

# **MITIGATION PLAN PAN MINE PROJECT**

*Prepared for:*

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### **LIST OF ACRONYMS & ABBREVIATIONS**

<b>BBCS</b>	Bird and Bat Conservation Strategy
<b>BLM</b>	Bureau of Land Management
<b>DEIS</b>	Draft Environmental Impact Statement
<b>EPM</b>	Environmental Protection Measure
<b>Midway</b>	Midway Gold U.S. Inc.
<b>NDOW</b>	Nevada Department of Wildlife
<b>PGH</b>	Preliminary General Habitat
<b>PMU</b>	Population Management Unit
<b>PPH</b>	Preliminary Priority Habitat
<b>SHPO</b>	State Historic Preservation Office
<b>USFWS</b>	United States Fish and Wildlife Service
<b>WWG</b>	Wildlife Working Group

# **MITIGATION PLAN PAN MINE PROJECT**

## **1.0 INTRODUCTION**

This Mitigation Plan includes mitigation by resource as described in the Draft Environmental Impact Statement (DEIS) prepared for the Pan Mine Project plus additional mitigation measures that were determined through consultation between Midway Gold U.S. Inc. (Midway), the Bureau of Land Management (BLM), the Nevada Department of Wildlife (NDOW), and the United States Fish and Wildlife Service (USFWS). Specific impacts to the affected resources are described in Chapter 4 of the DEIS.

The mitigation measures specified in this Mitigation Plan are designed to reduce impacts to the resources, which may occur from the Proposed Action. The BLM approach to mitigation is to first avoid and then minimize the impacts on public lands from proposed activities. Minimization is achieved through design features, best management practices, and Environmental Protection Measures (EPMs), which are part of the project, and which are detailed in Chapter 2 of the DEIS. However, not all impacts associated with the Proposed Action can be eliminated by these measures. For those impacts that cannot be avoided or minimized, the implementation of measures to mitigate the impacts needs to be developed with the goal of ensuring the viability of the impacted resources over time. In some cases, off-site mitigation may be required to compensate resource impacts by replacing or providing substitute resources or habitat at a different location than the project area. This on-site and off-site mitigation is used to increase the BLM's ability to fulfill its resource management objectives.

Resources where it was determined that the implementation of the Proposed Action would have a significant impact are included in the mitigation plan. If impacts were avoided through project design or EPMs or no mitigation was recommended by the EIS, mitigation is not discussed in this document. Resources addressed in this document include vegetation including noxious and non native, invasive weeds and special status plants; wildlife resources including special status wildlife and migratory birds; greater sage-grouse; cultural resources; and visual resources.

## **2.0 VEGETATION, INCLUDING NOXIOUS AND NON-NATIVE, INVASIVE WEEDS AND SPECIAL STATUS PLANTS**

The following mitigation measures for vegetation, and TES plants, have been proposed in the EIS.

### **2.1 MITIGATION**

Mitigation Measure Veg-1: To mitigate for the potential loss of individual sagebrush cholla plants and its habitat as a result of disturbance from the Proposed Action, Midway would provide monitoring during construction, maintenance, and reclamation activities to minimize impacts to plants and their habitat. Previously identified individual plants and populations would be flagged and avoided, if possible, while constructing access roads and installing power poles.

Mitigation Measure Veg-2: Midway would implement an employee-training program to educate employees of the importance of not disturbing flagged areas. This training would be conducted when the employee is initially hired and as part of periodic site safety training. Training would also be conducted prior to starting construction activities on the main access road and power line areas where sagebrush cholla plants have been identified. The employee training program would educate workers on the locations of the sagebrush cholla populations within the project area and on how to avoid impacts to those species.

Mitigation Measure Veg-3: During reclamation, a native seed mix would be used within sagebrush cholla habitat using locally collected seeds. A reference area would be established within sagebrush cholla habitat and used as the target for reclamation. The frequency, density, and ground cover of the native vegetation would be documented for sagebrush cholla habitat.

### **2.2 COMPLETION SCHEDULE**

Mitigation Measure Veg-1: This mitigation measure would be implemented prior construction, during construction, and during reclamation activities.

Mitigation Measure Veg-2: This mitigation measure would be implemented starting at construction and throughout the life of the mine and reclamation activities.

Mitigation Measure Veg-3: Reference areas would be established at the beginning of reclamation. Seeding similar to that of what exists in the surrounding area will take place during reclamation activities.

### **2.3 DETERMINATION OF EFFECTIVENESS OF PROPOSED MITIGATION**

Implementation and effectiveness monitoring would occur in areas previously identified as sagebrush cholla habitat and a monitoring report would be sent to the BLM Ely District Office

upon completion of construction activities and following each monitoring event. A qualified biologist would be present during construction and reclamation activities to minimize impacts to sagebrush cholla plants and to document implementation and effectiveness monitoring.

Implementation monitoring would include documentation on whether the known locations of sagebrush cholla were flagged and avoided during power pole placement and power line and access road construction. It would also document employee training, construction monitoring results, and reclamation results.

Effectiveness monitoring would include documenting where implementation and monitoring occurred and if new occurrences of sagebrush cholla were observed within the project area. When evaluating the persistence of the current population of sagebrush cholla, the baseline data from the 2011 and 2012 surveys would be used. These populations would be re-surveyed once every two years following construction and once every three years following reclamation.

#### **2.4 MITIGATION IMPACTS**

No negative impacts are expected from the implementation of this mitigation.

## **3.0 WILDLIFE RESOURCES, INCLUDING SPECIAL STATUS WILDLIFE, AND MIGRATORY BIRDS**

### **3.1 MITIGATION**

#### **3.1.1 Greater Sage-Grouse**

The conservation measures presented in this section are intended to minimize impacts to greater sage-grouse (*Centrocercus urophasianus*) resulting from the Pan Mine Project. Greater sage-grouse population decline has recently been identified as a concern by numerous federal and state agencies in the United States. The USFWS detailed reasons for the declining populations in the following Federal Register publication: “Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse as Threatened or Endangered”. The USFWS listing decision established the species as warranted but precluded, placing greater sage-grouse on the candidate species list. Although the greater sage-grouse have not been formally listed as Threatened and Endangered, Midway is committed to minimizing impacts. Greater sage-grouse use a variety of habitats in and around the project area. The goal of the mitigation is to avoid impacts to greater sage-grouse habitat where possible and, where avoidance is not possible, reduce impacts to an acceptable level or provide off-site mitigation where impacts are unavoidable or cannot be reduced through mitigation. This work would be completed in cooperation with applicable state and federal agencies and other private stakeholders.

#### On-Site Mitigation

Mitigation Measure W-1: Modified transmission line structures, including all H-Braces, line strike diverters, and perch deterrents would be used for transmission lines construction within two miles of known greater sage-grouse leks and within Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH) designated habitats.

Ambient noise levels will be measured at the lek sites during spring of 2013. If modeled dB(A) values exceed the actual ambient noise plus 10 dB(A) levels, Midway would employ the following measures, where determined necessary by the BLM:

Mitigation Measure W-2: Restrict traffic through areas within two miles of greater sage-grouse leks from March 1 through May 15 from one hour before sunrise until three hours after;

Mitigation Measure W-3: Restrict construction activities during the period from March 1 through May 15 within two miles of active greater sage-grouse leks;

Mitigation Measure W-4: Reduce vehicle speed limits on the access road during the period from March 1 through May 15;

Mitigation Measure W-5: Create barriers along access road;

Mitigation Measure W-6: Restrict the use of engine brakes on the access road: and

Mitigation Measure W-7: Other appropriate mitigation measures that reduce noise levels at leks.

### Off-Site Mitigation

JBR has completed sage grouse lek monitoring in the vicinity of the project area as well as wildlife observations during the two years of baseline surveys and vegetation community mapping. No sage grouse or sign were found within the mine area. In addition, vegetation communities were reviewed for pinion/juniper areas and overlaid with the most updated maps prepared by NDOW. Site specific data was gathered to determine possible sage grouse habitat within the project area. Based on mapping of habitat currently available, a total of 1,303 acres of PGH and 467 acres of PPH would be disturbed by mining activities. Due to the perception of danger from the proposed power line along the access road, an additional “zone of influence” would be affected. It is currently thought that the “zone of influence” for power lines includes a 600 meter buffer (Braun 1998). This “zone of influence” includes 431 acres of PGH and 1,927 acres of PPH. Development and the “zone of influence” within PPH would be mitigated on a 3 to 1 basis, meaning that for every one acre within the project footprint within this habitat category for sage-grouse, Midway would restore or enhance 3 acres of habitat either adjacent to the project, within the PMU, or within adjacent PPH habitats. Development and the “zone of influence” within PGH would be mitigated on a 2 to 1 basis. Brood rearing habitat may be replaced on a 1 to 1 basis if Midway purchases private land in proximity to the project area that have brood rearing value and provide a conservation easement or conservation agreement with assurances for the required acreage.

The total of 4,128 acres of habitat identified for mitigation would be subject to adjustment based upon information and analysis provided by a study which would be prepared by the USGS (Dr. Peter Coates); provided, however, that any area identified as habitat that is disturbed prior to Dr. Coates’ gathering of necessary data and information from that area would not be subject to such adjustment. The “zone of influence” would also be adjusted based upon information and analysis provided by the study. Midway would be given a mitigation offset for the cost of this study for up to 50% of its total mitigation obligation from the project. The study would include sage grouse collaring, tracking and development of a predictive map for sage grouse usage of differing habitat types in the area. This study would provide valuable research focusing on sage-grouse populations and their habitat in response to development. The research would provide important components to conservation efforts in Nevada and in the mitigation process to identify adverse impacts at different stages of development and at different spatial scales.

If adjacent habitat is not available for restoration or enhancement purposes, then Midway would make funding available to the Nevada Mitigation Bank to restore or enhance habitat elsewhere.

Approximate cost to mitigate a degraded acre of habitat (i.e; mowing, thinning, seeding) is \$600, which may be adjusted based on data gathered to determine the actual cost for off-site restoration or enhancement to be completed.

As described above, to compensate for the permanent disturbance of PPH and PGH Midway would complete off-site terrestrial habitat restoration/enhancement and other activities in accordance with Nevada Instruction Memorandum 2008-204 Off-site Mitigation.

#### *Wildlife Working Group*

A Wildlife Working Group (WWG) would be established and would meet annually or when a new project is proposed, to identify, discuss, and select habitat enhancement treatments, ensure appropriate implementation has taken place for previous treatments, and track the corresponding acreage to confirm compliance with the off-site mitigation requirement. Project suggestions would be accepted from the member agencies or the public and the WWG would serve as the deciding body for final project selection. The WWG would also provide direction on possible research that could fulfill a portion of the acreage requirement, as specified below. The WWG would consist of members from the BLM, NDOW, and Midway.

The WWG would determine where a specific project is located and when work would be conducted to allow for incorporation of applicable study or monitoring data and identification of areas with the best habitat potential. Prior to implementation of these various or potential treatment options (and after an area is designated for treatment) cultural surveys and Native American Consultation/Coordination will be completed per BLM protocols.

#### *Treatment Options*

Treatment Option WT-1: Vegetation may include burn restoration (historic burns) including: seedings (sagebrush and understory vegetation via broadcast, broadcast and harrow, drill or hand planting of seedlings), noxious and non-native invasive plant treatment (Plateau® for cheatgrass and other herbicides as needed for other invasive and/or noxious weed species), and possible temporary fencing to protect areas of restoration.

Treatment Option WT-2: Vegetation treatment may include brush thinning via mechanical methods, herbicide or hand thinning followed by seeding (seeding would be completed via broadcast or drill methods) to increase the diversity in monotypic sagebrush habitats.

Treatment Option WT-3: Vegetation treatment may include mechanical or hand shrub thinning or green stripping to reduce fuels and fire risk to greater sage-grouse habitats followed with successful seeding (seeding would be completed via broadcast or drill methods).

Treatment Option WT-4: Vegetation treatment may include weed treatment followed with

successful seeding (seeding would be completed via broadcast or drill methods).

Treatment Option WT-5: Vegetation treatment may include mechanical or hand thinning of pinyon-juniper areas in which shrubs are still the dominant form (Phase I pinyon-juniper woodland) or are co-dominant (early Phase II pinyon-juniper woodland).

Treatment Option WT-6: Vegetation treatment may include diversification of seedings: seeding of shrubs and forbs into historical crested wheatgrass seedings.

Treatment Option WT-7: Vegetation treatment may include restoration and fencing of springs and wet meadows.

Treatment Option WT-8: Vegetation treatment may include application of prescribed fire or wildland fire for resource benefit.

Treatment Option WT-9: Additional activities could be deemed appropriate by the WWG. Equivalent acreage credits would be assigned by the WWG as appropriate.

### **3.1.2 Pygmy Rabbits**

Mitigation Measure W-8: Pre-construction clearance surveys for pygmy rabbits would occur prior to any surface disturbance. Pygmy rabbits are known to be active above ground throughout the year, so these surveys would be required regardless of the season. If occupied pygmy rabbit habitat is identified during pre-construction clearance surveys and natal burrows are found, new disturbance would not occur within 200 feet of those areas. If disturbance of these areas is determined to be unavoidable, consultation with the appropriate BLM and NDOW wildlife biologists would occur to develop avoidance strategies and mitigation techniques.

### **3.1.3 Raptors**

Mitigation Measure W-9: The golden eagle habituation techniques suggested by Romin and Muck (1999) would be applicable to the Proposed Action. If activities such as blasting were to begin during summer or fall, birds potentially nesting in proximity to the project area would either become habituated to the disturbance or seek another location for nesting. Pre-disturbance signals such as sounding sirens prior to blasting may be effective in limiting negative raptor responses to blasting. As sounding sirens prior to a blast is a standard safety practice at most mine sites, this technique would be implemented to reduce impacts.

Mitigation Measure W-10: Midway would fully implement and adhere to the construction techniques, design standards, and avian mortality reporting set forth in the Pan Bird and Bat Conservation Strategy (BBCS) for the Proposed Action for raptors, golden eagles, western

burrowing owls, migratory birds, and bats.

### **3.1.4 Western Burrowing Owl**

Mitigation Measure W-11: Pre-construction clearance surveys for western burrowing owl would occur prior to any surface disturbance occurring from March 15 through August 31. If occupied western burrowing owl nesting territories are encountered, Midway would avoid the area within 0.25 miles of the active territory until a qualified biologist has determined the young have fledged and the nesting territory abandoned.

### **3.1.5 Migratory Birds**

Mitigation Measure W-12: Midway would fully implement and adhere to the construction techniques, design standards, and avian mortality reporting set forth in the BBCS for the Proposed Action.

### **3.1.6 Dark Kangaroo Mouse**

Mitigation Measure W-13: Pre-construction trapping for kangaroo mice would occur prior to any surface disturbance in areas determined to have potentially suitable habitat. If kangaroo mice exist, new disturbance would not occur within 200 feet of those areas. If disturbance of these areas is determined to be unavoidable, consultation with the appropriate BLM and NDOW wildlife biologists would occur to develop avoidance strategies and mitigation techniques.

## **3.2 COMPLETION SCHEDULE**

### **3.2.1 Sage-Grouse**

This mitigation would take place as outlined in an MOU which would be executed prior to the signing of the ROD. The Coates study would help determine where and when off-site mitigation would be conducted. It is estimated that the off-site mitigation would be initiated within 5 years of ground disturbance and completed within 10 years of ground disturbance.

### **3.2.2 Pygmy Rabbits**

This mitigation would take place prior to any surface disturbance.

### **3.2.3 Raptors**

This mitigation would take place prior to any surface disturbance (sounding sirens prior to blasting), preconstruction and construction time period.

### **3.2.4 Western Burrowing Owl**

This mitigation would take place prior to any surface disturbance.

### **3.2.5 Migratory Birds**

This mitigation would take place throughout the project.

### **3.2.6 Dark Kangaroo Mouse**

This mitigation would take place prior to any surface disturbance.

## **3.3 DETERMINATION OF EFFECTIVENESS OF PROPOSED MITIGATION**

### **3.3.1 Sage-Grouse**

The outcome will be determined by the USGS Dr. Coates study discussed above.

### **3.3.2 Pygmy Rabbits**

Effectiveness of mitigation will be determined by reporting the findings of pre-disturbance surveys to the BLM, NDOW and other consulting parties, as appropriate.

### **3.3.3 Raptors**

Effectiveness of mitigation will be determined by the BLM in consultation with NDOW and other consulting parties, as appropriate.

### **3.3.4 Western Burrowing Owl**

Effectiveness of mitigation will be determined by reporting the findings of pre-disturbance surveys to the BLM, NDOW and other consulting parties, as appropriate.

### **3.3.5 Migratory Birds**

Mitigation effectiveness will be determined by monitoring results outlined in the BBCS.

### **3.3.6 Dark Kangaroo Mouse**

Effectiveness of mitigation will be determined by the BLM in consultation with NDOW and other consulting parties, as appropriate.

## **3.4 MITIGATION IMPACTS**

### **3.4.1 Sage-Grouse**

Data provided by the Coates study would be used to determine where restoration projects would be completed; therefore, site specific analysis cannot currently be prepared. NEPA would be completed where applicable to analyze the site specific impacts of activities associated with the off-site mitigation projects. .

### **3.4.2 Pygmy Rabbits**

No negative impacts are expected from the implementation of this mitigation.

### **3.4.3 Raptors**

No negative impacts are expected from the implementation of this mitigation.

### **3.4.4 Western Burrowing Owl**

No negative impacts are expected from the implementation of this mitigation.

### **3.4.5 Migratory Birds**

No negative impacts are expected from the implementation of this mitigation.

### **3.4.6 Dark Kangaroo Mouse**

Impacts from mitigation include the potential loss of individuals during trapping. This would be kept at a minimum by practicing accepted small mammal trapping practices.

## **4.0 CULTURAL RESOURCES**

### **4.1 MITIGATION**

Mitigation Measure C-1: Mitigation for the Lincoln Highway includes video documentation of existing condition and route, and rerouting the segment of the Lincoln Highway.

Mitigation Measure C-2: Adverse impacts to National Register of Historic Places (NRHP)-eligible cultural resources would be mitigated as directed by the Programmatic Agreement.

### **4.2 COMPLETION SCHEDULE**

Mitigation Measure C-1: Prior to any project-related disturbance, Midway would conduct video documentation of the Lincoln Highway route within the project area. This would be submitted to and approved by BLM in consultation with the Lincoln Highway Association. Once the documentation was approved and BLM has provided a notice to proceed, rerouting of the Lincoln Highway segment could occur.

Mitigation Measure C-2: This mitigation measure would take place throughout construction, the life of the mine, and reclamation.

### **4.3 DETERMINATION OF EFFECTIVENESS OF PROPOSED MITIGATION**

Effectiveness of mitigation will be determined by the BLM in consultation with the State Historic Preservation Office (SHPO) and other consulting parties, as appropriate. Rerouting of the original Lincoln Highway route segment will be documented with video documentation and field verification. Effective mitigation for NRHP-eligible cultural resources will be achieved through completion and approval by BLM and SHPO of a site-specific Treatment Plan, as directed by the Programmatic Agreement, and acceptance of the results of that Treatment Plan. Monitoring of sites and associated reporting will aid in determining the effectiveness of the implemented measures.

### **4.4 MITIGATION IMPACTS**

No Lincoln Highway mitigation impacts are expected.

Mitigation of impacts through data recovery (i.e., excavation) would constitute an irreversible commitment of that resource. Information and data retrieved through mitigation measures such as data recovery would represent a short-term use of that cultural resource at the expense of future research opportunities.

## **5.0 VISUAL RESOURCES**

### **5.1 MITIGATION**

Mitigation Measure V-1: The exterior surfaces of any ancillary facilities visible from KOP 4 should be painted with non-reflective *shale green* if located in pinyon-juniper vegetation or *shadow gray* if located in shrublands or other open areas. Other non-reflective colors of paint, as determined by the BLM, may be used in place of *shale green* or *shadow gray*.

### **5.2 COMPLETION SCHEDULE**

Mitigation Measure V-1: Implementation of this mitigation measure would take place during construction of project facilities.

### **5.3 DETERMINATION OF EFFECTIVENESS OF PROPOSED MITIGATION**

Field verification that ancillary facilities are minimally visible from KOP 4, that non-reflective paint is used, and that facility colors blend with the surrounding landscape. Provide qualitative information by comparing baseline KOP 4 visual resources to the development of ancillary facilities visible from KOP 4. Use monitoring and reporting to measure the effectiveness of the implemented measures.

### **5.4 MITIGATION IMPACTS**

No visual mitigation impacts are expected.

## **6.0 REFERENCES**

Nevada Governor's Sage-Grouse Conservation Team (GSGCT). 2010. Nevada Energy and Infrastructure Standards to Conserve Greater Sage-Grouse. April 2010.

Romin, L.A. and J. A. Muck. 1999. Utah Field Office guidelines for raptor protection from human and land use disturbances. Salt Lake City, UT: U.S. Fish and Wildlife Service, Utah Field Office, 42pp.