U.S. Department of the Interior
Bureau of Land Management

March 2025

McDermitt Exploration Project

Environmental Assessment **DOI-BLM-OR/WA-V000-2023-0045-EA**

Location:
Malheur County, Oregon
The Project is located entirely on public lands administered by the Bureau of Land Management, within the Payne Creek Quadrangle and in all or parts of Section 32, Township 40 South, Range 40 East; Sections 1, 2, 11 through 14, T41S, R39E; Sections 3 through 10, 17, and 18, T41S, R40E, Willamette Meridian

U.S. Department of the Interior
Bureau of Land Management
Vale District
Malheur Field Office
100 Oregon Street
Vale, OR 97918

TABLE OF CONTENTS

TABLES IN TEXT

APPENDICES

CHAPTER 1. INTRODUCTION

1.1. Background

The following Environmental Assessment (EA) is a site-specific analysis undertaken by the Bureau of Land Management (BLM) Malheur Field Office (MFO) for a proposed action taking place on public lands. HiTech Minerals, Inc. (HiTech), a wholly owned subsidiary of Jindalee Lithium Limited, Ltd., proposal to conduct phased mineral exploration activities. The McDermitt Exploration Project (Project) is located approximately 20 miles west of McDermitt, Nevada, in Malheur County, Oregon (Figure 1). The Project is located entirely on Bureau of Land Management (BLM) administered lands, within the Payne Creek Quadrangle and in all or parts of Section 32, Township 40 South (T32S), Range 40 East (R40E); Sections 1, 2, 11 through 14, T41S, R39E; Sections 3 through 10, 17, and 18, T41S, R40E, Willamette Meridian (Project Area; Figure 2).

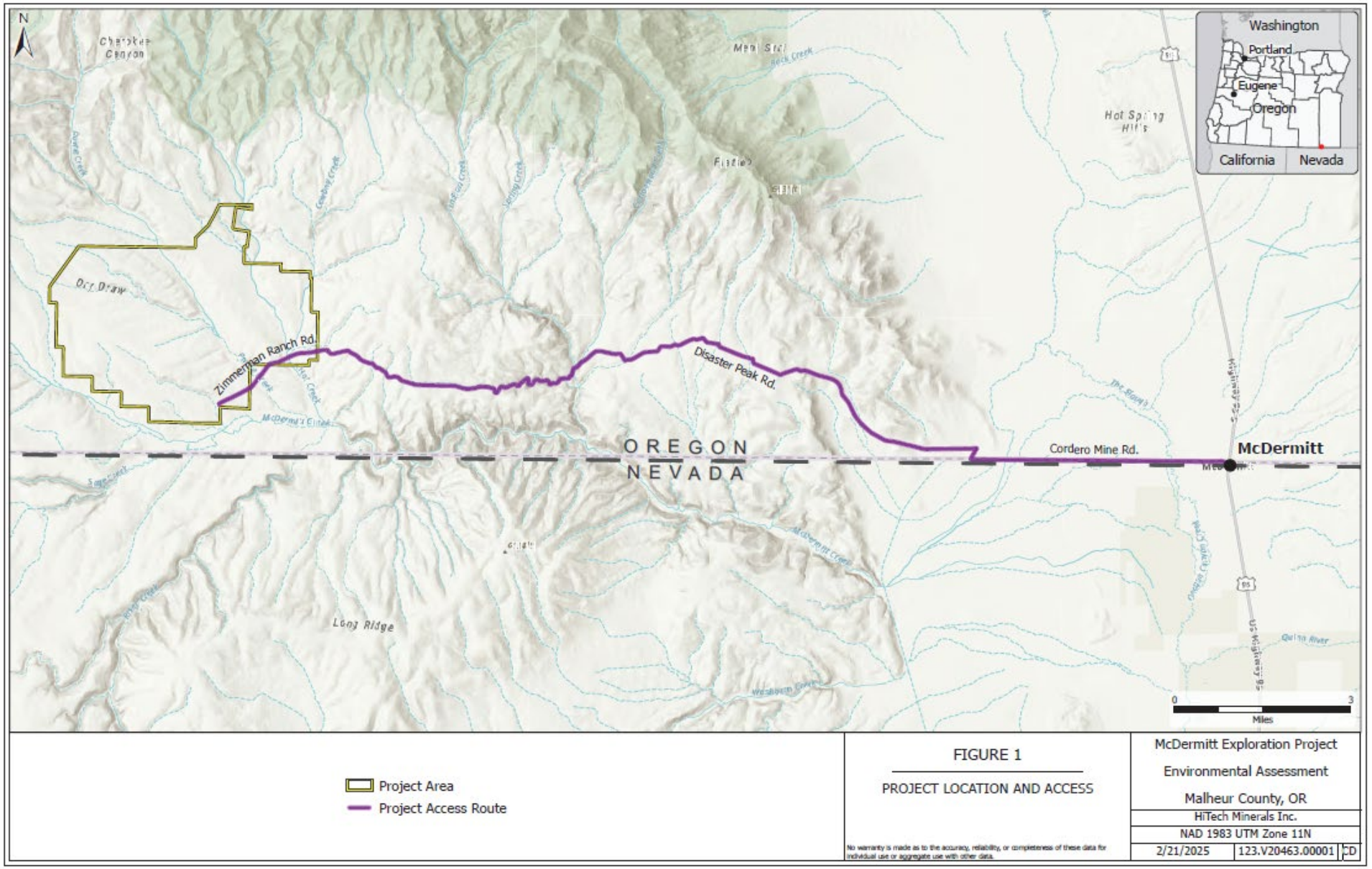
HiTech conducted mineral exploration under Notice OR106282838 (Notice) and proposes to conduct further activities under the Exploration Plan of Operations (EPO) No. OR-71665. The existing disturbance, authorized in the Notice, is incorporated into this Proposed Action, including reclamation requirements and the reclamation bond as presented in the EPO (HiTech, 2025a), which is included as Appendix C. HiTech submitted EPO No. OR-71665 to the BLM in August 2022, and the EPO was deemed complete in April 2023.

HiTech proposes to conduct activities in multiple phases. Each phase consists of the creation of access roads and drill site construction for the purpose of drilling boreholes to obtain subsurface rock samples and other information. Subsurface hydrological, geophysical, and geochemical data will be collected during the proposed drilling activities at various locations within the Project Area. Additionally, multiple boreholes will be completed as groundwater monitoring wells for future hydrogeological and geochemical data collection to support baseline studies and a meteorological monitoring station, including anti-perch devices such as an Applicant Committed Environmental Protection Measures (ACEPMs) device, will be installed on a drill site following exploration activities to support baseline studies.

Under the existing authorized Notice, HiTech has disturbed 4.13 acres in the Project Area. Additionally, to continue exploring within the Project Area for mineral resources, HiTech requests authorization to disturb as much as 99.2 acres by:

- Constructing up to 261 drill sites with sumps;
- Constructing up to 30.2 miles (163,559 linear feet) of roads;
- Constructing a 300-foot by 300-foot laydown and storage area;
- Constructing up to 40 groundwater monitoring wells; and
- Constructing a 10-meter meteorological monitoring station.

Both the acres disturbed under the existing Notice and the proposed EPO will total 103.3 acres.


N
Washington
Portland
Eugene
Oregon
California
Nevada
Dry Draw
Zimmerman Ranch Rd.
Disaster Peak Rd.
Cordero Mine Rd.
McDermitt
OREGON
NEVADA
Long Ridge
Hot Spring Hills
0
3
Miles
Project Area
Project Access Route
FIGURE 1
PROJECT LOCATION AND ACCESS
No warranty is made as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.
McDermitt Exploration Project
Environmental Assessment
Malheur County, OR
HiTech Minerals Inc.
NAD 1983 UTM Zone 11N
2/21/2025
123.V20463.00001
CD

This EA is an issue-based analysis of potential impacts that may result from the implementation of Project activities. The EA analyzes impacts to affected resources within the 7,200-acre Project Area based on questions that focus the analysis of the possible effects to resources instead of an all-encompassing study of the resources in the area. Potential impacts and issues were developed through internal scoping completed by the BLM, state and federal agencies, and the public scoping period.

1.2. Purpose and Need

The BLM's purpose is to approve, approve with modifications, or disapprove HiTech's proposed EPO to meet the statutory requirements of 43 CFR 3809 in a manner consistent with the General Mining Law of 1872, as amended, and with other laws, regulations, and land use plans, including the Record of Decision (ROD) for the 2024 Southeast Oregon Resource Management Plan (RMP).

The need for the action is established by the BLM's responsibility under the Mining Law of 1872, as amended, Section 302 of the Federal Land Policy and Management Act (FLPMA) (1976), as amended, and 43 CFR 3809. Specifically, the BLM is required to respond to a complete plan of operations and to prevent unnecessary or undue degradation of public lands managed by the BLM by operations authorized by mining law.

1.3. Decision to be Made

The BLM authorized officer (AO) will decide whether to approve the Proposed Action described in Section 2.2 and, if so, under what terms and conditions, conditions of approval, stipulations (such as conditions that are necessary to meet the performance standards of 43 CFR 3809.420 and to prevent unnecessary or undue degradation). Based on the environmental analysis documented in this EA, the BLM would: 1) approve the Project as submitted; 2) approve the Project subject to changes or conditions that are necessary to meet the performance standards of 43 CFR 3809.420 and to prevent unnecessary or undue degradation; or 3) disapprove or withhold approval of the Project if the BLM determines that the Project does not comply with 43 CFR 3809 and the FLPMA mandate to prevent unnecessary or undue degradation.

1.4. Relationship to Statutes and Regulations

The EA complies with federal laws and regulations, Executive Orders (EOs), Secretarial Orders, Department of Interior policies, and BLM policies. Below is a few of the relevant federal laws but is not an exhaustive list of law that this EA and the proposed project conforms to:

- Federal Land Policy and Management Act (FLPMA) (1976), as amended.
- General Mining Act (1872), as amended.
- National Environmental Policy Act (NEPA) (1969), as amended.
- Clean Air Act (1963), as amended.
- Clean Water Act (1972), as amended.
- National Historic Preservation Act (NHPA) (1966), as amended.
- American Indian Religious Freedom Act (AIRFA) (1978), as amended.
- Native American Graves Protection and Repatriation Act (NAGPRA) (1990).
- American Indian Religious Freedom Act (AIRFA) (1978), as amended.

- Native American Graves Protection and Repatriation Act (NAGPRA) (1990)
- Endangered Species Act (1973), as amended.
- Bald and Golden Eagle Protection Act (BGEPA) (1962).
- Migratory Bird Treaty Act (MBTA) (1918).

1.5. Conformance with the Land Use Plan

Land Use Plan Name: 2002 Southeastern Oregon Record of Decision (ROD) and Approved Resource Management Plan. The Proposed Action is in conformance with the goals and objectives of the 2002 Southeastern Oregon ROD and Approved Resource Management Plan which are to provide opportunities for exploration and development of locatable mineral resources while protecting other sensitive resources in accordance with the General Mining Law of 1872.

Land Use Plan Name: 2024 Southeastern Oregon ROD and Approved Resource Management Plan (BLM, 2024). The Proposed Action is in conformance with the goals and objectives of the amended 2024 ROD Southeastern Oregon RMP, which are to: 1) prioritize the protection of wilderness characteristics in the 33 lands with wilderness characteristics units identified in the RMP for protection; 2) continue to meet existing Travel Management objectives in the 2024 Southeastern Oregon RMP for the southeast Oregon planning area, Vale District; and 3) continue to meet existing livestock management objectives under the 2002 RMP (BLM, 2002). This RMP did not amend the 2002 RMP objectives for locatable minerals, nor withdraw additional lands from entry under the General Mining Act. The Project Area is open to mineral entry under the RMP.

Land Use Plan Name: Oregon Greater Sage-Grouse ROD and Approved Resource Management Plan Amendment (BLM, 2015) – The Proposed Action is in conformance with the goals and objectives of the 2015 ROD and Oregon Greater Sage Grouse Approved Resource Management Plane, which is to conserve, enhance, and restore the sagebrush system upon which Greater Sage-Grouse population depend to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners. The Proposed Action meets the specific conformance standards, which is documented in the Project's Greater Sage-Grouse Conformance Sheet provided in Appendix E. The Proposed Action is exempt from the 2024 Oregon Greater Sage-Grouse ROD and Approved Resource Management Plan Amendment (BLM, 2024) .

1.6. Scoping and Issues

The BLM began the environmental review process by gathering an Interdisciplinary Team, which was comprised of BLM's resource specialists, and state, federal, and tribal agencies, to complete a baseline needs discussion. This meeting determined the required baseline surveys and reports to determine the resources presence and the initial condition of the resource. The BLM approved Universal Engineering Sciences, Inc. (UES) and other third-party contractors and the prepared baseline reports, by the contractors. Baseline surveys began in 2022 and completed with minor updates in 2023. A list of the Baseline studies can be found on BLM's ePlanning site for the project. (*https://eplanning.blm.gov/eplanning-ui/project/2025844/510)*

On July 31, 2023, the BLM issued a news release and opened a 30-day public scoping period to seek input on the Project. On August 15, 2023, the BLM extended the public scoping period to September 15, 2023. The comments received were considered in issue statements, crafting the alternatives, and the resources analyzed in this EA. The Scoping Report can be found on the BLM ePlanning site: *https://eplanning.blm.gov/eplanning-ui/project/2025844/510*.

On January 10, 2024, the BLM Interdisciplinary Team met with HiTech, the U.S. Fish & Wildlife Service (USFWS*)*, Oregon Department of Agriculture (ODA), Oregon Water Resources Department (OWRD), Oregon Department of Fish & Wildlife (ODFW), and the Fort McDermitt Paiute and Shoshone Tribes *of the Fort McDermitt Indian Reservation* to identify issues to be considered in this EA, craft resource issue statements from public scoping and agencies, and identify the resources not to be considered in the EA. The team completed the process and agreed upon the results by completing the NEPA Baseline Needs Assessment Form (BNAF). Table 1-1 identifies resources considered, issues considered and where effects analyses are located within this document. The potentially impacted resources carried through analysis in Chapter 3 are provided in Table A-1 (Appendix A) and Table 3-5.

The BNAF outlines whether resources are "Not Present", "Present Not Affected", or "Present Affected". Those resources determined to be "Not Present" in the Project Area will forgo further analysis. If the resource is, "Present Not Affected", NEPA requires no further analysis; however, the EA does provide justification in the appendices, in adherence to the "hard look' doctrine and other federal regulations. Some resources presented in the "May be Affected" section in the BNAF were dismissed as "Not Present" or "Present but Not Affected" after survey results were received and/or further analysis with accompanying rational in Table A-1 (Appendix A). The BLM's consideration of these resources and issues ensures compliance with Federal laws, statutes, or EOs, which impose certain requirements upon all federal actions, and to those particular to the Vale District BLM office.

Table 1-1. Issue Statements and Analysis

Resource	Issue Statement	Analysis
Cultural Resources	How would Project activities affect archaeological [cultural] resources in the Project Area?	See the full analysis for cultural resources in provided in Section 3.3.
Soils	What effects would transportation and pad development have on soils within the Project Area?	See full analysis of soils in Section 3.11.
	What effects would soil displacement and impaction associated with transportation and pad development have on soil activity within the analysis area?	
Vegetation	How would Project activities impact the composition and abundance of vegetation?	See full analysis of vegetation in Section 3.15.
Noxious and Invasive, Non-Native Species	How would Project activities impact noxious weeds, and invasive non-native species introduction and spread?	See full analysis of noxious and invasive species in Section 3.9.

Resource	Issue Statement	Analysis
Terrestrial Wildlife (excluding migratory birds)	How would Project activities affect availability and quality of habitat?	See full analysis of wildlife in Section 3.5.
	How would Project activities affect big game use and movement?	
Migratory Birds	How would Project activities affect migratory birds?	See full analysis of migratory birds in Section 3.7.
BLM Sensitive Species – Plants	How will Project activities impact BLM sensitive plant species?	See full analysis of BLM Sensitive Plant species in Section 3.12.
	How would Project activities impact the ability of BLM Sensitive Plant species to expand?	
BLM Sensitive Species – Terrestrial Wildlife	How would Project activities affect availability and quality of habitat for BLM Sensitive terrestrial wildlife?	See full analysis of BLM Sensitive Terrestrial Wildlife in Section 3.13.
	How would noise affect Greater Sage-Grouse (summer and late brooding)?	
	How would Project activities affect BLM Sensitive terrestrial wildlife?	
	How would Project activities affect burrowing owl?	
	How would nighttime lighting affect bat populations?	
Aquatic Wildlife, including BLM Sensitive Species	How would Project activities affect aquatic populations, and habitat?	Potential habitat may exist for aquatic species. See full analysis of aquatic wildlife in Section 3.4.
	How would Project activities affect potential habitat for the Western Ridged Mussel?	
Threatened and Endangered Species and Proposed Threatened and Endangered Species - Wildlife	How would Project activities affect potential habitat for Lahontan cutthroat trout?	See full analysis concerning Lahontan cutthroat trout habitat in Section 3.14.
	How would Project activities affect potential habitat for the Monarch Butterfly?	See full analysis concerning the Monarch Butterfly in Section 3.14.
Socioeconomics	What will the effects of the Project have on the socioeconomics of the surrounding area?	See full analysis of socioeconomics in Section 3.10.
Water Resources (Surface and Ground Water)	How would Project activities affect surface water quality?	See full analysis concerning water quality in Section 3.17.
	How would exploration drilling affect groundwater quality?	
	How would Project water use affect surface and groundwater availability for existing water uses?	

Resource	Issue Statement	Analysis
Livestock Grazing	What impacts do exploratory activities have on livestock grazing management, including existing permitted livestock grazing use, and functionality of range improvements?	See full analysis of livestock grazing in Section 3.6.
Native American Religious and Cultural Concerns	How will Project activities affect traditional uses, including first foods?	See full analysis of cultural resources in Section 3.3.
Visual Resources	How will the Project activities affect visual resources?	See full analysis in Section 3.16.

CHAPTER 2. ALTERNATIVES

This EA analyzes the potential effects of implementing Alternative A - No Action and Alternative B - Proposed Action. The No Action Alternative is considered and analyzed to provide a baseline against which to compare the impacts of the Proposed Action. No other alternatives were brought forward for detailed analysis. Alternatives considered but not carried forward for detailed analysis are discussed in Appendix D.

2.1. Alternative A – No Action Alternative

The No Action Alternative, for this EA, is a disapproval or withholding approval of the proposed exploration found in the EPO (HiTech, 2025a [Appendix C of this EA]), due to the finding that the proposed operation's impacts result in Unnecessary or Undue Degradation (UUD). The No Action Alternative is not a discretionary alternative as the No Action Alternative provides a baseline for comparison of the impacts of the proposed action. However, under the General Mining Law of 1872, and within the framework of 43 CFR 3809 and 3715 regulations, the BLM is limited to disapproval, or withholding approval of the Plan of Operations only if it has been determined that the proposed action will result in UUD, as defined under 43 CFR 3809.5. Therefore, the possibility of withholding approval of this Plan of Operations cannot be determined until after the environmental evaluation process is complete, the FONSI discloses the impacts and concludes that UUD is not preventable through mitigation. This EA will not consider denial and closer of the Exploration activities under the active notice as part of the No Action Alternative. In accordance with NEPA regulations, the No Action Alternative considers only the effects of what would happen if the proposed action does not occur. The BLM previously approved the current exploration activities following Mining regulations and the notice level of exploration is occurring.

Under the No Action alternative, the BLM would disprove HiTech's Proposed Action to conduct phased mineral exploration activities described in Section 2.2. and none of the activities described in Section 2.2 would be implemented.

2.2. Alternative B – Proposed Action

Under the Proposed Action, the BLM would grant HiTech approval to conduct further exploration activities under the EPO.

The Project Area is comprised of 7,200 acres of unpatented claims. All activities would occur on public lands administered by the BLM MFO, held through 351 placer claims and 440 lode claims. To continue exploring the Project Area for targeted lithium sediments, HiTech would construct up to 261 drill sites with sumps, access roads, and one laydown and storage area, for a total of 103.3 acres of proposed disturbance over five years within the Project Area. Project activities would be phased over time as defined under the National Historic Preservation Act, 54 USC § 300308 (Figure 3).

Existing Notice-level (OR106282838) disturbance of approximately 4.13 acres is included in disturbance acreage described below for the Proposed Action (Table 2-1). Notice-level disturbance includes the construction of access roads, drill pads, laydown area and water supply

well, consistent with the same actions under the Proposed Action. The Notice would be closed if the EPO is approved.

Table 2-1. Existing and Proposed Phased Disturbance Within the Project Area

Exploration Activity	Existing Disturbance Notice OR106282838 Acknowledged (acres)[1]	Actual Disturbance Width (feet)	Proposed Disturbance Length (linear feet)	Proposed Number of Drill Sites	Total Disturbance (acres)
Constructed/Proposed Roads 0 – 10% slope	-	16.5	143,737	-	54.4
Constructed/Proposed Roads 11 –20% slope	-	20.2	14,505	-	6.7
Constructed/Proposed Roads 21 – 30% slope	-	26.1	1,317	-	0.8
Constructed/Proposed Drill sites (including sumps) 0 – 10% slope	-	70.8	-	218	29.2
Constructed/Proposed Drill sites (including sumps) 11 –20% slope	-	86.4	-	39	5.2
Constructed/Proposed Drill sites (including sumps) 21 – 30% slope	-	111.6	-	4	0.5
Laydown/Storage Area	-	353.8	300	1	2.4
Total	**4.13**	-	-	**-**	**103.3**

Note: [1] Notice OR106282838 disturbances previously permitted included in the total disturbance acreage. Notice-level disturbance includes the construction of access roads, drill pads, laydown area, and water supply well, consistent with the same actions under the Proposed Action. The Notice would be closed if the EPO is approved.

2.2.1. Access

The Project Area is accessed from McDermitt, Nevada, by heading west on paved Cordero Mine Road for 4.6 miles, then west on unpaved Disaster Peak Road for 12.9 miles, then left onto unpaved Zimmerman Ranch Road for 2.2 miles (Figure 1). The Cordero Mine Road, Disaster Peak Road, and Zimmerman Ranch Road are county-maintained travel routes. Light maintenance may be conducted on these routes by HiTech, as needed, and would include sediment and erosion control, grading, and surface maintenance. Any maintenance on existing roads would be limited to the existing road width and conducted in coordination with Malheur County and the BLM and will be limited to the time period that exploration activities are occurring. No new disturbance would result from existing road use or maintenance. A non-toxic, BLM-approved road binder solution may be applied on the first 8 miles of Disaster Peak Road for dust suppression and maintenance. If existing roads (Cordero Mine Road, Disaster Peak Road, and Zimmerman Ranch Road) or underlying infrastructure, such as water lines, are damaged due to the Proposed Action, HiTech would return them to pre-operational condition. Road maintenance would be completed per the Road Maintenance Agreement HiTech holds with

Malheur County, which only applies to Disaster Peak Road. HiTech would seek a fire waiver annually from the BLM at the start of each fire season.

2.2.2. Drill Road Construction

Although overland travel would be used where practicable and safe, Table 2-1 includes disturbance for blading of all roads to provide a conservative number of acres for road disturbance. Proposed roads would have an average 14-foot travel width. If needed, roads would be constructed for single-lane travel, including turnouts where needed, a travel lane, stormwater controls, and cut and fill depending on underlying slope. A masticator may be used to shred brush over access roads before use to create a vegetative mat and reduce potential environmental impacts. Only brush from the drill road travel width would be used for mastication. New access would be designed to the minimum size needed to accommodate intended safe use and to maintain surface resource protection. Where feasible, exploration roads would be constructed along existing contours. Exploration road construction would be conducted in such a manner as to balance cuts and fill, including limiting road construction on steep slopes, where practicable. For slopes greater than 10 percent, HiTech will implement erosion and sediment control Best Management Practices (BMPs) at drill sites and associated sumps necessary. Use of more stringent BMPs will be associated with drill sites on slopes greater than 10 percent, such as silt fencing and berms. BMPs will be utilized to control erosion and sedimentation throughout the Project as necessary and based on the slope of the area of disturbance. In reclamation, where slopes are greater than 10%, regardless of the classification, straw wattles will be staked on the ground surface perpendicular to slopes at the top and bottom of the reclaimed area to prevent erosion. Straw wattles will be certified as weed-free, and all components will be biodegradable. Straw wattles will remain in place in perpetuity. If slopes exceed 33%, wattles will be placed perpendicular to the slopes at 20-foot intervals.

HiTech would construct new, temporary roads using BMPs, according to BLM's *Primitive Roads Design Handbook (BLM, 2012)*, to manage sedimentation from stormwater events. Temporary roads would be constructed using a bulldozer (using less than a 12-foot-wide blade) or a track-mounted excavator. All side cast soil would be saved and stockpiled at the base of the road for reclamation. An interim seed mix would be applied to the side cast material as necessary for erosional stabilization or weed control purposes. Prior to final reclamation, newly constructed roads would be water-barred to minimize erosional damage as the BLM directs to meet performance standards.

Five stream crossings would be used to access the proposed drill sites (Figure 4). Two of the stream crossings have existing metal culverts on Zimmerman Ranch Road to cross Cherokee Creek and Payne Creek. Three of the stream crossings would use low water crossings via existing, unimproved fords on Cherokee Creek at Disaster Peak Road and on Mine Creek at Turner Ranch Road and Disaster Peak Road. The stream crossing with an existing metal culvert on Payne Creek and the stream crossing using a low water crossing via an existing ford on Mine Creek at Disaster Peak Road are located outside the Project Area. Low water stream crossings would use clean washed gravel or manufactured mats in accordance with the standards for temporary crossings provided by the U.S. Army Corps of Engineers (USACE) Portland District and the Oregon DSL. Ephemeral drainages will be crossed to access the proposed drill sites; however, drainages will not be crossed when water is present and HiTech will implement erosion

and sediment control BMPs including stormwater run-on diversion channels where necessary and straw wattles installed prior to stormwater runoff entering the drainage channel in accordance with the *Stormwater Pollution and Control Plan* (Appendix D of the EPO). Routine maintenance of temporary constructed access roads and existing roads may be required and would consist of smoothing ruts, removal of large rocks, filling holes with fill material, and grading and re-establishing or building water bars when necessary. Proposed dust control measures may include watering roads and pads before and after grading activities, and on a routine basis while the road is being used based on site conditions. Reduction of equipment speeds during operations will be used while on-site. Water for dust suppression will be supplied from the water supply well located within the Project Area. Water frequency and volumes will very and are dependent on-site conditions. The maximum volume of water that can be produced on site is 41,250 gallons per day.

When other methods are not adequate, gravel overlay obtained off-site may be considered for dust and erosion control. Use of chemical binders, such as mag-chloride, will be limited to Disaster Peak Road. The chemical binder to be used will be provided to the BLM and Malheur County for approval prior to application. All roads would be maintained while in use.

2.2.3. Drill Site Construction

Drill sites on slopes greater than 5 percent would require site leveling to operate in a safe manner. Balanced cut and fill construction would be used to the extent practicable to minimize the exposed cut 0s and the volume of fill material. All soil would be salvaged and stockpiled at the drill pad for reclamation. Drill pads that occur near washes will implement a 300-foot buffer and use BMPs, such as straw bales and wattles, would be used to capture stormwater runoff.

Actual drill site working surface dimensions would vary depending on equipment selection and underlying slope. Proposed drill site dimensions are 80 feet long by 60 feet wide, including sumps. Sumps for drilling effluent would be excavated using a backhoe or excavator. Sumps would be constructed adjacent to the drill site and connected by a ditch to direct water flow from the borehole. Anticipated sump dimensions are approximately 20 feet long by 10 feet wide by 6 feet deep and are sufficient to hold approximately 7,500 gallons each. One end of each sump would be sloped to provide escape routes for humans, wildlife, or other animals.

Where available (i.e., not in areas covered with rock), soils would be salvaged and stored adjacent to side cast berm material for reclamation purposes. Soils stockpiles would be in place for short periods of time, no longer than one operating season, until each drill site is reclaimed. Side cast materials created from the construction of sumps would be used for backfilling.

Drill sites may also be used as temporary laydown and storage areas within the Project Area for staging equipment, drill water, and related material storage. A 10-meter meteorological monitoring station would be installed on a proposed drill site for the collection of baseline data (Figure 2). A chain link fence will be constructed around the station to prevent damage from livestock and/or wildlife and prevent vandalism. Anti-perch devices will be installed on the tower as well to mitigate potential impacts to wildlife, specifically greater sage grouse.

2.2.4. Drilling Methods

Boreholes/drill holes would be drilled using wireline core, sonic, and/or Reverse Circulation (RC) methods from up to three drill rigs. Some RC holes may be completed to total depth with a core rig should ground conditions preclude completion with a RC rig. Multiple drill holes (vertical or angle) may be drilled from a single drill site.

Planned borehole/drill hole lengths (total vertical depths are dependent on borehole angle from horizontal) would range between 300 and 800 feet below ground surface. The maximum length for exploration drill holes would be 800 feet with an average drill hole length of 600 feet. RC and sonic drilling bits are 8 inches in diameter or less. Diamond drilling for this Project would use a maximum hole diameter of 8 inches in diameter or less. The largest hole diameter for sonic drilling would be 6 inches in diameter.

The RC drilling method is a form of percussion drilling, by which an air operated piston delivers rapid impacts to the drill bit. A feed force is applied to maintain rock/bit contact, and compressed air is used to remove the drill cuttings from the hole in the inside of the drill pipe, rather than the annulus, advancing the hole depth with minimal sample contamination. At the surface any produced groundwater would be collected in a sump along with drill cuttings.

Diamond core drilling uses an annular, diamond-impregnated bit mounted on the end of a rotating string of pipe. The core bit cuts a solid core, which passes up inside the drill rods as the bit advances. When the inner core tube is full or breaks loose from the bottom of the hole, an overshot on a wireline assembly is placed in the drill pipe, and the core tube is retrieved to the surface. When empty, another inner core tube is inserted into the drill pipe, pumped to the bottom of the borehole, latched into the drill bit, and drilling operations then resume.

The use of a wireline retrieval system increases efficiency because the drill pipe is not removed from the borehole for every sample taken, as would be the case if conventional core barrels were used. The bit is lubricated with freshwater drilling fluid, which is pumped to the cutting face down the inside of the drill rods. It then returns to the surface in the annulus between the rods and the sides of the hole. At the surface, the return fluid is collected in a sump where fine suspended ground rock material is allowed to settle.

Sonic drilling uses high frequency vibration to advance the drill bit without the use of water or air. It uses a similar wireline retrieval system as a diamond core drill.

Up to 40 exploration boreholes would be converted to groundwater monitoring wells at select locations. The exploration boreholes selected for conversion to a groundwater monitoring well will be 8 inches in diameter. Groundwater monitoring wells would be constructed, developed, and abandoned in accordance with Oregon Administrative Rule (OAR) 690-240. A transducer and pump would be installed in each well to facilitate data collection and sampling.

Each borehole would be properly abandoned before the rig moves from the drill site. Boreholes would be plugged in accordance with OAR 632-033-0025(7)(e). The water supply well would be abandoned and reclaimed per Oregon abandonment regulations OAR 690-0030 through 690-220-0140. The EPO includes a summary of Oregon Drill Hole abandonment provisions.

Up to seven stream monitoring stations have been installed within the Project Area. These stations are temporary, dedicated, and discrete and are intended to measure continuous stream stage and water temperature. Each instream monitoring station is equipped with a portable electronic pressure transducer and data logger which will be downloaded quarterly. No disturbance was required for the installation of the stream monitoring stations.

2.2.5. Water Supply and Management

Water for drilling operations would be obtained from the water supply well and storage location (Figure 2). Water use is anticipated to average 4,000 gallons per drill rig, per 24-hour day with 2 rigs operating 24-hours a day resulting in a total of 8,000 gallons per day. An additional 6,000 gallons per day would be required for dust suppression.

A 50-kilowatt (kW) to 75 kW portable generator would be located adjacent to the water supply well and used to power the submersible pump. A 500-gallon portable fuel tank with secondary containment that would contain 110 percent of the volume stored in the tank would also be located near the water supply well.

Drill water would be pumped from the proposed on-site water supply well to up to three, 20,000-gallon portable water tanks (a total of 60,000-gallon capacity), located adjacent to the water supply well withing the water supply drill pad footprint, which would be used to store and deliver water to individual water trucks for delivery to the drill rigs. Tanks will be located as close to the water supply well as possible while allowing for access for sampling and maintenance of the well and allowing for safe access for water trucks. The number of storage tanks on site would vary depending on rig type, count, and overall water consumption. Water would not be discharged to the ground surface during operation of the water supply well.

The only anticipated water management activities would be associated with the water supply well construction and continued operation to support drilling operations, including dust suppression as needed.

2.2.6. Drilling Fluid and Effluent Management

A freshwater bentonite-based drilling fluid would be used for wireline coring in a closed-loop circulation system. For RC holes, freshwater is injected as needed to suppress dust and remove cuttings from the bit face. In either method of drilling, all fluid or produced groundwater would be contained in the adjacent sump or mud tanks.

All drilling fluid products used for the Project would meet National Sanitation Foundation (NSF)/American National Standards Institute Standard 60. Other passive filtration methods may be used to manage the separation of fine particulates from the water. These passive filtration devices may include filter bags or centrifuges. The sumps would be allowed to consolidate prior to backfilling. Portland cement or adjacent excavated materials may be added to the drilled solids in the sump to facilitate absorption of any remaining free water prior to backfilling the sump.

To ensure safety and protection of the environment, individual sumps would be backfilled within 30 days after completion of drilling operations. If used, mud tanks would be cleaned at the drill site and the contents would be contained in the sump and covered with backfilled soil materials. Sumps would be fenced until backfilling occurs.

2.2.7. Laydown and Storage Area

HiTech proposes to construct one laydown and storage area that would be approximately 300 feet wide by 300 feet long (Figure 2). This laydown area would be used to store drilling equipment and consumable materials such as Portland cement, bentonite and well casing to support exploration activities in the Project Area. All chemicals in the laydown area will be properly labeled, inventoried, and stored in compliance with Occupational Safety and Health Administration (OSHA) Hazard Communication Standard to include staff training. The water supply well is located at the laydown area and is proximal to an existing access road. The water well and any materials left on site will be secured and stored in a manner that would prohibit unauthorized use. Temporary water storage tanks may also be placed here as needed.

2.2.8. Equipment and Vehicles

Equipment needs and personnel are shown in Table 2-2. Portable electrical power sources are proposed for the exploration activities, including supplemental power needed at drill sites or at the water supply well.

Contractors would be used for road and drill site construction and for drilling operations. Local contractors and residents would receive preference where feasible. Up to 15 contracted employees would be employed. The Project would be managed by HiTech staff or their contractors.

Table 2-2. Proposed Equipment and Projected Labor

Equipment	Units	Projected Labor
CAT D-7 Dozer (or similar)	1	1
CAT 345C Excavator (or similar)	1	1
Truck or Track Mounted Drill Rigs (3-man crew each rig)	3	9
Supervisory/Support Geological Staff	0	3
Four-Wheel Drive Vehicles	6	0
Pipe Truck or Trailer	3	0
Mud Tanks (2 per rig)	6	0
Water Storage Tanks (20,000-gallon)	3	0
Portable Generator – Water Supply Well (~50 kW - 75 kW)	1	0
Portable Fuel Tank (500-gallon or less)	1	0
Rig Portable Light Plant/Generator (6-kW or similar)	3	0
Water Truck (4,000-gallon or less)	3	0
ATV	3	0
Portable Toilets	4	0
Maintenance Service Truck	1	1
Total	**40**	**15**

All personnel would drive to the Project Area daily from either McDermitt or Winnemucca, Nevada. No living or dining facilities would be constructed on site.

Whenever practicable, equipment maintenance and repairs would be performed off site. If repairs must be made on site, spill kits/plastic sheeting and/or absorbent pads would be placed underneath equipment to catch drips or spills.

No constructed structures are proposed with the exception of the 10-meter meteorological monitoring station, and only portable equipment would be used. A portable toilet would be kept in the laydown area during drilling operations. Additional portable toilets would be placed at each active drill site, as appropriate. The placement of portable toilets would meet or exceed the standard requiring at least one toilet for every 20 crew members as required by OSHA regulations at 29 CFR 1926.51.

2.2.9. Non-hazardous Solid Waste

Non-hazardous Project refuse or solid waste would be collected in approved trash bins and/or containers equipped with lids. HiTech would remove trash bins and/or containers and dispose of debris at an approved landfill. Trash bins would be inspected regularly for leaks and lids would remain closed. Materials that attract wildlife would be removed from the site each shift. Debris that may contain hazardous characteristics, residue, or fluids would be disposed of in appropriate containers, and sent to an approved off-site facility.

2.2.10. Public Safety

Public safety would be a priority throughout the life of the Project. All equipment and other facilities would be maintained in a safe and orderly manner. Public access to active operations would be restricted by high visibility portable fencing and the posting of portable visible warning signs as necessary.

2.2.11. Project Schedule

The Project would begin immediately upon federal and state authorization. Exploration activities would be limited to a five-month time frame annually (July 1 to November 30) to limit the impact and protect native species. The exploration drilling operations would be conducted on a 24-hour, seven days per week schedule. This Project would require up to three drill rigs on site running two 12-hour shifts with a crew size of three personnel per shift, per rig for a period of up to five years. Each borehole is projected to take 2 to 20 days to complete, depending on drilling method, total length, drilling conditions, and weather.

It is anticipated drilling activities and support would introduce up to 18 round trips between McDermitt and the Project Area per day, five months per year. The trips were estimated on the basis there would be three-day-shift driller pickups, three night-shift driller pickups, geotechnical sample trucks, one driller foreman pickup, two water truck driver pickups, two backhoe or bulldozer operator pickups, two geologist pickups, and one manager pickup per drilling day. This estimate provides for the maximum anticipated traffic for operations from July 1 through November 30, though trips to and from the Project Area would be consolidated as practicable.

HiTech does not anticipate temporary closure (closure greater than 60 consecutive days) during the exploration drilling activities beyond the seasonal closure from December 1 to June 30. Inclement weather may cause short-term suspensions of activities for several days. In the event of an unplanned temporary closure of more than 60 days, HiTech would undertake the following measures:

- Equipment, temporary facilities, and supplies would either be removed from the site or secured from theft and vandalism;
- All disturbed areas would be stabilized and seeded, and erosion controls implemented as necessary;
- Interim monitoring and inspections would be conducted to ensure safety and environmental integrity of the site; and
- HiTech would notify the BLM in writing within 30 days after any Project suspension that is anticipated to last longer than 60 days.

2.2.12. Reclamation

Reclamation methods include detailed activities, schedule, post-closure monitoring and success criteria. Reclamation would occur when sites are no longer needed at the completion of each drilling season. Site reclamation would include filling sumps, recontouring as necessary, scarification of soils, revegetation and, where defined by site conditions, temporary livestock exclusion. Constructed roads and drill sites would be recontoured to the original topography as practicable.

Generally, the final surface of backfilled sumps and recontoured areas would be left in rough condition to hold seed and to optimize germination (small humps, pits, etc.). Recontouring, soils placement, revegetation, and BMPs would be used to control erosion and sediment runoff in areas of disturbance throughout the Project as necessary. Certified weed free straw bales, wattles, and other diversion controls may be used to prevent erosion pending revegetation. These control devices would be maintained until final reclamation criteria are achieved and/or left in place. In accordance with BLM regulations, reclaimed areas would be seeded with a certified weed-free BLM-approved seed mix which will include a sterile triticale hybrid to act as a nurse crop and improve the success of the seeded native species. Changes and/or adjustments to the seed mix and/or application rates may be made to improve reclamation success. Seeding would occur using a seed drill or other appropriate method. Seeding would be implemented in the fall whenever possible to support retention and spring moisture for germination. All disturbances not required for future exploration activities will be reclaimed in the same year that the disturbance occurs.

Upon completion of reclamation, site monitoring would be conducted by HiTech, or a designated specialist, such as, but not limited to someone trained and experienced to conduct vegetation surveys. The result of the site monitoring will be reported to BLM annually. This will occur once per year during the peak growing season (May or June) for a minimum of three years and until revegetation standards have been met. Monitoring of revegetation success would be conducted concurrently with annual monitoring for noxious weeds. Annual reporting would be conducted and sent to the BLM for review. Noxious and invasive weed control measures may be necessary

post-reclamation and would be completed according to the Project's *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO).

Reclamation success would be determined through a future quantitative and qualitative comparison of reference sites and the reclaimed drill sites and will meet the requirements of 43 CFR 3809.420(b)(3). Reference sites would be selected from native plant communities within the Project Area that represent the post-disturbance land use objectives and representative of the areas being reclaimed. Post-reclamation maintenance may be required based on monitoring results and could include regrading, herbicide application and/or revegetation. The Reclamation Plan is included in Section 6 of the EPO (Appendix C).

2.2.13. Design Features

The following ACEPMs and BMPs would be used to minimize potential impacts to resources resulting from the Project. Identification and avoidance of resources of concern, combined with concurrent reclamation, would be the primary means of environmental protection to minimize or avoid impacts. All ACEPMs and BMPs would be implemented throughout the life of the Project. The below list is a summary of the ACEPMs and BMPs found in the Plan.

Air Quality

- Comply with all applicable state air quality standards, including Requirements for Fugitive Emissions (OAR 340-208-0210).
- Water roads, drill sites, and other disturbed areas as necessary in conformance with Oregon Department of Environmental Quality (ODEQ) Visible Emission and Nuisance Requirements to control fugitive dust.
- Minimize vehicular traffic and maintain a safe and appropriate speed limit for existing road conditions.
- Implement U.S. Environmental Protection Agency (EPA) Method 22 to monitor fugitive dust emissions during extremely dry conditions, as appropriate.

Biological Resources

- Implement a seasonal drilling shutdown December 1 through June 30 each year to avoid impacts to big game wintering and greater sage-grouse lek season.
- Coordinate with ODFW to determine an appropriate compensation level to meet the requirements of a future greater sage-grouse mitigation plan and be compliant with OAR 660-023-0115 and OAR 635-140-0025.
- Observe prudent speed limits (15 to 25 miles per hour [mph] as conditions warrant). Reduce vehicle speeds in areas of disturbance to minimize fugitive dust, protect wildlife and livestock, and to maintain operational safety.
- Consolidate trips to and from the Project Area as practical to the minimum necessary to safely complete the Project.

- Use road closure mechanisms to restrict overland travel routes to administrative use during drilling operations and to prevent use after drilling operations have ceased.
- Take all available and practical measures to ensure wildlife is not unduly disturbed, whether through spatial avoidance or timing of exploration activities.
- Conduct biological clearance surveys of work sites targeted for that season's construction. Clearance surveys would include avian species (including migratory birds), nests (including burrows), and BLM Sensitive plant species, as appropriate.
- Do not knowingly disturb nesting migratory or game birds whether through spatial avoidance or timing of exploration activities.
- Fully or partially shield all outdoor light fixtures except incandescent fixtures of 150 watts or less and other sources of 70 watts or less. LEDs in warm colors will only be used. Direct lights down and use the lowest lumens possible to safely conduct operations.
- Avoid disturbance of habitat for special status species[1], as much as practicable.
- If avoidance of special status species habitat is not possible and previously unidentified special status plant or wildlife species are identified within the Project Area, exploration construction and drilling activities within the species' habitat would be modified to mitigate for potential impacts in coordination with the BLM, USFWS, and ODFW, as appropriate.
- Conform to the approved 2015 RMP for the greater sage-grouse:
- Operational shutdown during lekking season (December 1 through June 30),
- Implementation of *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO),
- Establishing mitigation compensation to offset potential habitat loss,
- Completing reclamation activities seasonally, and
- Completion of the Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA) Conformance Review Worksheet.
- If possible, adjust proposed activities to provide a 100-foot buffer for BLM Sensitive plant species. Should avoidance not be possible, consider the species-specific information and monitoring and mitigation recommendations in the Special Status Plant Assessment (UES, 2023) to determine the likelihood of activities trending this species toward a listing under the ESA.

[1] *Special status species*: Species that are (1) federally listed (threatened or endangered), proposed, or candidates for listing under the ESA; (2) delisted species (minimum 5 years post-delisting or throughout the post-delisting monitoring period, whichever is longer); and (3) BLM sensitive species (BLM 6840 Manual, 2024).

- Maintain strict weed control near BLM Sensitive plant species and avoid using herbicides where they occur.
- All sumps would be sloped, or ramped, at one end to allow escape by humans or animals.
- Limit vegetation disturbance to the areas identified under the Proposed Action. Conduct reclamation of disturbed areas as soon as the area is no longer needed in accordance with the standards in the Southeastern Oregon RMP and CFR 3809.420, the Oregon Department of Geology and Mineral Industries (DOGAMI) chapter 632 Division 33 (632-33) (CFR 3809.420), and as summarized in the EPO.
- Stabilize and seed all disturbed areas during seasonal closures and implement erosion controls in accordance with the Stormwater Pollution and Control Plan (Appendix A).
- Conduct tailgate sessions for contractors regarding BMPs for noxious weed control and identification.
- Conduct cleaning and inspection of new equipment before use in the Project Area and cleaning of vehicles and equipment that have encountered areas of noxious weeds. Decontaminating vehicles would include power-washing or using compressed air to blow off vehicles and equipment, particularly the undercarriage, to ensure that the spread of noxious weeds is minimized. Vehicles will not be cleaned within 300 feet of a stream.
- Monitor and document noxious weed occurrences to ensure that new invaders are not colonizing areas of disturbance.
- Noxious weeds that are mechanically removed would be disposed of in a location and manner acceptable to the BLM.

Cultural and Paleontological Resources

- Do not knowingly disturb, alter, injure, or destroy any scientifically important paleontological remains or any historical archaeological site, structure, building, or object encountered in the Project Area.
- Immediately cease activities within 100 feet of any discovery of human remains, burials or any previously unidentified cultural (archaeological or historical) resources during Project operations. Ensure such discovery is appropriately protected and immediately notify the BLM authorized officer. Leave the discovery intact until authorized by the BLM officer. Comply with any specific discovery procedures under applicable regulations, the PA and any cultural mitigation plan established under the PA.
- Implement the terms under the PA to address whether identified sites and isolated finds are contributing elements to the potential lithic district and address potential effects on individual resources.

Hydrological Resources

- Only use existing stream crossings/fords. Do not establish new crossings.
- Conduct all new construction at least 300 feet from either side of the flood-prone width for all perennial and intermittent waters, and outside of riparian habitat, whichever is greater.
- Protect existing low water crossings/fords at Mine and Cherokee Creeks with clean, washed gravel or temporary mats according to the standards for temporary crossings provided by the Portland District USACE and Oregon DSL. Incorporate construction BMPs for timing of in-water work and sediment and erosion control as described in the *Stormwater Pollution and Control Plan* (SWPCP; Appendix D of the EPO).
- Conduct surface water monitoring according to the protocol provided in the *Monitoring Plan* (Appendix E of the EPO). The results of the surface water monitoring will assist HiTech in determining the effectiveness of the mitigation activities and provide the opportunity for modifications.
- Completely contain groundwater encountered during drilling in the associated sump.
- Properly abandon each borehole or convert to a monitoring well before the drill rig moves from the drill site. Plug boreholes in accordance with OAR 632-033-0025(7)(e), construct, develop, and abandon groundwater monitoring wells in accordance with OAR 690-240, and abandon and reclaim the monitoring wells and water supply well at the end of permitted use per Oregon abandonment regulations OAR 690-0030 through 690-220-0140.
- On drill sites located on slopes greater than 10 percent HiTech will implement erosion and sediment control BMPs including stormwater run-on diversion channels where necessary, straw wattles at the toe of the fill slopes and a minimum 1-foot earthen berm on the down gradient portion of the pad. Use of more stringent BMP's will be associated with drill sites on slopes greater than 20 percent, such as silt fencing and additional earthen berms in accordance with SWPCP (Appendix D of the EPO).
- Do not exceed the permitted pumping rate of 41,250 gallons of water per day from March 1 to November 30 each year from the water supply well, in accordance with the Limited License Issuance LL-1941.

Erosion and Spill Prevention and Control and Stormwater Control

- Do not operate equipment during periods of high precipitation or when ground conditions are such that excessive resource damage or increased sediment transport could occur as determined by visual assessment during operations.
- Install, maintain, and monitor erosion and sediment and stormwater BMPs in accordance with SWPCP (Appendix D of the EPO).

- Implement spill prevention practices and cleanup measures in accordance with the SWPCP.
- Use a weed free gravel source where necessary to maintain roads.
- No areas will be considered with slopes greater than 30 percent where there is evidence of soils eroding into or off either the toe or the head of the slope. This will include areas where there is evidence of surface water runoff. A 300-foot buffer has been placed around perennial and intermittent streams.

Livestock Grazing

- The BLM will provide direction to HiTech regarding the condition in which fences and gates are to be left (i.e., leave gates open or closed as appropriate) and coordinate with authorized grazing permittee to ensure that cattle operations are not impacted by Project activities.
- Retain fence repair equipment in personnel and contractor vehicles to make any light field repairs to fences and gates as needed.
- Should cattle guards along the access routes fill up with debris and sediment, HiTech would conduct maintenance of these features to ensure their integrity.
- Should cattle guards and wings be damaged, hindering the operability of the cattle guards, HiTech would conduct maintenance of these features to ensure their integrity.
- Coordinate with the authorized grazing permittee to ensure that cattle operations are not impacted by Project activities.
- Coordinate with the BLM to establish and implement an appropriate plan to minimize impacts from Project activities known to cause leaks or breaks in the pipeline used to fill livestock water troughs, repairing or replacing damaged pipelines, other appropriate maintenance, or seasonal timing with the authorized grazing permittee.
- Observe prudent speed limits (15 to 25 mph as conditions warrant). Reduce vehicle speeds in areas of disturbance to minimize fugitive dust, protect wildlife and livestock, and to maintain operational safety.
- Maintain Disaster Peak Road in accordance with the Road Maintenance Agreement HiTech holds with Malheur County, including repair road damage to pre-operational conditions.

Scenic Values

- Avoid adjacent lands with wilderness characteristics.
- Reclaim and revegetate all disturbed areas to the approximate original contour in a timely manner and according to reclamation methods.
- Remove or secure equipment and supplies from the Project Area and remove or appropriately secure temporary facilities (water tanks and portable toilets) during temporary periods of inactivity, including seasonal shutdown.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

This chapter defines the scope of analysis contained in this EA, describes the existing conditions relevant to the issues presented in Table A-1 (Appendix A), and discloses the potential impacts of the proposed action and alternatives.

Many times, a project would have some context and intensity of effect upon a resource or concern, but that effect does not approach a threshold of significance after consideration of short-term (up to 5 years from initiation of surface disturbance), and long-term (greater than 5 years) effects, beneficial and adverse effects, and effects that would violate federal, state, tribal, or local laws protecting the environment.

Description of impacts

Context - This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, for a site-specific action, significance usually depends on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

Intensity - Refers to the severity of the impact, in whatever context(s) it occurs. The regulations require that a number of variables be addressed in measuring intensity. Impacts that may be both beneficial and adverse.

> **Negligible** - Negligible effects have the potential to cause an immeasurable and/or insignificant change or stress to an environmental resource or use.
>
> **Minimal** - Minimal effects have the potential to cause a measurable change or stress to an environmental resource or use but will be temporal and insignificant.

Description of time

Short-term- will be defined as a period of time less than 5 years.

Long-term- will be defined as a period of time greater than 5 years.

3.1. General Setting

The Project Area is located within the Oregon Canyon Mountains, in the geologically unique McDermitt Caldera. The topography of the Project Area is gently sloping with open steppe terrain, steep uplands, and sagebrush country, typical of Malheur County and Oregon sagebrush country. Project elevations range from 5,000 to 5,600 feet above mean sea level. The climate of the region is arid and is characterized by warm, dry summers and cool winters. Temperatures range from an average low of 16 degrees Fahrenheit (°F) in January to an average high of 90°F in July (Western Regional Climate Center [WRCC], 2022). Most precipitation occurs in December and January. Average annual precipitation is 8 inches, including snow between the months of October and May (WRCC, 2022). Monthly average precipitation ranges from 0.3 inch in August to 1.2 inches in May (WRCC, 2022). The Project Area's vegetation classification is typical of High Lava Plain's ecoregion located in northern extent of the Great Basin Range.

Vegetative communities are primarily comprised of high desert steppe species such as sagebrush, grasses, and forbs. Where present, riparian areas are confined to the intermittent and perennial streams drainages and are characterized by native willows and other more moisture-depending shrub species (Appendix G of the EPO). Existing Notice-level (OR106282838)

3.2. Air Quality

3.2.1. Affected Environment

Issue 1: How would Project activities affect air quality?

The proposed Project is not within a non-attainment area or areas where total suspended particulates or other criteria pollutants exceed national or state air quality standards. Project activities would result in negligible temporary adverse effects to air quality in the form of vehicle emissions and fugitive dust. Estimated emissions from the Project are below the threshold that would require a proposed stationary source to conduct further environmental evaluation under Oregon State Air Quality regulations.

3.2.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to air and GHG conditions in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing air and GHG conditions on BLM lands would remain unchanged.

Alternative B – Proposed Action

As outlined in the ACEPMs (Section 2.2.13) and the *Monitoring Plan* (Appendix E of the EPO), short-term fugitive dust emissions, as a result of equipment travel within and traveling to and from the Project Area, may directly cause localized dust dispersion to adjacent vegetation along the path of travel. Short-term direct impacts can be mitigated through the implementation of control measures (e.g., minimization of vehicle traffic and speed restrictions) that may include watering before and after grading activities and reduction of equipment speeds during operations to be compliant with ODEQ Visible Emission and Nuisance Requirements to control fugitive dust. As appropriate, U.S. Environmental Protection Agency (EPA) Method 22 will be implemented to monitor fugitive dust emissions during extremely dry conditions.

When other methods are not adequate, chemical soil binders or gravel overlay may be considered for dust and erosion control. Use of chemical binders will be limited to Disaster Peak Road. Indirect impacts and long-term air pollution impacts are not anticipated. Adherence to the ACEPMs, combined with compliance with applicable state and federal regulations and permits, should maintain potential impacts on air quality at a negligible level.

The Oregon Department of Environmental Quality (DEQ) publishes a comprehensive report every 5 years that evaluates Oregon's greenhouse gas emissions with data from the sector-based and consumption-based inventories. The most recent report disclosed statewide GHG emissions

of 61.4 million metric tons in 2021. Oregon's most recently reported emissions would make up 0.97% of 2022 U.S. GHG emissions or 0.1% of global GHG emissions. The analysis estimated the carbon dioxide emissions for the Proposed Action compared to annual Oregon emissions and U.S. emissions. The Proposed Action is not expected to cause significant short- or long-term methane or nitrous oxide emissions. Direct annual greenhouse gas emissions from the Proposed Action are estimated at 921 MT (UES, 2024). This amount is well below the 25,000 MT threshold set for reporting from stationary sources by the EPA and is insubstantial compared to state of Oregon (61.4 MMT), national (6,677 MMT), and global (59,100 MMT) emissions. Indirectly, travel to and from the site will have a negligible indirect effect. Reductions in Proposed Action emissions, by following the ACEPMs, could have a negligible beneficial effect in terms of directly reducing the adverse impacts of human-forced climate change.

3.3. Cultural Resources

Issue 1: How would Project activities affect archaeological [cultural] resources in the Project Area?

3.3.1. Affected Environment

The study area for archaeological resources, as determined by the BLM, is 4,370 acres within the Project Area. Surveys conducted in 2022 included a pedestrian archaeological survey at an intensive, Class III level. These initial investigations indicate a larger lithic district may be present, which may be eligible for listing in the National Register of Historic Places (SWCA Environmental Consultants, 2024). The proposed PA defines the direct Area of Potential Effect (APE) as the proposed 7,200-acre Project Area and incorporates the 4,730-acre study area. The Visual, Vibrational, Atmospheric, and Auditory Effects APE will be established via Oregon Cultural Resources Assessment (OCRA) for all phased work under the PA. The purpose of the PA is to establish an agreement among the BLM, SHPO, and HiTech on how consultation under Section 106 would be implemented for the Project and the manner in which the Parties shall be afforded an opportunity to participate in that Section 106 consultation process.

3.3.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to cultural resources in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action with no long-term impacts due to avoidance. Existing conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

Under the PA, the BLM and HiTech would develop an OCRA for phased work covered under the PA to establish the APE and address the physical, visual, vibrational, and auditory effects of the undertaking, provide a summary of known resources present within the APEs, evaluate inventory needs, describe the methods (other than standard inventory) that will be used to analyze effects (e.g., visual modeling), and list the Tribes and members of the public who will be

consulted. The BLM would determine and describe information needed to identify and evaluate historic properties within the APE and would consider resources of religious and cultural significance to the Tribes through government-to-government consultation and ethnographic studies.

The PA outlines steps that the BLM would take to evaluate potential short- and long-term effects, as well as physical, visual, vibrational, atmospheric and auditory impacts the Project may have on historic properties that are none due to avoidance. Without avoidance, short-term physical impacts may include damage or destruction of cultural resources. Indirect impacts may include increased disturbance and visibility of historic properties, leading to removal or collection by recreationalists. HiTech would submit annual workplans detailing the location of exploration drilling for that season, including avoidance buffer zones. The BLM and the Proponent will review the annual work plans and shall seek to avoid potential adverse effects to historic properties through use of avoidance buffer zones, modifications to the design of undertaking activities, the relocation of undertaking activities, or by other means, as practicable, recognizing valid existing rights. Treatment and data recovery are not preferred mitigation for exploration projects; thus, use of strict avoidance buffer zones would be implemented unless otherwise approved by the BLM after consultation with SHPO and the Tribes. When use of avoidance buffer zones is practiced, adverse effects to historic properties are prevented. If the BLM, informed by discussion with the Proponent, determines that avoidance is not feasible or prudent, the BLM shall evaluate the effects of the undertaking on historic properties. The BLM would provide effects determinations and mitigation plans to SHPO for consultation. The BLM would prepare a Treatment Plan if avoidance of adverse effects is not possible and consult with the SHPO and Tribes on the Treatment Plan. The PA also includes measures to be taken by the BLM and HiTech if any unanticipated, previously unidentified cultural resources are encountered during Project operations.

In addition to the conditions set forth in the PA and ACEPMs (Section 2.2.13), HiTech will develop a detailed Monitoring and Inadvertent Discovery Plan (MIDP) with BLM cultural resources staff to ensure that the boundaries of cultural resource avoidance areas, established within the Project Area, are maintained. Monitoring of these boundaries will be conducted by a CRM Contractor who meets the Secretary of Interior's Qualifications Standards and may include a representative of the Tribes. The MIDP will establish protocols for the potential identification of any archaeological or human remains, postponing activities within their immediate vicinity, notifying the appropriate entities, consulting to determine an appropriate resolution, and identifying the activities needed before activities can resume. All Inadvertent Cultural Discoveries will follow the BLM and Oregon State Historic Preservation Office (SHPO) regulations. Any potential impacts would be minimized based on implementation of the PA, ACEPMs, and environmental protection measures specified in the EPO and the *Monitoring Plan* (Appendix E of the EPO). Impacts to cultural resources would be considered minimal.

3.4. Aquatic Wildlife (including BLM Sensitive Species)

Issue 1: How would Project activities affect aquatic populations and habitat?

Issue 2: How would Project activities affect potential habitat for the Western Ridged Mussel?

3.4.1. Affected Environment

The Project Area is located within the Upper McDermitt Creek, Payne Creek, and Mine Creek watersheds (Hydrologic Unit Code [HUC] 12). The three creeks within the Project Area, Payne Creek, Cherokee Creek, and Mine Creek, are tributaries to McDermitt Creek, which is located downstream of the Project Area. Hydrology baseline surveys conducted for the Project in 2022 indicate creeks within the Project Area have intermittent flows (McGinley, 2022b) that create a lack of perennial connectivity between creeks in the Project Area and McDermitt Creek. No aquatic surveys were conducted due to the avoidance buffers (300') from perennial and intermittent streams. Aquatic species (fish, amphibians, crustaceans, and invertebrates) are expected to occur within the Project Area and may include one BLM Sensitive Species, the Western Ridged mussel.

Western Ridged Mussel

The Western Ridged Mussel (WRM) (*Gonidea angulata*) was petitioned for listing as Endangered in 2020, under the Endangered Species Protection Act of 1969 (35 CFR 13520). It is currently a BLM Sensitive Species. ODFW has identified waterways in or downgradient of the Project Area that may be potential habitat and where the species may occur; therefore, potential affects to WRM and their habitat is being analyzed.

3.4.2. Environmental Consequences

Alternative A - No Action Alternative

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Potential direct impacts to aquatic wildlife in the Project Area from exploration activities under the No Action Alternative would be the same as impacts to the Proposed Action, which would have no direct impact on aquatic wildlife. Potential indirect effects to WRM and general aquatic species' habitat would be limited to soil erosion and off-site sediment transport, which if not managed properly, could result in the loss of soils from the Project Area, altering the physical and chemical properties of downstream waters.

Alternative B - Proposed Action

General Aquatic Wildlife

Aquatic wildlife species' habitat may potentially be affected in the short-term from ground-disturbing activities associated with access road and drill site construction, with the potential to result in short-term effects such as soil erosion and off-site sediment transport, which if not managed properly, could result in the loss of soils from the Project Area, altering the physical and chemical properties of downstream waters. Three existing temporary stream crossings would

be used to access drill targets in the Project Area during low water conditions. The Proposed Action would only occur between July 1 and November 30, outside of peak flow months and when stream conditions are typically low or dry (McGinley, 2022b). To protect riparian habitats within the Project Area, all new construction would be at least 300 feet from either side of the flood-prone width for all perennial and intermittent waters, and outside of riparian habitat eliminating any effect*s* to potential habitat. The EPO (Appendix C) requires roads and drill pads to be constructed to limit sediment loading, off-site sediment transport, and avoid destruction of riparian vegetation, minimizing effects to streams that may be intermittently connected to potential suitable aquatic species habitat downstream in McDermitt Creek.

All Project reclamation activities would be completed prior to completion of the Project to restore disturbed areas to as close to pre-disturbance conditions as possible. There are minimal to no short-term or long-term direct and indirect effects to habitat located within the Project Area. Potential long-term effects to habitat may occur from sediment loading as a result of soil instability and stream crossing. Design features and ACEPMs are included in the EPO to minimize, but not eliminate, the potential direct and indirect effects of the Project to suitable aquatic species' habitat. ACEPMs include the use of clean, washed gravel or manufactured mats, according to the standards for temporary crossings provided by the United States Army Corps of Engineers (USACE) Portland District and the Oregon Department of State Lands (DSL). This measure would armor the three in-stream crossings, limiting any sedimentation that could be introduced in the improbable event that those crossings are used during or immediately before active flows.

The frequency and total volume crossings included under the Proposed Action are not sufficient to significantly alter sediment loads in the relevant creek beds. Some of the methodologies include, but are not limited to, a 300-foot buffer from waterways, implementation of BMPs specific to soils, which will reduce the loss of any topsoil or sediment runoff into a receiving waterbody and ensure stabilization of soils within disturbed areas, routine water quality monitoring, no removal of riparian vegetation, and the use of clean, washed gravel or manufactured mats at the ford stream crossings. There is no significant impact resulting from short- and long-term effects of the Proposed Action on aquatic wildlife species.

Western Ridged Mussel

Impacts to WRM are similar to General Aquatic. The ODFW has identified McDermitt Creek, downstream of the Project Area, as potential for habitat for WRM. Potential short-term and long-term direct impacts to the intermittent streams within the Project Area and McDermitt Creek are increased sediment loading, which could impact WRM if present in the waterways.

There are minimal to no short-term or long-term indirect impacts to suitable habitat located downstream in McDermitt Creek due to the intermittent flows of Payne Creek, Cherokee Creek, and Mine Creek creating a lack of perennial connectivity between tributary streams within the Project Area and McDermitt Creek.

The short- and long-term potential impacts to WRM potentially suitable waterways that support foraging, and migration within the Project Area is mitigated and minimized through the ACEPMs, reclamation methods, the SWPCP (Appendix D of the EPO), and the *Monitoring Plan* (Appendix E of the EPO), which describe the methodologies HiTech would apply to ensure that any potential impacts are minimized. Some of the methodologies include, but are not limited to, a 300-foot buffer from waterways, implementation of BMPs specific to soils, which will reduce the loss of any topsoil or sediment runoff into a receiving waterbody and ensure stabilization of soils within disturbed areas, routine water quality monitoring, no removal of riparian vegetation, and the use of clean, washed gravel or manufactured mats at the ford stream crossings. Any potential impacts to WRM and their potentially suitable habitat would be minimal.

3.5. Terrestrial Wildlife (excluding Migratory Birds)

Issue 1: How would Project activities affect availability and quality of habitat?

Issue 2: How would Project activities affect big game use and movement?

Issue 3: How would nighttime lighting affect bat populations?

3.5.1. Affected Environment

Incidental observations of general wildlife species were documented during surveys as summarized in the *Biological Baseline Report* (McGinley, 2022a). Statewide wildlife survey protocols were followed, and the BLM, ODFW, USFWS, and other regulatory agencies were queried on the known or potential occurrence of wildlife resources in the vicinity of the Project. An analysis was performed using the best available data from Oregon Biodiversity Information Center (ORBIC), BLM GIS database, Geographic Biotic Observations (GeoBOB) Interagency Species Management System Observations, and Northwest Regional Gap Analysis Project for wildlife occurrences, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions. The Project Area is within known pronghorn antelope (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*) range and is within mule deer winter range (ODFW, 2013). All wildlife observed within the Project Area during the baseline surveys are listed in Table A-2 (Appendix A), but there may be other species not observed that are within the Project Area. BLM Sensitive species are shown in **bold** and are further described in Section 3.14. The entirety of Payne Creek within the Project Area is delineated as a priority wildlife connectivity area by ODFW (ODFW, 2023). Additionally, 1,270 acres of the Payne Creek priority wildlife connectivity area is located within the Project Area. Approximately 15.6 acres will be disturbed, approximately 1 percent of the connectivity area located within the Project Area; therefore, impacts to the connectivity area is considered minimal.

White-tailed Jackrabbit

Surveys for white-tailed jackrabbit (*Lepus townsendii*) were requested by ODFW. Prior to surveys, habitats throughout the study area were evaluated to determine the presence of suitable white-tailed jackrabbit habitat, particularly areas with perennial bunchgrass and sparse shrub cover (McGinley, 2022a). Habitat was determined to be marginal for white-tailed jackrabbit and no particular areas of high-quality habitat were observed. Spotlight surveys were conducted one hour after sunset on October 3, 2022. White-tailed jackrabbits were not observed during surveys.

Bats

Suitable habitat for these species within the Project Area consists of riparian corridors along the primary drainages within the Project Area (Payne Creek, Cherokee Creek, and Mine Creek) that were identified as potential flyway zones, insect foraging habitat, and water sources for bats inhabiting abandoned mine features and rocky outcrops outside the Project Area. Bats typically use riparian corridors from March to November during dusk and dawn. Suitable roosting habitat for these species such as forests, caves, mines, and rocky outcrops does not occur within the Project Area (McGinley, 2022a).

Bat surveys consisted of acoustic surveys at four locations near water features to capture roost utilization and habitat use. Abandoned mine land features and rock outcrops were not surveyed because these features are located outside of the Project Area. Two rounds of surveys were conducted in the Spring and the Fall of 2022. Across the two survey seasons, eleven species of bats were detected (Table A-2 in Appendix A).

During the spring survey, nine bat species were positively identified from the call recordings; big brown bat (*Eptesicus fuscus)*, canyon bat (*Parastrellus hesperus*), little brown bat (*Myotis lucifugus),* long eared myotis (*Myotis evotis*), Mexican free-tailed bat (*Tadarida brasiliensis*), pallid bat (*Antrozous pallidus)*, silver-haired bat (*Lasionycteris noctivagans),* Townsend's big-eared bat (*Corynorhinus townsendii)*, and the western small-footed myotis (*Myotis ciliolabrum*). Of these species, the greatest number of calls came from the silver-haired bat, followed by the canyon bat. When species guilds were considered, the largest proportion of calls came from unidentified myotis species (*Myotis* spp.). Of the positively identified species during the spring survey, two are considered Oregon State sensitive, one of which is also considered Oregon BLM sensitive, and one is considered sensitive-critical and Oregon BLM sensitive. BLM Sensitive species are shown in bold in Table A-2 (Appendix A).

During the fall survey, ten bat species were positively identified from the call recordings; big brown bat, canyon bat, hoary bat (*Lasiurus cinereus*), little brown bat, long-eared myotis, long-legged myotis (*Myotis volans),* Mexican free-tailed bat, pallid bat, silver-haired bat, and Townsend's big-eared bat. Of these species, the greatest proportion of calls were from the long-eared myotis, followed by the silver-haired bat. When species guilds were considered, the largest proportion of calls came from unidentified myotis species. Five of the species detected during the fall survey are considered Oregon State Sensitive, one of which is classified as sensitive-critical, and two of which are additionally Oregon BLM sensitive.

3.5.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to wildlife resources in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

The Proposed Action would disturb 103.3 acres (approximately 1.4 percent) within the 7,200 total acres of the Project Area over a five-year period. During exploration, there would be an increase in vehicular traffic from drilling activities for an average of approximately 5 months. This increase in anthropogenic disturbances and activity (e.g., noise, fencing, nighttime lightening) could cause a potential direct short-term impact through the increase of wildlife movement in the Project Area. To avoid the drilling activity, wildlife may expend more energy, which could potentially reduce reproduction and survivorship culminating into a decrease in population size, a potential long-term indirect impact. Wildlife, particularly big game, may avoid suitable habitat adjacent to the exploration activities. The Project Area is located within big game winter range, but a seasonal shutdown from December 1 through June 30 would be implemented to avoid impacts to winter use and movements within the Project Area. Additionally, a direct short-term impact could include wildlife killed by vehicles and other drilling equipment, especially slower moving species; however, vehicles would be required to travel at reduced speeds of 15 to 25 mph, which would minimize any mortalities. HiTech will fully or partially shield all outdoor light fixtures, except incandescent fixtures, of 150 watts or less and other sources of 70 watts or less. LEDs in warm colors only will be used and shall be directed down and use the lowest lumens possible to safely conduct operations to reduce light pollution impacts on wildlife occupying the areas around the disturbance. The environmental consequences described from the Proposed Action apply to the Payne Creek priority wildlife connectivity area.

Bats

Potential impacts to bats resulting from the Proposed Action include avoidance and temporary loss of foraging habitat. The Proposed Action is unlikely to physically impact hibernacula sites for these species as these sites (cliffs and rock outcrops) are not located within the Project Area and are not likely to be disturbed. Riparian corridors within the Project Area that serve as insect foraging habitat and water sources would be avoided due to the implementation of a 300-foot riparian avoidance area. Bats may temporarily relocate to adjacent habitat or temporarily avoid foraging habitat near areas of active disturbance due to short-term impact such as increased noise and human presence. No long-term impacts are anticipated for bats.

Night activities and lighting may attract insects, which are a primary food source for bats; however, noise from construction and drilling activities may deter their presence. Night lighting would be focused downward and use the lowest lumens possible to safely conduct operations on work areas to reduce disturbance to wildlife and night skies.

Based on anticipated species occurrence, ACEPMs and BMPs (Section 2.2.13), the Proposed Action may impact individual bats but is not likely to cause a population trend downward or trend BLM Sensitive Species toward federal listing or loss of viability for these species.

In addition to the ACEPMs (Section 2.2.13), HiTech will take all available measures to ensure that wildlife are not unduly disturbed and that the drill holes will be capped to reduce potential injury to wildlife. The reclamation methods and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO) will ensure that HiTech's reclamation methods (BLM and DOGAMI approved seed mixtures, fencing, noxious weed herbicide treatments, and routine monitoring) provide conditions that will promote wildlife use and occupancy following completion of the Project. The Project disturbance footprint is minimal in relation to the overall Project Area (103.3 acres within 7,200 acres, or 1.4 percent of the Project Area). The Proposed

Action is not likely to result in an alteration of the existing habitat or contribute to a decline in the existing condition. Impacts to wildlife and wildlife habitat would be minimal.

3.6. Livestock Grazing

Issue 1: What impacts do exploratory activities have on livestock grazing management, including existing permitted livestock grazing use and functionality of range improvements?

3.6.1. Affected Environment

The study area used to analyze livestock grazing management is the Project Area located within the Zimmerman Allotment (authorized grazing permittee). The BLM manages through the authorization and enforcement of permits that contain terms and conditions to achieve management and resource condition objectives as identified in the areas RMP and consistent with other BLM regulations.

The entirety of the 7,200-acre Project Area is located within the Zimmerman Allotment, within Mine Creek Seeding, Pinky, Disaster Peak Seeding South, and Disaster Peak Seeding North. Figure 9 shows the locations of infrastructure within the Project Area related to livestock grazing. The total acres of the Zimmerman Allotment are 56,888 acres (BLM, 2024b). The Project Area occupies approximately 12.7 percent of the allotment. The livestock grazing permit currently has 7,342 active animal unit months (AUMs) (BLM, 2024a).

3.6.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to livestock grazing management in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing livestock grazing conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

Potential direct short-term impacts to the authorized grazing permits include removal of forage, introduction of noxious weeds, damage to existing fences or water troughs, temporal disturbance to cattle, or car-animal collisions. Under the Proposed Action, approximately 103.3 acres would be temporarily impacted, representing approximately 0.2 percent of the Zimmerman Allotment. The Proposed Action would have a calculated potential displacement of approximately 25.5 AUMs. These temporary effects are not anticipated to affect the availability of livestock grazing forage within the Project Area and lead to potential longer-term impacts. No Project activities would occur within riparian areas, and most of the exploration would occur in areas with no existing water and less productive forage for livestock. No modifications to current livestock grazing permit authorizations are anticipated. Existing authorized livestock grazing permits for the Zimmerman Allotment would continue to be valid. Potential direct impacts would be minimal to negligible and direct impacts negligible due to ACEPMs. With the implementation of ACEPMs, and the environmental protection measures provided in the EPO (Appendix C), existing range improvements within the Project Area would be protected and enforced speed

limits would minimize car-animal collisions. Vehicles operating in the Project Area would follow reduced speed limits of 15 to 25 mph. Fencing would not be cut during exploration activities. Gates would be closed and/or locked as appropriate and left in the condition in which they are encountered. HiTech will coordinate with the BLM to establish an appropriate plan to minimize impacts from Project activities known to cause leaks or breaks in the pipeline used to fill livestock water troughs, by fortifying leaks, other appropriate maintenance, or seasonal timing with the allotment permittee. HiTech would continue to coordinate with the authorized grazing permittee to ensure that cattle operations are not impacted by the Proposed Action. Additionally, concurrent reclamation would occur as soon as access roads and drill sites are no longer needed. Impacts to existing permitted livestock grazing use and functionality of range improvements would be minimal to negligible and temporary.

3.7. Migratory Birds

Issue 1: How would Project activities affect migratory birds?

Issue 2: How would Project activities affect western burrowing owl?

3.7.1. Affected Environment

The Migratory Bird and Treaty Act (MBTA) (16 USC 703-712), which is administered by the USFWS, is the basis of migratory bird conservation and protection in the United States. The MBTA implements four treaties that provide for international protection of migratory birds. In 1972, an amendment to the MBTA resulted in Bald Eagles and other birds of prey being included in the definition of a migratory bird. Under the authority of the Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended (16 USC 668-668d), Bald Eagles and Golden Eagles are provided additional legal protection. The BGEPA makes it unlawful to import, export, sell, purchase, barter, or take any eagle, their parts, products, nests, or eggs.

Executive Order (EO) 13186, signed January 10, 2001, lists several responsibilities of federal agencies to protect migratory birds, among them: support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.

All migratory birds observed during the field surveys were recorded (Table A-2 in Appendix A) but there may be other species not observed that are within the Project Area. BLM Sensitive species are shown in bold. Two Oregon listed sensitive bird species were also observed: Swainson's hawk (*Buteo swainsoni*) and sandhill crane (*Grus canadensis*). To comply with the BGEPA and the MBTA, as amended, the BLM requires permittees to conduct baseline inventory surveys for raptor and eagle nests as a part of the NEPA evaluation. Surveys for migratory birds were conducted following the protocol outlined in the *Handbook of Field Methods for Monitoring Land Birds* (Ralph et al., 1993). Two rounds of point count surveys and aerial surveys were completed as shown in the *Biological Baseline Report* (McGinley, 2022a). The first round of surveys occurred in the spring breeding season (April 1 through May 31) and the second round during the summer season (June 1 through July 31). Eighteen nests within the study area were considered as belonging to Golden Eagles.

Western Burrowing Owl

Suitable habitat for western burrowing owl (*Athene cunicularia*) is known to exist within the Project Area (ORBIC, 2021). Western burrowing owl surveys consisted of three point-count replicate surveys conducted according to the BLM-provided protocol. Western burrowing owls and burrows were detected within the Project Area during the biological baselines conducted in April and May 2022. Two active burrows and one inactive burrow were observed along open slopes north of Dry Draw Creek (McGinley, 2022a). Incidental observations of western burrowing owls were recorded along Trout Creek Road during reclamation surveys in 2023 (UES, 2023). Proposed Project disturbance is located approximately 0.1 mile from the location of the nearest active burrow.

Short-eared Owl

Surveys for the short-eared owl (*Asio flammeus*) were requested by ODFW due to previous observations within the Project Area and presence of suitable habitat (McGinley, 2022a). Short-eared owls were not observed during two rounds of surveys conducted on April 5, 2022 and April 8, 2022.

Eagles and Raptors

One aerial survey was conducted on April 16, 2022, and the second aerial survey occurred on June 16, 2022. This timeframe was selected to capture the greatest overlap between the breeding season of eagles and other raptors with the potential to occur. The study area for the raptor surveys included the Project Area and primary access road with a 2-mile buffer and flight paths were concentrated where suitable nesting substrate (cliffs, rimrock, rocky outcrops, riparian areas, trees, and transmission lines) was present (McGinley, 2022a). A total of 67 nest structures were recorded. Of the 67 recorded nest structures, 18 were classified as belonging to Golden Eagles (*Aquila chrysaetos*; none occupied), three as belonging to red tailed hawks (all occupied), 26 as belonging to unknown large raptors (none occupied), and 20 as belonging to common raven (four occupied). During the first flight, two Golden Eagles, two northern harriers, and one prairie falcon was observed (McGinley, 2022a). On the second flight, one Golden Eagle, one turkey vulture, one red-tailed hawk, and one unknown owl were observed. None of the nests occur within the Project Area or immediately adjacent to the access road.

3.7.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to migratory birds in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

Short-term impacts to migratory birds may occur as a result of the increased anthropogenic activity and noise generated from the Project and may avoid habitat near the Proposed Action area; however, nests and fledglings would not be harmed due to conducting pre-clearance

surveys and the use of buffers, if nests are documented. Pre-clearance surveys, the use of buffers, and reporting are detailed in the *Monitoring Plan* (Appendix E of the EPO). Potential long-term impacts for migratory birds and raptors may include the avoidance of suitable habitat and the construction of nests where the ecological state has been temporarily changed as a result of the exploration drilling. HiTech's reclamation methods and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), which includes revegetation using BLM and DOGAMI approved seed mixtures, fencing, noxious weed herbicide treatments, and routine monitoring, will provide conditions that will promote migratory bird and raptor use and occupancy following completion of the Project and mitigate any long-term impacts.

Direct impacts to migratory birds can include disturbances leading to avoidance, dispersal (flushing), abandonment of nest sites, or mortality from collision or trampling. These direct impacts and the likelihood of "take" would be reduced by limiting disturbances seasonally to July 1 through November 30, and by pre-clearance surveys of proposed roads and drill pads prior to the disturbance during migratory breeding season and protecting active nests following protocols provided by BLM, USFWS, and ODFW. No indirect impacts are expected to occur. Under the Proposed Action, minimal habitat loss would occur with reclamation offsetting habitat loss in the long term.

Western Burrowing Owl

Potential impacts to the western burrowing owl resulting from the Proposed Action include longer term habitat degradation and short-term impacts to individuals from noise, vibrations, temporary fencing and increased human presence (Golden Gate Bird Alliance, 2024). HiTech would incorporate ACEPMs, including reduced speed limits (15 to 25 mph, as conditions warrant), implement a seasonal drilling shutdown December 1 through June 30 each year, and conduct biological clearance surveys of work sites targeted for that season's construction which include avian species and nests (including burrows). Individuals that currently use the active burrow located approximately 0.1 mile from the location of proposed Project disturbance may be impacted but is not likely to cause a population trend downward or loss of viability for these species.

Eagles and Raptors

Unoccupied Golden Eagle and occupied raptor nests were located in isolated outcrops or cliff ledges outside of the Project Area. However, if Golden Eagles and raptors do occupy the area in the future, they and their prey may choose to avoid the immediate area during Project activities due to increased human noise and presence and result in a potential long-term impact. Increased vehicle traffic on the main access road, along active exploration routes and drill sites could lead to temporary displacement of individuals. Individuals foraging along roadways may be struck or killed by vehicles or may choose to relocate.

During nesting season, Golden Eagles, and raptors, if present, may be impacted by potential short-term impacts such as local noise and may abandon nest locations if noise levels remain prolonged. ACEPMs such as conducting nest clearance surveys prior to any disturbance during nesting season would minimize these impacts.

Based on anticipated species occurrence, species habitat preference and ACEPMs, the Proposed Action may impact individual Golden Eagles and/or raptors but is not likely to cause a population trend downward or loss of viability for the species.

The short-and long-term potential impacts to all migratory bird species within the Project Area is mitigated and minimized through the ACEPMs, reclamation methods, the SWPCP (Appendix D of the EPO), and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), which describe the methodologies HiTech will apply to ensure that any potential impacts are minimized. Some of the methodologies include fencing to keep out grazing livestock and ensure the disturbed area can be returned to a functional habitat, selection of BLM and DOGAMI approved seed mixtures that are representative of the surrounding ecological state, monitoring for reclamation success and eradication methods for noxious weeds and invasives, and implementation of BMPs to reduce the loss of any topsoil.

Overall, the Proposed Action could cause a temporal, phased over 5 years, habitat loss of 103.3 acres. However, with interim and concurrent reclamation and ACEPMs, "take" is not likely to occur. Impacts to migratory birds would be minimal.

3.8. Native American Religious and Cultural Concerns

Issue 1: How will Project activities affect traditional uses and First Foods?

3.8.1. Affected Environment

The BLM conducts government-to-government consultation with Indian tribes to improve collaborative and informed federal decision making (BLM, 2016). BLM's Tribal coordination and consultation responsibilities are implemented under the laws and EOs, which are referred to as "cultural resource authorities," and under regulations, which are termed "general authorities." Cultural resource authorities include the NHPA of 1966, as amended; the ARPA of 1979; the NAGPRA of 1990, as amended; and Secretarial Order 3317-DOI Policy on Consultation with Indian Tribes. General authorities include the AIRFA of 1979; the NEPA of 1969; the FLPMA of 1976; EO 13007, "Indian Sacred Sites"; EO 13175, "Consultation and Coordination with Indian Tribal Governments; Presidential Memorandum of January 26, 2021 Tribal Consultation and Strengthening Nation-to-Nation Relationships"; Presidential Memorandum of November 30, 2022 Uniform Standards for Tribal Consultation; and Secretarial Order 3317-DOI Policy on Consultation with Indian Tribes.

The BLM MFO identified 16 potentially interested Tribes and sent out initial letters inviting them to participate in government-to-government consultation as described in Section 4.2.1. All 16 potentially interested Tribes were invited to participate in developing the Project PA to govern how the BLM would meet its NHPA Section 106 compliance responsibilities. The BLM has engaged with interested Tribes related to this Project consistently from 2023 to present, and a McDermitt Caldera Working Group has been formed, including tribal representatives to coordinate government-to-government activities for multiple projects in the McDermitt Caldera, including the Project. All tribal consultations related to the Project have been logged and are summarized in Table A-3 (Appendix A).

Anticipated affected native American religious and cultural concerns include viewshed, ethnobotany, and accessibility, although concerns may be better understood as consultation continues. Disaster Peak (outside the Project Area and both APEs) has been identified as a culturally significant site, resulting in the identification of Disaster Peak as a Key Observation Point (KOP) for the analysis of visual resources. To date, only a viewshed analysis of Disaster Peak has been conducted due to limited information about its use and significance. Other aspects of analysis may be conducted if more information is provided through consultation. An ethnobotanical survey report was completed by the Fort McDermitt Paiute Shoshone Tribe in October 2024 and additional studies are planned. Accessibility has been analyzed and is presented in Section 3.3. The Disaster Peak viewshed analysis is presented in Section 3.16.

Table A-4 (Appendix A) documents the initial results of consultation with Native American Tribes.

3.8.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to traditional uses and First Foods in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

The BLM has drafted the proposed Project PA to identify the APE/affected environment and environmental consequences, which considers resources important to the area Tribes. The affected environment/APE and environmental consequences would incorporate resources and resource areas important to Tribes, including religious and ethnobotanical resources that are within view of, or may experience potential vibratory effects of, the Proposed Action. The draft proposed Project PA indicates the physical APE, is approximately 7,200 acres. Visual, vibrational, atmospheric, and auditory effect APEs will be identified in writing through the submission of an OCRA for phased work. The BLM will conduct further consultation with Tribes to identify the reasonably foreseeable potential impacts to cultural resources important to the area's Tribes.

The cultural impacts of the Proposed Action as it pertains to visual resources is direct short-term occurrence of drilling activity (dust from travel, light, equipment presence) within the viewshed looking towards or from the culturally significant KOP, Disaster Peak. These short-term visual impacts would only occur between July 1 through November 30, when there is active exploration activity. Potential long-term impacts may be observed where drill pads and access roads were constructed but would gradually disappear over the course of 5 years as foliar cover established and blended with the surrounding undisturbed landscape. The Project includes up to 40 groundwater monitoring wells and one 10-meter meteorological monitoring station to remain in the Project Area long term. The wells will be accessible via overland travel, and the station will be accessed using an existing road. While these facilities will remain following the conclusion of exploration, the KOP is over 8 miles away and the wells and meteorological station would not

significantly alter the characteristics of the landscape because there will be no changes to topography. A casual observer would not be distracted by the activity during daylight hours. No illumination will be required for the wells and meteorological station; therefore, there is no long-term nighttime visual impacts.

In addition to the conditions set forth in the PA, HiTech will immediately cease activities within 50 meters of the discovery of human remains, burials, or any previously unidentified cultural (archaeological or historical) resources and will not knowingly disturb, alter, injure, or destroy any scientifically important paleontological remains or any historical archaeological site, structure, building, or object encountered in the Project Area. In the event of a discovery, HiTech will ensure that the discovery is appropriately protected and will immediately notify the BLM authorized officer. Any such discovery will be left intact until told to proceed by the authorized officer.

The authorized officer shall evaluate the discoveries brought to their attention, act to protect or remove the resource, and allow operations to proceed within ten working days after notification (CFR 3809.420). HiTech will be responsible for ensuring that employees, contractors, or any others associated with the Project do not damage, destroy, or vandalize archaeological or historical sites. HiTech will be responsible for costs of rehabilitation or mitigation should damage to cultural resources within or near the Project Area occur during the period of construction, operation, or rehabilitation due to the unauthorized, negligent, or inadvertent actions of HiTech or other Project personnel. No indirect impacts are anticipated.

3.9. Noxious and Invasive, Non-Native Species

Issue 1: How would Project activities impact noxious weeds and invasive non-native plant species introduction and spread?

3.9.1. Affected Environment

Noxious weed surveys were requested by the BLM and occurred in 2022 with targeted species from the Malheur County Noxious Weed Control list and the Oregon State Weed list. The study area for noxious weeds considered all areas of disturbance, plus the following buffers: 100 feet to either side of access routes, where practical, 165 feet from the center of drill sites, and 200 feet from the center of the water supply well laydown yard. Cheatgrass, Diffuse knapweed (*Centaurea diffusa*), halogeten (*Halogeton glomeratus*), Medusahead rye (*Taeniatherum caput-medusae*), perennial pepperweed (*Lepidium latifolium*), and whitetop/hoary cress (*Lepidium draba*) were identified within the Project Area during baseline surveys (McGinley, 2022a). Cheatgrass was the most common annual grass species encountered and was observed to be associated with generally lower vegetative diversity in areas where it was present.

3.9.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts related to noxious and invasive species in the Project Area from

exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

Due to the data gap of baseline surveys for this resource, noxious weeds and invasive, non-native plants are assumed to be present in proposed areas of disturbance that were not surveyed. Under the Proposed Action, approximately 103.3 acres (approximately 1.4 percent) of vegetation communities within the Project Area, would be removed or disturbed and may contribute to the potential direct short-term spread of noxious weeds and invasive, non-native plants and decrease native plant community composition. Increased vehicular traffic may also contribute to direct and indirect dispersal of noxious weeds and invasive, non-native plants to the areas traveled to both inside and out of the Project Area. HiTech will conduct concurrent reclamation and seeding as soon as drill sites and access roads are no longer needed with a certified weed-free BLM and DOGAMI- approved seed mix. Concurrent reclamation and seedling will reduce the spread and introduction of noxious weeds and invasive, non-native species.

Potential long-term impacts could include a temporary loss of native vegetative species composition that would not be suitable for wildlife use or the natural ecological state. Noxious weed occurrences would be monitored and managed in accordance with the BLM Integrated Invasive Plant Management standards, as outlined in the Project's *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO) and include decontaminating vehicles that must travel through identified noxious weed areas to ensure the spread is limited. Mechanical and herbicide treatment methods would also be applied as necessary and in conformance with the Oregon Department of Agriculture Noxious Weed Control Program and BLM's *Chemical Pest Control Handbook* (BLM, 1988).

Based on the management practices outlined in the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), any noxious weed and invasive, non-native species sites would be identified, treated, and monitored over the five-year life of the Project and until final reclamation is completed. Additionally, the EPO and the SWPCP (Appendix D of the EPO) will also minimize potential risks of noxious weed and invasive, non-native species by implementing fencing around disturbed areas, routine revegetation, monitoring and methods to stabilize soil in prior disturbed areas to ensure that natural revegetation can establish, and there is no erosion that could create conditions conducive for noxious weed and invasive, non-native species sites. Potential impacts as a result of the Proposed Action would be temporary and minimal.

3.10. Socioeconomics

Issue 1; What will the effects of the Project have on the socioeconomics of the surrounding area?

3.10.1. Affected Environment

The Project would take place in Malheur County, but because the closest community is McDermitt, NV, located in Humboldt County, NV, the socioeconomic affected environment consists of both counties. Both are rural counties with just over 70 percent of the land in each

county managed by the BLM. The population in 2022 was about 32,000 in Malheur County and about 16,000 in Humboldt County.[2]

In 2023, 57 percent of the wage and salary employment in Malheur County was in service-related sectors, with the largest proportions in retail trade and health care and social assistance, followed by accommodation and food services. Another 19 percent of jobs were in non-services sectors, dominated by farms and manufacturing, and 19 percent were government, including local, state, and federal jobs. The remaining percentage of jobs were residual employment remaining after accounting for reported or estimated jobs in the three categories above. Labor earnings were 47 percent of total personal income and non-labor income was 53 percent, including hardship-related payments (such as Medicaid, food stamps [SNAP], Supplemental Security Income [SSI], and unemployment insurance) and age-related transfer payments (e.g., Medicare and Social Security).

In 2023, 49 percent of the wage and salary employment in Humboldt County was in service-related sectors, with the largest proportions in retail trade and accommodation and food services. Another 35 percent of jobs were in non-services sectors, dominated by mining, and 16 percent were government, including local, state, and federal jobs. Labor earnings were 69 percent of total personal income and non-labor income was 31 percent, with much lower percentages of people than in Malheur County receiving hardship-related payments or age-related transfer payments.

3.10.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to socioeconomics in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Impacts may include loss of revenue and jobs in the area.

Alternative B - Proposed Action

Contractors will be used for road and drill site construction and for drilling operations. Local contractors and residents will receive hiring preference where feasible, resulting in some direct positive impacts. Up to 14 contracted employees will be used. The Project will be managed by HiTech staff or their designees. The Project would not have a noticeable short-term or long-term impact to employment, income, and poverty in the study area. Up to 14 workers at one time would be contract employees that are likely not local; however, local contractors and residents will receive hiring preference where feasible. Nothing in the Proposed Action would restrict or alter any other land users' long-term socioeconomic use because HiTech will not restrict other land users, and the disturbance will be reclaimed and eventually return to a pre-existing ecological condition. The Project would result in direct impacts to additional disturbance, employment, and traffic generation that may indirectly impact the social values and cultural landscapes of McDermitt and the surrounding area.

[2] Data in this section taken from Economic Profile System, Demographics and BLM reports, https://headwaterseconomics.org/tools/ accessed 6-26-2024.

3.11. Soils

Issue 1: What effects do transportation and pad development have on soils within Project Area?

Issue 2: What effects do soil displacement and impaction associated with transportation and pad development have on soil activity within the study area?

3.11.1. Affected Environment

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2024) and as shown in Figure 5, five soil associations were identified within the Project Area: Wieland silt loam, Loveboldt-Sheepsprings complex, Igert gravelly loam, Chug-Sheepsprings-Hackwood complex, and Kingsriver loam.

Table 3-1. Soil Associations in the Project Area

Soil Series	Map Unit	Acres	Percent	Description
Wieland silt loam, 4 to 8 percent slopes	438	6,472.8	89.9	Derived from volcanic ash and consists of ashy silt loams, gravelly clay, cemented material, and paragravelly loam. Soil is well drained with a high rate of runoff potential.
Loveboldt-Sheepsprings complex, 0 to 4 percent slopes	382	410.4	5.7	Derived from volcanic ash and consists of loamy sand, sand, silt loam, sand, and loamy very fine sand. Soil is well drained with a moderately low runoff potential.
Igert gravelly loam, 2 to 15 percent slopes	339	216	3.0	Derived from volcanic ash and consists of gravelly loam, very gravelly loam, and bedrock. Soil is well drained with a moderately high runoff potential.
Chug-Sheepsprings-Hackwood complex, 0 to 15 percent slopes	463	93.6	1.3	Derived from volcanic rock and volcanic ash and consists of ashy loam, ashy clay loam, and ashy fine sandy loam. Soil is well drained with a medium runoff potential.
Kingsriver loam, 0 to 2 percent slopes	NV0452	7.2	0.1	Derived from alluvium and consists of loam and sandy loam. Soil is very poorly drained with moderately high runoff potential.

Volcanic soils tend to have a low bulk density and higher susceptibility to compaction from mechanical disturbances (Page-Dumroese, 1993). Soils present in areas of proposed disturbance have high potential for compaction due to their structure. Following the initial compaction, the soil would be able to support standard equipment with only minimal increases in soil density (NRCS, 2024).

The soils present along existing unpaved roads on the site are moderately prone to erosion, particularly along steep slope gradients (NRCS, 2024). Soils within the Project Area are moderately likely to form fugitive dust due to the content of rock fragments and surface texture. Soils within the Project Area are rated with a moderate level of resilience, suggesting that their natural features generally support recovery following disturbances (NRCS, 2024).

3.11.2. Environment Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to soils in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

The Proposed Action, including Notice-level disturbances already approved, would directly disturb 103.3 acres (approximately 1.4 percent) within the 7,200 total acres of the Project Area over a five-year period. These disturbances include constructing drill sites, improving existing roads, creating temporary roads, and clearing for overland travel. There is a total of five soil types in 7,200 acres in the Project Area listed in Table 3-4. The majority of disturbance would occur within Map Units (MU) 438 and a small portion of disturbance would occur within MU 382 and 463. The soils are well drained and are derived from volcanic ash. There is a total of 6,976.8 acres of these soil types within the Project Area and the Proposed Action would temporarily disturb approximately 1.5 percent of these soils.

In areas that allow for storage, soils would be saved and stored adjacent to side cast berm material for reclamation purposes. HiTech will not consider areas with slopes greater than 30 percent or where there is evidence of soils eroding into or off either the toe or the head of a slope for storage. This includes areas where there is evidence of surface water runoff. Reclamation of disturbance areas would be performed as soon as the roads or drill pads were no longer needed. Using an excavator or a dozer, drill sites would be graded, scarified, and revegetated. Restoration of vegetation and soil productivity would be monitored on an annual basis and the reclamation bond would not be released until standards established by the BLM are met. No soil would be permanently removed.

Soil erosion potential for disturbance within the Project Area during exploration operations would be higher than exists in the natural environment. Short-term impacts include soil loss from water erosion as a result of the removal of protective vegetation and topsoil. Localized long-term potential impacts, such as the loss of productive topsoil, may result in more persistent erosion due to surface runoff and a lack of establishing foliar cover. Vegetation and the natural structure of topsoil aid in surface water infiltration, the dispersion of surface runoff, and dissipates flow energy, all of which reduces soil loss.

Plant root systems stabilize surface soil, which reduces soil loss from wind erosion and prevents fugitive dust formation. Direct impacts from soil loss from wind erosion and the formation of fugitive dust would increase as topsoil and protective vegetation is removed. Soils also have a natural structure that forms within soil layers (horizons), as well as having rock fragments and surface crusts that aid in the stabilization of surface soil.

Direct short-term impacts from soil compaction can lead to soil loss by increasing surface runoff and erosion. As heavy equipment is used to clear vegetation and topsoil, and as vehicles such as drill rigs, water trucks, and support vehicles travel on roads and overland, soil pore spaces

collapse, leading to reduced porosity, a lack of infiltration, and an increase in runoff. Indirect impacts could result in localized habitat degradation. Soil compaction would be reduced by incorporating ACEPMs and erosion control features to aid in energy dispersion if they are needed. Any compaction of the road surface or topsoil due to the increased use of access roads, overland travel, and pad development would be relieved by scarifying the soil at the end of each exploration phase prior to seeding. This would reduce any long-term impacts related to compaction issues at the end of exploration.

Potential impacts to soil would be reduced by the implementation of ACEPMs (Section 2.2.13), which includes actions taken (e.g., wattles, contouring, scarifying, and other sediment and erosion control methods) provided in the SWPCP (Appendix D of the EPO) or approved by the BLM, which will reduce sediment runoff from the Proposed Action during construction and operations, monitoring, and reclamation. Final reclamation methods (e.g., redistribution of soil and recontouring BLM and DOGAMI approved seed mixtures, fencing, revegetation monitoring) described in the EPO would promote the stabilization of soils directly with the appropriate use of contouring, revegetation of all disturbed areas, and through promulgation of revegetation to provide soil stability. Concurrent and final reclamation practices would ensure that soil impacts would remain localized. Any short- or long-term impacts to soil would be minimized based on the ACEPMs, the reclamation methods in the EPO, and the SWPCP (Appendix D of the EPO). Impacts to soil would be considered minimal to negligible.

3.12. BLM Sensitive Species - Plants

Issue 1: How would Project activities impact BLM Sensitive plant species?

Issue 2: How would Project activities impact the ability of the BLM Sensitive plant species to expand?

3.12.1. Affected Environment

BLM Sensitive plant species include plants for which federal or state agencies afford an additional level of protection by law, regulation, or policy. Data was acquired from the BLM, the Oregon Department of Agriculture (ODA), and USFWS to generate a list of special status[3] species with potential to occur in the vicinity of the Project Area. This list was evaluated in the *Biological Baseline Report* (McGinley, 2022) and in the *Special Status Plant Assessment* (UES, 2023).

Linear plant surveys were conducted in 2022 on the western side of the Project Area, and block plant surveys were selected for use in 2023 on the eastern side of the Project Area. The 2023 block plant surveys were on the eastern portion of the Project Area to cover the remaining portions of disturbance. The results of block surveys on the eastern portion of the Project Area identified total occupied populations, estimated number of species observed at each occurrence, and the location of the occurrence, which were compared to the acres of occupied populations that would be disturbed. Because total occupied populations were not identified during linear

[3] *Special status species* are species that are (1) federally listed (threatened or endangered), proposed, or candidates for listing under the ESA; (2) delisted species (minimum 5 years post-delisting or throughout the post-delisting monitoring period, whichever is longer); and (3) BLM sensitive species (BLM 6840 Manual, 2024).

surveys on the western portion of the Project, impacts are anticipated to be similar to the eastern portion of the Project Area. Surveys were conducted in accordance with the Project's habitat characterization and BLM survey protocols. Six Oregon BLM sensitive plant species were documented: king's rattleweed (*Astragalus calycosus*), broad-keeled milkvetch (*Astragalus platytropis*), Ibapah wavewing (*Cymopterus ibapensis*), Pueblo Mountains buckwheat (*Eriogonum crosbyae* ssp. *mystrium*), Cooper's goldflower (*Hymenoxys cooperi* ssp. *canescens*), and Tufted Townsend daisy (*Townsendia scapigera*). No federally listed threatened or endangered plant species are known to occur in the Project Area (McGinley, 2022a; UES, 2023).

To facilitate the assessment and affected environment, a circle with the radius of 12.5 meters, regardless of estimated number of plants observed, was created for each occurrence observed during the study. These polygons were compared to the Project disturbances, including drill sites, roads, and yards to identify and quantify effects of the Project on BLM Sensitive plant species. The estimated plants per occurrence and approximate affected occurrences by species are shown in Table 3-2 and summarized below.

King's Rattleweed

King's rattleweed was the most prevalent species observed and was particularly common in areas with apparent surface disturbance (e.g., road sides, decommissioned roads, cattle disturbance; UES, 2023). King's rattleweed was found in large populations across the Project Area and was observed in 600 occurrences within the Project Area during the 2022 and 2023 studies. The Proposed Action would disturb approximately 103 occurrences (17 percent) of king's rattleweed observed. Anticipated impacts to the western side of the Project Area would likely be similar if present.

Broad-keeled Milkvetch

Broad-keeled milkvetch was observed within the Project Area, primarily east of Mine Creek, in isolated occurrences with a relatively small number of individuals (between 6 to 25 individuals; UES, 2023). Broad-keeled milkvetch was observed in 40 occurrences within the Project Area. The Proposed Action would disturb approximately 3 occurrences (8 percent) of broad-keeled milkvetch on the eastern portion of the Project Area. Anticipated impacts to the western side of the Project Area would likely be similar if present.

Ibapah Wavewing

Ibapah wavewing was observed within the Project Area, primarily east of Mine Creek, and was comprised of a wide variety of individuals. Ibapah wavewing was observed in 165 occurrences within the Project Area. The Proposed Action would disturb approximately 18 occurrences (11 percent) of Ibapah wavewing on the eastern portion of the Project Area. Anticipated impacts to the western side of the Project Area would likely be similar if present.

Pueblo Mountains Buckwheat

Pueblo Mountains buckwheat was observed within the Project Area, primarily on west facing slopes, demonstrates large, connected communities and was the least observed BLM Sensitive plant species at the Project Area. Pueblo Mountains buckwheat was observed in 6 occurrences within the Project Area. The Proposed Action would disturb approximately 2 occurrences

(33 percent) of Pueblo Mountains buckwheat on the eastern portion of the Project Area. Anticipated impacts to the western side of the Project Area would likely be similar if present.

Cooper's Goldflower

Cooper's goldflower was observed within the Project Area, primarily in the northeastern portion and on gentle slopes near abandoned mine land. Most communities consisted of 6 to 25 individuals. Cooper's goldflower was observed in 59 occurrences within the Project Area. The Proposed Action would disturb approximately 9 occurrences (15 percent) of Cooper's goldflower on the eastern portion of the Project Area. Anticipated impacts to the western side of the Project Area would likely be similar if present.

Tufted Townsend Daisy

Tufted Townsend daisy was observed within the Project Area in small occurrences of fewer than 5 individuals, east of Payne Creek. Tufted Townsend daisy was observed in 26 occurrences within the Project Area. The Proposed Action would disturb approximately 10 occurrences (38 percent) of Tufted Townsend daisy on the eastern portion of the Project Area. Anticipated impacts to the western side of the Project Area would likely be similar if present.

Table 3-2. BLM Sensitive Species– Plants Impacted by the Project

Estimated Plants per Occurrence	ASCA9 King's Rattleweed	ASPL3 Broad-keeled Milkvetch	CYIB Ibapah Wavewing	ERCRM Pueblo Mountains Buckwheat	HYCOC Cooper's Goldflower	TOSC Tufted Townsed Daisy	Total per Ranking
Total Occurrences Observed in Project Area	**600**	**40**	**165**	**6**	**59**	**26**	**896**
Total Occurrences Potentially Disturbed	**103**	**3**	**18**	**2**	**9**	**10**	**145**
0 – 5	29	2	11	1	6	10	59
6 – 25	38	0	3	0	1	0	42
26 - 100	29	1	3	1	1	0	35
101 - 500	7	0	1	0	1	0	9
% of Total Plant Occurrences Potentially Disturbed	**17%**	**8%**	**11%**	**33%**	**15%**	**38%**	**16%**

3.12.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to BLM Sensitive Plant Species in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

HiTech commits to avoiding BLM Sensitive plant species using a 100-foot buffer, where practical. If avoidance is not possible (due to steep slopes, existing ground condition, and/or the presence of other buffers), species-specific information summarized in the *Special Status Plant Assessment* would be considered to inform potential monitoring and mitigation options in coordination with the BLM and other applicable state agencies (UES, 2023). Avoidance pre-clearance surveys for BLM Sensitive plant species would be conducted concurrent with other biological clearance surveys of work sites targeted for each season's construction. Pre-clearance surveys, the use of buffers and reporting are detailed in the *Monitoring Plan* (Appendix E of the EPO). The reclamation methods in the EPO describe how HiTech will reclaim concurrently and that seeding will be completed with a certified weed-free BLM-approved seed mix and in accordance with BLM and Oregon regulation and policy as soon as drill site access roads and drill sites are no longer needed, would reduce potential impacts. HiTech would maintain strict weed control near BLM Sensitive plant species and avoid using herbicides where they occur (Appendix B).

Under the Proposed Action, approximately 145 occurrences (16 percent) of BLM Sensitive plant species within the Project Area would be directly impacted by being removed or disturbed over the five-year life of the Project. The Proposed Action may result in short-term impacts to BLM Sensitive plant species and their associated habitat in the form of fugitive dust, physical disturbance during construction, trampling from vehicles and equipment, competition or loss of habitat due to weed encroachment, and compaction of soils, which may indirectly inhibit water and nutrient availability for native vegetation. Direct long-term impacts include the removal or disturbance of 16 percent of BLM Sensitive plant species which may temporarily affect species dispersion or density. Possible long-term impacts would be loss of suitable habitat due to weed establishment and competition for disturbed soils against other native or non-native species in the altered ecological state.

The short-and long-term potential impacts to BLM Sensitive plant species is mitigated through the ACEPMs (Section 2.2.13), the reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), and requirements for BLM and DOGAMI approved seed mixes, noxious weed treatment, soil stabilization, and monitoring which will reclaim the land to a prior disturbed ecological state which will be conducive to both established and future establishment BLM Sensitive species Pre-clearance surveys will allow for the Project to avoid individual BLM Sensitive plant species using a 100-foot bugger, where practical, which will minimize potential impacts. The Proposed Action's impact is minimal and would not impact the viability of any BLM Sensitive plant species occurrence.

3.13. BLM Sensitive Species – Terrestrial Wildlife

Issue 1: How would noise affect greater sage-grouse (summer and late brooding)?

Issue 2: How would Project activities affect BLM Sensitive terrestrial wildlife species?

Issue 3: How would Project activities affect the availability and quality of habitat for BLM Sensitive terrestrial wildlife species?

3.13.1. Affected Environment

BLM Sensitive terrestrial wildlife species are species that need special management consideration to help avoid future listing under the ESA. They include: 1) all US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Candidate species, 2) all de-listed USFWS or NOAA species for 5 years, and 3) All Oregon Department of Agriculture, Oregon Department of Fish and Wildlife and Oregon Department of Fish and Wildlife State Threatened or Endangered species.[4] Data were acquired from the BLM, the ODFW, and the USFWS to generate a list of special status species[5] with potential to occur in the vicinity of the Project Area. This list was evaluated in the *Biological Baseline Report* (McGinley, 2022). BLM Sensitive wildlife species are shown in bold in Table A-2 (Appendix A). Threatened and endangered species are discussed in Section 3.14.

BLM Sensitive terrestrial wildlife species with potential to occur in the Project Area have been determined based on habitat availability, previously documented occurrence, and the results of the baseline field surveys completed in 2022 (McGinley, 2022a).

Greater Sage-Grouse

The Project Area is within Trout Creek's Priority Areas of Conservation (PAC), which is classified as a Priority Habitat Management Area (PHMA). The ODFW conducts greater sage-grouse lek monitoring within the Project Area and throughout Southeast Oregon annually. The most recent 2024 ODFW sage-grouse lek data identifies 2 occupied, active leks within the Project Area, and 20 occupied leks (12 active, 8 inactive), 5 pending leks (2 active, 3 inactive), and 9 unoccupied (inactive) leks within 4 miles of the Project Area.

Of the two leks within the Project Area, the nearest is located approximately 490 feet from proposed Project disturbance.

Data from the Oregon Statewide Habitat Map was used to determine the vegetation communities that may occur within the Project Area and are summarized in Table 3-3 and shown on Figure 6 (ORBIC, 2018). Fair-good big sagebrush community (5,611 acres) is widespread throughout the project analysis area which is dominated by Wyoming sagebrush, big basin sagebrush and bitterbrush, and is considered to be critical for greater sage-grouse. Poor big sage sagebrush community (2,326 acres) co-dominates the Project Area with limited sagebrush cover from

[4] Only species that are suspected or documented on BLM lands.

[5] Special status species: Species that are (1) federally listed (threatened or endangered), proposed, or candidates for listing under the ESA; (2) delisted species (minimum 5 years post-delisting or throughout the post-delisting monitoring period, whichever is longer); and (3) BLM sensitive species (BLM 6840 Manual, 2024).

recent fires, and/ or high cover of non-native species. Other vegetation communities that occur in the analysis area include Low Sagebrush- poor (120 acres), Interior Lowland and Foothill Riparian (101 acres), Columbia Basin Grasslands and Prairie (34.9 acres), and Mountain Big Sagebrush- fair-good (16.6 acres).

HiTech has engaged with ODFW since 2022 to establish mitigation measures, fieldwork, and a debit value derived from the Habitat Quantification Tool (HQT). In fall of 2023, UES conducted a field habitat assessment in accordance with ODFW guidance for an initial HQT analysis to estimate a debit value. HiTech will coordinate with ODFW to determine an appropriate compensation greater sage-grouse mitigation plan as the Project progresses and Work Plans are approved.

The ODFW greater sage-grouse mitigation program was designed to coordinate with developers to best site and design proposed development projects in sage-grouse habitat in order to reduce negative impacts. This is accomplished through implementation of a mitigation hierarchy that includes avoidance, minimization, and mitigation. Early coordination between project proponents and the ODFW is essential to ensure that projects are sited to achieve the avoidance standard of the mitigation hierarchy. Once appropriately sited, the ODFW assesses the construction, operation, and decommissioning impact of the project to determine options for minimizing negative project effects to sage-grouse. Upon a project proponent selecting appropriate and feasible minimization measures, ODFW will identify any residual project impacts to sage-grouse and calculate a compensatory mitigation requirement to offset loss of sage-grouse habitat.

Kit Fox

Surveys for the kit fox (*Vulpes macrotis*) were requested by ODFW due to the known geographic range for this species to occur within the Project Area (McGinley, 2022a). Data was collected across four scent stations with motion-sensing digital cameras over 90 camera-days. Kit foxes were not observed on the captured images within the Project Area.

Pygmy Rabbit

Surveys for pygmy rabbits (*Brachylagus idahoensis)* were conducted on May 18 and 19, 2022 and June 14 through 17, 2022 within delineated areas of suitable habitat. Of the approximately 394 acres of suitable habitat identified, approximately 332 acres are within the 300-foot riparian avoidance area. Pygmy rabbit sign was found in nine locations within the Project Area, eight of which are located within the 300-foot riparian avoidance area. A primary burrow complex with evidence of active burrow use was found during surveys and exists exclusively outside of the Project Area and located approximately 0.2 mile from Project disturbance. The potential short-term and long-term impacts described from the Proposed Action apply to the Payne Creek priority wildlife connectivity area, which was designated as a corridor for Pygmy Rabbit.

3.13.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously

authorized activities. Impacts to BLM Sensitive species in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

BLM Sensitive Terrestrial Wildlife

Greater Sage-Grouse

The most recent 2024 ODFW sage-grouse lek data identifies 2 occupied, active leks within the Project Area, and 20 occupied leks (12 active, 8 inactive), 5 pending leks (2 active, 3 inactive), and 9 unoccupied (inactive) leks within 4 miles of the Project Area., the nearest is located approximately 490 feet from proposed Project disturbance. The Proposed Action would directly disturb approximately 103.3 acres of potentially suitable habitat (0.03 percent) of the total 476,987.55 acres that comprise the Trout Creeks PAC over the five-year life of the Project. The Proposed Action could result in potential indirect effects including avoidance of suitable habitat within the Project Area and in the immediate vicinity due to lighting, vibration, noise, dust, temporary fencing or human presence.

HiTech would implement a seasonal shutdown December 1 through June 30 to avoid impacts during the greater sage-grouse lekking season. No activities would occur during this period beyond monitoring and maintenance. As such, it was determined by the BLM and ODFW that noise was not to be considered an impact and baseline noise monitoring during the lekking season would not be needed. For greater sage-grouse occupying habitat during active Project activity, noise from construction and drilling activities may cause temporal disturbance of exploration activity resulting in an increased energy expenditure.

Although HiTech will implement a seasonal shutdown December 1 through June 30 to avoid impacts to sage-grouse lekking season, potential indirect effects may still occur. Indirect effects include reduced nest success due to habitat quality degradation, reduced food availability due to habitat degradation during brooding season, and during the winter season reduced food availability and cover due to habitat degradation.

Concurrent reclamation activities would reduce impacts to greater sage-grouse; however, decreased quality of habitat and increased habitat fragmentation during Project implementation and following reclamation are likely due to the prolonged time required to establish high-quality mature sagebrush habitat and potential for establishment and spread of invasive species and noxious weeds. HiTech would conduct biological clearance surveys of work sites targeted for that season's construction which will minimize any noise or other exploration activity potential effect on greater sage-grouse. HiTech would implement a phased approach to allow ODFW to better estimate Project impacts for future debit calculations.

Pygmy Rabbit

Approximately 1 acre (0.25 percent) of suitable habitat is identified within the proposed Project disturbance. Potential short-term impacts to the pygmy rabbit as a result of the Proposed Action may include impacts to individuals from noise, vibrations, vehicular travel and increased human

presence (Edgel, 2018). HiTech would incorporate ACEPMs, including reduced speed limits (15 to 25 mph, as conditions warrant), implement a seasonal drilling shutdown December 1 through June 30 each year, and conduct biological clearance surveys of work sites targeted for that season's construction which include avian species and nests (including burrows). Individuals that currently use the active burrow located outside of the Project Area and approximately 0.2 mile from the location of proposed Project disturbance may be impacted but is not likely to cause a trend toward federal listing or loss of viability for these species. Due to the minimal amount of pygmy rabbit habitat, no long-term impacts are anticipated.

In addition to the ACEPMs (Section 2.2.13), HiTech will take all available measures to ensure that BLM Sensitive wildlife are not unduly disturbed and that the drill holes will be capped to reduce potential injury to wildlife. The reclamation methods in the EPO and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO) will ensure that HiTech's reclamation methods (BLM and DOGAMI approved seed mixtures, fencing, noxious weed herbicide treatments, and routine monitoring) provide conditions that will promote wildlife use and occupancy following completion of the Project. The Project disturbance footprint is minimal in relation to the overall Project Area (103.3 acres within 7,200 acres, or 1.4 percent of the Project Area). The Proposed Action is not likely to result in an alteration of the existing habitat or contribute to a decline in the existing condition.

3.14. Threatened and Endangered Species and Proposed Threatened and Endangered Species - Wildlife

Issue 1: How would Project activities affect potential habitat for Lahontan cutthroat trout?

Issue 2: How would Project activities affect potential habitat for the Monarch Butterfly?

3.14.1. Affected Environment

Lahontan Cutthroat Trout

The Project Area is located within the Upper McDermitt Creek, Payne Creek, and Mine Creek watersheds (Hydrologic Unit Code [HUC] 12). The three creeks within the Project Area, Payne Creek, Cherokee Creek, and Mine Creek, are tributaries to McDermitt Creek, which is located downstream of the Project Area. Hydrology baseline surveys conducted for the Project in 2022 indicate creeks within the Project Area have intermittent flows (McGinley, 2022b) that create a lack of connectivity between creeks in the Project Area and McDermitt Creek.

Lahontan Cutthroat Trout (LCT) (*Oncorhynchus clarkii henshawi*) was listed as Endangered on October 13, 1970, under the Endangered Species Protection Act of 1969 (35 CFR 13520) and subsequently reclassified as Threatened on July 16, 1975, under the Endangered Species Act of 1973, as amended (40 Federal Register, pp. 29864). No surveys specific to LCT were conducted due to the avoidance buffers (300') from perennial and intermittent streams. The creeks within the Project Area are not identified as suitable habitat for LCT and no critical habitat has been established for this species; however, ODFW defines these intermittent streams from the 1995 Recovery Plan to acknowledge that LCT could possibly be present during spring flows and therefore could potentially be affected. ODFW has identified McDermitt Creek as potential suitable habitat for LCT, classifying it as foraging, migration, and/or over-winter habitat.

Several sources have considered LCT extirpated in McDermitt Creek due to hybridization with non-native rainbow trout as well as competition with brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*) in lower reaches (ODFW, 2005; USFWS, 2019; Western Native Trout Initiative [WNTI], 2020). The closest confirmed occupied LCT habitat is located approximately 4.6 stream miles southwest of the Project Area in Sage and Line Creeks upstream of the Project Area (McGinley, 2022a). No barriers prevent LCT from occurring downstream in McDermitt Creek, therefore LCT could potentially be affected. Figure 7 shows the locations of LCT habitat near the Project Area.

Monarch Butterfly

The Monarch Butterfly (*Danaus plexippus*) is currently a proposed species for listing under the Endangered Species Protection Act of 1969 (35 CFR 13520) and a listing determination is anticipated in 2025 (FWS, 2020). No critical habitat has been established for this species. The Western Association of Fish and Wildlife Agencies has identified a portion of the Project Area as Category 2 and Category 3 habitat (WAFWA, 2019), which is habitat that is limiting to monarch populations (Figure 8). Biological baseline surveys were not conducted for the Monarch Butterfly and its primary habitat, milkweed plants, have the potential to occur throughout the 7,200-acre Project Area. Monarch butterflies typically occur in Oregon from late May through September; therefore, potential effects to Monarch Butterflies and their habitat is being analyzed.

Two habitat categories (Category 2 and 3) exist within the Project Area. The most crucial habitat category (Category 1) is not present within the Project Area. The categories are described below:

Category 1 – Habitat which is rare or fragile and essential to monarch viability or exceptional diversity. This habitat contains a unique combination of location or composition or complexity which cannot be duplicated and is therefore considered irreplaceable.

Category 2 – Habitat, which is limiting to the monarch populations. Loss of any of this habitat could result in a significant local or population-level decline in monarch distribution, abundance, or productivity.

Category 3 – Habitat, including migration corridors, which contributes significantly to healthy monarch populations. Loss of a significant portion of this habitat could result in local or population-level declines in monarch distribution, abundance, or productivity.

Within the Project Area, 3,133 acres are classified as Category 2 habitat (43 percent of Project Area) and 4,067 acres for Category 3 habitat (56% of Project Area).

3.14.2. Environmental Consequences

Alternative A - No Action Alternative

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to LCT in the Project Area from exploration activities under the No Action Alternative would be the same as impacts due to the Proposed Action, which is to

have no direct impact on LCT. Impacts to the Monarch Butterfly under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action.

Alternative B - Proposed Action

Lahontan Cutthroat Trout

The Project includes two major components: exploration and reclamation. Both components involve the movement, removal, and/or repositioning of soils and rock. Three existing temporary stream crossings would be used to access drill targets in the Project Area during low water conditions. The Proposed Action would only occur between July 1 and November 30, outside of peak flow months when stream conditions are typically low or dry (McGinley, 2022b). To protect riparian habitats within the Project Area, all new construction would be at least 300 feet from either side of the flood-prone width for all perennial and intermittent waters, and outside of riparian habitat eliminating any impacts to potential habitat. The EPO (Appendix C) requires roads and drill pads to be constructed to limit sediment loading, off-site sediment transport, and avoid destruction of riparian vegetation, minimizing impacts to streams that may be intermittently connected to potential suitable LCT habitat downstream in McDermitt Creek.

Ground-disturbing activities associated with access road and drill site construction have the potential to result in short-term impacts such as soil erosion and off-site sediment transport, which if not managed properly, could result in the loss of soils from the Project Area altering the physical and chemical properties of downstream waters. All Project reclamation activities would be completed prior to completion of the Project to restore disturbed areas to as close to pre-disturbance conditions as possible. Stream crossings would only be used during low water or no water periods during the operational period from July 1 through November 30. No long-term potential impacts are anticipated.

The Project would have no direct impact to LCT because there are no LCT occupied streams within the Project Area. The ODFW has identified McDermitt Creek as foraging, migration, and over-winter habitat; therefore, potential short-term and long-term direct and indirect impacts to the intermittent streams within the Project Area and McDermitt Creek downstream of the Project Area are being analyzed.

There are minimal to no short-term or long-term direct and indirect impacts to potential suitable habitat located downstream in McDermitt Creek due to the intermittent flows of Payne Creek, Cherokee Creek, and Mine Creek creating a lack of perennial connectivity between tributary streams within the Project Area and McDermitt Creek. Potential short-term impacts may include sediment loading during operations and long-term impacts due to sediment loading may occur following reclamation until success criteria has been met. Upstream LCT populations in Sage and Line creeks would not be affected due to the lack of perennial connectivity with streams in the Project Area and general principles of directional flow.

Design features and ACEPMs are included in the EPO (Appendix C) to minimize, but not eliminate, the potential direct and indirect impacts of the Project to potentially suitable LCT habitat. Environmental protection measures include the use of clean washed gravel or manufactured mats, according to the standards for temporary crossings provided by the Portland District USACE and the Oregon DSL. This measure would armor the three in-stream crossings,

limiting any sedimentation that could be introduced in the event that those crossings are used during or before active flows or where sediment could be introduced during operations and then later transported during spring runoff. The frequency and total volume of crossings included under the Proposed Action is not sufficient to significantly alter sediment loads in the relevant creek beds since the Proposed Action will occur during periods of low to no flow (July 1 – November 30).

The short- and long-term potential impacts to LCTs potentially suitable waterways that support foraging, and migration within the Project Area is mitigated and minimized through the ACEPMs, reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), and the *Monitoring Plan* (Appendix E of the EPO), which describe the methodologies HiTech will apply to ensure that any potential impacts are minimized. Some of the methodologies include, but are not limited to, a 300-foot buffer from waterways, implementation of BMPs specific to soils, which will reduce the loss of any topsoil or sediment runoff into a receiving waterbody and ensure stabilization of soils within disturbed areas, routine water quality monitoring, no removal of riparian vegetation, and the use of clean, washed gravel or manufactured mats at the ford stream crossings. Any potential impacts to LCT and their potentially suitable habitat for a species would be minimal.

Monarch Butterfly

The Proposed action involves vegetation removal and/or disturbance that could impact habitat for Monarch Butterflies. Short-term and direct impacts include the loss of individuals, and temporary loss of habitat. Monarchs are expected to be in Oregon from late May through September. Long-term potential habitat impacts may occur if habitat does not re-establish, which may potentially affect migration and species reproduction through the area.

The short- and long-term potential impacts to Monarch Butterflies' potentially suitable habitat that support habitat within the Project Area, if present, is mitigated and minimized by limiting disturbances seasonally to July 1 through November 30, ACEPMs, reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), which describe the methodologies HiTech will apply to ensure that any potential impacts are minimized. Some of the methodologies include, but are not limited to, fencing to keep out grazing livestock for revegetation success to ensure the disturbed area can be returned to a functional habitat, selection of BLM and DOGAMI approved seed mixtures that are representative of the surrounding ecological state, monitoring for reclamation success and eradication methods for noxious weeds and invasives, and implementation of BMPs specific to soils that will reduce the loss of any topsoil or sediment runoff into a receiving waterbody and ensure soil stabilization within disturbed areas. Specifically, HiTech will avoid any disturbance of riparian areas suitable for Category 2 habitat through the implementation of the 300-foot buffer of perennial and intermittent streams. The Proposed Action's disturbance is negligible in relation to the overall Project Area (103.3 acres within 7,200 acres, or 1.4 percent of the Project Area). The Proposed Action will not result in permanent alteration of crucial (Category 2 and 3) habitat due to the environmental protection measures or contribute to a direct Monarch Butterfly population decline or their use of crucial habitat within the Project Boundary. Any potential impacts to Monarch Butterflies and their potentially suitable habitat for a species would be minimal.

3.15. Vegetation

Issue 1: How would Project activities impact the composition and abundance of vegetation?

3.15.1. Affected Environment

Data from the Oregon Statewide Habitat Map was used to determine the vegetation communities that may occur within the Project Area and are summarized in Table 3-3 and shown on Figure 6 (ORBIC, 2018). Thirteen vegetative habitat types were identified.

Table 3-3. Vegetation Communities in the Project Area

Habitat	Acre	Percent Area
Big Sagebrush Fair – Good	4,372	60.7
Low Sagebrush Fair – Good	306	4.3
Mountain Big Sagebrush Fair – Good	13	0.2
Marshes, Bogs and Emergent Wetlands	16	0.2
Early Shrub-Tree	2.5	0.0
Canyon & Montane Shrubland	2	0.0
Alkali and Desert Grasslands	8	0.1
Non-Native Grasslands and Annuals	320	4.5
Interior Lowland and Foothill Riparian	84	1.2
Lowland Woody Wetlands and Swamps	2	0.0
Columbia Basin Grasslands and Prairie	15	0.2
Big Sagebrush Poor	2,029	28.2
Low Sagebrush Poor	31	0.4
Total	**7,200**	**100.0**

Vegetative habitat characterization included ground truthing the Ecostate Time Series map (Table 3-4), and vegetation surveys that occurred in 2022, as described in the *Biological Baseline Report* (McGinley, 2022a). Ecostates range from state A (suitable for sage grouse – good sagebrush cover and minimal threats) to state E (unsuitable for sage grouse – juniper and/or annual grass dominated with no sagebrush or perennial bunchgrass). Good sage grouse habitat is defined by connected mosaics of sagebrush or grassland/sagebrush that allow for dispersal movements across subpopulations. Anthropogenic disturbances are generally absent or not wide-spread. Poor, marginal or unsuitable habitats are considered patchy, fragmented or low-quality sagebrush shrublands or grassland/sagebrush that are not well connected, grass dominated shrubland, or shrubland dominated by trees. Sixty percent of the sites surveyed were classified as ecostate A-C (Intermediate Condition Shrubland), 35 percent as ecostate A (Good Condition

Shrubland), and less than 5 percent as ecostate B-D (Intermediate Condition Grassland), C (Poor Condition Shrubland), or D (Poor Condition Grassland). The majority of surface disturbance associated with the Project would occur in Oregon Statewide Habitat Big Sagebrush Fair – Good habitat type and within ecostate Intermediate Condition Shrubland.

Table 3-4. Habitat Characterization Results

Ecostate	Acre	Percent Area
A-C (Intermediate Condition Shrubland)	4,320	60
A (Good Condition Shrubland)	2,578	35.8
B-D (Intermediate Condition Grassland)	79	1.1
C (Poor Condition Shrubland)	187	2.6
D (Poor Condition Grassland)	36	0.5
Total	**7,200**	**100**

Vegetation in the Project Area primarily consists of sagebrush shrub-steppe dominated by big sagebrush (*Artemisia tridentata*), with a small proportion of grasslands that consist of perennial grassland dominated by crested wheatgrass (*Agropyron cristatum*), and annual non-native grassland dominated by cheatgrass (*Bromus tectorum*). Limited riparian communities are located along streams.

3.15.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to vegetation composition or abundance in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing habitat conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

The Proposed Action would directly disturb 103.3 acres over a five-year period within a total of 4,320 acres of Intermediate Condition Shrubland and 2,578 acres of Good Condition Shrubland. The short-term impacts to the composition and abundance of vegetation would be minimized by implementing reclamation methods and ACEPMs and BMPs (Section 2.2.13).

Final and interim reclamation would be conducted once a drill site or access route is no longer needed to reduce long-term impacts from vegetation removal. Regraded or recontoured areas would be seeded at the appropriate time of year (fall or spring) to provide for optimum germination and plant establishment. Reclaimed surfaces would be left in a textured or rough condition to promote seed retention and moisture concentration. A certified weed-free BLM-approved seed mix would be used. Reclamation would be completed using BLM-approved

methods meet the standards outlined in 43 CFR 3809.420(b)(3). Post-reclamation maintenance would consist of remedial dirt work and reseeding, as required by the reclamation plan.

Until vegetation has reestablished in areas of disturbance, potential direct short-term impacts could produce an increased risk for weed encroachment and soil loss. The *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO) includes steps to minimize the introduction of new weeds and prevent the spread of existing noxious or invasive species through the use of herbicide treatments, vehicle cleaning and inspection, and annual monitoring to quickly address any new noxious infestations. Short-term effects may include an increase in noxious and invasive species until the seeded species establish. Indirect impacts may include fragmentation of habitat and spread of noxious weeds through site travel.

Annual site monitoring for stability and revegetation success would be conducted at least once per operating season, during the growing season until attainment of revegetation standards have been met. Potential long-term impacts would be identified in annual vegetation monitoring documenting a possible lack of establishing vegetation success or unacceptable erosion (Appendix C of the EPO).

The Project disturbance footprint is minimal in relation to the overall Project Area (103.3 acres within 7,200 acres, or approximately 1.4 percent of the Project Area). The Proposed Action, implemented in coordination with the ACEPMs and BMPs (Section 2.2.13), the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), reclamation standards in the EPO, and conformance with Public Lands Rule 89 FR 40308, will return vegetative conditions back to pre-disturbance conditions allowing for slow-growing vegetation to return over time and will not result in permanent impacts to vegetation resources. Impacts to vegetation resources from noxious weeds would be minimal.

3.16. Visual Resources

Issue 1: How would Project activities impact visual resources?

The area of analysis for visual resources includes one KOP from Disaster Peak, approximately 8 miles to the southwest of the Project Area and about 2,000 feet higher in elevation. Disaster Peak is part of the Disaster Peak Wilderness Study Area (WSA), which has 18,840 acres and an additional 13,200 acres of BLM land located in Nevada, are included in the Nevada WSA. The Disaster Peak WSA lies in the west-central Trout Creek Mountains at the headwaters of Kings River and McDermitt Creek. It includes part of the main ridgeline of the Trout Creek Mountains, stream valleys, and rolling sage hills. This WSA has an irregular horseshoe shape, and measures 10 miles long and 8 miles wide. Elevations range from 6,540 to 8,000 feet. This is one of a group of five WSAs located in both Nevada and Oregon that, collectively, are known as the Trout Creek Combination.

Scenic quality is a measure of the visual appeal of a parcel of land. Visual impacts would include increased disturbance and temporary removal of vegetation, and increased vehicles in the area. Section 102(a)(8) of the FLPMA emphasizes the protection of the quality of scenic resources on public lands. Section 101(b) of the NEPA requires that measures be taken to ensure that aesthetically pleasing surroundings be retained. To ensure that these objectives are met, the BLM devised the Visual Resource Management (VRM) system which provides a way to inventory and

analyze scenic values to determine appropriate levels of management. The VRM classes are established through the RMP, which reflects the specific goals or objectives for visual resources. The BLM identifies four VRM Classes (I through IV) with specific management objectives for each class as defined in Table 3-5.

Table 3-5. BLM VRM Class Objectives

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

Source: BLM, 1986

3.16.1. Affected Environment

The Project will consist of 261 drill sites using wireline core, sonic, or RC methods. Daily operations will consist of three drill rigs working seven days a week, twenty-four hours a day. The drill rigs are assumed to be 40 feet tall and the drill sites will be 80 feet by 60 feet (4,800 square feet each). Nighttime work will occur, as the proposed work is 24 hours a day 7 days a week. The drill sites will be illuminated at night. All light sources above 150 watts will be downcast and shielded to direct light on the job site and limit light spillage.

Within the Project Area, the VRM classes are made up of approximately 6,674 acres of Class II and 526 acres of Class III. The area of VRM Class III is located in the southwest corner of the parcel and upslope from both Turner Creek and McDermitt Creek. The area consists primarily of gentle sloping terrain below 10 percent pitch, with limited areas of pitches between 20-40 percent slopes related to drainageways or intermittent streams. Of the 261 proposed drill sites, 103 will not be visible from Disaster Peak (Figure 10), 7 (0.8 acre) will be located within VRM Class II, and 151 (16.6 acres) will be located within VRM Class III, as depicted on Figure 11.

HiTech plans to construct up 61.9 acres of temporary roads within the Project Area of which 35.1 acres will be visible from Disaster Peak (Figure 10). VRM Class II will include 32.4 acres, and VRM Class III will include 2.7 acres. The laydown yard is approximately 0.02 acre and located within VRM Class II. The total acreage located within VRM Class II is 34 acres, and the total acreage within VRM Class III is 19.3 acres.

3.16.2. Environmental Consequences

Alternative A - No Action

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized activities. Impacts to visual resources in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action.

Alternative B - Proposed Action

From the KOP, a maximum of 34 acres consisting of drill sites, roads, and yards of will be located in VRM Class II, and 19.3 acres consisting of drill sites and roads will be located in VRM Class III. For the short-term and only during exploration activities (July 1 – November 30) it is reasonable to assume that in clear daytime conditions that some direct changes in landscape patterns may be visible from Disaster Peak related to the drill sites, roads and yards, including travel routes. However, the view from the KOP is over 8 miles away and the proposed drilling activities would not significantly alter the characteristics of the landscape, as there will be no changes to topography. A casual observer would not be distracted by the activity during daylight hours.

All light sources above 150 watts will be downcast and shielded to direct light on the job site and limit light spillage. A casual observer would not be distracted by the activity during nighttime hours due to the distance from the KOP and the mitigation efforts. Impacts to the visual scenic quality of the area will be reduced by reclaiming and revegetating all disturbed areas to approximate the original contour in a timely manner and avoidance of adjacent lands with wilderness characteristics. Reclamation and/or interim stabilization will be in accordance with BLM standards. All equipment and supplies will be removed from the Project Area during temporary periods of inactivity, including seasonal shutdown. Temporary facilities, such as water tanks and porta toilets, will be removed or appropriately secured from theft or vandalism.

The Project includes up to 40 groundwater monitoring wells and one 10-meter meteorological monitoring station to remain in the Project Area long term. Wells will be located on VRM Class II and Class III areas. The 10-meter meteorological monitoring station will be located on a VRM Class II area. The wells will be accessible via overland travel and the station will be accessed using an existing road. While these facilities will remain after exploration has concluded, the KOP is over 8 miles away, and the wells and meteorological station would not significantly alter the characteristics of the landscape because there will be no changes to topography. A casual observer would not be distracted by the activity during daylight hours. No illumination will be required for the wells and meteorological station; therefore, there is no long-term nighttime visual impacts. There are no anticipated indirect impacts.

3.17. Water Resources (Surface and Groundwater)

Issue 1: How would Project activities affect surface water quality?

Issue 2: How would exploration drilling affect groundwater quality?

Issue 3: How would Project water use affect surface and groundwater availability for existing water uses?

3.17.1. Affected Environment

Water Resources (Surface and Groundwater)

The Project is located in the Owyhee Oregon Administrative Basin (Basin Number 11) and within the HUC 12 watershed near the northern boundary of the Basin and Range physiographic province. The average annual precipitation for the Project Area is 8 inches, including snow between the months of October and May (WRCC, 2022). Water rights within the Owyhee Administrative Basin are administered by the OWRD. Owyhee Basin and Malheur River Basin to the north have a combined average yield of over 1,000,000-acre-feet annually from surface and groundwater sources (Oregon State Water Resources Board, 1969).

Hydrologic baseline surveys for the Project were conducted in 2022 as summarized in the *Hydrologic Baseline Report* (McGinley, 2022b). Water quality within the Project Area is generally good with slightly moderate alkalinity and elevated temperatures. There are no springs located within the Project Area. Streams located within the Project Area include Cherokee Creek, Payne Creek, and Mine Creek.

Water rights within the Owyhee Administrative Basin are administered by the OWRD. Owyhee Basin and Malheur River Basin to the north have a combined average yield of over 1,000,000-acre-feet annually from surface and groundwater sources (Oregon State Water Resources Board, 1969).

Lower McDermitt Creek and Cherokee Creek are 303(d) impaired waters as defined by the Clean Water Act for fish and aquatic life due to water temperature issues. The Project is not and will not remove any riparian shade and the proponent create a buffer of 300 feet around all waterways in accordance with the SWPCP (Appendix D of the EPO) and, thus, will not impact water temperature. Currently, the Oregon Department of Environmental Quality (ODEQ) has no management plan in place.

Floodplains

The BLM's Southeastern Oregon RMP (BLM, 2002) guidelines were used to identify flood-prone areas that occur within the Project Area based on stream types. Payne Creek, Mine Creek, and Cherokee Creek were surveyed in 2022 to assess the flood-prone depth and width. Flood-prone areas generally range from 2 feet wide in the upstream areas to 330 feet wide in the downstream areas, and generally correlate with mapped riparian vegetation. Flooding potential appears to be limited to areas adjacent to streams and within established drainages and channels where vegetation is more abundant.

3.17.2. Environmental Consequences

Alternative A - No Action Both Resources

Under the No Action Alternative, no additional exploration activities would be conducted on BLM-administered lands. The Proponent could continue exploration activities for previously authorized or acknowledged activities. Impacts to water quality/quantity and floodplains in the Project Area from exploration activities under the No Action Alternative would be similar, but proportionally less than the impacts under the Proposed Action. Existing water quality/quantity and floodplains conditions on BLM lands would remain unchanged.

Alternative B - Proposed Action

Water Resources (Surface and Groundwater)

Surface Water Quality

Potential direct short-term impacts to surface water quality as a result of the Proposed Action include sediment erosion and increased turbidity from stream crossings. The proposed stream crossings would be limited to two existing metal culverts and three existing fords (Figure 4). The two culverts, located on Zimmerman Ranch Road, are used to cross Cherokee Creek and Payne Creek. There would be no direct contact between equipment and surface water for the culvert crossings. Three streams would be crossed via existing fords on Cherokee Creek at Disaster Peak Road and on Mine Creek at Turner Ranch Road and Disaster Peak Road (Figure 4). The stream crossing using an existing metal culvert on Payne Creek and the stream crossing using a low water crossing via an existing ford on Mine Creek at Disaster Peak Road are located outside the Project Area. The crossings would be required to access 26 of the 261 proposed drill sites (approximately 10 percent). The Proposed Action would have seasonal restrictions and exploration activities would be limited to occur between July 1 and November 30. The Proposed Action would not occur within 300 feet from either side of the flood-prone width for all perennial and intermittent waters, and outside of riparian habitat, whichever is greater. Therefore, no potential long-term impacts are anticipated. Cherokee Creek and Mine Creek were observed as dry during low flow times of the year, when exploration activities would occur (McGinley, 2022b). HiTech would use clean washed gravel or manufactured mats at the ford stream crossings according to the standards for temporary crossings provided by the Portland District USACE and the Oregon DSL. potential indirect impacts would be minimal to negligible and direct impacts negligible due to ACEPMs.

Potential impacts to stream crossings on Cherokee Creek and Mine Creek would be minimized with the use of seasonal restrictions when these crossings are generally dry and implementation of the BMPs discussed in the SWPCP (Appendix D of the EPO) and ACEPMs which include routine surface water monitoring at select locations and installation of up to four instream monitoring stations at select surface monitoring sites. HiTech will use the data collected quarterly from the surface water monitoring stations to monitor the impacts to waterways due to drilling operations and to prevent, or provide opportunity to mitigate impacts to surface water through the implementation or modification of BMPs . Impacts to water surface quality would be considered minimal to negligible.

The Proposed Action, implemented in coordination with the ACEPMs (Section 2.2.13) and the SWPCP (Appendix D of the EPO), which includes no removal of any riparian shade, installation of erosion control and sediment controls, and all buffer all waterways by 300 feet, would result in minimal potential short-term impacts to Lower McDermitt Creek and Cherokee Creek, which are impaired waters as defined by the Clean Water Act for fish and aquatic life due to water temperature issues.

Surface Water Quantity

Payne Creek, Mine Creek, and Cherokee Creek have intermittent stream flows, and do not have hydraulic connection to groundwater (McGinley, 2022b). HiTech does not currently hold surface water rights within the vicinity of the Project Area and water for drilling operations would be obtained from the water supply well as described in the Proposed Action. There are no potential impacts anticipated to surface water quantity or availability for existing uses because of the Proposed Action.

Groundwater Quality

The water supply well proposed for drilling use and the proposed monitoring wells are located within the Project Area and would consist of the same water chemistry encountered during drilling under the Proposed Action. The supply well would be cased and sealed to prevent any seepage of water through the borehole and prevent potential surface contamination to groundwater. Each borehole would be properly plugged in accordance with OAR 632-033-0025(7)(e), groundwater monitoring wells would be constructed, developed, and abandoned in accordance with OAR 690-240, and the supply well would be properly abandoned per Oregon abandonment regulations OAR 690-0030 through 690-220-0140. Fluids used for exploration drilling fluids and borehole abandonment are non-toxic and standard for environmental protection and are the same as used for drilling of drinking water wells. All drilling fluid products used for the Project would meet NSF/American National Standards Institute Standard 60 (2016). Therefore, the Proposed Action impacts on groundwater quality are considered minimal to negligible.

Groundwater Quantity

The proposed water supply well is currently permitted by OWRD (LL-1941) to pump 41,250 gallons per day from March 1 to November 30 each year through October 31, 2027. The volume of permitted water is equal to 11,302,500 gallons or 34.69-acre-feet annually. The maximum rate of pumping is 75 gallons per minute or 0.17 cubic feet per second. The total estimated pumped volume for the life of the Project would be 173.45-acre-feet, which is 0.02 percent of the Owyhee Basin and Malheur Basin combined average yield. Up to 40 exploration boreholes would be converted to groundwater monitoring wells exploration as part of the *Monitoring Plan* (Appendix E of the EPO) and ACEPMs to monitor hydrogeologic conditions proximal to exploration drilling activities. HiTech would be responsible for maintaining the groundwater monitoring wells for as long as they are the proponent on record with applicable federal and state permits.

The Proposed Action may seasonally cause a direct short-term minor decline in groundwater levels but would not affect the availability for existing permitted water users in the Owyhee and Malheur River basins. Due to the relatively small percentage (0.02 percent) of water estimated to

be pumped in comparison to the average basins' yield, potential impacts to groundwater quantity as a result of the Proposed Action would be minimal.

Floodplains

Potential short-term impacts to floodplains as a result of the Proposed Action include sediment erosion. The Proposed Action, including notice-level disturbances already approved, would disturb 103.3 acres (approximately 1.4 percent) within the 7,200 total acres of the Project Area over a five-year period. These disturbances include constructing drill sites, improving existing roads, creating temporary roads and clearing for overland travel. The soils are well drained and are derived from volcanic ash. HiTech will not consider areas for exploration with slopes greater than 30 percent or where there is evidence of eroding into or off either the toe or the head of a slope. This includes areas where there is evidence of surface water runoff to minimize the potential to impact to floodplains. All new construction would be conducted at least 300 feet from either side of the flood-prone width for all perennial and intermittent waters, and outside of riparian habitat, whichever is greater.

The operator will perform reclamation of disturbance areas as soon as the roads or drill pads were no longer needed and at the end of every season. Using an excavator or a dozer, drill sites would be graded, scarified, and revegetated. The operator will monitor restoration of vegetation and soil productivity on an annual basis and report to the BLM, and the reclamation bond would not be released and final reclamation no complete until success criteria established in the EPO are met.

Soil compaction and stripping can lead to direct short-term impacts like the increase of surface runoff and erosion and increase flooding. As heavy equipment is used, soil pore spaces collapse, leading to reduced porosity, a lack of infiltration, and an increase in runoff impacts long term. Soil compaction would be reduced by incorporating ACEPMs and erosion control features to aid in energy dispersion if they are needed. Soil compaction would be relieved by scarifying the soil at the end of each exploration phase prior to seeding.

HiTech will monitor all disturbed areas and access routes for signs of erosion, sediment accumulation, and potential off-site discharges to ensure that there is no direct or indirect effect on water resources and floodplains. Any unanticipated effect on the water resources and floodplains will be corrected immediately by applying the approved erosion prevention methods (i.e., silt fencing and berms), and routine inspections described in HiTech's Best Management Practices (BMPs) and in accordance with the SWPCP (Appendix D of the EPO). This includes early intervention to stabilize soils exhibiting an elevated risk of sediment migration into the floodplain and no construction being conducted during high periods of precipitation. As outlined in the SWPCP areas of active construction, erosion and sediment control structures will be visually inspected at least once every seven days. Inspections will also be conducted within 24 hours of a storm event of 0.25 inch or greater, or when runoff from snowmelt is enough to pose a runoff sediment risk to floodplains.

Concurrent and final reclamation practices would ensure potential runoff impacts would remain localized. Also, implementation of ACEPMs) would reduce potential impacts from sedimentation and runoff that occur naturally, as well as those resulting from this Proposed Action. Impacts to water resources and floodplains would be considered minimal.

3.18. Reasonably Foreseeable Future Actions Common to All Issues

3.18.1. Introduction

Environmental consequences of the Proposed Action were evaluated for the environmental resources in Sections 3.2 through 3.17. Resources that have the potential to be affected from reasonably foreseeable future actions (RFFAs), including the Proposed Action within the identified RFFA Study Area, are discussed in the following sections. The discussions are based on the previous analysis of each environmental resource. Based on the preceding analysis, the Proposed Action would not impact certain resources listed in Table A-1 (Appendix A). These resources are not discussed further in the RFFA effects section. The resources carried forward are provided in Table 3-6.

The geographical area considered for the analysis of RFFA was selected by the BLM Interdisciplinary Team and cooperating agencies to reflect the potential area of impact to the resources from the Proposed Action, as determined through the analysis in Sections 3.2 through 3.17. A RFFA area is generally larger than the Project Area; therefore, those RFFAs identified as the Project Area are included in the broader RFFA Study Area. The RFFA Study Area for the Project provides a comprehensive area for analysis and is used for resources potentially impacted by the Project. An additional RFFA analysis for Native American Religious and Cultural Concerns may be identified through the consultation process; however, using the PA reduces or eliminates direct impacts.

Each RFFA Study Area boundary is based on the following considerations:

- Future exploration mining activities;
- A wide variety of wildlife habitats, similar vegetation types, similar soils, and connected watersheds; and
- Land ownership within the RFFA Study Area includes the BLM, Oregon DSL, and private land.

Table 3-6. RFFA Study Area Figure Description

RFFA Study Area Name	Size of Area (Acres)	Resources Description	Propose Disturbance as a Percent of RFFA Study Area (103.3)
Figure 12. RFFA Study Area Boundary – Aquatic Wildlife and Special Status Aquatic Species	144,180	This RFFA Study Area Boundary, Hydrological Unit Code 10, was used to assess Aquatic Wildlife and Special Status Species.	0.07%
Figure 13. RFFA Study Area Boundary - Water Quality, Quantity, and Soil Resources	68,930	This RFFA Study Area Boundary, Hydrological Unit Code 12, was used to assess the effects of water quality, quantity, and soil resources.	0.14%
Figure 14. RFFA Study Area Boundary - Archaeological Resources, Native American Consultation & Coordination	285,365	This RFFA Study Area boundary was developed in coordination with BLM, Tribal and Archaeological consultations. A future PA may identify additional considerations for RFFA Study Area effects.	0.04%
Figure 15. RFFA Study Area Boundary – Special Status Species, General Plants, Botany & Vegetation, Noxious and Non-Native Species	9,879	Special Status Species Plants, Botany & Vegetation, Noxious and Non-Native Species.	1.05%
Figure 16. RFFA Study Area Boundary - Raptors & Eagles	295,463	This RFFA Study Area boundary established a 10-mile buffer from the Project Area.	0.04%
Figure 17. RFFA Study Area Boundary – Special Status Terrestrial Wildlife Species, General Wildlife, and Migratory Birds	33,501	This RFFA Study Area boundary established a 2-mile buffer around the Project Area.	0.30%
Figure 18. RFFA Study Area Boundary - Greater Sage-Grouse	393,261	Greater Sage-Grouse (Sensitive Species: Animals).	0.03%
Figure 19: RFFA Study Area Boundary – Livestock Grazing	56,854	The Zimmerman Allotment was used for the RFFA Study Area boundary.	0.18%

Data used to inform the RFFA impacts assessment was generated using BLM's Mineral and Land Records System (MLRS). Existing Notice-level (OR106282838) disturbance includes the construction of access roads, drill pads, laydown area, and water supply well, consistent with the same actions under the Proposed Action. Each of the nine RFFA Study Area boundaries was used to spatially filter case file types from the MLRS geospatial system. The results of the MLRS query were grouped based on their case type and status. Table 3-7 provides a summary of RFFA actions with their associated occurrences within each RFFA Study Area boundary. For the

purposes of the RFFA, an occurrence is quantified as a separate authorized action as defined by BLM's MLRS.

Table 3-7. RFFA Analysis

	Aquatic Wildlife and Special Status Aquatic Species	Water Quality, Quantity, and Soil Resources	Archaeological Resources, Native American Consultation &Coordination	Special Status Species, General Plants, Botany & Vegetation, Noxious and Non-Native Species	Raptors and Eagles	Special Status Terrestrial Wildlife Species, General Wildlife, and Migratory Birds	Greater Sage-Grouse	Livestock Grazing
Notice	1		1		1		1	
Mine Plan	1	1	1	1	1	1	1	1
Sand, Gravel & Stone			1					
Power Transmission Line			1					
Wind Project							1	
Other Land Use Authorizations	1	1	2	1	2	1	1	1
RFFA (Total Occurrence)	**3**	**2**	**6**	**2**	**4**	**2**	**4**	**2**

3.18.2. Aquatic Wildlife and Special Status Aquatic Species

The aquatic wildlife and special status aquatic species RFFA Study Area boundary (Figure 12) totals 144,180 acres. The proposed disturbance, 103.3 acres, represents 0.07 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrence within the RFFA Study Area. Mineral exploration and development, dispersed and permitted recreation, and realty actions (e.g., land use authorizations, utility, and telephone communications, grazing and other land use authorizations) are activities that impact aquatic wildlife, resulting in habitat loss, loss of surface water connectivity, disruption of migration, degraded water quality, invasive species, disturbance, and direct impacts (e.g., unregulated angling). These activities also require land occupancy or development, which can serve as a direct loss of wildlife habitat if within the wetted extent of a water body but indirectly can contribute to degraded water quality if located outside of the wetted extent or in the floodplain due to unstable soil conditions or loss of upland vegetation. Certain activities may require a supporting transportation and infrastructure network, which can exacerbate habitat fragmentation and direct loss of habitats through the compaction of soils located adjacent to stream crossings and contact of fugitive dust emissions with surface water bodies.

LCT are present within the RFFA Study Area boundary and three streams within the Project Area (Payne Creek, Cherokee Creek, and Mine Creek) are tributaries to McDermitt Creek, which is located south and outside of the Project Area but within the RFFA Study Area boundary.

McDermitt Creek is considered potential suitable habitat for LCT; however, several reports indicate LCT is considered extirpated in McDermitt Creek due to hybridization with non-native rainbow trout, as well as competition with brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*) in lower reaches (ODFW, 2005; USFWS, 2019; WNTI, 2020). The creeks within the Project Area are not identified as suitable habitat for LCT, and no critical habitat has been established for this species (USFWS, 2019). Hydrology baseline surveys conducted for the Project in 2022 indicate creeks within the Project Area have intermittent flows (McGinley, 2022b) that create a lack of connectivity between creeks in the Project Area and the potential suitable habitat for LCT downstream in McDermitt Creek.

Potential effects of the RFFA Study Area on the LCT primarily would be related to direct habitat loss, water consumption for agriculture, habitat degradation, degraded water quality, and loss of stream connectivity. McDermitt Creek downstream of the abandoned mine land, Opalite Mine, is a 303d water quality-listed stream for temperature, and the LCT were identified as a likely receptor of mercury contamination from the Opalite Mine (EPA, 2005). LCT would continue to occupy their current ranges; however, LCT populations likely would not naturally disperse into their historical ranges without anthropogenic interference and may undergo a small population reduction and be further selective of occupied waterbodies, which may increase the competitive use of suitable occupancy, spawning, and rearing habitat.

Under the Proposed Action, no direct impacts to LCT populations are anticipated. No disturbance is proposed within the wetted extent or historical floodplains of waterbodies within the RFFA Study Area boundary. No surface water will be diverted or consumed to support the Proposed Action. Ground-disturbing activities associated with access road and drill site construction have the potential to result in indirect impacts such as soil erosion and off-site sediment transport, which if not managed properly, could result in the loss of soil and alter the physical and chemical properties of downstream waters within the RFFA Study Area boundary. Potential effects of the RFFA Study Area on threatened and endangered wildlife species' potentially suitable habitat that support foraging and migration within the Project Area will be mitigated and minimized through the ACEPMs, reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), and the *Monitoring Plan* (Appendix E of the EPO). Some of the methodologies include, but are not limited to selection of BLM and DOGAMI approved seed mixtures that are representative of the surrounding ecological state; monitoring for reclamation success and eradication methods for noxious weeds and invasives; and implementation of BMPs specific to soils, which will reduce the loss of any topsoil or sediment runoff into a receiving waterbody and ensure stabilization of soils within disturbed areas, routine water quality monitoring, a 300-foot buffer along waterways, no removal of riparian vegetation, and the use of clean, washed gravel or manufactured mats at the ford stream crossings.

Any potential impacts to potentially suitable habitat(s) for aquatic species would be minimal. No activities within the Proposed Action will increase the likelihood or severity of existing mercury contamination in the RFFA Study Area boundary. The implementation of the environmental protection measures specified in the ACEPMs (Section 2.2.13), reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), and the *Monitoring Plan* (Appendix E of the EPO) would reduce the likelihood and severity of any potential effects to aquatic wildlife and special status aquatic

species. The Project would incrementally increase disturbance within the RFFA Study Area. The increased disturbance from the Proposed Action would be negligible within the RFFA Study Area. The RFFA effects within the aquatic wildlife and special status species RFFA Study Area, including the Proposed Action, would be negligible, short-term, and localized.

3.18.3. Water Quality, Quantity, and Soil Resources

Water Quality and Quantity

The water resources (surface and groundwater resources) RFFA Study Area boundary (Figure 13) totals 68,930 acres. The proposed disturbance, 103.3 acres, represents 0.14 percent of the RFFA Study Area. Table 3-7 shows RFFA occurrence within the RFFA Study Area. Mineral exploration and development, dispersed and permitted recreation, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations), are activities that impact water resources, resulting in loss of riparian foliar cover, non-native weed introduction, and soil erosion, which can contribute degraded water quality and the potential for impacted groundwater.

The Proposed Action proposes to include a 300-foot buffer along the streams to mitigate any possible impacts, but a risk of extraordinary conditions remains where erosion associated with drill pad and road construction would mobilize to a receiving water. Where the Project has stream crossings, there may be the potential for erosion because of increased travel along the road. Groundwater levels may have a minor, seasonal decline caused by the permitted supply well; however, it would not have RFFA impacts to groundwater resources because the volume of water to be used is minimal.

Under the Proposed Action, additional upland foliar removal, groundwater consumption, and disturbance would occur. To mitigate and minimize these RFFA effects, HiTech would use clean, washed gravel or manufactured mats at the ford stream crossings according to the standards for temporary crossings provided by the Portland District USACE and the Oregon DSL. Potential RFFA effects to stream crossings on Cherokee Creek and Mine Creek would be minimized with the use of seasonal restrictions when these crossings are generally dry, which include routine surface water monitoring at select locations and installation of up to four instream monitoring stations at select surface monitoring sites. HiTech will use the data collected quarterly from the water quality monitoring stations to monitor the drilling operations, which will prove the opportunity to modify mitigation efforts. The RFFA potential effects to water quality and quantity resources original from surface disturbance within the Project Area will be mitigated and minimized through the ACEPMs, reclamation methods in the EPO, and the SWPCP (Appendix D of the EPO), which include no removal of any riparian shade, concurrent reclamation, installation of erosion control and sediment controls, topsoil conservation, and a 300-foot buffer on all waterways. The increased disturbance from the Proposed Action would be negligible within the RFFA Study Area. The RFFA effects on general water quality and quantity within the water quality and quantity and soil resources RFFA Study Area, including the Proposed Action, would be negligible, short-term, and localized.

Soil Resources

The soil resources RFFA Study Area boundary (Figure 13) totals 68,930 acres. The proposed disturbance, 103.3 acres, represents 0.14 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrence within the RFFA Study Area. The RFFA Study Area boundary was used to analyze RFFA effects on both water quality and soil resources due to the relationship of degraded water quality as a result of soil mobilization within the watershed. Mineral exploration and development, dispersed and permitted recreation, grazing, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations) are activities that impact soil resources, resulting in loss of stabilizing foliar cover, noxious weed introduction, and severity of surface runoff, which can contribute soil instability, loss of topsoil quality (e.g., chemical composition or physical removal).

Potential RFFA effects to transportation within the RFFA Study Area boundaries are confined to frequent routes of travel but can contribute to soil instability because of continual or travel in wet conditions, which may create conditions for surface runoff to cause erosion. Potential RFFA effects resulting from the construction and installation of other facilities associated with land authorizations may result in the loss of stabilizing foliar cover and will contribute to soil degradation throughout the RFFA Study Area boundary without environmental protection measures in place.

Under the Proposed Action, additional upland foliar removal and soil disturbance would occur. Potential RFFA effects to soil resources would be reduced by the implementation of ACEPMs (Section 2.2.13), which include actions taken (e.g., wattles, contouring, scarifying, and other sediment and erosion control methods), the SWPCP (Appendix D of the EPO), or approved by the BLM, which will reduce sediment runoff from the Proposed Action during construction and operations, monitoring, and reclamation. Final reclamation methods (e.g., redistribution of soil and recontouring BLM and DOGAMI approved seed mixtures, fencing, revegetation monitoring) described in the EPO (Appendix C) would promote the stabilization of soils directly with the appropriate use of contouring, revegetation of all disturbed areas, and through the promulgation of revegetation to provide soil stability. The increased disturbance from the Proposed Action would be negligible within the RFFA Study Area. The RFFA effects on soil resources within the water quality and quantity and soil resources RFFA Study Area, including the Proposed Action, would be negligible, short-term, and localized.

3.18.4. Archaeological Resources, Native American Consultation & Coordination

The archaeological resources, Native American consultation and coordination RFFA Study Area boundary (Figure 14) totals 285,365 acres. The proposed disturbance, 103.3 acres, represents 0.04 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrences. Mineral exploration and development, dispersed and permitted recreation, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations) are activities that have the potential to impact Native American religious and cultural resources The BLM has drafted the Project PA to identify the APE/affected environment and environmental consequences that consider the resources important to the area Tribes. The affected environment/APE and environmental consequences would incorporate resources and resource areas important to Tribes, including religious and ethnobotanical resources that are within view of or may experience potential vibratory effects of the Proposed Action.

Impacts on cultural resources are mitigated through data recovery. Minimization of RFFA effects from the Proposed Action would be addressed through avoidance of identified eligible and unevaluated sites. If avoidance is not possible, eligible and unevaluated sites would be mitigated as agreed upon by the Historic Properties Treatment Plan.

Approval of the Proposed Action would increase disturbance by 103.3 acres, which represents about 0.04 percent of the RFFA Study Area. The intensity and duration of the RFFA effects would vary depending on the cultural resources and sensitive areas impacted and the mitigation in place; however, these impacts would not occur over the long term. Cultural resource inventories and government-to-government consultation/coordination would be completed for any future proposed development within the RFFA Study Area with a federal nexus – potential adverse impacts to any Native American traditional values would be avoided or mitigated. Implementation of the ACEPMs and BMPs (Section 2.2.13) would reduce the likelihood and severity of these effects on cultural resources. Specifically, all inadvertent cultural discoveries will follow the BLM and Oregon SHPO regulations. Exploration activity will immediately cease within 100 feet of any discovery of human remains, burials, or any previously unidentified cultural (archaeological or historical) resources during Project operations. HiTech will ensure such discovery is appropriately protected and immediately notify the BLM authorized officer. HiTech will leave the discovery intact until authorized by the BLM officer. HiTech will comply with any specific discovery procedures under applicable regulations, the PA, and any cultural mitigation plan established under the PA. Any potential RFFA effects would be minimized based on implementation of the PA, ACEPMs (Section 2.2.13), the *Monitoring Plan* (Appendix E of the EPO), and any additional environmental protection measures specified in the EPO (Appendix C). The increased disturbance from the Proposed Action would be negligible within the RFFA Study Area. The RFFA effects on archaeological resources Native American consultation and coordination and cultural resources within the RFFA Study Area, including the Proposed Action, would be negligible, short-term, and localized and addressed through a future PA and continued consultation.

3.18.5. Special Status Species, General Plants, Botany and Vegetation, Noxious, and Non-Native Species

The special status species for general plants, botany and vegetation, noxious, and non-native species RFFA Study Area boundary (Figure 15) totals 9,879 acres. The proposed disturbance, 103.3 acres, represents 1.05 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrences. Mineral exploration and development, dispersed and permitted recreation, grazing, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations) are activities that impact native vegetation resources and increase the risk non-natives infestations, resulting in vegetation removal, non-native weed introduction, and soil erosion, which can contribute to degraded ecological state and the potential for reduction in vegetative species establishment and/or diversity of composition.

The RFFA effects on vegetative resources primarily would be related to direct vegetative loss, loss of vegetative species diversity, and introduction of surface competition between native and non-native species. For RFFA effects resulting in surface disturbance, vegetation resources have or may be removed and result in an alteration of their prior ecological state and pose the risk of having to compete with faster establishing non-native species. Transportation in and around the

RFFA Study Area will likely introduce or exacerbate non-native establishments and create fugitive dust emissions on vegetative resources adjacent to routes of travel. A RFFA effect, combined with past and present dispersion as a result of activities on the landscape, can be challenging to fully analyze; however, RFFA effects of surface-disturbing activities would continue to pose the same potential effects.

Under the Proposed Action, additional vegetative removal, short-term loss of vegetative species diversity, and introduced potential risk of surface competition between native and non-native species would occur and may temporarily alter the ecological state within the RFFA Study Area boundary. The potential RFFA effects (e.g., loss of vegetative cover and introduction or spread of non-native species) to special status species for general plants, botany and vegetation, noxious, and non-native species will be mitigated and minimized through the ACEPMs (Section 2.2.13), the reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), and the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO). Specifically, the reclamation methods used to reclaim the land to a prior disturbed ecological state, such as BLM and DOGAMI approved seed mixes, noxious weed treatment, soil stabilization, and monitoring, will be conducive to both established and future establishment of vegetative resources. For special status plant species, pre-clearance surveys will determine areas of avoidance by establishing 100-foot buffers, where practical, and actions will be taken to reduce the risk of disturbance. The implementation of the mitigation and minimization tools referenced above would reduce the likelihood and severity of RFFA effects on special status species for general plants, botany and vegetation, noxious, and non-native species special status plant species.

3.18.6. Raptors and Eagles

The raptors and eagles RFFA Study Area boundary (Figure 16) totals 295,463 acres. The proposed disturbance, 103.3 acres, represents 0.04 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrences. Mineral exploration and development, dispersed and permitted recreation, and realty actions (e.g., land use authorizations, utility and telephone communications, grazing and other land use authorizations) are activities that impact raptors and eagles, resulting in habitat loss, disruption of migration, invasive species, altered predator/prey dynamics, construction of unnatural features (e.g., fence and telephone posts), and direct impacts (e.g., vehicle mortality). These activities also require land occupancy or development, which serves as a direct loss of wildlife habitat for certain activities. Additionally, these activities may require a supporting transportation and infrastructure network, which can exacerbate habitat fragmentation and direct loss of habitat acreage. Structures can create artificial nesting or roosting habitats, which (depending on type) could be beneficial or harmful to species. These impacts may change predator and prey relationships within the RFFA Study Area. Disturbance to raptor or bird nests, or breeding behavior, could occur from noise and human activity (e.g., construction, off-highway vehicles, etc.).

RFFA effects on raptors and eagles from the Proposed Action would include increased noise, anthropogenic activity, and additional habitat loss and fragmentation. The potential RFFA effects to raptor and eagle species within the Project Area will be mitigated and minimized through the ACEPMs (Section 2.2.13), reclamation methods in the EPO, and the *Monitoring Plan* (Appendix E of the EPO). Some of the methodologies used to reduce the likelihood and potential severity of impacts include seasonal shutdown, pre-clearance surveys, speed limits, selection of

BLM and DOGAMI approved seed mixtures that are representative of the surrounding ecological state and provide habitat for native prey, monitoring for reclamation success, and eradication methods for noxious weeds and invasives. Any reasonable actions to reduce RFFA effects to protect raptors and eagles will be considered, and no incidental take is anticipated for the Project. Where applicable, the Project will be compliant with state and federal laws relating to raptors and eagles within the Project Area. Overall, RFFA effects on raptors and eagles, including the Proposed Action, are expected to be minor, short-term, and localized.

3.18.7. Special Status Terrestrial Wildlife Species, General Wildlife, and Migratory Birds

The special status terrestrial wildlife species, general wildlife, and migratory birds RFFA Study Area boundary (Figure 17) totals 33,501 acres. The proposed disturbance, 103.3 acres, represents 0.30 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrences. Mineral exploration and development, dispersed and permitted recreation, grazing, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations) are activities that impact terrestrial wildlife and migratory birds, resulting in habitat loss and fragmentation, invasive species, altered predator/prey dynamics, construction of unnatural features (e.g., fence and telephone posts), and direct impacts (e.g., vehicle mortality). These activities also require land occupancy or development, which serves as a direct loss of wildlife habitat for certain activities and may require a supporting transportation and infrastructure network that can exacerbate habitat fragmentation and direct loss of habitats acreage. Surface disturbance can cause avoidance of suitable habitat and the construction of nests where the ecological state has been temporarily changed. Structures can create artificial nesting or roosting habitats, which (depending on type) could be beneficial or harmful to species. These impacts may change predator and prey relationships within the RFFA Study Area.

RFFA effects on special status terrestrial wildlife species, general wildlife, and migratory birds from the Proposed Action would include increased noise, anthropogenic activity, disruption of migration, and additional habitat loss and fragmentation. The likelihood and severity of potential RFFA effects special status terrestrial wildlife species, general wildlife, and migratory birds within the Project Area will be mitigated through the ACEPMs (Section 2.2.13), reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), and the *Monitoring Plan* (Appendix E of the EPO). Some of the environmental protection measures include seasonal shutdown, pre-clearance surveys, speed limits, fencing to keep out grazing livestock and ensure the disturbed area can be returned to a functional habitat, selection of BLM and DOGAMI approved seed mixtures that are representative of the surrounding ecological state, monitoring for reclamation success and eradication methods for noxious weeds and invasives, and implementation of BMPs to reduce the loss of any topsoil. Any reasonable actions in which to protect BLM Sensitive terrestrial wildlife and migratory bird species will be taken into consideration. Where applicable, the Project will be compliant with state and federal laws relating to special status terrestrial wildlife species, general wildlife, and migratory birds in the Project Area. Overall, RFFA effects, including the Proposed Action, are expected to be minor, short-term, and localized.

3.18.8. Greater Sage-Grouse

The greater sage-grouse RFFA Study Area boundary (Figure 18) totals 393,261 acres. The proposed disturbance, 103.3 acres, represents 0.03 percent of the RFFA Study Area. Table 3-7

shows a breakdown of RFFA occurrences. Mineral exploration and development, dispersed and permitted recreation, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations) are activities that impact the greater sage-grouse, resulting in habitat loss, habitat fragmentation, and displacement from increased human activity and noise. Other indirect impacts may have included the introduction of invasive species, increased predation, and decreased nesting success. Operations and maintenance activities that cause movement and noise also can lead to the displacement of individuals to less-suitable habitats.

RFFA effects on greater sage-grouse from the Proposed Action would temporarily increase habitat loss and degradation. The likelihood and severity of potential RFFA effects to greater sage-grouse within the Project Area will be mitigated through the ACEPMs (Section 2.2.13), reclamation methods in the EPO, the SWPCP (Appendix D of the EPO), the *Noxious Weed Management and Monitoring Plan* (Appendix C of the EPO), and the *Monitoring Plan* (Appendix E of the EPO). Some of the environmental protection measures include seasonal shutdown, pre-clearance surveys, fencing to keep out grazing livestock and ensure the disturbed area can be returned to a functional habitat, speed limits, selection of BLM and DOGAMI approved seed mixtures that are representative of the surrounding ecological state, monitoring for reclamation success and eradication methods for noxious weeds and invasive species, and implementation of BMPs to reduce the loss of any topsoil. Any reasonable actions in which to protect greater sage-grouse will be taken into consideration. Where applicable, the Project will be compliant with state and federal laws relating to greater sage-grouse in the Project Area. Overall, RFFA effects on greater sage-grouse, including the Proposed Action, are expected to be minor, short-term, and localized.

3.18.9. Livestock Grazing

The livestock grazing RFFA Study Area boundary (Figure 19) totals 56, 854 acres. The proposed disturbance, 103.3 acres, represents 0.18 percent of the RFFA Study Area. Table 3-7 shows a breakdown of RFFA occurrences. Mineral exploration and development, dispersed and permitted recreation, and realty actions (e.g., land use authorizations, utility and telephone communications, and other land use authorizations) are activities that impact the effective management of livestock grazing, resulting in forage loss (i.e., direct foliar removal), damage to supporting water infrastructure, access, introduction of non-native vegetative species (i.e., indirect impact of surface competition for forage resources), restriction of foraging range (e.g., fences, gates, etc.), and direct impacts (e.g., vehicle mortality). These activities also include land occupancy or development, which serves as a direct loss of forage resources and may require a supporting transportation and infrastructure network, which can exacerbate forage loss and cause environmental stressors on grazing livestock as result of increased traffic and human activity (e.g., noise or avoidance behavior from drilling activity).

RFFA effects on livestock grazing from the Proposed Action would include increased noise, anthropogenic activity, additional forage loss, and potential risk of non-native vegetative species infestation spread.

Under the Proposed Action, potential additional impacts to livestock grazing may include loss of forage resources, potential risk of non-native species, potential damage to grazing infrastructure (i.e., water storage and transport) and restricted grazing range because of fencing and

anthropogenic activity. The implementation of ACEPMs (Section 2.2.13) and the EPO (Appendix C) environmental protection measures would reduce the likelihood and severity of these effects on livestock grazing resources. Existing range improvements within the Project Area would be protected and enforced speed limits would minimize car-animal collisions. Vehicles operating in the Project Area would follow reduced speed limits of 15 to 25 mph. Fencing would not be cut during exploration activities. Gates would be closed and/or locked as appropriate and left in the condition in which they are encountered. HiTech will coordinate with the BLM to establish an appropriate plan to minimize impacts from Project activities known to cause leaks or breaks in the pipeline used to fill livestock water troughs, either by fortifying leaks, other appropriate maintenance, or seasonal timing with the allotment permittee. HiTech would continue to coordinate with authorized grazing permittee(s) to ensure that cattle operations are not impacted by the Proposed Action. Additionally, concurrent reclamation would occur as soon as access roads and drill sites are no longer needed. The increased disturbance from the Proposed Action would be negligible within the RFFA Study Area. The RFFA effects on livestock grazing, including the Proposed Action, would be negligible, short-term, and localized.

CHAPTER 4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

4.1. Public Involvement

On July 31, 2023, the BLM issued a news release and opened a 30-day public scoping period to seek input on the Project which was extended to September 15, 2023. (See Section 1.6 Scoping and Issues).

The BLM will post the draft EA and a draft FONSI on BLM's ePlanning website for public comment. The BLM will provide a 5-day Public Scoping period, seeking input on the proposed HiTech Lithium Exploration Plan of Operation EA from March 26, 2025, through March 30, 2025.

Subsequently and part of the planned public involvement, BLM will publish a News Release (NR) of the EA on March 26, 2025. The NR announced the availability of the EA, the unsigned Finding of No Significant Impact (FONSI), and the EPO for public review. The NR provided a link to the project website and the methods the public could send comments, on the EA and FONSI, to the BLM.

4.2. State and Federal Agencies and Tribes Consulted

The BLM consulted with the following individuals and organizations prior to the Public Comment Period:

- Oregon Department of Fish & Wildlife,
- U.S. Fish & Wildlife Service,
- Oregon Department of Agriculture
- Oregon Water Resources Department,
- Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon;

4.2.1. Tribes

The BLM identified 16 potentially interested Tribes and began conducting formal consultation in May 2023. Initial letters were sent to Tribes between May 2023 and November 2023 to invite them to participate in government-to-government consultation. The BLM sent initial letters to the following Tribes:

- Burns Paiute Tribe;
- Confederated Tribes of the Umatilla Indian Reservation;
- Confederated Tribes of the Warm Springs Reservation of Oregon;
- Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada;
- Fort Bidwell Indian Community of the Fort Bidwell Reservation of California;

- Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon;
- Klamath Tribes;
- Lovelock Paiute Tribe of the Lovelock Indian Colony, Nevada;
- Pyramid Lake Paiute Tribe of the Pyramid Lake Reservation, Nevada;
- Reno Sparks Indian Colony, Nevada;
- Shoshone Bannock Tribes of the Fort Hall Reservation;
- Shoshone Paiute Tribes of the Duck Valley Indian Reservation, Nevada;
- Summit Lake Paiute Tribe of Nevada;
- Te-Moak Tribe of the Western Shoshone Indians of Nevada;
- Walker River Paiute Tribe of the Walker River Reservation, Nevada; and
- Winnemucca Indian Colony of Nevada.

HiTech conducted informal outreach beginning in April 2022 and sent letters to the following Tribes in addition to those listed above.

- Susanville Indian Rancheria, California;
- Confederated Tribes of the Grande Ronde Community of Oregon;
- Coquille Indian Tribe;
- Cow Creek Band of Umpqua Tribe of Indians;
- Confederation Tribes of the Coos, Lower Umpqua, and Siuslaw Indians; and
- Confederated Tribes of Siletz Indians of Oregon.

The Burns Paiute Tribe, Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon, and the Shoshone Paiute Tribes of the Duck Valley Reservation, Nevada (collectively, Tribes), expressed interest in conducting government-to-government consultation and completing discrete culture studies in relation to the Project. Culture studies include the identification of culturally significant areas within the Project Area, including traditional uses and ethnobotany, to provide additional information to avoid, minimize, or mitigate potential adverse effects to historic properties.

A PA is being prepared to specify the process the BLM and consulting parties would follow for compliance with Section 106 of the NHPA and 36 CFR § 800.14(b), including consultation with the Oregon SHPO. The PA outlines how the consultation process under Section 106 would be implemented within the established APE, and how the BLM, SHPO, HiTech, and the Tribes would be able to consult to identify potential effects to historic properties within the APE and to resolve any effects determined to be adverse.

4.2.2. Regulatory Agency Consultation

The BLM followed applicable regulations for consulting with other agencies about ecologically and culturally sensitive aspects of the Proposed Action. Specifically, consultations were undertaken to ensure the plan's compliance with Section 7 of the Endangered Species Act as well as Section 106 of the National Historic Preservation Act.

Consultation with the USFWS per Section 7 of the Endangered Species Act: Lahontan Cutthroat Trout

Lahontan Cutthroat Trout (LCT) (*Oncorhynchus clarkii henshawi*) was listed as Endangered on October 13, 1970, under the Endangered Species Protection Act of 1969 (35 CFR 13520) and subsequently reclassified as Threatened on July 16, 1975, under the Endangered Species Act of 1973, as amended (40 Federal Register, pp. 29864).

Monarch Butterfly

The Monarch Butterfly (*Danaus plexippus*) is currently a proposed species for listing under the Endangered Species Protection Act of 1969 (35 CFR 13520) and a listing determination is anticipated in 2025 (FWS, 2020). No critical habitat has been established for this species.

Consultation with OR State Historic Preservation Officers per Section 106 of the National Historic Preservation Act

The BLM complies with the National Historic Preservation Act (54 U.S.C. 300101 et seq.) through the State Protocol with the Oregon State Historic Preservation Office (USDI BLM, 2015) as directed by the National Programmatic Agreement (USDI BLM, ACHP, NCSHPO, 2012). Upon implementation of actions consistent with the Proposed Action, the BLM consulted with the Oregon State Historic Preservation Office on Federal undertakings with the potential to effect historic properties (a prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places) in accordance with the 2015 State Protocol to comply with the National Historic Preservation Act. Per the National Historic Preservation Act (NHPA), BLM initiated consultation with the Oregon State Historic Preservation Offices for the Proposed Action.

REFERENCES AND ACRONYMS

References Cited

Bureau of Land Management (1988). *Chemical Pest Control Handbook, H-9011-1.* U.S. Department of Interior. May 25, 1988.

Bureau of Land Management (1997). *Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington.* U.S. Department of Interior. August. https://www.blm.gov/sites/default/files/docs/2023-08/orwa-Standards-Rangeland-Health-1997.pdf. Accessed February 22, 2025.

Bureau of Land Management (2002). *Southeastern Oregon Resource Management Plan and Record of Decision*. U.S. Department of Interior. September.

Bureau of Land Management (2008). *National Environmental Policy Act Handbook,* H-1790-1. Rel. 1-1710, January 30, 2008. U.S. Department of Interior. https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_Handbook_h1790-1.pdf. Accessed March 3, 2025.

Bureau of Land Management (2012). *Primitive Roads Design Handbook, H-9115-1.* Rel. No. 9-392, March 6, 2012. U.S. Department of Interior. https://www.ntc.blm.gov/krc/system/files/legacy/uploads/23933/H-9115-1%20-%20Design%20Handbook.pdf. Accessed March 3, 2025.

Bureau of Land Management (2015). *Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment.* U.S. Department of Interior. September. https://eplanning.blm.gov/public_projects/lup/60100/72050/79050/or_armpa.pdf. Accessed March 3, 2025.

Bureau of Land Management (2016). *BLM Handbook 1780-1 - Improving and Sustaining BLM - Tribal Relations*. Department of Interior. https://www.blm.gov/sites/blm.gov/files/uploads/MS%201780.pdf. Accessed February 22, 2025.

Bureau of Land Management (2024). *Southeastern Oregon Record of Decision and Approved Resource Management Plan Amendment*. U.S. Department of Interior. February.

Bureau of Land Management (2024a). *Allotment information*. BLM Reporting Application. U.S. Department of Interior. Retrieved on January 31, 2024, from https://reports.blm.gov/report/RAS/33/Allotment-Information/. Accessed February 22, 2025.

Bureau of Land Management (2024b). *BLM National Livestock Grazing Allotment Polygons*. U.S. Department of Interior. Retrieved from https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-natl-grazing-allotment-polygons/explore?location=42.094594%2C-117.990761%2C11.00. Accessed February 22, 2025.

Edgel, Robert J., Larsen, R.T., Whiting, J.C., and McMillan, B.R. Wildlife Society Bulletin (2018). *Space Use, Movements, and Survival of Pygmy Rabbits in Response to Construction of a Large Pipeline.*, vol. 42, no. 3, 2018, pp. 488–97. *JSTOR*, https://www.jstor.org/stable/90025210. Accessed February 22, 2025.

Golden Gate Bird Alliance (2024). *Burrowing Owls*. Burrowing Owls - Golden Gate Bird Alliance. Accessed February 22, 2205.

HiTech Minerals Incorporated (2024a). *Emergency Response Plan*. Appendix F of the *Exploration Plan of Operations*.

HiTech Minerals Incorporated (2024b). *Noxious Weed Management and Monitoring Plan*. Appendix C of the *Exploration Plan of Operations*.

HiTech Minerals Incorporated (2025a). *Exploration Plan of Operations (Revision 5)*.

HiTech Minerals Incorporated (2025b). *Monitoring Plan*. Appendix E of the *Exploration Plan of Operations*.

HiTech Minerals Incorporated (2025c). *Stormwater Pollution Control Plan*. Appendix D of the *Exploration Plan of Operations*.

McGinley & Associates (2022a). *McDermitt Exploration Project Biological Baseline Report*.

McGinley & Associates (2022b). *McDermitt Exploration Project Hydrological Baseline Report*.

Natural Resources Conservation Service (2024). *Custom Soil Resource Report for Malheur County, OR, Southern Part*. United States Department of Agriculture, Washington, D.C.

Oregon Biodiversity Information Center (2018). *Statewide Habitat Map 2018*. Oregon GeoHub Data.

Oregon Biodiversity Information Center (2021). *Biotics Rare Species Database*. Institute for Natural Resources – Portland. Portland State University, Portland, OR.

Oregon Department of Fish and Wildlife (2005). *Oregon Native Fish Status Report—Quinn River Lahontan Cutthroat Trout*.

Oregon Department of Fish and Wildlife (2013). *ODFW Oregon Big Game Winter Habitat*. https://www.dfw.state.or.us/habitat/mitigation/Final%202013%20ODFW%20Big%20Game%20Winter%20Habitat%20Map%20Rationale%20-%202013.pdf. Accessed February 22, 2025.

Oregon Department of Fish and Wildlife (2023) *Priority Wildlife Connectivity Areas*. https://experience.arcgis.com/experience/6979b6598f904951bd0af1821e1595f1/. Accessed February 22, 2025.

Oregon State Water Resources Board (1969). *Malheur-Owyhee Basins*. Salem, Oregon.

Page-Dumroese, D.S. (1993). *Susceptibility of volcanic ash-influenced soil in northern Idaho to mechanical compaction.* 6. Ogden, UT, USA: US Department of Agriculture, Forest Service, Intermountain Research Station.

Ralph, C.J., Geupel, G.R., Pyle, P., Martin, T.E., & DeSante, D.F. (1993). *Handbook of field methods for monitoring land birds.* U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station.

SWCA Environmental Consultants (2024). *McDermitt Exploration Project Paleontological Baseline Report*.

UES (2023). *McDermitt Exploration Project Special Status Plant Assessment.*

UES (2024). *McDermitt Exploration Project Emissions Inventory Assessment.*

U.S. Environmental Protection Agency (2005). *Final Opalite Mine Site Investigation Report Malheur County, Oregon*. Prepared for Oregon Department of Environmental Quality Eastern Region. February 2005.

U.S. Fish and Wildlife Service (2019). *Updated Goals and Objectives for the Conservation of Lahontan Cutthroat Trout (Oncorhynchus clarkii henshawi)*. Lahontan Cutthroat Trout Coordinating Committee May 29, 2019.

Western Association of Fish and Wildlife Agencies (WAFWA) (2019). Western monarch butterfly conservation plan, 2019–2069. Version 1.0 https://monarchchat.org/?page=page_5 . Accessed March 19, 2025.

Western Native Trout Initiative (2020). *Lahontan cutthroat trout (Oncorhynchus clarkii henshawi)*. Western Native Trout Status Report. Updated July 2020. https://westernnativetrout.org/media_category/lahontan-cutthroat/. Accessed February 22, 2025.

Western Regional Climate Center (2022). *Period of Record Monthly Climate Summary - McDermitt, Nevada*. Cooperative Climatological Data Summaries; Desert Research Institute. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?nv4935. Accessed February 22, 2025.

Acronyms

Table 4-1. Acronyms

°F	Fahrenheit
ACEPMs	Applicant Committed Environmental Protection Measures
ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
ARMPA	Approved Resource Management Plan Amendment
AUMs	Animal unit months
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMPs	Best Management Practices
BPT	Burns Paiute Tribe
CFR	Code of Federal Regulations
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
DOGAMI	Oregon Department of Geology and Mineral Industries
DSL	Department of State Lands
EA	Environmental Assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPO	Exploration Plan of Operations
FLPMA	Federal Land Policy and Management Act of 1976
FMPST	Fort McDermitt Paiute and Shoshone Tribe
GeoBOB	Geographic Biotic Observations
GIS	Geographic Information System
HiTech	HiTech Minerals Incorporated
HQT	Habitat Quantification Tool
HUC	Hydrologic Unit Code
KOP	Key Observation Point
kW	Kilowatt
LCT	Lahontan Cutthroat Trout
MBTA	Migratory Bird Treaty Act
MFO	Malheur Field Office
MLRS	Mineral and Land Records System
MMT	million metric tons
mph	miles per hour
MT	metric tons

MU	Map Units
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
BNAF	NEPA Baseline Needs Assessment Form
Notice	Notice OR106282838
NRCS	Natural Resources Conservation Service
NRHP	National Registry of Historic Places
NSF	National Sanitation Foundation
OAR	Oregon Administrative Rule
OCRA	Oregon Cultural Resources Assessment
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish & Wildlife
ORBIC	Oregon Biodiversity Information Center
OSHA	Occupational Safety and Health Administration
OWRD	Oregon Water Resources Department
PA	Programmatic Agreement
PAC	Priority Areas of Conservation
Project	McDermitt Exploration Project
RC	Reverse Circulation
RFA	Reasonably Foreseeable Actions
RFFA	Reasonably Foreseeable Future Actions
RMP	Resource Management Plan
ROW	right of way
DR	Decision Record
ROW	Right-of-Way
Sho-Pai	Shoshone-Paiute Tribes of Duck Valley Indian Reservation
SHPO	State Historic Preservation Office
SLPT	Summit Lake Paiute Tribe
SNAP	Food Stamps
SSI	Supplemental Security Income
SWPCP	Stormwater Pollution and Control Plan
T32S	Township 40 South
USC	U.S. Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish & Wildlife Service
UUD	Unnecessary or Undue Degradation
WAFWA	Western Association of Fish and Wildlife Agencies

WNTI	Western Native Trout Initiative
WRCC	Western Regional Climate Center
WRM	Western Ridged Mussel
WSA	Wilderness Study Areas

APPENDICES

APPENDIX A:

Tables

The following tables are Included in this section.

Please visit Bureau of Land Management E-Planning portal at https://eplanning.blm.gov/eplanning-ui/project/2025844/510 for any of the appendices that are not inserted into the text of this EA but are part of the EA.

Table A-1. Resources Considered for Analysis

Resource or Issue	Present Yes/No	May be Affected Yes/No	Rationale
Air Quality/Greenhouse Gasses/Global Climate Change	Yes	Yes	Air quality is analyzed in Section 3.2.
Areas of Critical Environmental Concern (ACEC)	Yes	No	The project area is within the nominated McDermitt Caldera Sagebrush Sea ACEC. The BLM has compared the nominated ACEC values and assessed if the values are already analyzed in this EA or if not analyzed the EA explains why. One can find the explanation below at the end of this table. Therefore, this ACEC resource is an Issues Considered but not Analyzed in Detail in this EA.
Cultural Resources	Yes	Yes	Cultural resources is analyzed in Section 3.3.
Farmlands (Prime and Unique)	**No**	**No**	No prime or unique farmlands are located within the Project Area Therefore, this EA will not analyze this resource.
Fire/Fuels	**Yes**	**No**	Fire waivers are an annual requirement for anyone operating on public land during fire season. Each year a fire waiver would be completed for the Project. The EPO includes an *Emergency Response Plan* (Appendix F of the EPO), which includes fire prevention measures. Therefore, this EA will not analyze this resource.
Floodplains	**Yes**	**Yes**	Floodplains Analyzed as part of section 3.18.3 Water, Quantity, and Soil Resources.
Forestry Resources	**No**	**No**	No forested areas are located within the Project Area. Therefore, this EA will not analyze this resource.
Terrestrial Wildlife (excluding migratory birds)	**Yes**	**Yes**	Terrestrial wildlife (excluding migratory birds) is analyzed in Section 3.5.
Geology/Minerals	**Yes**	**No**	Final reclamation and plugging drillholes would minimize impacts to surface resources. Exploration drilling would be conducted to obtain subsurface rock samples and would result in the extraction of small amounts of material and fluids from drill holes. No significant measurable amount of resource would be removed. Therefore, this EA will not analyze this resource.
Land Use Authorizations	**Yes**	**No**	There are several existing rights of ways (ROWs) along the southern portion of the Project Area. Project disturbance would occur within existing ROWs ORO 053094, held by Oregon Idaho Utilities Inc. and ORORO12596, held by Harney Electric Cooperative. HiTech has coordinate agreements between existing ROW holders to mitigate impacts and agreements are filled with the BLM.

Resource or Issue	Present Yes/No	May be Affected Yes/No	Rationale
Lands with Wilderness Characteristics	**No**	**No**	The proposed 7,200-acre Project Area has been modified from HiTech's original 9,000-acre mineral claims to avoid areas with wilderness characteristics. As there are no such lands within the Project Area, further analysis of this resource is not needed.
Livestock Grazing	**Yes**	**Yes**	Livestock grazing is analyzed in Section 3.6.
Migratory Birds	**Yes**	**Yes**	Migratory birds are analyzed in Section 3.7.
Mining Law Administration	**Yes**	**No**	The Project Area is open to mineral entry under the Mining Law, exploration/development per 43 CFR 3809, and use and occupancy per 43 CFR 3715. HiTech holds the claim for locatable solid minerals within the Project Area. No effect to other claim holder will occur. Therefore, this EA will not analyze this resource.
Native American Religious and Cultural Concerns	**Yes**	**Yes**	Cultural resources, including Native American and cultural religious concerns, are discussed in Section 3.3.
Noxious and Invasive, Non-Native Species	**Yes**	**Yes**	Noxious and invasive, non-native species are analyzed in Section 3.9.
Paleontological Resources	**Yes**	**No**	The geology in the area is not likely to contain recognizable significant paleontological resources as the primary rock types within the Project Area are volcanic materials located in Tts formation (e.g., tuffs, tuffaceous sedimentary rocks, pumicites, and silicic flows). There is the presence of an overlaying alluvial deposit, formation Qal; however, these deposits have a Potential Fossil Yield Classification of Class 2, which are geological units not likely to contain paleontological resources. Therefore, this EA will not analyze this resource.
Recreation	**Yes**	**No**	There are no permanent recreation sites within the Project Area. Dispersed recreational activities may occur at the Project Area However, proposed action is not closing public land. HiTech will be responsible for maintaining roadways and access to public lands for dispersed recreational access. Therefore, this EA will not analyze this resource.
Socioeconomics	**Yes**	**Yes**	Socioeconomics is analyzed in Section 3.10.
Soils	**Yes**	**Yes**	Soils is analyzed in Section 3.11.
Aquatic Wildlife, including BLM Sensitive Species	**Yes**	**Yes**	Aquatic wildlife, including BLM Sensitive species, are analyzed in Section 3.4.
BLM Sensitive Species -- Plants	**Yes**	**Yes**	BLM Sensitive plant species are analyzed in Section 3.12.
BLM Sensitive Species – Terrestrial Wildlife	**Yes**	**Yes**	BLM Sensitive terrestrial wildlife are analyzed in Section 3.13.

Resource or Issue	Present Yes/No	May be Affected Yes/No	Rationale
Threatened and Endangered Species and Proposed Threatened and Endangered Species -- Plants	**No**	**No**	There are no threatened or endangered plant species or associated habitat located within the Project Area. Therefore, this EA will not analyze this resource.
Threatened and Endangered Species and Proposed Threatened and Endangered Species -- Wildlife	**Yes**	**Yes**	Threatened and endangered wildlife species, such as the Lahontan Cutthroat Trout and Monarch Butterfly are analyzed in Section 3.14.1
Transportation/ Travel Management	**Yes**	**No**	HiTech has an existing road maintenance agreement with Malheur County to mitigate impacts on Disaster Peak Road. Therefore, this EA will not analyze this resource.
Vegetation	**Yes**	**Yes**	Vegetation is analyzed in Section 3.15.
Visual Resource Management (VRM)	**Yes**	**Yes**	Visual resources are analyzed in Section 3.16.
Wastes: Hazardous or Solid	**No**	**No**	No hazardous waste will be used, generated, or located within the Project Area. The Project would include a SWPCP, which includes measures for spill prevention and clean up for fuel and petroleum products. The Project would also include an *Emergency Response Plan* (Appendix F of the EPO), which identifies emergency management protocols. Both SWPCP (Appendix D of the EPO) and *Emergency Response Plan* will be reviewed and approved by the BLM. Any solid waste would be collected in trash bins and/or containers equipped with lids and hauled off-site and disposed of at an approved facility. There would be no impacts using the standard BMP. Therefore, this EA will not analyze this resource.
Water Quality (Surface and Ground)	**Yes**	**Yes**	Water quality is analyzed in Section 3.17.
Wetlands/Riparian Zones	**Yes**	**Yes**	Wetlands/riparian zones are analyzed as part of Section 3.4 Aquatic Wildlife, Section 3.14 Threatened and Endangered Species, and Section 3.17 Water Resources (Surface and Groundwater)
Wild and Scenic Rivers	**No**	**No**	There are no Wild and Scenic Rivers located within the Project Area. Therefore, this EA will not analyze this resource.
Wild Horses and Burros	**No**	**No**	No wild horses or burros are known to occur within the Project Area. Therefore, this EA will not analyze this resource.
Wilderness/ Wilderness Study Area (WSA)	**No**	**No**	No wilderness areas are located within the Project Area. Therefore, this EA will not analyze this resource.

HiTech EA Issues Considered not Analyzed in Detail; McDermitt Caldera Sagebrush Sea ACEC Nomination

In this nomination the resources below were identified for the McDermitt Caldera Sagebrush Sea ACEC nomination. The BLM ACEC Manual (1613 Sec 9.2) directs the BLM to consider potential impacts to the resources identified in the nomination when projects are proposed in the nominated area, including proposed projects undergoing NEPA analysis at the time the nomination is received. The resources that were nominated are:

Resource	Consideration of potential impacts
Sagebrush and sage-grouse	This was analyzed in section 3.13 of the EA for potential of adverse effects.
Lahontan cutthroat trout	This was analyzed in section 3.14 of the EA for potential of adverse effects.
Fragile headwater springs	There are no headwater springs within the project boundary.
Biodiversity of plant and animal communities	This was analyzed in sections 3.4, 3.5, 3.7, and 3.12-3.15 of the EA for potential of adverse effects.
Cultural site, traditional uses and sacred places	This was analyzed in section 3.3 and 3.8 of the EA for potential of adverse effects.
Historic events of the US Snake War extermination	While the project boundary is with in the territory of the US Snake War, there are currently no know sites associated with the event. Analysis of cultural resources and a summary of tribal consultation can be found in Section 3.3, 3.8, and 4.2.1 of the document.
Unique local where the Yellowstone hotspot originated	The project proposes 99.2 acres of surface disturbance which is approximately 0.0003% of the McDermitt Caldera. Approximately 44 cubic feet of geologic material would be removed through exploration, estimates cold be found for total cubic feet of geologic material in the approximate 260,000-acre caldera. Exploration actions would not impact the origin of the Yellowstone Hotspot because a diminutive amount of geologic material is removed during exploration and the resource is still wholly there.
The landscape's untrammeled scenic beauty, sweeping vistas and	This resource is related to wilderness, Wilderness Study Areas and lands with Wilderness Character. These

outstanding wild lands values; quiet, peaceful open spaces	lands are not part of the Southeastern Oregon Resource Management Plan wilderness inventory or are not located within the project area.
Clean air	This was analyzed in section 3.2 of the EA for potential for adverse effects.
Dark night skies	This area is not designated in the Southeastern Oregon Resource Management Plan for dark night skies. However, these exploratory actions are temporary in nature, see Section 3.22 Project Schedule, and will not have long standing effect on dark skies.
Past mercury contamination	Past mercury mining activities are outside of the project area and would not have any potential for adverse effects.
Lithium and uranium mining generated toxics	There are currently no approved mining plans of operation for lithium or uranium mining in or adjacent to the project area and would not have any potential for adverse effects.
Western Rivers Conservancy purchase of the Disaster Peak Ranch	The Disaster Peak Ranch is not part of the project area, exploratory actions would not have any potential for adverse effects to the ranch.

The BLM considered the potential impacts to the resources identified in the nomination. Resources were either analyzed in sections of the EA or are not within the project area (see table above). As documented throughout the EA (see table above) or the resources not being within the project area, it is reasonable to conclude that, in all resources above, there is no potential adverse affects to the resource characteristics of relevance and importance.

Table A-2. Wildlife Observed in the Project Area

Wildlife Species	Scientific Name	Wildlife Species	Scientific Name
MAMMALS	MAMMALS	MAMMALS	MAMMALS
American badger	*Taxidea taxus*	Mexican free-tailed bat	*Tadarida brasiliensis*
Big brown bat	*Eptesicus fuscus*	Mountain cottontail	*Sylvilagus nuttallii*
Black-tailed jackrabbit	*Lepus californicus*	Mule deer	*Odocoileus hemionus*
Canyon bat	*Parastrellus hesperus*	**Pallid bat**	***Antrozous pallidus***
Coyote	*Canis latrans*	Pronghorn antelope	*Antilocapra americana*
Hoary bat	*Lasiurus cinereus*	**Pygmy rabbit**	***Brachylagus idahoensis***
Little brown bat	*Myotis lucifugus*	Silver-haired bat	*Lasionycteris noctivagans*
Long-eared myotis	*Myotis evotis*	**Townsend's big-eared bat**	***Corynorhinus townsendii***
Long-legged myotis	*Myotis volans*	Western small-footed myotis	*Myotis ciliolabrum*
Kangaroo Rat	*Dipodomys* sp.		
REPTILES	REPTILES	REPTILES	REPTILES
Desert horned lizard	*Phrynosoma platyrhinos*	Western fence lizard	*Sceloporus occidentalis*
Gopher snake	*Pituophis catenifer*	Western rattlesnake	*Crotalus viridis*
BIRDS	BIRDS	BIRDS	BIRDS
American crow	*Corvus brachyrhynchos*	Lazuli Bunting	*Passerina amoena*
American kestrel	*Falco sparverius*	Mallard	*Anas platyrhynchos*
American robin	*Turdus migratorius*	Mourning dove	*Zenaida macroura*
Bank swallow	*Riparia riparia*	Northern flicker	*Colaptes auratus*
Black-billed magpie	*Pica hudsonia*	Northern harrier	*Circus cyaneus*
Black-throated Sparrow	*Amphispiza bilineata*	Northern pintail	*Anas acuta*
Black-crowned night-heron	*Nycticorax nycticorax*	Northern rough-winged swallow	*Stelgidopteryx serripennis*
Brewer's blackbird	*Euphagus cyanocephalus*	Prairie falcon	*Falco mexicanus*
Brewer’s sparrow	*Spizella breweri*	Red-tailed hawk	*Buteo jamaicensis*
Bushtit	*Psaltriparus minimus*	Red-winged blackbird	*Agelaius phoeniceus*
California Quail	*Callipepla californica*	Ring-necked Pheasant	*Phasianus colchicus*
Canada goose	*Branta canadensis*	Sage thrasher	*Oreoscoptes montanus*
Chukar partridge	*Alectoris chukar*	Sagebrush sparrow	*Artemisiospiza nevadensis*
Common nighthawk	*Chordeiles minor*	Sandhill crane	*Grus canadensis*
Common raven	*Corvus corax*	Song sparrow	*Melospiza melodia*
Gadwall	*Mareca strepera*	Swainson’s hawk	*Buteo swainsoni*
Golden eagle	*Aquila chrysaetos*	Turkey vulture	*Cathartes aura*
Greater sage-grouse	***Centrocercus urophasianus***	Vesper sparrow	*Pooecetes gramineus*
Great-horned owl	*Bubo virginianus*	Western burrowing owl	*Athene cunicularia*
Green-tailed towhee	*Pipilo chlorurus*	Western meadowlark	*Sturnella neglecta*
Horned lark	*Eremophila alpestris*	White-crowned sparrow	*Zonotrichia leucophrys*
Killdeer	*Charadrius vociferus*	Wilson's snipe	*Gallinago delicata*
Lark sparrow	*Chondestes grammacus*	Yellow warbler	*Setophaga petechia*

Table A-3. BLM Tribal Engagement Summary

Date	Attendees	Description
July 11, 2023	Fort McDermitt Paiute and Shoshone Tribe (FMPST)	FMPST Council and community members are formally invited to attend two public meetings held on July 31, 2023.
July 25, 2023	Confederated Tribes of the Umatilla Indian Reservation (CTUIR)	30-day public scoping process Requested site visit Unnecessary or Undue Degradation Discussion
July 31, 2023	FMPST	Public scoping meeting for Plan of Exploration (McDermitt, NV). Tribal Council members were in attendance.
August 8, 2023	FMPST	Introduction to potential lithium exploration projects in McDermitt Caldera
October 24, 2023	Burns Paiute Tribe (BPT)	Introduction to potential lithium exploration projects in McDermitt Caldera Commitment to hosting community meetings Present PA approach BPT requests 2022 survey report Viewshed analysis requested
November 14, 2023	FMPST	Update on potential lithium exploration projects in McDermitt Caldera BLM seeking engagement on the PA from FMPST Ethnobotany and submittal of species list requested by BLM Viewshed and cultural study update Monthly engagement between BLM and FMPST offered by BLM
December 7, 2023	Shoshone-Paiute Tribes of Duck Valley Indian Reservation (Sho-Pai)	Introduction to potential lithium exploration projects in McDermitt Caldera Present tribal engagement conducted to date BLM seeking engagement on the PA from Sho-Pai
December 12, 2023	Summit Lake Paiute Tribe (SLPT)	Introduction to potential lithium exploration projects in McDermitt Caldera Presented engagement with other tribes Invitation to participate in NEPA kickoff meeting SLPT agreed with requests from BPT and FMPST for studies Importance of access to SLPT noted Importance of tribal monitors noted BLM seeking engagement on the PA from SLPT Site visit offered
January 10, 2024	FMPST State and Local Officials Federal and State Agencies	NEPA kickoff meeting Project presentation provided by HiTech
February 8, 2024	FMPST BPT Sho-Pai	Cultural Study Workshop

Date	Attendees	Description
February 13, 2024	Te-Moak Tribe of Western Shoshone Indians	Introduction to potential lithium exploration projects in McDermitt Caldera Tribes are not interested in consulting on projects outside of Nevada
April 2, 2024	Sho-Pai	Overview of government-to-government policies and procedures Outlined PA First foods and religious concerns are a priority to the BLM Concerns regarding the thoroughness of archaeological surveys for multiple projects were voiced by the Sho-Pai
August 13, 2024	FMPST	Hardy copy of updated draft PA was distributed
August 30, 2024	Sho-Pai	Detailed presentation of draft PA Legal discussion regarding signing the PA, “Tribes have historically decided not to sign similar documents on historic principal.”
September 17, 2024	BPT Sho-Pai	BPT and Sho-Pai are working on cultural studies for the Project BPT and Sho-Pai stated interest in working on the PA and an inter-Tribal workshop to complete the PA
November 5, 2024	BPT Sho-Pai	PA Workshop
January 24, 2025	FMPST	Approval to share redacted ethnobotanical survey with SHPO

Table A-4. Issues or Concerns Identified by Native American Tribes

Tribes, Individuals, and/or Organizations	Issue or Concern	Result
Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon	Project impacts to areas of cultural significance	The Tribe completed an ethnobotanical survey and will be completing a Culture Study in relation to the Project Area. The Tribe is being consulted with in the development of the PA and will be given the opportunity to sign as an Invited Signatory. The Tribe is being consulted with to identify and resolve potential effects areas of cultural significance to them.
Burns Paiute Tribe	Project impacts to areas of cultural significance	The Tribe will be completing a Culture Study in relation to the Project Area. The Tribe is being consulted with in the development of the PA and will be given the opportunity to sign as an Invited Signatory. The Tribe is being consulted with to identify and resolve potential effects areas of cultural significance to them.
Shoshone Paiute Tribes of the Duck Valley Indian Reservation, Nevada	Project impacts to areas of cultural significance	The Tribe will be completing a discrete Culture Study in relation to the Project, which includes the identification of culturally significant areas within the Project Area. The Tribe is being consulted with in the development of the PA and will be given the opportunity to sign as an Invited Signatory. The Tribe is being consulted with to identify and resolve potential effects areas of cultural significance to them.
Confederated Tribes of the Umatilla Reservation	Project impacts to water quality	The Proposed Action will implement the environmental protection measures for water quality provided in the EPO and restated in this EA. These measures incorporate avoidance (voluntary buffers) and mitigation procedures (SWPCP, Monitoring, ACEPMs), which will minimize any potential effects to water quality.

Table A-5. List of BLM Reviewers

Name	Title	Area of Responsibility
Nikki Haskett	Field Manager (Acting)	Malheur Field Office
Susan Fritz	Assistant Field Manager	Malheur Field Office
Michele McDaniel	Supervisory Rangeland Management Specialist	Malheur Field Office
Jeremy Vargas	Planning and Environmental Coordinator	Planner
Megan McGuire	Wildlife Biologist	Aquatic, Terrestrial, and SSS Wildlife
Elisabeth Murphy	Archeologist	Archeology/Cultural Resources
Lynne Silva	Range Technician (Weeds)	Botany/Plants/Invasive Plants
Karl Suttmann	Natural Resource Specialist	Hydrology/Soils
Kari Points	Outdoor Recreation Planner	Recreation

Table A-6. List of Contractor Preparers

Name	Title/Area of Responsibility
Colleen Lavery, UES	NEPA Project Manager
Nicole Higgins, UES	NEPA Assistant Project Manager
Ben Klink, UES	Biological Lead
Tessa Behnke, UES	Biologist
Meaghan Davis, UES	Biologist
Justin Fike, UES	Hydrogeological Lead
Alexa Terrel, UES	Hydrogeologist
Tom Tsunemoto, UES	GIS Specialist
Brad Bowden, Historical Research Associates, Inc.	Principal Archeologist
Opal Adams, OAR LLC	Environmental Permitting and NEPA Program Manager
Jeremy Scott Collyard, SLR	Senior Principal Environmental Consultant
Chelsea Anderson, SLR	Senior Environmental Consultant
Charley Mumford, SLR	Associate Environmental Consultant

APPENDIX B:

Figures

The following figures are presented in this appendix.

Please visit Bureau of Land Management e-Planning portal at https://eplanning.blm.gov/eplanning-ui/project/2025844/510 for any of the appendices that are not inserted into the text of this EA but are part of the EA.

APPENDIX C:

Exploration Plan of Operations (Version 5)

The EPO includes descriptions of proposed exploration activities and the associated reclamation of disturbance in the Project Area on affected mining claims controlled by HiTech Minerals Incorporated (HiTech).

HiTech proposes to conduct the McDermitt Exploration Project in three phases in southeast Oregon approximately 20 miles west of McDermitt, Nevada, in Malheur County, Oregon. Additionally, HiTech proposes to install groundwater monitoring wells and one meteorological monitoring (MET) station to support future baseline studies. The Project Area is located entirely on lands administered by the Bureau of Land Management (BLM), Malheur Field Office.

The exact locations of proposed surface disturbance may change as exploration activities progress, to allow the flexibility necessary to evaluate the Project and avoid environmental or cultural impacts in accordance with the Programmatic Agreement. Subsequent phased activities will be included under Work Plan submittals to the BLM and will be based on the success of previously completed exploration and baseline collection activities. The Work Plan submittals will include maps that will show locations of proposed surface disturbance for that exploration phase.

HiTech will also include surface disturbance whose locations vary from the locations originally proposed and analyzed. The BLM will review the proximity and context of new surface disturbance locations to those of sensitive biological and cultural resources. HiTech will not commence surface disturbance activities in new locations until authorization is received from the BLM.

Please visit Bureau of Land Management e-Planning portal at https://eplanning.blm.gov/eplanning-ui/project/2025844/510 for any of the appendices that are not inserted into the text of this EA but are part of the EA.

APPENDIX D:

Alternatives not Analyzed in Detail in this Environmental Assessment

Several alternatives were considered but were eliminated from analysis because they met one or more of six removal eligibility criteria specified in the NEPA Handbook (BLM, 2008).

- Using a gravel source within the Project Area for road maintenance was eliminated from analysis because the low-quality bedrock at site is not suitable as a gravel source and the presence of greater sage-grouse (*Centrocercus urophasianus)* habitat.
- Drilling year round was eliminated from detailed analysis because it would be inconsistent with the policy objectives and subsequent mitigation measures to protect the presence of greater sage-grouse habitat. and the seasonal migration of mule deer (*Odocoileus hemionus*) and pronghorn antelope (*Antilocapra americana*)
- Considering a larger Project Area that included Lands with Wilderness Characteristics was eliminated from detailed analysis because its implementation is speculative of mineral occurrence.

Please visit Bureau of Land Management e-Planning portal at https://eplanning.blm.gov/eplanning-ui/project/2025844/510 for any of the appendices that are not inserted into the text of this EA but are part of the EA.

APPENDIX E:

Greater Sage-Grouse Conformance Sheet

The Proposed Action meets the specific conformance standards, which is documented in the Project's Greater Sage-Grouse Conformance Sheet provided in this appendix. The Proposed Action is exempt from the 2024 Oregon Greater Sage-Grouse ROD and Approved Resource Management Plan Amendment (BLM, 2024) due to it occurring outside of designated areas.

Please visit Bureau of Land Management e-Planning portal at https://eplanning.blm.gov/eplanning-ui/project/2025844/510 for any of the appendices that are not inserted into the text of this EA but are part of the EA.