

**U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**

Glennallen Field Office  
P.O. Box 147  
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**MMG Exploratory Drilling**

Environmental Assessment, DOI-BLM-AK-A020-2014-0013-EA

Case File: AA093554

Applicant: MMG Exploration LLC

June 30, 2014

**TABLE OF CONTENTS**

1.0	INTRODUCTION.....	1
2.0	ALTERNATIVES.....	5
3.0	AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS.....	7
4.0	CONSULTATION AND COORDINATION.....	14
5.0	LIST OF PREPARERS.....	14
6.0	REFERENCES CITED.....	14

**ACRONYMS**

BLM	Bureau of Land Management
EARMPP	East Alaska Resource Management Plan
GFO	Glennallen Field Office
MMG	MMG Exploration LLC
State	State of Alaska

**1.0 INTRODUCTION**

**1.1 Summary of Proposed Project**

MMG is requesting to conduct rock core sampling for mineral potential. This project within the West Kosina hills area of Talkeetna Mountains will be staged out of Alpine Creek Lodge at approximately Mile 68 Denali Highway. The drill sites will be accessed by helicopter and equipment will be sling loaded to the site. MMG plans to drill up to 6 drill holes at different locations, each up to 3.8 inches in diameter, to a depth of less than 1000 feet. Drill pads are normally 16ft X 16ft and will be constructed using timbers to minimize the amount of earthmoving and reclamation.

MMG would like to start the project around June 1, 2014 and continue until completed, or freeze up, whichever comes first. This project might require 2 seasons to complete. During the initial setup there could be approximately 8-15 flights to sling in the needed equipment. During the actual drilling there will be approximately 4-6 flights per day, this

includes slinging out any core samples and bringing in fuel and crew. The drill will be working 24 hours per day with 2 crews working. Each site should only be used for approximately 7 days.

All sites will be reclaimed when the drilling is complete. Reclamation will include plugging each hole with bentonite slurry or equivalent for a minimum of 10 feet within the top 20 feet of the hole, the remainder of the hole to the surface will be backfilled with drill cuttings. Ground reclamation will include utilizing the displaced onsite organic material to re-contour, re-grade and re-seed as required. If brush is cleared, it will be replaced on the cleared ground rather than re-seeding.

## **1.2 Project Area Description and Land Status –**

Sections 13-14, 20-21 and 23-24, T. 29 N., R. 5 E., Section 29, T. 30 N., R. 6 E., Seward Meridian. This land is State selected.

## **1.2 Background**

MMG has submitted an application to conduct exploratory drilling for mineral potential on lands that are selected by the State of Alaska (State). They would like to drill during the summer season of 2014 and possibly 2015. These lands were withdrawn by Public Land Order (PLO) 5180 which were for Classification and for Protection of Public Interest in Lands. This also withdrew these lands from selection by the State of Alaska under the Alaska Statehood Act and from location and entry under the mining laws and from leasing under the Mineral Leasing Act of February 25, 1920, as amended. PLO 5657 opened these lands to selection by the State of Alaska under the Alaska Statehood Act. Therefore under the current PLO's no mining can occur, and no Federal or State mines can be staked.

No mining can occur on selected lands. The area is closed to entry which means that regardless of what they find, no federal mining claims can be staked in this area. The only way that the area could be mined would be for the State to take conveyance of the lands or for PLO 5180 to be revoked and the lands be opened to mineral entry.

## **1.3 Purpose and Need**

MMG Exploration LLC, has filed an application with the BLM Glennallen Field Office to obtain authorization to conduct mineral exploration (rock core sampling) on public lands.

The need for action is established by the BLM's responsibility under Section 302 of the Federal Land Policy Management Act (FLPMA), as amended, to respond to requests for land use authorizations on public lands. The purpose of this action is to provide use of public lands in a manner that is consistent with the provisions and objectives established for the management of resources within the respective planning areas and to ensure that the public uses described herein will not cause unacceptable damage to public lands.

### **1.3.1 Decision to be Made**

The decision to be made by BLM is whether to authorize exploratory drilling on BLM managed lands, and if so, under what terms and conditions.

The Bureau of Land Management must decide if it is in the best interest of the public to authorize this mineral exploration on State selected lands. This project could be authorized for a period of 1 year with option for renewal, for a total term of 2 years. If the Bureau of Land Management decides to authorize this activity, it must choose from the alternatives that best fulfill the purpose and need.

### **1.4 Land Use Plan Conformance**

The East Alaska Resource Management Plan and Record of Decision (RMP/ROD) provide the overall long-term management direction for lands encompassed by the proposed project (BLM 2007). The proposed action and alternatives are consistent with the RMP/ROD. Specifically, the proposed action is consistent with the following decisions in the RMP/ROD:

#### **I. LANDS AND REALTY**

##### **I-2: Land Use Authorizations**

- Land use authorizations include various authorizations and agreements to use BLM lands such as right-of-way grants, road, and temporary use permits under several different authorities including leases, permits, and easements under section 302 of the Federal Land Policy and Management Act of 1976 (FLPMA)

#### **APPENDIX A: REQUIRED OPERATING PROCEDURES (ROPs), STIPULATIONS (Stips), and STANDARD LEASE TERMS**

##### **A-1 Required Operating Procedures**

- ROPs are requirements, procedures, management practices, or design features that the BLM adopts as operational requirements. ROPS would apply to all permitted activities including FLPMA leases and permits, special recreation permits, oil and gas operations, mining Plans of Operation, and Right-Of-Way authorizations. Obviously not all ROPs would apply to all permitted activities. ROPs are selected as part of the site specific analysis that occurs during activity level planning. They are applied as stipulations to permits. The Authorized Officer (AO) or his/her representative is responsible for seeing that the permittee is complying with stipulations of the permit.

### **1.5 Other Applicable Laws, Regulations, Policies, etc.**

The proposed action would be subject to various laws, regulations, and acts including, but not limited to:

- Federal Land Policy Management Act of 1976 as amended P.L. 94-579, 90 Stat 2743, 43 USC 1701
- Clean Air Act (Air Pollution Control Act; July 14, 1955), 42 USC 7401 et seq., as amended by P.L. 101-549, 104 Stat 2399
- Clean Water Act, as amended P.L. 92-500 and amended, 33 USC 1251 et seq.
- National Historic Preservation Act of 1966, P.L. 89-655, 80 Stat 915, 16 USC 470, 1966 U.S. Code Cong. And Ad. News 3855; amended; P.L.s 91-243, 93-54, 94-422, 94-458, 96-244 and 96-515
- Alaska National Interest Lands Conservation Act of 1980, P.L. 96-487, 94 Stat 2371, 16 USC 3148, 30 USC 181

## **1.6 Summary of Public Involvement**

- An internal scoping meeting was held on April 10, 2014 at the GFO to identify issues, concerns or comments.
- External scoping notices were also posted on ePlanning, and were sent out to a variety of stakeholders on April 30, 2014 for a 15 day scoping period, ending May 15, 2014.

A scoping notice was sent out to all the attendees of the Copper Basin Manager's Meeting, and was placed in the Copper River Record the week of April 21, 2014. Notice of the Proposed Action and solicitation of comments were also published on the What's Up Alaska list server, and mailed to the SRP holder affected by the Proposed Action on April 25, 2014. A summary of the proposed project was also posted to the BLM's national NEPA register website, ePlanning on April 21, 2014.

Comment deadline was Thursday May 15, 2014. Eight comments were received within the comment period, one of which identified an issue that the IDT had not identified internally. This issue consisted of the impacts of noise on the affected environment including the Nelchina Caribou calving grounds. Two comments were received past May 15, but neither comment identified any new issues.

## **1.7 Issues Identified / Issues Eliminated from Further Analysis**

Internal and external scoping revealed the following issues for analysis:

- How will Helicopter Activity and Human Presence from this Project Affect the Nelchina Caribou Herd's Traditional Calving Range?
- How will this project affect water quality from disposal of drilling waste water?
- How will this project affect Sensitive and Migratory Birds Species and their nesting areas?
- How will noise from this project affect the wildlife and recreationists in the area?

The following issues were identified but eliminated from further analysis for the reasons provided:

- *Effects to Federally threatened and endangered species.* There are no known occurrences of Federally threatened or endangered species nor habitat for these species in this area.
- *Effects to Subsistence resources and access.* The BLM is required by Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) to consider potential impacts to subsistence activities, resources, or access to subsistence activities from project proposals. A complete analysis of Section 810 findings is located on file at the Glennallen Field Office. In summary, there is no reasonably foreseeable significant decrease in the abundance and distribution of harvestable subsistence resources. Furthermore, the easement itself is not open to federal subsistence use.
- *Effects to Cultural Resources.* There are few reported cultural resources in the high alpine, steep sloped areas of the Talkeetna Mountains where the project will take place. Some semi-permanent ice patches in the Alaska Range and parts of the Talkeetna Mountains have yielded well preserved organic artifacts associated with caribou and sheep hunting dating back over several hundred years. However, a Class I literature review and an inspection of summer aerial photography for the project area failed to locate any known cultural resources nor any alpine ice patches likely to contain significant cultural resources.
- *Effects to Lands with Wilderness Characteristics.* The analysis is attached.
- *Effects related to the spread and establishment of invasive species.* The project design features included in the Proposed Action alternative (section 2.3 number 1) would adequately prevent introduction, establishment and spread of invasive plant species as a direct result of this project.
- *Effects to Visual Resource Management.* Visual Resource Management (VRM) was eliminated from further analysis because of the location and distance from recreation activities and because these sites are temporary. Due to the minimal footprint and consideration of the recreational activities occurring in the area, impacts can be mitigated (section 2.4 number 4) by utilizing ROP-VRM-a-4 “the modification or disturbance of landforms and vegetative cover will be minimized” and ROP-VRM-a-6 “In open, exposed landscapes, development will be located in the opposite direction from the primary scenic views, if feasible” (Section 2.4 number 4) and will not physically alter the nature of the area and will not attract the attention of the casual observer and retain the existing character of the landscape.

## **2.0 ALTERNATIVES**

### **2.1 Alternative 1 - No Action Alternative**

Under this alternative, MMG Exploration LLC, would be denied the authorization. This proposed project area would remain in the same undisturbed conditions as now exist.

### **2.2 Alternative 2 - Proposed Action Alternative**

Grant authorization with stipulations and mitigation measures to reduce impacts to the existing landscape.

MMG Exploration is requesting to conduct drilling at 6 sites on State selected lands to conduct mineral exploration.

Access to the sites will be by helicopter, with a 2 person crew on the ground. They will be using a Boart Longyear LF70 diamond coring drill or equivalent. The drill hole will be approximately 3-4 inches in diameter and up to 1000 feet deep. The drilling will use rain and snow melt-water collected from small rivulets, creeks and ponds. The average daily water use for drilling operations is 4000 gpd. A 0.25" mesh screen will be used on the suction hose to prevent fish from entrapment. The crew will be staging at Alpine Creek Lodge and flying the most direct route to the drilling site.

Drill pads will be constructed using timbers to minimize the amount of earthmoving and reclamation to be done. Drill pads are typically 16 ft. X 16 ft. A shed will be built around the drill rig itself to help minimize the noise levels at the drill site. Time on site will be approximately 5-7 days, 1 day to construct the pad, 3-4 days to complete the drilling, and 1-2 days for dismantling the pad and reclamation of the site.

Organic material, if present, will be stockpiled and drill sites will be re-contoured, re-graded and organic materials (duff layer) replaced as required. If brush is cleared, it will also be replaced on the cleared ground.

Drill holes will be plugged with bentonite slurry or equivalent for a minimum of 10 feet within the top 20 feet of the hole. The remainder of the hole to the surface will be backfilled with drill cuttings. If water is encountered, a minimum of seven feet of bentonite slurry or equivalent shall be placed immediately above the static water level in the hole.

Up to eight 55 gallon drums of fuel will be on site for use by the drilling rig and water pump. Fuel will be moved by helicopter to the work sites. Fuel drums will be stored in approved secondary containment. Spill prevention and response plan will be on site.

Solid waste will be removed to an approved, permitted disposal facility. Non-combustible solid waste will be removed to an approved, permitted disposal facility. Drill sites will use pit toilets for the time they are occupied.

### **2.3 Design Features Common to All Action Alternatives**

The following design features and best management practices would be incorporated to alternatives to minimize impacts to resources including, but not limited to: soils, the spread of invasive species, and native vegetation.

1. All vehicles, aircraft, drilling equipment, tools, building materials, and gear used to access, transport, construct, maintain and operate project must be thoroughly cleaned prior to moving equipment across or onto BLM managed lands. Washing and/or brushing to remove material that can contain weed or other propagates helps to insure that everything being transported across or onto BLM managed lands are weed and weed seed free every time.

## **2.4 Design Features and Best Management Practices**

The following design features and best management practices will be used to minimize impacts to resources, including, but not limited to: soils, the spread of invasive species, and native vegetation.

1. Roads, well pads, and other oil and gas facilities will not be allowed within 500 feet of fish-bearing rivers and lakes unless the lessee can demonstrate (through a site-specific analysis that considers species of fish present, slope, vegetation, and other conditions) that the impacts to fish habitat are minimal. Exploratory drilling will be permitted within 500 feet under frozen conditions.
2. Within defined caribou calving areas, the following uses will not be permitted from May 1 to June 15: a) surface disturbing activities; b) FLPMA leases or permits that exceed 14 days of activity; or c) mining exploration. Aircraft associated with permitted activities will maintain an altitude of at least 1,000 feet. Exceptions to this ROP may be granted for mining operations where no feasible alternative exists and where mitigation measures can be identified to minimize impacts.
3. Projects will be designed to protect water quality and comply with State and Federal water quality standards.
4. In open, exposed landscapes, development will be located in the opposite direction from the primary scenic views, if feasible.

## **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

### **3.1 Issue 1: How will Helicopter Activity and Human Presence from this Project Affect the Nelchina Caribou Herd's Traditional Calving Range?**

#### **3.1.1 Affected Environment**

The proposed action would occur on a very remote portion of state-selected BLM managed lands between 4,000-5,000 feet in the Talkeetna Mountains, within the West Kosina hills area. The proposed action would occur above tree line in terrain consisting mainly of a tree-less alpine ecotype with an intermixing of rock/bare ground, herbaceous (mesic) (Interior Alaska, Cook Inlet basin) and dwarf shrub vegetation types (Boggs et al., 2012).

The Nelchina Caribou Herd (NCH), one of 11 main caribou herds in Alaska, inhabits this area. The NCH range encompasses approximately 20,000 square miles (Skoog 1968), including the area of the proposed action. The NCH is an important resource for sport and state subsistence hunters from Anchorage and Fairbanks due to its proximity to the large population centers (Schwanke, 2011). The NCH is also a major subsistence resource to federally qualified rural residents within the State of Alaska's Game Management Unit (GMU) 13. Federal subsistence

users within GMU13 have a 5-year average annual harvest of approximately 400 individuals and 2,800 permits issued to federally qualified subsistence users (USFWS, 2014).

The proposed action area lies in the northwestern area of the NCH's traditional calving grounds and summering area (BLM, 2006). Skoog (1968) also recorded that most NCH calving took place between 3,000 and 4,500 feet. Calving usually occurs from mid-May to mid-June (Skoog, 1968). The BLM has established a Required Operating Procedures (ROP) concerning the NCH calving grounds. The BLM stipulates in ROP-F&W-b2 that surface disturbance or mining exploration will not be permitted within defined caribou calving areas from May 1 to June 15 and that aircraft maintain an altitude of at least 1,000 feet (BLM, 2007).

Presently, the proposed action area occurs within the Fox 3 Military Operation Area, which is a special use airspace area that the Joint Base Elmendorf Richardson utilizes for military training. The Alaska Energy Association also is presently pursuing a license with the Federal Energy Regulatory Commission for a large hydroelectric project (Susitna-Watana Hydroelectric Project No. 14241) that is located approximately 13 miles north of the proposed action area. There is currently a multitude of various studies being conducted in relation to the Susitna-Watana Hydro project, including a caribou study (AEA, 2013).

### **3.1.2 Direct and Indirect Effects from No Action Alternative**

Under the No Action Alternative, the BLM would deny the proposed action. By denying the requested action, the NCH would not be subject to any activities or additional disturbance associated with the proposed action; therefore, the NCH would encounter no direct or indirect effects.

### **3.1.3 Direct and Indirect Effects from Proposed Action Alternative**

The Proposed Action Alternative would authorize helicopter use and a two-man crew to conduct mining exploration at 6 sites (16 feet by 16 feet) within the NCH main calving grounds within the West Kosina hills area of the Talkeetna Mountains. The proposed action would occur from June 16 to September 30 or freeze-up, whichever comes first. Freeze up in the usually occurs in the area during October. Caribou are particularly sensitive during calving period (May 1 to June 15), calf survival is negatively affected by exposure to aircraft (Harrington & Veitch, 1992), and aircraft are perceived as very threatening (Webster, 1997; Harrington & Veitch, 1992; Gunn et al 1985; Calef et al, 1976). Caribou, during this period, tend to exhibit a high probability to panic and react strongly to altitudes below 500 feet, which could cause injury and fatigue (Calef et al., 1976; Webster, 1997).

The Proposed Action Alternative is not expected to cause negative effects during the NCH calving period (May 1 to June 15) due to helicopter use and human presence during the mineral exploration. The BLM's established ROP for the NCH (explained above in section 3.1.1 Affected Environment), would minimize negative effects caused by helicopter use and human disturbance from the proposed action during the calving period, since it will be operating outside those dates. By operating outside the calving period and maintaining an elevation of at least

1,000 feet, the proposed action would avoid even mild escape responses by caribou (Calef et al, 1976) inhabiting the proposed action area.

Periods of helicopter use (8-15 sling loads for construction and deconstruction; and, 4-6 flights per day) after the calving season until freeze-up (Oct.) is not expected to cause negative effects. With the proposed action area being within the Fox 3 MOA that is frequently used as a training area for military aircraft; and, with the multitude of studies that are being conducted by AEA for the Susitna-Watana Hydroelectric project that frequently use aircraft to access remote portions of the area, caribou are expected to be habituated to these types of overflights. It has been shown that caribou that are consistently flown over and not harassed or hunted have been shown to habituate to the disturbance (Webster, 1997; Davis et al., 1985; Valkenburg & Davis 1983).

Caribou individuals or groups near each of the six sites are expected to be temporarily displaced for 5-7 days as exploration takes place. Noises and human presence associated with mining exploration can increase distances moved by ungulates and cause them to avoid the area of disturbance (Webster, 1997). The noise and disturbance from the 8-15 sling loads for construction and deconstruction, 4-6 transportation flights per day, and 24 hour operation of the can diminish optimal foraging that could have occurred if the disturbance did not exist. However, the minimal footprint of each exploration site and the short time period of disturbance should reduce overall negative effects from reduced foraging. In addition, after each site has been rehabilitated and disturbance has ceased, caribou are expected resume use of the explored site areas.

### **3.1.4 Cumulative Effects**

Given that there would be no direct or indirect effects to NCH traditional calving grounds as a result of the No Action Alternative; therefore, by definition, there is no potential for this alternative to incrementally contribute to cumulative effects. The AEA's pursuance of a FERC license to construct the Susitna-Watana Hydroelectric project represents a foreseeable action in the future. The Susitna-Watana Hydroelectric project and associated disturbance occurs in the lowlands, outside the established boundaries of the NCH traditional calving area. Therefore, beyond the direct and indirect effects explained above, no significant individual or cumulative impacts are anticipated to NCH traditional calving area of the Proposed Action Alternative. This is due to the Alaska Department of Natural Resources and Joint Pacific Elmendorf Richardson also recognizing the sensitivity of calving NCH and placing stipulations on permits and aviation operations (respectively) to mitigate disturbance.

### **3.1.5 Recommended Mitigation**

It is recommended that BLM request that the applicant adhere to ADFG's stipulation of the helicopter avoiding caribou aggregations by maintaining a 0.5 mile horizontal buffer. This buffer would minimize the possibility of causing a panic response from aggregations of caribou from the 8-15 sling loads for construction and deconstruction; and, 4-6 transportation flights per day, thus reducing chances of injury or mortality. The residual effects would be on individuals and groups of caribou that inhabit or traverse near the six sites, at the time of the exploration. Individuals or groups of caribou will likely avoid the immediate mining exploration area during

the 5-7 day exploration period. Noises and human presence associated with mining exploration can increase distances moved by ungulates and cause them to avoid the area of disturbance (Webster, 1997). Direct and indirect effects would remain as stated previously.

### **3.2 Issue 2: How will this project affect water quality from disposal of drilling waste water?**

#### **3.2.1 Affected Environment**

The proposed exploration drilling activity would occur on BLM managed State Selected lands located in the northeast part of the Talkeetna Mountains. The six proposed drill locations are fairly steep sloped, between an elevation of 4,000-5,000 feet, and at least 800 feet from any water sources. Since the project start date is June 1 there may still be snow on the ground at project locations but should be snow free during most of the summer months. The drill sites are in very remote areas with little to no human activities or disturbance. It is assumed that water quality in the general area is very good with pristine conditions.

#### **3.2.2 Direct and Indirect Effects from Alternative 1 - No Action Alternative**

Since there would be no drilling with the No Action Alternative there would be no effects to water resources.

#### **3.2.3 Direct and Indirect Effects from Alternative 2 - Proposed Action Alternative**

The objective of the drilling would be to collect a core sample and to test the properties of the collected materials for valuable mineral content. The contractor would use a diamond coring drill to cut out a cylindrical sample of the subject material. The entire length of the core would be removed from the site for testing which greatly reduces excess materials left on site. The drilling process requires the use of water and other materials such as Penetrol and Quik-Gel to lubricate and cool the bit and to separate and hold the core materials intact. According to the MSDS's provided by the applicant, the chemicals used in the drilling operation do not pose negative ecological or environmental effects when used away from surface water bodies. In the five year plan of operation it is stated that the average daily water use for the drilling operation is 4,000 gpd. According to an agent from MMG, it is more realistic to expect an average of 1,000 gpd (during the 3-4 day drilling period) where the use of 4,000 gpd would be a worst case scenario. So it is within reason to expect the use of 5,000 gallons of water during the 3-4 day drilling period for each of the six sites. It is anticipated that when drilling starts there would be residual waste materials such as drill cuttings and dirty water that may be forced out of the core hole. In anticipation of this there will be a hand built trench for the mud like materials to collect in. For reclamation purposes the trench materials would be allowed to dry before the trench is reclaimed by covering with brush and overburden materials. To eliminate possible ground water contamination the drill holes would be plugged with a bentonite slurry or equivalent for a minimum of 10 feet within the top 20 feet of the hole with the remainder of the hole backfilled with drill cuttings. It is not anticipated during the drilling that there would be excess dirty water flowing from the core hole over the hand built trench, however, potential does exist for dirty water to overflow onto the mountain side.

### **3.2.4 Cumulative Effects**

The Talkeetna Mountains have been ideal for mineral development as evidenced by past and present mining. Past and present mining has produced significant amounts of copper, zinc, silver, lead, gold and molybdenum. These mountains contain a variety of characteristics that indicate high mineral potential. As such, there could be State mining claims in the Talkeetna Mountain area. It is reasonable to predict that mining will continue in the area and possibly expand, especially on State land, as recent requests for exploration have indicated.

Mining operations of the past made little to no effort in preserving water quality and stream channel structure. This has resulted in an unquantifiable amount of erosion and water quality degradation. Today, and into the foreseeable future, there are regulations in place to help reduce, not eliminate, large and intense degradation of the watershed. In addition, there are continual upgrades in equipment and mining theory and technology that help mitigate impacts of mining to water quality. As mining progresses into the future, impacts from exploration and mineral extraction should be reduced.

### **3.3 Issue 3: How will this project affect Sensitive and Migratory Birds Species and their nesting areas?**

#### **3.3.1 Affected Environment**

The proposed action would occur on a very remote portion of state-selected BLM managed lands between 4,000-5,000 feet in the Talkeetna Mountains, within the West Kosina hills area. The proposed action would occur above tree line in terrain consisting mainly of a tree-less alpine ecotype with an intermixing of rock/bare ground, herbaceous (mesic) (Interior Alaska, Cook Inlet basin) and dwarf shrub vegetation types (Boggs et al., 2012). Even though information on what specific sensitive species or migratory birds inhabit the area around the proposed action area, the “Bird Conservation Region (BCR) 4 All-Bird Conservation Plan’s” “above tree line” habitat is favored by 10 migratory bird species, in which eight species have been identified as priority species (Sharbaugh, 2007). The eight priority migratory bird species identified in the BCR4 All-Bird Conservation Plan include, Rock & White-tailed Ptarmigan, Golden Eagle, Gyrfalcon, American Golden-Plover, Wandering Tattler, Surfbird, and American Pipit (Sharbaugh, 2007). Of the eight priority bird species, the BLM has listed the golden eagle (*Aquila chrysaetos*) as a BLM sensitive species (BLM, 2010). No location surveys of Golden Eagle nests have occurred in the area of exploration. The BLM has established a Required Operating Procedures (ROP) consistent with the Migratory Bird Treaty Act. The BLM stipulates in ROP-F&W-a-13 that operations that require vegetation removal will avoid the migratory bird nesting period of April 15 to July 15 (BLM, 2006). The proposed action area is assumed to provide nesting, brooding, and foraging habitat for various neo-tropical migratory birds and sensitive species above tree line habitats.

Presently, the proposed action area occurs within the Fox 3 Military Operation Area, which is a special use airspace area that the Joint Base Elmendorf Richardson utilizes for military training. The Alaska Energy Association also is presently pursuing a license with the Federal Energy Regulatory Commission for a large hydroelectric project (Susitna-Watana Hydroelectric Project

No. 14241) that is located approximately 13 miles north of the proposed action area. There is currently a multitude of various studies being conducted in relation to the Susitna-Watana Hydro project.

### **3.3.2 Direct and Indirect Effects from No Action Alternative**

Under the No Action Alternative, the BLM would deny the proposed action. By denying the requested action, sensitive species and migratory bird nesting habitat would not be subject to any activities or additional disturbance associated with the proposed action; therefore, the sensitive species and migratory bird nesting habitat would encounter no direct or indirect effects.

### **3.3.3 Direct and Indirect Effects from Proposed Action Alternative**

The Proposed Action Alternative would result in approximately 0.03 acres of surface disturbance between the six exploration sites. No surface disturbance or vegetation removal is expected with the water collection from rivulets. The BLM's established ROP for the vegetation removal during the migratory bird nesting period, explained above, would minimize negative effects to sensitive species and migratory bird nesting habitat caused by the proposed action. However, due to the small surface disturbance (0.03 acres), the timing restrictions already in place for the caribou calving area, and the vegetation type in the area of the proposed action, this ROP does not seem warranted in this case. Individual migratory birds that forage near the six exploration sites will be displaced by the infrastructure and noise from mining exploration; however, the minimal footprint of each exploration site and the short time period of disturbance (5-7 days) should reduce negative effects from reduced foraging area. In addition, after each site has been rehabilitated and disturbance has ceased, migratory birds in the vicinity are expected resume use of the explored site areas.

Golden eagle nesting habitat is not expected to be negatively affected by the Proposed Action Alternative. Golden eagle is a cliff-nesting raptor that occurs in the mountains (Young et al., 1995). No location surveys of Golden Eagle nests have occurred in the area of exploration; therefore, an established helicopter flight path or an exploration site may disturb an undocumented Golden Eagle nest(s). However, the short time period of disturbance (5-7 days) should reduce negative effects on potential undocumented Golden Eagle nest(s) from noise and human presence associated with the proposed action.

### **3.3.4 Cumulative Effects**

Given that there would be no direct or indirect effects to sensitive species and migratory bird nesting habitat as a result of the No Action Alternative; therefore, by definition, there is no potential for this alternative to incrementally contribute to cumulative effects. The AEA's pursuance of a FERC license to construct the Susitna-Watana Hydroelectric project represents a foreseeable action in the future. The Susitna-Watana Hydroelectric project and associated disturbance occurs in the lowlands, beyond the above tree line habitats. Therefore, beyond the direct and indirect effects explained above, no significant individual or cumulative impacts would occur for sensitive species and migratory bird nesting habitat of the Proposed Action Alternative.

### **3.4 Issue 4: How will noise from this project affect the wildlife and recreationists in the area?**

#### **3.4.1 Affected Environment**

The proposed action would occur on a very remote portion of state-selected BLM managed lands between 4,000-5,000' MSL within the West Kosina hills area of the Talkeetna Mountains. The proposed action would occur above tree line in terrain consisting mainly of a tree-less alpine ecotype with an intermixing of rock/bare ground, herbaceous (mesic) (Interior Alaska, Cook Inlet basin) and dwarf shrub vegetation types (Boggs et al., 2012).

The proposed action area occurs within the Fox 3 Military Operation Area, which is a special use airspace area that the Joint Base Elmendorf Richardson utilizes for military training. The Alaska Energy Association also is presently pursuing a license with the Federal Energy Regulatory Commission for a large hydroelectric project (Susitna-Watana Hydroelectric Project No. 14241) that is located approximately 13 miles north of the proposed action area. There are currently many resource-related studies being conducted in relation to the Susitna-Watana Hydro project which often involve helicopter and fixed-wing aviation support. There are no known remote cabins in the project area that would be susceptible to hearing the drilling. There are no known trails in the project area that would make trail users susceptible to hearing the drilling operation.

Helicopter noise in the vicinity of the Denali Highway is expected as this is where MMG is basing their operations off of, and the AEA project is also based off of the Denali Highway.

#### **3.4.2 Direct and Indirect Effects from No Action Alternative**

Under the No Action Alternative, the BLM would deny the proposed action. By denying the requested action, wildlife would not be subject to noise from any activities associated with the proposed action; therefore, the wildlife would encounter no direct or indirect effects.

#### **3.4.3 Direct and Indirect Effects from Proposed Action Alternative**

The Proposed Action Alternative would generate noise from drilling operations as well as helicopter logistical support at each of the six exploration sites. A shed will be built around the drill rig to help minimize noise levels in the area of the drill site. Physical presence and noise from the drill rig operations and aviation logistical support will occur only at one site at a time, (not at all six sites at the same time). Wildlife that forage in the vicinity of the six exploration sites will be temporarily displaced and/or disturbed for approximately 7 days during the exploration activities at each site, but only at one site at a time. The noise will be temporary in nature and is not expected to cause undue stress on wildlife or availability of forage resources. Wildlife is expected to move back into the mineral exploration sites soon after drilling and logistical support operations cease.

Recreationists will see and/or hear the drilling operations and aviation logistical support in the vicinity of each of the six exploration sites, but only at one site at a time. This noise and

disturbance will be temporary in nature and will be observed at only one of each six exploration sites at a time. Aviation flight routes will avoid human concentrations and recreational activity areas of the area by maintaining a ½ mile horizontal distance to the maximum extent feasible. Noise from the on-site drill rig will be temporary and local in nature. After the mineral exploration operations cease, the noise and physical presence of aviation and drill rig operations will be gone.

### **3.4.4 Cumulative Effects**

There are several other aviation supported operations ongoing this summer in the Talkeetna Mountain area bounded by the Parks Highway to the west, the Susitna River to the east, and the Denali Highway to the north. The AEA's pursuance of a FERC license to construct the Susitna-Watana Hydroelectric project represents a foreseeable action in the future, and ongoing helicopter supported studies are occurring this summer. Additional exploratory drilling is occurring on state lands that are not dependent on federal permits. BLM will be conducting administrative cadastral survey activities that will involve helicopter logistical support for field crews in this region. In addition, there are flightseeing tours and other mining related air traffic. These activities will be occurring over an area over 3,600 square miles. The cumulative effect of the proposed action would be an additional 360 flights (maximum) spread out over a six week period.

Beyond the direct and indirect effects explained above, no significant individual or cumulative impacts are expected to the wildlife or recreationists in the area by the Proposed Action Alternative.

## **4.0 CONSULTATION AND COORDINATION**

A consultation meeting was held at Cantwell Village. Cantwell Village was informed of the scoping timeframes, but did not have any comments during the meeting or send in any.

## **5.0 LIST OF PREPARERS**

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#### APPENDICES / ATTACHMENTS