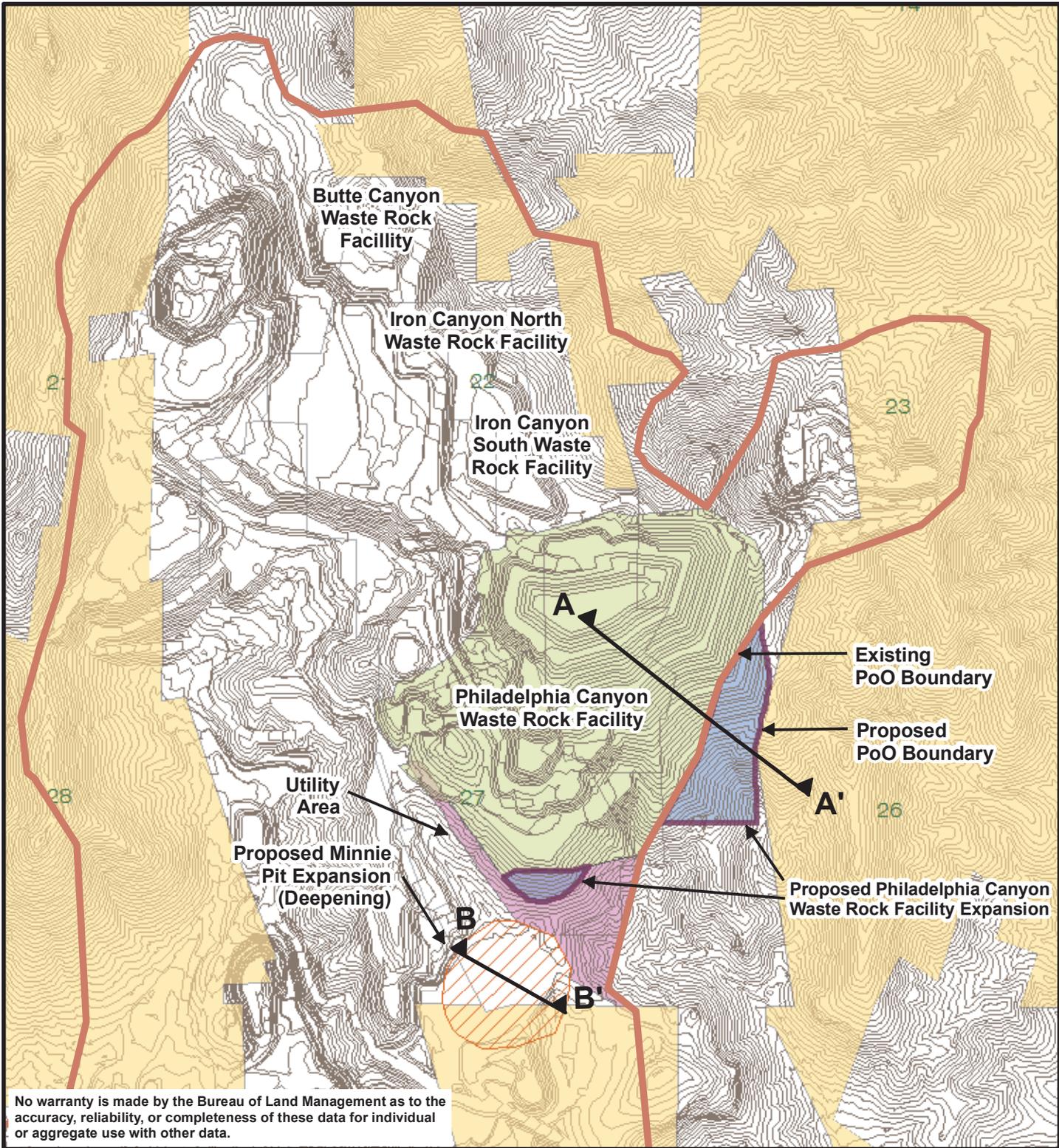


NEWMONT PHOENIX PROJECT
**PHILADELPHIA CANYON/
 MINNIE PIT EXPANSION EA**

FIGURE 4
PROPOSED DISTURBANCE



BLM Battle Mountain District
 50 Bastian Road
 Battle Mountain, NV 89820

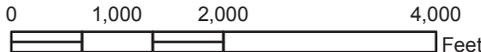


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BASE IMAGE: Newmont Fig2-5_PoO_Existing Disturbance.dwg

MAP DATE: July 14, 2010

- PoO Boundary
 - Proposed PoO Boundary
 - Proposed Pit Expansion
 - Public Land
 - Private Land
 - Proposed WRF Expansion
 - Philadelphia Canyon WRF
 - Utility Area
- T31N, R45E



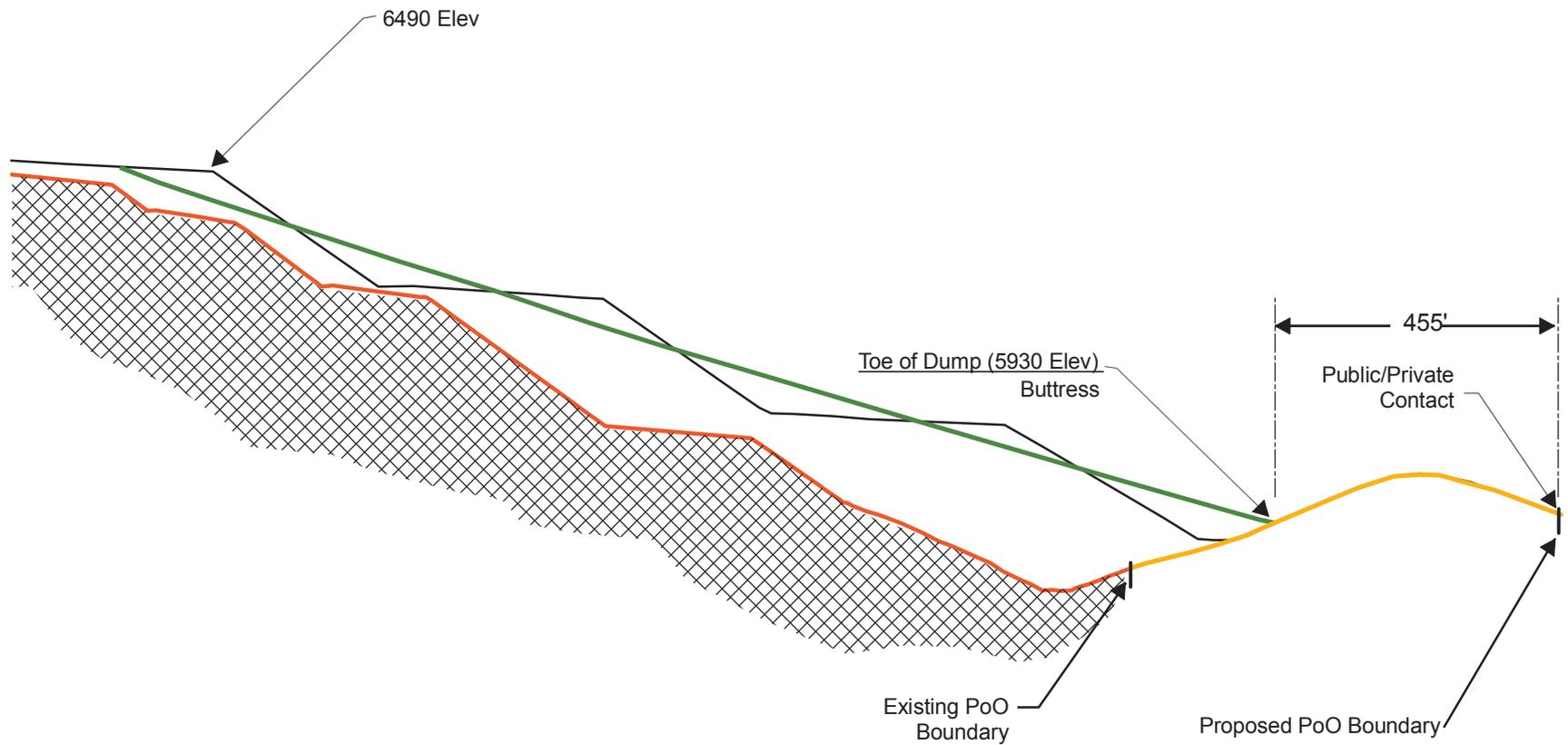
NEWMONT PHOENIX PROJECT
**PHILADELPHIA CANYON/
 MINNIE PIT EXPANSION EA**

FIGURE 5
PROPOSED RECLAMATION TOPOGRAPHY



BLM Battle Mountain District
 50 Bastian Road
 Battle Mountain, NV 89820

A A'



Not to Scale

BASE IMAGE: Newmont Fig7_PoO_Minnie_X-Section.dwg

- Existing WRF
- Proposed WRF
- Reclaimed WRF
- Natural Contour



MAP DATE: May 26, 2010



NEWMONT PHOENIX PROJECT

PHILADELPHIA CANYON/
MINNIE PIT EXPANSION EA

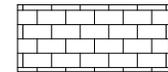
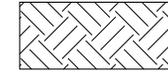
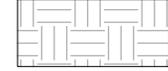
FIGURE 6
PHILADELPHIA CANYON WRF CROSS-SECTION

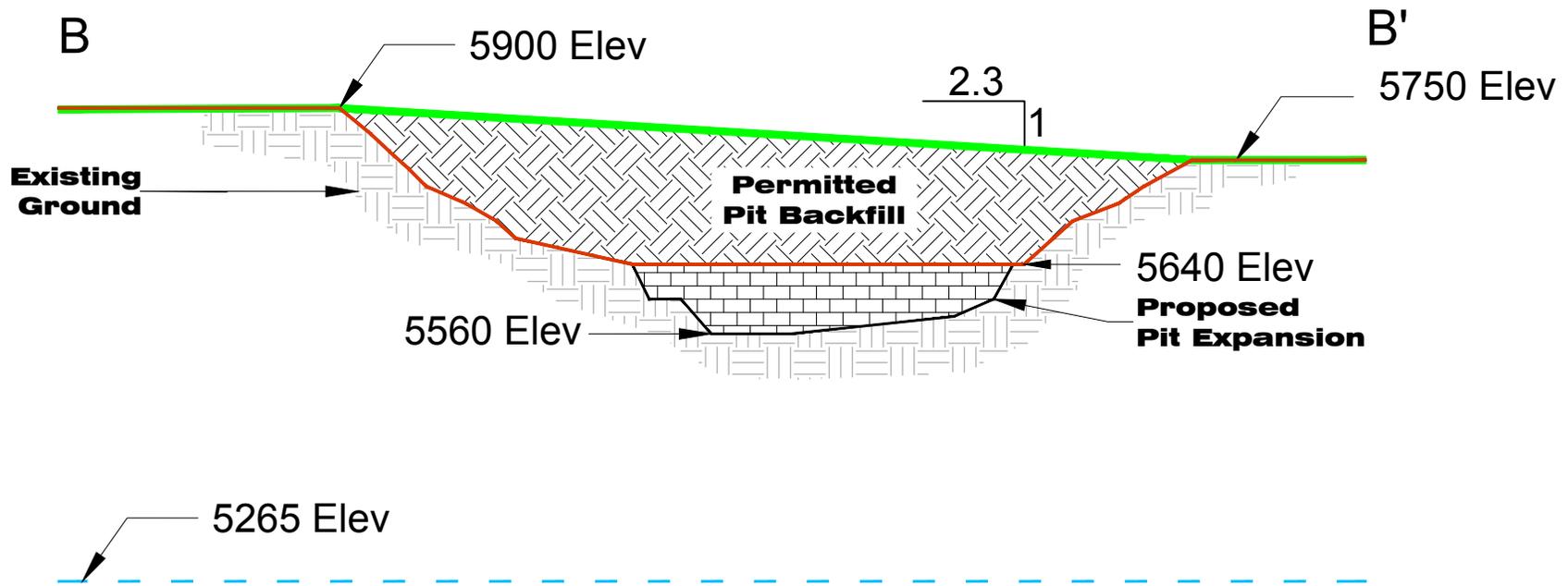


BLM Battle Mountain District
50 Bastian Road
Battle Mountain, NV 89820

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

-  Reclamation Topography
-  Existing Topography
-  Proposed Topography
-  Predicted Groundwater Elevation (Baker 2000)

-  Proposed Pit Expansion and Backfill
-  Permitted Backfill
-  Existing Ground



Not to Scale

Base Image: Fig 7_PoO_Minnie_X-Section.dwg



DATE DRAWN 03/09/10

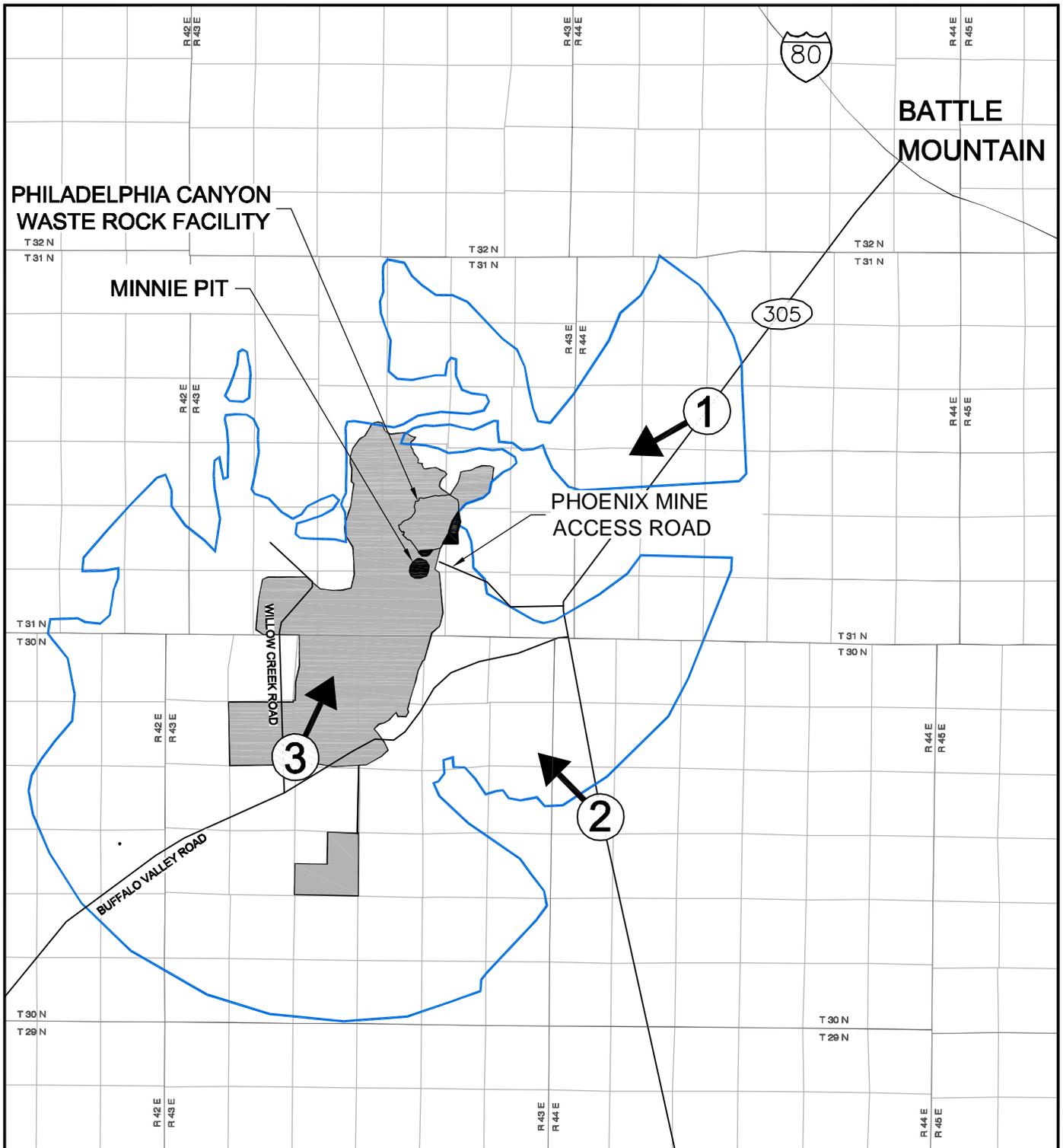
NEWMONT PHOENIX PROJECT
PHILADELPHIA CANYON / MINNIE PIT EXPANSION EA

FIGURE 7
MINNIE PIT CROSS-SECTION



Battle Mountain District Office
50 Bastian Road
Battle Mountain, NV 89820

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



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

Base Data: Phoenix Project FEIS, Jan. 2002

- Road
- 5-Mile Viewshed Boundary
- Existing POO Boundary
- Proposed Expansion
- Key Observation Points
 - 1 - State Highway 305 Southbound View
 - 2 - State Highway 305 Northbound View
 - 3 - Willow Creek Road View



DATE DRAWN 02/11/10

NEWMONT PHOENIX MINE
PHILADELPHIA CANYON / MINNIE PIT EXPANSION EA

FIGURE 8
VISUAL RESOURCES KEY OBSERVATION POINTS



Battle Mountain District Office
 50 Bastian Road
 Battle Mountain, NV 89820

R43E | R44E

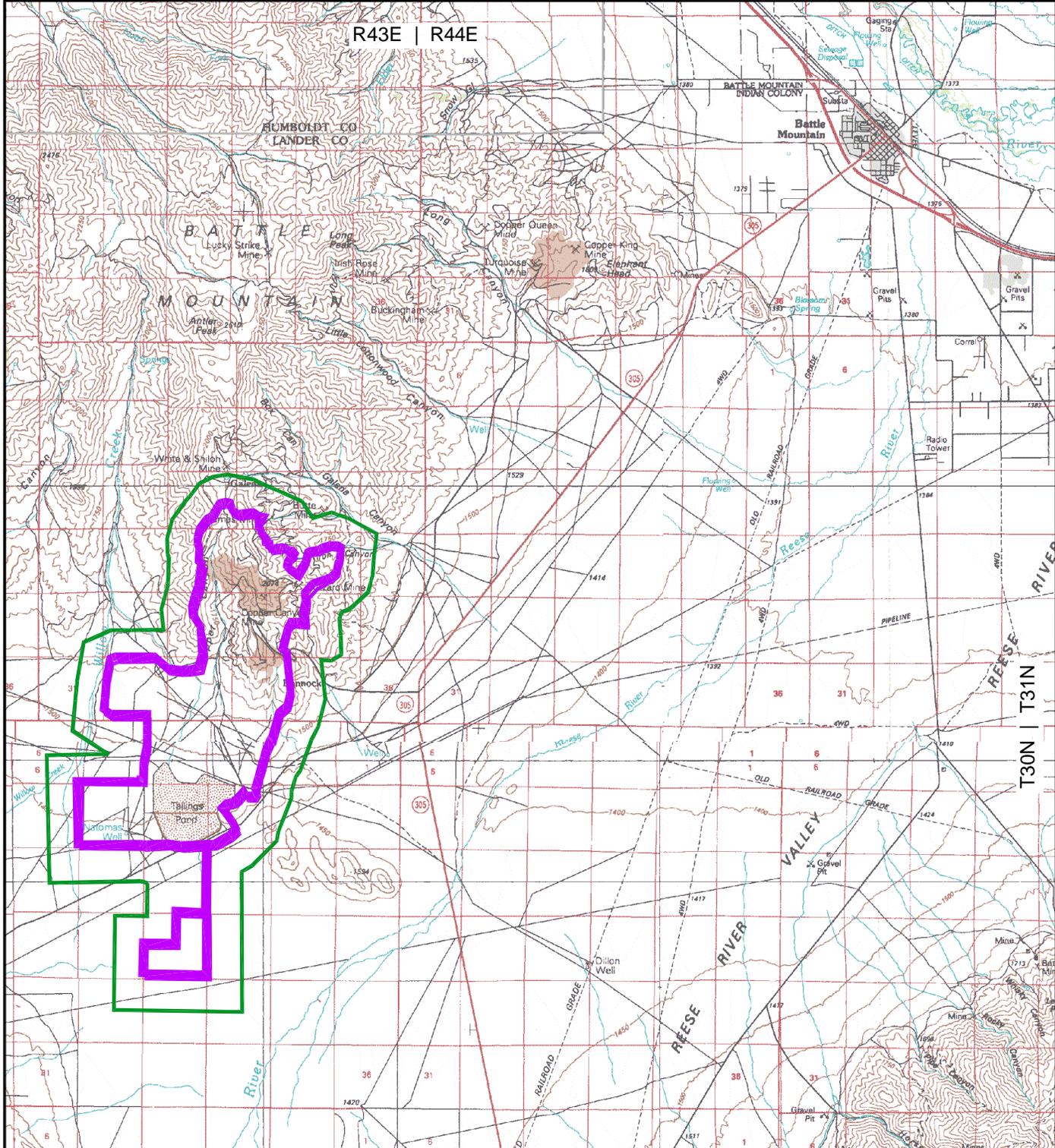
HUMBOLDT CO
LANDER CO

BATTLE MOUNTAIN
INDIAN COLONY

Battle Mountain

BATTLE MOUNTAIN

T30N | T31N



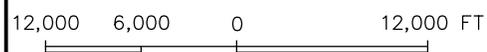
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data.

Base Image: USGS DRG 100 K

- Existing PoO Boundary
- Cumulative Effects Buffer (1/2 mile)



N



DATE DRAWN 02/12/10

NEWMONT PHOENIX PROJECT
PHILADELPHIA CANYON / MINNIE PIT EXPANSION EA

FIGURE 9
CUMULATIVE EFFECTS AREA



Battle Mountain District Office
 50 Bastian Road
 Battle Mountain, NV 89820

APPENDIX A

Existing and Proposed Surface Disturbance

Existing and Proposed Surface Disturbance (acres)

PROJECT COMPONENT	EXISTING		PROPOSED		TOTAL		
	Private	Public	Private	Public	Private	Public	Total
Post-reclamation highwalls ¹							
Midas ²	272.2	74.3	0	0	272.2	74.3	346.5
Phoenix	326.0	18.9	0	0	326.0	18.9	344.9
Reona	0	17.1	0	0	0	17.1	17.1
Iron Canyon	26.8	0.1	0	0	26.8	0.1	26.9
Subtotal	625.0	110.4	0	0	625.0	110.4	735.4
PIT BACKFILL ACTIVITIES							
Midas Pit Backfill	185.4	100	0	0	185.4	100	285.4
Phoenix Pit Backfill	165.4	31.3	0	0	165.4	31.3	196.7
Reona pit Backfill	13.2	109.5	0	0	13.2	109.5	122.7
Iron Canyon Pit backfill	46.8	25.3	0	0	46.8	25.3	72.1
Minnie Pit Backfill	37.4	6.6	0	0	37.4	6.6	44
Subtotal	448.2	272.7	0	0	448.2	272.7	720.9
STOCKPILES							
Fortitude Stockpile	0	33.4	0	0	0	33.4	33.4
Ore Stockpiles	28.9	0	0	0	28.9	0	28.9
Subtotal	28.9	33.4	0	0	28.9	33.4	62.3
WASTE ROCK FACILITIES							
Iron Canyon North	50.3	38.6	0	0	50.3	38.6	88.9
Iron Canyon South	99.0	30.2	0	0	99.0	30.2	129.2
Iron Canyon East	11.5	75.5	0	0	11.5	75.5	87.0
Box Canyon	41.0	162.5	0	0	41.0	162.5	203.5
Butte Canyon	1.7	25.0	0	0	1.7	25.0	26.7
Philadelphia Canyon	343.7	0	45.9	0	382.7	0	389.6
Natomas	292.5	704.6	0	0	292.5	704.6	997.1
North Fortitude	58.4	23.2	0	0	58.4	23.2	81.6
North Optional Use Area	113.8	7.2	0	0	113.8	7.2	121.0
Subtotal	1011.9	1066.8	45.9	0	1057.8	1066.8	2124.6
TAILINGS FACILITIES							
Tailings Area #1	547.2	274.0	0	0	547.2	274.0	821.2
Tailings Area #2	181.7	87.0	0	0	181.7	181.7	268.7
Tailings Area #3	301.1	5.1	0	0	301.1	5.1	306.2
Subtotal	1030	366.1	0	0	1030	336.1	1396.1
GROWTH MEDIA STOCKPILES							
Section 4 (Adjacent to Natomas Waste)	0	14.2	0	0	0	14.2	14.2
Section 4 (within Tailings Borrow Area)	0	9.3	0	0	0	9.3	9.3
Section 28 (Adjacent Reona Pit)	0	31.1	0	0	0	31.1	31.1

PROJECT COMPONENT	EXISTING		PROPOSED		TOTAL		
	Private	Public	Private	Public	Private	Public	Total
Section 10 (S.E. of tailings, excluding stockpile area)	0	13.1	0	0	0	13.1	13.1
Subtotal	0	67.7	0	0	0	67.7	67.7
							OTHER
Clay Borrow Area	463.2	5.6	0	0	463.2	5.6	468.8
Borrow Area (adj. tailings, excluding stockpile area)	176.3	52.3	0	0	176.3	52.3	228.6
Office Area	0	2.6	0	0	0	2.6	2.6
Heap Leach Pad (Reona)	303.5	167.6	0	0	303.5	167.6	471.1
Reona Event Pond and Beneficiation Facility	0	0	0	0	0	0	0
New Phoenix Mill Area Site	59.2	17.6	0	0	59.2	17.6	76.8
Ancillary Facilities Area	0	0	0	0	0	0	0
Iron Launder Plant	0	0	0	0	0	0	0
South Optional Use Area	0	641.9	0	0	0	641.9	641.9
Utility and Haul Road Corridor	43.4	53.3	0	0	43.4	53.3	96.7
Roads	0	0	0	0	0	0	0
Utility Corridor	50.0	11.5	- 6.9	0	43.1	11.5	54.6
Drill Sites	25.0	25.0	0	0	25.0	25.0	50
Subtotal	1120.6	977.4	- 6.9	0	1113.7	977.4	2091.1
Willow Creek County Road Reroute	23.0	3.9	0	0	23.0	3.9	26.9
Buffalo Valley Power Line	1.9	1.1	0	0	1.9	1.1	3.0
Philadelphia Canyon Power Line	1.3	1.0	0	0	1.3	1.0	2.3
Subtotal	26.2	6.0	0	0	26.2	6.0	32.2
Total Disturbance In All Categories	4290.8	2900.5³	39.0	0	4329.8	2900.5	7230.3

¹ The total proposed area of disturbance of each pit is obtained by adding the post-reclamation pit highwall area with the pit backfill facility area.

² To obtain the total proposed area of disturbance for the Midas Pit, add 40.2 acres that are backfilled with Box Canyon waste to the Midas post-reclamation pit highwall and Midas Pit backfill facility areas.

³ Total acreage of disturbance inside the Phoenix Mine boundary.

APPENDIX B

Agency Coordination



JIM GIBBONS
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

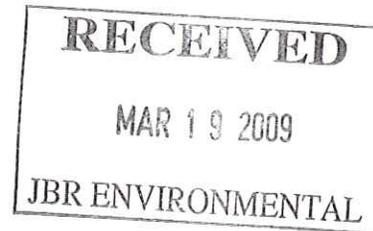
1100 Valley Road
Reno, Nevada 89512

(775) 688-1500 • Fax (775) 688-1595

KENNETH E. MAYER
Director

RICHARD L. HASKINS, II
Deputy Director

March 13, 2009



David Worley
Senior Biologist
JBR Environmental Consultants, Inc.
5355 Kietzke Lane
Suite 100
Reno, NV 89511

RE: Newmont Minnie Pit and Philadelphia WRF Expansion

Dear Mr. Worley,

This letter is in response to your recent request for biological information in the vicinity of Newmont's Pheonix Mine existing Minnie pit and Philadelphia WRF and its proposed expansion.

The Battle Mountains are used as habitat by a variety of game and non-game species. Mule deer are present and dispersed across the mountains. Mule deer use the higher elevations in the summer months and migrate elevationally to the lower areas in the winter months. Sage grouse are also present in the project vicinity. A couple of active and historic leks are located within a few miles of the project boundary. Sage grouse also use the higher elevations in the summer months and then winter and nest in the lower elevations.

Chukar are an important game bird and are found in abundance in and around the project area. Chukar tend to prefer steep, rocky terrain, with access to water sources, either seeps, springs, or streams.

Raptors have been located within and beyond the project boundary. An historic golden eagle nest is located within Iron Canyon; whether it is currently active is unknown. An historic Cooper's hawk's nest is located north of the project area in Little Cottonwood Canyon; its status is also unknown. Raptors are known to forage in and around the project area.

If sagebrush habitat is intact, there is the possibility that pygmy rabbits would be present. Numerous non-game species could be found in and around the project area. Migratory songbirds that may be present include meadowlarks, horned larks, mountain bluebirds, western kingbird and loggerhead shrikes. Small mammals that may be present include least chipmunk, ground squirrels, bushy-tailed woodrat and sagebrush voles. The project area may provide sufficient roosting opportunities for numerous bats. Bats are likely to forage in the project area. Two

maternity colonies of Townsend's big-eared bats are located just north of the project area in Butte canyon. Disturbance to these sites must be prevented. A number of reptiles, including rattlesnakes, desert horned lizards, and western fence lizards, can be found in the vicinity.

Should you have any questions about the information I've provided or if you require additional information, please contact me. Thank you.

Sincerely,

A handwritten signature in black ink that reads "K Miller". The signature is written in a cursive style with a large, prominent "K" and "M".

Katie Erin G. Miller
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STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program
<http://heritage.nv.gov>

17 March 2009

David Worley
JBR Environmental Consultants, Inc.
5355 Kietzke Lane, Suite 100
Reno, NV 89511



RE: Data request received 12 March 2009

Dear Mr. Worley:

We are pleased to provide the information you requested on endangered, threatened, candidate, and/or At Risk plant and animal taxa recorded within or near the Newmont Minnie Pit and Philadelphia Canyon Waste Rock Facility Expansion Project area. We searched our database and maps for the following, a five kilometer radius around:

Township 31N Range 43E Sections 22, 23, 26 and 27

There are no at risk taxa recorded within the given area. We do not have complete data on various raptors that may also occur in the area; for more information contact Ralph Phenix, Nevada Division of Wildlife at (775) 688-1565. Note that all cacti, yuccas, and Christmas trees are protected by Nevada state law (NRS 527.060-.120), including taxa not tracked by this office.

Please note that our data are dependent on the research and observations of many individuals and organizations, and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the taxa or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for checking with our program. Please contact us for additional information or further assistance.

Sincerely,


Eric S. Miskow
Biologist /Data Manager



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Nevada Fish and Wildlife Office

1340 Financial Blvd., Suite 234

Reno, Nevada 89502

Ph: (775) 861-6300 ~ Fax: (775) 861-6301

March 25, 2009

File No. 2009-SL-0187

Mr. David Worley
JBR Environmental Consultants, Inc.
5355 Kietzke Lane, Suite 100
Reno, Nevada 89511



Dear Mr. Worley:

Subject: Species List Request for Newmont Minnie Pit and Philadelphia Waste Rock Facility Expansion Project, Lander County, Nevada

This responds to your letter received on March 10, 2009, requesting a species list for the Newmont Minnie Pit and Philadelphia Waste Rock Facility Expansion Project in Lander County, Nevada. To the best of our knowledge, no listed, proposed, or candidate species occur in the subject project area. This response fulfills the requirements of the Fish and Wildlife Service (Service) to provide a list of species pursuant to section 7(c) of the Endangered Species Act of 1973 (Act), as amended, for projects that are authorized, funded, or carried out by a Federal agency.

The Nevada Fish and Wildlife Office no longer provides species of concern lists. Most of these species for which we have concern are also on the sensitive species list for Nevada maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we are adopting Heritage's sensitive species list and partnering with them to provide distribution data and information on the conservation needs for sensitive species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. Consideration of these sensitive species and exploring management alternatives early in the planning process can provide long-term conservation benefits and avoid future conflicts.

For a list of sensitive species by county, visit Heritage's website at www.heritage.nv.gov. For a specific list of sensitive species that may occur in the project area, you can obtain a data request form from the website or by contacting Heritage at 901 South Stewart Street, Suite 5002,

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Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the Act. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address. Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (see <http://www.leg.state.nv.us/NAC/NAC-503.html>). Before a person can hunt, take, or possess any parts of wildlife species classified as protected, they must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (visit <http://www.ndow.org> or call 775-777-2300).

We note that the pygmy rabbit (*Brachylagus idahoensis*) may occur within the planning area and could be affected by it. On January 8, 2008, the Service published a substantial 90-day finding on a petition to list the pygmy rabbit as threatened or endangered under the Act, thus initiating a status review of the species. Draft survey guidelines have been developed for this species and are available upon request from the Nevada Fish and Wildlife Office. We encourage you to survey the proposed project area for pygmy rabbits prior to any ground disturbing activities and to consider the needs of this species as you complete project planning and implementation. The Bureau of Land Management State Director for Nevada has directed all Field Office staff in Nevada to address the pygmy rabbit in all upcoming Land Use Plan revisions.

Because wetlands, springs, or streams may occur in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (Corps) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the Corps' Regulatory Section, 300 Booth Street, Room 2103, Reno, Nevada 89509, (775) 784-5304, regarding the possible need for a permit.

Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703 *et seq.*), we are concerned about potential impacts the proposed project may have on migratory birds in the area. Given these concerns, we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If 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) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Mr. David Worley

File No. 2009-SL-0187

Please reference File No. 2009-SL-0187 in future correspondence concerning this species list. If you have any questions regarding this correspondence or require additional information, please contact me or James Harter at (775) 861-6300.

Sincerely,



 Robert D. Williams
State Supervisor