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COMMODITY If not obvious	Gold
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Keep docs at about 250 pages if no oversized maps attached
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**United States Department of the Interior
Bureau of Land Management
Battle Mountain District December 23, 2008**



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**Environmental Assessment
NV065-EA08-067**

**REDSTAR GOLD USA INC.
NORTH BULLFROG
EXPLORATION PROJECT**

NVN-83002

**REDSTAR GOLD USA INC.
NORTH BULLFROG EXPLORATION PROJECT
ENVIRONMENTAL ASSESSMENT**

TABLE OF CONTENTS

	Page
ACRONYMS.....	iv
United States Department of the Interior	1
1 INTRODUCTION / PURPOSE OF AND NEED FOR ACTION	1
1.1 Introduction.....	1
1.2 Existing Disturbance	1
1.3 Purpose of and Need for Action.....	2
1.4 Land Use Conformance Statement	2
1.5 Issues	2
1.6 Relationship to Other Statutes, Regulations and Plans	5
2 PROPOSED ACTION AND ALTERNATIVES	7
2.1 Proposed Action.....	7
2.1.1 Location and Access	9
2.1.2 Road Construction	9
2.1.3 Exploration Drill Sites and Pads	10
2.1.4 Equipment	10
2.1.5 Water Use.....	11
2.1.6 Work Force	11
2.1.7 Surface and Ground Water Control	11
2.1.8 Solid and Hazardous Materials	11
2.1.9 Reclamation	12
2.1.10 Environmental Protection Measures	13
2.2 No Action Alternative.....	15
3 AFFECTED ENVIRONMENT	15
3.1 Introduction.....	15
3.1 Air Quality	17
3.2 Cultural Resources	18
3.3 Environmental Justice.....	18
3.4 Invasive, Nonnative Species and Noxious Weeds.....	19
3.5 Migratory Birds.....	20
3.6 Threatened or Endangered Species	21
3.7 Wastes, Hazardous and Solid.....	23
3.8 Water Resources	23
3.9 Mineral Resources	23
3.10 Land Use and Access	24
3.11 Recreation	24
3.12 Soils.....	25
3.13 Vegetation, including Special Status Species	25
3.14 Visual Resources.....	26

3.15	Wild Horses and Burros	27
3.16	Wildlife, including Special Status Species	27
4	ENVIRONMENTAL CONSEQUENCES	28
4.1	Air Quality	28
	Proposed Action.....	28
	No Action Alternative.....	28
4.2	Cultural Resources	28
	Proposed Action.....	28
	No Action Alternative.....	28
4.3	Invasive, Nonnative Species and Noxious Weeds.....	29
	Proposed Action.....	29
	No Action Alternative.....	29
4.4	Migratory Birds.....	29
	Proposed Action.....	29
	No Action Alternative.....	29
4.5	Threatened or Endangered Species	30
	Proposed Action.....	30
	No Action Alternative.....	30
4.6	Wastes, Hazardous and Solid.....	31
	Proposed Action.....	31
	No Action Alternative.....	31
4.7	Water Resources	31
	Proposed Action.....	31
	No Action Alternative.....	31
4.8	Land Use Authorizations, Recreation and Access	32
	Proposed Action.....	32
	No Action Alternative.....	32
4.9	Soils and Vegetation	32
	Proposed Action.....	32
	No Action Alternative.....	32
4.10	Visual Resources.....	33
	Proposed Action.....	33
	No Action Alternative.....	33
4.11	Wild Horses and Burros.....	33
	Proposed Action.....	33
	No Action Alternative.....	33
4.12	Wildlife, including Special Status Species	34
	Proposed Action.....	34
	No Action Alternative.....	34
5	CUMULATIVE IMPACTS	34
5.1	Past Actions	35
5.2	Present and Proposed Actions.....	35
5.3	Reasonably Foreseeable Future Actions.....	35
5.4	Cumulative Impact Analysis.....	37
5.4.1	Cumulative Impacts to Air Quality.....	37
5.4.2	Cumulative Impacts to Cultural Resources.....	38

5.4.3	Cumulative Impacts to Migratory Birds	37
5.4.4	Cumulative Impacts to Threatened or Endangered Species	39
5.4.5	Cumulative Impacts to Soils and Vegetation.....	40
5.4.6	Cumulative Impacts to Visual Resources	40
5.4.7	Cumulative Impacts to Wildlife including Special Status Species	41
6	CONSULTATION AND COORDINATION	42
6.1	List of Preparers.....	42
6.2	Persons, Groups and Agencies Contacted	42
7	REFERENCES.....	44

LIST OF FIGURES

Figure 1.1.1	Location Map	3
Figure 1.1.2	Project Area Land Ownership and Pre-existing Disturbance	4
Figure 2.1.1	Proposed Disturbance	8
Figure 3.6.1:	BLM-Designated Tortoise Habitat in the Tonopah Planning Area, including the Northern Bullfrog Hills.....	22
Figure 5.1.1:	Cumulative Effects Study Area	37

LIST OF TABLES

Table 1.1-1:	Acreage of Notice-Level Disturbance	1
Table 2.1-1:	Acreage of Existing and Proposed Project Disturbance	9
Table 2.1-2:	Proposed Seed Mix	12
Table 2.1-3:	Anticipated Exploration Reclamation Schedule	13
Table 3.1-1:	Elements of the Environment.....	16
Table 3.5-1:	Migratory Birds with a Distribution which Overlaps the Project Area	213
Table 3.12-1:	Soils in the Project Area	25

APPENDIX

Appendix : Past, Present, Proposed and Reasonably Foreseeable Future Impacts within the
Cumulative Impacts Study Area for the North Bullfrog EA

ACRONYMS

amsl	above mean sea level
AUM	Animal Unit Month
BAPC	Nevada Bureau of Air Pollution Control
BLM	Bureau of Land Management
BMPs	Best Management Practices
BMRR	Bureau of Mining Regulation and Reclamation
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CESA	Cumulative Effects Study Area
EA	Environmental Assessment
ESA	Endangered Species Act of 1973
EPA	Environmental Protection Agency
°F	degrees Fahrenheit
FLPMA	Federal Land Policy and Management Act of 1976
HMA	Herd Management Area
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MSHA	Mining Safety and Health Administration
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NEPA	National Environmental Policy Act
NNHP	Nevada Natural Heritage Program
NRS	Nevada Revised Statutes
NSAAQS	Nevada State Ambient Air Quality Standards
NSPS	New Source Performance Standards
NSR	New Source Review
PSD	Prevention of Significant Deterioration
RFFA	Reasonably Foreseeable Future Action
RGU	Redstar Gold USA Inc.
ROW	Right-of-way
SAD	Surface Area Disturbance
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management

**REDSTAR GOLD USA INC.
NORTH BULLFROG EXPLORATION PROJECT
ENVIRONMENTAL ASSESSMENT**

1 INTRODUCTION / PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

Redstar Gold USA Inc. (RGU) has submitted a Plan of Operations (Plan) for mineral exploration to the Bureau of Land Management (BLM). Requirements for Plans of Operation are codified under the Title 43 Code of Federal Regulations (CFR) Subpart 3809 for the surface management of mining and mineral exploration operations. The Plan is known as the North Bullfrog Exploration Project (Project). Gold is the primary exploration target. The Project is located in the Bullfrog Hills at elevations ranging from 4,095 feet above mean sea level (amsl) to 4,580 feet amsl in Nye County, Nevada, approximately eight miles north of Beatty (Figure 1.1.1). Project-related activities would consist of exploration drilling from constructed and overland drill sites that would be accessed by constructed roads and overland travel. Project activities would occur intermittently for a period of up to three years. The Project is located on public land administered by the BLM Tonopah Field Office in Sections 26, 35, and 36, Township 10 South, Range 46 East (T10S, R46E) and Sections 1, 2, and 11, T11S, R46E, Mount Diablo Base and Meridian (Project Area).

1.2 Existing Disturbance

Past activities and disturbances in the Project Area include mine shafts, adits, waste rock dumps, tailings and a network of existing roads created during past underground mining and mineral exploration (Figure 1.1.2). RGU submitted an exploration notice (BLM casefile NVN-82706) in 2007. In the notice, RGU planned up to 2.45 acres of exploration-related disturbance on public land within the Project Area. Figure 2.1.1 shows the project area of the notice relative to the Plan. The Plan represents an expansion of drill exploration disturbance beyond the 5-acre limit for notices. Table 1.1-1 categorizes disturbance in the notice.

Table 1.1-1: Acreage of Notice-Level Disturbance

Exploration Activity	Notice-level (Public) Disturbance
Constructed Roads	0.02
Overland Travel	0.34
Constructed Drill Sites (includes sumps and spoils)	0.83
Overland Drill Sites (includes sumps and spoils)	1.26
Total	2.45

1.3 Purpose of and Need for Action

The purpose of the proposed North Bullfrog exploration is to evaluate the Project Area for precious metal deposits by means of reverse circulation and core drilling (Proposed Action). The geologic and assay data obtained from the drilling program will be used to evaluate the Project Area for the potential of future mine development. In order to conduct the proposed exploration activities on public lands, RGU submitted the Plan to the BLM in accordance with BLM Surface Management Regulations, 43 Code of Federal Regulations (CFR) 3809 (as amended).

The Plan is subject to the National Environmental Policy Act (NEPA) and the BLM has prepared this Environmental Assessment (EA) under the NEPA to analyze and disclose to the public the impacts that the Proposed Action and No Action Alternative would have on the human environment.

This EA is prepared in conformance with the NEPA, associated Council of Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and BLM NEPA Handbook H-1790-1 (BLM 2008). The BLM Handbook provides instructions for compliance with the CEQ regulations and implementing the procedural provisions of NEPA and the Department of the Interior's (DOI's) manual on NEPA (516 DM 1-7).

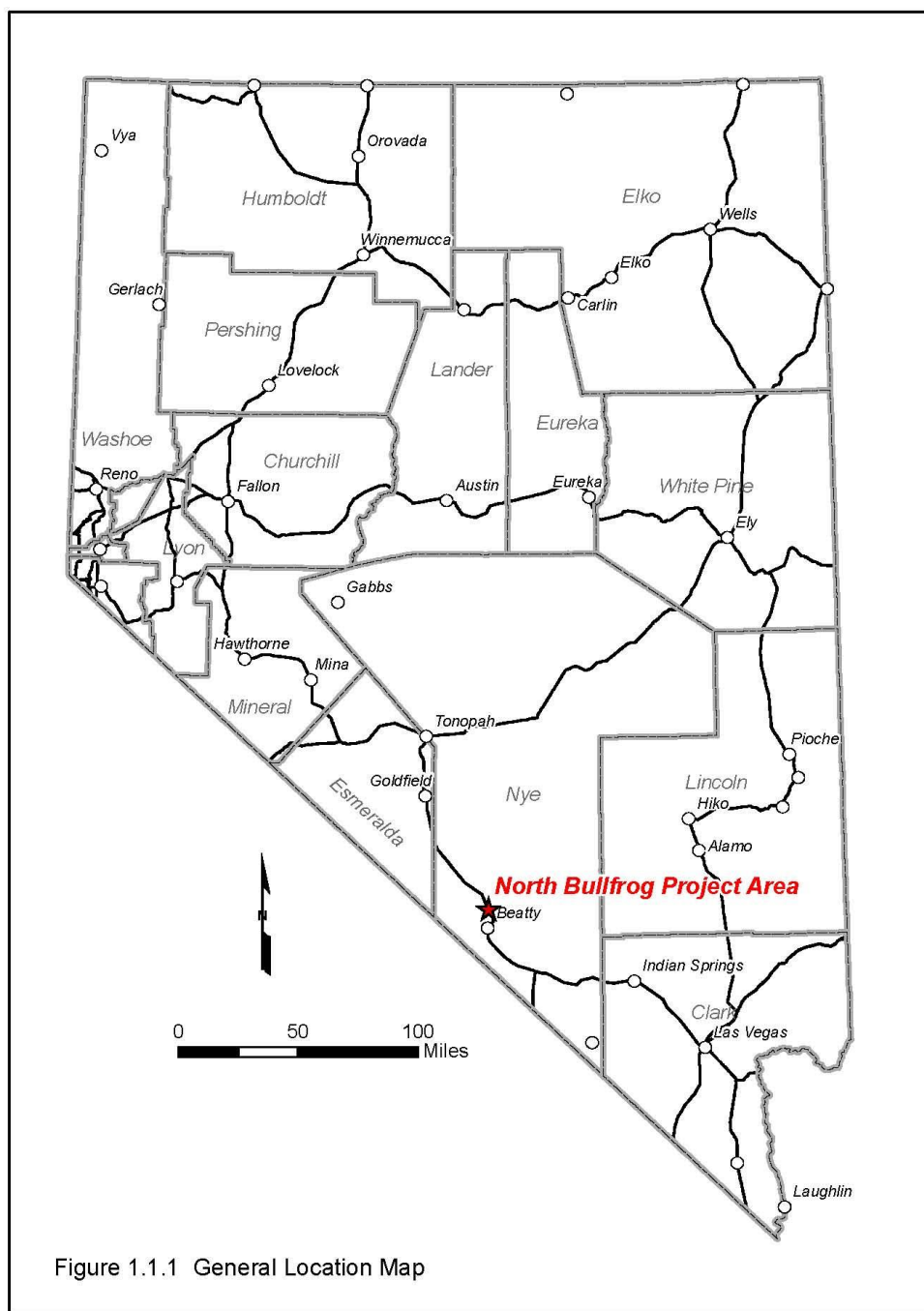
1.4 Land Use Conformance Statement

The Proposed Action is in conformance with the Tonopah Resource Management Plan (RMP) and Record of Decision (ROD), approved on October 2, 1997 (BLM 1997b). "A total of 6,028,948 acres (99 percent of the Tonopah Planning Area) will be open to the operation of the mining laws," (page 23). The "BLM provides for mineral entry, exploration, location and operations pursuant to the mining laws in a manner that 1) will not unduly hinder the mining activities, and 2) assures that these activities are conducted in a manner which will prevent undue or unnecessary degradation of the public land," (page 35). "A Plan of Operations and a Reclamation Plan are required in situations in which there will be more than five acres of cumulative unreclaimed surface disturbance in a project area," (page 35). All operations shall comply with all Federal and State laws, including those relating to air quality, water quality, solid waste, fisheries, wildlife and plant habitat, and archeological and paleontological resources," (page 36).

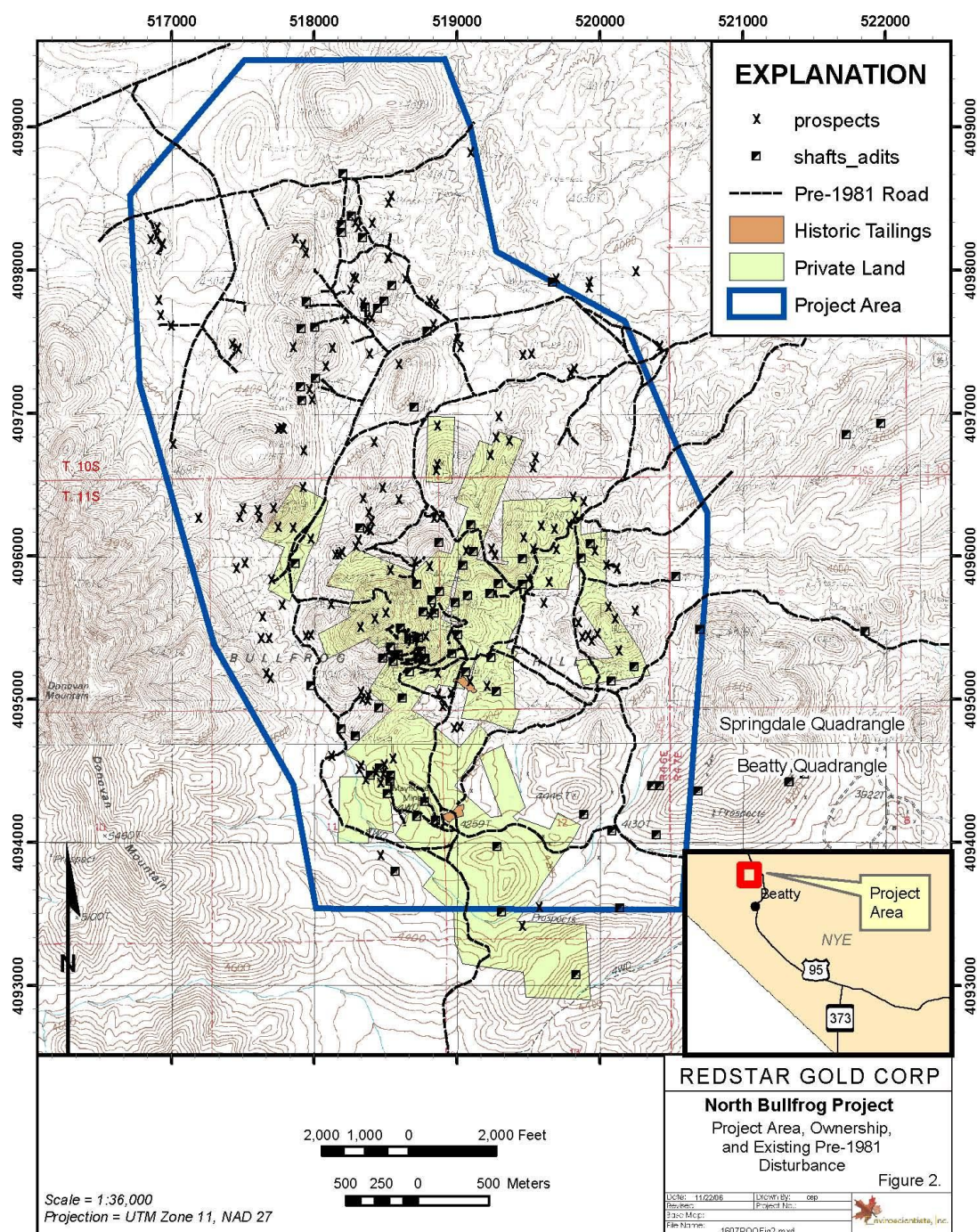
1.5 Issues

BLM personnel highlighted the following issues and concerns regarding the Proposed Action that need to be addressed in this EA:

- The threatened desert tortoise
- Cultural resources



1511GeneralLocationMap.mxd



1.6 Relationship to Other Statutes, Regulations and Plans

National Environmental Policy Act of 1969

The NEPA, as amended (Public Law 91-190, 42 USC 4321 et seq.), is the basic national charter for protection of the environment. The NEPA establishes policy, sets goals, and provides means for carrying out the policy. It is the law under which Environmental Impact Statements and EAs are prepared. The regulations which implement the NEPA are listed under 40 CFR Part 1500.

Environmental assessment (40 CFR 1508.9):

1. Means a concise public document for which a federal agency is responsible that serves to:
 - a. Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
 - b. Aid an agency's compliance with the Act when no environmental impact statement is necessary.
 - c. Facilitate preparation of a statement when one is necessary.
2. Shall include brief discussions of the need for the proposal, of alternatives as required by Section 102(2)(E), of the environmental impacts of the Proposed Action and alternatives, and a listing of agencies and persons consulted.

The Federal Land Policy and Management Act of 1976 (P. L. 94-579)

The Federal Land Policy and Management Act (FLPMA) of 1976 authorizes the BLM's management of public lands. Section 302 (b) of the Act states, "In managing the public lands, the Secretary shall, subject to this Act and other applicable law ...regulate, through easements, permits, leases, licenses and published rules or other instruments as the Secretary deems appropriate, the use, occupancy, development of the public lands...." "In managing the public lands the Secretary shall, by regulation or otherwise take any action necessary to prevent unnecessary or undue degradation of the lands."

Regulations (43 CFR 3809) Surface Management of Mining

The original 43 CFR 3809 regulations were promulgated in 1980 to implement provisions of the FLPMA for the surface management of mining. Revised regulations were promulgated on January 20, 2001. The purpose of the 3809 regulations is to prevent undue or unnecessary degradation of the federal lands due to mineral exploration or mining activities conducted under the General Mining Law of 1872. It was the filing of a 43 CFR 3809 Plan of Operations for the North Bullfrog Exploration Project that prompted the preparation of this Environmental Assessment under the NEPA. Some of the pertinent environmental standards of the 43 CFR 3809 surface management regulations applicable to the proposed exploration project are listed below:

- Design, construct and maintain roads and structures to minimize erosion, siltation, air pollution;
- Use existing access and follow the natural contour of the land to minimize surface disturbance, including cut and fill;
- Remove, segregate and preserve topsoil or other suitable growth material to minimize erosion and sustain revegetation;
- Grade or otherwise engineer disturbed areas to a stable condition to minimize erosion and facilitate revegetation;
- Revegetate disturbed lands by establishing a stable condition that is comparable in both diversity and density to preexisting natural vegetation;
- Plug all exploration drill holes to prevent mixing of waters from aquifers per the Nevada Administrative Code (NAC);

Wildlife

A number of public laws, acts, and executive orders provide direction to the BLM in managing wildlife resources. These include the following: NEPA; Endangered Species Act of 1973 (as amended); Sikes Act; Executive Order No. 11514, Protection and Enhancement of Environmental Quality; and FLPMA. The BLM has translated applicable parts of these laws, acts, and executive orders into policies and guidance, which are contained within the BLM manual system. Manual 6840 provides direction to the wildlife program for Threatened and Endangered Wildlife and Manual 6740 provides direction for Wetland/Riparian Area Protection and Management. The Migratory Bird Treaty Act affords protection to migratory bird species. The BLM's primary focus is on migratory birds that nest on the ground or in shrubs and may be affected by surface disturbing actions.

Special Status Plant Species

It is the BLM's policy to carry out management consistent with the principals of multiple use for the conservation of special status plant species and their habitats and to ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any of the species as threatened or endangered.

Cultural Resources

Several laws require consideration of cultural resources and Native American concerns. The National Historic Preservation Act (NHPA) (as amended) requires that federal agencies consider the effects of all actions on cultural resources and that any effects to significant cultural resources be mitigated. It also requires that federal agencies consult with the relevant State Historic Preservation Officer (SHPO) on these matters. The requirements of the NHPA are currently dealt with under a State Protocol Agreement between the BLM and the Nevada SHPO.

The NHPA also has provisions for consulting with Native Americans on the effects of proposed actions to archaeological sites or areas of traditional use or concern. The American Indian Religious Freedom Act requires that agencies obtain and consider the views of Native Americans during decision-making. The Religious Freedom Restoration Act requires that agency decisions do not burden the free exercise of religion by Native Americans, especially in terms of access, use, or ritual practice. The FLPMA and the NEPA also have provisions for providing tribal officials with the opportunity to comment on planning and NEPA documents.

Fire Management Objectives

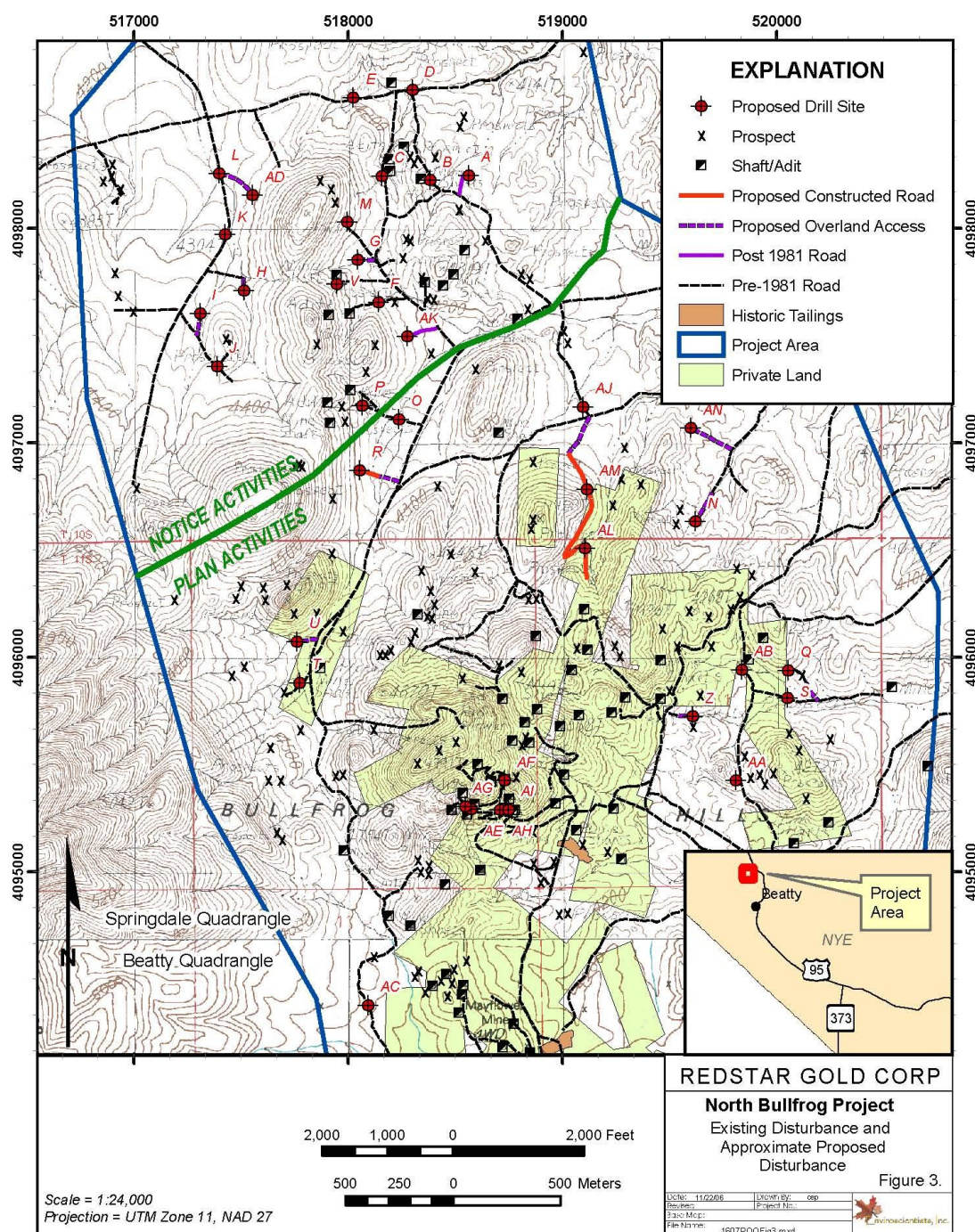
The BLM attaches the following operating measures to all authorized activities on public lands in the Battle Mountain District which have the potential for accidentally starting a wildland fire.

1. All vehicles must carry fire extinguishers.
2. Adequate fire-fighting equipment i.e. shovel, pulaski, extinguisher(s), and/or an ample water supply must be kept at the drill site(s).
3. Vehicle catalytic converters shall be inspected often and cleaned of all brush and grass debris.
4. Welding shall be done in an area free from or mostly free from vegetation. An ample water supply and shovel must be on hand to extinguish any fires created from the sparks. Extra personnel should be at the welding site to watch out for fires created by welding sparks.
5. Wildland fires must be immediately reported to the BLM Central Nevada Interagency Dispatch Center at (775) 623-3444.
6. When conducting operations during the months of May through September, the operator must contact the BLM Battle Mountain Field Office, Division of Fire and Aviation at (775)635-4000 to find out about any fire restrictions in place for the area of operation and to advise this office of approximate beginning and ending dates for your activities.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

Figure 2.1.1 shows the Project Area and the location of proposed drill sites and roads on public land. Drill sites and roads approved under the notice, as well as those proposed in the Plan are shown. The notice project area was confined to sections 26 and 35, Township 10 South, Range 46 East. The Proposed Action would expand drilling-related disturbance from the current 2.45 acres of drill pad and drill road disturbance completed under the notice to a total of 6.43 acres of disturbance in the Plan (Table 2.1-1). In the Plan, drilling would be done from eight constructed drill sites and 14 overland drill sites. RGU would access the drill sites via constructed roads and overland travel. The following discussion outlines drilling operations in the proposed Plan.



2.1.1 Location and Access

Access to the Project Area is via U.S. Highway 95 north of Beatty and then west along unimproved dirt roads. Existing roads would be utilized for travel within the Project Area (Figure 2.1.1). Project-related disturbance for new overland travel and constructed roads would total approximately 1.64 acres with 0.36 acre of road/travel disturbance in the notice and 1.28 acres of proposed road/travel disturbance in the Plan (Table 2.1-1). Disturbance width for overland travel is calculated at ten feet wide, although overland travel generally produces a two-track road rather than a full width road. Constructed roads built with a dozer would be 12 feet wide.

Approximately, 2,695 linear feet of overland travel (10' x 2,695' = 0.62 acre) across flat to gently-sloping lands is proposed to access six of the drill sites (drill sites N, Q, R, Z, AM, and AN). A total of approximately 0.96 acre of disturbance is associated with Project-related overland travel disturbance on public land.

Table 2.1-1: Acreage of Existing and Proposed Project Disturbance

Exploration Activity	Disturbance		
	Notice-level	Proposed	Total
Constructed Roads	0.02	0.66	0.68
Overland Travel	0.34	0.62	0.96
Constructed Drill Sites (includes sumps and spoils)	0.83	0.63	1.46
Overland Drill Sites (includes sumps and spoils)	1.26	2.07	3.33
Total	2.45	3.98	6.43
Public	2.45	3.98	6.43

2.1.2 Road Construction

A track-mounted dozer would construct roads on hillsides. A Caterpillar D-7 or equivalent would be used. Constructed road disturbance in the notice is 0.02 acre. In the Plan, a total of approximately 0.66 acre of disturbance is associated with Project-related constructed road disturbance on public land. The following lengths of constructed road would be built:

300 feet	access to drill site R	0.08 acres
760 feet	access to drill site AM	0.20 acres
500 feet	access to drill site AL	0.13 acres
520 feet	access to drill site CC	0.14 acres
330 feet	access to drill site CD	0.09 acres
2,410 ft. x 12'		0.66 acres

Balanced cut and fill construction would be used to the extent practicable to minimize the exposed cut slopes and the volume of fill material. Growth media removed during construction would be stockpiled as the fill slope to be used during reclamation. Road construction within

drainages would be avoided where possible. When drainages must be crossed by a road, Best Management Practices (BMPs) established by the Nevada Division of Environmental Protection (NDEP) and Nevada Division of Conservation Districts through the State Environmental Commission (1994) would be followed to minimize surface disturbance and erosion potential. Roads would not be constructed in areas where rock outcrops and areas of shallow soils on bedrock are present. Road maintenance on existing and proposed new roads would consist of smoothing ruts, filling holes with fill material, grading, and re-establishing waterbars when necessary.

2.1.3 Exploration Drill Sites and Pads

Seventeen drill sites are part of the RGU drill exploration notice. In the proposed Plan, 22 new drill sites would be added for a total of 39 drill sites on BLM-administered public land. The 22 proposed drill sites are described below.

Four of the proposed 22 drill sites would require earthwork to prepare a level drill pad. Drill site AM would be constructed with a working area that measures approximately 60 feet wide by 100 feet long. Drill sites R, CC, and CD would be constructed on an average slope of 15 percent with working areas that measure 71.5 feet wide and 100 feet long. Sumps would be utilized at each drill site to contain cuttings and drilling fluids and are included in the disturbance of each drill site. Sumps would measure approximately ten feet long, 20 feet wide, and five feet deep. The constructed drill sites would disturb approximately 0.63 acres of public land.

Eighteen of the proposed drill sites (drill sites N, O, Q, S, Z, AA, AB, AC, AJ, AN, CA, CB, CE, CF, MA, MB, MC, and MD) are overland sites and would not require any preparatory earthwork. It is estimated that overland drill sites would have a 50 feet wide by 100 feet long working area. Overland drill sites would result in approximately 2.07 acres of surface disturbance.

Proposed constructed drill sites and sumps would disturb 0.63 acres and overland drill sites and sumps would disturb 2.07 acres. Existing notice-level activities have disturbed 0.83 acres in constructed drill sites and 1.26 acres of overland drill sites. The total drill pad and sump disturbance on public land from the proposed Plan and the existing notice would total 4.79 acres (Table 2.1-1).

2.1.4 Equipment

Exploration drilling equipment could include a truck-mounted reverse circulation drill rig or a core rig (only one drill rig would be on site at any time depending on drill rig availability), four-wheel drive pickup trucks, and a combination water truck/pipe truck for drill support.

RGU would take steps to prevent fires by ensuring that each field vehicle carries hand tools and a fire extinguisher. The water truck would be used in the event of a fire. All portable equipment, including drill rigs, support vehicles, and drilling supplies, would be removed from the Project Area during extended periods of non-operation.

2.1.5 Water Use

RGU would obtain water for drilling from a well located on private land east of the Project Area and U.S. Highway 95.

2.1.6 Work Force

Generally, five personnel would be located on site during Project activities, including two RGU geologists and three contract drill operators. Personnel would lodge at motels/hotels in Beatty during periods of drilling.

2.1.7 Surface and Ground Water Control

BMPs for sediment control would minimize sedimentation from disturbed areas during construction, operation, and reclamation. Waterbars would be constructed on all bladed roads, as needed, to facilitate drainage and prevent erosion. Sediment control structures could include fabric and/or hay bale (certified weed-free) filter fences, siltation or filter berms, and down gradient drainage channels. Project access and drill roads would be monitored for erosion and any necessary repairs would be made. Sumps would be excavated on each drill pad to settle cuttings and contain drilling mud during exploration drilling.

2.1.8 Solid and Hazardous Materials

Exploration drilling activities would generate a minimal amount of general refuse. All refuse would be removed to an authorized off-site landfill and disposed of, consistent with applicable regulations. Self-contained, portable chemical toilets would be set up for use during the Project.

Diesel fuel, gasoline, and lubricating grease would be temporarily stored and used in the Project Area. Approximately 500 gallons of diesel fuel would be stored in fuel tanks on service vehicles. Approximately 100 gallons of gasoline would be stored in fuel tanks on a service vehicle. Two 1,000 gallon diesel tanks owned and serviced by an outside contractor would also be on site. All containers of hazardous substances would be labeled and handled in accordance with Nevada Department of Transportation (NDOT) and Mining Safety and Health Administration (MSHA) regulations.

In the event of an accidental release or spill of a regulated material, the BLM, NDEP, and/or the Emergency Response Hotline would be notified, as required. If any petroleum products were spilled during operations, the spill would be contained and cleaned up in a timely manner. After clean up, the released fluids, and any contaminated soil would be removed from the site and disposed of at an approved disposal facility.

2.1.9 Reclamation

In the reclamation plan, drill-related disturbance in the Project Area would be rehabilitated to a beneficial land use consistent with the BLM's land use management plans for the area and reclaimed to ensure visual and functional compatibility with surrounding areas. Post-exploration land uses include wildlife habitat, mineral exploration and development, hunting, casual and organized recreation. Reclamation would be completed to the standards described in 43 CFR 3809.420 and Nevada Administrative Code (NAC) 519A. The standard for revegetation success is described in the BLM/NDEP "Revised Guidelines for Successful Mining and Exploration Revegetation" (BLM 1999). Overland travel and existing roads would be utilized as much as possible, minimizing the need for road construction.

Drill pads, sumps and roads would be concurrently reclaimed during the project, when no longer needed for future drilling. After exploration activities are concluded, remaining disturbed areas would be reclaimed. Constructed drill pads and roads would be restored to their approximate original contour. Overland drill pads, sumps and roads would be scarified or ripped. All Project disturbance would be reseeded with a BLM-approved, certified weed-free seed mix (Table 2.1-2) at the appropriate time of year and at an application rate for optimum seed sprouting and plant growth (Table 2.1-3). The BLM would be notified before the commencement of final reclamation work.

The seed mix is composed of species that have a moderate to rapid growth rate. The seed would be broadcast over the disturbed ground and then raked to cover the seed. The reclaimed surfaces would be left in a textured or rough condition. Seeded areas would be monitored for stability and revegetation success for a minimum of three years until attainment of the revegetation standards established in the Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management, and the United States Forest Service (Instruction Memorandum #NV-13).

Table 2.1-2: Proposed Seed Mix

Species		Application Rate (lbsPLS ¹ /acre)
Common Name	Scientific Name	
Shadscale	<i>Atriplex confertifolia</i>	2.00
Four-wing saltbush	<i>Atriplex canescens</i>	4.00
Desert spinach	<i>Atriplex polycarpa</i>	3.00
Quail bush	<i>Atriplex lentiformis</i>	3.00
White bursage	<i>Ambrosia dumosa</i>	1.00
Desert globemallow	<i>Sphaeralcea ambigua</i>	0.50
Palmer's phacelia	<i>Phacelia palmeri</i>	0.50
Total		14.00

¹Pure live seed

Table 2.1-3: Anticipated Exploration Reclamation Schedule

TECHNIQUES	Quarter				
	1 st Jan.- Mar.	2 nd April- June	3 rd July- Sept.	4 th Oct.- Dec.	Year(s)
Regrading					Within 2 years of Project completion
Seeding					Within 2 years of Project completion
Monitoring					3 years beyond regrading and reseeding

2.1.10 Environmental Protection Measures

RGU has committed to the following environmental protection measures to prevent unnecessary and undue degradation during construction, operation, and reclamation of the Project. The measures are derived from the general requirements established in the BLM's Surface Management Regulations at 43 CFR 3809 and NDEP's Bureau of Mining Regulation and Reclamation (BMRR) mining reclamation regulations, as well as other water, air quality, and special status species regulations.

- Airborne dust would be minimized on dirt roads by using BMPs, such as using prudent vehicle speeds, and watering roads to minimize fugitive dust created by travel.
- BMPs for sediment control would be employed during construction, operation, and reclamation to minimize sedimentation from drill roads and pads. Bladed exploration roads would be built at ten percent or less, unless steeper grades would be necessary for short pitches. Waterbars would be installed as needed. Roads would not be built within drainages. Constructed drill pads would be reclaimed as soon as practical after drilling is completed.
- Pursuant to 43 CFR 10.4(g), RGU would notify the BLM authorized officer, by telephone and with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2). Pursuant to 43 CFR 10.4 (c) and (d), the operator would immediately stop all activities in the vicinity of the discovery and not commence again for 30 days or when notified to proceed by the BLM authorized officer.
- Although no desert tortoises were located in the Project Area during a protocol survey, the following specific measures would be implemented to prevent potential impacts to desert tortoises:
 - Petroleum products such as gasoline, diesel fuel, and lubricants would be stored in approved containers.
 - Flagging and wire would be removed from the Project Area at the end of Project to ensure debris is not consumed by desert tortoises.

- To minimize the predation on desert tortoises by ravens, RGU would implement a litter control program. The program would include the use of covered, raven-proof trash receptacles and removal of trash from the Project Area following the close of each workday.
- If desert tortoises are located during construction or operation within harms way, activity would cease in the immediate area until the desert tortoise moves out of harms way or it is relocated by a qualified biologist.
- RGU would notify the BLM and United States Fish and Wildlife Service (USFWS) if any desert tortoise death or injury should occur as a result of the Project by the close of the following business day of which the incident occurred.
- RGU would avoid the five cultural sites found during a survey of the proposed project disturbance. If RGU discovers any cultural resource during project activities that might be altered or destroyed by operations, the discovery would be left intact and reported to the authorized BLM officer. RGU would maintain a 100-foot buffer between historic prospect pits, trenches, or other features and project-related disturbance.
- Mineral exploration drill holes would be properly abandoned in accordance with NAC 534.4369 and 534.4373. If ground water is encountered, the drill holes would generally be plugged pursuant to NAC 534.420. In addition, drill holes would be plugged as an operational procedure prior to the drill rig moving from the drill site unless a reverse circulation drill rig is used to collar a hole for completion by a core rig.
- Activities would be restricted to frozen or dry ground conditions where feasible. Operations would be curtailed when saturated and soft soil conditions exist.
- Survey monuments, witness corners, or reference monuments would be protected to the extent economically and technically feasible.
- Pursuant to 43 CFR 8365.1-1(b)(3), no sewage, petroleum products, or refuse would be dumped from any trailer or vehicle.
- RGU would comply with all applicable federal and state fire laws and regulations and would take all reasonable measures to prevent and suppress fires in the area of operations. RGU and contractors are required to carry fire extinguishers, hand tools, and/or backpack type water pumps in their vehicles to suppress small fires.
- Reseeding would be consistent with all BLM recommendations for mix constituents, application rate, and seeding methods.
- Regulated wastes would be removed from the Project Area and disposed of in a state, federally, or locally designated area.

- All refuse generated during the Project would be removed and disposed of in an authorized landfill facility off site, consistent with applicable regulations.
- If noxious weeds were introduced as a result of the Proposed Action, they would be controlled through implementation of preventive BMPs and eradication measures.
- To prevent violation of the Migratory Bird Treaty Act (MBTA), RGU would either conduct surface disturbing activities outside of the migratory bird nesting season (roughly May through August) or employ a qualified biologist to survey prospective work areas prior to surface disturbance during the nesting season. If nests were found, a 250-foot buffer area around the nest would be avoided.
- During seasonal closure and periods of inactivity between drill phases, previously used drill sumps would be backfilled, equipment and supplies removed and the Project Area left in a safe and clean condition.

2.2 No Action Alternative

NEPA requires that an alternative of ‘No Action’ be analyzed. No Action would mean that the proposed exploration plan would not be approved. For the purposes of this EA, the No Action Alternative is defined as the 2.45 acres of drill pads and drill roads disturbance proposed under the existing RGU notice. The No Action Alternative serves as the background resource condition against which the impacts of the Proposed Action are compared. The primary difference between the Proposed Action and No Action alternatives is their location relative to desert tortoise habitat as demarcated in the 1997 Tonopah Resource Management Plan and Record of Decision. The project area for the Proposed Action is within tortoise habitat and the disturbance area in drill pads and roads is outside of tortoise habitat. The desert tortoise is a Federally-listed threatened species. The effect on soils, vegetation, common wildlife habitat and forage is only related to the difference in disturbance areas (2.45 acres in the notice and an additional 3.98 acres in the Plan).

3 AFFECTED ENVIRONMENT

3.1 Introduction

The RGU Project Area is located in the Bullfrog Hills, north of Beatty, Nevada (Figure 1.1.2) in portions of Sections 26, 35, and 36, T.10 S., R.46 E., and Sections 1, 2, and 11, T.11 S., R.46 E, Mount Diablo Meridian. The proposed disturbance would affect a total of 6.43 acres of public land of which 3.98 acres is new disturbance and 2.45 acres was previously permitted by the BLM in a notice filed by RGU in 2006.

To comply with the National Environmental Policy Act (NEPA), the Bureau of Land Management is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988, BLM 1997, BLM 2008). The following table outlines the elements that must be considered in all

environmental assessments, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action or No Action Alternative affects those elements.

Table 3.1-1: Elements of the Environment

Element	Present Yes/No	Affected Yes/No	Rationale
Air and Atmospheric Values	Yes	No	See discussion (Chapter 3) and Analysis in Chapter 4
Areas of Critical Environment. Concern	No	No	None in or near Project
Cultural Resources	Yes	No	Project would avoid cultural sites
Environmental Justice	No	No	No habitation in project area.
Fish Habitat	No	No	None in adjacent to Project Area
Flood Plains	No	No	None exist in area
Noxious Weeds and Invasive, Nonnative Species	No	No	Operator would monitor for invasive weeds and implement control measures, if necessary.
Migratory Birds	Yes	Yes	Operator would not disturb new ground during the migratory bird nesting season
Native American Religious Concerns			TO BE DETERMINED AFTER CONSULTATION
Prime or Unique Farmlands	No	No	None exist in area
Threatened or Endangered Species (plants and animals)	No	No	See Analysis in Chapter 4
Wastes, Hazardous or Solids	Yes	No	See Analysis in Chapter 4
Water Quality (Drinking-Ground)	Yes	No	No surface water in Project Area. Drill holes will be plugged. No affect on ground water.
Wetlands and Riparian Zones	No	No	None exist in area
Wild and Scenic Rivers	No	No	None exist in area
Wilderness	No	No	None exist in area

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

Table 3.2-1: Elements of the Environment (continued)

Other Resources	Present Yes/No	Affected Yes/No	Rationale
Grazing Management	No	No	No grazing authorized in Project Area
Land Use Authorization	Yes	No	See analysis in Chapter 4
Mineral Resources	Yes	No	Drill exploration would not affect resource
Paleontological Resources	No	No	None in or near Project
Recreation	Yes	No	No Drill operations during off-road races
Socio-Economic Values	Yes	No	Temporary lodging for 3 drillers and two geologist. No change in housing or schooling needs
Soils	Yes	Yes	See analysis in Chapter 4
Vegetation, including Special Status Species	Yes	Yes	See analysis in Chapter 4
Vegetation	Yes	Yes	See analysis in Chapter 4
Visual Resources	Yes	Yes	See analysis in Chapter 4
Wild Horses and Burros	Yes	Yes	See analysis in Chapter 4
Wildlife, including Special Status Species	Yes	Yes	See analysis in Chapter 4

The remainder of this chapter describes those elements of the environment identified through scoping, which are present within the Project Area and would be or could be affected by the Proposed Action or the No Action Alternative. The following elements do not occur in the Project Area and, therefore, would not be impacted by the Project and are not further analyzed in this EA: Areas of Critical Environmental Concern, Prime/Unique Farmlands, Fish Habitat, Floodplains, Forests and Rangelands, Wetlands/Riparian Zones, Wild and Scenic Rivers, and Wilderness. Environmental Justice, Water Resources and Mineral Resources are described in this chapter to disclose background information, although there will be no impacts to these resources.

3.1 Air Quality

The Project Area is in the Bullfrog Hills, north of Beatty, Nevada. Elevations in the Project Area range from approximately 4,095 to 4,580 feet amsl. The climate is arid, characterized by hot, dry summers and cool, dry winters. The mean total annual precipitation just north of Beatty, Nevada, located approximately five miles east of the Project is 6.32 inches and the mean total annual snowfall is 3.0 inches. The mean minimum low temperature is 43.5 degrees Fahrenheit (°F) and the mean maximum is 74.7°F (WRCC 2006). Climatic trends in the region are not well defined. The Beatty, Nevada area is in the Mojave Desert and experiences extreme heat in the summer

and low precipitation. Periods of greater summer heat and reduced precipitation alternate with periods of moderate heat and above average precipitation.

Ambient air quality and the emission of air pollutants are regulated under both federal and state laws and regulations. Regulations potentially applicable to the Proposed Action and the alternative include the following: National Ambient Air Quality Standards (NAAQS); Nevada State Ambient Air Quality Standards (NSAAQS); Prevention of Significant Deterioration (PSD); New Source Performance Standards (NSPS); Federal Operating Permit Program (Title V); and State of Nevada air quality regulations (NAC 445B).

Major stationary sources of air pollution and major modifications to major stationary sources are required by the Clean Air Act (CAA) to obtain an air pollution permit before commencing construction. The process is called new source review (NSR) and is required whether the major source or modification is planned for an area where the NAAQS are exceeded (nonattainment areas) or an area where air quality is acceptable (attainment and unclassifiable areas). The Project Area is located within the Sarcobatus Flat (Number 146) and Oasis Valley Hydrographic Basin (Number 228), which are considered “unclassified” relative to attainment of the federal air quality standards.

3.2 Cultural Resources

A Class III cultural resource inventory was completed by Chambers Group in September 2007. A total of five sites were recorded in the Project Area. Two of the sites are unevaluated for inclusion in the National Register of Historic Places (NRHP), as only small portions of these sites were recorded. Three of the sites were not considered eligible for inclusion in the NRHP (Chambers Group 2007).

3.3 Environmental Justice

On February 11, 1994, President William Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. In April of 1995, the Environmental Protection Agency (EPA) released the document titled Environmental Justice Strategy: Executive Order 12898. The document established EPA-wide goals and defined the approaches by which the EPA would ensure that disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed.

According to the 2000 United States Census, the American Indian and Hispanic populations constituted approximately 1.5 and 8.9 percent, respectively, of the total population of the town of Beatty. African American, Asian, and Pacific Islanders comprised 0.1, 1.2, and 0.0 percent, respectively, of the town of Beatty’s population. In 2005, the American Indian and Hispanic populations of Nye County were 1.8 and 11.0 percent, respectively. African American, Asian, and Pacific Islanders comprised 1.7, 1.0, and 0.5 percent, respectively, of Nye County’s population in 2005 (United States Census Bureau 2007). For Nevada as a whole, American Indian and Hispanic persons made up 1.4 and 23.5 percent, respectively, of the population in

2005. African American, Asian, and Pacific Islanders constituted 7.7, 5.7, and 0.5 percent of the population of Nevada, respectively (United States Census Bureau 2007).

In accordance with EPA's Environmental Justice Guidelines (EPA 1998), these minority populations should be identified when either of the following exists:

- The minority population of the affected area exceeds 50 percent; or
- The minority population of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

Neither population of American Indians, Hispanics, African American, Asians, or Pacific Islanders exceeds 50 percent of the population for the town of Beatty or for Nye County as a whole. Although the American Indian population constitutes a slightly higher percentage of the total population within Beatty and Nye County than the population in the State of Nevada, the Project Area is located on BLM-administered lands, which are undeveloped and unpopulated; thus, there are no minority or low income populations present. Therefore, for the purposes of screening for environmental justice concerns, the identified populations defined in EPA's guidance (EPA 1998) do not exist within the Project Area.

The median household income in the town of Beatty in 2000 was \$41,250. In Nye County and the State of Nevada the median incomes for 2000 were \$36,024 and \$44,581, respectively (United States Census Bureau 2007). The percentage of individuals below the poverty level in the town of Beatty was 13.4 percent in 1999. This rate was 10.7 percent and 10.5 percent in Nye County and the State of Nevada, respectively (United States Census Bureau 2007). Although the median incomes were lower in Nye County, and the town of Beatty than for the state as a whole in 2000 and the poverty rate slightly higher, a low income population group as defined in the EPA's guidance (EPA 1998) for the purposes of screening for environmental justice concerns, is not present in the Project Area.

3.4 Invasive, Nonnative Species and Noxious Weeds

An "invasive species" is defined as a species that is nonnative to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112). Invasive, nonnative species are species that are highly competitive, highly aggressive, and easily spread. They include plants designated as "noxious" and animals designated as "pests" by federal or state law. Animal species designated as "pests" are generally species that are injurious to agricultural and nursery interests or vectors of diseases, which could be transmissible and injurious to humans. There are no known invasive, nonnative animal species (pests) that are mandated for control in the Project Area; therefore pests are not further addressed in this EA.

The BLM defines "noxious weed" as "a plant that interferes with management objectives for a given area of land at a given point in time" (BLM 1996). The BLM Nevada strategy for noxious weed management is to "prevent and control the spread of noxious weeds through local and

regional cooperative efforts... to ensure maintenance and restoration of healthy ecosystems on BLM-managed lands. Noxious weed control would be based on... prevention, education, detection, and quick control of small infestations” (BLM 1997b). The Nevada Department of Agriculture’s Plant Industry Division maintains a “Nevada Noxious Weed List.”

There are laws, executive orders, regulations, policies, and agreements that pertain to invasive nonnative species, including the following: Executive Order 11312 (Prevention and Control of Invasive Species); Federal Noxious and Invasive Weed Laws; BLM Manuals and Partners Against Weeds Action Plan; BLM Cooperative Agreements; and Nevada Revised Statutes (NRS) and NAC, Chapter 555.

No comprehensive weed survey has been conducted in the Project Area, however, the BLM has identified red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), and puncture vine (*Tribulus terrestris*) as potentially occurring in the Project Area (personal communication, Valerie Metscher, BLM Range Management Specialist, August 6, 2007). Puncture vine is classified as a category C noxious weed by the Nevada Department of Agriculture. The definition of a category C noxious weed is, *Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer.*

Although no salt cedar is located in the Project Area, the BLM has identified salt cedar in wet areas in the vicinity of the Project Area (personal communication, Valerie Metscher, BLM Range Management Specialist, August 9, 2007).

3.5 Migratory Birds

“Migratory bird” means any bird listed in 50 CFR 10.13. All native birds found commonly in the United States, with the exception of native resident game birds, are protected under the MBTA. The MBTA prohibits taking of migratory birds, their parts, nests, eggs, and nestlings. Executive Order 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices.

Additional direction comes from the Memorandum of Understanding (MOU) between the BLM and the USFWS, signed January 17, 2001. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the BLM and USFWS, in coordination with state, tribal, and local governments. The MOU identifies management practices that impact populations of high priority migratory bird species, including nesting, migration, or over-wintering habitats, on public lands, and develops management objectives or recommendations that avoid or minimize these impacts.

Nevada has more than 240 breeding bird species with close to 400 bird species having been reported in Nevada. The Amargosa River drainage/Oasis Valley several miles east of the Project Area is an important flyway for migratory birds. The species of birds with recorded sightings within or near of the Project Area according to the Nevada Breeding Bird Atlas are listed in Table 3.6-1 (GBBO 2005).

Table 3.5-1: Migratory Birds with a Distribution which Overlaps the Project Area

Common Name	Scientific Name	PIF ¹ “Management Species”	PIF ¹ “Long-term Planning and Responsibility Species”	PIF ¹ “Immediate Action Species”	NVPIF ² “Priority Species”
Black-throated sparrow	<i>Amphispiza bilineata</i>	Yes	No	No	No
Burrowing owl	<i>Athene cunicularia</i>	No	No	No	Yes
Cactus wren	<i>Campylorhynchus brunneicapillus</i>	No	Yes	No	Yes
Costa’s hummingbird	<i>Calypte costae</i>	No	Yes	No	No
LeConte’s thrasher	<i>Toxostoma lecontei</i>	No	Yes	No	Yes
Loggerhead shrike	<i>Lanius ludovicianus</i>	No	No	No	Yes

¹Partners in Flight

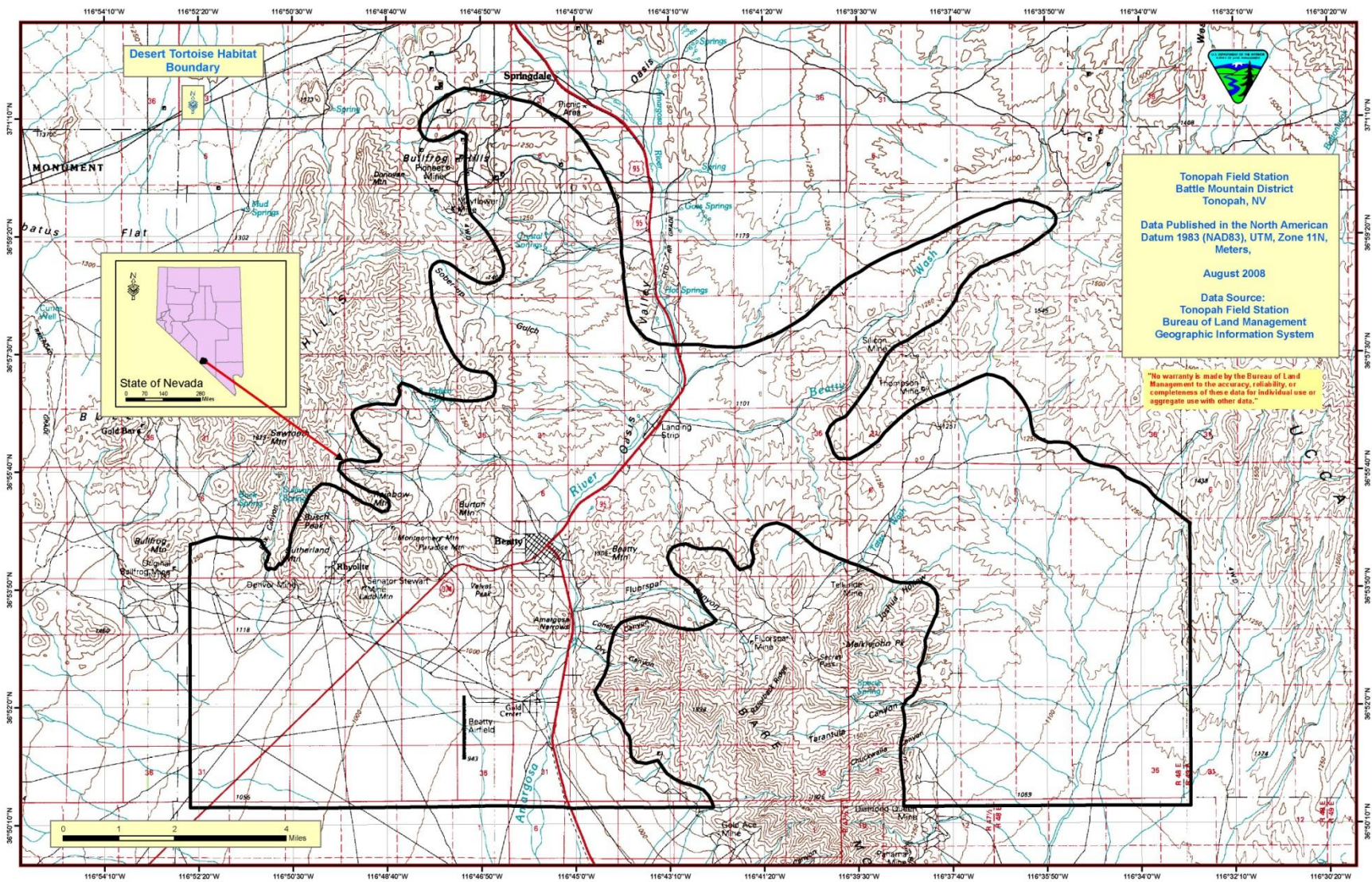
²Nevada Partners in Flight

3.6 Threatened or Endangered Species

The USFWS has classified the desert tortoise (*Gopherus agassizii*) as threatened in a significant portion of its range under the Endangered Species Act. The boundaries of tortoise habitat are demarcated in the Tonopah RMP as well as the *Final Programmatic Biological Opinion for Implementation of Proposed Actions within Desert Tortoise Habitat Administered by the Tonopah Field Station, Nye County, Nevada* (File # 1-5-01-F-570). The Bullfrog Hills and part of the proposed Project Area are within the northernmost extent of potential desert tortoise habitat (See Figure 3.7.1). The Programmatic Biological Opinion (PBO) was issued in 2003 and covers designated desert tortoise habitat in the BLM Tonopah Planning Area. The PBO defines the types of activities and limits the acreage of potential disturbance in tortoise habitat that may be authorized by the BLM Tonopah Field Office over a 10-year period from 2003 to 2013. Mineral exploration, such as in the Proposed Action, are covered in the PBO.

Section 7 of the ESA, as amended, and regulations implementing the ESA [50 CFR 402.12(f) and 402.14(a)] require federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of proposed, threatened, or endangered species, or result in the destruction or adverse modification of their critical habitats. Informal consultation between the BLM and the USFWS for the Project was initiated in November 2008 and completed in December 2008. The USFWS has specified terms and conditions in the consultation that the BLM would attach to the North Bullfrog Plan. The terms and conditions were designed to protect the desert tortoise from potential impacts of the drilling project. The terms and conditions are listed in Section 4.5.

Enviroscientists, Inc. conducted a protocol desert tortoise survey in the Project Area and the zone of influence (ZOI) between March 21 and 23, 2007. No desert tortoises or tortoise sign (e.g.,



shell, bones, scutes, limbs, scats, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, etc.) were found in the proposed Project Area or in the belt transects in the ZOI around the areas of proposed disturbance (Appendix B). No other Threatened or Endangered animal or plant species are in or near the Project Area.

3.7 Wastes, Hazardous and Solid

Solid wastes within the Project Area would consist of refuse, paper, and other inert materials, generated during Project activities. In addition, hydrocarbon fuels and lubricants would be used in the Project Area including fuels used to operate project equipment. Section 2.1.8 of this EA outlines the amounts and management of solid wastes and fuels and potential hydrocarbon spills.

3.8 Water Resources

The Project Area is located within two Hydrographic Regions: the Death Valley Hydrographic Region, Oasis Valley Ground Water Basin and the Central Hydrographic Region, Sarcobatus Flat Ground Water Basin. There are no surface waters within the Project Area.

There are no springs, seeps, perennial or intermittent streams in the Project Area. The Project is located in a tributary drainage to the Amargosa River, located approximately five miles east of the Project Area. Runoff in the Project Area would flow via ephemeral drainages into the Amargosa River. Runoff from the Project is limited to short periods after high intensity storms or rapid snow melt. One spring and two seeps are located approximately 0.7 mile southeast of the southern Project boundary at Crystal Springs.

Drainage in southern Nye County appears to be mainly by subsurface flow both through the alluvium and along solution cavities and fractures in Paleozoic carbonate rocks that underlie the basins and intervening highlands (NBMG 1972).

The BLM is required by statutes to meet national water quality goals in the management of water resources. Water quality goals are considered in approval of projects on BLM-administered lands. As outlined in Section 2.1.10, BMPs would be implemented to control drainage and minimize storm or sediment runoff. Water for drilling and dust control would be obtained from a well located on private land east of the Project Area and on the east side of Highway 95. Drilling mud and additives are composed of non-toxic materials and drill holes would be plugged according to Nevada Administrative Code NAC 534.

3.9 Mineral Resources

The Project Area lies within the Basin and Range province of southern Nye County. Topography of the Basin and Range province is typified by ranges, hills, and mesas, and internal drainages into enclosed basins. Structural deformation in southern Nye County can be divided into the following types: folding and thrust and related tear faulting; strike-slip faulting; cauldron subsidence, doming, and high-angle faulting related to volcanic activity; Basin-Range high-angle normal faulting; and gravity sliding. Volcanic-tectonic activity in the Miocene and Pliocene in

southern Nye County resulted in the development of calderas or graben found in the domes, elevated blocks, and normal faults in the Bullfrog Hills (NBMG 1972).

Tertiary rock outcrops are mainly volcanic and associated tuffaceous clastic rocks. Ash-fall tuff, tuffaceous sedimentary rocks, and unnamed nonwelded ash flows are scattered widely throughout the area. The ash-fall tuffs and tuffaceous sedimentary rocks are most abundant near the base of the tertiary volcanic sequence in the Oligocene and Miocene units and near the top in the Pliocene rocks (NBMG 1972).

Historic gold mining in the North Bullfrog Hills occurred along a three mile north-south trend which includes the Pioneer and Mayflower mines near the south end of the trend. There are over 50 mine shafts in the trend, approximately 15 adits and over 150 prospects. Waste rock dumps and tailings piles are found at the Mayflower and Pioneer mines. Gold production at the Mayflower and Pioneer underground gold mines was not well recorded. The Pioneer mine was active from 1909 to 1926. The RGU Project Area encompasses the two mines with proposed drill sites largely at the north end of the trend (See Figure 2.1.1).

3.10 Land Use and Access

Land use within the Project Area is comprised of dispersed and organized recreation, historic mining and past and current mineral exploration. A 14.4 kv powerline passes through the northern part of the project area to service a radio facility. The powerline passes through Township 10 South, Range 47 East, sections 35 and 36. The powerline continues southward and ties into the radio facility in Township 11 South, Range 47 East, section 2.

The dirt roads in or near the Project Area are used by a limited number of casual off-road recreationists and hunters. The annual Las Vegas to Reno and Nevada “1000” use parts of the road network for off-road racing.

U.S. Borax, Cordex, Gexa/Galli, Sunshine Mining Company, Lac Minerals, Bond Gold, Barrick, and Western States Mining Company have done exploratory drilling in the Project Area.

Access to the Project Area would be via Highway 95 north of Beatty and then west along unimproved dirt roads created during past mining and mineral exploration. Access for operations within the Project Area would be primarily on existing dirt roads and via overland travel. Roads in the general area provide access to private land and for mineral exploration, dispersed and organized recreation, vegetation management, and other BLM administrative duties.

3.11 Recreation

Recreational use in the Project Area is considered dispersed (i.e., there are no developed recreational sites in the Project Area). The nearest area with developed recreation is the ghost town of Rhyolite, which is also a historical site, and is located approximately seven miles southwest of the Project Area. No roads or recreational access would be closed or blocked by activities associated with the Proposed Action.

Off-road races use dirt roads within the project area. The annual Vegas to Reno race, sponsored by Best in the Desert Racing Association, ran in late August 2008. The race started east of the project area and the race route passed through the project area.

3.12 Soils

The soils found in the Project Area have been mapped and described by the Natural Resource Conservation Service (NRCS) in their Soil Survey of Nye County, Nevada, Southwest Part (NRCS 2007). The Project Area soils are within the Yermo-Greyeagle, Gabbvally-Upspring-Rubble, Gabbvally-Rock outcrop, and Zalda-Ruble land-Skelon complex associations. Each map unit has one or more major soil component as outlined in Table 3.16-1. Soils in the Project Area have a low erosion potential from surface water runoff and a low to moderate potential from wind erosion.

3.13 Vegetation, including Special Status Species

Vegetation within the Project Area consists of salt desert shrub and is characteristic of the Great Basin and northern Mojave Desert. Common plants on the soils found in the Project Area include the following species: Indian ricegrass (*Achnatherum hymenoides*), desert needlegrass (*Achnatherum speciosum*), Nevada ephedra (*Ephedra nevadensis*), bud sagebrush (*Picrothamnus desertorum*), cattle saltbush (*Atriplex polycarpa*), creosote bush (*Larrea tridentata*), shadscale (*Atriplex confertifolia*), spiny menodora (*Menodora spinescens*), white burrobrush (*Hymenoclea salsola*), white bursage (*Ambrosia dumosa*), wolfberry (*Lycium* sp.), Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), Stansbury cliffrose (*Purshia stansburiana*) (NRCS 2004 and personal communication, Valerie Metscher, BLM Range Management Specialist, March 19, 2008). No special status plant species have been recorded by the BLM or the NNHP in the Project Area.

Table 3.12-1. Soils in the Project Area

Association	Soil Series (Percent of Map Unit)	Landscape Position / Percent Slope	Profile of Soil Texture	Parent Material	Erosion Hazard by Water	Erosion Hazard by Wind	Drainage Class
Yermo-Greyeagle (2215)	Yermo (60 percent)	Alluvial fans; 2 to 4 percent slopes	Very gravelly sandy loam	Alluvium derived from mixed rock sources	Low	Moderate	Well drained
	Greyeagle (25 percent)	Fan remnants; 2 to 4 percent slopes	Very gravelly sandy loam	Alluvium derived from mixed rock sources	Low	Moderate	Excessively drained
Gabbvally- Upspring- Rubble land (2290)	Gabbvally (40 percent)	Hills; 15 to 50 percent	Very gravelly sandy loam	Colluvium derived from volcanic rocks over residuum weathered from volcanic rocks	Low	Moderate	Well drained

Association	Soil Series (Percent of Map Unit)	Landscape Position / Percent Slope	Profile of Soil Texture	Parent Material	Erosion Hazard by Water	Erosion Hazard by Wind	Drainage Class
	Upspring (35 percent)	Hills; 30 to 75 percent	Very gravelly sandy loam	Colluvium derived from volcanic rocks over residuum weathered from volcanic rocks	Low	Moderate	Excessively drained
	Rubble land (15 percent)	Hills; 30 to 75 percent	Fragmented material	-	Low	Low	Excessively drained
Gabbvally-Rock outcrop (2291)	Gabbvally (70 percent)	Hills; 15 to 50 percent	Very gravelly sandy loam	Colluvium derived from volcanic rocks over residuum weathered from volcanic rocks	Low	Moderate	Well drained
	Rock outcrop (15 percent)	Hills	-	-	-	-	-
Zalda-Rubble land Skelon complex (2373)	Zalda (40 percent)	Hills; 8 to 30 percent	Gravelly Sandy loam	Residuum weathered from volcanic rocks	Low	Moderate	Well drained
	Rubble land (25 percent)	Hills; 15 to 30 percent	Fragmented material	-	Low	Low	Excessively drained
	Skelon (20 percent)	Fan remnants; 8 to 15 percent	Very gravelly sandy loam	Alluvium from mixed rock sources	Low	Moderate	Well drained

Source: NRCS 2007

3.14 Visual Resources

Scenic quality is a measure of the visual appeal of a parcel of land. Section 102(a)(8) of the Federal Land Policy and Management Act of 1976 (FLPMA) emphasizes protection of the quality of scenic resources on public lands. Section 101(b) of NEPA requires that measures be taken to ensure that aesthetically pleasing surroundings be retained for all Americans.

The Visual Resource Management (VRM) system designates classes for BLM-administered lands in order to identify and evaluate scenic values to determine the appropriate levels of management during land use planning. Each management class portrays the relative value of the visual resources and serves as a tool that describes the visual management objectives. The Project Area is located in a Class IV VRM area (personal communication, Angelica Ordaz, BLM Environmental Coordinator, July 25, 2007). The objective of this class is to provide for management activities that allow for major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities could dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of such activities through careful location,

minimal disturbance and repeating the basic elements of line, form, color, and texture (BLM 1986).

Once visual resource classes and objectives are established, the analysis stage is used to determine whether the potential visual impacts from proposed surface-disturbing activities would meet the management objectives established for the area. A visual contrast rating process is used for this analysis, which involves comparing the project features with the major existing landscape features using the basic design elements of form, line, color, and texture.

3.15 Wild Horses and Burros

The Project Area is located in the Bullfrog Herd Management Area (HMA) (Figure 5.1.1). There are currently an estimated 75 burros and no horses in the HMA. The Appropriate Management Level is from 55 to 91 burros. (personal communication, Andrea Felton, BLM Wild Horse and Burro Specialist, June 2008).

3.16 Wildlife, including Special Status Species

Wildlife in the Project Area is characteristic of that in the Great Basin and the northern Mojave Desert. Typical wildlife in the Project Area could include mammals such as black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), badger (*Taxidea taxus*), ringtail cat (*Bassariscus astutus*), kit fox (*Vulpes macrotis*), Merriam's kangaroo rat (*Dipodomys merriami*), desert wood rat (*Neotoma lepida*), valley pocket gopher (*Thomomys bottae*), Great Basin pocket mouse (*Perognathus parvus*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), and deer mouse (*Peromyscus maniculatus*); raptors such as raven (*Corvus corax*), turkey vulture (*Cathartes aura*), barn owl (*Tyto alba*), prairie falcon (*Falco mexicanus*), golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), and kestrel (*Falco sparverius*); gamebirds including chukar (*Alectoris chukar*) and Gambel's quail (*Callipepla gambelii*); and reptiles such as the zebra-tailed lizard (*Callisaurus draconoides*), leopard lizard (*Gambelia wislizenii*), collared lizard (*Crotaphytus bicinctores*), chuckwalla (*Sauromalus ater*), and rattlesnake (*Crotalus oreganus*) (BLM 1988b).

The Nevada Natural Heritage Program (NNHP) identified two special status animal species within three kilometers of the Project Area (the Oasis Valley pyrg (*Pyrgulopsis micrococcus*), a USFWS species of concern and BLM Nevada sensitive species and the Amargosa toad (*Bufo nelsoni*), a BLM Nevada sensitive species and a Nevada State protected species). Habitat for the two species is not in or adjacent to the Project Area. The NNHP data is in Appendix A.

Nevada BLM special status bat species, such as the Townsend's big-eared bat (*Corynorhinus townsendii*), California myotis (*Myotis californicus*) and small-footed myotis (*Myotis ciliolabrum*) may inhabit mines shafts and adits within the Project Area.

4 ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

Proposed Action

Travel on dirt roads, drill road and pad construction and drilling activities would create fugitive dust, causing a minor and localized impact to air quality. The drill rig and support vehicles would release small quantities of air pollutants as well as carbon dioxide in engine exhaust. The Project is too short-term and small in scale to analyze impacts to climate change

No Action Alternative

Under the No Action Alternative, the current disturbance of 2.45 acres would not be expanded. Air quality impacts would be similar but proportionally less than those associated with the Proposed Action.

Mitigation and Monitoring Measures

As described in the Proposed Action, fugitive dust would be controlled by minimizing surface disturbance, observing a maximum 25 speed limits on all dirt roads and using a water truck for dust suppression, if needed. Pursuant to NAC 445B.22037.4(b), RGU would be required to operate under a Surface Area Disturbance (SAD) Permit issued by the NDEP's Bureau of Air Pollution Control (BAPC) for drilling disturbance above five acres. These measures would reduce the impact of the Proposed Action on air resources to levels that are consistent with the ambient air quality standards.

4.2 Cultural Resources

Proposed Action

During the cultural survey, no eligible sites and two unevaluated cultural sites were found in the areas and zone of influence around the proposed drill pads and roads. There may be buried cultural resources that could be uncovered during pad and drill road construction. With the avoidance and monitoring measures described below, the proposed action would not likely have any impact to cultural resources.

No Action Alternative

In the No Action Alternative, the BLM attached stipulations to the notice requiring RGU to avoid all historic mining features and inform the BLM if a cultural feature was discovered during earthwork or drilling activities. The stipulations are similar to those in the following section.

Mitigation and Monitoring Measures

RGU would avoid the five cultural sites found during a survey of the proposed project disturbance. If RGU discovers any new cultural resource during project activities that might be altered or destroyed by operations, the discovery would be left intact and reported to the authorized BLM officer. RGU would maintain a 100-foot buffer between project activities and historic mines shafts, adits, prospect pits, trenches, or other features.

4.3 Invasive, Nonnative Species and Noxious Weeds

Proposed Action

New surface disturbance in the Proposed Action could increase the potential for the establishment of invasive, nonnative plant species. Currently, puncture vine is the only noxious weed that may occur in the Project Area. With implementation of the monitoring and mitigation measures described below, there is a low potential for the establishment of noxious weeds.

No Action Alternative

In the No Action Alternative (notice-level drill exploration), the BLM required RGU to implement monitoring and mitigation measures similar to those in Section 4.3.3. The potential for the establishment of invasive, nonnative plant species in the No Action Alternative is also low.

Mitigation and Monitoring Measures

To minimize the introduction and spread of noxious weeds into the Project Area, RGU would implement the following preventative measures: 1) stay on existing roads to and from the Project Area, 2) use a certified weed free seed mix during reclamation, 3) conduct concurrent reclamation when feasible, and 4) implement a weed monitoring and control program. The BLM would provide RGU with a color brochure, 'Noxious Weeds of Central Nevada.' RGU would annually screen the Project Area for invasive weed species. If a limited amount of weeds are discovered, they would be pulled, placed in a plastic bag, sealed, and disposed of properly. For more intensive infestations, the operator would consult with the BLM on containment or eradication measures.

4.4 Migratory Birds

Proposed Action

The Proposed Action would temporarily eliminate 6.43 acres of desert scrub and migratory bird nesting habitat. Drill pad or road construction during the migratory bird nesting season could result in the destruction of active nests or disturb the breeding behavior of migratory bird species. With the mitigation measures described below, the Proposed Action would have a low impact on migratory bird species.

No Action Alternative

Under the No Action Alternative, the BLM attached a stipulation to the notice requiring RGU to avoid the nests of migratory birds (during the nesting season) or to disturb new ground outside of the migratory bird nesting season. Only two of the 17 proposed drill sites were drilled and the earthwork was done outside of the migratory bird nesting season. The remainder of the 17 drill sites will be drilled under the plan of operations (Proposed Action) and be subject to the mitigation measures described below. Drilling during notice-level activities (the No Action Alternative) likely had no effect on migratory birds.

Mitigation and Monitoring Measures

RGU would either conduct surface disturbing activities outside of the migratory bird nesting season (March 1 through July 31) or employ a qualified biologist to survey prospective work

areas prior to surface disturbance during the nesting season. If nests were found, a 250-foot buffer area would be established around the nest.

4.5 Threatened or Endangered Species

Proposed Action

A desert tortoise survey for the North Bullfrog drill roads and pads was done in March 2007. No desert tortoises or tortoise sign (e.g., shell, bones, scutes, limbs, scats, burrows, pellets, tracks, egg shell fragments, courtship rings, drinking sites, etc.) were found in the proposed disturbance areas or in the belt transects in the ZOI around the areas of proposed disturbance. Seven other tortoise surveys were done in the Bullfrog Hills to the south and east of the RGU Project Area from 2000 to 2007. No tortoise or tortoise sign were found during the seven surveys. For the North Bullfrog Project, the BLM informally consulted with the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act of 1973, as amended. The BLM proposed a finding of, *Not Likely to Adversely Affect*, for the desert tortoise or its critical habitat. The U.S. Fish and Wildlife Service concurred with this recommendation in their consultation letter dated December 12, 2008.

No Action Alternative

In the No Action Alternative (notice level drill exploration) all drill sites and roads were sited outside of BLM-defined tortoise habitat in the Bullfrog Hills. It is unlikely that the No Action Alternative would have any effect on the threatened desert tortoise.

Mitigation and Monitoring Measures

As a result of Informal Section 7 Consultation on the North Bullfrog Exploration Project between the BLM and the U.S. Fish and Wildlife Service, the following mitigation measures would be attached to the proposed action:

The enclosed handout shall be used to educate project personnel, including drillers, about the legal status, life history, mitigation and avoidance measures, etc., of the desert tortoise prior to the start of the exploration project.

All trash and food items generated by activities at the site shall be promptly contained in covered, raven proof containers and regularly removed from the site to a designated solid waste disposal site.

Whenever possible, overnight parking and storage of equipment and materials, including stockpiling, shall be in previously disturbed areas within the designated (project) area.

A speed limit of 25 miles per hour shall be required for all vehicles on the project site and unposted dirt access roads.

The project site would be clearly marked or flagged at the outer boundaries before the onset of ground disturbance. All activities shall be confined to within the designated (project) areas.

During exploration activities, if a tortoise enters the work area, all activities must cease and the (U.S. Fish and Wildlife) Service notified at 702-515-5230.

4.6 Wastes, Hazardous and Solid

Proposed Action

Wastes produced during the Project would consist of refuse, paper, and other inert materials. Project vehicles and equipment would use fuels and lubricants. In the proposed Action, RGU has committed to spill contingency measures restated in section 4.6.3. Fuel and lubricant use and the generation of solid waste would have a negligible to minimal impact in the Project Area.

No Action Alternative

In the No Action Alternative (notice-level drill exploration), the BLM attached stipulations for the proper disposal of solid wastes and a prohibition against disposal of any petroleum wastes in the project area. Wastes generated during notice-level drilling would not likely have any impact on the environment in the Project Area.

Mitigation and Monitoring Measures

All refuse would be removed and disposed of consistent with applicable regulations, in an authorized off-site landfill. Self-contained, portable chemical toilets would be available for project personnel. No refuse or waste would be disposed of or left on site.

In the event of an accidental release or spill of a regulated material, the BLM, NDEP, and the Emergency Response Hotline would be notified as required. If any petroleum products were spilled during operations, the spill would be contained and cleaned up in a timely manner. After clean up, the released fluids, and any contaminated soil would be removed from the site and disposed of at an approved disposal facility.

4.7 Water Resources

Proposed Action

In the Proposed Action there would be no impacts to ground water or surface runoff waters after the implementation of mitigation measures described below.

No Action Alternative

In the No Action Alternative, there would be no impacts to ground water or surface waters. Notice-level drilling was subject to the same mitigation measures -as the Proposed Action.

Mitigation and Monitoring Measures

Fresh well water and nontoxic drilling additives would be used to make up drilling fluids. Drill holes would be plugged according to NAC 543 before the drill rig leaves the drill site.

Erosion control measures would minimize impacts to runoff surface water during rare precipitation events. Bladed exploration roads would be built at ten percent or less unless steeper grades would be necessary for short pitches. Waterbars would be installed as needed. Roads

would not be built within drainages. Constructed drill pads would be reclaimed as soon as practical after drilling is completed.

4.8 Land Use Authorizations, Recreation and Access

Proposed Action

The Project is consistent with the BLM's multiple-use management. Other land uses in the local area would include quarry operations by D & H Mining Ltd. southeast of the Project Area, other potential mineral exploration, casual recreation and organized off-road racing. The temporary and localized nature of the Project and the availability of numerous dirt roads in the Bullfrog Hills largely eliminate potential conflicts between the Proposed Action and other land uses. Drilling operations would not block access on roads in the Project Area. Project activities would not affect a radio facility in the east center of Section 2, Township 11 South, Range 46 East or the powerline which serves the facility. Organized off-road events, such as the Nevada 1000 and Las Vegas to Reno race, do use some of the same dirt roads in the Project Area as the Proposed Action. In the interest of safety, the BLM typically requires that affected public land users shut down and stay off the race route for the one to two day period when racers would use the roads.

No Action Alternative

In the No Action Alternative (drill exploration under the notice), there were no impacts to other land uses and users except for a potential conflict with off-road racing. The BLM stipulated in the notice that RGU would be informed of any future race events. If a race had been scheduled, RGU would have been told to vacate the project area for the day of the race.

Monitoring and Mitigation Measures

If an off-road race is scheduled to use dirt access roads in or adjacent to the Project Area, RGU would be informed in writing and required to halt drilling operations and not enter the Project Area during the time of the race.

4.9 Soils and Vegetation

Proposed Action

Exploration drill pads and roads would affect 6.43 acres of soils and salt desert shrub vegetation. The soil associations in the Project Area have low to moderate erosion potential (Table 3.16-1). There are no special status plant species in the Project Area.

Soils disturbed during exploration would be subject to increased rates of wind and water erosion until reclamation was successfully completed. After successful revegetation, soils would regenerate over a long period of time

No Action Alternative

Under the No Action Alternative, soil and vegetative disturbance would be limited to 2.45 acres. The level of impacts to soils would be similar to, but proportionally less than those associated with the Proposed Action.

Monitoring and Mitigation Measures

The impacts to soils would be reduced by measures incorporated in the Project design, including the use of waterbars and other BMPs, and the concurrent reclamation of drill pads, sumps, trenches, and drill roads no longer needed for drilling or access. Reclamation (regrading, reseeding, and revegetation) of disturbed areas would be done either during the project for pads and access roads no longer needed or at the end of the project. A BLM recommended seed mix (Table 2.1-1) would be used. Reclamation would begin the process of revegetation and soil regeneration.

4.10 Visual Resources

Proposed Action

The Proposed Action would affect the visual background of the area during the project as a result of the presence of drilling equipment and longer-term from the loss of vegetation and exposure of disturbed ground on drill pads and roads. Project disturbance would blend in with past mining, mineral exploration and roads disturbance.

No Action Alternative

Under the No Action Alternative, visual impacts would be limited to the current 2.45 acres of surface disturbance. The level of impacts to visual resources would be similar to, but proportionally less than those associated with the Proposed Action.

Monitoring and Mitigation Measures

Drill pads and roads would be recontoured and reseeded. Revegetation of these features would minimize visual impacts after a period of from 3-5 years. The BLM would monitor the progress of revegetation annually.

4.11 Wild Horses and Burros

Proposed Action

There are no wild horses and an estimated 75 burros in the Bullfrog Herd Management Area (HMA). The Bullfrog (HMA is centered on Beatty, Nevada and encompasses approximately 150,000 acres. The Project Area in the northern Bullfrog Hills is in the northwest sector of the HMA. Burros could encounter Project traffic with the possibility of injury or death of the animal in a collision. The temporary loss of 6.43 acres of forage due to project disturbance would not have an impact on the wild burro population.

No Action Alternative

Under the No Action Alternative, drill exploration would be limited to the current 2.45 acres of authorized surface disturbance. The level of impacts to burros would be similar to, but proportionally less than those associated with the Proposed Action.

Monitoring and Mitigation Measures

Project traffic would be limited to a top speed of 25 mph on dirt access roads. If burros are encountered, project traffic would be required to slow down, so as not to frighten or injure the animals. If burros are in the Project Area at the start of daily operations, project traffic would

slow down to allow time for the animals to move away from the area. Revegetation of disturbed ground would restore forage for wildlife species, including wild burros.

4.12 Wildlife, including Special Status Species

Proposed Action

Wildlife habitat would be degraded in the 6.43 acres of drill pad and road disturbance. Disturbance would occur in the Mojave Desert Shrub vegetation community, resulting in short-term loss of forage. Wildlife sensitive to human activity and noise may be temporarily displaced as a result of drill pads and road construction, the operation of heavy equipment and the generation of noise and dust. The Project activities would be intermittent over a three year period and dispersed within the Project Area. Wildlife would be able to move around and between drilling operations.

Bats, on the BLM sensitive species list, may live in adits and mine shafts in the Project Area. If present, the bats may be disturbed by noise and vibration. Four drill sites are relatively close to existing mine shafts.

No Action Alternative

Under the No Action Alternative, drill exploration would be limited to the current 2.45 acres of authorized surface disturbance. The level of impacts to wildlife would be similar to, but proportionally less than those associated with the Proposed Action.

Monitoring and Mitigation Measures

Project disturbance would be regraded or scarified and then reseeded. Revegetation would restore forage plants for wildlife. In the plan of operations, RGU has committed to maintain a buffer of 100 feet from any mine shaft or adit during drilling operations.

5 CUMULATIVE IMPACTS

As defined in 40 CFR 1508.7 (regulations for implementing the NEPA) a cumulative impact on the environment results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (RFFAs), regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

The potential for the direct and indirect impacts of the Project to contribute to cumulative effects depends on the type and location of the affected resource, the scope and scale of the project, the type and location of the affected resource and the mitigation or reclamation measures applied to the direct impacts. With the application of avoidance/mitigation measures, the direct impacts of the Proposed Action and No Action Alternative to or from Invasive, Nonnative Species, Wastes, Hazardous and Solid, Water Resources, Land Use Authorizations, Recreation and Access would be reduced to an extent or degree that there would be no contributing element to cumulative impacts. Therefore, these resources will not be analyzed in this section.

Cumulative impacts are analyzed for the following resources: **Air Quality, Cultural Resources, Migratory Birds, Threatened and Endangered Species, Soils and Vegetation, Visual Resources and Wildlife, including Special Status Species.**

A Cumulative Impacts Study Area (CESA) has been defined for this EA which addresses cumulative impacts to Air Quality, Cultural Resources, Migratory Birds, Soils, Vegetation, including Special Status Plant Species, Visual Resources and Wildlife, including Special Status Species. The CESA is defined by a greater degree of surface disturbance and human activities that could cumulatively impact the above resources, than adjacent land outside the CESA. The CESA includes the RGU Project Area which covers an area of historic gold mining along a three mile north-south trend including the Mayflower and the Pioneer mines. The CESA also includes land to the east and southeast of the Project Area with five rock quarries operated or being developed by D & H Mining Ltd., two residences and a water source at Crystal Springs (see Figure 5.1.1). The CESA includes 12.25 sections and approximately 7840 acres. The estimated surface disturbance from past, present and reasonably foreseeable future actions within the CESA is approximately 190 acres or 2.42 % of the total.

The Bullfrog Hills below 4,200 feet are part of designated tortoise habitat in the 1997 BLM Tonopah Resource Management Plan (See Figure 5.1.2). The lobe of designated habitat in the Bullfrog Hills is surrounded by non-habitat to the east in the Amargosa Valley and to the west in higher elevations of the Bullfrog Hills. Eight tortoise surveys have been done from 2000 to 2007 within the CESA outlined in Figure 5.1. In the eight surveys, no tortoises or tortoise sign was found. Therefore the CESA for the threatened desert tortoise is defined by the absence of tortoise or tortoise sign and is same CESA as for resources in the above paragraph and as outlined in Figure 5.1.1.

5.1 Past Actions

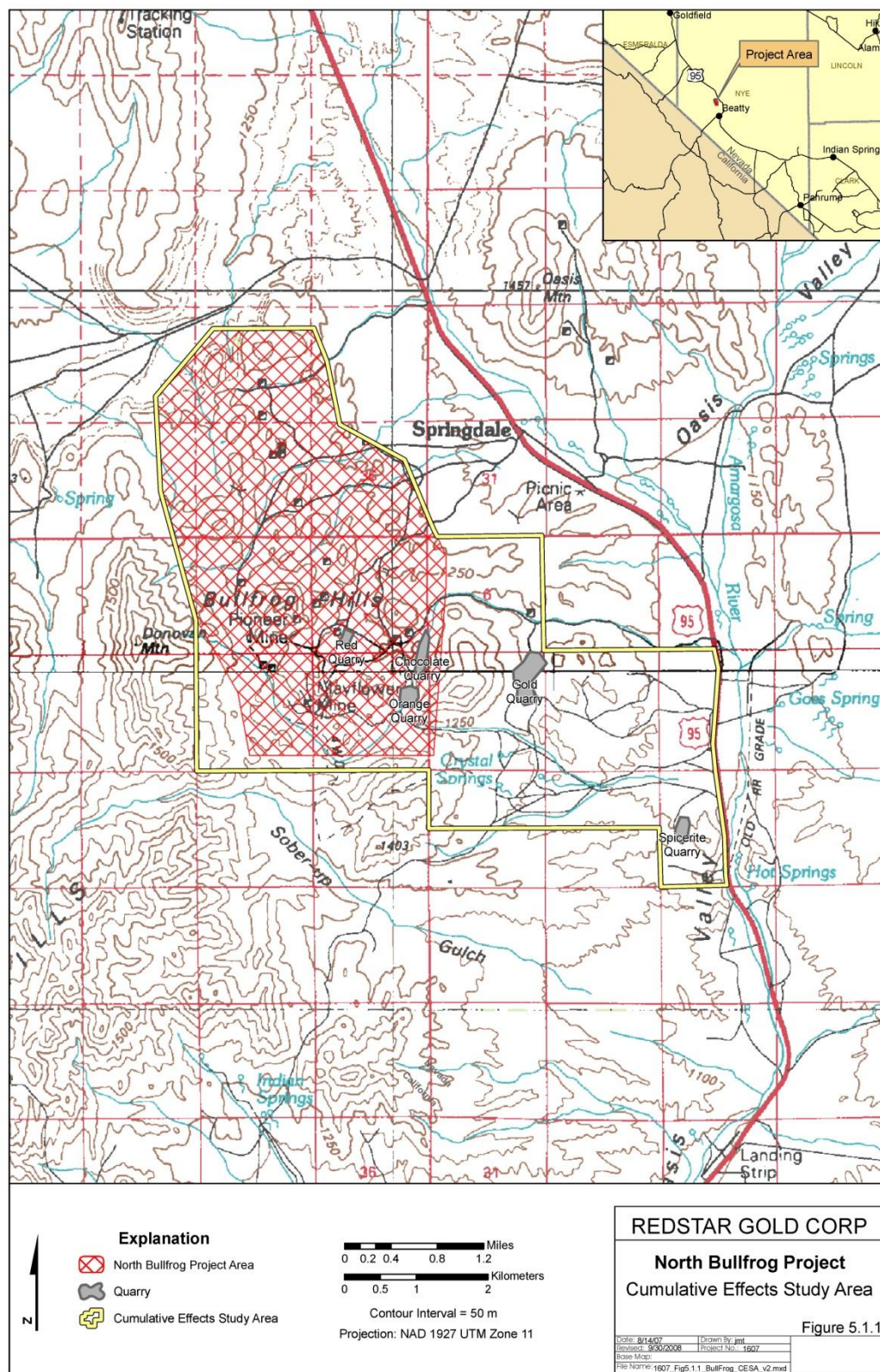
Past actions in the CESA include historic mining, mineral exploration, dispersed recreation, organized off-road racing and residential occupation. The existing road network originated from these past activities.

5.2 Present and Proposed Actions

Present actions in the CESA include mineral exploration, quarry operations by D & H Mining Ltd., road, powerline and other right-of-ways, dispersed recreation, annual off-road racing and residential occupation. In 2007, RGU initiated exploration activities under the Notice and currently has approval to disturb a total of 2.45 acres. The Proposed drilling exploration by RGU would disturb an additional 3.98 acres for a total of 6.43 acres in drill pads and roads.

5.3 Reasonably Foreseeable Future Actions

RFFAs include expanded mineral exploration by RGU, a possible underground mining operation, a currently proposed expansion of quarry operations by D & H Mining Ltd. and a continuation of dispersed recreation, off-road race events and road use and occupation by two residences at Crystal Springs.



5.4 Cumulative Impact Analysis

Cumulative Impact for respective resources list the type of effects associated with past, present and proposed and reasonably foreseeable future actions followed by an analysis of cumulative impacts from all disturbances/actions. For all resources, cumulative effects are limited to the Project Area and adjacent land within the CESA. Cumulative impacts to respective resources are low to nil.

5.4.1 Cumulative Impacts to Air Quality

Past Actions: The primary air pollutant deriving from past actions, such as historic mining, mineral exploration, dispersed recreation, off-road racing and residential occupation, was dust generated by traffic on unpaved roads. A secondary source was vehicle and equipment exhaust emissions. These past effects were localized and short-term and essentially have no current cumulative impact. However, past unvegetated mining disturbance may contribute to current dust emissions during high winds or from vehicular travel on dirt roads.

Present and Proposed Actions: Present actions which affect air quality within the CESA include, current mineral exploration by RGU, quarry operations by D & H Mining Ltd., off-road race events, casual recreation and local residential traffic. The Proposed Action would expand the RGU exploration-related disturbance from 2.45 to 6.43 acres. Old mining disturbance may contribute to current dust emissions during high winds.

Reasonably Foreseeable Future Actions: RFFA's that would affect air quality in the CESA include, additional mineral exploration by RGU, a possible underground mining operation (if sufficient gold mineralization can be delineated during exploration), a currently proposed expansion of quarry operations by D & H Mining Ltd., casual recreation, off-road race events and road use and occupation by two residences at Crystal Springs. Travel on dirt roads would be the largest contributor to dust emissions. Engine exhaust from vehicles and equipment would also contribute to air pollution.

Cumulative Impacts Analysis: The primary contributor to air pollution in the CESA from Present, Proposed and RFFA's would be dust raised by vehicular travel on dirt roads, operation of crushing and screening equipment at quarry operations and engine exhaust from all sources. Air impacts from the Proposed Action would be reduced by mitigation measures as stated in sections 2.1.10 and 4.1.3. Crushing and screening equipment at the D & H Mining, Ltd. quarries is and would be reduced by air pollution control devices required and permitted through the NDEP's Bureau of Air Pollution Control (BAPC). Disturbance greater than 5 acres for any project would be subject to a Surface Area Disturbance (SAD) Permit also issued by the BAPC. A possible underground mining operation would also be subject to air pollution control measures from the NDEP. Watering of dirt roads, spray bars on rock crushers, screens and conveyors are typical control measures. Most air quality impacts would be short-term or intermittent and dispersed within the CESA. Air pollutants would either settle out or be diluted within several hundred feet from the source. Cumulative impacts from most Present, Proposed and RFFA's

would be low. Off road racing would create a moderate short-term air impact mostly from dust emissions.

5.4.2 Cumulative Impacts to Cultural Resources

Past Actions: Impacts to cultural resources could have occurred from recreation due to incidental collection of artifacts on public lands, and from inadvertent destruction of artifacts from mineral exploration and mining. Past cultural impacts from recreation are considered to have been low. Historic mining may have disturbed prehistoric cultural resources but the mine shafts and other mining-related features have created new cultural resources for potential inventory and analysis.

Present and Proposed Actions: Casual recreation on public lands and all activity on private land are not regulated by the BLM. However, most other actions on public land, such as off-road races, new rights-of-way, mining and mineral exploration, are subject to laws for the protection of cultural resources. There are regulatory requirements to survey cultural resources in new project areas and to mitigate impacts to cultural sites found during the surveys. The primary mitigation is avoidance of cultural sites. For example, RGU has committed to avoiding the five known cultural sites found within the Project Area.

Reasonably Foreseeable Future Actions: Impacts to cultural resources would be mitigated for most of the RFFAs. As noted above, most such actions, such as future exploration or mining projects, off-road races, rights-of way would be subject to laws and regulations for the protection of cultural resources.

Cumulative Impacts Analysis: Cumulative impacts to cultural resources due to past actions in the CESA are likely to have been low but cannot be quantified. Present, Proposed and RFFA's, subject to cultural resource laws and regulations and mitigation measures, would have a small or no impact to cultural resources.

5.4.3 Cumulative Impacts to Migratory Birds

Past Actions: Past actions, such as historic mining, mineral exploration, dispersed recreation, off-road racing and residential occupation have left approximately 72 acres of denuded ground within the CESA. This area is not available for ground or shrub-nesting migratory birds.

Present and Proposed Actions: Current and proposed mineral exploration and quarry operations would disturb new ground and potential nesting habitat for ground and shrub-nesting migratory bird species. These actions, except for quarry areas, would be reseeded and revegetated, thus restoring nesting habitat. Vehicles and equipment related to the above actions, casual recreation and off-road racing could disturb migratory birds during the nesting season from March 1st through July 31st.

Reasonably Foreseeable Future Actions: Expanded mineral exploration, and a possible underground mine or new quarry development would remove vegetative cover and temporarily or permanently eliminate potential migratory bird nesting habitat. Vehicular traffic associated

with the above actions, as well as casual recreation and off-road races could disturb birds during the nesting season.

Cumulative Impacts Analysis: Past actions combined with present, proposed and RFFA's would affect approximately 2.42% of vegetative cover and migratory bird nesting habitat within the CESA. Mineral exploration, including the Proposed Action, and a possible future underground mine would be required to reseed and revegetate disturbed ground after completion of the respective projects. Revegetation would eventually restore ground and shrub nesting habitat. All of the above actions (except past actions) must avoid new ground disturbance during the migratory bird nesting season or conduct a field survey prior to disturbance. A 250-foot buffer zone around any found nests would be avoided. Project traffic in the above actions could disturb nesting migratory birds adjacent to dirt roads or the project area. Casual recreationists generally stay on existing roads and off-road races are run over existing dirt roads. These activities could also disturb nesting birds adjacent to dirt roads in the CESA. Because of avoidance measures attached to exploration, mining and quarry actions and to the confinement of off-road racing to existing roads, the impacts to migratory birds are expected to be low.

5.4.4 Cumulative Impacts to Threatened or Endangered Species

Past Actions: Desert tortoises inhabited the Bullfrog Hills in the past. The impact of past actions cannot be quantified. Historic mining, mineral exploration and associated road development and use may have caused tortoise mortality.

Present and Proposed Actions: These actions include current and proposed RGU mineral exploration, current quarry operations, off-road race events, casual recreation and residential uses and occupation. A desert tortoise survey was done in 2006 for proposed disturbance areas in the RGU plan of operations. Seven other tortoise surveys were done in the CESA to the south and east of the RGU Project Area for actions relating to quarry operations by D & H Mining Ltd. No live desert tortoise or tortoise sign was found in the seven surveys. These surveys were done from 2000 to 2007.

Reasonably Foreseeable Future Actions: These actions include possible expanded mineral exploration, expanded or new quarry operations, an underground mining operation and continued off-road racing, casual recreation and residential uses and occupation. Desert tortoise surveys may be done for future actions to determine the presence or absence of the desert tortoise.

Cumulative Impacts Analysis: The west, east and north portions of the CESA are outside of BLM-designated tortoise habitat. Eleven tortoise surveys in the central part of the CESA within designated habitat found no live tortoises or tortoise sign. Based on tortoise surveys in the CESA, no cumulative impacts to the threatened desert tortoise from present, proposed and RFFA's are expected. BLM personnel have observed individual tortoises in the Beatty Wash area, eight miles southeast of the Project Area and in the town of Beatty, Nevada, eight miles south of the Project Area. Desert tortoise mitigation and monitoring measures arising from consultation between the BLM and the USFWS would still be applied to the Proposed Action.

5.4.5 Cumulative Impacts to Soils and Vegetation

Past Actions: Past actions, such as historic mining, mineral exploration, dispersed recreation, off-road racing and residential occupation have left approximately 72 acres of denuded ground within the CESA.

Present and Proposed Actions: Soils and vegetation are or would be affected by the current and proposed RGU mineral exploration, current quarry operations by D & H Mining Ltd., off-road race events, casual recreation and residential uses and occupation

Reasonably Foreseeable Future Actions: RFFA's include possible expanded mineral exploration by RGU, expanded or new quarry operations, a possibility of an underground mining operation and continued off-road racing, casual recreation and residential uses and occupation.

Cumulative Impacts Analysis: Past actions combined with present, proposed and RFFA's would affect approximately 2.42% of soils and vegetative cover within the CESA. Mineral exploration, including the Proposed Action, and a possible future underground mine would be required to reseed and revegetate disturbed ground after completion of the respective projects. All of the above actions would have a low cumulative impact on the soils and common Mojave Desert vegetation within the CESA.

5.4.6 Cumulative Impacts to Visual Resources

Past Actions: Mineral exploration, mining, residential occupation, gravel operations and recreation have altered the visual landscape in the CESA. Natural revegetation has partially muted the visual effects of these past actions.

Present Actions: Impacts to visual resources from current and proposed RGU mineral exploration would add light-colored lines and areas to the visual landscape. Current operations by D & H Mining Ltd. have created light tan-colored disturbed areas around the quarries. Mining has created vertical cliff-like faces at the forward edge of the quarries.

Reasonably Foreseeable Future Actions: RFFA's include possible expanded mineral exploration by RGU, expanded or new quarry operations by D & H Mining Ltd., a possibility of an underground mining operation and continued off-road racing.

Cumulative Impacts Analysis: Visual impacts from past, present and reasonably foreseeable future actions would be isolated from one another, thus reducing their cumulative effect. Visual effects would be minimized for most actions due to reclamation and revegetation of surface disturbance, such as drill roads and pads and mining-related disturbance, such as pads, roads, dumps, etc. Quarries could not be revegetated and would remain as a semi-permanent alteration to the visual landscape. However, the quarries are not visible except from proximal locations within 0.25 miles of the quarries. Off-road racing does result in a short-term visual impact. The local area is sparsely populated and the CESA is not frequently visited by the public. The above

visual impacts would mostly be seen by the few local residents, quarry workers, exploration crews, and mineworkers. Casual recreationists or hunters may also note some of the above visual landscape alternations. The cumulative impacts to visual resources in the CESA from all types of actions or disturbances would be low.

5.4.7 Cumulative Impacts to Wildlife including Special Status Species

Past Actions: Historic mining, mineral exploration and associated road development and use has partially degraded common wildlife habitat and likely caused a limited degree of mortality. However, these short-term and dispersed effects have not contributed to cumulative impacts to common species of wildlife. The Amargosa toad may have been affected by past actions that directly affected Crystal Springs. These possible effects cannot be quantified or qualified.

Present and Proposed Actions: Present and Proposed Actions in the CESA that affect wildlife and wildlife habitat include current and proposed drill exploration by Redstar Gold USA, current operations at the Spicerite, Gold, Chocolate, Red and Orange quarries, haul truck, off-road race and casual traffic on dirt roads.

Reasonably Foreseeable Future Actions: D & H Mining Ltd. has submitted a mine plan for a proposed expansion of operations at four quarries located east of the Redstar Gold Project Area. Redstar Gold could potentially conduct additional drill exploration beyond the level proposed in their plan of operations. An underground mining operation in the northern Bullfrog Hills could potentially follow after a sequence of mineral exploration. Continued mining at the D & H Mining Spicerite quarry would disturb an additional 13 acres over the life of the project. Other potential new quarry development would disturb an estimated 10 acres.

Cumulative Impacts Analysis: The estimated total disturbance to wildlife habitat from past, present, the Proposed Action and reasonably foreseeable future actions is 190 acres. Of this amount, approximately 146 acres would remain permanently disturbed on existing roads, quarry areas and an estimated 5 acres of past mining disturbance. Natural or planned revegetation would restore forage on the remaining 45 acres disturbed by past mining, current and proposed mineral exploration and surface facilities of a possible future underground mine. There are 7,840 acres in the CESA. The short-term loss of vegetation and wildlife habitat from all sources is 190 acres or 2.42%. The long-term loss of vegetation and wildlife habitat from quarries, existing roads, old mining disturbance, and residences, is 146 acres (1.86%). The short-term loss of vegetation and habitat on 2.42% of land within the CESA and 1.86% in the long-term is not consequential to common wildlife species.

6 CONSULTATION AND COORDINATION

This EA was prepared at the direction of the BLM, Tonopah Field Office, Tonopah, Nevada, by Enviroscientists, Inc., under a contract with RGU. The following is a list of individuals responsible for preparation of the EA.

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Opal Adams	Project Manager
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Jennifer Thies	Environmental Justice, Socioeconomics
J. Marie Trammell	Baseline data collection, Figures

Chambers Group

Erika Johnson	Cultural Resources
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6.2 Persons, Groups and Agencies Contacted

Federal Agencies

U.S. Fish and Wildlife Service

State Agencies

Nevada Department of Conservation and Natural Resources
Nevada Division of State Lands
Nevada Division of Environmental Protection
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Division of Water Resources
Nevada Natural Heritage Program
Nevada Division of State Parks
Nevada Public Utilities Commission
State Historic Preservation Office

County Government: Nye County Commisioners

Local Government: Beatty Town Board

Organizations: Center for Biological Diversity

Native American Tribes: Timbisha Shoshone Tribe

Industries/Businesses: D & H Mining, Ltd.

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APPENDIX

Past, Present, Proposed and Reasonably Foreseeable Future Impacts within the Cumulative Impacts Study Area (CESA) for the North Bullfrog Exploration EA

Historic mining disturbance

60 mine shafts (50' x 50' = 2,500 ft ²)	150,000 ft ²	
20 adits (50' x 50' = 2,500 ft ²)	50,000 ft ²	
175 prospects (20' x 20' = 400 ft ²)	70,000 ft ²	
Tailings and waste rock dumps (3)	202,500 ft ²	
	472,000 ft ²	10.83 acres

Other existing disturbance

Two residences near Crystal Springs	1.50 acres
Existing dirt roads 228,000' x 10' =	52.30 acres
NDOT gravel pit	<u>7.20 acres</u>
	61.00 acres

Present and Proposed Disturbance

Redstar Gold notice	2.45 acres
Quarries (Spicerite)	4.00 acres
Quarries (Gold, Chocolate, Red, Orange)	7.00 acres
Quarry Expansion (Gold, Chocolate, Red, Orange)	<u>53.00 acres</u>
	66.45 acres

Reasonably Foreseeable Future Actions

Redstar Gold Plan of Operations	4.00 acres
Expansion of Spicerite Quarry	13.00 acres
Possible U/G mine	25.00 acres
New quarry development	<u>10.00 acres</u>
	52.00 acres

TOTAL = 190.3 ACRES

Semi-permanent loss of soils and vegetation

5 (hist. mining) + 52.3 (exist. roads) + 70 (quarries) + 17 (spicerite) + 1.5 (residences) = 146 ac.
44 acres subject to natural or planned revegetation.