RECORD OF DECISION

For the Eagle Take Permit Application and Eagle Conservation Plan
for the Thacker Pass Lithium Mine Project

March 2022

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Record of Decision

1 Introduction

We, the U.S. Fish and Wildlife Service (USFWS), developed this Record of Decision (ROD) in compliance with its decision-making requirements, pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] §§ 4321–4347). The purpose of this ROD is to document the USFWS's decision in response to an application submitted by Lithium Nevada Corporation (LNC) (Applicant) under the federal Bald and Golden Eagle Protection Act (16 U.S. Code [U.S.C.] § 668) (Eagle Act) for an eagle incidental take permit for take of golden eagles (*Aquila chrysaetos*). Information contained in this ROD is based on the eagle take permit application and supporting Eagle Conservation Plan (ECP), the Draft Environmental Impact Statement released on August 27, 2020 (DEIS) (85 FR 45651, DOI-BLM-NV-W010-2020-0012-EIS), Final Environmental Impact Statement released on December 4, 2020 (FEIS) (85 FR 78349, DOI-BLM-NV-W010-2020-0012-EIS), and all other supporting materials. Collectively, we refer to the draft and final analyses as the EIS throughout this document when not referencing a particular version.

This ROD is designed to: (1) state the USFWS decision and present the rationale for that decision; (2) identify the alternatives considered in the EIS in reaching the decision and discuss the factors considered in making the decision; and (3) state whether all practicable means to avoid or minimize environmental harm from implementation of the Selected Alternative have been adopted, and if not, why they were not (40 CFR §1505.2).

The USFWS has based its decision on the analysis completed in the DEIS (84 FR 45651) and FEIS (85 FR 78349). In making our decision, we also incorporated information and analysis contained in our 2016 Programmatic EIS (PEIS) (USFWS 2016a) for the Eagle Rule Revision (81 FR 91494 effective January 17, 2017) as well as comments submitted during public comment periods.

2 Background and Project Description

Exploration activities in the vicinity of the Thacker Pass Lithium Mine began in 1975 when Chevron began its exploration program for uranium in the sediments located throughout the McDermitt Caldera. Section 1.6, page 1-6, of the DEIS provides a detailed description of the site history of the Thacker Pass Mine (BLM 2020a).

LNC submitted the *Thacker Pass Mine and Reclamation Plan of Operations* (LNC 2019a) and the *Thacker Pass North and South Area Exploration Plan of Operations* (hereafter referred to as the Project) (LNC 2019b) to the Bureau of Land Management (BLM) Humboldt River Field Office (HRFO) for review and potential approval of the Project in accordance with BLM Surface Management Regulations under 43 Code of Federal Regulations (CFR) 3809.

Under the proposed Project, LNC would construct and operate an open pit lithium mine and processing facility in the Thacker Pass basin. Facilities associated with the Project include development of an open pit mine; waste rock storage facilities; a coarse gangue stockpile; a clay tailings filter stack; growth media stockpiles; haul and secondary roads; and additional mine facilities to support mining and lithium production operations. The Project would be developed in two phases (Phase 1 and Phase 2) during the proposed 41-year mine life. Phase 1 would include construction of the mine facilities and mining and processing for the first 4 years of mine life. Phase 2 would occur from years 5 to 41 of the mine life, after which the Project would enter the reclamation and closure period (for a minimum of 5 years). In addition, LNC would complete exploration activities as part of the Project.

The Project area includes 17,933 acres of land, of which 10,468 acres and 7,465 acres are associated with the Mine PoO and Exploration PoO, respectively. The total disturbance footprint would be approximately 5,695 acres. Surface and subsurface mineral estates associated with the Project are located on public lands administered by the BLM, Winnemucca District. No state or private lands are included in the Project area. Surface disturbances would be concurrently reclaimed by the applicant during the life of the mine in areas where mining activity has been completed. The open pit would be actively backfilled during the life of the mine and those areas would be concurrently reclaimed prior to the final closure and reclamation period. At the conclusion of mining, the open pit would be completely backfilled and reclaimed.

The Project area contains suitable habitat for golden eagles. To address eagle impacts, LNC submitted an application to the USFWS requesting coverage for unavoidable incidental take under the Eagle Act for otherwise lawful mining operation activities associated with the proposed Project. LNC's take coverage request included authorization for the disturbance to and loss of annual productivity (i.e., preventing the eagles from breeding and rearing young) from one golden eagle breeding pair (territory #5 as shown on Figure 4.5-16, Appendix A of the FEIS) for a maximum of five breeding seasons from the issuance date of the Eagle Incidental Take Permit (EITP).

The BLM Winnemucca District, HRFO, and the USFWS prepared an Environmental Impact Statement (EIS) to analyze and disclose environmental impacts associated with LNC's proposed Project and their request authorization for incidental take under the Eagle Act. The BLM was the lead agency in development of the EIS. We were a cooperating agency with jurisdiction by law. The EIS analyzed two separate federal actions: (1) LNC's Mining and Exploration Plans submitted to the BLM to construct and operate a lithium mine, lithium processing plant, and related facilities, as well as continued exploration within the proposed Project area on Public lands and (2) an eagle incidental take permit application submitted to the USFWS. BLM issued a ROD on January 15, 2021 (DOI-BLM-NV-W010-2020-0012-EIS), selecting Alternative A. With this document, FWS is issuing a separate ROD for our action.

3 Purpose and Need

The USFWS's purpose for this Federal Action is to respond to LNC's request for an incidental take permit for golden eagles under the Eagle Act by either issuing or denying an eagle take permit for LNC. The permit would be associated with LNC's mining operations at the Thacker Pass Lithium Mine Project. We, the USFWS, are obligated to review the application package, complete the associated NEPA process, identify a Preferred Alternative, and decide whether or not to issue an EITP under BGEPA for the LNC Project. To issue an EITP, we must determine that LNC's Project is consistent with the BGEPA regulatory standards, defined in applicable regulations as maintaining stable or increasing breeding populations of bald and golden eagles.

The USFWS will decide whether (1) the incidental take is necessary to protect legitimate interests; (2) the take is compatible with the preservation standard of the Eagle Act; (3) the applicant has avoided and minimized impacts to eagles to the extent practicable; and (4) compensatory mitigation will be provided for any take. Consequently, these considerations guide us whether to issue an eagle incidental take permit (EITP), approve with modifications, or deny the application.

4 Alternatives Considered

The EIS analyzed a total of four alternatives: (1) the Proposed Action (Alternative A); (2) the Partial Pit Backfill (Alternative B); (3) the No Pit Backfill (Alternative C); and (4) the No Action Alternative (Alternative D). Alternatives are described in Chapter 2 of the EIS.

4.1 Alternatives Carried Forward for Detailed Analysis

4.1.1 Alternative A (Proposed Action)

Under Alternative A the USFWS would issue an EITP under the Eagle Act, related to mining operations within the scope of the Project compatible with BLM's Alternative A decisions as analyzed in the EIS. Under the Proposed Action, the applicant is requesting authorization for disturbance to and loss of annual productivity from one golden eagle breeding pair (territory #5 as shown on Figure 4.5-16, Appendix A) during the period of up to five years from the date of the issuance of the permit. This Alternative would include monitoring of the nest site and required compensatory mitigation to offset impacts to golden eagles.

Under this Alternative, the Project would provide the compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as analyzed and discussed in our Eagle Rule Revision PEIS (USFWS 2016a). The intent would be to minimize the potential for eagle electrocutions and ensure that the effects of eagle take caused by the Project are offset at the population level.

Avoidance and minimization measures, monitoring, required compensatory mitigation, and adaptive management measures are part of this action alternative. Seasonal and/or spatial buffers will be implemented to avoid potential disturbance to other eagles nesting with proximity to the Project. As required under 50 CFR 22.26(c)(1)(i), and stated in our Eagle Rule Revision 2016 PEIS, authorized take for golden eagles must be offset by compensatory mitigation that would produce a commensurate decrease in a pre-existing mortality factor, or an increase in carrying capacity, that offsets the permitted mortality (USFWS 2016a). The effect of this mitigation must be that no net increase in mortality occurs within the Eagle Management Unit (EMU) where the take is authorized (USFWS 2016a). The compensatory mitigation that is part of this action alternative, and described in Chapter 4, Section 4.5.4 of the EIS, would result in no net loss to the golden eagle population (BLM 2020b). The need for permit renewal would be re-evaluated by the applicant in consultation with us prior to the permit expiration date, as appropriate under the Eagle Act permit regulations.

4.1.2 Alternative B (Partial Pit Backfill)

Under Alternative B, the USFWS would issue an EITP under the same terms as those for the Proposed Action (Alternative A). The avoidance and minimization measures, monitoring, required compensatory mitigation, and adaptive management measures that are part of this action alternative are the same as described above under Alternative A. Alternative B differs from Alternative A in that the open pit would be backfilled in the north and west ends but only partially backfilled at the southern end of the pit. This alternative would have no discernable differences with regards to potential effects to eagles.

4.1.3 Alternative C (No Pit Backfill)

Under Alternative C, we would authorize an eagle incidental take permit to LNC for the same terms as under Alternative A and B, except compensatory mitigation would differ. Under this alternative, the USFWS would require 1:1 mitigation as retrofits, and 0.2:1 mitigation as nest site enhancement within the Pacific Flyway Eagle Management Unit. The LNC would be responsible to pay for retrofits and would contribute funds for nest site enhancement to NFWF or directly to an ongoing study that is treating golden eagle nests for Mexican chicken bugs or other parasites if they are identified as a concern.

4.1.4 Alternative D (No Action)

Under the No Action Alternative, the BLM would not approve the proposed Mine and Exploration Plans. No adverse effects to golden eagle territories would be anticipated. Under this alternative, we, the USFWS, would deny LNC's permit request. We could deny the permit because the application failed to meet issuance criteria under 50 CFR 22.26 (incidental take) or because we have determined that the risk to eagles is so low that take authorizations are unnecessary.

4.2 Alternatives Considered and Dismissed

A complete description of alternatives that were identified for consideration, but eliminated from full analysis in the DEIS, are summarized in Chapter 2 of the Thacker Pass FEIS and further detail is provided in the Thacker Pass Project Options Analysis report (LNC 2019c). Those alternatives were relative to BLMs considerations and did not impact our consideration of an incidental eagle take permit.

4.3 Selected Alternative

The Selected Alternative for issuance of an EITP was described under the Proposed Action (Alternative A) also identified as our Preferred Alternative, as described in the FEIS.

Under our Selected Alternative, LNC will contribute to a USFWS-approved fund or an approved in-lieu fee program in the amount to compensate for the authorized level of eagle take. The contributions will be applied to retrofit the required high-risk power poles within the same EMU (Pacific Flyway).

This decision is based on the review of the alternatives and their environmental consequences described in the Draft EIS and Final EIS, as well as comments received during public comment periods, indicating the following:

1. Issuing a permit for LNC's proposed mining Project is consistent with the Eagle Act regulatory standards, i.e., is consistent with the goal of maintaining stable or increasing breeding populations in all golden eagle management units, and the persistence of local populations throughout the geographic range of the species.
2. The permit would authorize incidental take in the form of disturbance that we determined will result in lost productivity (i.e., prevent the eagles from breeding and rearing young) of one golden eagle territory (territory #5 as described in the EIS) over the period of five breeding seasons. Territory #5 includes six eagle nests, all attributed to one golden eagle pair, located within two miles of the Project area. These nests would be disturbed by intermittent blasting activity located in the mine pit area.
3. Disturbance of territory #5 is anticipated to result in the loss of annual productivity from the entire territory. USFWS uses an estimate of 0.59 golden eagle young fledged per occupied nesting territory per year (USFWS 2016a) to estimate the loss of annual productivity.
4. Compensatory mitigation for the take of golden eagles under the incidental take authorization will be required. Retrofitting power poles with a high risk of avian electrocution in accordance with Avian Power Line Interaction Committee (APLIC 2006) guidelines is the only form of compensatory mitigation for which we are able to quantify the benefits to eagles with reasonable certainty at this time. As described in Section 4.1.1 in this document, high risk poles will be retrofitted within the eagle management unit and, to the extent practicable, within the golden eagle local area population. Using our Resource Equivalency Analysis (Service 2013), the applicant would offset the take of golden eagles at the Project by ensuring the retrofitting of 24 power poles per year (where avoided loss from retrofits is maintained and effective for up to 10 years) or 11 poles per year

(where avoided loss from retrofits is maintained and effective for up to 30 years). The final power pole number depends on the type and expected longevity of each retrofit.

5. Annual monitoring within the Project area during the permit term and for up to three years beyond the permit term would be required to ensure that the appropriate disturbance avoidance and minimization buffers are implemented around active/in-use eagle nests, and to determine if any mining facilities are posing risks to eagles.
6. Monitoring will inform and potentially trigger adaptive management.
7. A Technical Advisory Group (TAG) would be created by the BLM to develop appropriate monitoring for biological resources and to evaluate monitoring data to determine the success of mitigation and provide adaptive management recommendations. The TAG would consist of representatives from the applicant, BLM, NDOW, USFWS, and any other appropriate agencies or academic institutions. Annual meetings would be held to review the success of mitigation and monitoring.

4.4 Environmentally Preferable Alternative

The Proposed Action (Alternative A) is the preferred alternative as it conforms to the Purpose and Need of the FEIS and is based on the relatively compact disturbance footprint and the commitment to mitigation of reasonably foreseeable impacts to the environment, including golden eagles. Alternative A includes all the environmental protection measures and all mitigation measures identified in Attachment A. NEPA regulations require Federal agencies to specify "the alternative or alternatives which were considered to be 'environmentally preferable'" (40 CFR 1505.2(a)(2)). The environmentally preferable alternative would be the No Action Alternative if solely based on disturbance that would be caused by the operations proposed and disregarding the Purpose and Need.

4.5 Effects of Implementation

Our Selected Alternative is consistent with the purpose and need stated in the EIS. A summary of the impact analysis, mitigation measures, EIS conclusions, and effects on eagles, migratory birds, and species listed under the Endangered Species Act (ESA) follows.

4.5.1 Eagles

BLM's Preferred Alternative in the FEIS (absent an Eagle Act Permit) would result in impacts to golden eagles. The BLM determined that if we issue an EITP, impacts to golden eagles would be minor, as discussed in Section 4.5.4 of the EIS. If we do not issue an EITP, the BLM would require that LNC continue to coordinate with the USFWS prior to conducting mining activities that would result in disturbance take to eagles. As a result, the mine would likely be unable to fully implement its Plan of Operations until it obtained an eagle take permit for disturbance impacts that would cause take of eagles.

In determining the effects of each of our eagle take permit alternatives on eagles, we screened each alternative against the Eagle Act regulation's permit issuance criteria using the quantitative tools available in our ECP Guidance (USFWS 2013). The Service independently evaluated the potential impacts from Project construction and operation. We developed conservative risk estimates for the Project and our cumulative effects analysis to be protective of the species.

4.5.1.1 Direct and Indirect Effects

The Proposed Action would affect golden eagles through the presence of drilling and mining activity in close proximity to their nests, thus causing potential negative impacts to golden eagle breeding and nesting activities. Impacts from trucking of ore (Table 4.11), blasting (Section 4.5.6.1), other surface disturbance associated with mining activities and development of mine facilities (Section 4.5.1.1), road construction (Section 4.5.2.1), and heavy equipment (Section 4.5.2.1) have been considered in the total impacts to golden eagles. In addition to disturbance from construction, effects to golden eagles would include the loss of approximately 5,695 acres of potential foraging habitat and a reduction in prey base until concurrent or final reclamation is completed and vegetation is re-established.

The applicant would provide mitigation to offset the proposed take. To determine the amount of mitigation required, the Service's golden eagle Resource Equivalency Analysis (REA) was used (USFWS 2013). The amount of take to be authorized, loss of reproduction by one territory for 5 years, is directly entered into the REA to calculate the required compensatory mitigation to offset disturbance of the breeding pair.

Under the Selected Alternative the USFWS would use electric utility power pole retrofitting to offset authorized take of golden eagles. Electrocutions from power poles is known to be a major cause of eagle mortality. Power poles can be retrofitted by verified methods (such as insulating or covering electrical components or modifying pole elements to increase the distance between electrical components) to reduce the risk of electrocution to eagles, with the maintenance and efficacy of retrofits confirmed through post-installation inspections and monitoring. The effects of retrofitting power poles has been quantified "per eagle," allowing use of the REA to calculate the number of power pole retrofits needed to offset the authorized take of golden eagles (USFWS 2013).

The implementation of BLM's Preferred Alternative, the Proposed Action (Alternative A), results in less overall disturbance to habitat than Alternative C with approximately 5,695 acres of habitat being directly removed or disturbed over the life of the mine. BLM's Preferred Alternative and our corresponding Selected Alternative (Alternative A) would have a direct impact on the breeding pair in territory #5.

Compensatory mitigation would be conducted as described in this ROD and Section 4.5.5.1 in the EIS. Under our Selected Alternative, issuance of an eagle take permit to LNC would not affect eagles at the population scale and there will be no net loss of golden eagle populations, although individual eagles would be impacted. The breeding pair in territory #5 would be directly impacted by disturbance resulting from mine activity and reduction in prey base caused by mine related surface disturbance in close proximity to their nest.

Assuming successful reclamation of all Project components, residual impacts to golden eagles from the selected action would include the permanent loss of less than five acres of potential golden eagle foraging habitat. Implementation of the compensatory mitigation (retrofitting power poles within the Pacific Flyway EMU) would result in long-term protection from electrocution to eagles and other raptors.

4.5.1.2 Cumulative Effects

A cumulative impact, as analyzed in the EIS under the previously defined term cumulative impact, is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" by federal, state, or local agencies or by individuals. Reasonably foreseeable future actions consist of activities that are generally in the planning stage and can be evaluated with respect to their impacts.

To evaluate cumulative impacts for the local-area population, we followed the guidance provided in Appendix F of the ECP Guidance (USFWS 2013) and as described in the 2016 PEIS. Using this process, we

estimated annual golden eagle fatality rates within a 109-mile radius around the Project area (FEIS Appendix Q). We incorporated data provided by the Applicant, our own data on permitted take and other documented eagle mortalities in determining cumulative impacts to the local area population.

It is the Service's objective to manage eagles by authorizing take at a level that is less than five percent of the local-area population annually, as well as to assess any available data to determine if there is any indication that unauthorized take in the local area population may exceed ten percent. Eagle management units are defined by the Service and are assigned a take limit specific to each eagle management unit (USFWS 2016b). As golden eagle populations throughout the United States may be declining, the take limit for all eagle management units was set to zero (2016). Therefore, any authorized take of golden eagles must be offset with compensatory mitigation at a mitigation ratio of 1.2 to 1 (81 FR 91494).

We estimated the local-area population for the Project area to be 787 golden eagles. The five percent benchmark for authorized take of that local-area population is 39.4 eagles. There is incomplete information available regarding the level of unpermitted golden eagle take in the region; thus, golden eagle take in the past, present, and foreseeable future is not fully known. Over the past 20 years the USFWS knows of 257 golden eagles killed by a variety of causes within the local area population (FEIS Appendix Q). This equates to approximately 12.85 golden eagles killed per year in the LAP.

In addition to the estimated unauthorized take, Appendix Q of the EIS describes the amount of previously-authorized take that overlaps with the LAP (0.36 golden eagles/year). The loss of productivity authorized by permit (if issued) would be an additional 0.59 eagles per year for a maximum of five years. This would be fully offset by the compensatory mitigation that would be provided by the permit holder. Cumulatively, this totals 13.8 golden eagles/year, which is well below the five percent threshold.

While the incremental effect of the Project is small, it would contribute to local and possibly regional adverse effects on the species. We anticipate that, by issuing a permit, we would ensure that take of eagles would be offset through the implementation of impact avoidance and minimization measures, compensatory mitigation, monitoring, and adaptive management. The applicant would offset take through compensatory mitigation, therefore the cumulative effects contributed to golden eagle populations from our authorizations to allow up to five years of disturbance to a single breeding territory under an eagle take permit would result in no net loss at the population level. The cumulative impacts from our permit to LNC is within the range of what the Service has determined is compatible with our goal of maintaining stable or increasing breeding populations in all eagle management units, and the persistence of local populations throughout the geographic range of each species.

4.5.2 Migratory Birds

The Applicant submitted a Bird and Bat Conservation Strategy (BBCS) to us and the BLM to support their applications. The BBCS goals are to reduce the Project's impacts to breeding birds and to reduce any Project related mortality to birds and bats. Implementation of Applicant Committed Design Features (see EIS Appendix D), best management practices (BMPs), and the BBCS would minimize Project impacts. Project compliance with the NDOW Industrial Artificial Pond Permit is expected to include protection measures and monitoring to minimize impacts to birds and bats from reclaim ponds and emergency ponds. In addition, as described in Section 4.1.1 of this ROD, the retrofitting of power poles we will require as eagle compensatory mitigation would also prevent the electrocution of other large birds and raptors, resulting in positive effects to large birds and raptors. The effects of authorizing incidental eagle take will result in some minor beneficial effects from the reduction of avian electrocution risk associated with our eagle compensatory mitigation requirements.

As stated in EIS Section 5.5.1, BLM concluded that impacts to wildlife and special status species (including migratory birds) under their Preferred Alternative would be the following:

> *Past, present, and reasonably foreseeable future actions in the wildlife and special status species cumulative effects study area (CESA) have resulted, or would result, in approximately 289.1 acres of mine-and mineral exploration-related disturbance for locatable and salable minerals and includes 24 acres attributed to sand and gravel mining operations. Past, present, and RFFAs from utility and energy development and have resulted, or would result, in up to 1,209 acres of additional disturbance. The Proposed Action including exploration within the Project area would incrementally increase disturbance by an additional 5,694.8 acres for a total cumulative disturbance of 7,192.9 acres.*
>
> *It is assumed that portions of past mine-related disturbances in the CESA have been reclaimed, and ongoing reclamation at existing operations would continue. The incremental additional impacts to habitat as a result of the proposed project would be temporary in nature for the majority of the project disturbance area. These effects to wildlife, special status species and their habitat would remain until successful completion of final reclamation and closure of the mine.*

4.5.3 Species Listed Under ESA

As described in Table H.1 in Appendix H of the EIS, Lahontan cutthroat trout (LCT) (*Oncorhynchus clarkia henshawi*), listed as a federally threatened species, has the potential to occur within the Project Area. The BLM has completed its ESA Section 7 consultation for the Project in coordination with the Service's Ecological Services Office in Reno, NV. On November 6, 2020, the BLM submitted its Biological Assessment for the Project to the Service and requested concurrence on its effects determination of "may effect, but is not likely to adversely affect" LCT. No areas of critical habitat have been designated for the species. On December 4, 2020, the Service responded to the BLM with a letter of concurrence with the BLM effects determination (USFWS 2020). USFWS's authorization of incidental eagle take is not expected to have effects to this species, or any other species protected by the ESA.

4.5.4 Cultural Practices

Bald and golden eagles are important symbolic and traditional religious resources for American and Native American cultures. Eagles, particularly golden eagles, have a central role in many Tribe's beliefs, traditions, and worldview.

Our 2016 PEIS fully analyzed impacts of our eagle permit program to cultural and religious resources. As stated in Section 1.0 of this ROD, the EIS and this document incorporated information and analysis contained in our 2016 PEIS, including potential impacts to cultural practices.

Issuance of an eagle permit under our Selected Alternative is not expected to adversely affect the cultural relationship between eagles and Native Americans. Because we are not authorizing direct take (i.e., lethal take), issuance of the permit will have no effect on Native American access to eagles, feathers, or parts, from the National Eagle Repository.

Requirements for offsetting each golden eagle indirectly taken would mitigate impacts on Tribes that attribute symbolic value to eagles by ensuring that the number of golden eagles remains stable.

4.6 Rationale for Decision

Our decision is to implement the eagle incidental take permit components of the Proposed Action (Alternative A) as our Selected Alternative. Our Selected Alternative is the same as the BLM's Preferred Alternative. Under the Proposed Action (Alternative A), the Thacker Pass Project would be constructed as described in LNC's Plan of Operations. Under our Selected Alternative, we will issue an eagle take permit to LNC that aligns with BLM's Alternative A. The USFWS will authorize disturbance take from mining activities that would prevent one eagle territory from nesting and rearing young for a period of up to five consecutive breeding seasons.

We recognize our Selected Alternative will result in impacts to eagles; however, we have determined that all practicable means to avoid or minimize environmental harm from the Selected Alternative will be implemented. We anticipate that the commitments from LNC in the FEIS, ECP and the Bird and Bat Conservation Strategy, coupled with the required compensatory mitigation, will address and offset impacts to eagles, resulting in stable or increasing eagle populations at the management unit and within the local area population. To address future uncertainty, LNC has committed to annual monitoring and implementation of seasonal or spatial nest buffers and may implement an adaptive management strategy based on monitoring results should problems be detected at other locations within or proximate to the facility.

We determined that under the Selected Alternative, LNC has met the issuance criteria identified in the Eagle Act's permitting regulations under 50 CFR 22.26 (incidental take). In summary, we have chosen the eagle incidental take components of Alternative A (Proposed Action) as our Selected Alternative which is also in alignment with BLM's Preferred Alternative for LNC's Proposed Thacker Pass Project.

5 Coordination

5.1 Agency Coordination

In preparing this decision the BLM and USFWS communicated with and received input from federal, state, and local agencies, as well as private organizations and individuals. The following is a list of the agencies and private organizations that provided input:

Federal Government Agencies

- Bureau of Land Management – Nevada State Office, Reno
- Bureau of Land Management – Washington D.C.
- U.S. Environmental Protection Agency (Cooperating Agency)
- U.S. Forest Service

State Government Agencies

- Nevada Department of Wildlife (Cooperating Agency);
- Nevada Division of Environmental Protection
- Nevada Division of State Lands
- Nevada Department of Conservation and Natural Resources
- Nevada Department of Transportation
- Nevada Division of Water Resources
- Nevada Division of Minerals

Local Governments

- Humboldt County

Private Organizations

- Lithium Nevada Corporation

5.2 Tribal Coordination

We engaged in Tribal consultation specific to the issue of eagle take. The USFWS has conducted coordination activities with five Federally recognized Tribes that are located within a 109-mile radius (the golden eagle natal dispersal range) from the Project Area, and farther.

We considered Tribal input throughout the project, including identification of alternatives, consideration of compensatory mitigation, evaluation of cultural impacts, and selection of the preferred alternative.

6 Public Involvement

6.1 Scoping

The BLM published a Notice of Intent (NOI) to prepare an EIS in the Federal Register (FR; 85 FR 3413) on January 21, 2020. The NOI invited scoping comments to be submitted to the BLM from January 21, 2020, through February 27, 2020.

The BLM held two open house meetings at the Winnemucca Convention Center on February 5, 2020, and at the Orovada Community Center on February 6, 2020. A total of 35 individual people signed attendance sheets available at the meetings. Additional attendees at the meetings in Winnemucca and Orovada, Nevada included representatives from LNC, the BLM, and consultants. Comment forms were provided at the meeting with instructions on how to submit scoping comments. One comment was received during the Orovada public meeting.

A Scoping Report was prepared for the DEIS that outlines the activities conducted during the public scoping process, and addresses the issues and concerns identified by the public during the scoping process (ICF 2020). The BLM received a total of 26 unique comment letters during public scoping. Each comment was reviewed, and a total of 335 discrete comments were identified. Section 3.4 of the Scoping Report summarizes the public comments received and groups them into issue categories based on the content and substance of the comment. Effects to golden eagles and their habitat was one of these categories. Appendix C of the Scoping Report lists each discrete comment received by assigned issue category, organization (commentor), and content of the comment per letter. BLM received four comments related to golden eagles.

6.2 Draft EIS

To solicit public comments and feedback on the Draft EIS, in coordination with the USFWS, the BLM published the Notice of Availability for the Draft EIS (85 FR 45651) on July 31, 2020. Letters were sent to potentially interested parties and a news release was also issued by the BLM that stated the Draft EIS was available for comment during a 45-day period. Due to the national COVID-19 outbreak, public meetings that would have been held in Winnemucca and Orovada, Nevada, during the 45-day comment period were held in a virtual online format. Virtual public meetings were held on August 19, 2020, and August 20, 2020.

Sixty-three individuals, public agencies, and nonprofit organizations submitted letters with comments on the Draft EIS. The comments and responses to them are contained in Appendix R of the Final EIS. Eight commenters mention golden eagles, commenting on habitat impacts, sources of disturbance, effects of new transmission lines required for the substation, compensatory mitigation, and supporting different alternatives. Based on comments received, the BLM, in coordination with the USFWS, prepared the Final EIS adding information that clarified and improved the EIS analysis. Moreover, there were no significant new circumstances or information relevant to environmental concerns and related to the Proposed Action and alternatives or impacts.

6.3 Final EIS

The BLM published the Notice of Availability for the Final EIS in coordination with the USFWS (85 FR 78349) on December 4, 2020. The 30-day availability period ended on January 5, 2021.

The BLM and the USFWS collectively received 12 comment letters during this 30-day period. Comments were received from two cooperating agencies (USEPA and NDOW), three State of Nevada agencies (Nevada Division of Water Resources (NDWR), Nevada Department of Transportation (NDOT), and Nevada Department of Environmental Protection (NDEP) Bureau of Safe Drinking Water (BSDW), four non-governmental organizations (NGO) and three members of the public.

USFWS received one comment letter related to eagle impacts. The comment letter was submitted jointly by NGOs: the Great Basin Resource Watch, Western Watersheds Project (WWP), and Basin and Range Watch and contained comments relative to both BLM and our analyses. Our response to comments relative to the FEIS's analysis of our eagle incidental take permit decision are provided in Appendix 1 of this ROD and were considered in making this decision.

The NGO comment letter included statements that the analysis of potential effects to golden eagles was incorrect and asked why we had not responded to WWP's second supplementary comment letter that was submitted on the DEIS. In our investigations, we discovered that we overlooked the second of two comment letters that WWP submitted on September 14, 2020:

1. WWP Letter 1: Subject: Comments on the Thacker Pass Lithium Mine DEIS (DOI-BLM-NV-W010-2020-0012-EIS)
2. WWP Letter 2: Subject: Supplemental Comments on the Thacker Pass Lithium Mine DEIS (DOI-BLM-NV-W010-2020-0012-EIS)

Our response to comments received on the DEIS are in Appendix R of the FEIS which addressed the comments from WWP Letter 1, but not from WWP Letter 2. Our response to comments from WWP Letter 2 relative to the EIS's analysis of our eagle incidental take permit decision are provided in Appendix 2 of this ROD. In considering the comments from the WWP Letter 2 as part of this ROD, no un-analyzed impacts were discovered and no project alterations or permit conditions were found necessary.

7 Corrections to Final EIS

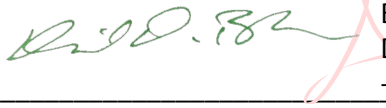
Minor edits to the Draft EIS have been made in response to public comments in order to provide clarification or further information (see FEIS Chapter 2).

8 USFWS Decision

The USFWS's decision is to implement our Selected Alternative and issue an eagle incidental take permit authorizing the disturbance from LNC's mining operations to one golden eagle territory that will result in the loss of productivity annually for five years.

This decision is based on the information contained in the Draft EIS and Final EIS for the Thacker Pass Lithium Mine Project DOI-BLM-NV-W010-2020-0012-EIS dated December 4, 2020 (85 FR 78349). This ROD was prepared pursuant to the requirements of the CEQ regulations for implementing NEPA at 42 CFR 1505.2 and the Department of the Interior's implementing regulations in part 46 of title 43 of the Code of Federal Regulations (43 CFR 46.205, 46.210, and 46.215).

Signature



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_____ _____

Daniel Blake
Chief, Migratory Bird Program
California Great Basin
U.S. Fish and Wildlife Service

Date

9 Appendices

Appendix 1a: December 29, 2020 letter from Great Basin Resource Watch on behalf of Western Watersheds Project, Great Basin Resource Watch, and Basin and Range Watch.

Appendix 1b: FWS response to comment on Final EIS for Thacker Pass Lithium Mine

Appendix 2a: September 14, 2020 letter from Wester Watersheds Project with supplemental comments on DEIS

Appendix 2b: FWS response to supplemental comments from WWP

Appendix 3: LNC Thacker Pass Eagle Conservation Plan

Appendix 4: LNC Thacker Pass Bird and Bat Conservation Strategy

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50 CFR 22.26. Title 50. Wildlife and Fisheries Chapter I. United States Fish And Wildlife Service, Department of the Interior Subchapter B. Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants Part 22. Eagle Permits Subpart C. Eagle Permits Section 22.26. Permits for eagle take that is associated with, but not the purpose of, an activity. [74 FR 46877, Sept. 11, 2009, as amended at 79 FR 73725, Dec. 9, 2013; 81 FR 8004, Feb. 17, 2016; 81 FR 91551, Dec. 16, 2016]

50 CFR 13.21. Title 50. Wildlife and Fisheries Chapter I. United States Fish and Wildlife Service, Department of the Interior Subchapter B. Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants Part 13. General Permit Procedures Subpart C. Permit Administration Section 13.21. Issuance of permits.

APPENDIX 1a

December 29, 2020 letter from Great Basin Resource Watch on behalf of Western Watersheds Project, Great Basin Resource Watch, and Basin and Range Watch.

Great Basin Resource Watch

Western Watersheds Project

Basin and Range Watch

December 29, 2020
Via Email, with Personal (or Overnight Federal Express) Delivery of Documents

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and
Mr. Ken Loda
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RE: Final EIS and Proposed Record of Decision, Thacker Pass Lithium Mine Project

Dear U.S. Bureau of Land Management ("BLM"):

This letter regards the Thacker Pass Lithium Mine Project ("Mine/mine" or "Project/project"), and is submitted by the following organizations: **Western Watersheds Project, Great Basin Resource Watch, and Basin and Range Watch** (collectively the "Commenting Groups") for BLM's consideration prior to issuance of the Record of Decision for the project. All previous comments submitted regarding the Project to the BLM by the Commenting Groups or its members are hereby reiterated and incorporated into the administrative record for BLM's consideration of the Project. The Commenting Groups also include the issues regarding BLM's failure to comply with NEPA, FLPMA, the ESA, and the other laws raised by the affected community as articulated in the comment letter to BLM by Edward Bartell on September 14, 2020, including BLM's failure to properly respond to that letter, and to the comment letters of the Commenting Groups.

As shown herein, due to significant information, including that which has arisen since the issuance of the BLM's Draft EIS ("DEIS") for the project, a revised Draft EIS (or in the alternative, a Supplemental Draft EIS), must be prepared and subject to full public review under the National Environmental Policy Act ("NEPA"), the Federal Land Policy and Management Act ("FLPMA") and other applicable federal law. BLM issued the Final EIS for the project on or about December 3, 2020 (*see* "Dear Interested Party" letter:

https://eplanning.blm.gov/public_projects/1503166/200352542/20030668/250036867/FEIS_DIP_letter_with_signature_indicated_2020-12-01_FINAL.pdf

Under NEPA, the agencies have a continuing obligation after issuance of an EIS to take "a 'hard look' at the new information and assess whether supplementation might be necessary." Norton v. Southern Utah Wilderness Alliance, 542 U.S. 55, 73 (2004). "When new information comes to light [even after issuance of an EIS] the agency must consider it, evaluate it, and make a reasoned determination whether it is of such significance as to require [an SEIS]." Friends of the Clearwater v. Dombeck, 222 F. 3d 552, 558 (9th Cir. 2000). NEPA imposes an ongoing duty to "supplement" an EIS when "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(ii)(2019).[1] An agency "must be alert to new information that may alter the results of its original environmental analysis." Friends of the Clearwater, 222 F.3d at 557-58.

As explained by the Supreme Court, "[i]t would be incongruous with [NEPA's] . . . manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored *prior to completion of agency action* simply because the relevant proposal has received *initial approval*." Marsh v. ONRC, 490 U.S. 360, 371 (1989) (emphasis added). "When new information comes to light the agency must consider it, evaluate it, and make a reasoned determination whether it is of such significance as to require [a Supplemental EIS]." Warm Springs Dam Task Force v. Gribble, 621 F.2d 1017, 1024 (9th Cir. 1980). *See also* Stop H-3 Association v. Dole, 740 F.2d 1442, 1463-64 (9th Cir. 1984). The decision whether to prepare a supplemental EIS "is similar to the decision whether to prepare an EIS in the first instance." Marsh, 490 U.S. at 374.

If a "new environmental picture from that previously studied" emerges from subsequent information or circumstances, then a new formal in depth look at the environmental consequences of the proposed action is required. Hodges v. Abraham, 300 F.3d 432, 448-49 (4th Cir. 2002); Wisconsin v. Weinberger, 745 F.2d 412, 418 (7th Cir. 1984). In other words, if the agency action will "affect the quality of the human environment in a significant manner or to a significant extent not already considered, a supplemental [NEPA document] must be prepared." Marsh, 490 U.S. at 374.

As shown herein, the significant information submitted to BLM with these comments must be fully considered by BLM before it can consider issuing a ROD for the project. This significant information must be fully reviewed in a revised/supplemental Draft EIS, subject to full public review under NEPA, FLPMA, and other appliable federal laws.

A number of the attached/submitted documents have already been provided/quoted/cited to BLM in the previous submittals by the Commenting Groups (and should already be part of the administrative record), but are re-submitted/attached herein to reiterate their inclusion into the record for BLM consideration prior to issuance of the ROD.

[1] Although the CEQ NEPA regulations were revised in 2020, the FEIS is based on the previous regulations, which govern BLM's review of the project. In any event, the revised regulations, at 40 C.F.R. §1502.9(d)(1)(ii) contain the identical language.

In addition to providing critical and significant new information that must be fully analyzed, these materials highlight how the Draft and Final EIS failed to adequately analyze all direct, indirect, and cumulative impacts from the project, as well as the baseline conditions of the lands, waters, air, wildlife, and other resources that may be affected by the mine project and related Golden Eagle take permit. For example, as shown in these documents, as well as in previous submittals, BLM failed to adequately analyze the baseline conditions for all Sensitive Species, Migratory Birds, and other wildlife species that may be affected by the Project and related Golden Eagle take permit, as well as the direct, indirect, and cumulative impacts to these species.

This includes the failure to fully analyze the mitigation, and its effectiveness, for the Sensitive Species, Migratory Birds, and other wildlife species discussed in Chapter 4.5, and Appendices G and H of the FEIS, as well as BLM's failure to respond in the FEIS to one of Western Watersheds Project's two timely submitted DEIS comment letters. Also, BLM failed to consult with the U.S. FWS on impacts to Lahontan Cutthroat Trout (LCT), as the project's direct, indirect, and cumulative impacts "may affect" LCT in Crowley Creek, Pole Creek, and related habitat.

As shown by these materials, and by the previously-submitted comments by the Commenting Groups and others, the BLM cannot approve a Record of Decision at this time. Only after issuance of a revised/supplemental Draft EIS, subject to full public review and in compliance with NEPA and federal law, can the agencies attempt to comply with its duties under NEPA, FLPMA, the ESA, the 1872 Mining Law, and other applicable federal laws, regulations, and policies.

In addition to showing how the FEIS and any proposed ROD would violate BLM's procedural requirements to fully review, and provide adequate public comment on, the project under NEPA and FLPMA, the previous submittals by the Commenting Groups, and the materials attached to this letter show how any BLM ROD authorizing the project would violate the substantive environmental, wildlife, and public land protection mandates of FLPMA, the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), the 1872 Mining Law, the Endangered Species Act, and Interior Department and BLM regulations and policies.

At a minimum, these documents show how any issuance of a ROD for the project would not be consistent with, and would violate, the Record of Decision and Resource Management Plan (RMP) (ROD/RMP) for the Winnemucca District, the Nevada and Northeastern California Greater Sage-Grouse Approved RMP Amendment (September 2015)(and associated approvals and implementations), and any legally-valid and applicable amendments to those documents. As such, any ROD would violate FLPMA, BLM regulations and policies, and public land and environmental law as stated in previous comments and herein.

Additional Inadequacies in Water Quality Analysis

Antimony in the backfill will exceed water quality standards, in violation of FLPMA

The FEIS indicates that the pit backfill will be a source of elevated antimony to groundwater. Specifically, the concentration of antimony in the groundwater within the pit backfill would exceed the applicable Nevada water quality standard.

- GRBW comment P566: ". . . the antimony concentration in the pore water of the backfilled pits will exceed the MCL until it has been flushed with at least 10 to 20 pore volumes of through flowing groundwater."
- BLM response to comment P566: "Geochemical modeling results indicate that pore water in backfill will exceed MCLs for longer than 20 pore volumes (Water Quantity and Water Quality Impacts report, Appendix P of this EIS)."

Because saturated groundwater that would flow into the backfill would be waters of the State of Nevada, mitigation would be required to prevent the saturated waste-rock backfill from exceeding the drinking water standard. Under FLPMA and the Part 3809 regulations, BLM cannot approve an operation that is predicted to violate water quality standards at any time. The fact that future mitigation may potentially reduce the pollution levels in the future does not excuse the fact that water quality standards will be violated.

The backfilled pits are expected to have through flowing groundwater when they fill, and would thus be long-term sources of pollutants to down-gradient groundwater:

- GBRW Comment P570: "The groundwater model used to support the DEIS does recognize the backfilled pits as long-term pollution sources, and include an estimate for the extent of the antimony plume that will exceed the 0.006 mg/L MCL out to 300 years beyond closure."

This comment notes what is shown in Figure 6.10. "Antimony 0.006 mg/L isopleth through time (proposed action)," Piteau Associates 2020, FEIS Thacker Pass Lithium Mine Project Appendix P Part 4). As with the groundwater in the waste-rock backfill itself, the groundwater down gradient from the Thacker Pass pits is waters of the State of Nevada, and thus cannot be allowed to receive a plume of water that exceeds the drinking water standards.

Groundwater in the backfill will exceed MCLs for antimony and possibly other solutes, and should be treated in place avoid the need for perpetual treatment and prevent groundwater degradation. The FEIS and any ROD must prevent any generation of pollution levels that exceed water quality requirements at all times.

The FEIS and its supporting technical appendices do not prevent the degradation of Waters of the State in the backfilled pits, as they rely on future plans not subject to public NEPA and FLPMA review:

- GBRW Comment P572: "Present a model for an alternative closure option for the backfilled pits that prevents the release of pollutants in a groundwater plume, such as a period of active pumping and treating of pore water until the discharge from the waste-rock backfill is below the groundwater MCLs."

- BLM Response to P572: "Potential impacts to groundwater water quality downgradient from the backfilled pit would be addressed as outlined in Mitigation WR-3 provided in Section 4.3.2 of EIS."

The "Mitigation WR-3" cited in the BLM response is "Groundwater Quality Monitoring and Groundwater Quality Management Plans," which states that "in the event that constituent concentrations exceed established regulatory thresholds at one or more established compliance monitoring points, and the exceedance is attributable to contamination originating from mine facilities or operations, LNC would provide the BLM and NDEP with a groundwater quality management plan for review and approval" (FEIS pg. 4-26, Section 4.3.2 "Recommended Mitigation and Monitoring"). Yet since the FEIS predicts the exceedances of acceptable water quality levels, this reliance on future, as-yet-unreviewed plans violates NEPA and FLPMA.

<u>Failure to consider sulfide oxidation in backfilled waste rock</u>

Further, the FEIS still did not adequately calculate the effect of pollutants released by the oxidation of sulfide-sulfur minerals in the waste rock proposed for backfilling into the pit.

- GBRW Comment P555: "DEIS Does Not Completely Address Sulfide Oxidation that Could Cause UUD . . . Estimate the cumulative amount of sulfide S mineral oxidation that will occur in the pit backfill, and use this in the groundwater model to indicate the amount of sulfate that will be released to groundwater when the backfill is flooded."

- BLM Response to P557: "A static calculation on total sulfur production is complicated by the fact that pit lake recovery occurs faster than oxygen diffusion through pore space. Applying the Davis-Ritchie equation provides an estimate for the time it would take for the reaction front to propagate through the backfill. Under the given backfill parameters, the reaction front would require over 500 years propagate through backfill. Whereas water levels in the backfill are 90% recovered after 30 years post-closure. . . . . Thus, the flushing term applied in the geochemical model is appropriate to represent the release of sulfates, and other constituents."

The GBRW comment was asking that the model of solute concentrations in backfill include an estimate for the amount of sulfide-sulfur minerals that would oxidize in the waste rock during its storage on the surface, before it was backfilled and flooded in the pit. We accept the BLM's response - that once the sulfide waste rock has been backfilled to the pits, the rate of oxidation, presumably limited by the rate of oxygen diffusion down from the surface, will be slow enough that it can be neglected. But sulfide minerals in mine waste rock begin oxidizing as soon as it is oxygenated by blasting and excavation; and it will continue oxidizing until it is buried in a

manner that restricts oxidation, such as when it is backfilled to a pit. This concept - that the cumulative amount of sulfide mineral oxidation in waste rock depends on the duration over which the rock is stored in an aerated facility - is a fundamental component of mine-waste management, and is widely described in studies of mine-waste management. (See for example the recent presentation by Pearce et al., 2020.[2] This PDF file is attached to our comments so that it may be included in the public record.)

This cumulative solute release from waste rock by oxidation before backfilling is an important model source parameter, an initial condition, that is required to simulate solute release and transport from the backfill. However, the FEIS not contain a mandatory plan to prevent these pollutant releases. In addition, because the total load of soluble pollutants in the backfill has been ignored, the FEIS has failed to properly analyze treatment needs and the associated costs.. These failures violate BLM's duties under FLPMA and NEPA.

The FEIS does not clarify the extent of long-term water treatment

Both the waste rock dump and the tailing facility are potential sources of long-term pollution. The FEIS failed to present information and analysis as to how long it is anticipated that drainage from both of these facilities will need to be captured and treated. This is especially important for the tailings facility which based on the mobility test results contained in appendix P the leachate from the clay tailings will be highly contaminated including very low pH and significant uranium and alpha and beta activity. Drainage from the tailings facility must be treated. The question is for how long? This question is not addressed in the FEIS, but must be analyzed to ensure that water and environmental resources are protected and unnecessary and undue degradation does not occur.

Under FLPMA, BLM cannot approve an operation that is predicted to need such long-term/perpetual treatment. At a minimum, all costs for the construction, operation, and maintenance of this should be included in the reclamation/closure financial guarantee/bond in the ROD, as required by FLPMA and the part 3809 regulations.

Inadequate Air Quality Analysis

The FEIS still does not address the inconsistency and incomplete analysis of emissions from the facility. In particular is the confusing discussion of the emission from the acid plant.

- GBRW Comment P588 and P589: Sulfur Dioxide Emissions Analysis is Inadequate. The DEIS cites very low sulfur dioxide (SO_2) emissions from the facility as shown in Table 4.10. For Phase I SO_2 the table shows 75.8 tons per year (TPY) for the production of 337,895 tons of sulfuric acid (H_2SO_4) per year. This is a very low emission rate that currently does not exist in the United States for sulfuric acid production. Furthermore, Phase II of the mine

[2]Pearce, Steven, "Practically achieving zero oxygen concentrations in waste storage facilities: Martabe mine as a case study," BC MEND ML/ARD Annual Workshop, 2020. http://bc-mlard.ca/files/presentations/2020-18-PEARCE-ETAL-practically-achieving-zero-oxygen.pdf. Attached to these comments for BLM consideration prior to issuance of the ROD.

plan will involve doubling the acid production; however, SO_2 emissions are still only 76.1 TPY. Phase II would be a truly impressive emission capture rate. The DEIS does not justify these emission numbers. Appendix K of the DEIS provides only the following statement;

> "In order to minimize the emissions from the sulfuric acid plant, LNC has committed to installing a state-of-the-art scrubbing control, which is above customary industry standard. As a result, the sulfur dioxide and acid mist emissions from the sulfuric acid plant will be well below the emission standards (4 pounds SO_2 per ton of acid produced and 0.15 pounds H_2SO_4 per ton of acid produced) in the Code of Federal Regulations, Title 40, Part 60 (40 CFR 60), Subpart H, Standards of Performance for Sulfuric Acid Plants. While the exact scrubbing system has not yet been determined, LNC has committed to installing a control that, at the minimum, meets the emission levels used in this analysis." (DEIS, App. K, pp 6-7)

Indeed, the scrubbing technology would have to be state-of-the-art or beyond. But, the DEIS does not discuss any specifics, it only mentions a yet to be determined technology. Thus, there is no way for there to be an analysis of the effectiveness on this technology as a mitigation for sulfur dioxide emissions in violation of NEPA. There must be evidence of the effectiveness of the scrubbing technology.

- BLM Response to P588 and 589: The NEPA Air Quality Impact Analysis was completed based on guidance and specifications from a sulfuric acid plant manufacturer, which included manufacturer guaranteed emission levels for Phase 2. (These guaranteed emission levels were conservatively used for Phase 1 as well) [DEIS Appendix K, Sections 2.3.5 & 2.3.7]. Since completing the NEPA Air Quality Impact Analysis, LNC has concluded that the sulfuric acid plant tail gas scrubber will utilize a sodium sulfate scrubbing solution containing sodium hydroxide. The scrubber pH and sulfate concentration will be maintained to optimize the scrubber control efficiency. The emission limits for the sulfuric acid plant, starting with Phase 1, will be enforced through the Nevada Division of Environmental Protection Air Quality Operating Permit for the Thacker Pass Project. Furthermore, as discussed in the Thacker Pass Project NEPA Air Quality Impact Analysis Report, the sulfuric acid plant emissions must be maintained below the Federal standards in 40 CFR Part 60, Subpart H [DEIS Appendix K, Section 2.3.5].

There has been no change in the analysis and the response to comments hardly explains the process and the technology for scrubbing the SO_2 emissions; it merely provides a few chemicals to be used. How can the effectiveness be determined from such little information? Under NEPA and FLPMA, BLM must fully analyze, detail, and confirm the effectiveness of such purported mitigation measures.

GBRW requested "specifics" to be able to analyze whether the acid plant emissions is likely to meet the goals listed in the FEIS. Yet the FEIS adds no specific data or analysis on the scrubbing technology, such as its application in another operational acid plant or reasonably scalable laboratory test data.

GBRW also notes that the emissions for the acid plant for all constituents (PM, PM_{10}, $PM_{2.5}$, CO, NOx SO_2 VOC H_2S) are identical for both phase I and phase 2 (appendix K, FEIS). The FEIS failed to show why this is the case and clearly show that how the production of acid can double in phase 2 without changing the emissions.

In a discussion between GBRW and LNC on August 28, 2020 company representatives stated that "SO_2 emissions from phase 1of acid plant are to be ~15 ppm and for phase 2 ~7.5 ppm." These stack emission concentrations will achieve the 75.8 TYP and 76.1 TPY for phases 1 and 2 respectively facility wide as stated in the FEIS. Again, the FEIS does not provide the public sufficient data and analysis that these very low emissions is achievable.

The company's unsupported claims contradict current science and are not supported by the record. We note that according to the national "Acid Plant Database," Rio Tinto's Kennecott Copper smelter in Utah is "the cleanest in the world" and "captures 99.9% of the sulfur dioxide emissions produced." The same document from the "Acid Plant Database" listed the emissions concentration at <100 ppm in SO_2.[3]

Therefore, LNC is proposing an acid plant that will be on the order of 5 to 10 times cleaner in SO_2 that the current state-of-the-art industry standard and the "cleanest in the world," yet no details are provided for public review.

Under NEPA and FLPMA, the FEIS failed to establish that this standard can be met with clear data and analysis and that emission requirements and goals as presented in the FEIS will be met for all constituents.

BLM Must Address Impacts to Endangered, Threatened, Sensitive, and Other Special Status Birds, Wildlife, and Plants

In general, the EIS fails to take a hard look at impacts from the proposed mine to Endangered, Threatened, Sensitive and other special status birds, wildlife, and plants in the Project area, including State of Nevada Species of Conservation Concern and At-Risk species. BLM must supplement the EIS in order to adequately consider impacts to these species from the proposed mine and carry out its mandate to conserve and protect these species under FLPMA. In particular, it is clear that BLM does not have adequate baseline information to understand special status and imperiled species presence in and use of the Project area and thus, to project how they will be affected by the mine development. In some cases, the biological information about the

[3]DKL Engineering, Inc., "Sulphuric Acid on the Web™", http://www.sulphuric-acid.com/sulphuric-acid-on-the-web/home.htm, an online sulfuric acid database, last updated June 29, 2020. Kennecott Data Sheet from January 27, 2018 (viewed December 27, 2020). Attached to these comments for BLM consideration prior to issuance of the ROD.

species is so vague as to render the analysis and any proposed mitigation meaningless, as in the case of bat species, which erroneously presumes that all bats in the project area are aerial insect feeders. We have provided additional basic background information on some of these species for use in your supplemental analysis.

Even where surveys for species presence have been performed, the analysis of effects to the species is cursory and does not provide a meaningful understanding of likely impacts to their future persistence. For instance, regarding pygmy rabbits, the FEIS explains that surveys only detected inactive burrows and pygmy rabbit pellets. But this dismissal of impacts ignores the well-known difficulty of detecting pygmy rabbits and the recent research (Ellis *et al* 2017)[4] that in many instances found pygmy rabbits with cameras at burrows that had been considered inactive, which suggests that common methods of searching for pygmy rabbits can be ineffective and under detect their presence. Perhaps to cover its bases, the FEIS then states "the potential for mortality under the Proposed Action could be a significant effect to local populations" without describing the local population or what that significant effect would be. 4-41. This acknowledgment of some effects without any real disclosure or analysis of the extent of those effects and what they mean for the species is typical of the FEIS and violates NEPA's hard look requirement.

Greater Sage-Grouse

The Project will have serious impacts to Greater sage-grouse that BLM has failed to consider or address. The Project area is within the Lone Willow Population Management Unit (PMU) designated by the Nevada Department of Wildlife (NDOW). 4-43. Much of that PMU is categorized as "essential irreplaceable habitat," which the FEIS ignores. *See* https://www.fws.gov/nevada/nv_species/documents/sage_grouse/392012-Maps/Printable_Greater_Sage-Grouse_Habitat_Categorization_Map.pdf. The Project would completely span the southeastern portion of the PMU, severing the southernmost portion of the PMU from the rest of the PMU. *See* Figure 4.5-1. Studies show that isolating sage-grouse populations by fragmenting habitat in this way leads to their extirpation; thus, the Project will effectively shrink the habitat and sage-grouse population in the PMU.

Although the FEIS provides little discussion of how the Project would affect sage-grouse populations in the Project area or at the PMU scale, the Lone Willow PMU has reached lows recognized to warrant management action, both in terms of sage-grouse populations and sage-grouse habitat. In 2014, before the sage-grouse Plan amendments were first adopted, the PMU had already crossed a population threshold recognized as calling for adaptive management approaches. 4-43. The 2019 Sagebrush Ecosystem Technical Team also identified the Lone Willow PMU as having tripped a habitat trigger due to habitat loss from fire that burned 48 percent of the PMU. *See* 4-43. The assumption that management changes would occur in response to triggers like these was an important premise of the 2015 Approved Resource Management Plan Amendments adopted to provide adequate regulatory mechanisms to protect the greater sage-grouse and avert listing under the Endangered Species Act. *See* MD SSS 18-23.

[4] Attached to these comments for BLM consideration prior to issuance of the ROD.

The Project area provides important breeding, nesting, brood-rearing, and winter habitats for sage-grouse. According to the FEIS:

> There is one active lek (Montana-10) within 0.96 miles of the Project area, and three active lek sites within 3.1 miles of the Project area (Figure 4.5-10, Appendix A). NDOW lek observations have documented birds displaying at this lek within 0.75 miles of the proposed Project area (NDOW 2020). GRSG have been documented within the Project area during field surveys and by NDOW, who reported 63 tracking locations generated by at least 30 radio-marked birds (NDOW 2018).

4-42. The Montana-10 lek is one of the three largest leks in the Lone Willow PMU. Mapping shows six active and two inactive sage-grouse leks within or adjacent to the Project area. *See* Figure 4.5-10. The FEIS does not disclose whether sage-grouse leks occur south of the PMU, but there are active sage-grouse leks in the southeastern portion of the PMY.

Nearly the entire Project area occurs within moderate to high quality sage-grouse winter habitat and the northwestern portion of the Project area where the pit mine will be located, is high-quality brood-rearing habitat. Figures N.2, N.3; *see also* G-18. The most high-quality sage-grouse habitat is in the north of the Project area where the open pit will be located. *See* G-18 (describing habitat).

While the Winnemucca RMP, as amended, caps disturbance in high-value sage-grouse Priority Habitat Management Areas (PHMAs) at 3 percent and the project and PMU scale, disturbance in the Project area already surpasses that threshold. The Project will disturb 1.2 percent of PHMAs within the PMU and will raise disturbance in the Project area from 4.4 percent to 12 percent. Although the Project area already exceeds the 3 percent project-level disturbance cap, BLM seems to believe it may disregard that cap because the Project involves lithium mining.[5] BLM has also elected not to apply several Required Design Features (RDFs), including measures to address noise from the Project, because it claims that those measures do not apply to locatable mineral developments. Indeed, BLM appears to contend that it cannot constrain the manner of development at Thacker Pass at all to protect sage-grouse because the Project involves a locatable mineral—yet it has not provided analysis to support the assertion that the entire Project area is subject to "valid existing rights" or otherwise show that the company has statutory rights to use/occupy all of its mining claims without evidence to support such rights under federal mining and public land law. BLM's failure to apply conservation measures needed to mitigate impacts to this imperiled species from the proposed lithium mine is violates FLPMA, will cause unnecessary and undue degradation, and will likely cause irreparable harm to the species.

[5] The NV/NE CA ARMPA claims that the disturbance cap may not apply to mining activities, but that details about those activities will be fully analyzed and disclosed in the NEPA process: "Although locatable mine sites are included in the degradation calculation, mining activities under the 1872 mining law may not be subject to the 3% disturbance cap. Details about locatable mining activities will be fully disclosed and analyzed in the NEPA process to assess impacts to sage-grouse and their habitat as well as to BLM goals and objectives, and other BLM programs and activities." NV/NE CA ARMPA at E-2.

While the FEIS does disclose that effects to sage-grouse are anticipated, it fails to provide basic information necessary to determine what those effects will be. It does not disclose baseline sage-grouse populations in the project area and in the PMU or describe how they use seasonal habitats in the Project area. The FEIS does not even disclose which Priority Area for Conservation (PAC) the PMU is in, although it is within the Western Great Basin PAC, which extends into Oregon and California. Without this "big picture" (or small picture) baseline information, the FEIS fails to provide sufficient information to assess impacts to the bird from likely destruction of the populations at Thacker Pass and the southeastern portion of the Lone Willow PMU. And, because there is no adequate baseline, monitoring to discern changes to sage-grouse populations in the Project area would be meaningless. We have provided several resources concerning the need to consider effects to sage-grouse seasonal habitats at both landscape and local level scales to adequately discern impacts to the birds.

The FEIS also does not disclose where leks are located relative to different types of development and how they may be impacted. For instance, as the Nevada Department of Wildlife pointed out in comments: "Based on average lek attendance, the Montana-10 lek is one of the three largest leks in the Lone Willow PMU and the loss of this lek would likely be of high consequence to greater sage-grouse populations." R-184. But the FEIS does not disclose how the impacts from the development of the open pit mine within a mile of this critical lek will likely affect sage-grouse populations in the Project area, the PMU, or the PAC. Indeed, even though the FEIS discloses that, according to projections by the Nevada Department of Wildlife, noise from the Project will likely exceed levels known to have negative effects on lek attendance on two leks in the Project area, the FEIS does not disclose what those impacts will be. *See* 4-53. We have attached numerous studies showing drastic sage-grouse population declines and lek abandonment in response to disturbance from energy development. Will the lek likely be abandoned? How will abandonment of this significant lek affect sage-grouse populations in the PMU, PAC, or rangewide?

The area where the pit mine will be located will be subject to long-term, virtually permanent dewatering post-mine, which will likely affect wet meadows used by sage-grouse during the brood-rearing season, but the compensatory mitigation planned contains no permanent credits to offset those impacts. *See* 4-45. The lack of permanent mitigation credits means that long-lasting, persistent impacts to sage-grouse from the open pit mine are unaddressed. Thus, many statements in the FEIS and in the Response to comments claiming the effects of the project on sage-grouse will be fully mitigated through conservation credits are false. For example, the FEIS states in response to comments: "The [Conservation Credit System] provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are *fully compensated* by long-term enhancement and protection of habitat that result in a net benefit for the species." R-106, R-135. The analysis in the FEIS and response to comments is thus inaccurate and misleading and understates the impacts to sage-grouse from the mine.

The FEIS also fails to consider reasonably foreseeable effects to sage-grouse from the Project. For instance, it does not consider effects to sage-grouse from cutting off the southeastern part of the PMU from the rest of the PMU, either to sage-grouse populations in the PMU or to sage-grouse population in the PAC of which the PMU is part. The FEIS does not consider effects of

Project in light of the effects of wildfire that eliminated 48 percent of the sagebrush habitat in the western portion of the PMU. How much viable sage-grouse habitat remains in this PMU post-fire, and factoring in the impacts from the mine? Nor does the FEIS disclose effects to sage-grouse from permanent destruction of nesting and brood-rearing habitat from mine-caused groundwater drawdown—effects that are not offset in any way by the planned mitigation. Indeed, the FEIS does not disclose how impacts to any sage-grouse seasonal habitats in the Project area are likely to affect the species. We have included references regarding sage-grouse habitat needs, including their use of seasonal habitats, for use in your supplemental analysis.

Golden Eagles

Golden eagles are protected under both the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). Both prohibit take without permits.[6] BGEPA's definition of take includes disturbance, defined in later regulation as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, injury to an eagle, a decrease in productivity, or nest abandonment." 50 CFR 22.3. In 2009, USFWS issued regulations authorizing incidental take permits for eagles. After pressure from industries that wanted weaker permitting standards, the eagle incidental take permit regulations were revised, and reissued in 2016.

In April 2013, USFWS issued its most recent Eagle Conservation Plan Guidance (ECPG),[7] to help project proponents obtain eagle incidental take permits. Compliance with the ECPG is voluntary, but avoiding unpermitted eagle take and, if an eagle incidental take permit is issued, complying with that permit's requirements, is mandatory under BGEPA and the eagle take permit regulations. USFWS's most recent ECPG recommends that "initial surveys be conducted on and within 10 miles of a project's footprint to establish the project-area mean inter-nest distance." ECPG at 12. The ECPG further states, "If data on nest-spacing in the project area are lacking, project proponents or operators may wish to survey up to 10 miles, as this is ½ the largest recorded spacing observed for golden eagles in the Mojave/Sonoran deserts of western Arizona (Millsap 1981)." ECPG at 12.

In April 2020, UFSWS published a memo that reduced the ECPG's recommended 10-mile area for eagle nest surveys down to two miles, a reduction of 80%. This change appears to have been made without advance public notice, without opportunity for public comment and without NEPA analysis.[8] The agency's rationalization for the change was "eagle nest surveys out to 2 miles

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[6] The Trump Administration's interpretation of unlawful incidental take under MBTA contradicts at least 40 years of precedent, is currently being litigated, and is also the subject of a not-yet-completed rulemaking process.

[7] U.S. Fish and Wildlife Service. April 2013. Eagle Conservation Plan Guidance: Module 1—Land-Based Wind Energy, Version Two. Attached. USFWS has not released additional ECPG Modules for other industries, but instead applies and on-the-fly modifies the wind energy ECPG Module for eagle take permit applications submitted by other industries. Available at https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf.

[8] To the extent BLM has relied on this memo in the FEIS to limit eagle nest surveys to only two miles of the Project's footprint, that reliance is illegal, since the memo reversed prior policy without the process required by the Administrative Procedure Act.

from the boundary of the area associated with an incidental take permit will provide sufficient information to evaluate project impacts to nearby nesting eagles"; this conclusion was based on an average distance calculated by pooled data from 101 breeding golden eagles across the U.S. that were carrying satellite transmitters. USFWS eagle memo at 1 and 3. However, the memo shows that the female golden eagles in North American deserts traveled further distances from the center of their territories than the pooled averages, making the new two-mile survey buffer less representative of their travel distances. UFSWS eagle memo at 3. Furthermore, the memo did not state how many of the 101 golden eagles were tracked in each of the five ecoregions, nor did it give any rough estimate of where those tracked locations were. North America has several different deserts (Great Basin, Mojave, Sonoran, Chihuahuan), each with different characteristics beyond the shared characteristic of aridity (temperature, vegetation, prey species, etc.). The Thacker Pass mine would be located in the Great Basin desert. Therefore, it is unclear how well the new buffer distance actually represents travel distances of Great Basin golden eagles in general and the Thacker Pass local population of golden eagles in particular.

The project's eagle nest surveys for the Thacker Pass mine were conducted in 2018 and 2019 with a 10-mile buffer and an additional surveyed area beyond that going out to about 20 miles to the south of the project. Thacker Pass Eagle Conservation Plan at 10. Additional surveys with a 2-mile buffer were proposed for 2020. Thacker Pass Eagle Conservation Plan at 10. Within the 10-mile buffer, 10 territories were considered occupied in 2018 and 10 were considered occupied in 2019. Four territories were considered occupied during the 2020 survey that used the new two-mile buffer. FEIS at 4-57. Nevertheless, the FEIS concludes that only one nest is likely to be disturbed to an extent that take is likely. FEIS at 4-57. As we have explained in previous comments, this conclusion is too low given the many nests, potential alternate nests and territories in the immediate area. We also note that FEIS Figure 4.5-16 shows three golden eagle territories overlapping the project area, and concludes that two are unoccupied based on a single year of nest data, which does not accurately reflect golden eagle research.

In addition, the FEIS significantly underestimates cumulative impacts to golden eagles due to a serious error in the way that annual unpermitted take of golden eagles in the LAP has been calculated. The FEIS estimates that annual unpermitted take of golden eagles in the LAP is 12.85 eagles. FEIS at 5-9 and Appendix Q at Q-2. However, this number is incorrectly calculated in Appendix Q, which combines 19 different datasets[9] and calculates an annual mean average of unpermitted golden eagle take equivalent to 12.85 golden eagles by adding all the mortality in the 19 datasets together and dividing that sum by 20 (years). There are two major problems with this approach. First, the 19 datasets span a total of 26 years, not 20 (1994-2019). Second, none of the 19 datasets span the entire 26-year period; they range anywhere from one to 20 years with fully half reporting fewer than 10 years and eight reporting only a single year. This means that simply adding all the mortality together and dividing by 20 does not result in a credible annual average of unpermitted golden eagle take for a 20-year period since not all of the datasets cover 20 years.

[9] We are using the term "dataset" to refer to each of the 19 golden eagle mortality cause entries in the chart on Q-2. Some of the mortality cause names for these 19 entries are repeated in the chart, but they are clearly different datasets because their reported years are different. No information about these datasets is presented other than what is in the chart on Q-2, which the FEIS says is derived from UFSWS.

As a result, the FEIS appears to have significantly underestimated annual unpermitted golden eagle take.

To better estimate annual unpermitted golden eagle take, we have re-estimated it from the golden eagle mortality data in FEIS Appendix Q.[10] We calculated the mortality per reported year for each of the 19 datasets (all known mortality divided by number of reported years), which pertains to the 20 year data time span used as a divisor in FEIS Appendix Q and the actual 26-year data time span reported in FEIS Appendix Q. Then we multiplied mortality per reported year for each of the 19 datasets by 20 and 26 to obtain adjusted mortality for each of the 19 datasets. Then we added the adjusted mortality for each of the 19 datasets together and divided by 20 and 26. Both equations result in the same annual unpermitted take estimate of 32.18 golden eagles per year, significantly higher than Appendix Q's estimate 12.85 eagles per year.

After recalculating unpermitted golden eagle take, we also recalculated Appendix Q's figures for the total amount of take (overlapping, predicted, unpermitted) and the percentage of Local Area Population (LAP). Appendix Q's calculation that overlapping, predicted, and unpermitted take add to only 1.75% of the LAP is too low because the number it relies on for unpermitted take is too low, per the calculations described above. When we recalculated the total take percentage using our recalculated unpermitted take number, we found the overlapping, predicted, and unpermitted take is 4.121%.[11] This is uncomfortably close to the maximum of 5% allowed by the eagle take permit regulations. It is also significantly higher than Appendix Q's calculation of 1.75%. USFWS's 2016 Bald and Golden Eagle Population Update states that LAP golden eagle take rates of greater than 1% are of concern and 5% is the maximum allowable. That 5% maximum allowable take could come at great cost to golden eagles: "the 5% threshold could result in a decline of 80% to a new lower equilibrium." USFWS Bald and Golden Eagle Update at iv.[12]

Finally, BLM did not respond in the FEIS to the substantive comments and questions about golden eagles and the Bird and Bat Conservation Strategy that Western Watersheds Project (WWP) raised in its second DEIS comment letter, which was timely submitted.[13] These concerns include potential disturbance take continuing after the end of the five-year take permit, potential take greater than authorized by the proposed take permit, large number of eagle nests in the area, avoidance and minimization measures, monitoring and review of monitoring, failure to include

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[10] Millsap, B. A., Bjerre, E. R., Otto, M. C., Zimmerman, G. S., & Zimpfer, N. L. 2016. Bald and Golden Eagles: Population Demographics and Estimation of Sustainable Take in the United States, 2016 Update. Washington, D.C.: U.S. Fish and Wildlife Service, Division of Migratory Bird Management. Available at https://eagleruleprocess.org/files/handouts/EagleRuleRevisions-StatusReport.pdf.

[11] Our LAP percentage calculation is in the Cumulative Take worksheet of the Excel spreadsheet file.

[12] We have attached our calculations in the form of an Excel spreadsheet file. *See* the Unpermitted Take worksheet.

[13] We have attached the receipts BLM's ePlanning web portal gave WWP when it timely submitted its first and second DEIS comment letters and attachments. They clearly show that WWP timely submitted two comment letters and 29 supporting attachments and thus are in the administrative record.

the Eagle Conservation Plan and Bird and Bat Conservation Strategy as part of the FEIS, incorrect statements in the Eagle Conservation Plan and Bird and Bat Conservation Strategy that incidental take of migratory birds is not unlawful under the MBTA, research showing that golden eagle take is as likely to happen at alternate golden eagle nests as at used golden eagle nests, need to base nest risk data on multiple years of data and not just one, and need to underground new powerlines at the project site to reduce risk to eagles and greater sage-grouse. WWP Supplementary DEIS Comment Letter at 2-3.

Pronghorn

Nearly the entire project area is within pronghorn winter range. Figure 4.5-7. The FEIS discloses that potential direct effects to pronghorn under the Proposed Action include the loss of 427 acres of summer range and 4,960 acres of winter range over the life of the mine or longer, depending on the success of reclamation. Two pronghorn movement corridors lie within the Project area. These corridors facilitate access between limited use and winter range habitat to the south of the Project area and winter range, summer range, and year-round habitat to the north of the Project area. Mapped pronghorn antelope winter range distribution within the Project area constitutes approximately 1.26 percent of the total winter range mapped distribution within Hunt Unit 31. The construction of Project facilities and the associate loss of habitat is likely to prohibit or impede pronghorn movement between seasonal habitats.

The FEIS does not consider or disclose how severing these pronghorn movement corridors, or destroying nearly 5,000 acres of pronghorn winter range, will impact local pronghorn populations. The FEIS' consideration of impacts to pronghorn from the mine development appears limited to vague generalizations like the following: "Surface disturbance associated with mining activities and development of mine facilities…would directly affect wildlife through the loss of potentially suitable habitat by vegetation removal, and removal of seeps and springs and seasonal water sources for wildlife" and "Surface disturbance would also result in habitat fragmentation. Habitat fragmentation can affect species use of the area by reducing the landscape size for species that require large breeding or foraging ranges, increasing barriers to migration or movement, changing abiotic and biotic factors making the habitat less suitable, and reducing access to resources and potential mates." 4-34. But these generalizations do not address the effect of severing pronghorn migration corridors or destroying winter range on pronghorn. While the FEIS appears to attempt to minimize the impact of the habitat destruction that will occur by comparing the *amount* of habitat to the total amount of habitat in Hunt Unit 31, it does not consider the significance of this specific pronghorn habitat to the local pronghorn population. We have included relevant references addressing the effects of severing pronghorn migration corridors or destroying winter range for your consideration.

Amphibians

Although the FEIS discloses that Western toad, Columbia spotted frog, and northern leopard frog—all Sensitive species that BLM is mandated to conserve by its own policy and by FLPMA—may be present in the Project area, no amphibian surveys were conducted for the Project and no mitigation measures for amphibians were adopted. The only amphibian specifically discussed in the FEIS is the western toad, and the FEIS paradoxically claims that

impacts to the toad are unlikely while simultaneously admitting that "Western toads may be prevented from moving through disturbed upland habitats located between the limited amounts of aquatic/riparian habitat in the Project area." *See* 4-48. Thus, impacts to Western toads are likely, but the FEIS ignores those impacts.

Thus, the FEIS lacks an adequate baseline upon which to project effects to amphibians from the mine development and has adopted no measures to avoid impacts to amphibians, even though the mine will lower the water table, affecting perennial and ephemeral waterbodies that these species use. The FEIS fails to even mention numerous amphibians that are likely to be present in the Project area.

Springsnails

Two species of springsnails were found in the Project area during wildlife surveys, the Kings River pyrg (*Pyrgulopsis imperialis)* a.k.a. King's River pyrg and turban pebblesnail. *See* FEIS Appendix G unnumbered page 129 of 133. The Kings River pyrg is a critically imperiled endemic species at high risk of extinction (NatureServe conservation score G1, N1, S1), and the turban pebblesnail is a vulnerable species at moderate risk of extinction or elimination (NatureServe conservation score G3,S3). The Kings River pyrg is on Nevada's At Risk List of imperiled species; the turban pebblesnail is on Nevada's Watch List. The Kings River pyrg's high risk of extinction is nowhere discussed in the FEIS. Instead, the two springsnail species are described thus: "None of these snails are identified as BLM special status species, though both species are NDOW species of conservation priority." Appendix G at unnumbered page 129 of 133. The FEIS does not provide clear information as to the number of Kings River pyrg that were found, how many springs contained them, or which springs contained them, thus making it impossible for anyone, including BLM, to accurately assess risk. Instead, the FEIS merely states: "Springsnails were surveyed at 13 undeveloped springs in the survey area. During surveys for springsnails, the Kings River pyrg (*Pyrgulopsis imperialis*) was found at all springs collected." Appendix G at unnumbered page 129 of 133. According to a very recent conservation strategy for Nevada and Utah springsnails, the Kings River pyrg is an endemic species only known from 13 locations in Humboldt County in the Thacker Pass area. *See* Conservation Strategy for Springsnails Summary Reports at 4. That is the same number of locations as springs that were surveyed for the Thacker Pass Project. It also means that the Thacker Pass Project area might contain the entire known population of Kings River pyrg, thereby putting the species at risk of extinction. The FEIS should discuss this issue clearly, but utterly fails to. Instead, the FEIS doesn't mention either the Kings River pyrg or the turban pebblesnail by name in its impacts analysis and states that there will be no direct impacts to springsnails. 4-48, 4-50. As for indirect impacts, the FEIS directs the reader to section 4.5.3 (potential impacts of groundwater drawdown to wildlife) and then fails to state whether there will be indirect impacts to springsnails or that the potential indirect impacts to wildlife in the project area may include extinction. 4-53 to 4-55. Nor does the FEIS propose any mitigation specifically for springsnails, nor does it explain how the Kings River pyrg will maintain its representation, resiliency, and redundancy, which are all necessary for population integrity and species survival. These are stunning failures of the FEIS given that the Thacker Pass Project appears to pose significant risk of driving the Kings River pyrg to extinction. Failure to adequately review these issues and protect these species violates NEPA and FLPMA. We have attached several works of springsnail conservation science, and we

urge the BLM and cooperating agency UFSWS to read them and take strong action to protect the Kings River pyrg and other springsnails in the Thacker Pass Project area. Emergency listing of the Kings River pyrg as an endangered species under ESA may be warranted.

Sensitive Plants

The FEIS does not disclose the extent of efforts to detect many special status plants that are likely present in the Project area, or to impose any measures to prevent harms to these rare and delicate species. For plants known to be present, the FEIS blithely writes off the potential for impacts without any real analysis.

For instance:

- Lahontan Milkvetch *(Astragalus porrectus)* is a BLM Sensitive Species that grows in calcareous or alkaline, sandy to gravelly washes, alluvium, or gullies on clay badlands. The soils on the site would be suitable for the species. The FEIS states that the species was not found during surveys but fails to say when surveys took place and if conditions were favorable enough to spot enough individuals of the species.
- Lonesome Milkvetch *(Astragalus solitarius)* a BLM Sensitive Species that grows in washes and banks of shallow soils on volcanic flat-rock with *Artemisia arbuscula, A. tridentata, Tetradymia glabrata, Poa sandbergii, Atriplex confertifolia, Chrysothamnus nauseosus,* etc. The FEIS states that the species was not found during surveys, but fails to say when the surveys took place and what the conditions were.
- Crosby's buckwheat (*Eriogonum crosbyae* var. *crosbyae*) was identified within the southwest corner of the south Exploration area during field surveys in 2018. (FEIS at 4-48). Effects were discounted and the populations would supposedly be avoided. Yet, many possible impacts to these rare plants were not analyzed in the EIS. We have observed large-scale mining activities, and many associated direct and indirect effects could impact plants: vehicle traffic crushing vegetation, piling up of topsoil for remediation, open pit excavation and storage of waste rock, dust, impacts to pollinators, weedy plant invasion, and disturbance of seed beds in soils. A few plant surveys may not account for all the seed banks in the region of these plants, and differing years with rain patterns may trigger germination of annual plants or blooming of perennials to be different between years. More surveys should be undertaken to account for this inter-annual variation in the geography of rare plant phenology.
- The Tiehm milkvetch (*Astragalus tiehmii*) was not found on the site during a survey, and described as "low probability of occurrence" at FEIS H-2, yet in Appendix H-3 the EIS notes that Crosby buckwheat frequently grows with Tiehm milkvetch. Therefore surveys might have missed this rare plant which could be present and impacted by mining activities.
- Cordelia beardtongue (*Penstemon floribundus*) habitat is also present and more surveys could uncover this species during different weather years (FIES at H-8).
- Sand-associated rare plants could be found on the project if even slight amounts of wind-blown sand deposits are found on the project site, and these should be surveyed for: Nevada dune beardtongue (*Penstemon arenarius*) requires sand (at H-5), but it may not need to be deep sand. Similarly Oryctes (*Oryctes nevadensis*), Tonopah milkvetch (*Astragalus pseudiodanthus*).

- Sand cholla (*Grusonia pulchella*) is not an obligate sand plant, as the FEIS at H-4 determines. Ingram (2008) shows that sand cholla can grow easily in open sagebrush and saltbush in valleys just north of Winnemucca NV, habitats present on the project site. In addition, the visible portion of sand cholla may die back during dry years, but it survives as a tuber. Therefore sand cholla could easily exist on the project site but be missed during survey passes. There is no mitigation measure analyzed for this unusual cactus.

Further surveys are necessary to understand baseline populations of these species as necessary to accurately project impacts as necessary for the hard look required by NEPA. Without any mitigation measures to address impacts to sensitive plants, BLM is not complying with the mandates of its Sensitive Species Policy and FLPMA, which require it to conserve the species.

List and Brief Description of Materials That Must Be Fully Considered and Included in the Administrative Record

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Conclusion

Thank you for your consideration of these materials. Due to the overall size of these materials, they are being submitted to BLM on a flashdrive, where BLM can easily download them for inclusion into the administrative record. Please contact me immediately if you are unable to open and download these documents.

Sincerely,

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APPENDIX 1b

FWS response to comment on Final EIS for Thacker Pass Lithium Mine

Appendix 1b

USFWS Record of Decision
Thacker Pass Lithium Mine Project
USFWS Eagle Incidental Take Permit

Response to Comments on Final EIS for Thacker Pass Lithium Mine

We received a single comment letter on the Final Environmental Impact Statement (EIS) for the Thacker Pass Lithium Mine Project relative to our eagle incidental take permit analysis. The letter was submitted jointly by three non-governmental organizations (NGO); Western Watersheds Project, Great Basin Resource Watch, and Basin and Range Watch (commenter). The comment letter was submitted to the Bureau of Land Management (BLM) as the lead agency for the Environmental Impact Statement (EIS). As a cooperating agency with Federal jurisdiction by law, the EIS also analyzed the potential impacts resulting from our issuance of an eagle incidental take permit to the applicant, Lithium Nevada Corporation (LNC), for the Thacker Pass Lithium Mine Project (Project). Our response to comments relative to the EIS's analysis of our eagle incidental take permit decision are provided below, and a copy of the commenter's letter follows.

Comments (italicized) and our responses (indented)
(1) Page 12-13, "In April 2020, UFSWS published a memo that reduced the ECPG's recommended 10-mile area for eagle nest surveys down to two miles, a reduction of 80%. This change appears to have been made without advance public notice, without opportunity for public comment and without NEPA analysis. The agency's rationalization for the change was "eagle nest surveys out to 2 miles. from the boundary of the area associated with an incidental take permit will provide sufficient information to evaluate project impacts to nearby nesting eagles"; this conclusion was based on an average distance calculated by pooled data from 101 breeding golden eagles across the U.S. that were carrying satellite transmitters. USFWS eagle memo at 1 and 3. However, the memo shows that the female golden eagles in North American deserts traveled further distances from the center of their territories than the pooled averages, making the new two-mile survey buffer less representative of their travel distances. UFSWS eagle memo at 3. Furthermore, the memo did not state how many of the 101 golden eagles were tracked in each of the five ecoregions, nor did it give any rough estimate of where those tracked locations were. North America has several different deserts (Great Basin, Mojave, Sonoran, Chihuahuan), each with different characteristics beyond the shared characteristic of aridity (temperature, vegetation, prey species, etc.). The Thacker Pass mine would be located in the Great Basin desert. Therefore, it is unclear how well the new buffer distance actually represents travel distances of Great Basin golden eagles in general and the Thacker Pass local population of golden eagles in particular."

As the commenter correctly summarized, our USFWS April 2020 Memorandum (memo) provided a technical update to our National Eagle Conservation Plan Guidance, Module

1–Land-based Wind Energy (ECPG). The memo updates our recommendations for how to conduct nest surveys to determine the number and locations of occupied eagle nests in the vicinity of a proposed wind project. The comments regarding this memo and related recommendations for wind projects is beyond the scope of our analysis and consideration of an eagle incidental take permit for this proposed mining project analysis.

(2). Page 13, "Nevertheless, the FEIS concludes that only one nest is likely to be disturbed to an extent that take is likely. FEIS at 4-57. As we have explained in previous comments, this conclusion is too low given the many nests, potential alternate nests and territories in the immediate area. We also note that FEIS Figure 4.5-16 shows three golden eagle territories overlapping the project area, and concludes that two are unoccupied based on a single year of nest data, which does not accurately reflect golden eagle research."

We refer the commenter to FEIS Section 4.5.5.1, where we explained that one golden eagle breeding territory that contains six known alternate nests (not one nest) would be authorized for disturbance for up to five years. We acknowledge that each breeding territory may contain multiple alternate nest sites. Each nest site would be protected to avoid any unanticipated take. As described in FEIS Section 4.5.5.1,in the last paragraph on the bottom of page 4-58, appropriate buffers would be implemented to protect eagle nests. This measure would also become a condition of our eagle incidental take permit. The project would be required to survey within 2 miles of the project boundary annually. Protection buffers (1 mile for most activities, 2 miles for blasting) would be implemented to avoid take at each nest location until a third party independent monitor validates that a nest is not being utilized for nesting. Therefore, beginning on December 15th each year, nest buffers would be implemented until it is determined that eagles either, 1) did not attempt to use a given nest that year; 2) a nest was used, but failed for natural reasons, or 3) a nest was used and successfully fledged young.

The commenter is correct that three golden eagle breeding territories overlap the project boundary as described in the FEIS and illustrated in Appendix A, Figure 4.5-16. The commenter states that this figure, "*shows three golden eagle territories overlapping the project area, and concludes that two are unoccupied based on a single year of nest data, which does not accurately reflect golden eagle research."* In actuality, Figure 4.5-16 classifies the three referenced territories as occupied, although the status of each individual nest varied across each territory.

Figure 4.5-16 indicates that territory 16 overlaps with the northwestern boundary of the project area. The shaded green circle around territory 16 is a circular symbolic representation of the territory. In reality, golden eagle breeding territories are rarely circular. Without intensive telemetry studies it is difficult to ascertain the exact shape or boundaries of an individual eagle territory. Even so, we acknowledge there may be some uncertainty about how habitat loss may affect territory 16 over the life of the

project. To address this uncertainty, the Project's ECP has been updated to, 1) include both the aforementioned annual nest survey and nest buffer requirements; 2) monitor territorial occupancy and productivity (i.e., breeding success) of territory 16 to validate that this territory is not impacted as we concluded in the FEIS; and 3) include an adaptive management process to address any uncertainty in the monitoring data including potentially requesting take coverage for this breeding territory or others if avoidance measures become impracticable for the project, and if determined appropriate.

(3). Page 13, "In addition, the FEIS significantly underestimates cumulative impacts to golden eagles due to a serious error in the way that annual unpermitted take of golden eagles in the LAP has been calculated. The FEIS estimates that annual unpermitted take of golden eagles in the LAP is 12.85 eagles. FEIS at 5-9 and Appendix Q at Q-2. However, this number is incorrectly calculated in Appendix Q, which combines 19 different datasets and calculates an annual mean average of un-permitted golden eagle take equivalent to 12.85 golden eagles by adding all the mortality in the 19 datasets together and dividing that sum by 20 (years)…"

We conduct our cumulative effects analyses as required under the Eagle Act updated 2016 permit regulations under 50 CFR 22.26, as described in our 2016 PEIS (USFWS 2016), consistent with our ECP Guidance (USFWS 2013), and internal policies. This approach requires all regions to utilize the same analysis methods to ensure national consistency across all USFWS permit offices. Therefore, the commenter's questions and concerns about our methodology is beyond the scope of this analysis. Even so, we would like to explain that the mean average is based on all information available to the USFWS. The information is not from a systematic study or sampling effort where predictions can be made. The information is simply a reporting of all human-caused eagle mortalities that the USFWS knows about. Based on that incomplete and non-systematic information, the calculation is a simple division of the sum by years. This mean does not exceed the 10% threshold for unpermitted take identified in the 2016 PEIS (USFWS 2016) for additional examination or other actions. The commentor did not provide any new information on this topic. Thus, the USFWS decision remains unchanged and is fully covered by the 2016 PEIS (USFWS 2016) analysis for our issuance of eagle incidental take permits and our associated Record of Decision.

(4). Page 14, "To better estimate annual unpermitted golden eagle take, we have re-estimated it from the golden eagle mortality data in FEIS Appendix Q."

To further explain our methods, the mortality data presented in Appendix is not estimated information but are known mortalities. To "re-estimate" as the commenter suggests is to add unverified information into a reporting limited to known mortality information. The commentor did not provide any new information on this topic. Thus, the USFWS decision remains unchanged and is fully covered by the 2016 PEIS (USFWS 2016) and the associated Record of Decision.

(5). Page 14, "When we recalculated the total take percentage using our recalculated unpermitted take number, we found the overlapping, predicted, and unpermitted take is 4.121%. This is uncomfortably close to the maximum of 5% allowed by the eagle take permit regulations."

The 5% value from the PEIS (USFWS 2016) is relevant to permitted take, not unpermitted as the commentor suggests. In any case, the known unpermitted take does not suggest that unpermitted take is above 10%/year of the Local Area Population. The commentor did not provide any new information on this topic. Thus, the USFWS decision remains unchanged and is fully covered by the 2016 PEIS (USFWS 2016) and our associated Record of Decision.

(6). Page 14, *"Finally, BLM did not respond in the FEIS to the substantive comments and questions about golden eagles and the Bird and Bat Conservation Strategy that Western Watersheds Project (WWP) raised in its second DEIS comment letter, which was timely submitted."*

In our investigations, we learned a mistake was made. WWP did submit the following two comment letters on September 14, 2020:

1. WWP Letter 1: Subject: Comments on the Thacker Pass Lithium Mine DEIS (DOI-BLM-NV-W010-2020-0012-EIS)
2. WWP Letter 2: Subject: Supplemental Comments on the Thacker Pass Lithium Mine DEIS (DOI-BLM-NV-W010-2020-0012-EIS)

We addressed the comments from WWP Letter 1 in Appendix R of the FEIS. We overlooked the second comment letter, however this only resulted in a harmless error. A copy of WWP Letter 2 and our response to comments to that letter relative to the EIS's analysis of our eagle incidental take permit decision are provided in Appendix 2 of this ROD.

(7). "These concerns include potential disturbance take continuing after the end of the five-year take permit, potential take greater than authorized by the proposed take permit, large number of eagle nests in the area, avoidance and minimization measures, monitoring and review of monitoring…"

Please see our response to comment 2 above that addresses the commenter's concerns.

(8). "…failure to include the Eagle Conservation Plan and Bird and Bat Conservation Strategy as part of the FEIS,…"

We had decide not to include copies of the Eagle Conservation Plan and Bird and Bat Conservation Strategy as part of the Draft EIS and subsequently the Final EIS because of our partner's concerns about disclosing eagle nest locations. The ECP and BBCS were analyzed in the EIS and are part of our administrative record for the project. In response

to the commenter's concerns the Final ECP, which has been updated to align with our anticipated eagle incidental take permit decision, and the project's BBCS will be included as attachments to our USFWS Record of Decision (ROD).

(9) "…incorrect statements in the Eagle Conservation Plan and Bird and Bat Conservation Strategy that incidental take of migratory birds is not unlawful under the MBTA,…"

This comment is beyond the scope of this analysis. Interpretations of incidental take under the MBTA has undergone policy and proposed regulatory changes over the past few years. Regardless, both the USFWS and BLM have responsibilities and commitments to provide for sustainable populations and habitat for migratory birds. The project's EIS, ECP and BBCS outline the regulatory responsibilities and purview of oversight of the USFWS, BLM and the Nevada Department of Wildlife (NDOW). These plans summarize the project's biological information, best management practices, impact minimization and avoidance measures, monitoring, reporting, and adaptive management measures applicable eagles, birds and bats.

(10) "…research showing that golden eagle take is as likely to happen at alternate golden eagle nests as at used golden eagle nests, need to base nest risk data on multiple years of data and not just one,…"

Please see our response to comment 7. The EIS considered eagle nest inventory data collected in 2018, and a single year of eagle nesting data within 10 miles of the proposed project boundary collected in 2019. While we typically recommend 2-3 years of monitoring data, we also have a responsibility to use the best available science and data when making permit decisions. In this habitat, we were able to consider information about nest locations and nest clusters to inform our assessment of breeding territories. We assume that any alternate nest within a breeding golden eagle territory could become an in-use/active nest in any given year. This approach is consistent with our USFWS eagle take permit data recommendations, decisions and polices for assessing eagle use and risk at projects sites. Please see our response to comment 2 above and the project's updated ECP (ROD Appendix 3) which describes annual monitoring, protections for nests, and adaptive management. The updated ECP contains data from 2019 and includes the most recent monitoring year, 2020, nesting data.

(11) …"need to underground new powerlines at the project site to reduce risk to eagles…"

We received a similar comment (FEIS Appendix R, comment P982) from WWP during the draft EIS comment period. BLM's previous response to that comment is applicable here, and repeated below:

"Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these

measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements. An alternative with a significantly reduced footprint is not an economically feasible alternative for the operator. Alternatives must be technically and economically feasible for BLM."

(12) "These concerns include potential disturbance take continuing after the end of the five-year take permit."

Please see our response to comment 2.

APPENDIX 2a

September 14, 2020 letter from Wester Watersheds Project with supplemental comments on DEIS

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Working to protect and restore Western Watersheds and Wildlife

September 14, 2020 *Via Web Portal*

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Subject: Supplemental Comments on the Thacker Pass Lithium Mine DEIS (DOI-BLM-NV-W010-2020-0012-EIS)

Dear Mr. Loda:

Western Watersheds Project (WWP) is writing again to submit supplemental comments on the Draft Environmental Impact Statement (DEIS) for the Thacker Pass Lithium Mine (DOI-BLM-NV-W010-2020-0012-EIS). We submitted another comment letter and 25 attachments earlier today. Due to the DEIS's short public comment period and the disruptions we have experienced because of the ongoing wildfire emergency, we have not been able to fully participate in the NEPA process for this Project. Even with this supplemental comment letter, there are additional comments that we have been prevented from making during the public comment period (e.g., golden eagles, greater sage-grouse, migratory birds, and BLM sensitive species). We ask again that BLM re-open the public comment period for this DEIS for a 30-to-45-day period, so that the public can fully participate and provide information for BLM's consideration. This would be in keeping with BLM's prior practice of 90-day DEIS comment periods for large, complex projects. Fast-tracking that hinders the public's ability to fully participate in NEPA review is unlawful.

A. Pole Creek

We are concerned about the Project's potential impacts on Pole Creek and the potential to harm wildlife that rely upon it, through reductions in water quantity and flow caused by the Project. Attachment 25 in our previously submitted DEIS comment letter contains photos that show that even in September, there is still substantial water in it. In this part of the Great Basin, every drop of water is precious. What seems like a "small" reduction in water quantity to BLM or LNC can be a very big reduction to wildlife, affecting survival and reproductive success. We don't think these potential impacts and similar potential impacts to Thacker Creek and the wildlife reliant on it have been adequately analyzed in the DEIS, especially given the potential for drought and a drier climate due to climate change to also reduce water quantity and stream flow. These would be direct, indirect, and cumulative impacts. NEPA requires BLM to make a full analysis of the impacts of this Project.

B. Golden Eagles

The DEIS states:

> Under the Proposed Action, the Applicant is requesting authorization from the USFWS for disturbance to and loss of annual productivity from one Golden Eagle breeding pair for a period of up to five years from the date of the issuance of a take permit, under the Bald and Golden Eagle Protection Act. This Alternative would include monitoring of the nest site and mitigation to offset impacts to golden eagles. Under this Alternative, LNC would provide the compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as discussed in the Eagle Rule Revision 2016 PEIS (USFWS 2016).

DEIS at ES-1.

What is the Project's plan for after the five years/breeding seasons elapse? Does LNC plan to re-apply for additional golden eagle take permits over the life of the Project? If the Project continues to disturb golden eagles after the expiration of its take permit, it will violate the Bald and Golden Eagle Protection Act (BGEP)A.

Why has LNC applied for a take permit authorizing disturbance and loss of annual productivity from only golden eagle breeding pair when there are so many active golden eagle nests within two miles and 10 miles? It is reasonably foreseeable that there will be disturbance and loss of annual productivity for more than only one golden eagle breeding pair. Yet the DEIS contains no explanation of or evidence for why only one pair would experience take. If any additional golden eagles experience any form of take prohibited by BGEPA without a take permit, it will be unlawful. What measures will the Project take to prevent unauthorized take of other golden eagles? How will the Project be monitored to ensure that unauthorized take of other golden eagles has not occurred? Who will review the results of this monitoring and how often will those reviews take place?

Eagle take permits under BGEPA can only be issued if the permit applicant has avoided and minimized impacts to the extent practicable. What avoidance and minimization measures has the Project taken? Has USFWS, NDOW or another government agency suggested other avoidance and minimization measures to prevent take of golden eagles that LNC or BLM is unwilling to implement? If so, what were they?

Some of this information is in the draft Eagle Conservation Plan but it should be repeated in the EIS where the full public can see it. The Eagle Conservation Plan is not actually part of the Project's NEPA documents (not an Appendix or posted on ePlanning) and was not available to the public for review during the DEIS public comment period unless members of the public had previous experience reviewing eagle conservation plans and knew to ask for it.

The Project's draft Eagle Conservation Plan (Attachment A) incorrectly asserts that incidental take of birds protected under the Migratory Bird Treaty Act (MBTA), which includes bald and golden eagles, is not unlawful. ECP at 4. This is based on a faulty Department of the Interior M-Opinion that was recently vacated by a federal court. *See* Attachment B. The Eagle Conservation Plan must be revised to correct this and reviewed to ensure that its avoidance, minimization, and mitigation measures are sufficient to prevent incidental take of migratory birds.

The Eagle Conservation Plan does not take into account that golden eagles can have alternate nests and that all of those nests need to be protected, not just the nests that happened to be active the year that a survey was conducted. *See* Attachment C (B. A. Millsap, *et. al.* Conservation Significance of Alternative Nests of Golden Eagles). "Based on our review, were commend alternative golden eagle nests be treated with the same deference as used nests in land use plans. We justify this recommendation on the basis of existing scientific information reviewed here, which suggests take, as defined by the [Bald and Golden Eagle Protection] Act and implementing regulations, is as likely to occur at alternative golden eagle nests as at used nests." Attachment C at 240. The Eagle Conservation Plan states that there are 59 golden eagle nests in the project area, which the Plan describes as including "9 active and used by golden eagles." Attachment A at 11. According to the Eagle Conservation Plan, in 2019's survey, there were 76 golden eagle nests and six characterized as active and used by golden eagles in the survey area. Attachment A at 12. This suggests that the number of golden eagle nests in the survey area is increasing. Many of these nests may be alternate nests, suggesting that there is a greater likelihood of golden eagle disturbance and loss of annual productivity than just one breeding pair per year/breeding season. Given this, it seems highly likely that the Project would result in illegal, unauthorized golden eagle take (e.g., disturbance, productivity loss, nest loss).

The Eagle Conservation Plan's assessment of the risk of Active Nest Destruction is based on a single year (2019), which had fewer active nests than the survey located the previous year. *See* Attachment A at 17. Basing this assessment on a single year's data is unwise given the use of alternative nests by golden eagles and underestimates the risk, thus increasing the likelihood of unauthorized nest destruction take.

Proposed new power lines at the Project should be undergrounded to reduce risk of eagle collision or electrocution. By undergrounding power lines, the Project would demonstrate that it had taken all practicable steps to avoid and minimize eagle loss, which is a requirement of getting an eagle take permit. Undergrounding power lines would also protect greater sage-grouse by eliminating a new source of perches for raptors that prey on them. Curiously, the Eagle Conservation Plan's perch risk assessment only mentions an existing powerline, not any that would be new, thus underestimating risk.

Because of the DEIS's short public comment period and the repeated disruptions caused by the recent wildfires, WWP has been unable to review the Eagle Conservation Plan and the DEIS's sections on golden eagles in full. We have more to say about this, but have prevented from saying it during the public comment period by ridiculously short public comment period associated with the Project's fast tracking.

C. Illegal Restriction on Review and Approval Authority

BLM bases its entire review of the Project on the assumption that LNC has a statutory right to conduct all of its proposed operations under the 1872 Mining Law and BLM's associated 43 CFR Part 3809 regulations.

Especially regarding all of the mining claims to be used for waste dumping and other non-extractive operations, BLM assumed that LNC has statutory rights to use these claims without meeting the Mining Law's prerequisite that each of its mining claims contain the discovery of a "valuable mineral deposit" of a locatable mineral.

To satisfy the discovery requirement necessary for a valid mining claim, "the discovered deposits must be of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine." U.S. v. Coleman, 390 U.S. 599, 602 (1968). This economic test for claim validity necessarily includes the consideration of all costs necessary to develop, process, transport, and market the mineral, including costs to protect public land and the environment. "[I]t must be shown that the mineral can be extracted, removed and marketed at a profit." Id. Here, there is no evidence in the record that the mining claims covering the public lands are valid under the Mining Law.

The mere fact that the company submitted a mining plan (MPO/POO) does not mean that all, indeed any, aspects of the Project are regulated only under Part 3809 or that approving the MPO is the BLM's only choice. Indeed, because the record lacks evidence that the company has statutory rights under federal mining laws, including the 1872 Mining Law, to the federal lands/minerals, review and regulation of the project is not solely under Part 3809, but rather the agency's special use and multiple use authorities (43 CFR Part 2900/2920) under FLPMA, and/or the statutes and regulations governing common variety minerals.

The BLM's overly-restricted interpretation of its authority was squarely and recently rejected by the federal courts. In 2019, the federal district court for the District of Arizona issued its decision in Center for Biological Diversity v. U.S. Fish and Wildlife Service, 409 F.Supp.3d 738 (D. Ariz. 2019), in which the court vacated and remanded the federal government's approval of a large copper mine (the Rosemont Mine) due to the agency's erroneous interpretation and application of the 1872 Mining Law, federal public land law, and NEPA.[1]

The federal court squarely rejected the same federal government position taken by the BLM here – that mining claimants are entitled to use and occupy mining claims absent any evidence that the claims are valid under the Mining Law, and that the agency's mining regulations are the only proper regulatory vehicle for operations – and ruled that the government's statutory interpretation was contrary to the plain language and controlling caselaw under the Mining Law, NEPA, and other laws. The Rosemont decision rejected the government's position that it has no authority to apply its broader public land regulations to mining operations proposed on lands that fail to meet the Mining Law's statutory prerequisites for rights against the United States.

The only way to ascertain the proper regulatory scheme for the Project is for BLM to obtain the necessary information on the mineralization of the pit and other areas to be used by the Project in order to determine whether the minerals are locatable, and if so, whether the claims satisfy the Mining Law's claim validity prerequisites. The court in the Rosemont case held that unless sufficient evidence exists in the agency record that mining claims proposed for use and occupancy met the requirements of the Mining Law and were valid (i.e., each mining claim contained the requisite "valuable minerals"), the Mining Law does not govern the agency's review of the proposed use/occupancy of those lands. The agency could not simply assume

[1] Although that case involved the Forest Service, not BLM, the court's interpretation of the claimant's purported "rights" under the Mining Law applies equally to BLM.

rights under the Mining Law that limit the federal land agency's full and broad authority to protect public land and resources.

> [H]aving a piece of paper reflecting that one has unpatented mining claims does not show that one actually has *valid* unpatented mining claims. If there is no valuable mineral deposit beneath the purported unpatented mining claims, the unpatented mining claims are completely *invalid* under the Mining Law of 1872, and no property rights attach to those invalid unpatented mining claims.
>
> Center for Biological Diversity, 409 F.Supp.3d at 747-48 (emphasis in original).

The federal court detailed how the agency never inquired into whether the mining claims met the Mining Law's prerequisite for use/occupancy rights (discovery of valuable minerals), yet the agency "accepted, without question, that those unpatented mining claims were valid" and "assumed that Rosemont had the right to use those 2,447 acres to support its mining operation (i.e., by dumping 1.9 billion tons of waste on that land)." Center for Biological Diversity, at 748. "This was a crucial error as it tainted the Forest Service's evaluation of the Rosemont Mine from the start." Id. at 747. The court held that such use/occupancy, without verification that such rights under the Mining Law actually exist on those lands/claims, was ***not*** authorized by the Mining Law, and thus was not governed by the agency's mining regulations.

The court also noted that its ruling does not require that the federal agency conduct a full-scale mineral validity review for every proposed use:

> The Forest Service argues that it is not required to conduct a validity determination before approving a mining plan of operations. **However, a validity determination differs significantly from establishing a factual basis upon which the Forest Service can determine rights**. A validity determination invokes a separate administrative procedure carried out by the BLM (which is within the Department of the Interior). **In contrast, the Forest Service** (which is within the Department of Agriculture) **merely needed a factual basis to support Rosemont's assertion of rights.** Such a finding would not preclude another individual from bringing an adverse proceeding to determine mineral rights, or the Government from initiating a validity determination. As referenced above, the fact that Rosemont proposed to dump 1.9 billion tons of waste on its unpatented claims on 2,447 acres of the Coronado National Forest was a potent indication that Rosemont's unpatented claims on the land in question were invalid (i.e., if Rosemont was voluntarily proposing to bury its unpatented claims under 1.9 billion tons of its own waste, there is a strong inference that there is no valuable mineral deposit lying below the waste site).

Center for Biological Diversity, at 761-62 (emphasis added).

The situation is the same here, as there is nothing in the record that provides "a factual basis to support [the claimant's] assertion of rights." Under basic principles of administrative law, "Any decision made without first establishing the factual basis upon which the Forest Service could form an opinion on surface rights would entirely ignore an important aspect of the

problem. *See State Farm,* 463 U.S. at 43. [Motor Vehicles Mfrs. Ass'n of U.S. v. State Farm Mut. Auto Ins. Co., 463 U.S. 29 (1983)]." Center for Biological Diversity, at 757-58.

The court also relied upon over a century of Mining Law court precedent which holds that the presence of valuable minerals on one claim (or on private land) cannot support claim validity on adjacent or nearby claims or other federal lands. "A claimant may not use the deposit present in one location to lend validity to an adjacent location. *See Waskey v. Hammer*, 223 U.S. 85, 91 (1912) ('A discovery without the limits of the claim, no matter what its proximity, does not suffice.'); *Lombardo Turquoise Milling & Mining Co. v. Hemanes*, 430 F. Supp. 429, 443 (D. Nev. 1977)." Center for Biological Diversity, at 754.

In the Rosemont decision, the federal court rejected the agency's view that only its mining regulations, and not its Special Use Regulations, applied to mining-related operations on public land. The Forest Service mining regulations at 36 CFR Part 228, mirror the BLM's Part 3809 regulations in that they only apply to "operations authorized by the mining laws." *Compare* 43 CFR §3809.1(a) with 36 CFR §228.1.

> [I]t does not follow that the Forest Service must use these Part 228 regulations merely because an action falls within the regulation's definition of operations. The Forest Service's reliance on its definition of operations ignores the purpose of its own regulations. Part 228 regulates "use of the surface of National Forest System lands in connection with operations *authorized* by the United States mining laws (30 U.S.C. 21-54 [Mining Law of 1872])." 36 C.F.R. § 228.1. Therefore, authorization under the Mining Law of 1872 acts as a precursor to any regulation through Part 228.

Center for Biological Diversity, at 764 (emphasis in original). Thus, BLM/DOI regulations for special uses under other sections of FLPMA (e.g. Title V), 43 CFR Part 2900/2920, rather than the 3809 regulations, apply to all operations not specifically "authorized by the United States mining laws." For common variety minerals, the 1947 and 1955 Acts and their implementing regulations apply, rather than the Mining Law. Based on the DEIS, the lands slated for the waste dumps and other non-extraction facilities are comprised of common variety minerals, to which no "rights" under the Mining Law apply.

It should also be noted that BLM relies on LNC's "valid existing rights" to avoid compliance with the RMPs under FLPMA, but nowhere does BLM verify these "valid existing rights" under the Mining Law.

D. FLPMA

The proposed approval of the Project would violate FLPMA which requires that the BLM "take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b). This is known as the "prevent UUD" standard. This duty to "prevent undue degradation" is "the heart of FLPMA [that] amends and supercedes the Mining Law." Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003). "FLPMA, by its plain terms, vests the Secretary of the Interior [and the BLM] with the authority – indeed the obligation – to disapprove of an otherwise permissible mining operation because the operation, though

necessary for mining, would unduly harm or degrade the public land." Id. BLM cannot approve a mining project that would cause UUD. 43 C.F.R. § 3809.411(d)(3) (iii).

"FLPMA's requirement that the Secretary prevent UUD supplements requirements imposed by other federal laws and by state law." Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 644 (9th Cir. 2010). BLM complies with this mandate "by exercising case-by-case discretion to protect the environment through the process of: (1) approving or rejecting individual mining plans of operation." Id. at 645, *quoting* Mineral Policy Center, 292 F.Supp.2d at 44. *See also* Kendall's Concerned Area Residents, 129 IBLA 130, 138 (1994) ("If unnecessary or undue degradation cannot be prevented by mitigation measures, BLM is required to deny approval of the plan.").

One of the required Performance Standards in Part 3809 mandates that all operations "must take mitigation measures specified by BLM to protect public lands." 43 CFR § 3809.420(a)(4). According to the national policy of the Interior Department/BLM, failure to look at a range of alternatives to avoid significant impacts and failure to require mitigation that would reduce adverse Project impacts constitutes UUD. "Mitigation measures fall squarely within the actions the Secretary can direct to prevent unnecessary or undue degradation of the public lands. **An impact that can be mitigated, but is not, is clearly unnecessary**." 65 Fed. Reg. 69998, 70052 (Nov. 21, 2000) (preamble to BLM's 43 C.F.R. Part 3809 mining regulations) (emphasis added).

E. BLM Failed to Require Right-of-Ways (ROWs) Under FLPMA

BLM based its review of the Project on the belief that, once a POO/MPO is submitted, all operations, including electrical transmission lines, water pipelines, and access routes and uses outside of the mining claims, are covered by the Part 3809 regulations. Yet the only way that BLM could legally approve LNC's electrical transmission lines, water pipelines and access roads is to grant the applicant a Right-of-Way ("ROW") across these lands under FLPMA Title V.

For mining operations on public lands, these uses and other conveyances are not authorized by the Part 3809 plan of operations approval process. Instead, BLM must require the company to submit right-of-way or other special use permit authorizations and require that all mandates of FLPMA Title V and its implementing regulations are adhered to (e.g., no permit can be issued unless it can be shown that the issuance of the permits is in the best interests of the public, payment of fair market value, etc.). This is required because these uses are not covered by the 1872 Mining Law and the 3809 regulations.

Further, even if the BLM could ignore its duties under its multiple use and other mandates and assume that the company had a right under the Mining Law (which as noted herein it does not), such rights do not attach to the SUP/ROWs and other FLPMA approvals needed for the transmission line, pipeline, roads, etc..

The Interior Department has ruled that roads and pipelines, including those across public land related to a mining operation, are not covered by statutory rights under the Mining Law. *See* Alanco Environmental Resources Corp., 145 IBLA 289, 297 (1998) ("construction of a road, was subject not only to authorization under 43 C.F.R. Subpart 3809, but also to issuance of a right-of-way under 43 C.F.R. Part 2800."). "[A] right-of-way must be obtained prior to

transportation of water across Federal lands for mining." Far West Exploration, Inc., 100 IBLA 306, 308 n. 4 (1988) *citing* Desert Survivors, 96 IBLA 193 (1987). *See also*; Wayne D. Klump, 130 IBLA 98, 100 (1995) ("Regardless of his right of access across the public lands to his mining claims and of his prior water rights, use of the public lands must be in compliance with the requirements of the relevant statutes and regulations [FLPMA Title V and ROW regulations]."). As noted in Alanco, ROWs for access roads (as opposed to internal mine roads) are subject to FLPMA's Title V requirements.

The Interior Board of Land Appeals has expressly rejected the argument that rights under the Mining Law apply to pipelines and access roads:

> Clearly, FLPMA repealed or amended previous acts and Title V now requires that BLM approve a right-of-way application prior to the transportation of water across public land for mining purposes. See 43 U.S.C. § 1761 (1982). As was the case prior to passage of Title V of FLPMA, however, approval of such an application remains a discretionary matter and the Secretary has broad discretion regarding the amount of information he may require from an applicant for a right-of-way grant prior to accepting the application for consideration. Bumble Bee Seafoods, Inc., 65 IBLA 391 (1982). A decision approving a right-of-way application must be made upon a reasoned analysis of the factors involved in the right-of-way, with due regard for the public interest. See East Canyon Irrigation Co., 47 IBLA 155 (1980).
>
> **BLM apparently contends that a mining claimant does not need a right-of-way to convey water from land outside the claim for use on the claim. It asserts that such use is encompassed in the implied rights of access which a mining claimant possesses under the mining laws. Such an assertion cannot be credited**.
>
> The implied right of access to mining claims never embraced the right to convey water from outside the claim for use on the claim. This latter right emanated from an express statutory grant in the 1866 mining act. See 30 U.S.C. § 51 (1970) and 43 U.S.C. § 661 (1970). In enacting FLPMA, Congress repealed the 1866 grant of a right-of-way for the construction of ditches and canals (see § 706(a) of FLPMA, 90 Stat. 2793) and provided, in section 501(a)(1), 43 U.S.C. § 1761(a)(1), for the grant of a right-of-way for the conveyance of water under new procedures. In effect, Congress substituted one statutory procedure for another. There is simply no authority for the assertion that mining claimants need not obtain a right-of-way under Title V for conveyance of water from lands outside the claim onto the claim.

Desert Survivors, 96 IBLA 193, 196 (1987)(underline emphasis in original, bold emphasis added). *See also* Far West Exploration, 100 IBLA 306, 309, n. 4 (1988)("a right-of-way must be obtained prior to transportation of water across Federal lands for mining."). The leading treatise on federal natural resources law confirms this rule: "Rights-of-way must be explicitly applied for and granted; **approvals of mining plans or other operational plans do not implicitly confer a right-of-way**." Coggins and Glicksman, PUBLIC NATURAL RESOURCES LAW, §15.21

(emphasis added). Thus, the BLM wrongly considered the transmission lines, pipelines, and access road associated with the Project part of mineral "operations" under Part 3809.

Under FLPMA Title V, Section 504, BLM may grant a SUP/ROW only if it "(4) will do no unnecessary damage to the environment." 43 U.S.C. § 1764(a). Rights of way "shall be granted, issued or renewed … consistent with … any other applicable laws." Id. § 1764(c). A right-of-way that "may have significant impact on the environment" requires submission of a plan of construction, operation, and rehabilitation of the right-of-way. Id. § 1764(d). A Title V SUP/ROW "shall contain terms and conditions which will … (ii) minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. § 1765(a). In addition, the SUP/ROW can only be issued if activities resulting from the SUP/ROW:

> (i) protect Federal property and economic interests; (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way; (iii) protect lives and property; (iv) protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes; (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (vi) otherwise protect the public interest in the lands traversed by the right-of-way or adjacent thereto.

FLPMA, § 1765(b).

At least three important potential substantive requirements flow from the FLPMA's SUP/ROW provisions. First, BLM has a mandatory duty under Section 505(a) to impose conditions that "**will** minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. §1765(a) (emphasis added). The terms of this section do not limit "damage" specifically to the land within the ROW corridor. Rather, the repeated use of the expansive term "the environment" indicates that the overall effects of the SUP/ROW on wildlife, environmental, scenic and aesthetic values must be evaluated and these resources protected. In addition, the obligation to impose terms and conditions that "protect Federal property and economic interests" in Section 505(b) requires that the BLM must impose conditions that protect not only the land crossed by the right-of-way, but **all** federal land affected by the approval of the SUP/ROW.

Second, the requirements in Section 505(b) mandate a BLM determination as to what conditions are "necessary" to protect federal property and economic interests, as well as "otherwise **protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto**." (emphasis added). This means that the agency can only approve the SUP/ROW if it "protects the public interest in lands" not only upon which the road would traverse, but also lands and resources adjacent to and associated with the SUP/ROW. As noted herein, BLM would be unable to make a finding that industrial use of the lands within Red Rock Canyon State Park, such as the use/route approved in the DR, would "protect the public interest."

Third, is the requirement that the right-of-way grant "do no unnecessary damage to the environment" and be "consistent with … any other applicable laws," *id*. §§ 1764(a)-(c). This

means that a grant of a SUP/ROW leading to the mine (and the mine itself) must satisfy all applicable laws, regulations and policies, including the Endangered Species Act, Clean Water Act, all state and local laws, etc.

The federal courts have recently and repeatedly held that the federal land agency not only has the authority to consider the adverse impacts on lands and waters outside the immediate ROW corridor, it has an obligation to protect these resources under FLPMA. In County of Okanogan v. National Marine Fisheries Service, 347 F.3d 1081 (9th Cir. 2003), the court affirmed the Forest Service's imposition of mandatory minimum stream flows as a condition of granting a ROW for a water pipeline across USFS land. This was true even when the condition/requirement restricted or denied vested property rights (in that case, water rights). Id. at 1085-86.

The BLM thus cannot issue a SUP/ROW that fails to "protect the environment" as required by FLPMA, including the environmental resource values in and not within the ROW corridor. "FLPMA itself does not authorize the Supervisor's consideration of the interests of private facility owners as weighed against environmental interests such as protection of fish and wildlife habitat. FLPMA *requires* all land-use authorizations to contain terms and conditions which will protect resources and the environment." Colorado Trout Unlimited v. U.S. Dept. of Agriculture, 320 F.Supp.2d 1090, 1108 (D. Colo. 2004)(emphasis in original) appeal dismissed as moot, 441 F.3d 1214 (10th Cir. 2006).

The Interior Department, interpreting FLPMA V and its right-of-way regulations, has held that: "A right-of-way application may be denied, however, if the authorized officer determines that the grant of the proposed right-of-way would be inconsistent with the purpose for which the public lands are managed or if the grant of the proposed right-of-way would not be in the public interest or would be inconsistent with applicable laws." Clifford Bryden, 139 IBLA 387, 389-90 (1997) 1997 WL 558400 at *3 (affirming denial of right-of-way for water pipeline, where diversion from spring would be inconsistent with BLM wetland protection standards).

Similar to the County of Okanogan and Colorado Trout Unlimited federal court decisions noted above, the Interior Department has held that the fact that a ROW applicant has a property right that may be adversely affected by the denial of the ROW does not override the agency's duties to protect the "public interest." In Kenneth Knight, 129 IBLA 182, 185 (1994), the BLM's denial of the ROW was affirmed due not only to the direct impact of the water pipeline, but on the adverse effects of the removal of the water in the first place:

> [T]he granting of the right-of-way and concomitant reduction of that resource, would, in all likelihood, adversely affect public land values, including grazing, wildlife, and riparian vegetation and wildlife habitat. The record is clear that, while construction of the improvements associated with the proposed right-of-way would have minimal immediate physical impact on the public lands, the effect of removal of water from those lands would be environmental degradation. Prevention of that degradation, by itself, justified BLM's rejection of the application.

1994 WL 481924 at *3. That was also the case in Clifford Bryden discussed above, as the adverse impacts from the removal of the water was considered just as important as the adverse

impacts from the pipeline that would deliver the water. 139 IBLA at 388-89. *See also* C.B. Slabaugh, 116 IBLA 63 (1990) 1990 WL 308006 (affirming denial of right-of-way for water pipeline, where BLM sought to prevent applicant from establishing a water right in a wilderness study area).

In King's Meadow Ranches, 126 IBLA 339 (1993), 1993 WL 417949, the IBLA affirmed the denial of right-of-way for a water pipeline, where the pipeline would degrade riparian vegetation and reduce bald eagle habitat. The Department specifically noted that under FLPMA Title V: "[A]s BLM has held, **it is not private interests but the public interest that must be served by the issuance of a right-of-way**." 126 IBLA at 342, 1993 WL 417949 at *3 (emphasis added).

As noted herein, BLM failed to use the proper legal regime governing the Project in proposing to approve the MPO/POO and issuing the DEIS.

In addition, the 2015 Grouse ARMPA contains greater sage-grouse protections including, but not limited to, management direction measures and Required Design Features that apply to Rights of Way grants. All wildlife protection and resource conservation measures in the 2015 Grouse ARMPA and the Winnemucca District RMP that apply to Rights of Way must be added as requirements for this Project.

F. Sensitive Species

BLM's mitigation plan fails to include the required analysis of the effectiveness of each measure, thus failing to meet BLM's duties under NEPA as well as FLPMA. Here, the DEIS does not impose mitigation measures that will eliminate or substantially reduce all of the potential impacts from the Project. As one example, the DEIS admits the presence of sensitive species such as bighorn sheep, yet little if any mitigation to prevent impacts is required. In order to protect this species and meet its FLPMA requirements, the BLM should have precluded any activity at and access near this area.

> As part of its duties to prevent UUD and irreparable harm to public land resources under FLPMA, BLM has established a national policy to protect designated Sensitive Species.
>
> The objectives of the BLM special status species policy are:
>
> A. To conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species.
> B. To initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

U.S. Dep't of the Interior BLM, Special Status Species Mgmt. Manual 6840 at 3 (2008) ("Special Status Species Manual"). BLM has specifically acknowledged its duty to safeguard the public's interest in protecting Sensitive Species:

> It is in the interest of the BLM to undertake conservation actions for such species before listing is warranted. It is also in the interest of the public for the BLM to undertake

> conservation actions to improve status of Sensitive Species so sensitive recognition is no longer warranted. By doing so, BLM will have greater flexibility in managing public lands to accomplish native species conservation objectives and other legal mandates.
>
> In compliance with existing laws, including the BLM multiple use mission as specified in the FLPMA, the BLM shall designate Bureau sensitive species and implement measures to conserve these species and their habitats, including ESA proposed critical habitat, to promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA.

Special Status Species Manual at 36.

In the DEIS, BLM failed to meet these requirements and as such, failed to meet the protective requirements of FLPMA. Merely naming sensitive species and providing little to no NEPA analysis of impacts to them in the DEIS is not enough. BLM must actively implement conservation measures protecting them at the Project area, as part of this Project.

G. Failure to Take the Required "Hard Look" at the Project under NEPA and FLPMA

The DEIS fails to comply with the "hard look" requirement under NEPA, as well as BLM's duties to protect public land and the public interest under FLPMA and other laws noted herein.

Failure to conduct a proper NEPA analysis, including reviewing off-site impacts, violates not only NEPA, but the FLPMA UUD standard:

> **Like NEPA, the [UUD] definition requires BLM to consider the nature and extent of surface disturbances resulting from a proposed operation and environmental impacts on resources and lands outside the area of operations**. Kendall's Concerned Area Residents, 129 IBLA 130, 140-41 (1994); Nez Perce Tribal Executive Committee, 120 IBLA 34, 36 (1991); see Sierra Club v. Hodel, 848 F.2d 1068, 1078, 1091 (10th Cir.1988) (nondegradation duty is mandatory). … [M]ost disturbed land at the mine sites is public land and other public land is adjacent to them. **To the extent BLM failed to meet its obligations under NEPA, it also failed to protect public lands from unnecessary or undue degradation**.

Island Mountain Protectors, 144 IBLA 168, 202, 1998 WL 344223, * 28 (internal citations omitted, emphasis added).

Failure to Obtain and Analyze Baseline Data and Information.

BLM violated NEPA by failing to provide sufficient analysis and data for the baseline conditions of resources that might be affected by the Project. Here, this is especially true for ground and surface waters, air quality, wildlife, recreation, cultural resources, and other resources where the DEIS fails to contain any detailed baseline information or analysis, and in many cases no baseline information/data at all.

The establishment of the baseline conditions of the affected environment is a fundamental

requirement of the NEPA process, because an inadequate environmental baseline precludes an accurate assessment of project impacts. Oregon Nat. Desert Ass'n v. Jewell 823 F.3d 1258 (9th Cir. 2016) (without accurate baseline information the agency cannot accurately assess project impacts); N. Plains Resource Council v. Surface Transp. Board, 668 F.3d 1067 (9th Cir. 2011) (reversing decision due to inadequate baseline information).

As the federal courts have held, rejecting BLM's post-NEPA analysis of baseline conditions:

> Without establishing baseline conditions for the Obscure Routes, the Bureau could not have analyzed the environmental impacts of the Recreation Plan properly. *Great Basin [Resource Watch v. BLM]*, 844 F.3d at 1101.
>
> At some point *after* the public comment period closed, the Bureau attached ground photographs for a few Obscure Routes to the forms; the photographs show details about vegetation and the condition of the routes themselves. Such late analysis, "conducted without any input from the public," impedes NEPA's goal of giving the public a role to play in the decisionmaking process and so "cannot cure deficiencies" in an EA. *Id.* at 1104.

Oregon Natural Desert Association v. Rose, 921 F.3d 1185, 1192 (9th Cir. 2019)(BLM EA violated NEPA for failure to adequately analyze baseline conditions).

For example, the DEIS has only cursory analysis of potentially affected water resources. Courts have held this baseline requirement applies equally to groundwater resources. In Gifford Pinchot, the Court held that the BLM EA's failure to include a comprehensive baseline analysis representative of the entire Project area violated NEPA:

> While Alternative 3 requires sampling and monitoring before drilling, the failure to obtain onsite data before analyzing the environmental effects means that such analysis cannot possibly be based on all of the relevant information.
>
> …
>
> Furthermore, the 2012 EA does not explain why sampling at two discrete holes not newly drilled as part of the Project will provide accurate information about contamination to groundwater at the drill sites. The monitoring required as part of Alternative 3 fails to address the Project's impact to groundwater.

Gifford Pinchot Task Force v. Perez, 2014 WL3019165, at *31 (D. Or. 2014). "Ninth Circuit cases acknowledge the importance of obtaining baseline condition information before assessing the environmental impacts of a proposed project." Id. at 28. This is required because:

> Without the baseline data, the agency cannot carefully consider information about significant environmental impacts and thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision. *Id.* Additionally, even if the mitigation measures may guarantee that the data will be collected in the future, the data is not available during the EIS process and is

> not available to the public for comment. *Id.* Thus, the process does not serve its larger information role and the public is deprived of the opportunity to play a role in the decision-making process. *Id.* Baseline information before approval is required so that the agency "can understand the adverse environment effects *ab initio.*" *Id.*

Gifford Pinchot at *29, *quoting* N. Plains Resource Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1083-85 (9th Cir.2011).

> "Without establishing the baseline conditions ... there is simply no way to determine what effect the [action] will have on the environment, and consequently, no way to comply with NEPA." *Half Moon Bay Fisherman's Mktg. Ass'n. v. Carlucci*, 857 F.2d 505, 510 (9th Cir.1988); *see also N. Plains*, 668 F.3d at 1085 ("without [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision.").

Gifford Pinchot at *27. "NEPA requires that the agency provide the data on which it bases its environmental analysis. Such analyses must occur before the proposed action is approved, not afterward." Northern Plains, 668 F.3d at 1083 (an agency's "plans to conduct surveys and studies as part of its post-approval mitigation measures," in the absence of baseline data, indicate failure to take the requisite "hard look" at environmental impacts).

Similarly, in Idaho Conservation League v. U.S. Forest Service, 2012 WL 3758161 (D. Idaho 2012), conservation groups challenged the Forest Service's approval of a hardrock mining exploration project, arguing the agency's environmental review failed to provide any baseline information on groundwater. In response, the Forest Service argued detailed information on groundwater resources was unnecessary because, in its judgment, the mine exploration would have "no impact" on groundwater resources. The court disagreed, and held that NEPA requires more than "conclusory assertions that an activity will have only an insignificant impact on the environment." Id. at *14 (*quoting* Ocean Advocates v. U.S. Army Corps of Eng'rs, 402 F.3d 846, 864 (9th Cir. 2005). Instead, the court required detailed baseline data, including "a baseline hydrogeologic study to examine the existing density and extent of bedrock fractures, the hydraulic conductivity of the local geologic formations, and [measures of] the local groundwater levels to estimate groundwater flow directions." Id. at *16. *See also* Shoshone-Bannock Tribes of Fort Hall Reservation v. U.S. Dept. of Interior, 2011 WL 1743656, at *10 (D. Idaho 2011) (rejecting agency analysis of impacts of mine on groundwater).

The DEIS's groundwater analysis (or lack thereof) here similarly fails to comply with NEPA. Like in Gifford Pinchot and Idaho Conservation League, BLM here failed to conduct, collect, or examine any baseline studies on groundwater or other potentially affected resources, and as such the DEIS fails to take the required hard look at the potential impacts of operations on water and other resources.

Further, BLM cannot rely on mitigation measures to avoid collecting and analyzing the required baseline information/data. "[B]ecause NEPA aims "(1) to ensure that agencies carefully consider information about significant environmental impacts and (2) to guarantee relevant

information is available to the public[,]" the **"use of mitigation measures as a proxy for baseline data does not further either purpose."** Gifford Pinchot at *29 (emphasis added), quoting Northern Plains. "I reject Defendants' and Ascot's arguments that a baseline groundwater analysis is not required before the issuance of the EA because the sampling and monitoring are being used to confirm that no significant impacts are occurring rather than addressing an issue of insufficient data." Gifford Pinchot, at *31.

BLM cannot meet its NEPA obligations by foregoing collection of baseline data, and, instead, "anticipat[ing]" that the impacts of a proposed decision will be insignificant. Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). Indeed, in Half Moon Bay, the federal appeals court noted that the starting point of any NEPA analysis is the collection and description of baseline data, because, "without establishing … baseline conditions … there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." 857 F.2d at 510.

The DEIS suffers from the same problem regarding air quality, where there is only partial data or analysis of baseline/background air quality. The federal courts have squarely held that BLM must obtain and analyze representative baseline data/information on all potentially affected resources. BLM's "assessment of baseline conditions must be based on accurate information and defensible reasoning." Great Basin Resource Watch v. BLM, 844 F.3d 1095, 1101 (9th Cir. 2016) (BLM review and approval of mining operation violated NEPA requirement for analysis of baseline/background air quality).

BLM admits that the Project will produce air pollution, but the DEIS contains little baseline data/information, and certainly not for all of the Criteria Pollutants under the Clean Air Act. Under FLPMA and the 3809 regulations, BLM cannot authorize any activity without full assurance that the Project will comply with all environmental, wildlife, public lands, and other standards. BLM cannot rely on the fact that the operator will purportedly obtain an air quality or other permits from a state agency. Yet, as the courts have held, BLM cannot rely on current or future state permitting to avoid collection of baseline/background data/information.

> Eureka Moly [mining company applicant] argues that the FEIS' air impacts analysis is nonetheless adequate because it relies in part on the fact that the NDEP's Bureau of Air Pollution Control issued a Clean Air Act permit for the Project. This argument evinces a misunderstanding of the nature of NEPA and its relationship to "substantive" environmental laws such as the Clean Air Act. *See S. sFork Band Council of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 588 F.3d 718, 726 (9th Cir. 2009) (per curiam) (holding that a **failure to discuss mercury emissions from a nearby mining facility in an EIS was not excused by the fact that the facility "operate[d] pursuant to a state permit under the Clean Air Act," because "[a] non-NEPA document ... cannot satisfy a federal agency's obligations under NEPA"). The failure to explain the zero baseline assumption frustrated the BLM's ability to take a "hard look" at air impacts, and the reference to the Project's Clean Air Act permit did nothing to fix that error.**

Great Basin Resource Watch, 844 F.3d at 1103-04 (emphasis added).

Thus, in order to comply with NEPA and FLPMA, BLM must obtain and analyze the required baseline/background data/information – and subject it to full public review under NEPA – for all potentially affected resources including water, air, wildlife, night skies, economic, hunting, recreation, public safety, traffic, noise, cultural, etc.

Failure to Adequately Review All Direct, Indirect, and Cumulative Impacts.

NEPA requires that BLM fully review all direct, indirect, and cumulative environmental impacts of the proposed action. 40 CFR §§1502.16, 1508.8, 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. §1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. §1508.8(b). Types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." Id.

The DEIS fails to adequately review the direct and indirect impacts associated with the Project. Regarding cumulative impacts, although the DEIS contains a brief mention of a few other past, present, and reasonably foreseeable future activities within the area, little details are provided. Under NEPA, BLM must fully review the impacts from all "past, present, and reasonably foreseeable future actions." 40 CFR § 1508.7. These are the "cumulative effect/impacts" under NEPA. Cumulative effects/impacts are defined as:

> [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 CFR § 1508.7. In a cumulative impact analysis, an agency must take a "hard look" at all actions.

> An EA's analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. … Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.

Te-Moak Tribe of Western Shoshone v. U.S. Dept. of Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting BLM-issued EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).

A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Engineers, 361 F.3d 1108 1118 (9th Cir. 2004). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a

piecemeal review of environmental impacts. Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003). The NEPA obligation to consider cumulative impacts extends to all "past," "present," and "reasonably foreseeable" future projects. Hall v. Norton, 266 F.3d 969, 978 (9th Cir. 2001) (finding cumulative analysis on land exchange for one development failed to consider impacts from other developments potentially subject to land exchanges); Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006) (requiring "mine-specific … cumulative data," a "quantified assessment of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed mining operations in the region). As the courts have further held:

> Our cases firmly establish that a cumulative effects analysis "must be more than perfunctory; it must provide a *useful analysis* of the cumulative impacts of past, present, and future projects." Klamath–Siskiyou, 387 F.3d at 994 (emphasis added) (quoting Ocean Advocates v. U.S. Army Corps of Eng'rs, 361 F.3d 1108, 1128 (9th Cir.2004)). To this end, we have recently noted two critical features of a cumulative effects analysis. First, it must not only describe related projects but also enumerate the environmental effects of those projects. *See* Lands Council v. Powell, 395 F.3d 1019, 1028 (9th Cir.2005) (holding a cumulative effects analysis violated NEPA because it failed to provide "adequate data of the time, place, and scale" and did not explain in detail "how different project plans and harvest methods affected the environment"). Second, it must consider the interaction of multiple activities and cannot focus exclusively on the environmental impacts of an individual project. *See* Klamath–Siskiyou, 387 F.3d at 996 (finding a cumulative effects analysis inadequate when "it only considers the effects of the very project at issue" and does not "take into account the combined effects that can be expected as a result of undertaking" multiple projects).

Oregon Natural Resources Council Fund v. Brong, 492 F.3d 1120, 1133 (9th Cir. 2007), *quoting* Klamath–Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 994, 996 (9th Cir. 2004).

A full review of direct, indirect and cumulative impacts is also required by FLPMA's mandate that BLM take all measures to "prevent unnecessary or undue degradation" of public resources. "Like NEPA, the [UUD] definition requires BLM to consider the nature and extent of surface disturbances resulting from a proposed operation and environmental impacts on resources and lands outside the area of operations." Island Mountain Protectors, 144 IBLA 168, 202, 1998 WL 344223, *28 (citations omitted).

In this case, BLM failed to fully consider the cumulative impacts from all past, present, and reasonably foreseeable future activities in the region on water quality and quantity, air quality, recreation, cultural/religious, hunting opportunities, public safety, night skies, wildlife, economic, scenic and visual resources, etc. At a minimum, this requires the agency to fully review, and subject such review to public comment in a revised DEIS, the cumulative impacts from all other residential and commercial development, mining, grazing, recreation, energy development, roads, ORV use, etc., in the region. The DEIS's failure to include this analysis violates NEPA and FLPMA.

The federal courts have rejected an argument that the agency can avoid reviewing impacts simply because the mining company did not provide the necessary information. "[I]nsofar as

[the agency] has determined that it lacks adequate information on *any* relevant aspect of a plan of operations, [the agency] not only has the authority to require the filing of supplemental information, it has the obligation to do so." Center for Biological Diversity v. U.S. Dept. of the Interior, 623 F.3d 633, 644 (9th Cir. 2010) (emphasis in original).

Cumulative impacts must be reviewed "regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 CFR § 1508.7. For example, in considering a challenge to federal approval of mineral leasing and mining, a court required the agency to look at the impacts from the proposed mill that would process ore from mines/leases, despite the fact that the proposed mill would be on private lands and despite the fact that the mill was not directly associated with the mines/leases being proposed and was not included in the lease/mining proposals. The court held:

> [The agency's] other two arguments—that the effects of the mill need not be evaluated because (1) it is being built by a company on private land, and (2) approval of the mill is controlled by other governmental entities—lack merit. Regardless of whether an EA or EIS is being prepared, the agency conducting the analysis must consider the "cumulative impacts" of the proposed action. …
>
> Nothing in this regulation suggests that ''cumulative impacts'' are limited to those occurring on [public] land, or that [the agency] need not consider the impacts from related activities that another federal agency is in charge of approving or disapproving.

Colorado Environmental Coalition v. Office of Legacy Management, 819 F.Supp.2d 1193, 1212 (D. Colo. 2011). In Sierra Club v. U.S. Dept. of Energy, 255 F.Supp.2d 1177, 1185 (D. Colo. 2002), the court required the agency to review impacts from a "reasonably foreseeable" mine on private land when preparing a NEPA document for a federal land easement related to the future mine. "The fact that a private company will undertake the mining is irrelevant under NEPA regulations. *See* 40 C.F.R. § 1508.7 ('regardless of what agency or person undertakes such other actions')."

Failure to Consider All Reasonable Alternatives.

The DEIS improperly fails to consider all reasonable alternatives as required by NEPA, which requires federal agencies to "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed action that has significant environmental impacts. 40 C.F.R. §1502.14(a); *accord* 42 U.S.C. § 4332(2)(C)(iii). Informed and meaningful consideration of alternatives is critical to the NEPA statutory scheme, ensuring that agency decision-makers assess a project's costs, benefits, and environmental impacts in the correct context. *See* Alaska Wilderness Recreation & Tourism Ass'n v. Morrison, 67 F.3d 723, 729-30 (9th Cir. 1995). This requirement also ensures that decisionmakers "have before them and take into proper account all possible approaches to a particular project (*including total abandonment of the project*) which would alter the environmental impact and the cost-benefit balance." Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988)(emphasis in original).

BLM violated NEPA's alternatives-review requirement by arbitrarily dismissing the No-Action Alternative and failing to consider reasonable alternatives that would minimize impacts to

public land and wildlife. Due to its locatable mineral and claim validity assumptions, BLM improperly restricted its NEPA/FLPMA review and regulatory authority based on its unsupported position that AM had a statutory right to conduct the Project (as discussed above). Because BLM "misconstrue[d]" its statutory authority, it arbitrarily dismissed the No-Action alternative, and thereby failed to take "a hard look at all reasonable options before it." New Mexico ex rel. Richardson v. BLM, 565 F.3d 683, 710-711 (10th Cir. 2009).

As result of its assumption that all aspects of the Project have "valid existing rights" under the 1872 Mining Law, BLM arbitrarily dismissed the No-Action Alternative and other alternatives that would better meet its FLPMA and other responsibilities based on its fundamental misconception of its regulatory authority. That was the holding in the Rosemont Mine decision, where the court rejected the same legal position taken by BLM here, where it asserts that it cannot choose the No-Action Alternative for the Project. In the Rosemont Mine decision, after discussing the agency's erroneous assumption of "rights" under the Mining Law (detailed above), the court discussed how this erroneous legal position also violated the agency's duties under NEPA:

> Based on the administrative record, the Forest Service improperly applied its Part 228 regulations to actions not authorized under the Mining Law of 1872. This mistake infected the FEIS and led to the Forest Service misinforming the public and failing to consider reasonable alternatives within the scope of its duties under the Organic Act.
>
> For example, in response to a public comment requesting the Forest Service "give true consideration to selection of the No Action Alternative", the Forest Service responded: "The Forest Service may reject an unreasonable Mine Plan of Operation but cannot categorically prohibit mining or deny reasonable and legal mineral operations under the mining laws." *Id.* at G-10 [Final Rosemont EIS]. In response to a comment requesting the Forest Service "consider other locations for copper mining", the Forest Service responded: "The Forest Service lacks the authority to deny Rosemont Copper's proposal if it can be legally permitted." *Id.* at G-12. And in response to a comment that the Forest Service "should scale down the size of the project or limit it to private lands only", the Forest Service repeated: "The Forest Service may reject an unreasonable Mine Plan of Operation but cannot categorically prohibit mining or deny reasonable and legal mineral operations under the mining laws." *Id.* These examples did not occur in isolation. Rather, they illustrate how heavily the Forest Service relied upon this rationale in its decision-making process.
>
> Under the Part 251 regulations, the Forest Service could limit the mine to any of the above options if it found they ran afoul of the public interest. The Forest Service failed to take the requisite hard look at these alternatives by informing the public that it could not truly consider any alternative that rejected the MPO or substantially modified it as to make the mine economically unfeasible. *See Nat. Res. Def. Council*, 421 F.3d at 813-14. A "thorough discussion of the significant aspects of the probable environmental consequences" will include the regulatory framework in which the Forest Service analyzes those consequences. *See California v. Block*, 690 F.2d 753, 761 (9th Cir. 1982). No amount of alternatives

> or depth of discussion could "foster[ ] informed decision-making and informed public participation" when the Forest Service bases its choice of alternatives on an erroneous view of the law. *See Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 868 (9th Cir. 2004).

Center for Biological Diversity, at 764-66 (internal footnotes omitted).

H. Migratory Birds

The Project's Bat and Bird Conservation Strategy (Attachment D) contains the same incorrect information about incidental take under the Migratory Bird Treaty Act based on the vacated M-Opinion as the draft Eagle Conservation Plan does. *See* Attachment D at 2-1. That section should be revised. In addition, the Bat and Bird Conservation Strategy and DEIS should be revised as necessary so that any assumptions or analysis based on the M-Opinion's faulty interpretation of MBTA is corrected.

Conclusion

Thank you again for this opportunity to assist BLM during the NEPA process. We respectfully request to be notified of all future public comment opportunities related to the Thacker Pass Lithium Mine Project, the availability of any NEPA analysis BLM undertakes in relationship to it, and BLM's decisions related to it, per 40 CFR § 1506.6.

Sincerely yours,

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APPENDIX 2b

FWS response to supplemental comments from WWP

Appendix 2b

Record of Decision
Thacker Pass Lithium Mine Project
USFWS Eagle Incidental Take Permit

Response to Comments to Draft EIS Supplemental Comments on the Thacker Pass Lithium Mine from Western Watersheds Project (WWP)

Comments (italicized) and our responses (indented)
(1) Page 2, "The DEIS states: Under the Proposed Action, the Applicant is requesting authorization from the USFWS for disturbance to and loss of annual productivity from one Golden Eagle breeding pair for a period of up to five years from the date of the issuance of a take permit, under the Bald and Golden Eagle Protection Act. This Alternative would include monitoring of the nest site and mitigation to offset impacts to golden eagles. Under this Alternative, LNC would provide the compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as discussed in the Eagle Rule Revision 2016 PEIS (USFWS 2016). DEIS at ES-1.

What is the Project's plan for after the five years/breeding seasons elapse?"

> As described in FEIS Section 4.5.5.1, in the last paragraph on the bottom of page 4-58, appropriate buffers would be implemented to protect eagle nests. This measure would also become a condition of our eagle incidental take permit. The project would be required to survey within 2 miles of the project boundary annually. Protection buffers (1 mile for most activities, 2 miles for blasting) would be implemented to avoid take at each nest location until a third party independent monitor validates that a nest is not being utilized for nesting. Therefore, beginning on December 15th each year, nest buffers would be implemented until it is determined that eagles either, 1) did not attempt to use a given nest that year; 2) a nest was used, but failed for natural reasons, or 3) a nest was used and successfully fledged young. LNC's ECP has been updated to include these measures prior to our issuance of an eagle incidental take permit.

(2) "Does LNC plan to re-apply for additional golden eagle take permits over the life of the Project?"

> As an adaptive management measure in the updated ECP (March 2021), LNC has committed to reapply for an eagle take permit if monitoring results indicate impacts are greater than the EIS had evaluated, or if avoidance and minimization measures (i.e., nest buffers) are inconvenient or impracticable for the mine to implement long term.

(3) "If the Project continues to disturb golden eagles after the expiration of its take permit, it will violate the Bald and Golden Eagle Protection Act (BGEPA)."

Please see response to comments number 1 and 2 above. We have determined that these measures will ensure the project's operation are in compliance with the Bald and Golden Eagle Protection Act.

(4) "Why has LNC applied for a take permit authorizing disturbance and loss of annual productivity from only golden eagle breeding pair when there are so many active golden eagle nests within two miles and 10 miles?"

Please see our response to comment number 1.

(5) "It is reasonably foreseeable that there will be disturbance and loss of annual productivity for more than only one golden eagle breeding pair."

Please see our response to comment number 1.

(6) "Yet the DEIS contains no explanation of or evidence for why only one pair would experience take."

Please see our response to comment number 1.

(7) "If any additional golden eagles experience any form of take prohibited by BGEPA without a take permit, it will be unlawful."

Comment noted.

(8) "What measures will the Project take to prevent unauthorized take of other golden eagles?"

Please see our response to comment number 1 and 2.

(9) "How will the Project be monitored to ensure that unauthorized take of other golden eagles has not occurred?"

Please see our response to comment number 1.

(10) "Who will review the results of this monitoring and how often will those reviews take place?"

For the 5-year duration of the eagle take permit, and for 3 years after the expiration of our permit, we, the FWS would require monitoring, and review the results annually. Subsequently, LNC would continue to implement their ECP, which commits to

monitoring and buffer implementation (see our response to comment number 1) as required by BLM's ROD. We would continue to provide technical assistance to the BLM and LNC in reviewing monitoring data as requested.

(11) "Eagle take permits under BGEPA can only be issued if the permit applicant has avoided and minimized impacts to the extent practicable. What avoidance and minimization measures has the Project taken?"

Please see our response to comment number 1.

(12) "Has USFWS, NDOW or another government agency suggested other avoidance and minimization measures to prevent take of golden eagles that LNC or BLM is unwilling to implement? If so, what were they?"

No other avoidance or minimization measures have been suggested by USFWS, NDOW, or other government agencies.

(13) "Some of this information is in the draft Eagle Conservation Plan but it should be repeated in the EIS where the full public can see it. The Eagle Conservation Plan is not actually part of the Project's NEPA documents (not an Appendix or posted on ePlanning) and was not available to the public for review during the DEIS public comment period unless members of the public had previous experience reviewing eagle conservation plans and knew to ask for it."

Comment noted. As described in ROD Appendix 1, response to comment number 8, we had decided not to include copies of the Eagle Conservation Plan as part of the Draft EIS and subsequently the Final EIS because of our partner's concerns about disclosing eagle nest locations. The ECP was analyzed in the EIS and is part of our administrative record for the project. In response to the commenter's concerns the Final ECP has been updated to align with our anticipated eagle incidental take permit decision and to include the measures described in our response to comment number 1. Upon further coordination with partners, we are making the ECP available as Appendix 3 to our ROD.

(14) "The Project's draft Eagle Conservation Plan (Attachment A) incorrectly asserts that incidental take of birds protected under the Migratory Bird Treaty Act (MBTA), which includes bald and golden eagles, is not unlawful. ECP at 4. This is based on a faulty Department of the Interior M-Opinion that was recently vacated by a federal court. See Attachment B. The Eagle Conservation Plan must be revised to correct this and reviewed to ensure that its avoidance, minimization, and mitigation measures are sufficient to prevent incidental take of migratory birds."

As described in ROD Appendix 1, response to comment number 9, this comment is beyond the scope of this analysis. Interpretations of incidental take under the MBTA has undergone policy and proposed regulatory changes over the past few years. Regardless,

both the USFWS and BLM have responsibilities and commitments to provide for sustainable populations and habitat for migratory birds. The project's EIS, ECP and BBCS (Appendix 4 to our ROD) outline the regulatory responsibilities and purview of oversight of the USFWS, BLM and the Nevada Department of Wildlife (NDOW). These plans summarize the project's biological information, best management practices, impact minimization and avoidance measures, monitoring, reporting, and adaptive management measures applicable eagles, birds and bats.

(15) "The Eagle Conservation Plan does not take into account that golden eagles can have alternate nests and that all of those nests need to be protected, not just the nests that happened to be active the year that a survey was conducted. See Attachment C (B. A. Millsap, et. al. Conservation Significance of Alternative Nests of Golden Eagles). 'Based on our review, were commend alternative golden eagle nests be treated with the same deference as used nests in land use plans. We justify this recommendation on the basis of existing scientific information reviewed here, which suggests take, as defined by the [Bald and Golden Eagle Protection] Act and implementing regulations, is as likely to occur at alternative golden eagle nests as at used nests.' Attachment C at 240. The Eagle Conservation Plan states that there are 59 golden eagle nests in the project area, which the Plan describes as including '9 active and used by golden eagles.' Attachment A at 11. According to the Eagle Conservation Plan, in 2019's survey, there were 76 golden eagle nests and six characterized as active and used by golden eagles in the survey area. Attachment A at 12. This suggests that the number of golden eagle nests in the survey area is increasing. Many of these nests may be alternate nests, suggesting that there is a greater likelihood of golden eagle disturbance and loss of annual productivity than just one breeding pair per year/breeding season. Given this, it seems highly likely that the Project would result in illegal, unauthorized golden eagle take (e.g., disturbance, productivity loss, nest loss)."

As described in ROD Appendix 1, response to comment number 10, the EIS considered eagle nest inventory data collected in 2018, and a single year of eagle nesting data within 10 miles of the proposed project boundary collected in 2019. While we typically recommend 2-3 years of monitoring data, we also have a responsibility to use the best available science and data when making permit decisions. In this habitat, we were able to consider information about nest locations and nest clusters to inform our assessment of breeding territories. We assume that any alternate nest within a breeding golden eagle territory could become an in-use/active nest in any given year. This approach is consistent with our USFWS eagle take permit data recommendations, decisions and polices for assessing eagle use and risk at projects sites. Please see our response to comment 2 above and the project's updated ECP (ROD Attachment 3) which describes annual monitoring, protections for nests, and adaptive management. The updated ECP contains data from 2019 and includes the most recent monitoring year, 2020, nesting data. Please also see our response to comment number 1.

(16) "The Eagle Conservation Plan's assessment of the risk of Active Nest Destruction is based on a single year (2019), which had fewer active nests than the survey located the previous year. See Attachment A at 17. Basing this assessment on a single year's data is unwise given the use of alternative nests by golden eagles and underestimates the risk, thus increasing the likelihood of unauthorized nest destruction take."

Please see our response to comment number 1.

(17) "Proposed new power lines at the Project should be undergrounded to reduce risk of eagle collision or electrocution. By undergrounding power lines, the Project would demonstrate that it had taken all practicable steps to avoid and minimize eagle loss, which is a requirement of getting an eagle take permit. Undergrounding power lines would also protect greater sage-grouse by eliminating a new source of perches for raptors that prey on them. Curiously, the Eagle Conservation Plan's perch risk assessment only mentions an existing powerline, not any that would be new, thus underestimating risk."

We received a similar comment (FEIS Appendix R, comment P982) from WWP during the draft EIS comment period. BLM's previous response to that comment is applicable here, and repeated below:

"Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements. An alternative with a significantly reduced footprint is not an economically feasible alternative for the operator. Alternatives must be technically and economically feasible for BLM."

(18) "Because of the DEIS's short public comment period and the repeated disruptions caused by the recent wildfires, WWP has been unable to review the Eagle Conservation Plan and the DEIS's sections on golden eagles in full. We have more to say about this, but have prevented from saying it during the public comment period by ridiculously short public comment period associated with the Project's fast tracking."

At the time that the EIS was being developed the protocol was set by Secretarial Order 3355. This is similar to the response in *FEIS Appendix R, Comment Responses, P61: "*This NEPA process is being executed under the protocol set by Secretarial Order 3355.*"*

APPENDIX 3

LNC Thacker Pass Eagle Conservation Plan

Eagle Conservation Plan

LITHIUM NEVADA CORPORATION

THACKER PASS PROJECT

Revised

April 2021

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ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

amsl	Above Mean Sea Level
APLIC	Avian Power Line Interaction Committee
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practices
Cedar Creek	Cedar Creek Associates, Inc.
CFR	Code of Federal Regulations
CTFS	Clay Tailings Filter Stack
dB	Decibels
dBA	A-weighted Decibels
EIS	Environmental Impact Statement
EPM	Environmental Protection Measure
ESA	Endangered Species Act
Exploration Plan	Exploration Plan of Operations
JBR	JBR Environmental Consultants, Inc.
kHz	kilohertz
kv	kilovolt
LAC	Lithium Americas Corporation
LNC	Lithium Nevada Corporation
MBTA	Migratory Bird Treaty Act
Mine Plan	Mine Plan of Operations
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NVMA	Nevada Mining Association
Project Area	Mine Plan of Operations and Exploration Plan of Operations Boundary
Saxelby	Saxelby Acoustics, LLC
SWCA	SWCA Environmental Consultants
US	United States
USFWS	United States Fish and Wildlife Service
WRC	Wildlife Resources Consultants, LLC

1.0 INTRODUCTION

Lithium Nevada Corporation (LNC), a wholly owned subsidiary of Lithium Americas Corporation (LAC), proposes to construct, operate, reclaim, and close an open pit lithium mining and processing operation, the Thacker Pass Project (Project), located on public lands in northern Humboldt County, Nevada (Figure 1).

LNC prepared the Thacker Pass Project Plan of Operations (N98586) (Mine Plan) to develop the Project in accordance with BLM Surface Management Regulations under 43 Code of Federal Regulations (CFR) 3809, Surface Occupancy regulations under 43 CFR 3715, and State of Nevada reclamation regulations under NAC 519A. The Mine Plan proposes 5,545 acres of disturbance that would occur over a 41-year timeframe. Separately, LNC submitted the North-South Exploration Plan of Operations (N98582). Exploration activities would be located to the northeast and south of the Mine Plan boundary. The Exploration Plan proposes 150 acres of disturbance that would occur over a 40-year timeframe. An Environmental Impact Statement (EIS) was prepared for the proposed Project (BLM 2020). The Record of Decision (ROD) for the Project was issued on January 15, 2021 (BLM 2021).

LNC has voluntarily prepared this Eagle Conservation Plan (ECP) to assess risks to eagles posed by the Project and develop appropriate environmental protection measures to minimize risks and avoid take. LNC will adopt and implement this voluntary ECP to reduce the potential for eagle mortality or injury resulting from Project related activities. As an added measure, in an abundance of caution, LNC is applying for a U.S. Fish and Wildlife Service (USFWS) Take Permit for disturbance to and loss of annual productivity of one golden eagle breeding pair located in Territory 5 in the event the protection measures as described in this ECP may still result in golden eagle take. LNC will initiate mining under the USFWS issued take permit and will reevaluate the need to extend the permit before 5 years.

2.0 PROJECT DESCRIPTION

The Project consists of construction and operation of an open pit mine, lithium processing plant and ancillary facilities, and continued exploration (LNC 2019a). The proposed Thacker Pass Project Mine Plan of Operations (POO) proposes an estimated surface disturbance footprint of approximately 5,545 acres (LNC 2019a). Figure 2 presents the Thacker Pass Project mine site layout in year 41. The North-South Exploration POO proposes an additional 150 acres of surface disturbance (LNC 2019b).

LNC will develop the Project in two phases (Phase 1 and Phase 2) over the estimated 41-year mine life. Construction will commence in 2021 or upon receiving all required agency approvals. LNC estimates that it will complete mining, processing and concurrent reclamation activities in 2064, after which, reclamation, site closure activities, and post-closure monitoring will occur for a minimum of five years.

Construction activities (and associated noise and visual disturbances) will include equipment and personnel involved in construction of a lithium processing plant, sulfuric acid plant, a clay tailings filter stack (CTFS), haul and secondary roads, stormwater management infrastructure, growth media stockpiles, raw water supply facilities and related infrastructure, a 7-mile, 25-kilovolt (kV) power transmission line, and other ancillary facilities.

During construction and mining phases, blasting of basalt outcrops within the Mine Plan area (specifically within the pit boundary, as shown on Figures 2 and A-1) would be required on an intermittent basis. The frequency of blasting associated with mine development would be greatest during the first two years of construction, at a rate of up to 22-25 blasts per year (e.g., 2 blasts per month). The actual number of blasts are expected to be far less than that with each blast being a larger volume of rock per blast to start stripping and provide construction fill. During mining, 1 to 2 blasts per year on average may be required. Each individual blast produces an impulsive noise during a brief period of up to several seconds. Blasts would be done during mid-day or early afternoon hours.

Development of the open pit would advance from the west towards the east. Over time, as the open pit is developed and concurrently backfilled, mining activity in the west would decrease as mining advances towards the east. The open pit would be concurrently backfilled and reclaimed, anticipated to occur starting in year seven. Other noise sources

during operations would include the operation of vehicle and mine equipment, exploration drilling, and day-to-day mining operations.

Exploration associated with the proposed North-South Exploration POO (LNC 2019b) would occur infrequently and in some years may not occur at all. When exploration is proposed, it would occur at targeted locations, identified in an exploration work plan. The exploration work plan would be submitted to the BLM, typically on an annual basis, for their review and approval. The proposed North-South Exploration POO would not involve any blasting activity.

LNC would initiate concurrent reclamation of areas no longer required for operations at the earliest economically and technically feasible time over the mine life. During reclamation, reclamation equipment would be used to regrade and recontour the CTFS and open pit, cover the CTFS with growth media, and remove other mine infrastructure, including the transmission powerline.

Additional project information, including applicant-committed environmental protection measures, can be found in greater detail in the following documents: Thacker Pass Project Proposed Plan of Operations and Reclamation Plan Permit Application (LNC 2019a) and Thacker Pass North-South Exploration Project Proposed Plan of Operations and Reclamation Plan Permit Application (LNC 2019b).

3.0 PROJECT AREA EAGLE HABITATS

The Project area is located in an intermontane basin between the Montana Mountains to the north and the Double H Mountains to the south, which contain suitable nesting habitat for golden eagles, such as cliff and rock outcrops. Adjacent to the Project boundary, the Santa Rosa Mountains reside to the east, and the Bilk Creek Mountains to the west, both of which also contain suitable raptor nesting habitat. Figure 3 shows the vegetation cover and other habitats in and around the Project boundary.

Vegetation cover in the Project area is predominantly sagebrush, intermixed with salt desert scrub and invasive grasslands and forb lands. The majority of the Project area has been burned by wildland fires since 1985, resulting in the propagation of an invasive annual-dominated vegetation community (e.g., cheatgrass) in large portions of the Project area. Wildlife species in the area typical of sagebrush habitats in northern Nevada. Potential prey species that inhabit the area include cottontails (*Sylvilagus* sp.), jackrabbits (*Lepus* sp.), and a variety of snakes, lizards, and birds.

There is cliff and canyon habitat outside the Project boundary that provide nesting habitat for eagles. The closest of these features is Thacker Canyon, which is a narrow canyon located approximately 1 mile northwest of the Mine project boundary, on the far side of a small ridge that separates the Project area from the canyon and land west. The canyon walls face roughly west and east, with the mouth opening to the south. The Project area is not visible from inside the canyon.

Golden eagle nests and territories relative to the Project area were identified during baseline surveys for the project. Attachment A includes eagle information. Project site specific eagle survey reports (WRC 2019a, WRC 2019b, WRC 2020) were previously submitted to USFWS. There are no golden eagle nests (active or inactive) located within the Mine or Exploration POO Boundary. There are 4 golden eagle territories and 10 golden eagle nests within 2 miles of the Mine and Exploration Boundary, shown in Attachment A, Figures A-1 and A-2. There is 1 golden eagle nest within 1 mile of the Exploration Boundary (this nest, #16, is also within 2 miles of the Mine Boundary).

4.0 AVOIDANCE AND MINIMIZATION MEASURES

LNC has committed to Project Protection Measures and Conservation Practices to prevent unnecessary and undue degradation during the life of the Project. The practices directly applicable to the protection of eagles are derived from the general requirements established in the BLM's surface management regulations at 43 CFR § 3809 and NDEP Bureau of Mining Regulation and Reclamation (BMRR) mining reclamation regulations, as well as other regulations and guidance documents, including the *Golden Eagle Protection Best Practices for the Nevada Mineral Exploration and Mining Industry* (NVMA 2018). These measures are to be considered part of the operating plan and procedures. Project Protection Measures and Conservation Practices are described in detail in Attachment B.

The Project protection measures include annual monitoring of nests (see Section 6.0 for details), chemical exposure management, deterrence measures, habitat management and enhancement, and administrative controls such as speed limits (on and off site), employee training, and carcass removal.

Adaptive management measures that LNC will implement in the event a new nest is found, or previously inactive nest becomes active, that is within or near the project footprint are addressed in the Adaptive Management section.

5.0 IMPACT AND RISK ASSESSMENT

Part of the ECP process is assessing the level of risk of a project on local-area golden eagle breeding populations. An assessment of risk of golden eagle take is described in Attachment C. The risk assessment evaluated potential Project hazards to golden eagles from the Project, which could include mortalities or injuries due to collision, electrocution, or exposure to lethal doses of chemicals; nest destruction; or nest abandonment or loss of productivity resulting in substantial interference with breeding, feeding, or sheltering behavior due to indirect effects such as visual or noise disturbances, or due to loss of habitat.

Risk assessments are inherently a probabilistic analysis; therefore, risks were evaluated in terms of probability, not certainty, and ranked as either minimal, moderate, or high. Risks cannot be exactly 100 percent or 0 percent, because then it would be a certainty, not a risk.

Project hazards could result in the following types of impacts to eagles:

1. Direct take – mortality, in terms of number of eagles per year.

2. Indirect take – loss of productivity due to disturbances.

3. Habitat loss – number of acres lost as a result of the Project.

4. Territory Loss – loss in number of territories.

5. Nest removal – number of nests for each territory involved.

Based on the risk assessment, the following types of eagle impacts are anticipated:

Direct take – No direct take of eagles is anticipated for the Project. No eagle nests are within the Project footprint. Project protection measures are designed to avoid and minimize the potential for mortalities due to collision with mine equipment, power lines, or vehicles from the Project, or mortalities associated with exposure to chemicals used in Project processes.

Indirect take – In sum, the risk of indirect take is minimal. Indirect take in terms of territory loss is described in the next paragraph; this summary describes risks of indirect take of nests within territories. Indirect take associated with nests in Territories 9, 16, or 17,

as described in Attachment A, are unlikely to occur due to distance between the nests and planned mining activities. In addition, indirect take associated with nests in Territories 9, 16, 17 are unlikely to occur as a result of exploration activities due to and the distance from nests, infrequency of exploration occurring in close proximity to nests, and establishment of buffer zones during the nesting and breeding season. Modeled impacts to golden eagles in Territory 5 also indicates minimal risk of impacts to golden eagles in Territory 5. However, there are uncertainties associated with modeling eagle impacts, and therefore, in an abundance of caution, LNC has applied for a take permit to address 1 breeding pair in Territory 5.

Exploration activity would be avoided near active golden eagle nests, such as the known active nest in Territory 16, during the nesting and breeding season. Specifically, within the northeast portion of the Exploration POO Boundary, in proximity to Territory 16, exploration activities would occur infrequently and may not occur in this area for numerous years. When exploration activities are proposed in proximity to the nests in Territory 16, a raptor survey would first be performed and exploration activity would establish a 1-mile avoidance buffer should the golden eagle nest be identified as active.

The risk of loss of productivity or nest abandonment for nests in Territories 9, 16, and 17 due to mining activities would be minimal to none because the nests are located outside of recommended buffers (USFWS 2002 and USFWS 2017). Visual modeling confirms (as shown in Figures C-1 and C-2) that the nests and majority of these territory areas are out of the line of site of Project activities. Therefore, the risk of indirect take to these territories (9, 16, 17) from Project activities is minimal.

Even though Territory 5 was determined to be active in 2019 and 2020, the golden eagle nests in Territory 5 that are located in Thacker Canyon have not been active in the last 2 years (e.g., golden eagles were observed in the territory, but no breeding attempts nor active nests were observed). Thacker Canyon is located about a half mile away from the Mine boundary and western edge of the open pit area. The nests are located deep in Thacker Canyon, with no direct line of sight between the nests and the Project area. There is additional topographic relief (e.g., hills) between Thacker Canyon and Project site. Noise modeling was conducted for these nests in the event they would become active in the future and have the potential to disrupt eagle breeding behavior. Saxelby Acoustics LLC (Saxelby) modeled expected noise levels from blasting and mining activities (Saxelby 2019, 2020). Modeled maximum noise levels from blasting were less than the typical maximum

baseline levels in Thacker Canyon. Modeled maximum noise levels from blasting were also within the range reported by Grubb (2010) as having no effect on eagle courtship behavior. Saxelby also modeled all the mining facilities as if they were operating at full capacity on a continuous basis, representing a worst-case scenario. Predicted noise levels ranged between 19.3 dBA, up to 29.0 dBA near the nests in Thacker Canyon, which is lower than current baseline noise levels (ranging from 21.6 to 50.2 dBA). Based on these two studies, modeled noise levels from the proposed Project are not expected to impact golden eagles in Thacker Canyon (Territory 5).

Therefore, the risk of noise-related impacts on breeding behavior at these nest sites is minimal. Although loud noises are assumed to disrupt golden eagle behavior, there are few studies that have measured the effect of noise on raptors. This Project's modeling study indicates blasting and other mining activities will be within typical sound levels near the nests in Thacker Canyon, and compared to other noise impact studies (see Attachment C), this suggests that eagle behavior will not be affected. As with all risk assessments; however, there are uncertainties associated with predictive assessments. Hence, this assessment acknowledges the uncertainties inherent in this modeling study.

Habitat Loss – Acres of vegetation cover lost as a result of the proposed Project are estimated to be 5,395, with a breakdown of the types of vegetation cover lost provided in Attachment C. Types of vegetation cover lost reflects mining-related activities, as the location of exploration-related disturbance (150 acres) is on a phased bonding approach and has not been located. In addition, it is important to note that project disturbance would occur gradually over the 41-year mine life, LNC will perform concurrent reclamation, and not all acres will be disturbed or habitat lost at the same time.

The types of habitats lost as a result of the Project represent loss of potential foraging habitat. None of the habitats include features that would provide nesting habitat or facilitate sheltering to eagles. Given the small reduction in total habitat loss within the NDOW management unit, and a substantial proportion of that habitat consisting of low-quality forage habitat and considering LNC would implement concurrent reclamation as the mine develops, the risk of impacts to golden eagle foraging due to habitat loss would be minimal.

Territory Loss – Some researchers have proposed that protection of individual nests on relatively short time scales (e.g., 1 season or 1 year) may be insufficient because golden eagles often maintain alternative nests within a territory, exhibit nest-switching between

years, and do not necessarily lay eggs in all or most years (McGahan 1968, Kochert et al. 2002, Kochert and Steenhof 2012, Millsap et al. 2015, all cited in Slater et al. 2017). They propose that management decisions should be based on the last use of any nest within a territory, including all potential eagle nests within a biologically meaningful distance of one another (Slater et al. 2017).

Conceptual depictions of nesting territories were estimated around the Project area based on methods described in Slater et al. (2013) for Great Basin eagles. The territories are a graphical representation of the territory boundaries only, used primarily to estimate which nests belong to a single pair of territorial eagles. The territory boundaries are not intended to represent the foraging area, home range or the area defended by territorial eagles, but rather the area containing nests likely used by only one pair of eagles. The estimate method for territories assumes a fixed radius around nest(s), and therefore the territories are displayed as circles around nest(s). Based on the graphical representation of nesting territories, Territory #5, 9, 16 and 17 overlap a portion of the Mine and/or Exploration boundary. In reality, however, nesting territory size and shape depends on the type and quality of habitat, prey forage base, topographical constraints, and other considerations. As such, simply because a territory overlaps a Project area does not imply that the territory will be impacted.

Following the discussion presented by Slater et al (2017), if management decisions should be based on territories rather than individual nests, impact assessment should consider all the nests within each territory as one unit. By extension, if one nest is potentially impacted, this may impact the alternate nest sites within that territory, and therefore the territory as a whole.

There are 4 golden eagle nesting territories in proximity to the Mine and Exploration Plan of Operations Boundaries: Territories 5, 9, 16, and 17 (Figures A-1 and A-2). Territories 5 and 16 overlap the Mine Boundary. Territories 9, 16 and 17 overlap the Exploration Boundary. None of the nests are expected to be either directly or indirectly impacted. Therefore, no risk of territory loss would be expected. As noted above; however, in an abundance of caution, LNC has applied for a Take Permit to address one breeding pair in Territory 5.

Nest Removal – No nest removals are proposed or anticipated for the Project. There are no eagle nests (active or inactive) within the Project footprint. The number of nests within and around the Mine and Exploration POO boundaries are summarized in Table 1. The risk

of perch creation as a result of the Project is minimal, and adaptive management procedures would be in place to address new nests if they are found or built within the Mine footprint.

Table 1. Eagle Nests Relative to the Project Area

Nests within Mine and Exploration Boundaries	Nests within 1 mile of Mine Boundary	Nests within 1 mile of Exploration Boundary	Nests within 2 miles of Mine Boundary
0 (0)	6 (0)	1 (1)	10 (2)

Notes:

Number of occupied nests is based on the 2020 survey (WRC 2020).

The two occupied nests within 2 miles of the mine boundary include Nest 16 and 51. Nest 16 is also within 1 mile of the Exploration boundary.

6.0 MONITORING

A monitoring program will be implemented for exploration activities, and during construction, operations, and reclamation of the mine site, to ensure that the management approach (both preventative and reactive means) minimizes the potential injuries and mortalities to eagles, other raptors, and wildlife in general. The following monitoring measures would be implemented for the Project for golden eagles:

Prior to initial surface disturbance or activity associated with exploration activity (as described in the North-South Exploration Plan of Operations [LNC 2019b]), LNC would have a qualified biologist perform a raptor nest survey within 1-mile of the proposed exploration disturbance area in suitable habitat. If an active golden eagle nest(s) is located, LNC would establish a one-mile buffer around such nest and would avoid all activity within the one-mile buffer until the golden eagle nest is no longer active and in use. Nest status monitoring would be performed in a way so as not to disturb breeding and brood-rearing activities. LNC will not conduct any surface disturbing activities within the avoidance buffer until a qualified biologist determines that the golden eagle nest is no longer active.

LNC will perform a raptor survey within a 2-mile radius of the mine on an annual basis, for the first 5-years of mine development or as along as the USFWS Take Permit is in place, whichever is longer. After this time period, LNC will also commit to performing raptor survey and monitoring on an annual basis beginning in advance of any new construction occurring within one mile of a known golden eagle nest or when blasting may occur within two miles of a known golden eagle nest. As previously identified, mining activities will start in the west, and move towards the east; activity and associated noise will over time get farther and farther away from known nests in Territory 5 and nesting habitats.

The survey boundary will include the 4 golden eagle territories near the Project (Territory 5, 9, 16, 17) and all areas between. The objective of such survey is to identify whether any new nests have been constructed, and activity and nest occupancy within existing territories. The annual surveys will also identify if there is active eagle courtship occurring in the area, and if there has been a successful mating attempt.

During operations, monitoring of Project components would focus on the constructed transmission lines and power distribution infrastructure, communication infrastructure, and emergency and reclamation ponds. Monitoring methods may be refined if new survey

techniques or protocols become available, or if the quality control system, described below, indicates a need to change methods to ensure efficient and effective protection measures.

Visual monitoring of the transmission and power lines, distribution centers, power poles, and communication infrastructure will occur bi-monthly for the first two months following construction and semi-annually thereafter concurrent with eagle breeding periods. Communication towers will be visually monitored quarterly by environmental personnel and incidentally by other LNC Environmental Department personnel and contractors. Risks associated with electrocution along distribution power lines at transformers, and at substations will be minimized and, in most cases, negated through adherence to Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).

Visual inspections of other facilities that pose hazards to eagles and other wildlife (e.g., processing and storage facilities, administration buildings) would occur on a daily basis by LNC personnel and contractors. All other ancillary facilities (e.g., borrow areas, storage facilities) would be inspected on a quarterly basis by LNC personnel and contractors.

7.0 ADAPTIVE MANAGEMENT

The conceptual adaptive management process is an iterative process that includes assessment, design, implementation, monitoring, evaluation and adjustment. By nature of this process, each adaptive management action should be based on the information from the planned monitoring. Adaptive management strategies for long term operations (more than 5 years) should include milestones that are reviewed at scheduled intervals during the lifetime of the permitted action. If a relatively high degree of risk exists, milestones and adjustments would occur early and often. To that end, LNC will regularly review the monitoring data from site investigations and any mortality reports to prioritize adaptive management needs. If an eagle injury or mortality is detected, LNC will notify the BLM, NDOW and USFWS within 24 hours. The Wildlife Incident Report Form will be filled out and provided upon agency request. LNC will work with BLM, USFWS and NDOW to determine causal factors in any eagle mortality and develop an immediate plan to address potentially problematic areas or structures.

The following adaptive management strategies identify additional adjustments that would occur if a high degree of risk exists for eagle take:

- The Project is applying for a take permit for one breeding pair of eagles in Territory 5. Active nests in other territories are more than a mile from planned mining activities and more than 2 miles of planned blasting activities. However, if new active golden eagle nests in other territories (#9, 16, 17) are found, LNC will ensure that mining and exploration activities within 1 mile of the new active nests and blasting within 2 miles of the new active nests are curtailed until the nest(s) are no longer active. Similarly, if a new golden eagle nest is identified outside the four known territories (#5, 9, 16, 17), and if the nest is deemed active, then the same 1-mile (activity) and 2-mile (blasting) restrictions will apply until the nest is no longer active or an additional or updated Take Permit is obtained. Although unlikely (due to the nature of the clay deposit and implementation of concurrent backfilling of the pit), if an eagle is attempting to build a nest on the pit highwall, LNC will immediately consult NDOW, USFWS, and BLM regarding appropriate protection measures, and will curtail any blasting activity in the meantime until protection measures are in place. LNC may also choose to submit an application to amend their USFWS take

permit to allow for additional take if new active eagle nests are found, especially if nests are within immediate proximity to continual operations of the Project.

- If new eagle activity or new nests are observed within a half mile of mine roads, posted vehicle speeds will be reduced by half until no eagle activity in the area has been confirmed for a period of 14 days.
- No eagle nests would be removed by LNC unless a take permit is in place. If new eagle nests are built on the pit wall or mine infrastructure that would require removal, LNC will first obtain a take permit.

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FIGURES

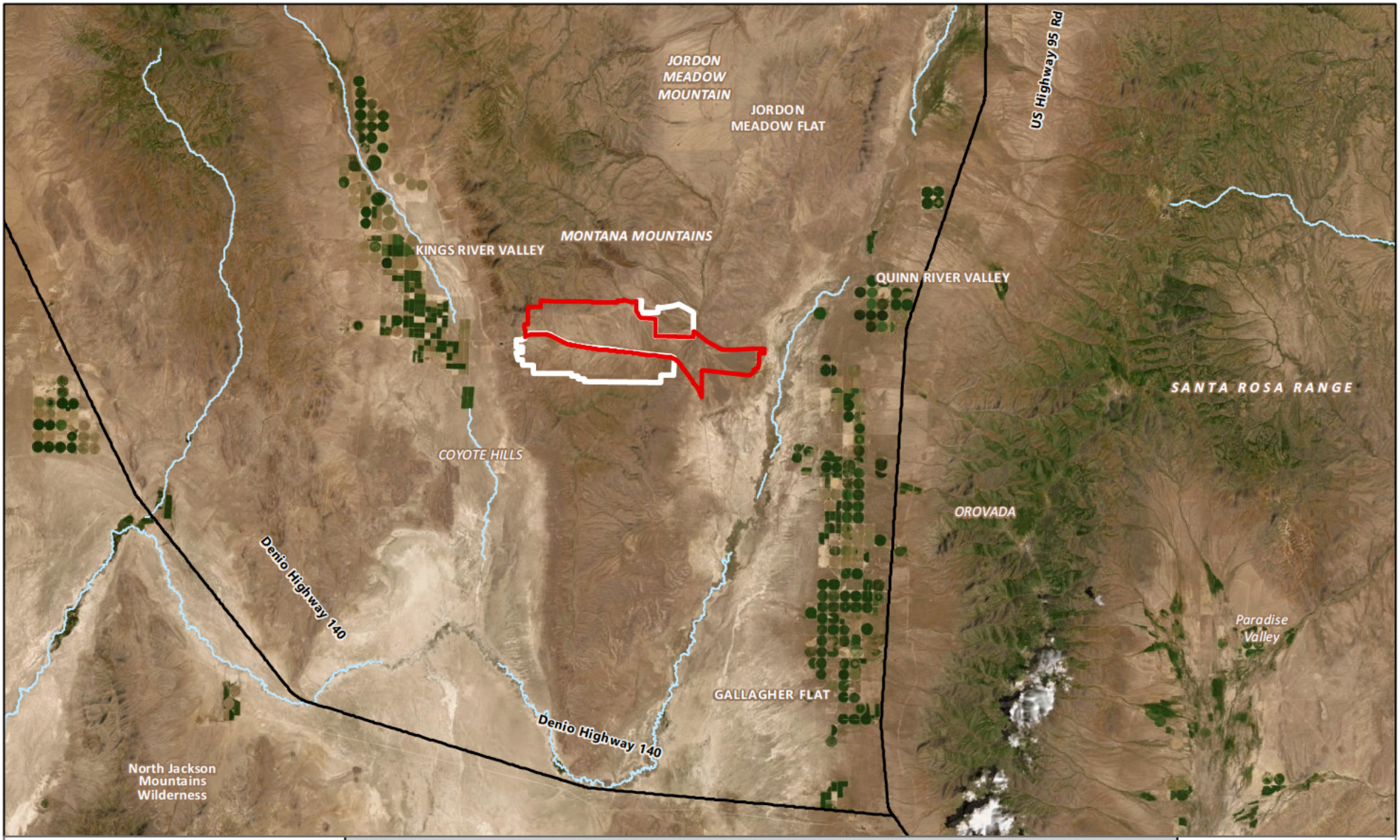

Figure 1
Project Location

Map Legend

- Exploration POO Boundary
- Mine POO Boundary

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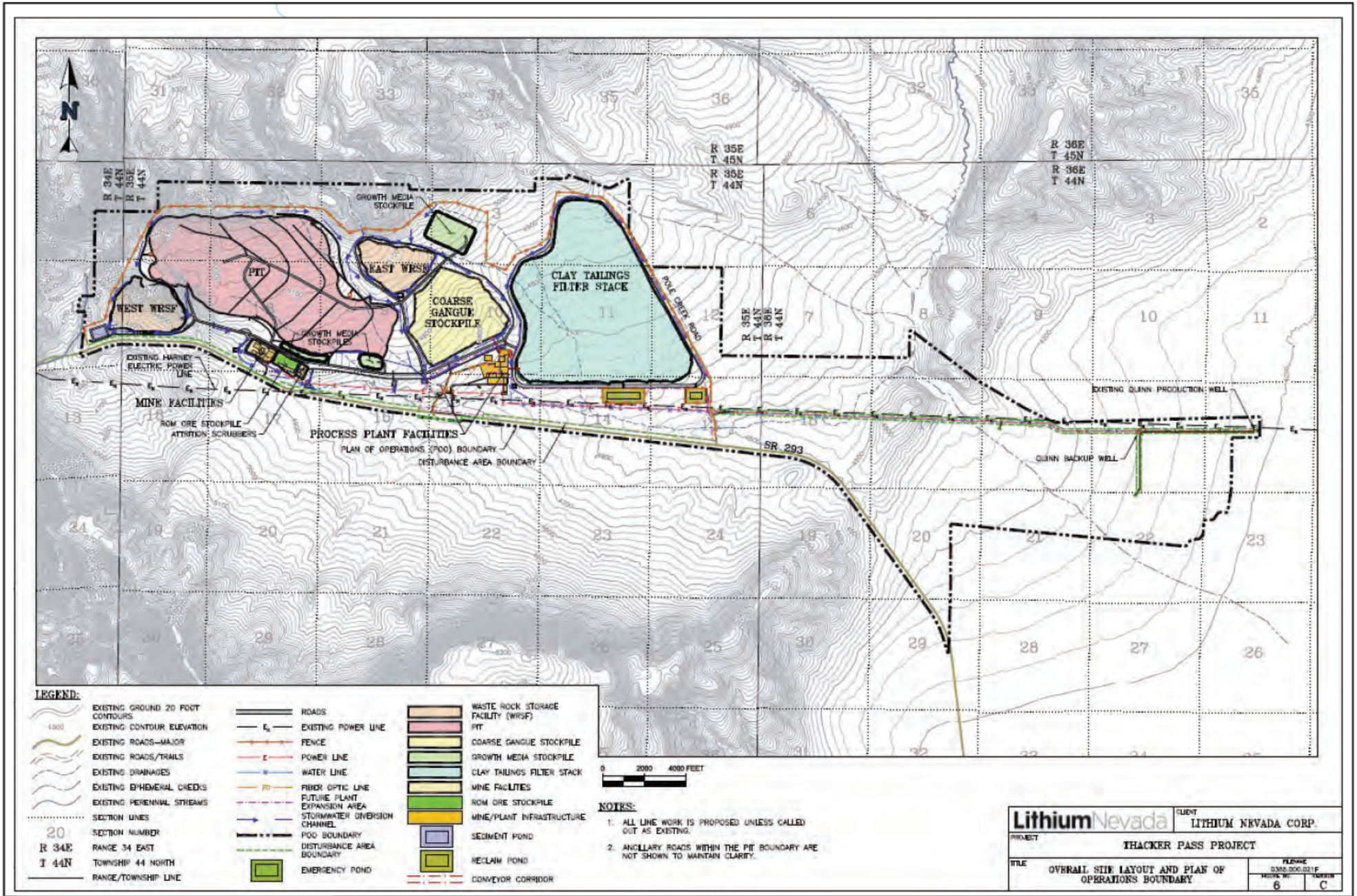
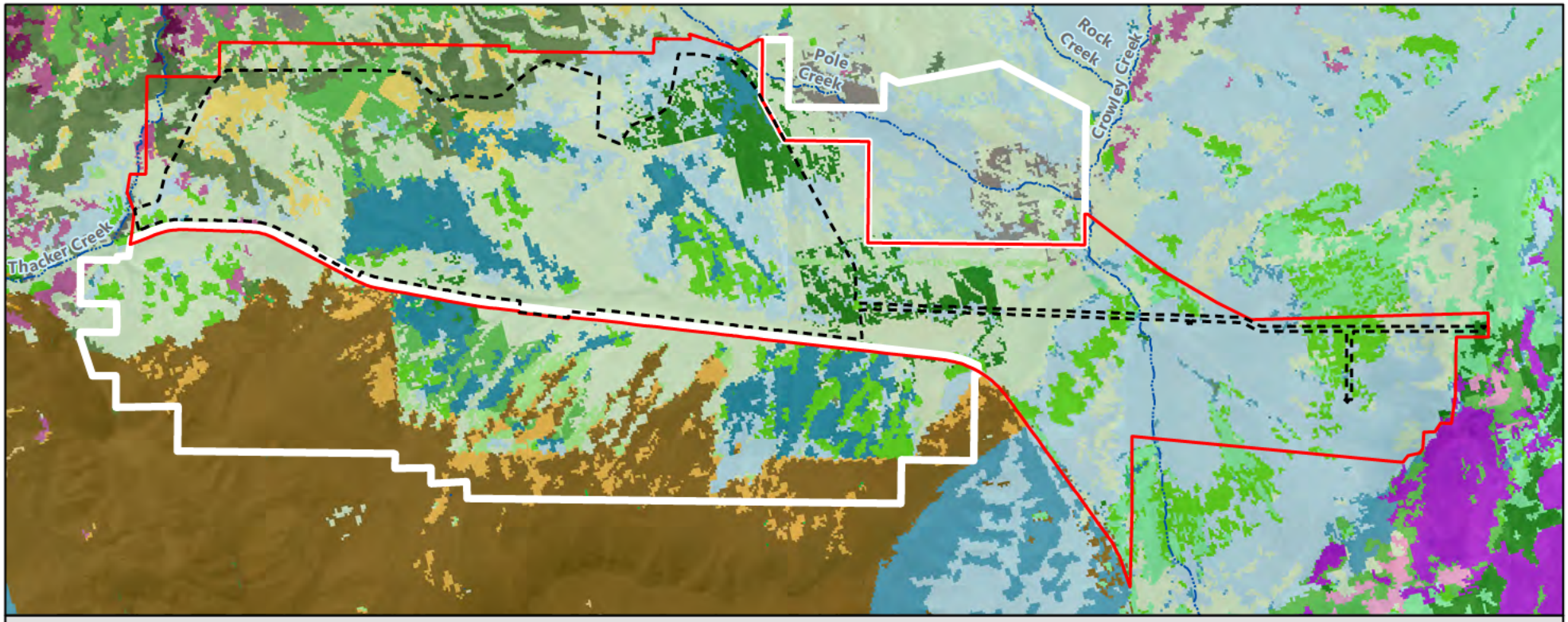


Figure 2 Project Facility Layout – year 41



GAP Landform Cover

- Columbia Basin Foothill and Canyon Dry Grassland
- Columbia Plateau Ash and Tuff Badland
- Columbia Plateau Low Sagebrush Steppe
- Columbia Plateau Steppe and Grassland
- Columbia Plateau Western Juniper Woodland and Savanna
- Developed, Low Intensity
- Developed, Open Space
- Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland
- Great Basin Pinyon-Juniper Woodland
- Great Basin Xeric Mixed Sagebrush Shrubland
- Inter-Mountain Basins Active and Stabilized Dune
- Inter-Mountain Basins Big Sagebrush Shrubland
- Inter-Mountain Basins Big Sagebrush Steppe
- Inter-Mountain Basins Cliff and Canyon
- Inter-Mountain Basins Curl-leaf Mountain Mahogany Woodland and Shrubland
- Inter-Mountain Basins Greasewood Flat
- Inter-Mountain Basins Mat Saltbush Shrubland
- Inter-Mountain Basins Mixed Salt Desert Scrub
- Inter-Mountain Basins Montane Sagebrush Steppe
- Inter-Mountain Basins Playa
- Inter-Mountain Basins Semi-Desert Grassland
- Inter-Mountain Basins Semi-Desert Shrub Steppe
- Introduced Upland Vegetation - Annual Grassland
- Introduced Upland Vegetation - Perennial Grassland and Forbland
- Introduced Upland Vegetation - Shrub
- North American Arid West Emergent Marsh
- Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland
- Pasture/Hay
- Recently Burned
- Recently burned grassland
- Recently burned shrubland

Figure 3
Vegetation Cover

Map Legend

- Exploration POO Boundary
- Mine POO Boundary
- Surface Disturbance Footprint

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ATTACHMENT A – EAGLE SURVEY INFORMATION

Summary of Available Data

Golden eagles were observed incidentally during migratory bird surveys conducted in the Project area (JBR 2012, SWCA 2019). Additionally, aerial raptor nest surveys were conducted in the vicinity of the Project in 2011 by Nevada Department of Wildlife (NDOW). On May 2 and 3, 2011, NDOW performed an aerial survey for nesting raptors within a four-mile buffer around a project area in the same location as the current project, but smaller in size. A ground survey of raptor nests was also conducted in 2011 to search areas of potential golden eagle/raptor nesting habitat outside of the areas included in the NDOW survey (JBR 2012). Aerial-based raptor surveys for the current Project area and 10-mile buffer began in 2018 and continued through 2019 (WRC 2019a, 2019b). In 2020, surveys were performed within a 2-mile buffer (WRC 2020). These reports were previously provided to USFWS in 2020. Surveys are again being performed in 2021.

Figure A-1 shows eagle nests and territories in the vicinity of the Mine POO Boundary including the open pit, blasting, and buffer areas. Figure A-2 shows eagle nests and territories in the vicinity of the Exploration POO Boundary. The data shown in both Figures reflects 2020 data.

Some notes regarding territory size estimates as shown in the figures, based on WRC (2020):

Territories shown in Figures A-1 and A-2, and described below, reflect nesting territories only and were based on methods described in Slater et al. (2013) for Great Basin eagles. The territories shown in the figures are a graphical representation of the territory boundaries only, used primarily to estimate which nests belong to a single pair of territorial eagles. The territory boundaries are not intended to represent the foraging area, home range or the area defended by territorial eagles, but rather the area containing nests likely used by only one pair of eagles. To estimate the spatial distribution of nesting territories, a maximum nesting territory of 83 km^2 (radius=5.1 km) was transposed over a map of nest sites in a GIS system. The circles were then adjusted spatially with the following guidelines:

- Neighboring nests at which nesting attempts were documented during the same year were considered to be within separate nesting territories.

- Nesting territories do not overlap, so the amount of overlap between the circles representing territories was minimized.
- Distinct spatial clusters of nests were placed within a single nesting territory.
- Where nesting attempts were documented at several closely spaced nests, the size of nesting territories was reduced to minimize overlap.
- Significant topographic features such as divides were used to position nesting territories around widely spaced nests.

Based on reporting details in WRC (2019a, 2019b, and 2020), the following is a consolidated description of the nests and territories that overlap or are nearest the Project:

Territory 5

Territory 5 contains six nests classified as eagle nests: Nests 40-A, 40-B, 101-A, 102, 10249, and 103-A. There are also two large raptor nests (101-B and 103-B) in the vicinity that could possibly have been constructed by eagles. Nest 40-A was active in 2018. The NDOW identified one of these nests as active in the May 2011 aerial survey.

Most of the nests are close to the Mine Plan boundary, but none are within the mine plan boundary. All nests are located in Thacker Canyon, a steep, narrow canyon associated with Thacker Creek. Four of the golden eagle nests are on the west side of the canyon and two golden eagle nests are on the back wall, facing southwest. There is no direct line of sight and significant topographic relief exists (e.g., hills) between any of the golden eagle or large raptor nests and the Project area.

During early season ground surveys in 2019, adult eagles were seen multiple times near these nests and within this territory. However, no evidence of nest occupancy was observed during the 2019 aerial surveys. The territory was therefore classified as occupied, but no occupied nests or breeding attempts were observed. None of these nests were found to be occupied in 2020.

Territory 9

Territory 9 contains the following two nests classified as eagle nests: Nests 87-A and 87-B. Both nests are located on the same isolated rock outcrop and are about 23 feet apart. They

are over one mile from the Exploration Plan and Mine Plan boundary, located within the Kings River Valley, on a canyon wall that faces west. The nests are out of the line of site from the Project.

The NDOW identified one of these nests as active in the May 2011 aerial survey. During the 2018 ground surveys, two adult eagles were observed within this territory, displaying mating behavior. A successful breeding attempt fledging one young was documented in Nest 87-B in 2018.

During early season ground surveys in 2019, adult eagles were seen multiple times near these nests and within this territory. Aerial surveys documented that Nest 87-B was again occupied, and that a breeding attempt occurred. A chick estimated to be 35 days of age was observed on the second flight. On a subsequent ground survey on June 17, 2019, the chick was observed and was estimated to be over 51 days of age. The territory was therefore classified as occupied, and Nest 87-B was classified as occupied, with a successful breeding attempt fledging one young.

In 2020, Nest 87-A was found to be occupied, and young were observed. During the early season ground surveys in 2020, a pair of eagles was observed flying in tandem in the vicinity of the nest outcrop. Nest 87-A, the upper nest, was verified as occupied by an incubating adult during the first aerial survey. A nesting attempt with two chicks between 28 and 35 days old was documented on the second aerial flight. The territory was classified as occupied, Nest 87-A was classified as occupied, and a viable breeding attempt was confirmed.

Territory 16

Territory 16 contains one nest: Nest 16. This nest was identified by the GBBO in 2011. The nest is approximately 0.4 miles outside the Exploration Plan boundary, and 1.3 miles outside the Mine Plan boundary.

This nest was not occupied in 2011. The nest and territory were visited multiple times during ground surveys in 2018, and no eagles were observed. No evidence of nest occupancy was observed during aerial surveys in 2018. During early season ground surveys in 2019, a pair of adult eagles were seen multiple times near this nest and within this territory. However, no evidence of nest occupancy was observed during the 2019 aerial

surveys. The territory was therefore classified as occupied, but no occupied nests or breeding attempts were observed.

In 2020, nest 16 was determined to be occupied. A pair of eagles was frequently observed near Sentinel Rock and was also observed copulating, perching, and preening on power poles southwest of Sentinel Rock. Nest 16 was verified as occupied by an incubating adult during the first aerial survey, and a nesting attempt was documented with two chicks between 28 and 32 days old observed on the second aerial flight. The territory was classified as occupied, and Nest 16 was classified as occupied, and a viable breeding attempt was confirmed.

Territory 17

Territory 17 contains eight nests: Nest 45, 47, 48, 49, 50, 51, 52 and 58. All of the nests are more than 1 mile from the Mine Plan and Exploration Plan boundaries. The closest nests to the Project boundaries are nests 51 and 52. There is some uncertainty in the inclusion of Nest 58 within this territory, which is approximately 1 mile from the other nests. Also, Nest 58 has been classified as an eagle nest, but its characteristics are borderline and it was occupied by a red-tailed hawk in 2018 (WRC 2019a). Therefore, this nest may not have been constructed by an eagle. There are no records of nests within this territory from the 2011 survey or from the Great Basin Bird Observatory database.

Although no nest in this territory was used for a breeding attempt by eagles, it was classified as occupied in 2018 based on the presence of fresh nest decorations in Nest 48. During early season ground surveys in 2019, a pair of adult eagles were seen multiple times within this territory, including near Nest 48. Nest 48 was verified as occupied during aerial surveys, and a viable nesting attempt was documented with one chick 35 days old observed on the second aerial flight.

In 2020, Nest 51 was found to be occupied. An adult golden eagle was seen in the vicinity of Nests 50 and 51 and the territory was classified as occupied. Nest 51 was verified as occupied by an incubating adult during the first aerial survey, and a viable nesting attempt was documented with two chicks between 42 and 49 days old observed on the second aerial flight.

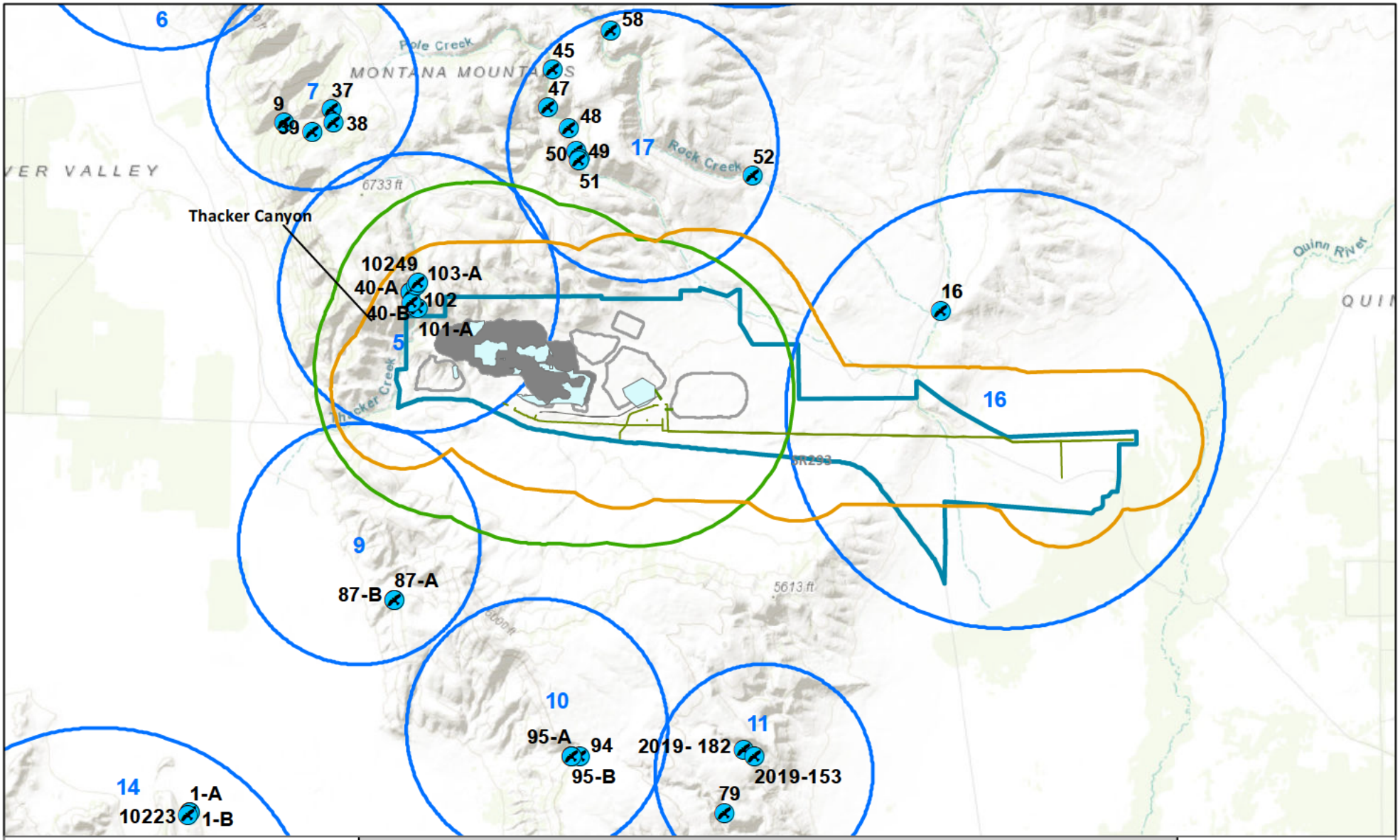

Figure A-1
Nests and Territories Relative to the Mine POO Boundary

Map Legend

- Mine POO Boundary
- Eagle Territories
- Final_Pit_Design
- Utility Corridor
- Eagle Nests
- Facility Stockpile, Tailing Pile, Storage Area
- Blasting Areas
- 2 Mile Buffer of Blasting Areas
- 1Mile Buffer of Mine Facilities

In an abundance of caution, LNC is applying for a USFWS Take Permit for disturbance to and loss of annual productivity of one golden eagle breeding pair located in Territory 5.

N
W E
S

Miles
0 0.75 1.5

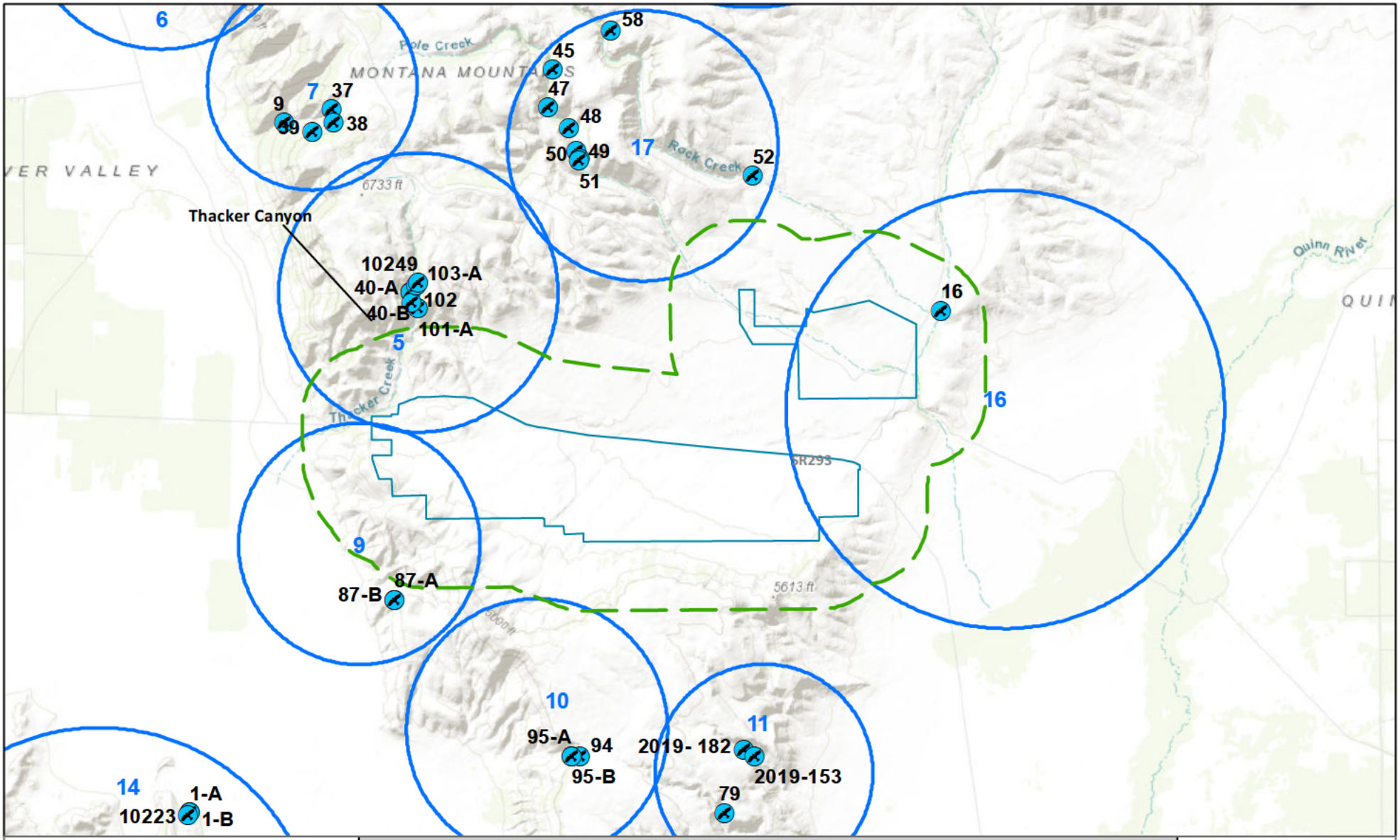

Figure A-2
Nests and Territories Relative to the Exploration Plan

Map Legend

- Exploration POO Boundary
- Eagle Nests
- Eagle Territories
- 1Mile buffer of Exploration POO

Should an active golden eagle nest be identified within the Exploration POO Boundary, a 1-mile buffer will be established and no exploration drilling activity would occur within 1 mile of an active golden eagle nest

N
W
E
S

Miles
0 0.75 1.5

ATTACHMENT B – PROJECT PROTECTION MEASURES AND CONSERVATION PRACTICES

LNC will adopt and implement the Bird and Bat Conservation Strategy (BBCS) (Cedar Creek 2020) as well as this ECP to reduce the potential for eagle mortality or injury resulting from Project related activities, and avoid golden eagle take. Protection measures described below are measures that will most directly avoid and minimize impacts to eagles. Other Environmental Protection Measures (EPMs), such as controlling fugitive emissions and fugitive dust, managing erosion and acid rock drainage, and noxious weed control (detailed in the POO [LNC 2019a, LNC 2019b]), would more indirectly minimize impacts by reducing the environmental footprint of the proposed Project and preventing unnecessary and undue degradation. Those EPMs, though not explicitly stated here, were incorporated into considerations of threats, implementation, and monitoring practices for the Project.

Project Design and Management

LNC sited the Project facilities away from and south of the high Montana Mountains area to specifically avoid high-value sage-grouse and other wildlife habitat, to retain other ecological values, and to protect recreational interests. Planned facilities within the Project boundary were designed so as to limit the project disturbance footprint as much as possible, therefore reducing modifications to wildlife habitat.

LNC will keep all project-related disturbance to a minimum. Only the amount absolutely necessary for the operation will be disturbed. Total disturbance will not occur at once but will gradually occur over time as mine development occurs over the 41 years. Development of the open pit will generally occur from the west, moving towards the east (mine-related activity would get farther and farther away from Territory 5 over time). During operations, vehicles would travel on established roads to minimize disturbance of the native habitat in the Project area, which would minimize habitat impacts and reduce physical harm of avian species during Project activities.

The plant site facilities, which are located over 3.5 miles east from the nearest eagle nest, will include additional sound buffering and acoustic insulation features that will further reduce project-related noise. The sound buffering includes added insulation at specific areas of the plant to reduce noise emissions from machinery. Rotating equipment with expected elevated noise levels, such as sulfuric acid plant main blower, steam turbine generator, and MVR compressors (if included), will be enclosed within engineered structures specifically designed for noise attenuation. Noise buffering structures, such as walls, integrated acoustic

silencers and/or fan size/speed will be evaluated for equipment such as air-cooled condensers, chillers and cooling towers (if included).

The location of the process plant facilities lends itself to having earthen structures (e.g., waste rock stockpiles, coarse gangue stockpile, and clay tailings filter stack) that will act as sound barriers to the north, west, and east.

Throughout the Project's operational phase, concurrent reclamation will occur in areas where final configurations are complete. The development of the pit would be concurrently reclaimed, starting in approximately year seven. The pit development and concurrent reclamation would advance generally from the west towards the east. LNC will begin reclamation activities at the earliest practicable time within areas of the Project that are considered inactive, anticipated to occur starting in Year 5. Early initiation of reclamation will stabilize soil, reduce dust and naturalize runoff. Periodic evaluation conducted throughout mine operations will be required in order to improve reclamation techniques and measure concurrent reclamation success.

Reclamation of the Project area will include a combination of revegetation practices. These practices will promote the establishment of diverse plant communities, stabilization of soil cover through minimizing wind and water erosion, and restoration of land to a condition consistent with historical and emerging local patterns. The mix is designed to provide species that can exist in the environment of northwestern Nevada, are proven to be robust species for revegetation, or are species found in the plant communities prior to disturbance. The proposed reclamation seed mix is also especially adapted to the Project site's clay soils.

Nest Monitoring

For all nest locations within two miles of Project activity, LNC will perform annual golden eagle surveys to document nest occupancy and breeding attempts. LNC will perform a raptor survey within a 2-mile radius of the mine on an annual basis, for the first 5-years of mine development or as along as the USFWS Take Permit is in place, whichever is longer. After this time period, LNC will also commit to performing raptor survey and monitoring on an annual basis beginning in advance of any new construction occurring within one mile of a known golden eagle nest or when blasting may occur within two miles of a known golden eagle nest.

The assessment will be conducted during the spring (when raptors are most active), prior to the start of project activities, conducted by a qualified biologist or environmental scientist, by a ground-based or aerial based survey, whichever is most effective at identifying nest use status. The purpose of the nest monitoring is to identify if the territory is active, if the nest is occupied, and if possible, if there is breeding success.

When exploration activities are proposed to occur, especially in proximity to Territory 16, LNC will first perform a raptor survey to determine if golden eagle nests in the area are active. LNC will establish avoidance buffers around active golden eagle nests within 1 mile of exploration activity until the nest(s) are no longer active (exploration activity will avoid the area and no exploration activity would occur within 1 mile should an active golden eagle nest be identified).

Compliance with the Migratory Bird Treaty Act

In order to avoid potential impacts on breeding migratory birds, a nest survey shall be conducted within potential breeding habitat prior to any surface disturbance during the avian breeding season (March 1 - August 31). If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, or transporting food) is observed, a protective buffer shall be delineated and the buffer area avoided to prevent destruction or disturbance to nests until they are no longer active. This monitoring requirement can also capture potential new eagle nest activity in the project boundary.

Chemical Exposure Management

Hazardous and solid wastes will be generated during construction and operations of the Project. Hazardous waste will be managed and stored according to state, federal (43 CFR 262) and local regulations. These wastes will be stored in closed containers on concrete pads and provided with secondary containment until removal and disposal at an authorized facility. Used oil and coolant will also be stored at the truck shops within secondary containment. The materials will be either recycled or disposed in accordance with state, federal, and local regulations. Used coolant and oil will not be mixed. Used containers will be disposed or recycled according to federal, state, and local regulations. Solid wastes will be disposed of in permitted off site or onsite landfills.

A Solid and Hazardous Waste Management Plan has been developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure of

substances to wildlife and the environment. A training program will be implemented to inform employees of their responsibilities in proper waste disposal procedures.

The reclaim ponds and emergency pond will be fenced to restrict wildlife, and under normal operations be kept dry. Any spills associated with wastes or chemicals will be managed under the Spill Contingency Plan, which will avoid or minimize exposure to wildlife. Upon final closure and reclamation, open pits will be backfilled, and a final pit lake is not expected to form.

Deterrence Measures

LNC will install raptor anti-perch devices on the proposed 25-kV power poles that are located within the portions of Project area that support sage grouse habitat. Anti-perch devices will also be installed on tall structures (where appropriate) within the mine facilities and plant site (e.g., communication tower, weather station, some areas of the lithium processing plant, and sulfuric acid plant). Anti-perch devices (usually triangle shaped, cone-shaped, or are spike-type structures) are designed to be mounted on utility poles or tall structures to prevent or dissuade raptors from landing or nesting on the structure.

LNC will also install the proposed transmission infrastructure to be incompatible with the establishment of raven (or raptor) nests. As suggested in APLIC guidelines, LNC will attach polyvinyl chloride pipe or corrugated drainpipe to the proposed 25-kV distribution line structures to discourage nesting (APLIC 2012). LNC will also regularly monitor the usefulness of the deterrence measures and implement different measures if the current effort is unsuccessful. LNC will reduce the attraction of the Project to eagles and other raptors by limiting the availability of created/artificial water sources. Access to standing water on the Project site will be limited during construction and operation. When possible, LNC will ensure truck wash areas are kept free of standing water during construction. Water used for dust suppression during construction will be applied at a rate that discourages puddling.

All trash associated with the Project during construction and operation will be contained in secure receptacles to prevent the introduction of subsidized food resources for animals that could be prey for eagles. LNC will use closed bins during construction for waste. To reduce the possibility of ravens (or other birds) from ripping into the bags and exposing the trash, plastic bags containing trash will not be left out for pickup. All trash and food items

generated by construction and operation activities will be promptly contained and regularly removed from the Project site to reduce the attractiveness of the area to eagles and other animals. Following Project decommissioning, elevated structures including utility poles will be removed from the Project site to avoid creation of perch structures.

Project Administrative Controls

Speed Limits

Speed limits will be posted at all times to minimize the risk of collisions between Project vehicles and eagles and other animals.

Employee Training

LNC will ensure that all appropriate personnel regularly undergo training where they will receive direction and guidance on the issues and protocols for eagle protection. This training will ensure that all appropriate personnel have a thorough understanding of the ECP and associated BBCS. The training also will emphasize LNC's responsibility towards regulatory compliance and environmental stewardship.

Training will include establishing educational programs for project employees to increase awareness of the potential for vehicular collisions and other encounters with eagles and other animals. Training will include annual training, conducted by a qualified biologist or environmental specialist, review best management practices for the project, and show training presentations. Training will also include a reporting requirement in the event of mortality.

LNC will establish wildlife protection policies that will prohibit the feeding or harassment of all wildlife, including eagles.

Carcass Removal

Personnel should, in general, refer any injured or dead wildlife species discovered to the Environmental Personnel to address and remove, unless it poses a health or safety risk to personnel or operations. Personal would have access to various forms of communications for properly reporting wildlife injuries or mortalities to appropriate environmental personnel. LNC will coordinate with NDOW and USFWS for a golden eagle carcass removal; for other bird or big game mortalities, LNC will coordinate with NDOW.

If safe to do so, LNC environmental personnel will dispose of any animal road kills occurring within the Project site and along the Quinn River Well access road. In all cases, LNC personnel will be strictly prohibited from handling, transporting, or disposing of a golden eagle carcass without a handling permit issued under the Bald and Golden Eagle Protection Act (BGEPA).

Habitat Management and Enhancement

LNC will continue to protect natural resources and promote actions that benefit eagle populations. LNC will maintain local vegetation outside of the immediate project footprint that will maintain nearby nesting and foraging habitat for wildlife species. All non-active mined areas will be concurrently reclaimed as soon as feasible.

During final reclamation, measures to increase prey base will be employed where practicable, such as constructing rock piles, with hiding and denning values for prey species. The seed mixture is designed to provide species that can exist in the environment of northwestern Nevada, are proven species for revegetation, or are native species found in the plant communities prior to disturbance. The plant communities that will form will therefore serve as a food source and habitat for native species, including eagle prey species.

ATTACHMENT C – RISK ASSESSMENT

A risk assessment was performed to evaluate the risk of golden eagle take from Project hazards. A risk is an event that "may" occur. Risks are described in terms of probability rather than certainty; risks cannot be exactly 100 percent or 0 percent, because then it would be a certainty, not a risk. Therefore, risks are described in this assessment in terms of the following categories: minimal, moderate, or high.

Standard operations associated with the mining and mineral exploration industry generally pose a low risk to golden eagles. There is a low risk for interaction with most of the operations and facilities on a mine site. LNC has considered the multiple exposure pathways that the Project could impact golden eagles and has identified a number of avoidance, minimization, monitoring and management methods to reduce risks to the species, and the potential for take. As described in the ECP, LNC has incorporated many industry standards into their Mine Plan (LNC 2019a) and Exploration Plan (LNC 2019b) applicable to the mining industry.

These protection measures will minimize exposure to or eliminant entirely the potential sources of mortality or injury risk to golden eagles and their nests. Therefore, this risk assessment discusses risks to golden eagles after incorporating the protection measures that will be employed by LNC during construction, operations, and reclamation.

Project hazards to golden eagles could results in the following types of risk:

Active Nest Destruction – The intentional destruction of a nest would occur if sites were within the planned disturbance footprint. Within the project boundary, however, there are currently no golden eagle nests. The design of the Project will include engineering controls to deter nest construction on towers or tall infrastructure during operations. Although unlikely (due to the nature of the clay deposit and proposed concurrent open pit backfill, anticipated to start in year seven), nests could be built on the pit wall after development of the open pit. Adaptive management measures will be in place in the event new nests are discovered in the open pit or near to mining activity to avoid direct or indirect impacts to eagles. Starting in operating year seven, the open pit will be concurrently backfilled, preventing eagles or other raptors from building nests on the pit side wall. Human activity in and around the pit area would also discourage nesting behavior. Therefore, the risk of active nest destruction due to the Project is minimal.

Mortality or Injury from Collision or Electrocution – Eagles (and other birds) could be electrocuted from power lines or electrical equipment used on the mine site. The Project includes construction of a seven mile, 25-kV power transmission line from a new substation installed in the process plant area to the raw water supply facilities to the east, and a two-mile power transmission line to a new mine area substation to the west. The degree of risk from powerlines depends significantly on the design of the power line structures, and the density of power pole distribution. Risks associated with electrocution along distribution power lines at transformers, and at substations will be minimized and, in most cases, negated through adherence to Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006). LNC will follow APLIC guidance, including installing deterrence measures to reduce risks to raptors. The Project area is not located in any known flight corridor for eagles.

Dwyer et al. (2014) studied the incidence of raptor electrocutions and distribution power pole density in western habitats. When modeled in Great Basin habitats, electrocutions were less likely than would be expected due to chance in areas with low densities of power poles (less than 5 power poles per square kilometer), and higher than expected in areas with moderate to high predicted densities (5 or more poles per square kilometer). Therefore, areas with low power pole densities would be expected to result in low electrocution risk. The area in and around the Project is a low density area for power poles. The proposed transmission lines would not change the low density characteristics of this area.

Eagle mortalities could occur from mining equipment if they are attracted to roads and the mining area. Deterrence measures to avoid eagle attraction to the mine, and deter perch creation (see next topic), will be a part of the Project's protective measures. These measures will help to prevent eagle activity near mining equipment and therefore reduce the risk of mortalities caused by collision with equipment or vehicles. Initial construction activities would also be avoided during nesting periods when possible, and nest monitoring would identify buffer areas around active nests near construction if activities are occurring around active nests, therefore reducing the risk of collisions during these activities. Therefore, risks are minimal that eagle mortalities would occur as a result of collision with mine equipment.

Increased traffic would occur on State Route (SR) 293, and new roads would be constructed in the mine area, increasing the risk of collision with eagles and other animals. However, collisions with animals throughout Humboldt County are low, and increased traffic would

result in about a few additional animal collisions due to vehicle increases (Cedar Creek 2019). LNC personnel would be instructed to follow speed limits, and visibility along SR 293 is excellent. Due to these factors, risk of mortalities to eagles from vehicle collisions associated with the Project are minimal.

Perch Creation – New infrastructure can create potential perch opportunities. However, LNC will employ a number of anti-perch and other deterrent systems to limit the attraction of eagles (and other raptors and birds) to the Project site. Nearby, existing perch sites are expected to be more attractive to eagles, such as the rock outcrops in Thacker Canyon, nearby mountains, and existing transmission lines to the south of the project. Combined, the protection measures and suitable alternative sites nearby would result in minimal risk of perch creation on Project infrastructure. Avian species could potentially utilize the open pit and may find the uneven pit walls suitable for nesting or perching. Since mining activities are continuous (24 hours a day, seven days a week), and considering the pit will be concurrently backfilled starting in year seven, long-term nesting attempts within the pit by eagles are unlikely to occur. Therefore, the overall risk of perch creation is minimal.

Visual Impacts – Mining activities could impact eagle breeding behavior or deter feeding behavior due to visual disturbances associated with human activities at the Project site. The Project is in a topographic low, compared to surrounding mountains, and therefore much of the Project area would not be visible unless standing on a high-elevation mountain peak. There are existing natural visual obtrusions between eagle nest locations and the Project. In addition to the natural contours, visual impacts will be minimized by LNC by developing and implementing best management practices (BMPs) for the Project to reduce light pollution and impacts to visual resources. There are no topographic features for slope soaring within the Project boundary, and no known flight corridors occur within the Project area.

A visual simulation, shown in Figure C-1 for the entire site, and Figure C-2 showing a close-up view around Thacker Canyon, indicates where on the surrounding landscape that the tops of various proposed mining facilities (stockpiles, tailings, or growth media storage areas) could be seen. This analysis was performed using ArcMap with a 10-meter resolution digital elevation model (DEM) extracted from the USGS National Elevation Dataset. For the analysis, the viewshed is projected out from the tops of stockpiles, storage areas, and the tailings at full build-out height. As shown, the natural contours of Thacker Canyon and the mountain ranges to the north and south create natural visual barriers between the proposed Project and nests as well as most of the surrounding territory areas nearest the Project.

Nests associated with the closest territories can be seen in Figure C-1 and C-2. As shown, active nests in 2020 (nest 16, 51, and 87A) are largely topographically obscured from the Project site. Much of the territory areas surrounding these nests are also obscured. Between the protection measures and natural contours surrounding the site, the risk of visual impacts to golden eagles is minimal.

Noise Impacts – Project-related noises that occur during construction, operations, and reclamation, including occasional blasting in the open pit, may impact golden eagle breeding behavior or result in nest abandonment. Although loud noises are assumed to disrupt golden eagle behavior, there are few studies that have measured the effect of noise on raptors. Between 2000 and 2004, BLM monitored the distribution and reproductive success of golden eagles in New Mexico, in areas where oil and gas development represents a potential source of noise disturbance to nesting golden eagles (BLM 2005). A noise threshold could not be identified because nest success in the study area was observed at both distances far from noise sources, and near high traffic roads and within a half mile of oil and gas activities that generate up to 50 decibels (dB). A similar finding was reported by Grubb et al. (2010), which measured the effect of airplane noises on golden eagle courtship behavior. Noise levels were recorded from 303 helicopter passes near more than 30 golden eagle nests in 22 nesting territories in an area in northern Utah. Sound levels measured from the passes ranged from 76.7 to 108.8 dBZ, but no response during the airplane passes were observed in eagles during nesting. A small number of eagle responses to airplane passes occurred after hatching (4 golden eagles exhibited flatten and fly behaviors at 3 nest sites), but no responding pairs failed to fledge young because of testing.

Most eagle nests in the vicinity of the Project are located more than a mile from the Mine boundary and 2 miles from the planned open pit. Table C-1 shows the breakdown of active nest distances from various planned activities at the mine. The one-mile buffer from mine activities is a conservative recommendation based on the golden eagle recommended spatial buffer of 0.5 mile (USFWS 2002). A 2-mile buffer has been proposed as a conservative buffer from blasting activity (USFWS 2017). Buffer distances may increase or decrease depending on site-specific characteristics such as line of site.

Table C-1. Distances from Active Golden Eagle Nests to Planned Mining Activities

Nest ID / Territory ID	Distance from Exploration Boundary (miles)	Distance from Mine Boundary (miles)	Distance from Nearest Planned Mine Facility (miles)	Distance from Open Pit Footprint (miles)
Nest 16 (Territory 16)	0.41	1.1	1.9	5.4
Nest 51 (Territory 17)	2.9	1.9	2.4	2.4
Nest 87A (Territory 9)	1.2	3.1	3.0	3.5

Loss of productivity or nest abandonment associated with nests close to exploration activity (as may occur for nests in Territory 16) would be minimal because exploration activities work will be temporary in nature (short in duration), occurring outside of eagle nesting and breeding seasons when possible, or establishing avoidance buffers around active golden eagle nests within 1 mile of exploration activity until the nest(s) are no longer active (exploration activity will avoid the area and no exploration activity would occur within 1 mile should an active golden eagle nest be identified). Exploration would be focused on targeted areas, and primarily occur in the south plan area (south of SR 293). In proximity to Territory 16, exploration activity would likely be infrequent and may not occur in the immediate area of Territory 16 for several years.

In addition, the only mine-related activity that would occur within Territory 16 would be the construction of a 7-mile long water pipeline located from the Quinn Well to the Mine (as shown on Figure 2). Construction activities for the water pipeline would be temporary, having an approximate 4-month duration. Pipeline-related construction would occur over 1.5 miles from identified nest 16 (located within Territory 16). Once the pipeline is constructed, there would be minimal and infrequent mine-related activity occurring in the eastern portion of the Mine Plan Boundary that overlaps with Territory 16 (as shown on Figure A-1). Activity that would occur at the Quinn Well would involve one worker occasionally checking the operation status of the Quinn Well. Active mining and associated mining-related operations (such as a waste rock dump, gangue stockpile, or clay tailing storage facility) are not proposed in the eastern portion of the Mine POO Boundary near Territory 16. Protection and minimization measures applied throughout the Project will avoid and minimize disturbances to eagle territories in general, as described in this ECP.

The distances away from Project activities compared to recommended buffers, and the protection measures that will be in place, indicates that there is minimal risk to these nests from noise-related impacts.

The golden eagle nests in Territory 5 are located in Thacker Canyon and have not been active in the last 2 years. Thacker Canyon is located about a half mile away from the western portion of the open pit area. The nests are located deep in the canyon, with no direct line of sight between the nests and the Project area. There is additional topographic relief (e.g., hills) in between the canyon and Project site. Noise sources coming from the Project are expected to attenuate as the pressure waves travel out from the Project area, and up in elevation coinciding with the canyon elevational changes. However, due to the straight-line distance between the open pit and the nests, noise modeling was conducted for these nests in the event they would become active in the future and have the potential to disrupt eagle breeding behavior.

Saxelby Acoustics LLC (Saxelby) completed baseline monitoring near the eagle nests in Thacker Canyon (Saxelby 2020). The monitoring was conducted for 14 days in April and recorded noise levels on a 24-hour basis. Noise equipment specifications and noise monitoring protocols were consistent with recommended techniques by NDOW (2018). Baseline noise levels in Thacker Canyon measured between 21.6 and 50.2 dBA (and up to 78.6 dBZ), with a 24-hour median noise level of 26.4 dBA.

Saxelby then modeled the effect of blasting activity and mining activities on nest sites in Thacker Canyon. The Project does not propose frequent blasting. However, blasting is expected to occur approximately two times per month during the construction phase of the project and two times per year during project operation. Saxelby calculated peak blasting noise levels for the point of blasting closest to the eagle nests. Maximum (Lmax) blasting noise levels are modeled be in the range of 64.3 to 76.1 dBZ at the nesting sites in Thacker Canyon (Saxelby 2020). These modeled maximum noise levels are less than the typical maximum baseline levels in Thacker Canyon. Modeled maximum noise levels are also within the range reported by Grubb (2010) as having no effect on eagle courtship behavior. Therefore, proposed blasting is not expected to generate noise levels that would impact golden eagle nest sites in Thacker Canyon.

Saxelby also modeled all the mining facilities as if they were operating at full capacity on a continuous basis (Saxelby 2019). In reality, not all facilities will be active at all times or may be active at levels less than that assumed in the model. Therefore, mining noise analysis presented in the report is considered to be conservative and represent a worst-case scenario. Noise levels produced by mining and processing activities were predicted to result in 24-hour median noise levels ranging between 19.3 dBA to up to 29.0 dBA near the nests

in Thacker Canyon. These predicted noise levels are less than the baseline noise levels measured near nest sites in the Canyon (measured noise levels ranged from 21.6 – 50.2 dBA; Saxelby 2020). Therefore, modeled noise levels from the proposed Project would not affect noise levels near the nests in Thacker Canyon. Other operations and construction noise levels are similar to baseline noise levels in the vicinity (Saxelby 2019), and below levels (as identified in BLM's study [BLM 2005]) where golden eagle nesting continued to be observed.

Based on the results of the noise modeling near nests in Thacker Canyon, should the nests become active, the risk of noise-related impacts on golden eagle nest sites is minimal. As with all risk assessments, however, there are uncertainties associated with predictive assessments. Hence, this assessment acknowledges the uncertainties inherent in this modeling study.

Toxicity due to Chemical Exposure – Exposure to chemicals used in mine processing could result in mortalities or injury if ingested or by coming in contact with chemicals. However, the risk of mortality or injury to golden eagles (or other wildlife) due to chemical exposure is minimal, given the robust chemical and material management plans in place, and lack of opportunity for exposure from open solution ponds associated with the Project. The reclaim and emergency ponds will be fenced to restrict wildlife and will under normal operating conditions be kept dry. A Solid and Hazardous Waste Management Plan will be developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure of substances to wildlife and the environment. Any spills associated with wastes or chemicals will be managed under the Spill Contingency Plan, to minimize exposure to wildlife. The open pit will be concurrently backfilled and no open water will occur associated with the pits. Nearby wetland complexes and perennial streams would be more attractive to eagles and other wildlife in general than the mine area, given associated vegetation and absence of human activity, further reducing attraction to less suitable habitats. Therefore, the risk of mortality or injury from chemical exposure is minimal.

Habitat Loss - Vegetation cover lost as a result of the proposed Project are estimated to be 5,395 acres. Table C-2 provides a breakdown of the types of vegetation cover lost. The types of vegetation cover lost reflects mining-related losses, as the location of exploration-related disturbance (150 acres) is on a phased bonding approach and has not been located.

In addition, it is important to note that LNC will perform concurrent reclamation, and not all acres will be disturbed or habitat lost at the same time.

The types of habitats lost as a result of the Project represent loss of potential foraging habitat. None of the habitats include features that would provide nesting habitat or facilitate sheltering to eagles. About 36 percent of the vegetation cover that will be lost is low quality invasive forblands and grasslands. Invasive-dominated vegetation communities would be expected to have a poorer and less diverse prey base for golden eagles. The remaining habitat represents typical habitat for unburned areas in northern Nevada. Overall loss of habitat during proposed operations would reflect approximately 1.3 percent reduction within NDOW Hunt Unit 31. Reductions in potential prey base populations are estimated to be proportional to the loss of habitat. Assuming a maximum jackrabbit population density of 1 per acre (McAdoo and Young 1980), approximately 135 jackrabbits (or raptor prey base) may be impacted per year the 41-year life of the mining and exploration projects. This would represent about 1% of the raptor survey area, or 0.6% of the NDOW hunt unit. Therefore, interference with foraging behavior would occur, but there would be minimal risk of substantial interference.

Loss of habitat would be short-term to long-term, given that development of the mine would occur in stages over the life of mine (41 years). Short-and long-term effects would occur in areas where vegetation is disturbed or removed during construction and operation. Exploration activity would be temporary and occur infrequently throughout the Exploration Plan boundary. Associated concurrent reclamation would lead to re-establishment of vegetation in some areas before the closure of the mine, and re-establishment of most habitat post-reclamation. Successful interim reclamation would limit the extent of short-term reductions in vegetation cover and production. Long-term reductions would likely occur within the mine operations boundary to include mine and plant facilities, stockpiles and pits, haul roads, reclaimed areas adjacent to roads and in reclaimed areas with limited reclamation potential. Cumulatively, the incremental additional impacts to vegetation as a result of the proposed project would be temporary in nature for the majority of the project disturbance area (BLM 2020).

Land uses of reclaimed land are expected to be compatible with uses on the majority of reclaimed land. Given the small reduction in total habitat loss within the hunt unit, and a substantial proportion of that habitat consisting of low-quality forage habitat, the risk of impacts to golden eagle foraging due to habitat loss would be minimal.

Table C-2. Disturbance Acreages within Landcover Sites

Landcover	Disturbance Acres[1]	Percentage
Great Basin Xeric Mixed Sagebrush Shrubland	19.9	0.4
Inter-Mountain Basins Big Sagebrush Shrubland	2,866.1	53.1
Inter-Mountain Basins Cliff and Canyon	323.4	6.0
Inter-Mountain Basins Greasewood Flat	5.5	0.1
Inter-Mountain Basins Mixed Salt Desert Scrub	201.8	3.7
Inter-Mountain Basins Semi-Desert Grassland	8.0	0.1
Inter-Mountain Basins Semi-Desert Shrub Steppe	17.3	0.3
Invasive Annual Biennial Forbland	746.2	13.8
Invasive Annual Grassland	1,206.6	22.4
Total	**5,394.9[2]**	**100.0**

Source: BLM (2020), Table 4.4.

[1] Clay tailings, filter stack, coarse gangue stockpile, emergency pond, GMS, mine facilities, pit, reclaim pond, run-of-mine ore stockpile, sediment pond, septic system, waste rock storage facilities, and other disturbance.

[2] Does not include the 150 acres in the exploration areas.

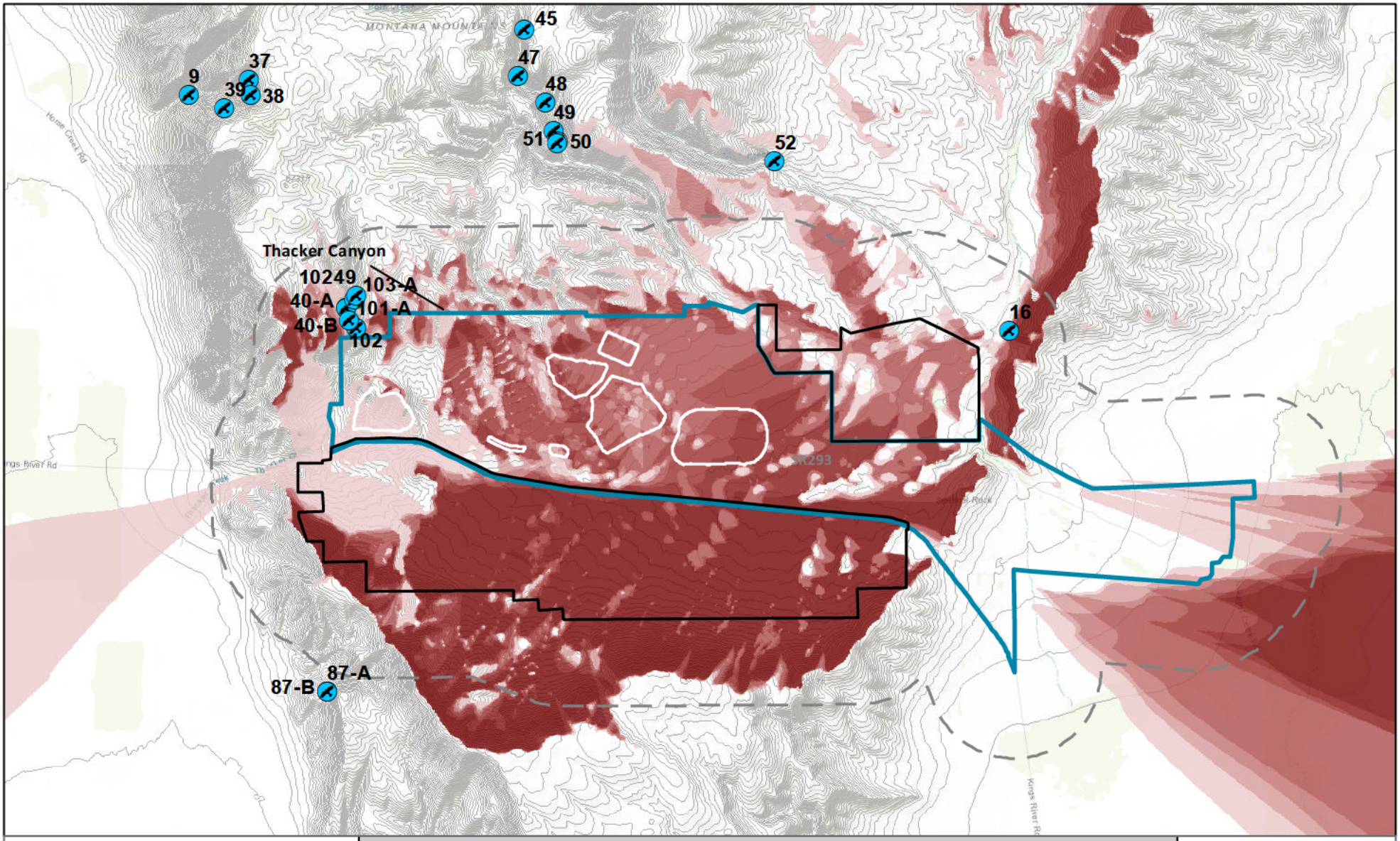

Figure C-1
Viewshed Analysis

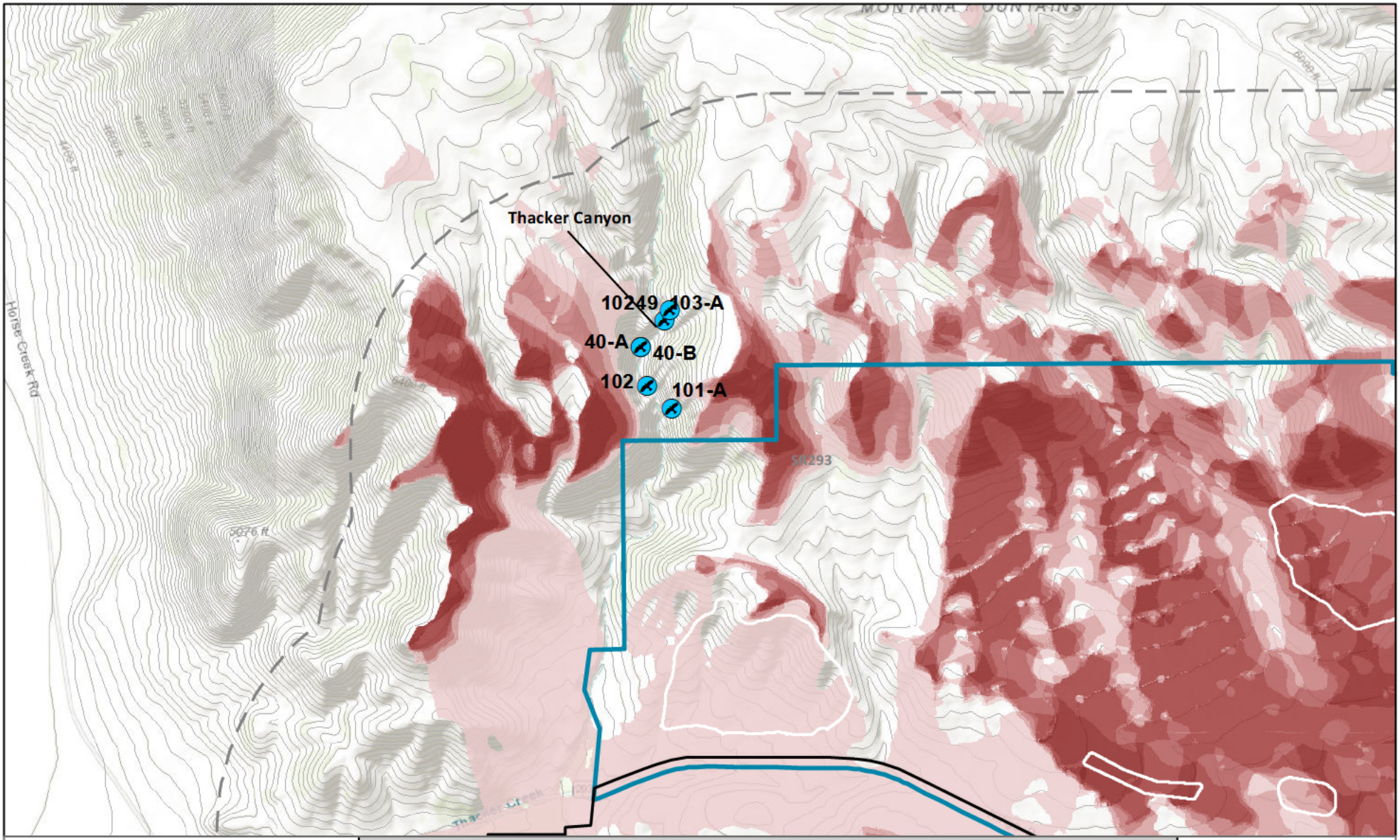

Figure C-2
Viewshed Analysis - Close Up

Map Legend

- Exploration POO Boundary
- Mine POO Boundary
- Facility Stockpile, Tailing Pile, Storage Area
- 1-Mile Buffer
- GOEANestsOnly_LiNV
- Ground Surface Contour (contour interval = 40 ft)

Viewshed Analysis of Facility Piles

More Visible

Less Visible

N W E S

Miles

0 0.225 0.45

APPENDIX 4

LNC Thacker Pass Bird and Bat Conservation Strategy

Bird and Bat Conservation Strategy

LITHIUM NEVADA CORPORATION

THACKER PASS PROJECT

Revised

March 2021

Prepared for:

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ACRONYMS AND ABBREVIATIONS

APLIC	Avian Power Line Interaction Committee
amsl	Above Mean Sea Level
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practices
Cedar Creek	Cedar Creek Associates, Inc.
CFR	Code of Federal Regulations
CTFS	Clay Tailings Filter Stack
DOI	Department of Interior
EIS	Environmental Impact Statement
EPM	Environmental Protection Measure
ESA	Endangered Species Act
Exploration Plan	Exploration Plan of Operations
GBBO	Great Basin Bird Observatory
JBR	JBR Environmental Consultants, Inc.
kHz	kilohertz
Kv	kilovolt
LAC	Lithium Americas Corporation
LNC	Lithium Nevada Corporation
MBTA	Migratory Bird Treaty Act
M CY	million cubic yards
Mine Plan	Mine Plan of Operations
MOU	Memorandum of Understanding
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NMFS	National Marine Fisheries Service
NNHP	Nevada Natural Heritage Program
NRS	Nevada Revised Statutes
NVMA	Nevada Mining Association

Project Area	Mine Plan of Operations and Exploration Plan of Operations Boundary
ROM	Run-of-Mine
SWCA	SWCA Environmental Consultants
US	United States
USFWS	United States Fish and Wildlife Service
WRC	Wildlife Resources Consultants, LLC
WRSF	Waste Rock Storage Facilities

1.0 INTRODUCTION

This Bird and Bat Conservation Strategy (BBCS) outlines a program to reduce the potential risks of bat and avian mortality or injury that may result from the construction and/or operation of the Thacker Pass Project. Lithium Nevada Corporation (LNC), a wholly owned subsidiary of Lithium Americas Corporation (LAC), proposes to construct, operate, reclaim, and close an open pit lithium mining and processing operation, the Thacker Pass Project, located on public lands in northern Humboldt County, Nevada. The Project location is shown in Figure 1.

LNC submitted the Thacker Pass Project Mine Plan of Operations (N98586) to develop the Project in accordance with BLM Surface Management Regulations under 43 Code of Federal Regulations (CFR) 3809, Surface Occupancy regulations under 43 CFR 3715, and State of Nevada reclamation regulations under NAC 519A (LNC 2019a). The Mine Plan proposes 5,545 acres of disturbance that would occur over a 41-year timeframe. Separately, LNC submitted the North-South Exploration Plan of Operations (N98582) (LNC 2019b). Exploration activities would be located to the northeast and south of the Mine Plan boundary. The Exploration Plan proposes 150 acres of disturbance that would occur over a 40-year timeframe. An Environmental Impact Statement (EIS) was prepared for the proposed Project (BLM 2020). The Record of Decision (ROD) for the Project was issued on January 15, 2021 (BLM 2021).

This BBCS addresses general bird and bat conservation strategies. Detailed discussion of protection measures to golden eagles is addressed in LNC's Eagle Conservation Plan (ECP) (Cedar Creek 2021). LNC will adopt and implement this BBCS to reduce the potential for mortality or injury resulting from Project related activities.

2.0 REGULATORY FRAMEWORK, GOALS AND BENEFITS OF THE BBCS

Development of this BBCS incorporated the goals and objectives of established federal and state laws and policies for protection of birds and bats, including: the Migratory Bird Treaty Act (MBTA; [16 U.S.C. 703-712]), which is administered by United States Fish and Wildlife Service (USFWS), and is the cornerstone of migratory bird conservation and protection in the United States; the Endangered Species Act (ESA); [16 U.S.C. 1531-1544]), administered by USFWS and the Commerce Department's National Marine Fisheries Service (NMFS); BLM policies, including but not limited to BLM sensitive species policy (BLM 2008), and Memorandum of Understanding (MOU) with the USFWS that promotes the conservation of migratory bird populations (BLM 2010); and state regulations, including Title 45 of Nevada Revised Statutes (NRS) (NRS 501.100 through 503.104), and NRS 503.584 through 503.589.

With this regulatory framework in mind, the implementation of this BBCS will contribute to the achievement of the principal goal of reducing impacts to birds and bats and fulfill multiple goals as follows:

- Reduce the potential for avian and bat injury or mortality by implementing best management practices;
- Identify and isolate where avian and bat mortality has occurred or has the potential to occur to minimize future incidents;
- Establish an avian and bat reporting system to document incidents of mortality resulting from project-related features; and
- Assist LNC in compliance with state and federal laws regarding avian and bat species to avoid penalties and fines.

As the foremost goal central to any BBCS is reduced avian and bat mortality, conservation of avian and bat species are perhaps the most obvious to benefit when the goals of the BBCS are accomplished. While this is true, the practical effect of such a plan may also translate to advantages for LNC. Because the BBCS would reduce avian and bat mortality resulting from bird and bat interactions with Project facilities, costs associated with avian- and bat-related fatalities could be avoided or held to a minimum. These costs may include repair costs for equipment damaged by avian and bat interaction, or administration and

managerial time directed towards avian and bat conflicts. The voluntary implementation of a BBCS will also support compliance with the state and federal regulations, thus avoiding costly fines or penalties associated with noncompliance.

3.0 PROJECT DESCRIPTION

The Project consists of construction and operation of an open pit mine, lithium processing plant and ancillary facilities, and continued exploration activities on public lands within the Project area located in northern Humboldt County, Nevada. The proposed Thacker Pass Project Mine Plan of Operations (POO) boundary will encompass approximately 10,468 acres with an estimated surface disturbance footprint of approximately 5,545 acres (LNC 2019a). The North-South Exploration POO proposes an additional 150 acres of surface disturbance (LNC 2019b).

LNC will develop the Project in two phases (Phase 1 and Phase 2) over the estimated 41-year mine life. Construction will commence in 2021 or upon receiving all required agency approvals. Figure 2 presents the Thacker Pass Project site layout in year 41.

Construction activities (and associated noise and visual disturbances) will include equipment and personnel involved in construction of a lithium processing plant, sulfuric acid plant, a clay tailings filter tack (CTFS), haul and secondary roads, stormwater management infrastructure, growth media stockpiles, raw water supply facilities and related infrastructure, a 7-mile, 25-kilovolt (kV) power transmission line, and other ancillary facilities.

LNC estimates that it will complete mining, processing, and concurrent reclamation activities in 2064, after which, reclamation, site closure activities, and post-closure monitoring will occur for a minimum of five years.

Reclamation of disturbed areas resulting from activities associated with the Project will be completed in accordance with BLM and Nevada Division of Environmental Protection (NDEP) regulations to prevent unnecessary or undue degradation of public lands by operations authorized under the mining laws. LNC will initiate concurrent reclamation of areas no longer required for operations at the earliest economically and technically feasible time over the mine life.

Additional project details can be found in the following documents: Thacker Pass Project Proposed Plan of Operations and Reclamation Plan Permit Application (LNC 2019a) and Thacker Pass North-South Exploration Project Proposed Plan of Operations and Reclamation Plan Permit Application (LNC 2019b).

4.0 SPECIES OF INTEREST

In this BBCS, the term "protected species" encompasses all avian and bat species that are protected by any one or more of the laws, policies, or regulations described in Section 2 of this document. Specifically, this includes:

- all avian and bat species that are listed as threatened or endangered species or are proposed or candidates for listing under the ESA of 1973 as amended;
- all avian species extended protection under the MBTA;
- all avian or bat species that the State of Nevada extends protection to through NRS 501.100–503.104, NRS 527.050, and/or NRS 527.60–527.300; and,
- all species identified as BLM sensitive species in Nevada (IM-NV-2018-003).

In addition, though golden eagle protection is addressed specifically in the LNC ECP, conservation strategies described here will also facilitate protection of golden eagles under the provisions of the Bald and Golden Eagle Protection Act (BGEPA). Regardless of whether a bat or bird species is protected by regulation, law, or agency directive, the ultimate goal of this BBCS is to provide protection to all avian and bat species that may interact with the project facilities.

The BLM Winnemucca District special status bird and bat species present and those with a moderate to high likelihood of occurring in and around the Project are summarized in Table 1. This list includes species data identified in the USFWS IPAC database, screening of the BLM sensitive species list for Nevada to identify likelihood of occurrence in the Project area, NDOW and Nevada Natural Heritage Program (NNHP) data queries for species occurrences in and around the Project area, and Project-specific habitat information and baseline bird and bat studies (WRC 2019, WRC 2018, SWCA 2019, JBR 2012). A full screening of BLM Nevada sensitive bird and bat species' likelihood of occurrence is provided in Appendix A. The "vicinity" of the Project area is defined as approximately 1 mile around the Project area.

4.1 Bats

There are no underground mine workings found within the Project area (JBR 2012), but there are outcrops, fissures, and other rock features in the vicinity which could potentially provide seasonal roosting, hibernation, or maternity colony habitat close to the Project area.

In addition, suitable foraging habitat occurs in and near the Project area, principally associated with areas of open water, including reservoirs, stock ponds, wetted stream reaches, wetlands, seeps and springs.

Acoustic bat monitoring was conducted by JBR in 2011 near stock ponds in and near the Project area, which represent suitable foraging habitat for bats. Bat species detected during three nights of surveys, from July 5 through 7, 2011, included hoary bats, western small-footed myotis, and long-eared myotis. Very few calls were recorded during the timeframe in general.

Acoustic bat monitoring was conducted over three seasons in 2018 by SWCA. Dates of monitoring were May 13-June 2 (spring), June 2-22 (summer), and September 21-October 4 (fall). Four locations were established each season, but the monitors were moved around from season to season. All but one location was established near open water or wet meadow habitat which provides good foraging habitat for bats. Descriptions of each monitoring station location are summarized in Table 2.

For the majority of calls, SWCA identified bat calls to frequency groups. A number of potential bat species could be associated with each frequency group, but exact species identifications were not made. SWCA did identify four call record types to species level, and those included records for canyon bat, Mexican free-tailed bat, hoary bat, and Townsend's big eared bat.

All monitoring stations recorded bat calls. The highest volume of calls was associated with larger areas of open water or mesic habitat. The Central Project area location received the fewest calls, which would be expected due to lack of habitat at this location. Thacker Creek Reservoir location recorded the largest volume of calls in summer and fall (relative to other detectors recorded during those same time periods). In spring, Crowley Creek recorded the greatest number of calls, but call volume dropped each subsequent season after that. Activity near Crowley Creek would be likely to decline as water availability in Crowley Creek declines in summer and fall months. The highest volume of calls each season were typically emitted by the "low frequency" call group (below 25 kilohertz [kHz]).

Because the detectors cannot distinguish individual calls, the data collected by SWCA can indicate relative activity near monitoring locations, and the presence of bats, but cannot be used to quantify abundance of bats.

Table 1 Winnemucca BLM Special Status Bird and Bat Species Likely to Occur

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
BIRDS				
Black Rosy-finch	*Leucosticte atrata*	MBTA, BLM WMDO Special Status Species	Breeds in barren, rocky or grassy areas and cliffs in alpine tundra. Nests in rock crevices or holes in cliffs near snow fields. During winter can occur in lowlands and open country, including mountain meadows, high deserts, valleys, and plains.	Moderate - Not observed but seasonal occurance possible in winter.
Brewer's Sparrow	*Spizella breweri*	MBTA, BLM WMDO Special Status Species	Obligate sagebrush species. Occurs in arid sagebrush steppe and desert scrub habitats. Prefers areas dominated by shrubs rather than grass. Nests low in sagebrush (preferred), or other shrub.	High/confirmed - observed in surveys.
Gray-crowned Rosy-Finch	*Leucostcte tephrocots*	MBTA, BLM WMDO Special Status Species	Breeds in barren, rocky or grassy areas and cliffs in alpine tundra. Nests in rock crevices or holes in cliffs near snow fields. During winter can occur in lowlands and open country, including mountain meadows and shrublands.	Moderate - Not observed but seasonal occurance possible in winter.
Greater Sage-grouse (including Bi-State DPS)	*Centrocercus urophasianus*	Game Species, BLM WMDO Special Status Species	Occurs in sagebrush steppe. Nests in areas with relatively dense cover from big sagebrush; may use areas with rabbitbrush, greasewood, and grassy areas; leks are located in clear areas such as broad ridgetops, grassy swales, dry lakebeds, and sometimes recently burned areas. Chick rearing areas include irrigated pastures, wet meadows, and alfalfa fields, in addition to sagebrush.	High/confirmed - leks occur within 3.1 miles of Project Area.
Lewis's Woodpecker	*Melanerpes lewis*	MBTA, BLM WMDO Special Status Species	Habitats include open tree canopy forests, open riparian woodlands dominated by cottonwood, and logged or burned conifers. In Nevada, this species is most strongly associated with deciduous riparian woodlands dominated by aspen or cottonwood.	Moderate - NDOW records indicate presence in vicinity but species is typically associated with forested areas, not occuring in Project Area.

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
Loggerhead Shrike	*Lanius ludovicianus*	MBTA, BLM WMDO Special Status Species	Nests in arid, open country with short vegetation and well-spaced shrubs or low trees. Found throughout most habitat types in Nevada with lower probability of occurrence in forests, higher mountains, barren zones, and urban areas.	High/confirmed - observed in surveys.
Sage Thrasher	*Oreoscoptes montanus*	MBTA, BLM WMDO Special Status Species	Obligate to sagebrush steppe habitats. In northern Great Basin, breeds and forages in tall sagebrush, bunchgrass, juniper-sagebrush-bunchgrass, and some woodlands. In winter, uses arid and semiarid scrub, brush, and thickets.	High/confirmed - observed in surveys.
Burrowing Owl (includes Western Burrowing Owl)	*Athene cunicularia (A. c. hypugaea Western Burrowing Owl)*	MBTA, BLM WMDO Special Status Species	Open habitats with sparse vegetation including grasslands and shrubsteppe. Western Burrowing Owls breed throughout Nevada in salt desert scrub, Mojave shrub, and some sagebrush habitat, as well as in agricultural landscapes. Winters most frequently in the southern half of Nevada, but has been recorded throughout the state during all months.	High/confirmed - observed in surveys.
Ferruginous hawk	*Buteo regalis*	MBTA, BLM WMDO Special Status Species	Nesting habitat includes open country, sagebrush, saltbush-greasewood shrubland, and the periphery of pinyon-juniper woodlands. In Nevada, nests primarily in live juniper trees. Lone or peripheral trees are preferred over densely wooded areas.	High/confirmed - observed in surveys.
Golden Eagle	*Aquila chrysaetos*	BGEPA, MBTA, BLM WMDO Special Status Species	Found generally in open country, wooded, grasslands, or barren, especially in hilly or mountainous regions. In Nevada, nests occur predominantly on the rock ledge of cliffs; occasionally observed in large trees. Golden eagles prey mainly on small to medium-sized mammals. Forages in a variety of open to semi-open landscapes with sufficient mammalian prey base.	High/confirmed - observed in surveys.

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
Peregrine Falcon	*Falco peregrinus*	MBTA, BLM WMDO Special Status Species	Utilizes various open environments including open water, desert shrub, and marshes, usually in close association with suitable nesting cliffs; also mountains, open forested regions, and human population centers. When not breeding, occurs in areas where prey concentrate, including marshes, lake shores, rivers and river valleys, cities, and airports. In Nevada, often nests on a ledge or hole on the face of rocky cliffs or crags; also uses ledges of city high-rise buildings. On cliffs, nest ledges are commonly sheltered by an overhang.	High/confirmed - observed in surveys.
Short-eared Owl	*Asio flammeus*	MBTA, BLM WMDO Special Status Species	Habitat requirements include broad expanses of open land with low-growing vegetation for nesting, and low growing vegetation/high rodent densities for foraging. Habitat types frequently mentioned as suitable include fresh and saltwater marshes, grassy plains, old fields, river valleys, meadows, and open woodland. Roosts by day on ground, on low open perches, under low shrubs, or in conifers. Nests on the ground, generally in slight depressions, often beside or beneath a bush or a clump of grass. Many nests are near water.	High/confirmed - observed in surveys.
Swainson's Hawk	*Buteo swainsoni*	MBTA, BLM WMDO Special Status Species	An ideal landscape for the Swainson's Hawk provides large riparian nesting trees, agricultural fields, and open shrublands within relatively close proximity such as, savanna, open pine-oak woodland and cultivated lands (e.g., alfalfa and other hay crops, and certain grain and row croplands) with scattered trees. Swainson's Hawks in the Great Basin occupy the Juniper/Sagebrush community typical to the area. Populations in the Great Basin often use juniper trees (Juniperus sp.) for nesting	High/confirmed - observed in surveys.

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
BATS				
California myotis	*Myotis californicus*	BLM WMDO Special Status Species	Habitats vary from desert scrub to forests throughout the state up to 2,730 m. Selects a variety of day roosts including mines, caves, buildings, rock crevices, hollow trees, and under exfoliating bark. Night roosts in a wider variety of structures.	High - Likely to forage in or near Project Area (frequency group detected)
little brown bat (little brown myotis)	*Myotis lucifugus*	BLM WMDO Special Status Species	Found primarily at higher elevations, often in association with coniferous forest. Uses caves, tunnels, abandoned mines, and similar sites. Maternity colonies commonly are in warm sites in buildings and other structures; also infrequently in hollow trees. Narrow microclimate is suitable for raising young, and availability of suitable maternity sites may limit abundance and distribution.	High - Likely to forage in or near Project Area (frequency group detected)
big brown bat	*Eptesicus fuscus*	BLM WMDO Special Status Species	Found in a variety of habitats; pinyon juniper, blackbrush, creosote, sagebrush, agriculture, and urban habitats. In Nevada, distributed from 300 - 3,000 m. Day roosts vary, and include caves, trees, mines, buildings, and bridges. Night roosts are in more open settings in buildings, mines, and bridges.	High - Likely to forage in or near Project Area (frequency group detected)
Brazilian (or Mexican) free-tailed bat	*Tadarida brasiliensis*	BLM WMDO Special Status Species	Found in a wide variety of habitats throughout Nevada from low desert to high mountains. Roosts primarily in caves in the southwestern United States. May use rock crevice, bridge, sign, or cliff swallow nest as roost during migration. Generally roosts high (at least 3 meters) above ground to allow free fall required to attain flight. Large maternity colonies inhabit buildings and caves; also uses culverts and bridges.	High/confirmed - forages in Project Area

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
Canyon bat (formerly western pipestrelle)	*Parastrellus hesperus*	BLM WMDO Special Status Species	Found througout most of the state. Common in low and middle elevation (6,000 ft), although occasionally found at higher elevations (>8,000 ft). Found in desert habitats, occasional occurrence in pinyon-juniper, usually in association with rock features. Day roosts primarily in rock crevices but may include mines, caves, or occasionally in buildings and vegetation; generally roost singly or in small groups. Year round resident. Hibernates but periodically arouses to actively forage and drink in water.	High/confirmed - forages in Project Area
fringed myotis	*Myotis thysanodes*	BLM WMDO Special Status Species	Found in a wide range of habitats in Nevada from low desert scrub to high elevation coniferous forests. Roosts in caves, mines, rock crevices, buildings, and other protected sites. Nursery colonies occur in caves, mines, and sometimes buildings.	High - Likely to forage in or near Project Area (frequency group detected)
hoary bat	*Lasiurus cinereus*	BLM WMDO Special Status Species	Hoary bats are a tree-roosting species, found primarily in forested upland habitats such as pinyon-juniper and conifers, as well as in riparian habitats. Sometimes roosts in rock crevices, rarely uses caves in most of range. Distributed between 570 and 2,520 m across most of the state.	High/confirmed - forages in Project Area
long-eared myotis	*Myotis evotis*	BLM WMDO Special Status Species	Mostly forested areas, especially those with broken rock outcrops; also shrubland, over meadows near tall timber, along wooded streams, over reservoirs. Often roosts in buildings, also in hollow trees, mines, caves, fissures, etc.	High/confirmed - forages in Project Area

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
long-legged myotis	*Myotis volans*	BLM WMDO Special Status Species	Primarily in montane coniferous forests; also riparian, desert, and shrubland habitats. Uses caves and mines as hibernacula, but winter habits are poorly known. Roosts in abandoned buildings, rock crevices, under bark, etc. In some areas, hollow trees are the most common nursery sites, but buildings and rock crevices are also used.	High - Likely to forage in or near Project Area (frequency group detected)
pallid bat	*Antrozous pallidus*	BLM WMDO Special Status Species	Arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodland. Usually roosts in rock crevice or building, less often in caves, tree hollows, or mine openings. Prefers narrow crevices in caves as hibernation sites. Ranges from 420 to 2,580 m in elevation. Scattered distribution across the state.	Moderate - no detections during monitoring but occurs throughout Nevada.
silver-haired bat	*Lasionycteris noctivagans*	BLM WMDO Special Status Species	This species roosts almost exclusively in trees, but has been known to use alternative winter rooosts, including caves, mines, cliffs, and talus. Prefers forested (frequently coniferous) areas adjacent to lakes, ponds, and streams. Elevation range is480-2,520 m.	High - Likely to forage in or near Project Area (frequency group detected)
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM WMDO Special Status Species	Maternity and hibernation colonies typically are in caves and mine tunnels. Prefers relatively cold places for hibernation, often near entrances and in well ventilated areas. Uses caves, buildings, and tree cavities for night roosts. This species does not use crevices or cracks; it hangs from the ceiling, generally near the zone of total darkness. Throughout much of the known range, commonly occurs in mesic habitats characterized by coniferous and deciduous forests, but occupies a broad range of habitats. Occurs throughout the state between 210 and 2,500 m.	High/confirmed - forages in Project Area

Species Common Name	Scientific Name	Protection Status	Ecology and Distribution [b]	Potential for Occurance
western small-footed myotis	*Myotis ciliolabrum*	BLM WMDO Special Status Species	Inhabits a variety of habitats including desert scrub, grasslands, sagebrush, blackbrush, greasewood, pinyon-juniper woodlands, pine-fir forests, agriculture, and urban areas. Current Nevada records indicate this species is distributed across the state between 510-2,760 m. Roosts in caves, mines and trees.	High/confirmed - forages in Project Area
Yuma myotis	*Myotis yumanensis*	BLM WMDO Special Status Species	More closely associated with water than most other North American bats. Found in a wide variety of upland and lowland habitats, including riparian, desert scrub, moist woodlands and forests, but usually found near open water. Nursery colonies usually are in buildings, caves and mines, and under bridges.	High - Likely to forage in or near Project Area (frequency group detected)

Table 2. Bat Monitoring Station Information

Location ID	Spring	Summer	Fall	Location Description
Crowley Creek	X (Anabat 1)	X (Anabat 1)	X (Anabat 4)	On the east end inside the Project boundary, nearest an ephemeral drainage, approximately 120 feet east of Crowley Creek and 315 feet west of a large wet meadow (WM23)
Thacker Creek Reservoir	X (Anabat 3)	X (Anabat 3)	X (Anabat 1)	On the west side, outside of the Project boundary near the edge of the Thacker Creek Reservoir.
Thacker Creek	--	--	X (Anabat 2)	On the west side just outside of the Project boundary, about 60 feet west of Thacker Creek. Established near spring SP-010 and associated Thacker Meadow marsh.
SP058 / SP059	X (Anabat 4)	X (Anabat 4)	--	Within the Project boundary on the north side, near spring SP059 (monitored in spring), and moved to SP058 for the summer monitoring event.
Central Project area	--	--	X (Anabat 3)	Within the Project boundary, within the central area of the Project. Established near a roadside.

In parenthesis, the original name of the bat monitor (e.g., Anabat 1, etc.) is shown for reference to the original SWCA (2019) report. A dashed line indicates monitoring was not conducted at this location/season.

4.2 Migratory Birds

In 2011, field surveys included migratory bird point count surveys conducted in inter-mountain basins big sagebrush steppe habitat within the south and central portions of the Project area (JBR 2012). Survey protocols followed those in Great Basin Bird Observatory (GBBO) (2003) and were conducted on July 5, 2011. Ten point count stations were surveyed. Birds recorded in upland areas were typical of the region, and commonly included mourning doves (*Zenaida macroura*), common ravens (*Corvus corax*), horned larks (*Eremophila alpestris*), sage thrashers (*Oreoscoptes montanus*), Brewer's sparrows (*Spizella breweri*), and western meadowlarks (*Sturnella neglecta*). Riparian habitat in Thacker Canyon, west of the Project area, supported a greater diversity of species, including a short-eared owl (*Asio flammeus*) and yellow-breasted chats (*Icteria virens*).

In 2018, SWCA completed migratory bird point count surveys from May 23 to June 1, capturing the early summer breeding season (SWCA 2019). Protocols were consistent with

those in GBBO (2003). Sixty-eight point count stations were established across the Project area, spaced at about 0.5 miles apart. Fifty-four species of birds were identified during the survey, which included five species not protected by MBTA (European starling, rock pigeon, chukar, California quail, Greater sage-grouse), and 6 species of raptors.

Protocols followed by SWCA provide quantitative information that can be used to compute bird densities in the area. Based on these calculations, bird densities are greatest for the following protected migratory birds (not including raptors): included horned lark, cliff swallow, western meadowlark, Brewer's blackbird (*Euphagus cyanocephalus*), mourning dove, sagebrush sparrow (*Artemisiospiza nevadensis*). Density estimates for these species were greatest for these species (SWCA 2019). These species are common to grassland and shrubland habitats. Relatively greater numbers of birds and diversity of species were observed near waterways, stock ponds, and unburned vegetation communities in the Project area.

NDOW (2018) also reported observed migratory bird species in the Project area or vicinity. A summary of all migratory birds observed in the Project area are shown in Table 3.

Table 3. Protected Migratory Birds Observed in the Project Area

Common Name	Scientific Name	Source
American coot	*Fulica americana*	SWCA (2019)
American crow	*Corvus brachyrhynchos*	SWCA (2019)
American robin	*Turdus migratorius*	NDOW (2018)
Bank swallow [c]	*Riparia*	SWCA (2019), NDOW (2018)
Barn swallow	*Hirundo rustica*	SWCA (2019), NDOW (2018)
Belted Kingfisher	*Megaceryle alcyon*	NDOW (2018)
Black-billed magpie	*Pica hudsonia*	SWCA (2019), NDOW (2018)
Black-chinned hummingbird	*Archilochus alexandri*	SWCA (2019)
Black-crowned night-heron	*Nycticorax*	SWCA (2019), NDOW (2018)
Black-throated sparrow	*Amphispiza bilineata*	SWCA (2019), JBR (2012)
Blue-gray gnatcatcher	*Polioptila caerulea*	SWCA (2019)
Brewer's blackbird	*Euphagus cyanocephalus*	SWCA (2019), NDOW (2018)
Brewer's sparrow [a][c]	*Spizella breweri*	SWCA (2019), JBR (2012)
Brown-headed cowbird	*Molothrus ater*	SWCA (2019), JBR (2012)

Common Name	Scientific Name	Source
Bullock's oriole	*Icterus bullockii*	SWCA (2019)
Bushtit	*Psaltriparus minimus*	SWCA (2019)
Canada goose	*Branta canadensis*	SWCA (2019)
Canvasback [c]	*Aythya valisineria*	SWCA (2019)
Canyon wren	*Catherpes mexicanus*	SWCA (2019)
Chipping sparrow	*Spizella passerina*	NDOW (2018)
Cliff swallow	*Petrochelidon pyrrhonota*	SWCA (2019)
Common nighthawk [c]	*Chordeiles minor*	SWCA (2019)
Common raven	*Corvus corax*	SWCA (2019), JBR (2012), NDOW (2018)
Gadwall	*Mareca strepera*	SWCA (2019)
Grasshopper sparrow	*Ammodramus savannarum*	SWCA (2019)
Gray flycatcher	*Empidonax wrightii*	SWCA (2019)
Gray-headed junco (dark-eyed junco)	*Junco hyemalis*	NDOW (2018)
Great egret	*Ardea alba*	NDOW (2018)
Horned lark	*Eremophilia alpestris*	SWCA (2019), JBR (2012)
House finch	*Haemorhous mexicanus*	SWCA (2019)
Killdeer	*Charadrius vociferus*	SWCA (2019), NDOW (2018)
Lark sparrow	*Chondestes grammacus*	SWCA (2019)
Lazuli bunting	*Passerina amoena*	SWCA (2019)
Lewis's woodpecker [a][c]	*Melanerpes lewis*	NDOW (2018)
Loggerhead shrike [a][c]	*Lanius ludovicianus*	SWCA (2019), JBR (2012)
Long-billed curlew [a][b][c]	*Numenius americanus*	SWCA (2019)
Mallard	*Anas platyrhynchos*	SWCA (2019), NDOW (2018)
Mourning dove	*Zenaida macroura*	SWCA (2019), JBR (2012), NDOW (2018)
Northern flicker	*Colaptes auratus*	NDOW (2018)
Northern mockingbird	*Mimus polyglottos*	SWCA (2019)
Northern rough-winged swallow	*Stelgidopteryx serripennis*	SWCA (2019)
Northern shrike	*Lanius excubitor*	NDOW (2018)
Redhead [c]	*Aythya americana*	SWCA (2019)

Common Name	Scientific Name	Source
Red-winged blackbird	*Agelaius phoeniceus*	SWCA (2019), NDOW (2018)
Rock wren	*Salpinctes obsoletus*	SWCA (2019)
Ruby-crowned kinglet	*Regulus calendula*	NDOW (2018)
Sage thrasher [b][c]	*Oreoscoptes montanus*	SWCA (2019), JBR (2012)
Sagebrush sparrow	*Artemisiospiza nevadensis*	SWCA (2019), JBR (2012), NDOW (2018)
Savannah sparrow	*Passerculus sandwichensis,*	NDOW (2018)
Say's phoebe	*Sayornis saya*	SWCA (2019)
Spotted towhee	*Pipilo maculatus*	SWCA (2019), NDOW (2018)
Vesper sparrow	*Pooecetes gramineus*	SWCA (2019), JBR (2012)
Violet-green swallow	*Tachycineta thalassina*	SWCA (2019), NDOW (2018)
Western bluebird	*Sialia mexicana*	SWCA (2019)
Western kingbird	*Tyrannus verticalis*	SWCA (2019)
Western meadowlark	*Sturnella neglecta*	SWCA (2019), JBR (2012), NDOW (2018)
Western tanager	*Piranga ludoviciana*	SWCA (2019)
White-throated swift	*Aeronautes saxatalis*	SWCA (2019)
Willet	*Tringa semipalmata*	SWCA (2019)
Wilson's snipe	*Gallinago delicata*	SWCA (2019)
Yellow warbler	*Setophaga petechia*	SWCA (2019), NDOW (2018)
Yellow-headed blackbird	*Xanthocephalus*	SWCA (2019)

Notes:
[a] BLM Special Status Species
[b] USFWS Bird of Conservation Concern
[c] NDOW species of concern

4.3 Burrowing Owls

Burrowing owls (*Athene cunicularia*) are a BLM special status species. In northern Nevada, the majority of the breeding population is seasonal, but observations of this species have been recorded in Nevada during all months of the year. Suitable habitat for breeding burrowing owls includes patches of sparse, low-growing sagebrush or grassland vegetation generally with canopy coverage of less than 30 percent (California Burrowing Owl Consortium [CBOC] 1993).

SWCA (2019) completed a ground-based burrowing owl survey throughout the Project area on April 22-25, May 10-13, and June 1-6, 2018. Methods followed those described in Crowe and Longshore (2010), and are consistent with protocols in BLM (2019). Thirty-four burrowing owl calls were detected during 26 of the 206 call surveys. Direct sightings of burrowing owls or their nests were detected at eight locations throughout the Project area and were found in throughout all upland habitats in the Project area, most frequently in unburned areas. The observations consisted primarily of individual adults. One juvenile was observed. Several of the adults were observed in the same area.

4.4 Other Raptors

In addition to burrowing owls, a variety of other raptor species have been observed in and near the Project area. Golden eagles are referenced in this section but are described in detail in the LNC ECP. Table 4 summarizes raptor nest observations relative to the Project area from studies conducted in and around the Project area since 2011.

Table 4. Summary of Raptor Species Observations

Common Name	Scientific Name	Surveyed Aerially (by ground for burrowing owls)			Reported by NDOW
		Within Project Boundary	Within 1 mile buffer of the Project Boundary	Outside a 1 mile buffer of the Project Boundary	Project area and vicinity [d]
Burrowing owl [a][c]	*Athene cunicularia*	x			x
Cooper's hawk	*Accipiter cooperii*				x
Ferruginous hawk [a][c]	*Buteo regalis*			x	
Golden eagle [a][b][c]	*Aquila chrysaetos*		x	x	x
Long-eared owl [a]	*Asio otus*				x
Northern harrier	*Circus hudsonius*				x
Prairie falcon [a]	*Falco mexicanus*			x	
Red-tailed hawk	*Buteo jamaicensis*	x			x
Rough-legged hawk	*Buteo lagopus*				x
Short-eared owl [a][c]	*Asio flammeus*				x
Turkey vulture	*Cathartes aura*				x

Notes:
[a] BLM Special Status Species
[b] USFWS BCC
[c] NDOW Species of Concern
[d] within a 4-mile buffer of a project area that overlaps the LNC Project area.

The Project area is located in an intermontane basin between the Montana Mountains to the north and the Double H Mountains to the south, which contain suitable nesting habitat for raptors, such as cliff and rock outcrops and pinyon-juniper woodlands. Adjacent to the Project boundary, the Santa Rosa Mountains reside to the east, and a Bilk Creek Mountains to the west, both of which also contain suitable raptor nesting habitat.

Raptors and their nests were observed during both JBR and SWCA migratory bird surveys and recorded incidentally. Additionally, aerial raptor nest surveys were conducted in the vicinity of the Project in 2011 by NDOW. On May 2 and 3, 2011, NDOW performed an aerial survey for nesting raptors within a four-mile buffer around a project area in the same location as the current project, but smaller in size. A ground survey of raptor nests was also conducted in 2011 to search areas of potential golden eagle/raptor nesting habitat outside of the areas included in the NDOW survey (JBR 2012).

NDOW (2018) notes that the following additional species of raptors may reside in the vicinity of the Project area due to distribution ranges that include the Project area and a four-mile buffer area: American kestrel, bald eagle, barn owl, flammulated owl, great horned owl, merlin, northern goshawk, northern saw-whet owl, osprey, sharpshinned hawk, Swainson's hawk, and western screech owl. Golden eagles and burrowing owls, discussed in more detail in the previous sections, are not further discussed in this section.

Aerial-based raptor surveys for the current Project area and 10-mile buffer began in 2018 (WRC 2018, 2019). The raptor surveys conducted in 2018 and 2019 distinguished golden eagle and ferruginous hawk nests, but other raptor nests were grouped by size (large or small), and only species occupying those nests were reported. A summary of occupied nests in the survey area is shown in Table 5. All of the raptor nests identified in 2018 were also observed in 2019, with additional nests located in 2019.

Table 5. Other Raptor Nests Surveyed in 2018 and 2019

Nest Type	Total Nests Observed [a]	Total Occupied Nests Observed [b]
Ferruginous hawk	7 (2018) 18 (2019)	2 (2018) 4 (2019)
Red-tailed Hawk	n/a [d]	10 (2018) [c] 2 (2019)
Prairie falcon	n/a [d]	0 (2018) 1 (2019)
Large raptor	41 (2018) 61 (2019)	n/a [d]
Small raptor	17 (2018) 35 (2019)	n/a [d]

Notes:
This table does not include data for golden eagles, which are described in the ECP.
[a] Surveyed area encompasses a 10-mile radius from the Project boundary, with a south extension that is over 20 miles away from the Project boundary.
[b] Nests occupied by common ravens are not reported here because ravens are not raptors.
[c] One golden eagle nest was reported occupied by a red-tailed hawk and is included in this count.
[d] Total nests are reported only for large or small raptors. Occupied nests are presented by species.

5.0 BIRD AND BAT PROTECTION MEASURES

LNC will commit to best management practices (BMPs) and environmental protection measures (EPMs) to prevent unnecessary and undue degradation during the life of the Project. The practices directly applicable to the protection of birds and bats, described below, are derived from the general requirements established in the BLM's surface management regulations at 43 CFR § 3809 and NDEP Bureau of Mining Regulation and Reclamation mining reclamation regulations. These measures are to be considered part of the operating plan and procedures.

Bird and bat protection measures described below are measures that will most directly avoid and minimize impacts to raptors, birds and bats. Other EPMs, such as controlling fugitive emissions and fugitive dust, managing erosion and acid rock drainage, and noxious weed control, would more indirectly minimize impacts to raptors, birds and bats by reducing the environmental footprint of the proposed Project and preventing unnecessary and undue degradation. Those EPMs, though not explicitly stated here, were incorporated into considerations of threats, implementation, and monitoring practices for the Project.

5.1 Project Design and Management

LNC sited the Project facilities away and south of the high Montana Mountains area to specifically avoid high-value sage-grouse habitat, retain other ecological values, and protect recreational interests. Planned facilities within the Project boundary were designed so as to limit the project disturbance footprint as much as possible, therefore reducing modifications to wildlife habitat.

LNC will keep all project-related disturbance to a minimum. Only the amount absolutely necessary for the operation will be disturbed. Total disturbance will not occur at once, but will gradually increase over time as mine development over the 41 years occurs. During operations, vehicles would travel on established roads to minimize disturbance of the native habitat in the Project area, which would minimize habitat impacts and reduce physical harm of avian and bat species during Project activities.

Throughout the Project's operational phase, concurrent reclamation will occur in areas where final configurations are complete. The development of the pit would be concurrently reclaimed, starting in approximately year seven. The pit development and concurrent reclamation would advance generally from the west towards the east. LNC will begin

reclamation activities at the earliest practicable time within areas of the Project that are considered inactive, anticipated to occur starting in Year 5. Early initiation of reclamation will stabilize soil, reduce dust and naturalize runoff. Periodic evaluation conducted throughout mine operations will be required in order to improve reclamation techniques and measure concurrent reclamation success.

Reclamation of the Project area will include a combination of revegetation practices. These practices will promote the establishment of diverse plant communities, stabilization of soil cover through minimizing wind and water erosion, and restoration of land to a condition consistent with historical and emerging local patterns. The mix is designed to provide species that can exist in the environment of northwestern Nevada, are proven to be robust species for revegetation, or are species found in the plant communities prior to disturbance. The proposed reclamation seed mix is also especially adapted to the Project site's clay soils.

5.2 Nest Monitoring

Note that the nest monitoring and avoidance measures described here address bird species other than golden eagles. If warranted and possible, LNC will time land clearing and surface disturbance to prevent destruction of active bird nests or young birds during the avian breeding season (March 1 through August 31 in accordance with BLM policies), in compliance with the MBTA.

LNC will perform a survey to assess whether there is an in-use raptor nest nearby. The survey will be conducted during the spring (when raptors are most active), prior to the start of project activities, conducted by a qualified biologist or environmental scientist, by a ground-based or aerial based survey, whichever is most effective at identifying nest use status. If an in-use raptor nest (other than a golden eagle) is detected within 1 mile from project activities, LNC would work with the BLM to determine whether an activity buffer should be applied, or the extent of the buffer, prior to initiation of construction and operation activities in that area. Factors to consider in determining the scope and limitations for a buffer of less than one mile include (but are not limited to) whether the nest is within the line of sight from mining activity and the nature and intensity of LNC activity. The buffer dimension will also depend on the species, age class, stage of nesting activity, number of young, location and visibility of nest, and habitat and topographical conditions.

5.3 Activity Buffer

To prevent nest abandonment or disruption to breeding and nesting activities (for breeding migratory birds), a spatial buffer will be established around active nests in the Project area. LNC will coordinate with BLM, USFWS, and NDOW to establish an appropriate activity buffer dimension. The buffer dimension will depend on the species, age class, stage of nesting activity, number of young, location and visibility of nest in relation to planned project activities, and habitat and topographical conditions, and therefore, these details should be recorded at the time of nest observation and reported to the coordinating agencies. Any activity that could disturb the nesting birds will be avoided in the established activity buffer until the nest is no longer in-use. Nest status monitoring will be performed in a way so as not to disturb breeding and brood-rearing activities.

5.4 Chemical Exposure Management

Hazardous and solid wastes will be generated during construction and operations of the Project. Hazardous waste will be managed and stored according to state, federal (43 CFR 262) and local regulations. These wastes will be stored in closed containers on concrete pads and provided with secondary containment until removal and disposal at an authorized facility. Used oil and coolant will also be stored at the truck shops within secondary containment. The materials will be either recycled or disposed in accordance with state, federal, and local regulations. Used coolant and oil will not be mixed. Used containers will be disposed or recycled according to federal, state, and local regulations. Solid wastes will be disposed of in permitted off site or onsite landfills.

A Solid and Hazardous Waste Management Plan has been developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure of substances to wildlife and the environment. A training program will be implemented to inform employees of their responsibilities in proper waste disposal procedures.

The reclaim ponds and emergency pond will be fenced to restrict wildlife, and under normal operations be kept dry. Any spills associated with wastes or chemicals will be managed under the Spill Contingency Plan, which will avoid or minimize exposure to wildlife. Upon final closure and reclamation, open pits will be backfilled, and a final pit lake is not expected to form.

5.5 Deterrence Measures

LNC will install raptor anti-perch devices on the proposed 25-kV power poles that are located within the portions of Project area that support sage grouse habitat. Anti-perch devices will also be installed on tall structures (where appropriate) within the mine facilities and plant site (e.g., communication tower, weather station, some areas of the lithium processing plant, and sulfuric acid plant). Anti-perch devices (usually triangle shaped, cone-shaped, or are spike-type structures) are designed to be mounted on utility poles or tall structures to prevent or dissuade raptors from landing or nesting on the structure.

LNC will also install the proposed transmission infrastructure to be incompatible with the establishment of raven (or raptor) nests. As suggested in APLIC guidelines, LNC will attach polyvinyl chloride pipe or corrugated drainpipe to the proposed 25-kV distribution line structures to discourage nesting (APLIC 2012). LNC will also regularly monitor the usefulness of the deterrence measures and implement different measures if the current effort is unsuccessful. LNC will reduce the attraction of the Project to eagles and other raptors by limiting the availability of created/artificial water sources. Access to standing water on the Project site will be limited during construction and operation. When possible, LNC will ensure truck wash areas are kept free of standing water during construction. Water used for dust suppression during construction will be applied at a rate that discourages puddling.

All trash associated with the Project during construction and operation will be contained in secure receptacles to prevent the introduction of subsidized food resources for animals that could be prey for eagles. LNC will use closed bins during construction for waste. To reduce the possibility of ravens (or other birds) from ripping into the bags and exposing the trash, plastic bags containing trash will not be left out for pickup. All trash and food items generated by construction and operation activities will be promptly contained and regularly removed from the Project site to reduce the attractiveness of the area to eagles and other animals. Following Project decommissioning, elevated structures including utility poles will be removed from the Project site to avoid creation of perch structures.

5.6 Project Administrative Controls

Speed Limits

Speed limits will be posted at all times to minimize the risk of collisions between Project vehicles and raptors, birds, or bats.

Employee training

LNC will ensure that all appropriate personnel regularly undergo training where they will receive direction and guidance on the issues and protocols outlined in the BBCS. This training will ensure that all appropriate personnel have a thorough understanding of the BBCS. The training also will emphasize LNC's responsibility towards regulatory compliance and raptor, bird, and bat protection.

Training will include establishing educational programs for project employees to increase awareness of the potential for vehicular collisions and other encounters with raptor, bird, or bat species; include annual training, conducted by a qualified biologist or environmental specialist, review best management practices for the project, and show training presentations. Training will also include a reporting requirement in the event of mortality.

LNC will establish wildlife protection policies that will prohibit the feeding or harassment of all wildlife.

Carcass Removal

Personnel should, in general, refer any injured or dead wildlife species discovered to the Environmental Personnel to address and remove, unless it poses a health or safety risk to personnel or operations. Personal would have access to various forms of communications for properly reporting wildlife injuries or mortalities to appropriate environmental personnel. LNC will coordinate with NDOW and USFWS for a golden eagle carcass removal; for other bird or big game mortalities, LNC will coordinate with NDOW.

If safe to do so, LNC environmental personnel will dispose of any animal road kills occurring within the Project site and along the Quinn River Well access road. In all cases, LNC personnel will be strictly prohibited from handling, transporting, or disposing of a golden eagle carcass without a handling permit issued under the BGEPA.

5.7 Habitat Management and Enhancement

LNC will continue to protect natural resources and promote actions that benefit local and regional bird and bat populations. LNC will maintain local vegetation outside of the immediate project footprint that will maintain nearby nesting and foraging habitat for avian and bat species.

During final reclamation, measures to increase prey base will be employed where practicable, such as constructing rock piles, with hiding and denning values for prey species. The seed mixture is designed to provide species that can exist in the environment of northwestern Nevada, are proven species for revegetation, or are native species found in the plant communities prior to disturbance. The plant communities that will form will therefore serve as a food source and habitat for native species, including eagle prey species.

6.0 THREAT ASSESSMENT

Potential risks to avian species and bats resulting from the proposed Project are described below. The types of risks that could occur to raptors, birds, and bats from the Project include mortality or injury, toxicity from chemical exposure, nest or roost destruction or abandonment, or loss of habitat directly or indirectly. The threat assessment considered the multiple exposure pathways that the Project could impact raptors, other birds, and bats, and has identified a number of avoidance, minimization, monitoring and management methods to reduce risks to these species, and the potential for take. These protection measures were incorporated into the analysis, demonstrating low likelihood of risks overall. Some loss of habitat would occur from the Proposed project, as described below.

6.1 Risk Endpoint 1: Mortality or Injury from collision or electrocution.

Conclusion: Low Risk

Potential Causes: Mortalities or injury to birds and bats could occur due to collisions with vehicles, power lines, or mining and construction equipment. Birds could be electrocuted from power lines or electrical equipment used on the mine site. Birds may be attracted to roads and emergency/reclamation ponds if mortalities occurred to other animals from Project facilities, and the carcasses of the animals are left in the open. Birds may be attracted to the mine if employees or contractors dispose improperly of trash. Bats and some birds may be attracted to lighting or standing water in open pit areas, which attract insects.

Analysis: The birds and bats in the Project area and vicinity are highly mobile and initial construction activities would not likely occur during nesting periods. Therefore, risks are low that disturbance associated with project construction would result in bird or bat injury or mortality. Increased traffic would occur on SR 293, and new roads would be constructed in the mine area, increasing the risk of collision with birds; collision with bat species is less likely given that bats do not congregate near roads or use roads for foraging opportunities. However, collisions with animals throughout Humboldt county are low, and increased traffic would result in about few additional animal collision due to vehicle increases (Cedar Creek 2019). LNC personnel would be instructed to follow speed limits; in addition, visibility along SR 293 is excellent. Due to these factors, impacts to avian or bat species from vehicle collisions associated with the Project are unlikely.

A number of deterrence mechanisms will be employed throughout the mine and on power lines to prevent attraction of birds to power lines, or nesting behavior near electrical equipment, and to deter bats and birds from the mine area generally. These measures will help to prevent mortalities caused by collision with equipment, or electrocution associated with power lines.

6.2 Risk Endpoint 2: Toxicity due to chemical exposure

Conclusion: Low Risk

Potential Causes: Exposure to chemicals used in mine processing could result in mortalities due to an acute lethal dose, or significant effects on growth, reproduction, or behavior due to toxicology of chemicals ingested or by coming in contact with chemicals. Other chemicals, if left out in the open, could be ingested by wildlife.

Analysis: A Solid and Hazardous Waste Management Plan will be developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure of substances to wildlife and the environment. Any spills associated with wastes or chemicals will be managed under the Spill Contingency Plan, to minimize exposure to wildlife. Upon final closure and reclamation, open pits will be backfilled and no open water will occur associated with the pits. Nearby wetland complexes and perennial streams would be more attractive to birds and bats than the mine, further reducing attraction to less suitable habitats. The reclaim pond and emergency pond would normally be kept dry.

6.3 Risk Endpoint 3: Active nest or roost destruction, nest abandonment

Conclusion: Low Risk

Potential Causes: Intentional destruction of nest or roost sites would occur if sites were within the planned disturbance footprint. Nests could be built on the pit wall, or bats may choose to roost on buildings or openings of mine facilities after mine construction, leading to potential nest/roost destruction during mine operations. Incidental or unintentional disturbances from activity near nest sites could occur due to noise and human activity.

Analysis: Within the project boundary, there are no adits, abandoned mine workings, or suitable roosting habitat for bats. Therefore, implementation of the proposed project would not impact bat roosting sites. Active burrowing owl nests occur within the Project boundary, as surveyed in 2018. Raptor nests within 1 mile of the Project boundary were inactive in

2019. Nest surveys would be conducted prior to any surface disturbance to locate and avoid disturbances to any active bird or raptor nests during nesting and breeding season. After nest abandonment, nests of birds other than golden eagles may be destroyed due to surface disturbance activities.

6.4 Risk Endpoint 4: Habitat Loss and Activity Disruption

Conclusion: Low to Moderate Risk

Potential Causes: Direct loss of habitat, and habitat fragmentation, would be caused by the development of mine facilities. Surface disturbances would cause the direct loss of foraging and food sources associated primarily with upland habitats. Decreased habitat use would occur immediately surrounding project footprint and new roads due to noise and human activity.

Analysis: The mine would remove approximately 5,395 acres of potential upland foraging habitat for birds, which would include salt desert shrub, sagebrush, and annual invasive grassland communities. An additional 150 acres is proposed for exploration activities. Approximately 0.11 acres of wetlands and any associated riparian habitat would be removed. About 36 percent of the vegetation cover that will be lost is low quality invasive forblands and grasslands. Invasive-dominated vegetation communities would be expected to have a poorer and less diverse food base for bird and bat species. The project would not be expected to restrict bird and bat behavior through the area.

Surface disturbance, especially in grassland, shrubland, and wetland/riparian habitats, would affect these and other migratory bird species by removing potential breeding and foraging habitat, and removing water sources, although alternative water sources are located directly adjacent to the Project area and would not be impacted by the Project. Following reclamation, and depending on reclamation success, the types of vegetation re-established, and species, some areas may provide more or less adequate breeding and foraging habitat than the existing vegetation communities (i.e., invasive annual-dominated vegetation).

Loss of habitat during proposed operations would reflect approximately 1.3 percent reduction within NDOW Hunt Unit 31. Loss of habitat would be short-term to long-term, given that development of the mine would occur in stages over the life of mine (41 years). Other exploration activity would be temporary, and concurrent reclamation would lead to re-

establishment of vegetation in some areas before the closure of the mine, and re-establishment of most habitat post-reclamation. Land uses of reclaimed land are expected to be compatible with uses on the majority of reclaimed land. Given the small reduction in total habitat loss within the hunt unit, and a substantial proportion of that habitat consisting of low-quality forage habitat, the risk of impacts to bird and bat foraging habitat due to habitat loss would be minimal to moderate.

Increased noise levels during construction would cause birds and bats to avoid the area temporarily, possibly disrupting normal behavior patterns. Wildlife foraging in wetlands may be avoided by bats and birds during operations due to noise and human activity. Reclamation activities would be conducted concurrently with mining activities (e.g., the waste rock disposal area would be reclaimed concurrently as the operation develops). The reclamation seed mix will include species suited to the natural ecosystem of the area. Reclamation would begin at the earliest practicable time during mine development. Reestablishment of vegetation would take place within three years of Project reclamation. Overtime, the reclaimed area would be expected to be similar to pre-disturbance vegetation or better.

Mining activities and facility construction would disturb wildlife year-round through increased human presence, noise, and dust production. The most common wildlife responses to noise and human presence are avoidance or accommodation. Avoidance would result in displacement of animals from an area larger than the actual disturbance acreage footprint. After initial avoidance of human activity and noise-generating activities, some species may acclimate to the activities and begin to reoccupy areas formerly avoided.

Lights used for nighttime operations of mining facilities could interfere with the navigation of night-migrating birds and would attract aerial insects, as well as insectivorous birds, to project infrastructure. Long-term nighttime lighting would be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds.

7.0 IMPLEMENTATION, MONITORING AND MANAGEMENT

LNC would perform several actions to promote successful implementation of the BBCS and thus accomplishment of the identified goals. These actions would also be performed routinely after implementation of the BBCS to ensure goals are not only met, but maintained. Specifically, LNC would:

- identify the environmental and behavioral factors that lead to areas of high avian or bat use and areas of potential impacts;
- verify avian and bat mortalities within the immediate mine area;
- assist in refining criteria and protocols to further promote avian and bat conservation; and,
- ensure the accuracy and detail of incident reporting.

Note that post-reclamation monitoring for revegetation success would also be conducted, and is described in more detail in the POO. LNC would implement the BBCS using both preventative and reactive approaches. Preventative measures would include all of the initial protection measures described in this document that would be constructed into the project operating plans in order to minimize mortality. Preventative measures attempt to avert potential bat and avian mortality before the potential becomes reality. Effective preventative measures can help prevent possible violations of the MBTA, ESA and BGEPA. Preventative measures also include mitigation measures, developed through the Environmental Impact Statement (EIS) process, and implemented to minimize or eliminate the potential for avian mortality.

The reactive approach would include implementation of adaptive management actions after avian or bat mortality has occurred. As incidents occur for any protected species, LNC will respond appropriately through documentation and reporting. The reported mortality impacts would be assessed by the agencies in collaboration with LNC to determine whether the impact justifies mitigation by implementation of adaptive management actions. This determination would include several factors such as the avian or bat species impacted, whether that species is listed as threatened or endangered, the rarity of the species, the effects to the population level of that species, and consideration of previous mortality results to that species at the Project site, or as a result of interaction with that project facility.

Adaptive management actions would be developed based on many of these factors. The development of specific adaptive management actions would occur collaboratively, and would be based on scientific data, effective actions implemented at similar projects, new technology developed during the life of the project, and other similar or related information.

7.1 Training

In order to effectively implement the BBCS, LNC will ensure that all personnel and contractors receive training on the issues and protocols outlined in this BBCS. This would occur initially for all new personnel hired to work at the site and for existing personnel during Mine Safety and Health Administration and/or Occupational Safety and Health Administration annual refresher training. LNC will ensure that all appropriate personnel regularly undergo training where they will receive direction and guidance on the issues and protocols outlined in the BBCS. This training will ensure that all appropriate personnel have a thorough understanding of the BBCS and their responsibility to raptor, bird, and bat protection and regulatory compliance.

Training will include establishing educational programs for project employees to increase awareness of the potential for vehicular collisions and other encounters with raptor, bird, or bat species. Training will also include a reporting requirement in the unlikely event of mortality. LNC will establish wildlife protection policies that will prohibit the feeding or harassment of wildlife.

7.2 Permit Compliance

LNC will comply with all federal, state, and local permits for the proposed Project. Although unlikely, there may be situations where LNC finds it necessary to obtain additional federal and state permits regarding avian or bat species as it relates to mortality, and avian nest removal and relocation. These could include incidental take permits, collection or salvage permits, and nest removal and relocation permits. In such a situation, LNC will work with the appropriate agencies to determine which permits are necessary and to acquire relevant permit applications. Under no circumstances will LNC perform any activity requiring a permit without first obtaining the proper permit or authorization to do.

7.3 Monitoring Program

A monitoring program would be implemented for exploration activities, and during construction, operations, and reclamation of the mine site, to ensure that the management approach (both preventative and reactive means) minimizes the potential injuries and mortalities to avian and bat species. The primary objectives of the monitoring program will include:

- Identifying and documenting direct impacts to birds and bats in terms of injury and mortality resulting from operation of the Project; and
- Identifying and documenting the success of management actions that have been implemented to minimize avian and bat mortality and, if necessary, identify other actions to implement.

Monitoring methods may be refined if new survey techniques or protocols become available, or if the quality control system, described below, indicates a need to change methods to ensure efficient and effective protection measures. Refinement of the monitoring program may also occur through consultation with the USFWS, BLM, and/or NDOW.

Monitoring of the project components would focus on the constructed transmission lines and power distribution infrastructure, communication infrastructure, and emergency and reclamation ponds.

7.3.1 Transmission Lines, Power Distribution, and Communication Infrastructure

Visual monitoring of the transmission and power lines, distribution centers, power poles, and communication infrastructure will occur bimonthly for the first two months following construction and semi-annually thereafter concurrent with avian and bat migration periods. Communication towers will be visually monitored quarterly by environmental personnel and incidentally by other LNC Environmental Department personnel and contractors. Risks associated with electrocution along distribution power lines at transformers, and at substations will be minimized and in most cases negated through adherence to Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).

7.3.2 Other Facility Inspections

Visual inspections of other facilities that pose hazards to avian and bat species (e.g., processing and storage facilities, administration buildings) would occur on a daily basis by LNC personnel and contractors. All other ancillary facilities (e.g., borrow areas, storage facilities) would be inspected on a quarterly basis by LNC personnel and contractors. Avian or bat mortalities would be reported to LNC environmental personnel within 24 hours. This information would be reported to agencies as detailed in Section 7.4.

7.4 Reporting System

LNC would report and manage all bat and avian injury or mortality in accordance with the methodology below. Appropriate LNC personnel would be provided with instruction on implementing the methodology and properly reporting bat and avian mortality and avian nesting sites. The reporting of avian and bat mortality would be standard practice by LNC for the duration as directed by the BLM. Components of the reporting system are below.

7.4.1 Detection

Avian and bat injury or mortality would be detected through investigation of avian- or bat-caused power outages, through monitoring efforts during operation, and through incidental observations by LNC personnel or others. To improve the probability that birds or bats that have suffered injury or death do not go undetected, LNC field staff would be directed to remain alert for birds and bats within the Project area and near the Project area. The detection of avian nest sites would occur through monitoring efforts during operation and through incidental observations.

7.4.2 Response and Documentation

Under the MBTA, it is unlawful to collect, salvage, or otherwise have in possession any raptor or raptor part, including feathers, without a state and federal permit. Therefore, personnel would be instructed not to rescue or move any injured or dead raptor species discovered unless it poses a health or safety risk to personnel or operations. Figure 3 includes a flowchart of procedures in the event of a raptor, bird, or bat mortality. LNC would coordinate with the BLM and NDOW to determine appropriate procedures for carcass removal. Dead eagles would be reported to the USFWS Division of Migratory Bird Management and Law Enforcement.

In the event that a bat sustains injury or experiences death from interaction with facilities, LNC or LNC appointed biologists or environmental specialists may need to handle, transport, or dispose of bat carcasses. If the need for such actions becomes apparent, LNC would coordinate with the BLM and NDOW to ensure that if any permits are necessary they are obtained and that all activities are in accordance with applicable regulations and laws.

Standard reporting forms would be used to document all bird mortalities, and photographs of the bird carcass would be taken to accompany the form if possible. Personnel would have access to various forms of communications for properly reporting wildlife injuries or mortalities to appropriate environmental personnel.

7.4.3 Reporting

LNC's environmental personnel would report all protected species mortalities and submit any Incident Forms (Appendix B) to NDOW annually. Although this form would be for NDOW submittal, it could be used for other mortality monitoring studies, if required, and would be available to regulatory agencies should data be requested.

7.5 Quality Control

Periodically, LNC will assess various parameters and protection measures as described in this BBCS to ensure that it is efficient and effective as possible. Parameters that LNC will assess periodically include:

- assessing avian and bat protection devices to identify products preferred for avian and bat protection as well as ease of application and durability;
- assessing mortality reporting procedures to ensure that discoveries of avian mortalities are properly documented;
- assessing response to avian mortalities to ensure that appropriate actions are taken in a timely manner; and
- assessing compliance with company procedures to ensure that personnel are consistently following company methods for avian-and bat-safe construction, mortality reporting, nest management, etc.

Additional parameters other than those listed above may be assessed during review of the BBCS if determined necessary by LNC. Although it is only practical to periodically revise or update the BBCS, the quality control component would be an ongoing process. Daily observations, operating procedures, personnel input, and new technologies would be applied to assessments during the periodic reviews of the BBCS. Revisions and updates to the BBCS would be made in consultation with the USFWS, BLM, and NDOW. Revisions and updates to the BBCS will be addressed with personnel at the Project area.

7.6 Remedial Action

While there are no legal provisions for an unauthorized take of protected species, the USFWS recognizes that mortalities to some avian species may occur even after all reasonable measures to avoid a take are implemented. Based upon the information gathered from site investigations and reported on Incident Forms, USFWS, BLM, NDOW, and LNC would determine whether implementation of remedial protection measures is substantiated. This determination would be dependent on the frequency of incident occurrences at a particular facility, the species that suffered an injury or mortality, the likely effectiveness of remedial actions, and agency input and guidance. Likewise, these same factors would determine what types of remedial protection measures and practices LNC would implement if such measures are determined necessary.

7.7 Adaptive Management

Over the course of operation and maintenance of the Project, LNC's environmental personnel would gather, review, and report the monitoring data from site investigations and any mortality reports resulting from structures that are observed creating avian or bat mortality issues. The information received from the monitoring data would be used to prioritize, in collaboration with the agencies, future changes in monitoring and addressing potentially problematic areas and/or structures. LNC understands that ensuring the protection of avian species along this Project from year-to-year would be a dynamic process that may require different techniques and approaches to reduce avian mortality. Close coordination with the agencies would be important in managing and adapting this plan to future conditions.

7.8 Key Resources

LNC will consult with the following key resources to assist in providing expertise in permitting, bird and bat populations and behavior, and avian- and bat-safe design features:

- U.S. Fish and Wildlife Service
- Nevada Department of Wildlife
- The Bureau of Land Management
- Nevada Natural Heritage Program
- Great Basin Bird Observatory
- Western Bat Working Group
- Avian Power Line Interaction Committee

These resources will be utilized as necessary and will further ensure that LNC has a successful and effective BBCS. Resources other than those listed may also be consulted, including consultants, company specialists, and other mining facilities with proven effective avian and bat protection programs.

8.0 REFERENCES

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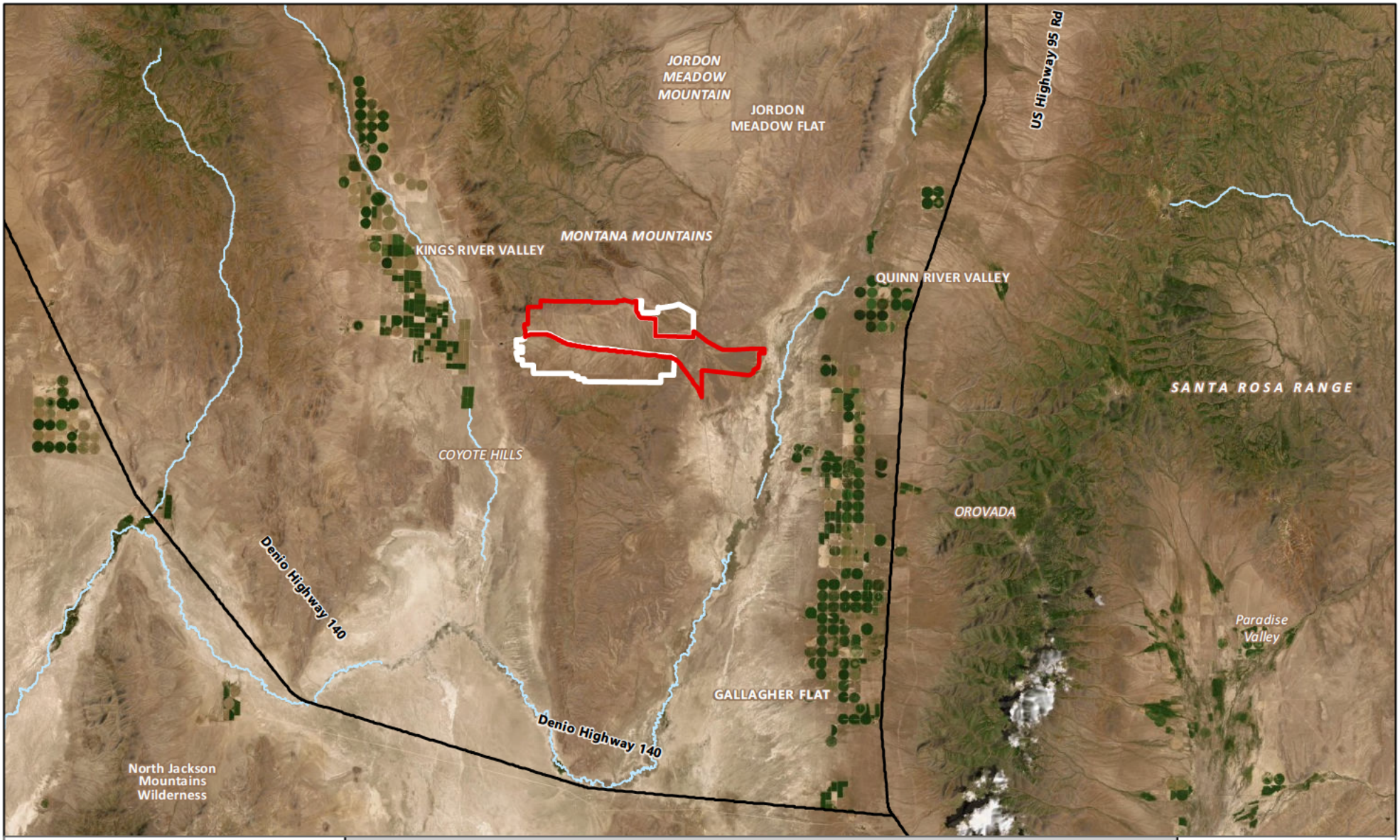

Figure 1
Project Location

Map Legend

- Exploration POO Boundary
- Mine POO Boundary

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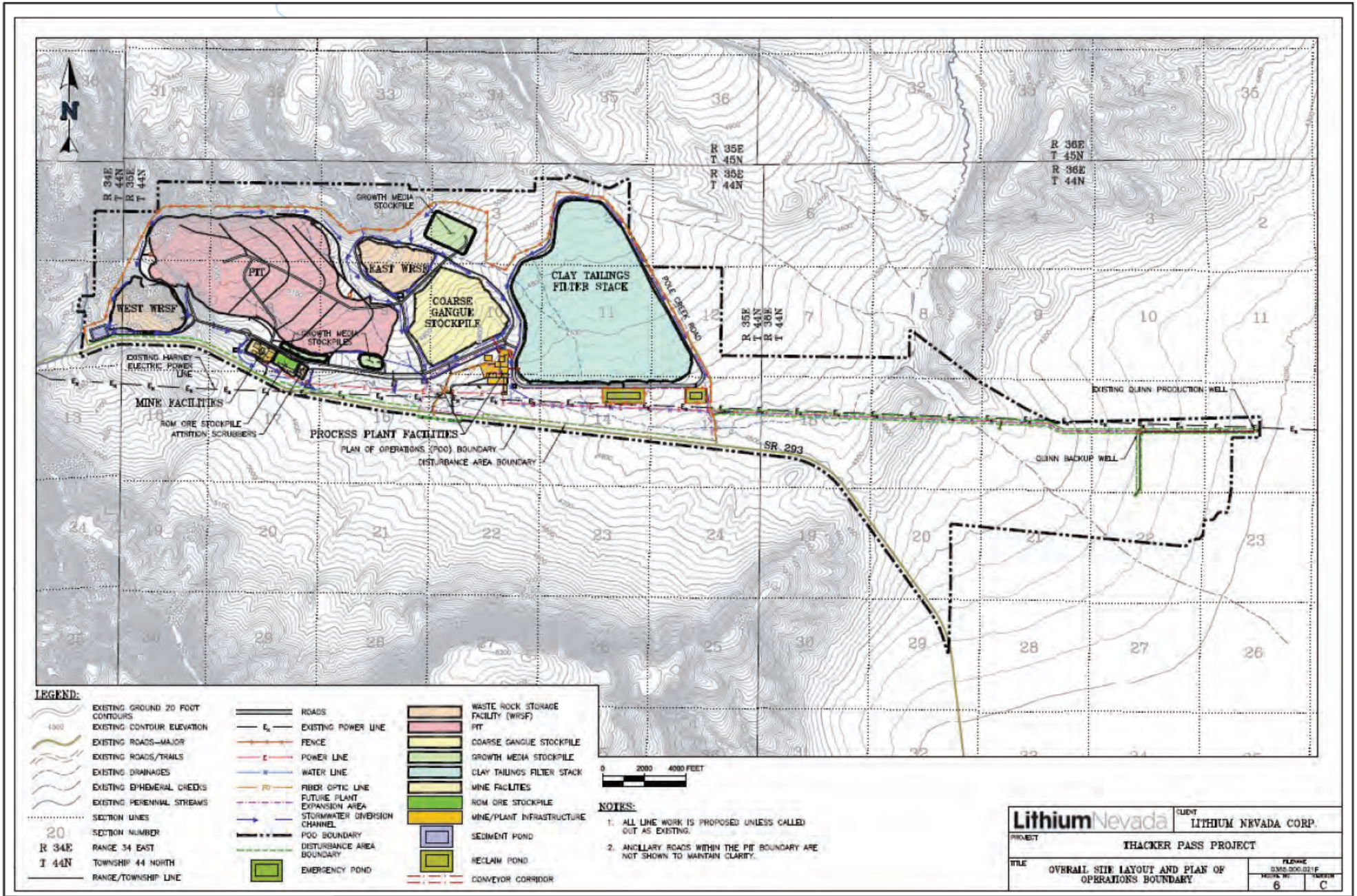
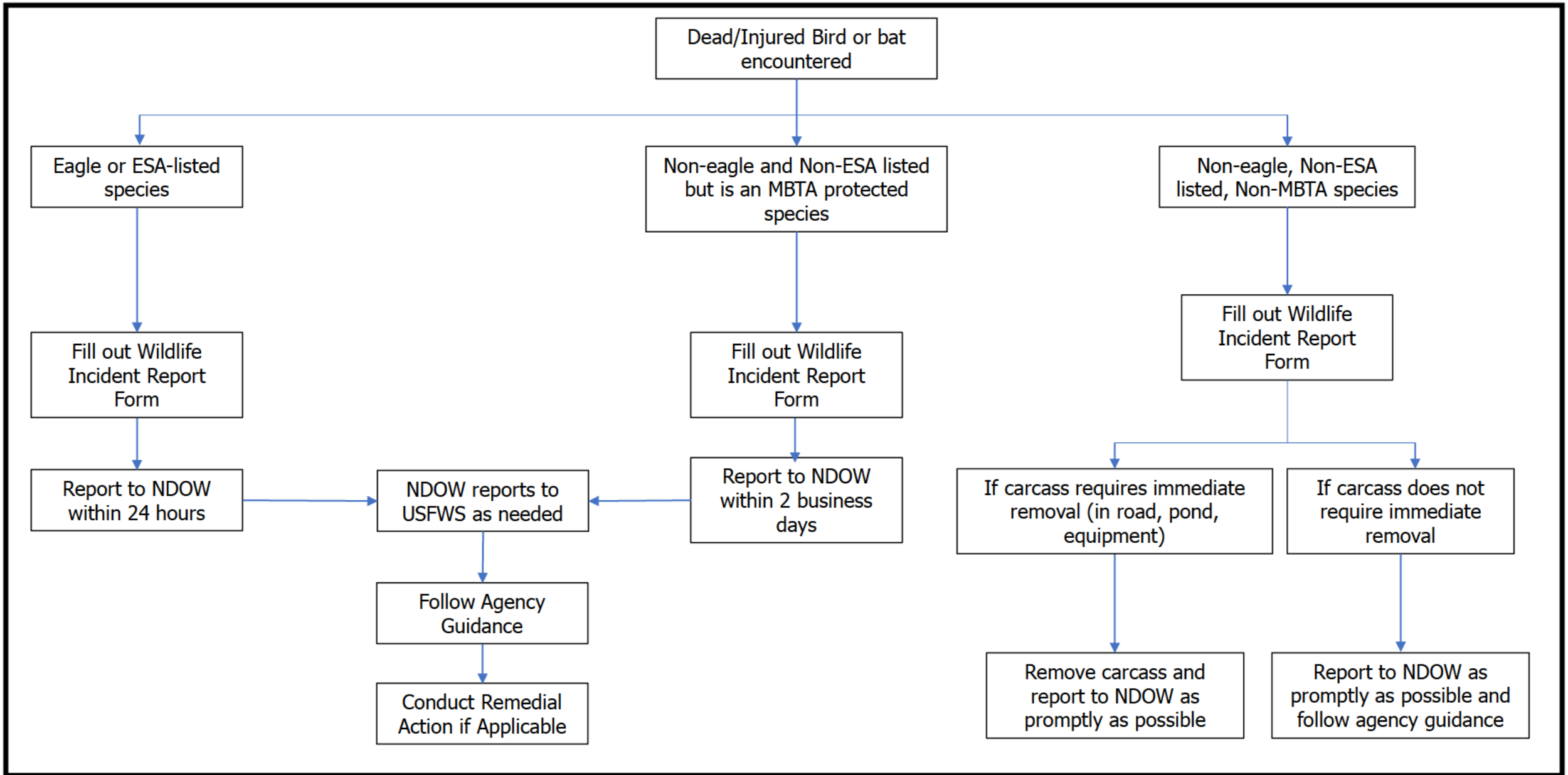


Figure 2 Project Facility Layout – year 41



CEDAR CREEK ASSOCIATES, INC.

Figure 3. Bird or Bat Mortality Flow Chart

Appendices

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
Black Rosy-finch	*Leucosticte atrata*	MBTA, BLM WMDO Special Status Species	NDOW (SP); NS-S (S3); NS (G4)	breeds in alpine areas, usually near rock piles, and cliffs; winters in open country, including mountain meadows, high deserts, valleys, and plains	Moderate - Not observed but seasonal occurance possible in winter.
Brewer's Sparrow	*Spizella breweri*	MBTA, BLM WMDO Special Status Species	NDOW (SP); NS-S (S4B); NS (G5)	arid sagebrush steppe; winter, occupy sagebrush shrublands similar to the breeding grounds, as well as a range of desert scrub habitats consisting mainly of saltbush and creosote	High/confirmed - observed in surveys.
Gray-crowned Rosy-Finch	*Leucostcte tephrocots*	MBTA, BLM WMDO Special Status Species	NS-S (S3N); NS (G5)	breeds in alpine areas, usually near snow fields or glaciers, talus, rockpiles, and cliffs; winters in open country, including mountain meadows, shrublands, roadsides, towns, cultivated areas, rocky hillsides, and margins of dry ditches	Moderate - Not observed but seasonal occurance possible in winter.
Great Basin Willow Flycatcher	*Empidonax traillii adastus*	MBTA, BLM WMDO Special Status Species	USFS (S); NDOW (SP); NS-S (S1S2); NS (G5T5)	montane riparian habitat, with some spilloverinto lowland riparian areas; found in both lowland and montane riparian habitats, and occasionally in other inundated areas such as aspen stands or wet meadows; uses the lower Colorado River corridor during migration.	Low - requires dense willow stands or aspens, neither of which occur in Project Area. Not observed during surveys.
Greater Sage-grouse (including Bi-State DPS)	*Centrocercus urophasianus*	Game Species, BLM WMDO Special Status Species	NDOW (GB); NS-S (S3); NS (G3G4)	sagebrush steppe; nest in areas with relatively dense cover from big sagebrush; may use areas with rabbitbrush, greasewood, and grassy areas; leks are located in clear areas such as broad ridgetops, grassy swales, dry lakebeds, and sometimes recently burned areas. chick rearing areas include irrigated pastures, wet meadows, and alfalfa fields, in addition to sagebrush.	High/confirmed - observed in surveys.
Lewis's Woodpecker	*Melanerpes lewis*	MBTA, BLM WMDO Special Status Species	NS-S (S3); NS (G4)	open pine woodlands, and other areas with scattered trees and snags; unlike other American woodpeckers, it enjoys sitting in the open as opposed to sitting in heavy tree cover	Moderate - NDOW records indicate presence in vicinity but species is typically associated with forested areas, not occuring in Project Area.
Loggerhead Shrike	*Lanius ludovicianus*	MBTA, BLM WMDO Special Status Species	NDOW (SB); NS-S (S4); NS (G4)	open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns; frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries; are often seen along mowed roadsides with access to fence lines and utility poles.	High/confirmed - observed in surveys.
Pinyon Jay	*Gymnorhinus cyanocephalus*	MBTA, BLM WMDO Special Status Species	NS-S (S3S4); NS (G5)	pinyon-juniper woodland, sagebrush, scrub oak, and chaparral communities, and sometimes in pine forests; specialized for feeding on pine seeds.	Low - Found in pinyon-juniper woodlands which do not occur in Project Area.
Sage Thrasher	*Oreoscoptes montanus*	MBTA, BLM WMDO Special Status Species	NDOW (SB); NS-S (S5B); NS (G4)	breeds exclusively in shrubsteppe habitats; require relatively dense ground cover for concealment, but also some bare ground for foraging and for getting around on their feet, which they often do in preference to flying; use arid or semiarid open country with scattered bushes, grasslands, and open pinyon-juniper woodlands.	High/confirmed - observed in surveys.
Sandhill Crane (both Greater and Lesser)	*Antigone canadensis*	MBTA, BLM WMDO Special Status Species	NS-S (S2B, S3M); NS (G5T5)	breed in open wetland habitats surrounded by shrubs or trees; nest in marshes, bogs, wet meadows, prairies, burned-over aspen stands, and other moist habitats, preferring those with standing water; breeders gravitate toward the edges between wetland and upland habitats, while nonbreeders may prefer open, grassy sites; winter roosting on shallow lakes or rivers at night and spending the day in irrigated croplands, pastures, grasslands, or wetlands.	Low - Low density populations may occur in northern Nevada but no records of occurrence in this area. Usually prefers lush riparian habitats which do not occur in Project Area.

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
Western Snowy Plover (does not include the protected DPS found along the Pacific Coast)	*Charadrius nivosus nivosus*	MBTA, BLM WMDO Special Status Species	NS-S (S3B); NS (G3T3)	barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds	Low - habitat preferences not found in the Project Area.
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA, MBTA, BLM WMDO Special Status Species	FWS (DELISTED 2009); NDOW (SE); NS-S (S1B, S3N); NS (G5)	near lakes, reservoirs, rivers, marshes, and coasts; scattered breeding occurances in Northern Nevada	Low - habitat requirements do not occur in Project Area. No record of occurance within 10 miles of Project Area.
Burrowing Owl (includes Western Burrowing Owl)	*Athene cunicularia (A. c. hypugaea Western Burrowing Owl)*	MBTA, BLM WMDO Special Status Species	NS-S (S3B); NS (G4); Western Burrowing Owl NS-S (S3B); NS (G4T4)	live in open habitats with sparse vegetation such as prairie, pastures, desert or shrubsteppe, and airports. In parts of their range they are closely associated with prairie dogs and ground squirrels, whose burrows they use for nests; Western Burrowing Owls breed throughout Nevada in salt desert scrub, Mojave shrub, and some sagebrush habitat, as well as in agricultural landscapes; winters most frequently in the southern half of Nevada, but has been recorded throughout the state during all months	High/confirmed - observed in surveys.
Ferruginous hawk	*Buteo regalis*	MBTA, BLM WMDO Special Status Species	NS-S (S2); NS (G4)	preferred habitat arid and semiarid grassland regions; open, level, or rolling prairies; foothills or middle elevation plateaus largely devoid of trees; and cultivated shelterbelts or riparian corridors	High/confirmed - observed in surveys.
Flammulated Owl	*Psiloscops flammeolus*	MBTA, BLM WMDO Special Status Species	NS-S (S4B); NS (G4)	open pine forest in mountains	Low - usually associated with pinyon-juniper woodlands which do not occur in Project Area. Not observed in surveys.
Golden Eagle	*Aquila chrysaetos*	BGEPA, MBTA, BLM WMDO Special Status Species	NS-S (S4); NS (G5)	open country, especially around mountains, hills, and cliffs; use a variety of habitats ranging from arctic to desert, including tundra, shrublands, grasslands, coniferous forests, farmland, and areas along rivers and streams	High/confirmed - observed in surveys.
Northern Goshawk	*Accipiter gentilis*	MBTA, BLM WMDO Special Status Species	USFS(S); NDOW (SB); NS-S (S2); NS (G5)	nest in mature and old-growth forests with more than 60% closed canopy; often build nests near breaks in the canopy, such as a forest trail, jeep road, or opening created by a downed tree, and prefer sites with a creek, pond, or lake nearby; hunt in the forest, along riparian corridors, and in more open habitat, such as the sagebrush steppes	Low - usually associated with close stand forests which do not occur in Project Area. Not observed in surveys.
Peregrine Falcon	*Falco peregrinus*	MBTA, BLM WMDO Special Status Species	USFS (S); FWS (delisted 1999); NDOW (EB); NS-S (S2); NS (G4)	breed in open landscapes with cliffs (or skyscrapers) for nest sites; nesting at elevations up to about 12,000 feet, as well as along rivers and coastlines or in cities, ; migration and winter in nearly any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains.	High/confirmed - observed in surveys.
Short-eared Owl	*Asio flammeus*	MBTA, BLM WMDO Special Status Species	NS-S (S4); NS (G5)	live in large, open areas with low vegetation, including prairie and coastal grasslands, heathlands, meadows, shrubsteppe, savanna, tundra, marshes, dunes, and agricultural areas; winter habitat is similar, but is more likely to include large open areas within woodlots, stubble fields, fresh and saltwater marshes, weedy fields, dumps, gravel pits, rock quarries, and shrub thickets.; if food is plentiful, winter areas often become breeding areas.	High/confirmed - observed in surveys.
Swainson's Hawk	*Buteo swainsoni*	MBTA, BLM WMDO Special Status Species	NS-S (S2B); NS (G5)	favor open habitats for foraging; hay and alfalfa fields, pastures, grain crops, and row crops, or perched atop adjacent fence posts and overhead sprinkler systems; they rely on scattered stands of trees near agricultural fields and grasslands for nesting sites.	High/confirmed - observed in surveys.

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
California myotis	*Myotis californicus*	BLM WMDO Special Status Species	NS-S (S4); NS (G5); WBWG (low - medium)	Found throughout Nevada, primarily at the low and middle elevations (to 6,000 ft), although occasionally found at higher elevations; more common in the southern half of the state; found in a variety of habitats from Lower Sonoran desert scrub to forests; current Nevada records indicate this species is distributed between 680-9,000 ft; ROOST HABITAT: crevice roosting; selects a variety of day roosts including mines, caves, buildings, rock crevices, hollow trees, and under exfoliating bark; night roosts in a wider variety of structures; generally roost singly or in small groups, although some mines in the Mojave Desert shelter colonies of over 100 in both the summer and winter; RESIDENT STATUS: year round resident; WINTER STATUS: hibernates but periodically arouses to actively forage and drink in the winter	High - Likely to forage in or near Project Area (frequency group detected)
little brown bat (little brown myotis)	*Myotis lucifugus*	BLM WMDO Special Status Species	NS-S (S3); NS (G3); WBWG (low to medium)	Found primarily throughout the northern part of the state, but little is known of its distribution and abundance.Found primarily at higher elevations and higher latitudes, often associated with coniferous forest; requires a nearby water source; occurrence in Dixie Valley, (4,400) has been documented acoustically: ROOST HABITAT: day roosts in hollow trees, rock outcrops, buildings, and occasionally mines and caves; one of the species most commonly found in human structures; night roosts may be same structures used for day roost but locations nearest the entrance are preferred; hibernacula elsewhere are generally mines or caves; often found in the same roost sites with *Myotis yumanensis*. RESIDENT STATUS: probably a year round resident; WINTER STATUS: hibernates but no hibernating colonies have been found in Nevada. It is suspected that there are elevational movements between summer and winter roosts; no large aggregations of this species, like those known in the eastern U.S. have been found.	High - Likely to forage in or near Project Area (frequency group detected)
spotted bat	*Euderma maculatum*	Nevada state protected, BLM WMDO Special Status Species	USFS (S); NDOW (TM); NS-S (S2); NS (G4); WBWG (medium to high)	Known from only twelve localities, but scattered distribution throughout Nevada;istribution is patchy and linked to availability of cliff roosting-habitat. Recent studies have documented significant activity throughout the summer months in the Muddy River drainage; there are recent high elevation records from the Sierra Nevada in California; found in a wide variety of habitats from low elevation desert scrub to high elevation coniferous forest habitats, including pinyon-juniper, sagebrush, riparian and on urban high-rise (cliff analog) habitats; closely associated with rocky cliffs; current Nevada records indicate this species is distributed between 1770-7,000 ft; ROOST HABITAT: Day roosts primarily in crevices in cliff faces but some indication that mines and caves may occasionally be used, primarily in winter; sas been found roosting on/in buildings but reliance on such roosts is unclear. Likely roosts singly; RESIDENT STATUS: year round resident; WINTER STATUS: Hibernates but periodically arouses to actively forage and drink in the winter; characteristics and locations of winter hibernacula in Nevada are completely unknown, and poorly understood throughout this species range	Low - no detections during monitoring. Not known to occur in area.
western red bat	*Lasiurus blossevillii*	BLM WMDO Special Status Species	NDOW (SM); NS-S (S1M); NS (G4); WBWG (high)	Historically known from only two locations, one of which (Fallon area) yielded additional specimens in 1958; third location near Dyer was documented in September 1999; recent acoustic sampling in the Muddy River drainage in Clark County have yielded records of occurrence in late spring and early summer 2000, and three females and two males were captured between July and September in the same drainage; been detected acoustically in the northern portion of the Nevada Test Site during the summers of 1999 and 2000; two acoustic records were obtained near the Truckee River west of Fernley; aoustic records from two localities in Lincoln County were documented in 2003; found primarily in wooded habitats, including mesquite bosque and cottonwood/willow riparian areas; Current Nevada records indicate this species is distributed between 1,380-6,600 ft; ROOST HABITAT:solitary rooster; day roosts in trees, within the foliage and presumably in leaf litter on the ground; RESIDENT STATUS: thought to be a migrant but may be a summer resident in the Fallon and Muddy River areas; WINTER STATUS: winter behavior poorly understood; thought to be migratory in NV, although migratory patterns are not well documented. This species is reported to be highly migratory throughout most of its range.	Low - no detections during monitoring. Not known to occur in area.

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
big brown bat	*Eptesicus fuscus*	BLM WMDO Special Status Species	NS-S (S4); NS (G5); WBWG (low)	Found throughout the state, from low to high elevations (720 to > 9,800 ft); occurs in a variety of habitats, including pinyon-juniper, blackbrush, creosote, sagebrush, agriculture, and urban habitats; better adapted to human habitation than most species; ROOST HABITAT: Selects a variety of day roosts including caves, trees (e.g., Ponderosa pine, quaking aspen and oaks), mines, buildings and bridges; often night roosts in more open settings in buildings, mines and bridges; roosts in groups up to several hundred; RESIDENT STATUS: year round resident; WINTER STATUS: Hibernates but periodically arouses to actively forage and drink in the winter; characteristics and locations of winter hibernacula in Nevada are completely unknown, and poorly understood throughout this species range.	High - Likely to forage in or near Project Area (frequency group detected)
Brazilian (or Mexican) free-tailed bat	*Tadarida brasiliensis*	BLM WMDO Special Status Species	NDOW (PM); NS-S (S3S4B); NS (G5): WBWG (low to medium)	Found through most of the state, ranging from low desert to high mountain habitats; found in a wide variety of habitats; although predominantly a lower elevation species has been found from 720 to > 11,480 ft in the Sierra Nevada; recent acoustic surveys reveal it is more widespread and common, at least in southern Nevada, than previously thought; current Nevada records indicate this species is distributed between 690-8,370 ft; ROOST HABITAT: selects a variety of day roosts including cliff faces, mines, caves, buildings, bridges, and hollow trees; although colonies number in the millions in some areas, colonies in Nevada are generally several hundred to several thousand (largest known colonies have been estimated at ca. 70,000- 100,000); some caves may be used as long term transient stopover roosts during migration; some evidence suggests that the colony at Rose Cave arrives in July and departs in mid October; RESIDENT STATUS: summer resident; recent observations susggest pockets of year-round residents in southern Nevada; WINTER STATUS: Migrations of 1140 mi are documented for this species; migrates away from colder regions and winters in areas with predominantly non-freezing temperatures but has been found to hibernate in northern California; migratory animals appear to be active in the winter range; winter activity has been observed recently in the low desert of southern Nevada.	High/confirmed - forages in Project Area
Canyon bat (formerly western pipestrelle)	*Parastrellus hesperus*	BLM WMDO Special Status Species	NS-S (S4); NS (G4): WBWG (low to medium)	found througout most of the state, primarily in the souther and western protions; most common n low and middle elevation (6,000 ft), although occasionally found at higher elevations (>8,000 ft); lower and upper Sonoran desert habitats of blackbrush, creosote, salt desert shrub and sagebrush, with occasional occurrence in Ponderosa pine and pinyon-juniper, usually in association with rock features such as ganite boulders and canyons; current nevada recores indicate this species is distrubted between 690-8,400 ft; ROOST HABITAT: day roosts primarily in rock crevices but may include mines, caves, or occasionally in buildings and vegetation; generally roost singly or in small groups; RESIDENT STATUS: year round resident; WINTER STATUS: hibernates but periodically arouses to actively forage and drink in water.	High/confirmed - forages in Project Area
fringed myotis	*Myotis thysanodes*	BLM WMDO Special Status Species	USFS (S); NDOW (PM); NS-S (S2); NS (SG4): WBWG (medium to high)	Found throughout central and southern Nevada; probably occurs in northern Nevada, as well; found in a wide range of habitats from low desert scrub habitats to high elevation coniferous forests; found from upper elevation creosote bush desert to pinyon-juniper and white fir (7,000 ft) in the White Pine Range; current Nevada records indicate this species is distributed between 1,400-7,000 ft; ROOST HABITAT: day and night roosts in mines, caves, trees, and buildings; maternity colony of approximately 200 individuals was found in a mine in creosote bush scrub in the Mojave Desert; two maternity colonies have recently been found in mine adits on the Nevada Test Site in blackbrush habitat; has been radio tracked to tree hollows, particularly large conifer snags in Oregon and Arizona, and rock crevices in cliff faces in southern California; known hibernacula are generally mines or caves; RESIDENT STATUS: year round resident; WINTER STATUS: hibernates but capable of periodic winter activity.	High - Likely to forage in or near Project Area (frequency group detected)

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
hoary bat	*Lasiurus cinereus*	BLM WMDO Special Status Species	NS-S (S3N); NS (G3G4); WBWG (medium)	Distribution patchy throughout the State and known mostly from the capture of single animals while foraging or acoustic records; roosting locations are not well known; tree-associated species; found primarily in forested upland habitats, as well as in gallery-forest riparian zones (e.g., in cottonwoods along the Colorado River drainage), and agriculture habitats; found in valley basins in pure stands of Rocky Mountain juniper (Juniperus scopulorum); may occur in park and garden settings in urban areas; current Nevada records indicate this species is distributed between 1,870-8,270 ft; ROOST HABITAT: solitary; day roosts in trees, within foliage 10-40 ft above the ground in both coniferous and deciduous trees; unusual roosting situations have been reported in caves, beneath a rock ledge, in a woodpecker hole, and in a squirrel's nest; RESIDENT STATUS: summer resident. Records from the northeast span 15 July to 21 August; documented in July at Key Pittman Reservoir and in September in Eagle Valley, Lincoln County; WINTER STATUS: migrates but probably hibernates in parts of its winter range; records are primarily from the spring and fall but migratory patterns in Nevada are not known.	High/confirmed - forages in Project Area
long-eared myotis	*Myotis evotis*	BLM WMDO Special Status Species	NS-S (S4); NS (G5): WBWG (low to medium)	Found throughout the state, primarily at the higher elevations associated with coniferous forest; more widespread and common in the northern half of the state; primarily a forest-associated species. In southern Nevada, only found in Ponderosa pine or above; found in pinyon-juniper in the northern portion of Nevada Test Site; in northern Nevada common in pinyon-juniper and above, but also found in sagebrush and desert scrub habitats; current Nevada records indicate this species is distributed between 2,300-10,100 ft; ROOST HABITAT: Day roosts in hollow trees, under exfoliating bark, crevices in small rock outcrops, and occasionally in mines, caves, and buildings; night roosts have been found in caves, mines, and under bridges. Generally roost singly or in small groups; RESIDENT STATUS: year round resident; WINTER STATUS; presumed to be non-migratory and to hibernate locally.	High/confirmed - forages in Project Area
long-legged myotis	*Myotis volans*	BLM WMDO Special Status Species	NS-S (S4); NS (G4G5); WBWG (low to medium)	Found throughout the State but more widespread and common in the northern half; occurs from mid to high elevations. Absent from the low desert; found in pinyon-juniper, Joshua tree woodland, and montane coniferous forest habitats; occasionally found in Mojave and salt desert scrub, and blackbrush, mountainshrub, and sagebrush. Current Nevada records indicate this species is distributed between 930-3,420 m; ROOST HABITAT: day roosts primarily in hollow trees, particularly large diameter snags or live trees with lightning scars; uses rock crevices, caves, mines, and buildings when available; caves and mines may be used for night roosts; hibernacula elsewhere are generally mines or caves; RESIDENT STATUS: probably a year round resident; WINTER STATUS: hibernates but has the capability of winter activity; it is suspected that there are elevational and latitudinal movements between summer and winter roosts; transient colonies in the spring on the east side of the Sierra Nevada.	High - Likely to forage in or near Project Area (frequency group detected)
pallid bat	*Antrozous pallidus*	BLM WMDO Special Status Species	USFS (S); NDOW (PM); NS-S (S3); NS (G4); WBWG (medium to low)	found throughout the state, primarily in the low and middle elevations (5,900 ft), although has been found at over 10,200 ft; variety of habitats from low desert to brushy terrain to coniferous forest and non-coniferous woodlands; in pinyon-juniper, blackbrush, creosote, sagebrush, and salt desert scrub habitats; ROOST SITES: Selects a variety of day roosts including rock outcrops, mines (maternity colonies have been found in geothermally-influenced adits), caves, hollow trees, buildings, and bridges. Night roosts very commonly under bridges, but also caves and mines. Intolerant of roosts in excess of 40° C; RESIDENT STATUS: year round resident WINTER STATUS: hibernates but periodically arouses to actively forage and drink in winter.	Moderate - no detections during monitoring but occurs throughout Nevada.

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
silver-haired bat	*Lasionycteris noctivagans*	BLM WMDO Special Status Species	NS-S (S3B); NS (G3G4); WBWG (medium)	Widely distributed in the state, but confined primarily to forested habitats; found in riparian habitats in the south and in woodland and riparian habitats in the central and northern portions of the state;forest-associated species, more common in mature forests; found primarily at higher latitudes and altitudes; found in coniferous and mixed deciduous/coniferous forests of pinyon juniper, subalpine fir, white fir, limber pine, aspen, cottonwood and willow; usually found at lower elevations in southern Nevada associated with riparian corridors; current Nevada records indicate this species is distributed between 1,570-8,200 ft. ROOST HABITAT: Roosts almost exclusively in trees in summer; maternity roosts are generally in woodpecker hollows and under the loose bark of large diameter snags. They are generally located at least 50 ft above ground; uses multiple roost sites, switching them frequently; small groups and single animals will roost under exfoliating bark; winter roosts include hollow trees, rock crevices, mines, caves, and houses; also has been found roosting under leaf litter; RESIDENT STATUS: Poorly understood; WINTER STATUS: Migrates but probably hibernates in some parts of its winter range; migratory patterns not well understood; recent October records of migrating individuals, one juvenile near Mesquite, in the foothills of the Virgin Mountains and one in the Santa Rosa Mountains of Humboldt County	High - Likely to forage in or near Project Area (frequency group detected)
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM WMDO Special Status Species	USFS (S); NDOW (SM); NS-S (S2); NS (G4); WBWG (high)	Found throughout the state, from low desert to high mountain habitats. Observed foraging in krumholz bristlecone pine as high as 11,500 ft in the Snake Range of eastern White Pine County; distribution is strongly correlated with the availability of caves and abandoned mines; highly associated with caves and mines; found primarily in rural settings from deserts to lower, mid to high-elevation mixed coniferous-deciduous forest. Current Nevada records indicate this species is distributed between 690-11,500 ft primarily in pinyonjuniper-mahogany, white fir, blackbrush, sagebrush, salt desert scrub, agricultural, and occasionally in urban habitats. ROOST SITES: A cavern-dwelling species that uses mines, caves, trees and buildings; very dependent on mines and caves; trees and buildings must offer "cave-like" spaces in order to be suitable.; will night roost in more open settings, including under bridges; recent studies indicate that use of roosts is variable within seasons and among years, and multiple surveys may be required before use can be documented.RESIDENT STATUS: year round resident; WINTER STATUS: hibernates in mixed sex aggregations of a few to many hundred; periodically arouses to move to alternate roosts and to actively forage and drink in the winter; hibernation prolonged in colder areas, and intermittent where climate is predominantly non-freezing.	High/confirmed - forages in Project Area
western small-footed myotis	*Myotis ciliolabrum*	BLM WMDO Special Status Species	NS-S (S3); NS (G5): WBWG (low to medium)	Found throughout the state; in the south, primarily found at the middle and higher elevations (> 5,900 ft), although occasionally found at lower elevations; in central and northern part of the State it is more common at valley bottoms (3,400-5,900 ft); inhabits a variety of habitats including desert scrub, grasslands, sagebrush steppe, and blackbrush, greasewood, pinyon-juniper woodlands, pine-fir forests, agriculture, and urban areas; current Nevada records indicate distribution between1,600-9,000 ft; ROOST HABITAT: roosts have been found in caves, mines, and trees; roosting preferences expected to be similar to those for *Myotis californicus*; RESIDENT STATUS: year round resident; WINTER STATUS: hibernates; in some areas may tolerate drier and colder hibernacula than some other species; hibernates individually or in large colonies. A large colony (>100 individuals) was found at a depth of 450 ft in an abandoned mine near Eureka	High/confirmed - forages in Project Area

Appendix A - BLM Special Status Species Screening for all Birds and Bats

Species Common Name	Scientific Name	Protection Status	Designation and Ranking [a]	BLM habitat description	Potential for Occurance
Yuma myotis	*Myotis yumanensis*	BLM WMDO Special Status Species	NS-S (S3S4); NS (G5); WBWG (low to medium)	Found at least in the southern and western half of the state, primarily at low to middle elevations; recent collection in east central Nevada and a large colony near Rye Patch Reservoir suggests a wider distribution in the state; found in a wide variety of habitats from low to mid-elevations, including sagebrush, salt desert scrub, agriculture, playa, and riparian habitats; one of the species that is most tolerant of human habitation and one of the few that thrives in a relatively urbanized environment; often considered to be a "building" bat, it is also found in heavily forested settings elsewhere; current Nevada records indicate this species is distributed between 1,500-10,900 ft; ROOST HABITAT: day roosts in buildings, trees, mines, caves, bridges, and rock crevices; night roosts usually associated with buildings, bridges, or other man-made structures; RESIDENT STATUS: year round resident; WINTER STATUS: hibernates; no large winter aggregations have been found in Nevada.	High - Likely to forage in or near Project Area (frequency group detected)

[a] Rankings from: NV Natural Heritage Program; US Forest Service; NV Dept. of Wildlife; NatureServ.

Appendix B

Avian/Bat Incident and Nest Assessment Form

Operations Area:

Dead Species (circle one): **or** **Nest (circle one)**

Crow/magpie/raven Eagle Active
Hawk/falcon Owl Species (if known):_____
Small bird/Song bird Sage-grouse Inactive
Other _____ Unknown

Bat (list species if possible)_____

Bird/Bat Count_____

Date Found_____ **Time Found_____**

Cause/Indicators of death (circle one)

Collision Electrocution Natural Unknown Other_____

Finders Name_____

Finders Phone/Contact_____

GPS Location or Description of Location_____

Pole Identification Number (if applicable)_____

Nearest Pole to Transmission Line (if applicable)_____

Recommended Action(s) (circle)

Mortality
- Install bird flight diverters/fireflies
- Reduce vehicle speeds
- Continue to monitor (Justification required)
- Evaluate to determine appropriate action (Provide action in comments)
- No action (Justification required)

Nesting
- Install nest platform
- Relocate nest
- Trim nest
- Install nest guards
- Remove nest
- Evaluate to determine appropriate action
- No Action

Other Notes/Comments:

*To be completed for protected species only.