AMES CONSTRUCTION, INC.
SADDLER BROWN GRAVEL PIT PROJECT
EUREKA COUNTY, NEVADA

ENVIRONMENTAL ASSESSMENT
#DOI-BLM-NV-B010-2013-0026-EA

April 2013

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ACRONYMS

1.5H:1V	1.5:1 horizontal-to-vertical slope ratio
3H:1V	3:1 horizontal-to-vertical slope ratio
AADT	Annual Average Daily Trips
ACEC	Area of Critical Environmental Concern
Ames	Ames Construction, Inc.
amsl	above mean sea level
APE	Area of Potential Effect
AST	Aboveground storage tank
BAPC	Bureau of Air Pollution Control
AUMs	Animal Unit Months
BLM	Bureau of Land Management
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CESA	Cumulative Effects Study Area
CO	Carbon Monoxide
COLA	Change of Location Application
dBA	decibel above ambient measures
˚F	degrees Fahrenheit
EA	Environmental Assessment
EIS	Environmental Impact Statement
Enviroscientists	Enviroscientists, Inc.
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EO	Executive Order
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act
GHG	Greenhouse Gases
GIS	Geographical Information System
gpm	gallons per minute
HDPE	High-density polyethylene
HFRA	Healthy Forest Restoration Act
IM	Instruction Memorandum
I-80	Interstate 80
KOP	Key Observation Point
kW	Kilowatt
L_{eq}	Equivalent Continuous Noise Level
Master Plan	Eureka County Master Plan, Land Use and Natural Resources & Federal or State Land Use Elements
Materials Act	Materials Act of July 31, 1947, as amended
MBTA	Migratory Bird Treaty Act
MLFO	Mount Lewis Field Office
MDB&M	Mount Diablo Base and Meridian
mph	miles per hour
NO_2	Nitrogen Dioxide
NAAQS	National Ambient Air Quality Standards

NAC	Nevada Administrative Code
NAGPRA	Native American Graves Protection and Repatriation Act
NDEP	Nevada Division of Environmental Protection
NDOA	Nevada Department of Agriculture
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resources Conservation Service
NRHP	National Registry of Historic Places
NRS	Nevada Revised Statutes
NSAAQS	Nevada State Ambient Air Quality Standards
O_3	Ozone
PCS	Petroleum Contaminated Soil
P.L.	Public Law
Plan	Plan of Operations
PLS	Pure Live Seed
PGH	Preliminary General Habitat
PJ	Pinyon pine and Juniper
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than 2.5 microns
PM_{10}	particulate matter with an aerodynamic diameter less than 10 microns
PMU	Population Management Unit
PPH	Preliminary Priority Habitat
RMP	Resource Management Plan
RFFAs	Reasonably Foreseeable Future Actions
ROW	Right-of-Way
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SPCC	Spill Prevention Control & Countermeasure Plan
SR	State Route
SRK	SRK Consultants
State Engineer	Nevada State Engineer
TCP	Traditional Cultural Property
U.S.	United States of America
U.S.C.	United States Code
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management
WSA	Wilderness Study Area
yd^3	cubic yard

AMES CONSTRUCTION, INC.
SADDLER BROWN GRAVEL PIT PROJECT
ENVIRONMENTAL ASSESSMENT

1 INTRODUCTION / PURPOSE OF AND NEED FOR ACTION

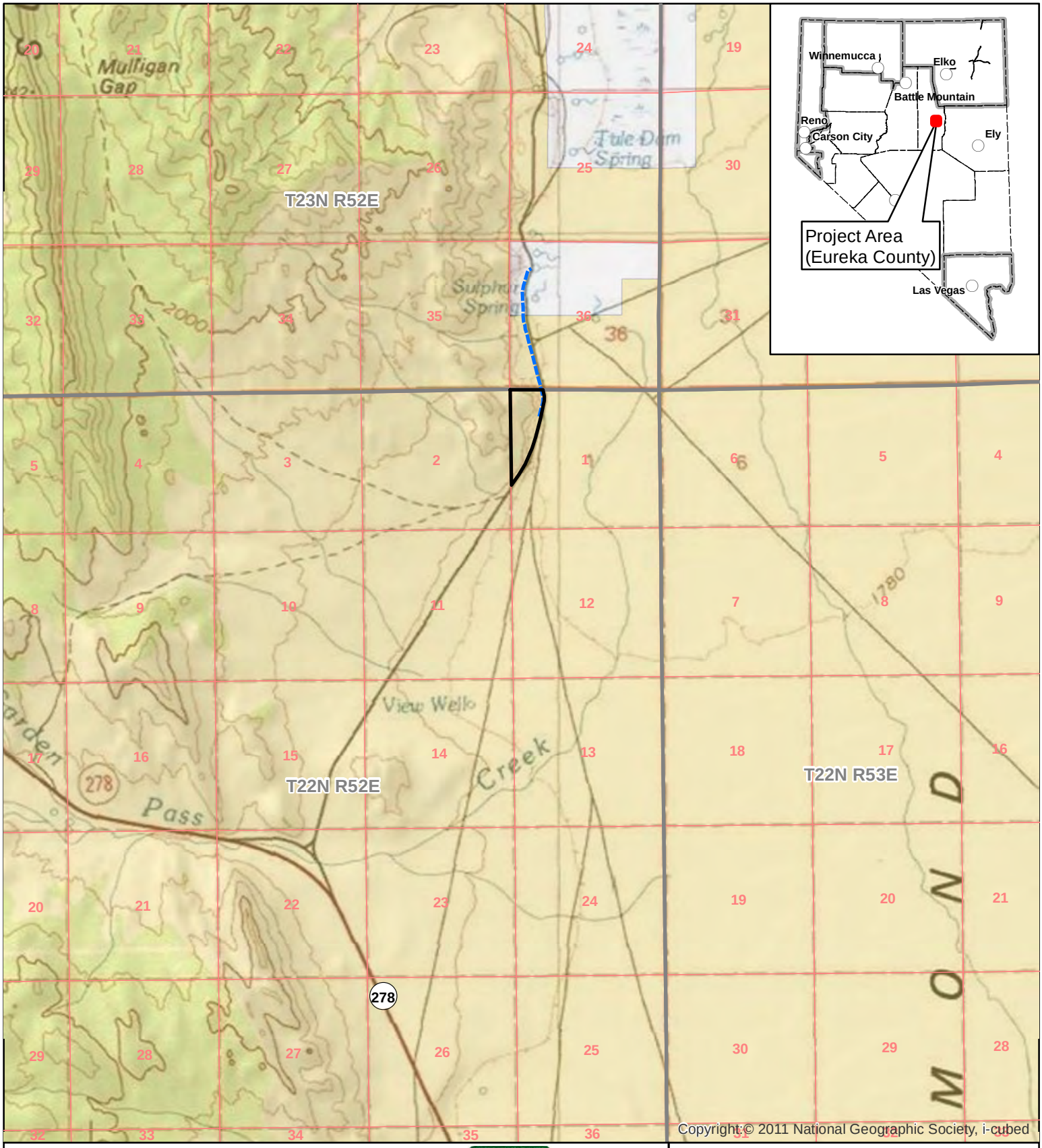
1.1 Introduction

Ames Construction, Inc. (Ames) proposes to develop an aggregate operation (gravel pit) by obtaining the acceptance and approval of a mineral material sale contract on public lands administered by the Bureau of Land Management, Battle Mountain District Office, Mount Lewis Field Office (BLM) in Eureka County, Nevada (Project). The material sale contract would allow Ames to extract approximately 120,000 cubic yards (yd^3) of aggregate material from a 61-acre area of public land administered by the BLM over a three- to five-year period. The Project is located in Section 1, Township 22 North, Range 52 East (T22N, R52E), Mount Diablo Base and Meridian (MDB&M) (Project Area), approximately 20 miles northwest of the Town of Eureka, Nevada (Figure 1.1.1). Ames would develop the aggregate pit, process the materials on site, and haul the processed materials off site to one or more third party purchasers. The Project Area totals 61 acres, and Ames would create a maximum of 61 acres of Project-related mining disturbance.

In addition, Ames would provide water to the Project Area by conveying water from an existing well located on private land in Section 36, T23N, R52E, via an aboveground pipeline (Figure 1.1.1). The waterline would cross BLM-managed land and would require a BLM right-of-way (ROW) grant for this use. The aboveground waterline would occupy 9.37 acres on both public and private land. The portion of the aboveground waterline located on BLM-administered land would occupy 6.32 acres. The total disturbance acreage associated with the waterline (portions on public and private land) would be 1.2 acres (0.8 acre on public land and 0.4 acre on private land). Alternatively, Ames may drill a new production water well located within the Project Area. The well would be permitted, constructed, and abandoned in accordance with Nevada Division of Water Resources (NDWR) requirements. If Ames would drill a new production well, it would be the primary source of water for the Project, and the existing well and waterline would be the secondary source of water.

The Proposed Action includes the aggregate pit operation and the ROW grant on public land, as well as the portion of the waterline on private property because it is a connected action under the National Environmental Policy Act of 1969 (NEPA). The total disturbance acreage, and the amount of disturbance analyzed under the NEPA, for the gravel pit and aboveground water pipeline is 62.2 acres.

Ames excavated test pits in 2012 that demonstrated the existence of viable material for the production of aggregate-based products (i.e., sand, gravel, cement, and asphalt) within the Project Area. These testing activities included the completion of 13 test pits under Mineral Material Notice Level Exploration Permit No. NVN-091236 (Permit). The total surface disturbance under the Permit was 0.01 acre, which was associated with overland travel, test pits, and backfilling activities. The results from this testing prompted Ames to submit a Plan of Operations (Plan) to the BLM in September 2012. The Plan has been accepted by the BLM, and it was determined by the BLM that an Environmental Assessment (EA) would be necessary in order to comply with the NEPA requirement to analyze the impacts that the Proposed Action and alternatives could have on the environment. This EA follows the Council on Environmental



Explanation

- Project Area
- Pipeline Route

Land Status

- Bureau of Land Management
- Private

BATTLE MOUNTAIN DISTRICT OFFICE
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Battle Mountain, NV 89820

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0 0.25 0.5 1 Miles

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SADDLER BROWN PIT

Project Area and Land Status

Figure 1.1.1

04/03/2013

Quality (CEQ) regulations implementing the provisions of the NEPA under the Code of Federal Regulations (CFR), Title 40, Parts 1500-1508 (40 CFR 1500-1508), and the BLM's NEPA Handbook H-1790-1 (BLM 2008a).

Ames also submitted a ROW application (N-091603) to the BLM for the aboveground waterline in November 2012. The ROW application also requires NEPA compliance; therefore, the potential impacts from the activities under the Plan and the ROW application are analyzed in this EA. Two approvals would result for the Project: one approval to authorize the material sale under 43 CFR 3600, and one approval for the aboveground waterline ROW under 43 CFR 2800.

1.2 Existing Activities and Disturbance

The Project Area has not been previously disturbed except for the disturbance created during the excavation of the 13 test pits by Ames under the Permit. The test pits were backfilled, and the surface was returned to a roughened state similar to existing conditions.

Eureka County maintains a drainage ditch within the proposed ROW. This area has been previously disturbed during the construction of the drainage ditch and continues to be disturbed during routine maintenance activities. The proposed ROW is also adjacent to Saddler Brown Road, and portions of the route may have been disturbed during construction and maintenance of this road.

1.3 Purpose and Need for Action

The purpose for the Project is to provide aggregate material for use in the construction industry and to construction material suppliers, such as asphalt, concrete, and ready-mix plants, and for public works projects in Eureka County. The proximity of potential third-party purchasers would allow Ames to keep production costs at a minimum by reducing the transportation distance for materials, equipment, and personnel traveling to the mine site and for finished product delivery from the Project Area. The need for the action is established by the BLM's responsibility under Section 302 of the Federal Land Policy and Management Act of 1976 (FLPMA), and BLM's authority to dispose of sand, gravel and other mineral and vegetative materials under the Mineral Materials Disposal regulations at 43 CFR 3600 pursuant to the Materials Act of July 31, 1947, as amended, (30 United States Code [U.S.C.] 601, *et. seq.*) (Materials Act).

The purpose of the ROW is to provide water from an existing production well to the Project site in support of Ames' proposed aggregate operations. The need for the action is established by BLM's authority under 43 CFR 2800 to grant ROWs in a manner that "a) protects natural resources associated with public lands and adjacent lands, whether private or administered by a government entity; b) prevents unnecessary or undue degradation to public lands; c) promotes the use of rights-of-way in common considering engineering and technological compatibility, national security, and land use plans; and d) coordinates, to the fullest extent possible, all BLM actions under the regulations in this part with state and local governments, interested individuals, and appropriate quasi-public entities" (43 CFR 2801.2). Additionally, the need for the action is established by BLM's responsibilities under Section 501 of the FLPMA.

1.4 BLM Responsibilities and Relationship to Planning

The BLM is responsible for the preparation of this EA, which was prepared in conformance with the policy guidance provided in the BLM NEPA Handbook H-1790-1 (BLM 2008a). The Proposed Action involves two elements: 1) Approval of a Mineral Materials Sale Contract (non-competitive), and 2) the installation of an aboveground waterline. For the first action, the BLM would approve the non-competitive Materials Sale Contract pursuant to its authority under 43 CFR 3601.03, pursuant to the Materials Act. For the second action, the BLM would decide to grant the proposed ROW, deny the ROW, or grant the ROW with modifications pursuant to 43 CFR 2805.10(a)(1).

The BLM also has the responsibility to determine if the Proposed Action conforms to the BLM's Shoshone-Eureka Resource Management Plan, as amended (RMP) dated February 26, 1986 (BLM 1986a). Specifically, on page 29 in the RMP Record of Decision, under the heading "Minerals" subtitled "Objectives" number 1:

> "Make available and encourage development of mineral resources to meet national, regional, and local needs consistent with national objectives for an adequate supply of minerals."

Further, "resource uses or management decisions not mentioned in this plan shall be clearly consistent with the terms, conditions, and decisions of the approved plan."

1.5 Local Land Use Planning and Policy

The Eureka County 1973 Master Plan, updated in 2000 and again in 2010, contains a description of land uses, restrictions on development, and recommendations for future land use planning. The Eureka County Master Plan 2010 included an Economic Development Element that incorporated recommendations for increased land use planning that expands and diversifies the County's economy. The Natural Resource and Federal or State Land Use Element was developed and included into the Master Plan in response to Nevada Senate Bill 40 (1983), which directs counties to develop plans and strategies for resources that occur within lands managed by federal and state agencies. Policies within the Eureka County Master Plan promote the expansion of mining operations/areas. Some elements of the Proposed Action would be in conformance with the Eureka County plans and policies while other elements of the proposed operations could prove inconsistent with these plans and policies.

The Natural Resources and Federal or State Land Use Element is a policy direction for natural resource management and land use on federal and state administered lands in Eureka County. This element is designed to accomplish the following: 1) protect the human and natural environment of Eureka County; 2) facilitate federal agency efforts to resolve inconsistencies between federal land use decisions and County policy; 3) enable federal and state agency officials to coordinate their efforts with Eureka County; and 4) provide strategies, procedures, and policies for progressive land and resource management (Eureka County 2010).

1.6 Scoping Issues

The Project was internally scoped by the BLM interdisciplinary team at a meeting held on October 3, 2012, at the BLM office in Battle Mountain. During this meeting, BLM personnel identified the following resources and uses as having potential issues:

- Air Quality;
- Cultural Resources;
- Land Use and Realty;
- Migratory Birds;
- Native American Traditional Values;
- Noxious Weeds, Invasive and Non-native Species;
- Livestock Grazing;
- Soils;
- Special Status Species;
- Vegetation;
- Visual Resources;
- Wastes, Hazardous or Solid;
- Water Resources (Ground); and
- Wildlife.

Additionally, the BLM sent invitations for tribal consultation to the following tribes on November 29, 2012: the South Fork Band of the Te-Moak Tribe of Western Shoshone, Battle Mountain Band of the Te-Moak Tribe of the Western Shoshone, and Elko Band of the Te-Moak Tribe of the Western Shoshone.

2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Proposed Action

2.1.1 Aggregate Operation

The Proposed Action consists of the development of an aggregate operation on 61 acres of public land administered by the BLM, located in Section 1, T22N, R52E, and an overland waterline route located in Section 36, T23N, R52E on both public land administered by the BLM and on private land in Section 36, T23N, R52E. Maximum disturbance within the aggregate operation would be 61 acres. Ames' initial disturbance area would be 12 acres, and Ames would expand the disturbance area as market conditions warrant. The acreage for the waterline ROW would be 6.32 acres. The waterline would be approximately 3,672 feet in length and the ROW would be 75 feet in width. The easement on the private land would be the same width and total length would be approximately 1,770 feet. The total acres on public and private land for the waterline would be 9.37 acres, with a total of 1.2 acres of disturbance (0.8 acre on public land and 0.4 acre on private land). The waterline would be located along an existing Eureka County-maintained drainage ditch that is parallel to Saddler Brown Road.

The aggregate operation acreage includes the area for extraction activities (Figure 2.1.1). Aggregate extraction activities would include the construction of a new aggregate pit, topsoil and overburden stockpiles (growth media), crushing and washing materials on site, and stockpiling materials until transported off site. Ames may drill a new water production well within the Project Area, which would be Ames' primary source of water. The water from the existing well and waterline would then be Ames' secondary source of water. Stripping of the growth media would progress in stages, in advance of extraction. Quarry operations would consist of direct extraction of gravels with excavators, loaders, or dozers. The materials would be loaded and transported to the processing area or directly to off-site customers. The processing area would have portable crushers, washers, conveyor belts, and stockpile areas. All equipment would be mobile, and no permanent structures would be erected. The Project Area would be fenced on all four sides with a BLM-specified four-strand range fence. The top three strands would be barb wire and the fourth strand would be smooth. Additionally, the fence would be 42 inches high, and the smooth bottom wire would be 16 inches from the ground in accordance with BLM-specifications.

Ames would conduct aggregate mining operations on public land for a minimum of three years. The overall Project lifespan would be determined by the economic conditions and aggregate product market demand throughout the life of the Project, but would not exceed five years. The Proposed Action would result in a yield of an estimated 186,000 tons of aggregate material (approximately 120,000 yd^3) from public land. Ames would initially conduct mining operations within a 12-acre area within the Project Area (Phase 1). Ames would expand operations into the remaining 49 acres when economic conditions warranted such expansion. The disturbance into the expansion area may be in one additional phase or in subsequent phases. Ames would notify the BLM if and when it planned on commencing disturbance within the expansion area. Ames would provide updates, as needed, on additional Project-related disturbance.

Once the aggregate material is excavated, Ames would transport material not designated for direct delivery to third party customers to the processing area. The aggregate material would then be fed by loader into the crushing system. The crushing system would reduce the size of the aggregate material, which would then be conveyed to the screening system. Any oversized

material would be sent back through the crushing system until the material passes through the screening system. The material would then be washed and temporarily stockpiled on site (Figure 2.1.1). Haul trucks (belly dump) would transport the stockpiled material to off-site customers.

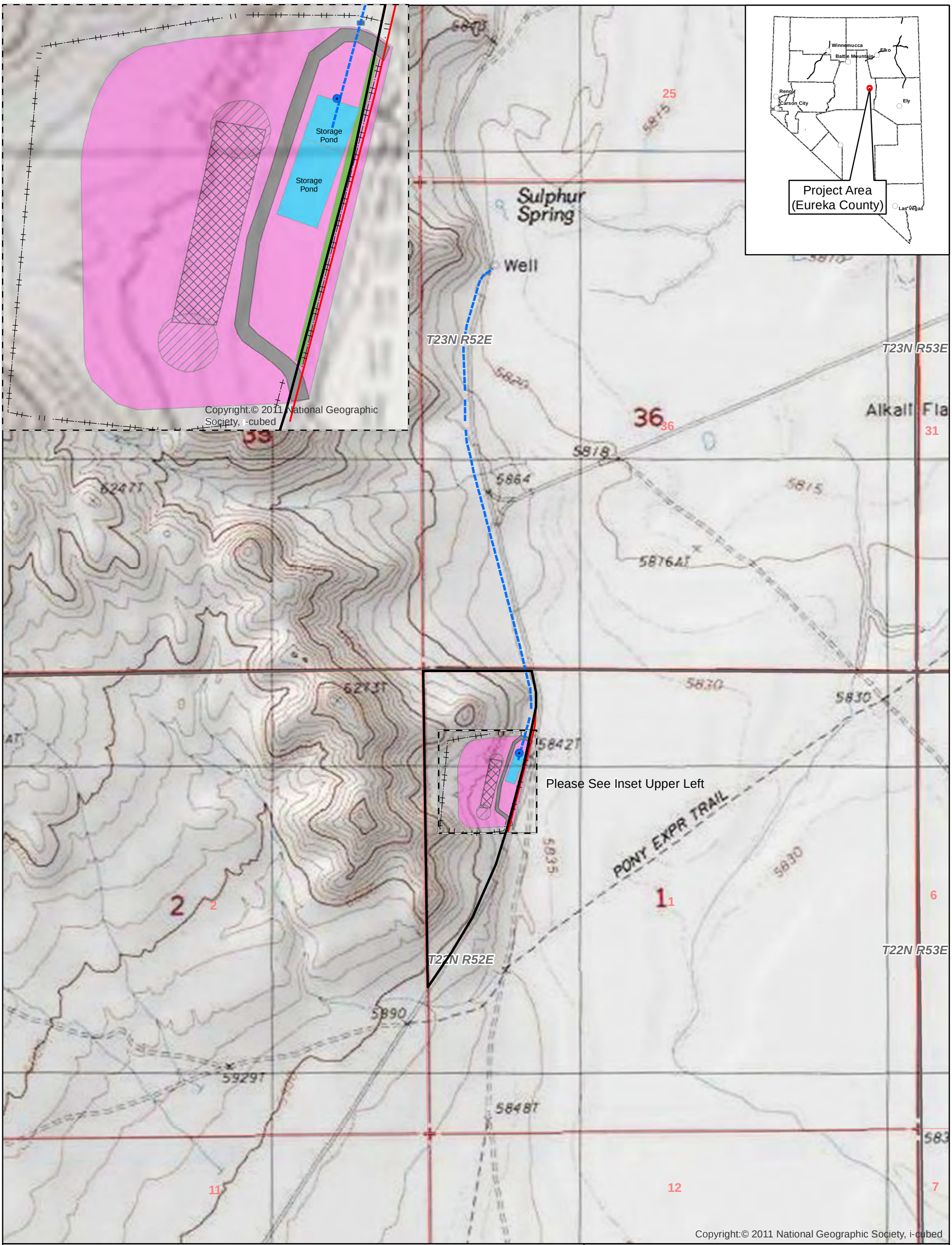
Ames would install two water storage ponds within the mine area. Water storage pond #1 would be used to collect and store freshwater conveyed from the private well to the Project site and/or from a new production well that would be located adjacent to the pond. The water would be piped to the washer, as needed. Water storage pond #1 would be approximately 190 feet by 100 feet (0.43 acre) in size. Water storage pond #2 would be a sedimentation pond. The pond would be used to hold the wash water from the washer until sediment settled. Upon sediment settling, the water would be re-circulated for use in the washer. Water storage pond #2 would be approximately 425 feet by 75 feet (0.73 acre) in size. For water conservation purposes, water storage pond #1 would be lined with a geosynthetics liner.

The estimated amount of surface disturbance that would be created by the Proposed Action is outlined in Table 2.1-1 and is detailed by type of activity.

Table 2.1-1: Acreage of Proposed Project Disturbance

Activity	Land Status	Proposed Disturbance Initial Area	Proposed Disturbance Expansion Area	Total Disturbance Area Analyzed in EA
Aggregate Mining	Public	7.24 acres	48.7 acres	55.94 acres
Processing and Wash Plant Pad	Public	1.5 acres	-	1.5 acres
Topsoil/Overburden Stockpiles	Public	0.3 acre	0.3 acre	0.6 acres
Material Stockpiles	Public	0.8 acre	-	0.8 acres
Haul Road	Public	1.0 acre	-	1.0 acres
Water Storage Ponds	Public	1.16 acre	-	1.16 acre
Waterline	Public	0.8 acre	-	0.8 acre
	Private	0.4 acre	-	0.4 acre
Total Disturbance Acres Analyzed	**Public**	**12.8**	**-**	**61.8 acre**
	Private	**0.4**	**-**	**0.4 acre**
	Total	**13.2 acres**	**49 acres**	**62.2 acres**

The activities conducted in the Project Area would include disturbance to public and private land as outlined in Table 2.1-1. Maximum disturbance for the aggregate operation would be 12 acres in the initial area (Phase 1) and 49 acres in the expansion area (subsequent phase[s]). For the waterline installation, Ames would use overland travel, as needed. Maximum vegetation disturbance would be 0.8 acre on public land and 0.4 acre on private land. This area would be disturbed once during the laying of the pipeline by the construction vehicles and again, when the pipeline is removed. Disturbance would be limited to construction vehicles using overland travel when the pipeline was installed and removed.



Explanation

- Project Area
- Proposed Well
- Proposed Temporary Surface Water Line
- Existing Utilities (buried)
- Fence
- Material Stockpile
- New Haul Road
- Initial Disturbance Boundary
- Processing & Washplant Pad
- Storage Pond
- Topsoil Stockpile
- Water Well

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0 500 1,000 2,000 Feet

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SADDLER BROWN PIT

Proposed Action

Figure 2.1.1

04/03/2013

Excavations of the aggregate would begin as soon as possible after the approval of the material sale by the BLM. Ames would provide updates to the BLM, as required, regarding reclamation completed during the life of the Project.

2.1.2 Quarrying Operation

Ames's mining activities would consist of quarrying on public lands. Mining operations would consist of direct extraction of gravels with excavators, loaders, or dozers. The materials would be loaded and transported to the processing area or directly to off-site customers. Materials not directly transported to off-site customers would be transported to a temporary stockpile area or directly to the processing plant. Mining operations would generally occur up to 24 hours a day, seven days a week.

2.1.3 Processing Facilities

The processing area would consist of the following: two cone crushers, six feet by 20 feet each, a jaw crusher, six feet by 20 feet, up to 16 conveyors, three to four feet in width and 60 feet in length, and two seven- to eight-foot by 20-foot triple deck screens. All facilities would be mobile, and no structures would be permanent. The front end loader would convey the material to the crusher, where the material would be crushed, screened, washed, and conveyed to the processed stockpile area. Any material failing to pass through the screen would be re-circulated and processed until it would meet quality standards.

2.1.4 Surface Facilities

2.1.4.1 Buildings and Structures

Ames would have one supervisor on site, who is responsible for the entire mine operation. The supervisor's office would be located in the crusher tower. The crusher tower would be 45 feet in length, ten feet in width and 12 feet in height, and would be brought on site with a tractor. No permanent foundation would be installed.

2.1.4.2 Generator/Power Supply

Electricity to the site would be supplied by a generator. The generator would be a diesel-powered 1,000 kilowatt (kW) generator. Diesel fuel would be brought on site, as needed, to supply the generator. Fuel would be stored in an aboveground ten thousand gallons or less capacity storage tank (AST). The generator would be located inside a van trailer within the wash plant pad.

2.1.4.3 Waste Facilities

No sewage facilities would be constructed. Ames would bring one chemical toilet onto the Project site. The chemical toilet would be provided by an outside contractor, and Ames would arrange to have it serviced on a routine basis.

2.1.5 Water Source

Water would be used during the course of the Proposed Action for dust control, rinsing mined material, and for miscellaneous uses. Ames has two different options for providing non-potable water to the Project. Ames would either obtain water from an existing well located on private

land in Section 36, T23N, R52E or Ames would drill a new production well within the initial 12 acre disturbance area for the Project. Even if Ames would drill the new well, Ames would still use the existing well as a secondary source of water.

Improvements associated with the use of the existing well would include the installation of approximately 5,442 linear feet of aboveground pipeline originating from the existing well (3,635 feet on BLM-administered land and 1,807 feet on private land). The aboveground pipeline would be flush with the ground and located adjacent existing drainage ditch maintained by Eureka County. The pipeline would be a high-density polyethylene (HDPE) pipe, three to six inches in diameter and would convey up to 100 gallons per minute (gpm) of water. The pipeline would be black.

If Ames drills a new well, it would be located adjacent to the fresh water pond (Figure 2.1.1). The depth of the well would be between 120 feet and 180 feet. Ames would obtain appropriated water rights from a third-party and would file a temporary point of diversion with the Nevada State Engineer (State Engineer). The production well would be permitted, constructed, and abandoned in accordance with the NDWR requirements. The well would convey approximately 100 gpm.

Ames would still install the aboveground pipeline if Ames did drill a new production well. The new production well would be the primary source of water for the project, and the existing well would be the secondary source.

Ames would need approximately 200 acre-feet of water annually for washing material, dust control, and miscellaneous uses. Ames has entered into an agreement with the owner of the existing well and the owner of the water rights for the new production well. Both owners have sufficient water rights to meet Ames' water demand.

The water from the off-site and/or on-site production wells would be non-potable. Bottled water would be used as potable water for the Project.

2.1.6 Water Storage Ponds

Water conveyed to the Project site would be held in a water storage pond until used in the washer or for the other Project water needs. The water storage pond would be approximately 0.43 acre in size and would have approximately three-acre feet of storage capacity. The pond would be lined with a geosynthetic liner and constructed in accordance with the NDWR regulations. A surface skimmer would pump the water to the wash plant screens.

Wash water from the wash plant would flow by gravity to a second water storage pond for sediment settling. The water storage pond would be approximately 0.73 acre in size and would have approximately five-acre feet of storage capacity. The second water storage pond would be mucked out, as needed. The silt collected from the pond would either be sold to a third party or stored on site and used during reclamation. The water from the second storage pond would be re-circulated for use in the washer. This pond would also be constructed in accordance with NDWR requirements.

Additionally, both storage ponds would be designed to enable wildlife to escape. Ames would create the storage ponds with low-gradient slopes, earthen corners, or liners that have a gripping surface to allow wildlife to escape the storage ponds.

Ames would apply to the State Engineer for the appropriate water transfer/point of diversion permits prior to transferring water to the water storage pond.

2.1.7 Access and Haul Road Construction

Access to the Project site would be from the Saddler Brown Road. This is an existing two-lane road maintained by Eureka County. The BLM has not granted a ROW to Eureka County. Saddler Brown Road was constructed prior to the FLPMA, and Eureka County claims it as a Revised Statute (RS) 2477 road. Ames would not need to construct any improvements to Saddler Brown Road. Ames and Eureka County would enter into an agreement or memorandum of understanding to identify maintenance responsibilities for Saddler Brown Road during the life of the Project.

Ames would construct one access road within the Project Area from Saddler Brown Road. The road would serve as the haul road for product. The road would be gravel and would be constructed with approaches to the north and south end of Saddler Brown Road. The north approach would be the entrance and the south approach would be the exit.

2.1.8 Mined Material Transport

Mined material, processed and unprocessed, would be transported by over the road haul trucks (belly dump type). Ames anticipates selling material to mining and construction companies, municipalities for public works projects, and companies or individuals needing aggregate. Ames anticipates that the haul trucks would utilize State Route (SR) 278 and travel north to Interstate 80 (I-80) or south to Highway 50. From I-80 and Highway 50, haul trucks would travel east or west. Based on an initial projected volume of 186,000 tons (120,000 yd^3) of material and the use of 40-ton haul trucks, Ames would generate a minimum of five vehicle trips (round trip) per day and a maximum of ten vehicle trips (round trip) per day.

2.1.9 Growth Media Stockpiles and Excavated Soil and Rock Stockpiles

Suitable growth media would be salvaged and stockpiled during construction of the water storage ponds, surface facilities, and haul road. The growth media removed during construction of the surface facilities and haul road would be used to create the berm located along Saddler Brown Road (Figure 2.1.1). The slope of the berm would be a 3:1 horizontal-to-vertical slope ratio (3H:1V).

For the ponds, Ames would strip the ponds of top soil. The ponds would be developed as a balanced cut and fill, and Ames would form an embankment around the depression. The slope of the embankment would be 1.5:1 horizontal-to-vertical slope ratio (1.5H:1V). During reclamation, Ames would place the embankment materials into the depression and re-grade to match the surrounding topography.

Ames would have three to five rock stockpiles for processed material. After the material was washed, conveyors would transport material to concrete sand, pea gravel, or concrete rock stockpiles. The processed material would remain in these stockpiles until transported off site as demand warrants.

2.1.10 Equipment

The following equipment is anticipated to be used for the Proposed Action:

- Up to two bulldozers- D8, D9 or equivalent;
- Up to two skid steers;
- Up to two front-end loaders, Cat 988, Komatsu 600, or equivalent;
- Two six-foot by 20-foot cone crushers;
- One six-foot by 20-foot jaw crusher;
- Two six-foot by 20-foot wash plants;
- One trailer mounted four-foot by six-foot pipe fuser;
- Up to two commercial pickups;
- One motorgrader;
- One portable scale with scale shed;
- Up to five light plants;
- One excavator - Cat 365 or equivalent;
- Up to two seven- to eight-foot by 20-foot three-deck screen;
- A minimum of ten and a maximum of 15, 30-to 40-ton highway-rated haul trucks;
- Up to 960 feet of a 36- to 48-inch conveyor for crushed material;
- One all-terrain vehicle with a seed broadcaster; and
- Two- or four-wheel drive vehicles for Project personnel transportation.

Ames would utilize a D8 or D9 bulldozer and Cat 365 excavator, or equivalent, for the majority of the aggregate extraction activities within the quarry area. The front-end loader, jaw crusher, and three-deck screen would then be used for refinement. The washer would be used to rinse the material, and the conveyor would convey the material to stockpiles (concrete sand, pea piles and concrete rock). The bulldozer and motorgrader would also be used to construct the haul road. Project personnel would access the Project Area in two- or four-wheel drive vehicles (i.e., pick-up trucks). Project-related surface disturbance would be reclaimed using the bulldozer and all-terrain vehicle with a seed broadcaster or comparable method.

The aboveground waterline would be installed by a forklift, small front end loader, and a trailer mounted pipe fuser. No surface disturbance is anticipated during installation of the aboveground waterline, except for overland travel.

Ames would take steps to prevent fires by ensuring that each field vehicle carries hand tools and a fire extinguisher. Water trucks may be used in the event of a fire, depending upon access and terrain issues. Communication would be available on the Project site through two-way radios and/or mobile phones. All equipment would be properly muffled and maintained in proper working order throughout the duration of the Project.

All Project-related traffic would observe a 25 mile per hour (mph) speed limit to enhance public safety, protect wildlife and livestock, and minimize dust emissions. All Project-related

equipment operation would be conducted in conformance with applicable federal, state, and local health and safety regulations. All portable equipment, including bulldozers, loaders, excavators, and support vehicles would be removed from the Project Area during extended periods of non-operation.

2.1.11 Work Force

Ames would have a maximum of five workers for construction of the mine and a maximum of ten workers for the operation of the aggregate operation. Ames would use existing employees from other operations in Nevada and Utah. If needed and as available, Ames would hire local workers.

2.1.12 Surface and Ground Water Control

Best Managements Practices (BMPs) for sediment control would be utilized during construction, operation, and reclamation to minimize sedimentation from disturbed areas. The topography of the Project Area generally consists of south and southwest sloping hills. Site drainage is accomplished primarily by sheet flow to the ditch located along Saddler Brown Road. There are no perennial streams within the Project Area. No ground water was encountered during testing activities, and no ground water is expected to be encountered during the life of the Project.

Current storm water runoff is generally to the east. Storm water would be contained by the soil berm established along Saddler Brown Road, and storm water would infiltrate into the ground. Ames would create the berm from the top soil removed during mining activities and stockpiled along the exterior of the Project road frontage (Figure 2.1.1). The slope of the berm would not exceed 3H:1V.

2.1.13 Solid and Hazardous Materials

No hazardous chemicals would be used in the mining and processing of materials within the Project Area. Diesel fuel for use by mining equipment would be contained in a ten thousand-gallon or less capacity AST. The tank would be a portable, dual walled off-road diesel tank and would be mounted on a custom trailer (50 feet long by 8.5 feet wide). The tank would meet Environmental Protection Agency (EPA) regulations for fuel containment. Ames would place a liner under the platform where the trailer was located to contain any spills from filling vehicles/equipment and dispensing diesel fuel. A berm would be constructed on or adjacent to the liner. In the event hazardous or regulated materials, such as diesel fuel, were spilled, measures would be taken to control the spill, and the BLM, Nevada Division of Environmental Protection (NDEP), and/or the Emergency Response Hotline would be notified, as required. If any oil, hazardous material, or chemicals are spilled during operations, they would be cleaned up in a timely manner. After clean up, the oil, toxic fluids, or chemicals and any contaminated material would be removed from the site and disposed of at an approved disposal facility. No hazardous materials would be left on site. Contractors would maintain spill kits on site for use in case of a spill. In addition, Ames would develop and implement a Spill Prevention Control and Countermeasure Plan (SPCC) that would be implemented in the event of a spill.

Gasoline, lubricating grease, antifreeze, and solvents would also be used to maintain and operate Project equipment and vehicles. Oil, anti-freeze, and used oil would be stored in compartments

located on the same custom trailer as the AST for diesel fuel. No waste products would be generated or introduced during Project operations that could enter or degrade surface or ground water sources.

On-site fueling of the off-road equipment (dozer, loader, grader, water truck, and portable crushing plant) would be done from the portable diesel tank, with an up to 10,000-gallon storage capacity, stored in the portable trailer located on the wash plant pad. All other vehicles would be fueled off site.

Petroleum Contaminated Soil (PCS) resulting from minor spills would be stored in a labeled 95-gallon over pack drum. Once it reaches capacity, it would be hauled to a permitted landfill.

All refuse generated by the Project would be disposed of at an authorized, off-site landfill facility consistent with applicable regulations. No refuse would be disposed of on site.

2.1.14 Reclamation

Reclamation would begin within disturbed areas considered inactive, without potential, or completed, at the earliest practicable time. Due to the small size of the proposed aggregate pit, reclamation would most likely occur when aggregate operations are completed. Short-term reclamation goals would include stabilization of disturbed areas and protection of adjacent undisturbed areas from disturbance. Long-term reclamation goals would ensure public safety, stabilize the Project Area, and establish productive vegetative communities consistent with pre-existing conditions.

Reclamation would be completed to the standards described in 43 CFR 3601.40. Reclamation activities on public land for the Proposed Action would be designed to achieve post-mining land uses consistent with the BLM's land use management plans for the area. An overall final slope of 3H:1V would be established in the aggregate pit area. Earthwork (e.g., regrading and recontouring) and revegetation activities would be limited by the time of year during which they can be effectively implemented. Seedbed preparation would generally be completed in the fall, either concurrently with or immediately prior to seeding. Seeds would be sown in late fall to take advantage of winter and spring precipitation and optimum spring germination potential. Seeding may take place in early spring should unfavorable fall weather conditions exist. In either case, seeding would not take place when the ground is frozen or snow covered. Reclamation activities would be coordinated with the BLM as necessary. Reclamation of the Proposed Action is expected to take place within approximately one year from the initiation of final reclamation activities. Revegetation success is anticipated to take up to three years from the time of seeding.

If the production well is drilled on site, the production well would be abandoned in accordance with the NDWR requirements.

2.1.14.1 Growth Media and Soil Balance

Reclamation activities during the Proposed Action would begin with the salvaging of topsoil/growth media from the proposed mine areas. All topsoil/growth media in areas of proposed surface disturbance would be removed and stockpiled for use during reclamation of the aggregate pit slopes, floors, and haul/access roads. Topsoil/growth media in the aggregate pit area are generally four to six inches deep and would be stored in the berm located along Saddler

Brown Road (Figure 2.1.1). Growth media stockpiles would be signed and separated from other overburden/reject material stockpiles intended for use as backfill. Ames would seed the stockpiles with an interim seed mix approved by the BLM.

2.1.14.2 Surface Disturbance Reclamation

All disturbed areas within the Project Area would be regraded and recontoured to approximate the topography of the existing terrain prior to disturbance. Following the completion of mining activities, aggregate pit slopes would be backfilled and contoured to not exceed 3H:1V before replacing growth media and revegetating. Regrading and reshaping activities would be completed with a bulldozer. Final reclamation of the Project Area would ensure that the slope and topography of reclaimed aggregate pit and other facilities are consistent with the proposed post-mining land use.

2.1.14.3 Water Storage and Sedimentation Ponds

The two water storage ponds would be reclaimed by backfilling, regrading, redistributing of growth media, and seeding. Synthetic liners used in water management facilities would be removed and disposed of at an approved off-site landfill.

2.1.14.4 Removal of Structures and Ancillary Facilities

All temporary structures and mobile equipment would be removed from the Project site. The crusher, wash plants and conveyor belts would be dismantled and transported to other Ames projects or to Ames storage facilities.

Salvageable equipment and materials would be used at another facility, sold, or properly disposed of off site. All consumables, such as petroleum products and solvents would be removed from the site and used at another facility or returned to the vendor. Construction debris, piping, and equipment that cannot be salvaged or sold would be removed and disposed of in accordance with applicable local, state, and federal regulations. Compacted areas would be ripped prior to the placement of growth media. All ripped and regraded surfaces would be seeded with the BLM-approved seed mix.

The generator and AST would be removed from the site and either stored at an Ames facility or used at another Ames project. Fences would remain in place until all facilities have achieved vegetation reclamation success. Removal of fences at that time would depend on the grazing management that BLM may implement for the reclaimed facilities. If the fences are not needed for livestock management as determined by the BLM, then Ames would remove all fences.

2.1.14.5 Revegetation, Seeding and Planting

Following earthwork, all reclaimed areas would be broadcast seeded with a BLM approved seed mix (Table 2.1-2) at the appropriate time of year for optimum seed sprouting and plant growth. Only certified weed-free seed would be used for reclamation seeding. The seed mix is based on known soil and climatic conditions and was selected to establish a plant community that would support the post-Project land use. The mix is designed to provide species that can exist in the environment of north central Nevada, are proven species for revegetation, and/or are native species found in the plant communities prior to disturbance. Broadcast seeding would be completed using a cyclone-type bucket spreader or mechanical blower at an application rate of

approximately 17 pounds of pure live seed (PLS) per acre. Broadcast seed would be covered by harrowing, raking, or other appropriate site-specific methods as necessary to provide seed cover and enhance germination. Reclaimed surfaces would be left in a textured or rough condition (small humps, pits, etc.) to enhance moisture retention and revegetative success while minimizing erosion potential. Changes and/or adjustments to the reclamation plant list and/or application rate would be made in consultation with, and approved by, the BLM. Ames may also utilize other means to accomplish reclamation goals, including the planting of Wyoming big sagebrush (*Artemisia tridentate* var. *wyomingenis*) seedlings, or Wyoming big sagebrush drill seeding.

Table 2.1-2: Proposed Revegetation Seed Mix

Common Name*	Scientific Name	Mix (%)	Pounds of PLS/Acre
Wyoming big sagebrush	*Artemisia tridentate* var. *wyomingenis*	12	2
Winterfat	*Krascheninnikovia lanata*	23	4
Spiny hopsage	*Grayia spinosa*	6	1
Bluebunch wheatgrass	*Pseudoroegneria spicata*	6	1
Bottlebrush squirreltail	*Elymus elymoides*	12	2
Indian ricegrass	*Achnatherum hymenoides*	17	3
Scarlet globemallow	*Sphaeralcea coccinea* ssp. *Elata*	6	1
Sweetvetch	*Hedysarum boreale* ssp. *Boreale*	12	2
Lewis flax	*Linum lewisi*	6	1
	Total	**100**	**17**

* Seed mixtures may change during concurrent and final reclamation. The changes would be based on targeting specific soil/disturbance types and experience gained during concurrent reclamation during the life of the Project, on test plot results, and changes in agency recommendations.

Post-closure management, including remedial earthwork and reseeding if required, would commence on any reclaimed area following completion of the reclamation work for that area. Post-closure management would extend until the reclamation of the site or component has been accepted by the BLM. Yearly visits to the site would be conducted to monitor the success of the revegetation for a period of three years following seeding. Annual reports showing reclamation progress would be submitted to the BLM.

2.1.15 Aboveground Waterline Right-of-Way

Ames would install a three- to six-inch HDPE aboveground waterline from a private well located on Section 36, T23N, R52E. The waterline pipe would be black and would be flush to the ground. The waterline would be approximately 5,442 linear feet, with approximately 1,807 linear feet located on private land and 3,635 linear feet located on BLM-administered lands. The ROW width would be 75 feet, and the total acreage associated with the ROW would be 6.27 acres. Total acreage for the waterline would 9.37 acres. Total disturbed acreage within the ROW and on private land would be 1.2 acres.

Disturbance would be limited to overland travel so reclamation would not be required. Ames would remove the waterline at Project completion.

2.1.16 Environmental Protection Measures

Ames has committed to the following environmental protection measures to prevent unnecessary disturbance during construction, operation, and reclamation activities associated with the Proposed Action.

Air Quality

- Emissions of fugitive dust from disturbed surfaces would be minimized by utilizing appropriate control measures such as reduced vehicle speeds to 25 mph and surface application of water from a water truck.

- The growth media stockpile would be compacted or otherwise treated to reduce windblown particulate matter in high wind conditions. Also, the growth media stockpile would be temporarily seeded with a BLM-approved interim seed mix.

Cultural Resources

- All eligible and unevaluated cultural sites would be avoided or treated to ensure compliance of Section 106 of the National Historic Preservation Act of 1966, as amended (16 United States Code [U.S.C.] 470, et seq.) (NHPA).

- Pursuant to 43 CFR 10.4(g), Ames 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). Further pursuant to 43 CFR 10.4 (c) and (d), Ames 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.

- Ames would not knowingly disturb, alter, injure, or destroy any historical or archaeological site, structure, building, or object. If Ames discovers any cultural resource that might be altered or destroyed by operations, the discovery would be left intact and reported to the BLM authorized officer.

- Ames would provide photodocumentation through the life of the Project. The photodocumentation would be taken at various points along the Pony Express Trail in close proximity to the Project in order to capture the setting and feel along segments of the trail that would be visually impacted as a result of the Proposed Action.

Fire Management

- All applicable state and federal fire laws and regulations would be complied with and all reasonable measures would be taken to prevent and suppress fires in the Project Area.

- In the event the Project should start a fire, Ames would be responsible for all the costs associated with suppression. The following precautionary measures would be taken to prevent and report wildland fires:

  - All vehicles would carry fire extinguishers;
  - Adequate firefighting equipment (i.e. shovel, Pulaski tool) and a minimum of ten gallons of water would be kept in the Project Area;
  - Vehicle catalytic converters would be inspected often and cleaned of brush and grass debris;
  - Ames would report wildland fires immediately to the BLM Central Nevada Interagency Dispatch Center at (775) 623-3444; and
  - When operations are conducted during the months of May through September, Ames would contact the Central Nevada Interagency Dispatch Center at (775) 623-3444 to obtain information regarding fire restrictions in place for the area of operation and to advise the office of approximate beginning and ending dates for the activities.

- A defensible space around fire-sensitive equipment utilized in the Project Area would be created. The defensible space would be 2.5 times the average height of the vegetation in the area.

Erosion and Sediment Control

- BMPs, including but not limited to dust control and earthen berms, would be implemented to minimize runoff, sedimentation, and soil loss.

- Reseeding would be consistent with all BLM recommendations for mix constituents, application rate, and seeding methods.

- BMPs would be used to limit erosion and reduce sediment runoff from Project facilities and disturbed areas during construction and operations.

- Disturbed areas would be reclaimed as soon as practicable in order to re-establish stabilizing vegetation cover that minimizes soil erosion potential and sedimentation.

Hazardous or Solid Wastes

- Pursuant to 43 CFR 8365.1-1(b)(3), no sewage, petroleum products, or refuse would be dumped from any trailer or vehicle.

- Regulated wastes would be removed from the Project Area and properly disposed of in a permitted state, federal, or local approved disposal area.

- The generation, transportation, treatment, storage, and disposal of all regulated wastes would be managed in accordance with applicable federal, state, and local requirements.

- If a spill of a petroleum constituent is considered to meet the reportable quantity per the NDEP's guidelines (greater than 25 gallons or greater than three cubic yards of impacted material), or a reportable quantity for hazardous waste is released based on EPA guidelines established under Title III List of Lists (40 CFR Part 302, Table 302.4), the

NDEP and BLM would be notified within 24 hours, and the appropriate remedial actions and confirmation sampling would be conducted under direction of the NDEP.

Land Use and Access

- Ames would avoid impacts to the existing ROW NVN-074974, a Nevada Bell telephone line, that traverses the southern portion of the Project Area.

Migratory Birds

- In order to avoid potential impacts to breeding migratory birds (including golden eagles [*Aquila chrysaetos*]), a nest survey would be conducted by a BLM approved biologist prior to any surface disturbance associated with Project activities during the avian breeding season (March 1 through July 31 for raptors and April 1 through July 31 for other avian species). Pre-disturbance surveys for migratory birds are only valid for 14 days. If the disturbance for the specific location does not occur within 14 days of the survey another survey would be needed. If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) would be delineated after consultation with the BLM resource specialist, and the buffer area avoided to prevent destruction or disturbance to nests or birds until they are no longer actively breeding or rearing young. The site characteristics to be used to determine the size of the buffer area are as follows: a) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; d) sensitivity of the species to nest disturbances; and e) the protection status of the species.

Noxious Weeds, Invasive and Non-native Species

- To prevent the establishment of noxious weeds, Ames would conduct spring and fall surveys, performed by a qualified individual, of the Project Area, including top soil stockpile to determine the presence of noxious weeds. Noxious weeds would be controlled through implementation of preventive BMPs and eradication measures if noxious weeds were found. The applicable BMPs and eradication measures would be coordinated with the BLM weed specialist prior to implementation.

- To eliminate the transport of vehicle-borne noxious weed seeds, roots, or rhizomes, all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities, for emergency fire suppression, or for authorized off-road driving within the Project Area, would be free of soil and debris capable of transporting weeds. All such vehicles and equipment would be cleaned off site with high power or high pressure equipment prior to entering the Project Area. Vehicles used for emergency fire suppression would be cleaned as part of check-in and demobilization procedures. Cleaning efforts would concentrate on tracks, feet, and tires on the undercarriage. Special emphasis would be applied to the axles, frames, cross members, motor mounts, on and underneath the steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs would be swept out and refuse would be disposed of in waste receptacles.

- Ames would consult with the BLM to properly remove tamarisk (*Tamarix* spp.) if the species is discovered along the water edge of the storage ponds.

Paleontological Resources

- Ames would not knowingly disturb, alter, injure, or destroy any scientifically important paleontological deposits. If Ames discovers any paleontological resource that might be altered or destroyed by operations, the discovery would be left intact and reported to the BLM authorized officer.

Public Safety

- Public safety would be maintained throughout the life of the Project. All equipment and other facilities would be maintained in a safe and orderly manner.

- Activities would be restricted to frozen or dry ground conditions where feasible. Operations would be curtailed when saturated and soft soil conditions exist.

- In the event that any existing roads are damaged as a result of Ames activities, Ames would return the roads to their original condition.

Special Status Species

In order to avoid potential impacts to the two greater sage-grouse (*Centrocercus urophasianus*) leks (Pony Express and Pony Express 2) and to mitigate the impacts to the Preliminary Priority Habitat (PPH), Ames would implement the following environmental protection measures:

- ***Lek Surveys –*** The population would be monitored by conducting surveys at both known leks (Pony Express and Pony Express 2) during the greater sage-grouse breeding season (March 1 through May 15) to determine if the leks are active per the Nevada Department of Wildlife (NDOW) lek survey protocol guidelines (NDOW 2004). These surveys would be conducted every year throughout the life of the project;

- ***Noise –*** If Ames would seek to operate the processing plant during the lekking period from four a.m. to ten a.m., Ames would first have to perform a noise study one to two weeks prior to the breeding season at both the Pony Express and Pony Express 2 leks. The noise study would follow the BLM noise monitoring/study protocols (BLM BMD 2013);

- ***Fencing*** – Fencing that would surround the Project Area would include greater sage-grouse fence markers to minimize impacts to greater sage-grouse; and

- ***Noise and Truck Travel*** – During greater sage-grouse breeding season (March 1 – May 15), Ames would not drive large trucks or equipment, including but not limited to haul/gravel trucks, on Saddler Brown Road between the Project Area and the intersection with SR 278 a.m. Ames would place speed limit signs, in coordination with Eureka County, to direct employees driving Brown Road to drive a maximum speed of 25 mph

during greater sage-grouse breeding season (March 1 – May 15). This directive would also apply to employees driving personal vehicles and company vehicles.

If Ames completes a noise monitoring study, Ames would submit the study to the BLM for review and approval. Ames would not be permitted to operate the processing plant from four a.m. to 10 a.m. during the lek period if noise levels at either lek are 10 decibels or more above ambient measures on any single day during the monitoring period. If noise levels do not exceed this maximum, the BLM would make a determination as to adjusted hours of operation.

Water Quality

- Ames would follow its SPCC for the Project.
- Ames would comply with BMPs.

Wildlife

- To prevent large mammals from entering the Project Area, Ames would fence the Project Area with a four-strand BLM-specified range fence. The top three wires would be barbed and the bottom wire would be smooth. Additionally, the fence would be 42 inches high and the smooth bottom wire would be 16 inches from the ground in accordance with BLM specifications.
- Storage ponds would be designed to enable wildlife to escape. Ames would create the storage ponds with low-gradient slopes, earthen corners, or liners that have a gripping surface to allow wildlife to escape the storage ponds.

2.2 No Action Alternative

In accordance with BLM NEPA guidelines H-1790-1, Chapter V (BLM 2008a), this EA evaluates alternatives to the Proposed Action. Due to the size and scope of the Proposed Action, the only alternative for consideration proposed in this EA is the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the Proposed Action were not implemented.

Under the No Action Alternative, the BLM would not approve Ames's application and bid for the material sale, and the Proposed Action would not be implemented. If BLM did not approve the material sale, the ROW grant would be unnecessary as the need for the ROW is contingent upon the approval of the material sale. Under the No Action Alternative, the Project Area would remain available for other management purposes, as approved by the BLM, and no surface disturbance associated with aggregate mining would be created within the Project Area. Ames, would, however, obtain aggregate material from another source, which would be from existing aggregate facilities located in Carlin, or Battle Mountain, Nevada.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

The purpose of this section of the EA is to describe the existing environment of the Project Area, as well as environmental consequences from implementation of the Proposed Action or the No Action Alternative. The Project Area has not been previously disturbed, except for the 0.01 acre of disturbance that occurred during Permit testing. This existing baseline condition of the Project Area serves as the basis for the analysis of the Proposed Action.

Supplemental Authorities that are subject to requirements specified by statute or Executive Order (EO) must be considered in all BLM environmental documents. The elements associated with the supplemental authorities listed in the NEPA Handbook (BLM 2008a, Appendix 1) and in the Nevada IM 2009-030, Change 1, are listed in Table 3.1-1. The table lists the elements and the determination whether the element is present in the Project Area and whether it would be affected by the Proposed Action.

Table 3.1-1: Supplemental Authorities and Rationale for Detailed Analysis

Supplemental Authority	Not Present	Present/ Not Affected	Present/ May Be Affected	Rationale
Air Quality			X	See sections 3.2.1 and 4.3.1.
Areas of Critical Environmental Concern (ACECs)	X			Element is not present and is not further addressed in this EA.
Cultural Resources		X		See Section 3.2.2.
Environmental Justice	X			Element is not present and is not further addressed in this EA.
Farm Lands (Prime or Unique)	X			Element is not present and is not further addressed in this EA.
Fish Habitat	X			Element is not present and is not further addressed in this EA.
Flood Plains	X			Element is not present and is not further addressed in this EA.
Forests and Rangelands (Healthy Forest Restoration Act [HFRA] projects only)	X			This project does not meet the requirements to qualify as an HFRA project.
Human Health and Safety (Herbicide Projects)	X			The Project may use herbicides to control noxious weeds; however, EO 13045, "Protection of Children from Environmental Health Risks and Safety Risks," would not apply to this Project as there would be no children on site.
Migratory Birds			X	See Sections 3.2.4 and 4.3.2.
Native American Traditional Values		X		See Section 3.2.5.
Noxious, Invasive, Non-native Species		X		See Section 3.2.6.
Threatened or Endangered Species (plants and animals)	X			Element is not present and is not further addressed in this EA.
Wastes, Hazardous and Solid		X		See Section 3.2.12.
Water Resources/Water Quality (Surface-Ground)		X		See Section 3.2.13.

Supplemental Authority	Not Present	Present/ Not Affected	Present/ May Be Affected	Rationale
Wetlands and Riparian Zones	X			Element is not present and is not further addressed in this EA.
Wild and Scenic Rivers	X			Element is not present and is not further addressed in this EA.
Wilderness/Wilderness Study Areas (WSAs)/Lands with Wilderness Characteristics	X			Wilderness or WSAs are not present within the Project Area or vicinity. The Project Area is substantially affected by human imprints as it is near an existing road, does not have opportunities for solitude or primitive recreation, and does not have an adequate size to contain land with wilderness characteristics. These elements are not further analyzed in this EA.

In addition to the supplemental authorities of the human environment, the BLM considers other resources and uses that occur on public lands and the issues that may result from the implementation of the Proposed Action or the No Action Alternative. Other resources or uses of the human environment that have been considered for this EA are listed in Table 3.1-2 below. Resources or uses that may be affected by the Proposed Action or No Action Alternative are further considered in the EA.

Table 3.1-2: Resources or Uses Other Than Supplemental Authorities

Other Resources or Uses	Not Present	Present/ Not Affected	Present/May Be Affected	Rationale
Minerals, Geology	X			Element is not present due to the small size of the Project and is not further analyzed in this EA.
Paleontology	X			Element is not present and is not further addressed in this EA.
Livestock Grazing		X		See Section 3.2.7.
Recreation	X			Element is not present and is not further addressed in this EA.
Land Use (including Access)		X		See Section 3.2.3.
Social Values and Economics	X			Ames would only employ ten workers for the aggregate operation. The workers would be relocated from other Ames facilities and operations. The impacts to Eureka County would be *de minimis*; therefore, this resource is not analyzed.
Special Status Species (Animals)			X	See Sections 3.2.9 and 4.3.4.
Special Status Species (Plants)	X			Element is not present and is not further addressed in this EA.
Soils			X	See Sections 3.2.8 and 4.3.3.

Other Resources or Uses	Not Present	Present/ Not Affected	Present/May Be Affected	Rationale
Transportation		X		See Section 3.2.10.
Vegetation			X	See Section 3.2.11 and 4.3.5.
Visual Resources		X		See Section 3.2.14
Wild Horses and Burros	X			The Project Area is not located in a Herd Management Area and the proposed operations area is fenced and will preclude any wild horse use; therefore, this resource is not further addressed in this EA.
Wildlife			X	See Sections 3.2.14 and 4.3.6.

3.2 Effects of the Proposed Action

3.2.1 Air and Atmospheric Values

3.2.1.1 Affected Environment

Air Quality

The Bureau of Air Pollution Control (BAPC) is the agency in the State of Nevada that is responsible for controlling sources of air pollution and assuring compliance with federal, state, and local environmental laws governing air quality and implementing the State Implementation Plan (SIP) (excluding Washoe and Clark Counties, which have their own SIPs). Included in a SIP are the State of Nevada air quality permit programs (Nevada Administrative Code [NAC] 445B.001 through 445B.3791, inclusive). Also part of a SIP is the Nevada State Ambient Air Quality Standards (NSAAQS). The NSAAQS are generally identical to the National Ambient Air Quality Standards (NAAQS), with the exception of the following: (a) an additional standard for carbon monoxide (CO) in areas with an elevation of excess of 5,000 feet above mean sea level (amsl), (b) a hydrogen sulfide standards, and (c) a violation of state standards occurs with the first annual exceedance of an ambient standard, while federal standards are generally not violated until the second annual exceedance. In addition to establishing the NSAAQS, the BAPC is responsible for permit and enforcement activities throughout the state of Nevada (except Clark and Washoe Counties).

The Project Area is within the Diamond Valley hydrographic basin of the Central Basin Region. The Diamond Valley basin is designated "Unclassifiable/Attainment" by the EPA Region 9 NAAQS for CO, nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$) and particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), sulfur dioxide (SO_2), the 8-hour ozone (O_3), and standard 1-hour O_3 (EPA 2009). Attainment status within the Project Area is determined by monitoring ambient levels of criteria pollutants. The attainment or unclassified designation means that no violations of NAAQS have been documented in the region.

Climate and Meteorology

The Project Area is located on the western side of Diamond Valley, approximately 20 miles northwest of Eureka, Nevada. The Project Area ranges in elevation between approximately 5,840 feet and 6,000 feet amsl, with an average elevation of approximately 5,920 feet amsl. The climate within the Project Area is typical of the desert environment of the Basin and Range Province. The climate is arid with wide fluctuations in seasonal temperatures. Winter temperatures are typically cool with periods of very cold weather and an average snowfall of approximately 58.9 inches per year. Summer temperatures are hot with annual precipitation averaging 11.83 inches per year. The average maximum and minimum temperatures are 62.4 and 27.1 degrees Fahrenheit (ºF), respectively (Western Regional Climate Center 2012).

Permitting

Ames would file a change of location application (COLA) with the BAPC to obtain coverage under their existing Class II permit. This permit would allow Ames to emit 22.27 pounds per day PM_{10} and 61.44 pounds per day $PM_{2.5}$. Ames has a minimum setback of 50 feet from the emission source to the nearest point of general public access. BAPC has modeled these emissions, and has determined that Ames complies with the NAAQS (BAPC 2012). BAPC does not consider NO_2 and SO_2 for a COLA. After 12 months of operation, Ames would need to obtain a permanent permit. Ames would apply for a Class II General Operating Permit.

Climate Change

Ongoing scientific research has identified the potential impacts of anthropogenic (man-made) greenhouse gas (GHG) emissions and changes in biological carbon sequestration due to land management activities on global climate. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide equivalent concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. The Intergovernmental Panel on Climate Change recently concluded that “warming of the climate system is unequivocal” and “most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations” (IPCC 2007).

Several activities contribute to the phenomena of climate change, including emissions of GHGs (especially carbon dioxide and methane) from fossil fuel development, large wildfires and activities using combustion engines; changes to the natural carbon cycle; and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs would have a sustained climatic impact over different temporal scales. For example, recent emissions of carbon dioxide can influence climate for 100 years.

Current emissions within the vicinity of the Project Area include vehicle combustion emissions and fugitive dust from travel on unimproved roads, ranch activities, mining and reclamation, and recreational activity. Emissions of all pollutants are generally expected to be low due to the extremely limited number of sources in the vicinity of the Project Area. Existing climate

prediction models are global in nature; therefore, they are not at the appropriate scale to estimate potential impacts of climate change within the Diamond Valley airshed in which the Project is located.

3.2.1.2 Environmental Consequences

Ames would comply with all permit stipulations from the BAPC, and the State of Nevada would monitor and enforce air quality standards during the life of the Project. As outlined in Section 2.1.16, fugitive dust would be controlled by water trucks and utilization of other BMPs. The growth media stockpile would be compacted to reduce the windblown dust from the pile. Also, the growth media stockpile would be temporarily seeded with a BLM approved interim seed mix. Speed limits on access roads would be observed and travel on roads within the Project Area would be conducted at a maximum speed of 20 miles per hour. Reclamation of surface disturbance would gradually eliminate any potential for long-term impacts to air resources. Any potential temporary impacts to air resources would cease once activities and reclamation are completed and would not exceed NAAQS or the NSAAQS.

3.2.2 Cultural Resources

3.2.2.1 Affected Environment

A Class III cultural resource inventory was conducted in August 2012 for the area of potential effect (APE), which was 44 acres (Mesa Field Services 2012a). A subsequent inventory was conducted October 1, 2012, for an additional 25 acres (Mesa Field Services 2012b). The inventories recorded one archaeological site (a historic road), and two isolated occurrences: a historic mining claim marker and half of an oxen shoe, within the APE boundary. The historic road was determined ineligible for listing on the National Register of Historic Places (NRHP) (Mesa Field Services 2012a). There is one previously recorded eligible site within a half mile of the Project Area: Pony Express Route (CrNV-63-482) (Mesa Field Services 2012a). Ten additional sites were previously recorded within one mile of the Project Area, but there is no data on eligibility (Mesa Field Services 2012a).

Subsequently, a Class III inventory was conducted for the proposed temporary aboveground waterline in November 2012. The inventory resulted in the documentation of two historic sites: one prehistoric site and one isolated artifact, and the previously recorded Sulphur Springs Station of the Overland Stage Route (CrNV-63-2143), which is recommended eligible for inclusion in the NRHP. The other two sites include a historic debris scatter, historic cap can, and two chert flake isolated scatters. These sites are not recommended for eligible for inclusion in the NRHP (Mesa Field Services 2012c). The waterline would bisect CrNV-63-2143. The APE, however, has been heavily disturbed, and the Sulphur Springs Station has been extensively disturbed (Mesa Field Services 2012c).

Pony Express Trail

The Pony Express Route (CrNV-63-482), a previously recorded eligible site, is located within a half mile of the Project Area (Mesa Field Services 2012a). The Pony Express Trail is considered a historic property, and Section 106 of the NHPA and its implementing regulations under 36 CFR 800, require all federal agencies to consider effects of federal actions on cultural resources eligible for or listed in the NRHP. Further management direction comes from BLM

Manual 6280, *Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (Public)* (BLM 2012e).

3.2.2.2 Environmental Consequences

CrNV-63-2143 has been heavily impacted by the construction of Saddler Brown Road and Eureka County's continued maintenance of this ditch. Routine maintenance occurs to Saddler Brown Road and the drainage ditch. The aboveground waterline would be placed along the existing drainage ditch and removed at the end of the life of the Project; therefore, the aboveground waterline would not cause any additional impacts to this site.

The one archaeological site located within the APE is a historical road segment that is categorically not eligible for inclusion in the NRHP. Furthermore, the section of the road located alongside the APE should be considered a non-contributing element towards the historical integrity of the historical road. Project activities would not occur within the site; therefore, there would be no adverse effects to cultural resources as a result of the proposed Project.

As outlined in the environmental protection measures in Section 2.1.16, all unevaluated cultural sites would be avoided or treated to ensure compliance with Section 106 of the National Historic Preservation Act. Furthermore, Ames would notify the BLM and cease operations upon the discovery of any archaeological artifacts or sites.

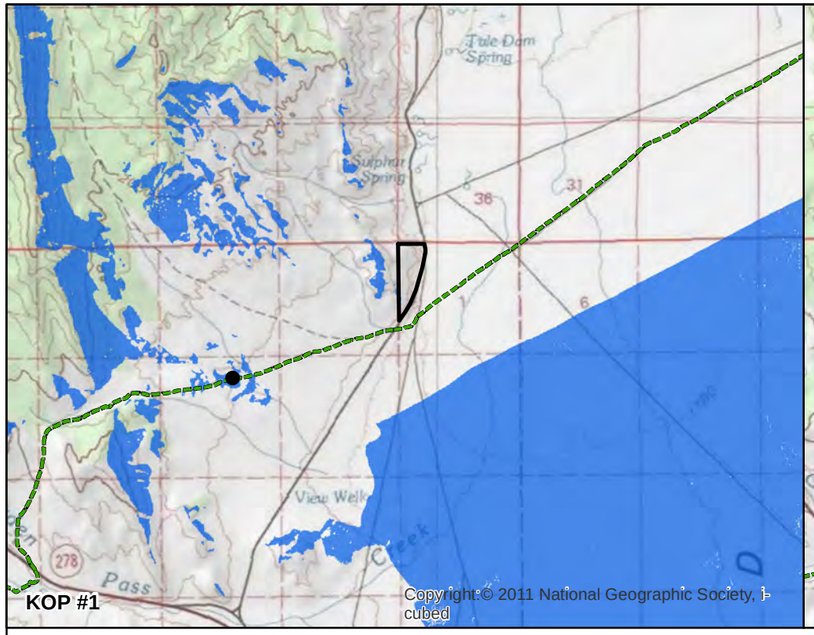
Pony Express Trail

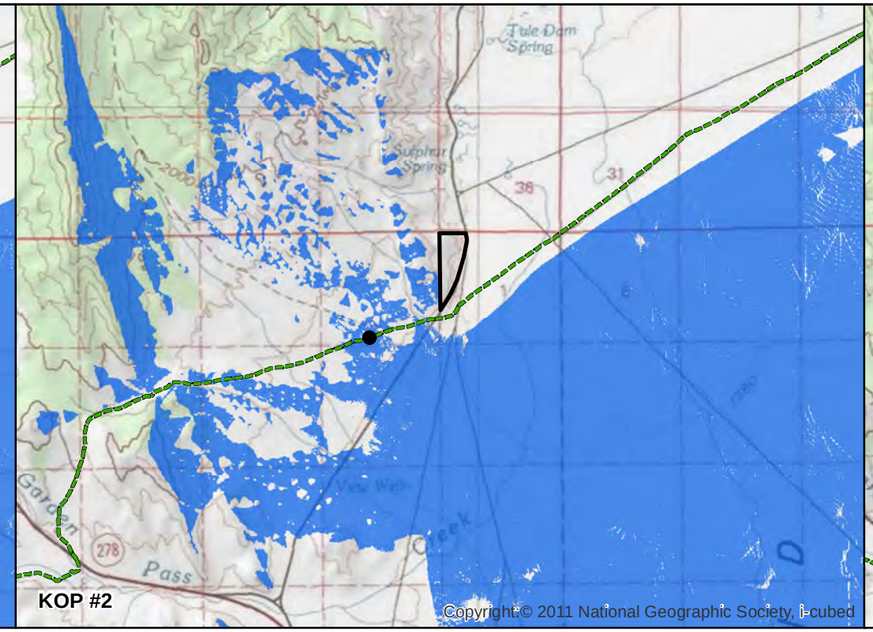
The Pony Express Trail is outside the Project Area and no Project-related disturbance would occur to the trail. Visual impacts, however, would occur. Five Key Observation Points (KOP) were selected along the Pony Express Trail correlating to the visibility of the Project Area from these locations (Figure 3.2.2) to identify the visual impacts. The Project Area is not visible from KOP # 1 and KOP # 2. Only a small fraction of the Project Area is visible from KOP # 3. A large percentage of the Project Area is visible from KOP # 4 and KOP # 5.

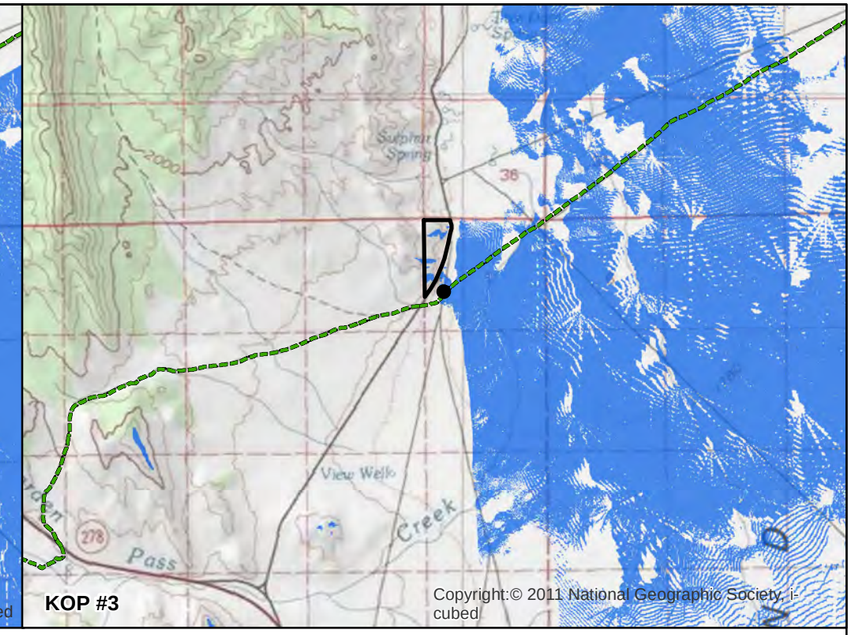
Table 3.2-1: Pony Express Trail KOP Visibility

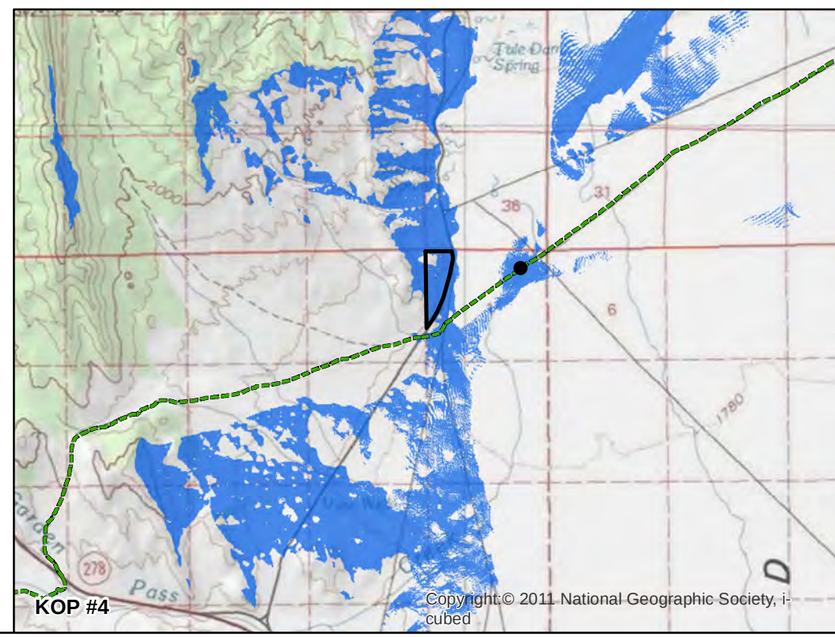
KOP	Miles to Project Area	Project Area Visibility from KOP
# 1	1.66	No
# 2	0.90	No
# 3	0.31	Partially
# 4	0.60	Majority
# 5	1.47	Majority

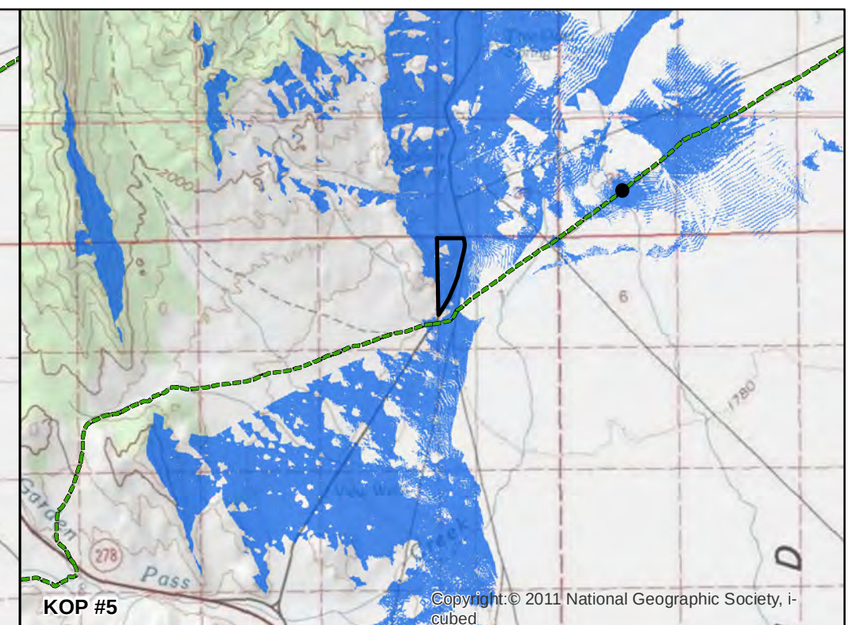
The Project would result in temporary short-term indirect impacts to the Pony Express Trail. As detailed in Section 2.1.16, environmental protection measures, Ames would provide photodocumentation to capture the setting and feel of the Pony Express Trail adjacent to the Project Area that would be visually impacted. This would occur before Project activities and throughout the life of the Project. This mitigation is designed to document the user experience of those segments of the trail that would be impacted by the Project and enhance the understanding of unevaluated segments of the trail.











Explanation

- Project Area
- Key Observation Point
- Pony Express Trail

Viewshed

- Not Visible
- Visible

0 0.5 1 2 Miles

BATTLE MOUNTAIN DISTRICT OFFICE
Mount Lewis Field Office
50 Bastian Road
Battle Mountain, NV 89820

N

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

BUREAU OF LAND MANAGEMENT

SADDLER BROWN PIT

Pony Express Trail KOPs and Viewshed

Figure 3.2.2

04/03/2013

3.2.3 Land Use and Access

3.2.3.1 Affected Environment

Public lands administered by the BLM are managed for multiple uses including range, forestry, watershed, mineral extraction, recreation, wilderness, and wildlife habitat. The current land use of the Project Area includes grazing and wildlife habitat. The Project Area is accessed via Saddler Brown Road. This road crosses BLM-administered land, but BLM has not granted a ROW to Eureka County, private citizen, or entity. The road is maintained by Eureka County and is considered a public road by Eureka County. The Project Area is traversed by one public utility ROW (BLM 2012a) and is shown in Table 3.2-1.

Table 3.2-2: Right-of-Way within the Project Area

Serial Number	Holder	Width (in feet)
NVN-074974	Nevada Bell	20

3.2.3.2 Environmental Consequences

A total of 61 acres of the Project Area would be fenced and would be inaccessible to the public over the life of the Project. A total of 1.2 acres of the ROW would be temporarily impacted by the waterline needed to support the aggregate operations. Activities from the public could occur in the vicinity of the waterline but access would be restricted due to the aboveground nature of the waterline. The existing ROW NVN-074974 is 20 feet in width and traverses the southern portion of the Project Area. Ames would avoid impacts to this existing ROW by not disturbing the area within this ROW. The amount of land use impacted is approximately 62.2 acres and there are BLM-administered lands surrounding the Project Area that are available for other uses. The Project life is a maximum of five years, and upon completion of mining activities, the land would be reclaimed and available for recreation, grazing, and wildlife habitat.

3.2.4 Migratory Birds

3.2.4.1 Affected Environment

Baseline surveys for wildlife species, including migratory birds and raptors, were conducted by Enviroscientists, Inc. (Enviroscientists) in 2012 for the Project Area and the ROW (Enviroscientists 2012). The surveys were conducted outside of the avian breeding season, and they do not serve to indicate the presence of migratory birds and raptors within the Project Area or the use of the Project Area by migratory species. The rough-legged hawk (*Buteo lagopus*) and the common raven (*Corvus corax*) were the only migratory species observed within the Project Area during the baseline surveys.

In addition, the NDOW, the Nevada Natural Heritage Program (NNHP), and the United States Fish and Wildlife Service (USFWS) were contacted to request information regarding wildlife use and nesting raptors in the area. In a response letter provided on October 9, 2012, for the proposed Project and ROW, the NDOW identified the following raptors as being known to reside in the vicinity (four-mile buffer area) of the Project Area: American kestrel (*Falco sparverius*); barn owl (*Tyto alba*); western burrowing owl (*Athene cunicularia*); Cooper's hawk (*Accipiter cooperii*); ferruginous hawk (*Buteo regalis*); golden eagle (*Aquila chrysaetos*); great horned owl

(*Bubo virginianus*); long-eared owl (*Asio otus*); merlin (*Falco columbarius*); northern goshawk (*Accipiter gentilis*); northern harrier (*Circus cyaneus*); northern saw-whet owl (*Aegolius acadicus*); osprey (*Pandion haliaetus*); peregrine falcon (*Falco peregrinus*); prairie falcon (*Falco mexicanus*); red-tailed hawk (*Buteo jamaicensis*); rough-legged hawk (*Buteo lagopus*); sharp-shinned hawk (*Accipiter striatus*); short-eared owl (*Asio flammeus*); Swainson's hawk (*Buteo swainsoni*); turkey vulture (*Cathartes aura*); and Western screech-owl (*Megascops kennicottii*).

In addition, bald eagle, ferruginous hawk, golden eagle, and rough-legged hawk have been directly observed in the vicinity (four-mile buffer area) of the Project Area (NDOW 2012a). Eight raptor nest sites (ferruginous hawk) have been identified by the NDOW in the vicinity of the Project Area. The NDOW reported no known bald eagle or golden eagle nests occurring within ten miles of the Project Area (NDOW 2012a). However, two golden eagle nests have been identified within five miles of the Project Area (SRK 2007; Enviroscientists 2012). Golden eagles are discussed in more detail in Section 3.2.9.

Migratory bird species that have additional protection or management attention are discussed in detail in Section 3.2.9. These species include the greater sage-grouse, ferruginous hawk, loggerhead shrike (*Lanius ludovicianus*), Brewer's sparrow (*Spizella breweri*), Swainson's hawk, western burrowing owl, long-eared owl, short-eared owl, northern goshawk, and the peregrine falcon.

3.2.4.2 Environmental Consequences

The Proposed Action would create surface disturbance and associated removal of vegetation, which could potentially result in the destruction of active nests or disturb the breeding behavior of migratory bird species. As outlined in the environmental protection measures in Section 2.1.16, Ames has committed to contracting a qualified biologist to conduct nest surveys prior to any surface disturbance activities associated with aggregate operations during the avian breeding season. This measure would ensure that no direct impacts to migratory birds are likely to occur under the Proposed Action.

A maximum of 62.2 acres of migratory bird and raptor habitat would be disturbed over the five-year Project life, as a result of implementation of the Proposed Action. Approximately 1.2 acres of disturbance would occur with the installation of the waterline. Disturbance associated with the waterline would be limited to crushed vegetation resulting from overland travel; therefore, reclamation would not be needed. In addition, the area proposed for the waterline route has been previously disturbed. Impacts from the installation of the waterline; therefore, would be temporary and minimal.

Vegetation removal and ground disturbance would result in a reduction of breeding habitat for migratory birds in the Project Area. The Proposed Action would result in a net loss (62.2 acres) of potential habitat but would not contribute to a loss of viability for any migratory bird species because extensive similar habitat is available adjacent to the Project Area. It is unlikely that implementing the Proposed Action would result in a decline in local or regional migratory bird populations. In addition, reclamation and revegetation of the surface disturbance associated with the Proposed Action would reduce any loss of habitat in the long term.

3.2.5 Native American Traditional Values

3.2.5.1 Affected Environment

Located within the traditional territory of the Western Shoshone, the BLM Mount Lewis Field Office (MLFO) administrative boundary contains spiritual, traditional, and cultural resources, and sites to engage in social practices that aid in maintaining and strengthening the social, cultural, and spiritual integrity of the Tribes. Recognized Tribes with known interests near the Project Area and the ROW include: the South Fork Band of Te-Moak Tribe of Western Shoshone, the Battle Mountain Band Council of the Te-Moak Tribe of Western Shoshone, and the Elko Band of the Te-Moak Tribe of Western Shoshone.

Social activities of Native Americans continue to define places of cultural importance across lands currently administered by the BLM. Some Western Shoshone maintain cultural, spiritual, and traditional activities, visit their sacred sites, hunt game, and gather available medicinal and edible plants. Through oral history (the practice of handing down knowledge from the elders to the younger generations), some Western Shoshone continue to maintain a world view similar to that of their ancestors.

Cultural, traditional, and spiritual sites and activities of importance to Tribes include, but are not limited to the following:

- Existing animal traps;
- Certain mountain tops used for vision questing and prayer;
- Medicinal and edible plant gathering locations;
- Prehistoric and historic village sites and gravesites;
- Sites associated with creation stories;
- Hot and cold springs;
- Collection of materials used for basketry and cradle board making;
- Locations of stone tools such as points and grinding stones (mono and matate);
- Chert and obsidian quarries;
- Hunting sites;
- Sweat lodge locations;
- Locations of pine nut ceremonies, traditional gathering, and camping;
- Rock collecting for use in offerings and medicine gathering;
- Tribally identified Traditional Cultural Properties (TCPs);
- TCPs found eligible to the NRHP;
- Rock shelters;
- Rock art locations;
- Lands or resources that are near, within, or bordering current reservation boundaries; and
- Actions that conflict with tribal land acquisition efforts.

In accordance with the National Historic Preservation Act of 1966 (Public Law [P.L.] 89-665, 80 Sta. 915; 16 U.S.C. 470), the CEQ's NEPA regulations (40 CFR Parts 1500-1508), the FLPMA (P.L. 94-579), the American Indian Religious Freedom Act of 1978 (P.L. 95-341), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (P.L. 101-601, 104 Stat. 3048: 25 U.S.C. 3001), EO 13007 "Indian Sacred Sites" (May 24, 1996), and the

Department of the Interior Policy on Consultation with Indian Tribes, the BLM must provide affected Tribes an opportunity to comment and consult on the proposed Project. The BLM must attempt to limit, reduce, or possibly eliminate any negative impacts to Native American traditional/cultural/spiritual sites, activities, and resources.

On November 29, 2012, consultation initiation/invitation letters were mailed for the Project from the BLM MLFO to the following Tribes: the South Fork Band of Te-Moak Tribe of Western Shoshone; Battle Mountain Band Council of the Te-Moak Tribe of Western Shoshone; and the Elko Band of Te-Moak Tribe of Western Shoshone. At the time this EA was prepared, no issues have been identified, but the BLM continues to provide opportunities for participation and input.

3.2.5.2 Environmental Consequences

Various Tribes and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and religion as they consider the landscape as sacred and as a provider. Various locations throughout the BLM MLFO administrative area host certain traditional, spiritual, and cultural use activities today, as in the past. TCPs, designated by the Tribes, are not known to exist within the vicinity of the Project Area. The BLM continues to solicit input from local tribal entities.

For this Proposed Action, the BLM has committed to avoiding those eligible and unevaluated archaeological sites discovered and documented during cultural resources inventories. The BLM is continuing to coordinate with the Tribes to identify any other sites or artifacts, or cultural, traditional, and spiritual use resources and activities that might experience an impact.

If any TCPs, tribal resources, sacred sites, etc. are identified within or in close proximity to the Project or ROW boundary, a protective “buffer zone” may be acceptable, if doing so satisfies the needs of the BLM, the proponent, and affected Tribe. The size of any “buffer zone” would be determined through coordination and communication between all participating entities.

The BLM Cultural Resource Specialists, accompanied by designated tribal observers, may periodically visit identified cultural resources sites within or near the mining activity boundary. Native American Consultation and monitoring by the BLM and Tribal Cultural Resource Specialists may occur throughout the life of the Project to ensure that any identified traditional cultural properties are not deteriorating.

If a subsequent development plan or amendment to the Plan is submitted to the BLM, as a result of an approval of this specific mining proposal, the BLM would again initiate consultation with the local Tribes and utilize any data collected during this mining proposal.

During the Project's activities, if any cultural properties, items, or artifacts (i.e., stone tools, projectile points, etc.) are encountered, it must be stressed to those involved in the proposed Project activities that such items are not to be collected. The environmental protection measure in Section 2.1.16 states that all activities would be halted immediately in the event of a discovery of a cultural resource. Cultural and archaeological resources are protected under the Archaeological Resources Protection Act (16 USC 470ii) and the FLPMA.

Though the possibility of disturbing Native American gravesites within most project areas is extremely low, inadvertent discovery procedures must be noted. Under the NAGPRA, section

(3)(d)(1), the discovering individual must notify the authorized officer in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease, and the materials are to be protected until the land manager can respond to the situation.

3.2.6 Noxious Weeds, Invasive, Non-native Species

3.2.6.1 Affected Environment

Noxious weeds, invasive and non-native species are species that are highly competitive, highly aggressive, and spread easily. The BLM defines a noxious weed as “A plant that interferes with management objectives for a given area of land at a given point of time.” (Nevada Revised Statute [NRS] 555). The BLM’s policy relating to the management and coordination of noxious weed activities is set forth in the BLM Manual 9015 – Integrated Weed Management (BLM 1992). The Battle Mountain District (BMD) recognizes the current noxious weed list designated by the State of Nevada Department of Agriculture (NDOA) statute, found in the NAC, Chapter 555, Section 010 (NAC 555.010). An "invasive species" is defined as a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (EO 13112, signed February 3, 1999).

The following invasive, non-native species were observed within the Project Area and the ROW: pale madwort (*Allysum desertorum*), halogeton (*Halogeton glomeratus*), tansy mustard (*Descurainia pinnata*), and cheatgrass (*Bromus tectorum*). No large populations or monocultures of these species were noted in the Project Area or the ROW. No noxious weeds were observed within the Project Area or ROW during the October 2012 biological survey (Enviroscientists 2012). The BLM noxious weeds Geographical Information System (GIS) geodatabase, however, contains records of hoary cress (*Cardaria draba*) along Saddler Brown Road from SR 278 to four miles north of the Project Area (BLM 2012c).

3.2.6.2 Environmental Consequences

New surface disturbance of 61 acres within the Project Area and 1.2 acres within the waterline route on both public and private land, as a result of the implementation of the Proposed Action, would increase the potential for the spread and establishment of noxious weeds, invasive and non-native species. These impacts would be mitigated based on implementation of the environmental protection measures outlined in Section 2.1.16.

3.2.7 Livestock Grazing

3.2.7.1 Affected Environment

The Project Area and the ROW are located within the Romano grazing allotment (#10047). The Romano Allotment encompasses approximately 76,070 acres of public rangeland. Sixty-one acres of the allotment are within the fenced Project Area and 1.2 acres are associated with the water pipeline route on both public (0.8 acre) and private land (0.4 acre) for a total of 62.2 acres of land disturbed within the allotment. All lands within the Romano allotment are located on public lands. The authorized permitted use for the entire allotment is 2,887 animal unit months (AUMs). An AUM represents the amount of forage required to support one cow and her calf, or the equivalent in horses, sheep, or other livestock, for one month. There are 26.3 acres per active AUM.

3.2.7.2 Environmental Consequences

The Project Area and the ROW impacts 61.8 acres of public land within the allotment. The Project would impact a maximum of 2 AUMs, approximately 0.081 percent of the active AUMs.

3.2.8 Soils

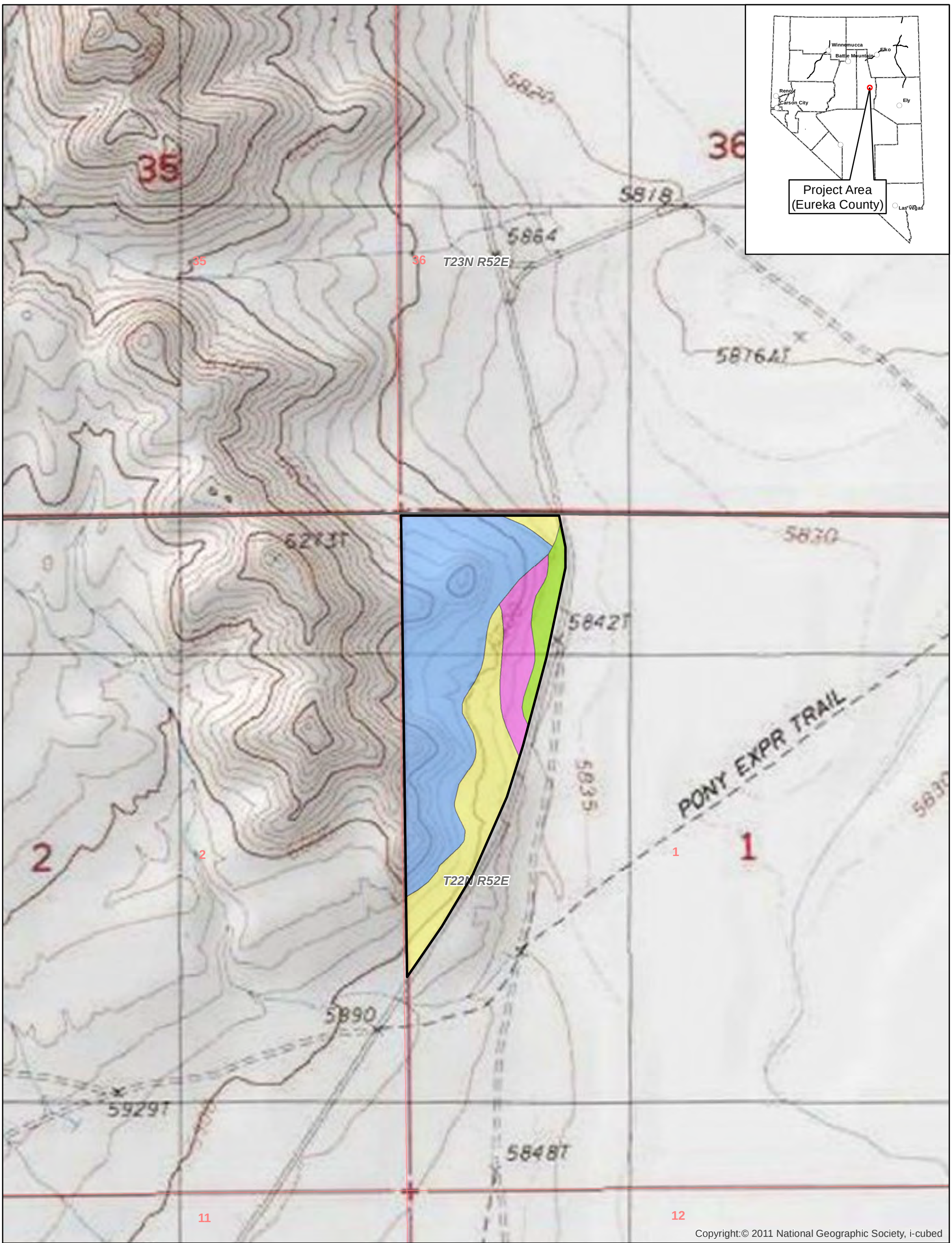
3.2.8.1 Affected Environment

Information regarding soils within the Project Area was obtained from the United States Department of Agriculture National Resources Conservation Service (NRCS). The soils within the Project Area consist of Hymas-Ansping (501), Hayeston-Silverado association (HE), Shipley silt loam, zero to two percent slopes (ShA) and Shipley silt loam moderately saline-alkai (SIA). These soils are within the aggregate mine site. Since land disturbance within the ROW is limited to overland travel, soils in this area would not be affected (Figure 3.2.8).

The Hymas-Ansping association comprises the majority of the aggregate mining area, approximately 59 percent. The Hayeston-Silverado association comprises approximately 26 percent of the site. The ShA and SIA comprise approximately ten and six percent respectively. The Hymas soils (55 percent of the Hymas-Ansping association) derive from alluvium and colluviums from limestone and consist of cobbly loam and very cobbly loam approximately three to 12 inches deep above bedrock. Ansping soils (30 percent of the Hymas-Ansping association) derive from alluvium and colluviums from limestone and consist of loam or very gravelly above cemented materials at least 43 inches deep. Both of these soil series occur on hills with slopes between 15 and 30 percent and are well drained (NRCS 2012a).

The Hayeston-Silverado association is 50 percent Hayeston soils and 30 percent Silverado soils. The Hayeston and Silverado soils are found in flat areas, with slopes two to four percent, and are well drained. The Hayeston series are derived from limestone and dolomite and some basalt. Hayeston soils consist of gravelly fine sandy loam four to 27 inches above stratified very gravelly loamy sand to extremely gravelly sand. Silverado soils consist of sandy loam two to 13 inches above gravelly sandy loam, which is 13 to 32 inches above very gravelly coarse sand (NRCS 2012a and NRCS 2012b).

Shipley silt loam is found in very flat areas, with slopes of zero to two percent and is somewhat poorly drained to well drained (NRCS 2012a and NRCS 2012b). Soil associations within the Project Area are shown on Figure 3.2.10 and listed in Table 3.2-2.



Explanation

Project Area

NRCS Soil Survey NV621

- 501, Hymas-Ansping association
- HE, Hayeston-Silverado association
- ShA, Shipley silt loam, 0 to 2 percent slopes
- SlA, Shipley silt loam, moderaterly saline-alkali, 0 to 2 percent slopes

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SADDLER BROWN PIT

Soil Units Map

Figure 3.2.8

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Table 3.2-3: Soil Associations

Association	Soil Series	Depth to Bedrock	Landscape position/ % Slope	Profile Soil Texture	Permeability	Erosion Hazard by Water	Erosion Hazard by Wind
Hymas-Ansping (501)	Hymas	Ten to 20 inches to lithic bedrock	Upper Slopes of mountains; 15 to 30 percent	Cobbly loam, very cobbly loam, bedrock	Moderate	Moderate	Low
	Ansping	39 to 55 inches to duripan	Lower side slope and foot slopes of mountains; 15 to 30 percent	Loam, very gravelly loam, cemented material	Moderate	Moderate	Low
Hayeston-Silverado (HE)	Hayeston	N/A	Crests and shoulders of ballenas 2 to 4%	Gravelly fine sandy loam, stratified very gravelly loamy sand to extremely gravelly sand	High	Low	Low
	Silverado	N/A	Broad fan skirts; 2 to 4%	Sandy loam, gravelly sandy loam, very gravelly coarse sand	Moderate to high	Low	Low
Shipley silt loam (ShA)	Shipley Silt Loam	More than 80 inches	Alluvial fans, lake terraces	Silt loam, very fine sandy loam	Moderate	Low	Low
Shipley silt loam (SIa)	Shipley Silt Loam	More than 80 inches	Alluvia fans, lake terraces	Silt loam, very fine sandy loam	Moderate	Low	Low

Wind erosion hazard is low for all soils classifications. Erosion hazard from water ranges from low to moderate.

3.2.8.2 Environmental Consequences

A maximum of 61 acres of soils would be disturbed over the five-year Project life as a result of implementation of the Proposed Action. Of the proposed disturbance acreage, 0.01 acre was disturbed by testing Permit activity.

Soil erosion potential for disturbance within the Project Area would be higher than the natural environment. The construction of sloped facilities, such as stockpiles, would increase the erodibility hazard of soils until the completion of stabilization and revegetation activities during reclamation. Interim stabilization, including seeding, would be conducted to reduce erosion. The construction of additional features and expansion of existing features, including the haul road, corridors, sediment control structures, and other ancillary facilities would also increase the

erosion potential of soils within the Project Area. Final reclamation activities under the Proposed Action would include the stabilization and revegetation of all disturbed areas within the Project Area.

Potential impacts to the disturbed and reclaimed soils would be reduced by the environmental protection measure outlined in Section 2.1.16 requiring the use of BMPs to limit erosion and to reduce sediment runoff from Project facilities and disturbed areas during construction and operations. Growth media that represents the top layer of reclaimed soils would be salvaged during Project activities, stored and reused during reclamation activities. None of the proposed facilities would become permanent topographical features. Erosion hazard from wind is low for all soil classifications, and erosion hazard from water is low to moderate. Therefore, implementation of the Proposed Action is not anticipated to result in substantial impacts to soil loss from erosion.

3.2.9 Special Status Species (Plants and Animals)

The BLM's policy for management of special status species is in the BLM Manual Section 6840. Special status species include the following:

- Federally Threatened or Endangered Species: Any species that the USFWS has listed as an endangered or threatened species under the Endangered Species Act (ESA) throughout all or a significant portion of its range.

- Proposed Threatened or Endangered Species: Any species that the USFWS has proposed for listing as a federally endangered or threatened species under the ESA.

- Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the ESA.

- BLM Sensitive Species (2011 List): 1) Species that are currently under status review by the USFWS; 2) Species whose numbers are declining so rapidly that federal listing may become necessary; 3) Species with typically small and widely dispersed populations; or 4) Species that inhabit ecological refugia or other specialized or unique habitats.

- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

Nevada BLM policy is to provide State of Nevada listed species and Nevada BLM sensitive species with the same level of protection as is provided to candidate species in BLM Manual 6840.06C. Per the wording in Table IIa in BLM Information Bulletin No. NV-2003-097, Nevada protected animals that meet BLM's 6840 policy definition are those species of animals occurring on BLM-administered lands in Nevada that are: 1) 'protected' under authority of the NAC; 2) have been determined to meet BLM's policy definition of "listing by a state in a category implying potential endangerment or extinction;" and 3) are not already included as federally listed, proposed, or candidate species.

Baseline surveys for biological resources including special status species wildlife and plant species were conducted by Enviroscientists in October 2012 for the Project Area and ROW (Enviroscientists 2012).

To further support the preparation of this EA, the USFWS, the NNHP, and the NDOW were contacted to obtain a list of threatened and endangered and sensitive species that have the potential to occur within the Project Area and ROW. The special status wildlife and plant species that have potential to occur within the Project Area and ROW are listed in Appendix A and are further discussed below.

3.2.9.1 Affected Environment

Federally Listed Species

The USFWS response letter, dated October 19, 2012, reported there were no listed or proposed species occurring within the Project Area and ROW. The USFWS, however, did state the greater sage-grouse, a candidate species, may occur in the Project Area (USFWS 2012). Greater sage-grouse is discussed below in the BLM Sensitive Species section.

The NNHP response letter, dated October 8, 2012, reported in a five kilometer radius search surrounding the townships and ranges of the Project Area, that there was no endangered, threatened, candidate, and/or at risk plant and animal taxa recorded within the Project Area or ROW. NNHP did report that habitat may be available for the long-eared myotis (*Myotis evotis*), a BLM Sensitive Species (NNHP 2012).

The NDOW response letter, dated October 9, 2012, did not identify any listed or proposed species occurring within a four-mile radius around the Project Area (NDOW 2012a).

BLM Sensitive Species

In addition to federally listed species (i.e., protected by the ESA) discussed above, the BLM also protects special status species by policy (BLM 2008b). The list includes certain species designated by the State of Nevada, as well as species designated as “sensitive” by the Nevada BLM State Director.

Various BLM sensitive raptors, birds, small mammals, and bats have the potential to occur within the Project Area and ROW area, as discussed below. No sensitive plants were identified as being within the Project Area or ROW area or having the potential to occur.

Greater Sage-Grouse

Greater sage-grouse is a candidate for listing under the ESA, and on March 23, 2010, the USFWS’s 12-month status review of the species determined that the species warrants the protection under the ESA. The listing of the greater sage-grouse at this time is precluded by the need to address higher priority species, and the State of Nevada and BLM are responsible for management of the species.

Greater sage-grouse, an upland game bird, is largely dependent on sagebrush for nesting and brood rearing and feed almost exclusively on sagebrush leaves during the winter. Greater sage-

grouse are found in 11 western states and two Canadian provinces. In Nevada, the greater sage-grouse habitat includes sagebrush, montane shrubland, and wet meadow. The greatest threats to the greater sage-grouse in Nevada are loss of habitat due to fire and piñon-juniper encroachment and a decline in habitat quality due to invasive plants and inadequate grazing management systems, which can particularly impact brood-rearing meadows (GBBO 2010). In 2010, the population in Nevada was estimated to be 68,000-88,000, which represented approximately 50 percent of the global population (GBBO 2010). Greater sage-grouse have specific habitat requirements to carry out their life cycle functions. Greater sage-grouse breeding habitats are defined as those where lek attendance, nesting, and early brood-rearing occur (Connelly et al. 2004).

Early spring habitat or breeding sites called “leks” are usually situated on ridge tops or grassy areas surrounded by a substantial brush and herbaceous component (Schroeder et al. 1999). In early spring, males gather in leks where they strut to attract females. Leks are a traditional courtship display and mating areas attended by greater sage-grouse in or adjacent to sagebrush dominated nesting habitat (Connelly et al. 2004). Leks have less herbaceous and shrub cover than surrounding areas. Spring is a period when birds are changing diets from sagebrush to forbs, as forbs become available (Connelly et al. 2004).

Greater sage-grouse nesting habitat is often a broad area within or adjacent to winter range or between winter and summer range (Connelly et al. 2004). Late spring habitat or nesting sites are located in thick cover in sagebrush habitat beneath sagebrush or other shrubs. Nests are situated on the ground in a shallow depression with an average distance between nest sites and nearest leks of 0.7 mile to 3.9 miles; however, females may move greater than 12.4 miles from a lek to nest (NatureServe 2012). Selection of specific habitat features, such as sagebrush height and canopy cover within a landscape by nesting greater sage-grouse has been extensively documented. It is suggested that nesting habitat within sagebrush stands should contain between 15 and 25 percent canopy cover. Females preferentially selected areas with sagebrush 36 to 63.5 centimeters tall and with canopies 15 to 50 percent for nesting in Utah (Connelly et al. 2004).

Early brood-rearing habitat is defined as sagebrush habitat within the vicinity of the nest used by greater sage-grouse hens with chicks up to three weeks following hatch. Early brood rearing habitat may be relatively open with approximately 14 percent canopy cover of sagebrush and abundant forbs, which attract insects to feed young chicks. Denser sagebrush is often on the periphery to provide shelter from predators. Early brood-rearing locations had less live sagebrush (15.8 vs. 20.2 percent) and total shrub (19.3 vs. 24.1 percent) canopy cover, more residual grass (2.9 vs. 2.0 percent), total forb (9.3 vs. 6.6 percent), and total herbaceous (37.3 vs. 29.4 percent) cover, relative to available habitats (Connelly et al. 2004). Late brood-rearing habitats are those habitats used by greater sage-grouse following desiccation of herbaceous vegetation in sagebrush uplands (Connelly et al. 2004). Late brood rearing habitat includes sagebrush vegetation with plants that are more succulent and have a perennial water source nearby such as meadows with streams (NatureServe 2010).

In fall and winter months the birds shelter under mature sagebrush. In the winter, males and females separate into different groups. Winter habitats of greater sage-grouse generally are dominated by big sagebrush; however, low sagebrush and silver sagebrush communities also are used during winter (Schroeder et al. 1999). The canopy cover of sagebrush in both arid and

mesic sites ranges from ten to 30 percent in wintering habitat and greater sage-grouse use shrub heights of 25-35 centimeters above the snow. They increase the proportion of sagebrush in their diet during the winter and rely on sagebrush exposure above the snow (Connelly et al. 2004).

The BLM has issued two IMs for the protection of greater sage-grouse, IM 2012-043 "Interim Management Policies and Procedures" and IM 2012-044 "Land Use Planning Strategy." These IMs provide the BLM with interim policies, procedures, and conservation measures to be applied to ongoing and proposed authorizations that affect greater sage-grouse. The IMs incorporate the following principles:

- Protection of unfragmented habitats;
- Minimization of habitat loss and fragmentation; and
- Management of habitats to maintain, enhance, or restore conditions that meet greater sage-grouse life history needs.

To provide guidance to field offices about how to promote these principles, IM 2012-043 transmits policies and procedures that apply to ongoing and proposed BLM actions (such as Salable Minerals) within PPH and Preliminary General Habitat (PGH). PPH comprises areas that have been identified as having the highest conservation value, and PGH comprises areas of occupied seasonal or year-round habitat outside of priority habitat. In Nevada, these areas have been identified and mapped in coordination with the NDOW.

For Salable Minerals (described in IM 2012-043), the BLM is instructed to take actions such as designing infrastructure, timing operations, or reclaiming disturbance that would avoid or minimize direct and indirect effects to greater sage-grouse populations and its habitat. The BLM is also directed to coordinate with respective state wildlife agencies to determine if the proposed actions would likely have more than minor adverse effects to greater sage-grouse and their habitat. In cases where the action would likely have more than minor adverse effects, the BLM should cooperate with the project proponents to develop and consider appropriate off-site mitigation that would avoid or minimize habitat and population-level effects. The proposed authorization decision must also be reviewed by the appropriate BLM State Director and Nevada State Wildlife Agency Director or delegates.

Greater sage-grouse near the Project Area were included in a long-term population ecology study that encompassed portions of the western Diamond and Three Bars Population Management Unit (PMU). This study was designed to investigate the response of greater sage-grouse to the Falcon-Gondor transmission line in central Nevada, and some general results are available in recent manuscripts (see Atamian et al. 2010; Blomberg et al. 2012, Nonne et al. 2013). Specific information relevant to greater sage-grouse populations near the Project Area is available, including lek status and location, nesting success, habitat use and conditions, and potential threats.

The entire Project Area is within habitat categorized as PPH. This habitat is considered PPH mainly because greater sage-grouse use the area for breeding and nesting (Blomberg 2013a and 2013b and Nonne 2013). Blomberg reported that greater sage-grouse used the area in late winter through the nesting season, but the area is not believed to be used by greater sage-grouse for brood-rearing, summer, fall, or early winter habitat. Following the nesting season, most birds either moved in the Roberts Mountains or north to irrigated fields in the Diamond Valley where

they spent summer and fall. Riparian areas within the Roberts Mountains were identified as important brood-rearing habitat for greater sage-grouse from the Pony Express leks (Blomberg 2013a and 2013b).

There are two known lek sites within the vicinity of the Project Area. The Pony Express lek is 1.3 miles from the Project Area, and the Pony Express 2 lek is 0.63 mile from the Project Area and 158 feet from Saddler Brown Road. NDOW reported that the Pony Express 2 lek was discovered in 2011 and was also active in 2012 (see Table 3.3). The Pony Express lek is considered as unknown because no birds were located at the lek in 2010, and no surveys were conducted in 2011 and 2012. However, this lek was active for several years prior to 2010 (NDOW 2012b and NDOW 2012c; Table 3.2-4). According to Mike Podborny (NDOW biologist in Eureka, NV), it is possible that the Pony Express lek was abandoned in 2011, and greater sage-grouse shifted their lek location to the Pony Express 2 lek site (Podborny 2012).

Over the course of the Falcon-Gondor study, several greater sage-grouse nests were located within two miles of the Project Area. The majority of these nests occurred in the sagebrush flats and small foothills to the southwest of the Project Area, and no nests were located within the boundary of the Project Area. Greater sage-grouse from the Pony Express Lek also nested to the west of SR 278 in the valley immediately east of Mount Hope. Nest success of birds within two miles of the Project Area was approximately 16%, which is close to the average success rate for nests throughout the entire study area (Nonne 2013). Potential limiting factors for nesting greater sage-grouse in this area include a lack of tall shrub cover and poor understory health.

Table 3.2-4: Peak Male Daily Attendance at Two Lek Sites Near the Project Area

LEK		
Year	**Pony Express (peak male attendance)**	**Pony Express 2 (peak male attendance)**
2003	14	Not located
2004	11	Not located
2005	15	Not located
2006	15	Not located
2007	10	Not located
2008	6	Not located
2009	8	Not located
2010	0	Not located
2011	Not surveyed	11
2012	Not surveyed	21
Average*	11.3	16.0

*Average peak male attendance was calculated based only on years when the lek had one or more males in attendance.

Golden Eagle

Golden eagles are protected by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act, both of which prohibit take, and are a Nevada BLM sensitive species. The USFWS overall management objective for golden eagle populations is to ensure no declines in breeding populations (USFWS 2010). Golden eagles nest in high densities in open and semi-open habitat, but may also nest at lower densities in coniferous habitat when open space is

available. Golden eagles currently breed in and near much of the available open habitat in North America west of the 100th meridian. Golden eagles avoid nesting near urban habitats. In the Great Basin, golden eagles nest on cliffs and in scrub forest habitat. Golden eagles forage both close to and far from their nests (up to 5.6 miles from the center of their territory). Foraging distances may be greater in xeric habitats (USFWS 2010).

The NDOW identified no golden eagle nests within ten miles of the Project Area and ROW. Golden eagles are, however, known to reside in the Project vicinity (four-mile buffer), and golden eagles have been observed in the vicinity of the Project Area and ROW (NDOW 2012a). In 2007, SRK Consultants (SRK) located one active and one inactive golden eagle nest approximately 3.4 and 3.9 miles southeast of the Project Area, respectively (SRK 2007). The Project Area is not visible from the southernmost nest but a portion of the Project Area is visible from the northernmost nest location (Figure 3.2.9). Enviroscientists investigated the golden eagle nest that is located approximately 3.4 miles southeast of the Project Area. The nest was investigated outside of the golden eagle breeding season; therefore, the status of its use is unknown (Enviroscientists 2012). This nest is located next to the intersection of Saddler Brown Road and SR 278. The southernmost golden eagle nest was not analyzed within the 2012 baseline survey conducted by Enviroscientists; therefore, the status is unknown. Furthermore, these nests are being monitored by Eureka Moly in association with the Mount Hope Project (NV063-EIS-07-019). The entire Project Area and ROW includes suitable foraging habitat for golden eagles (Enviroscientists 2012).

Ferruginous Hawk

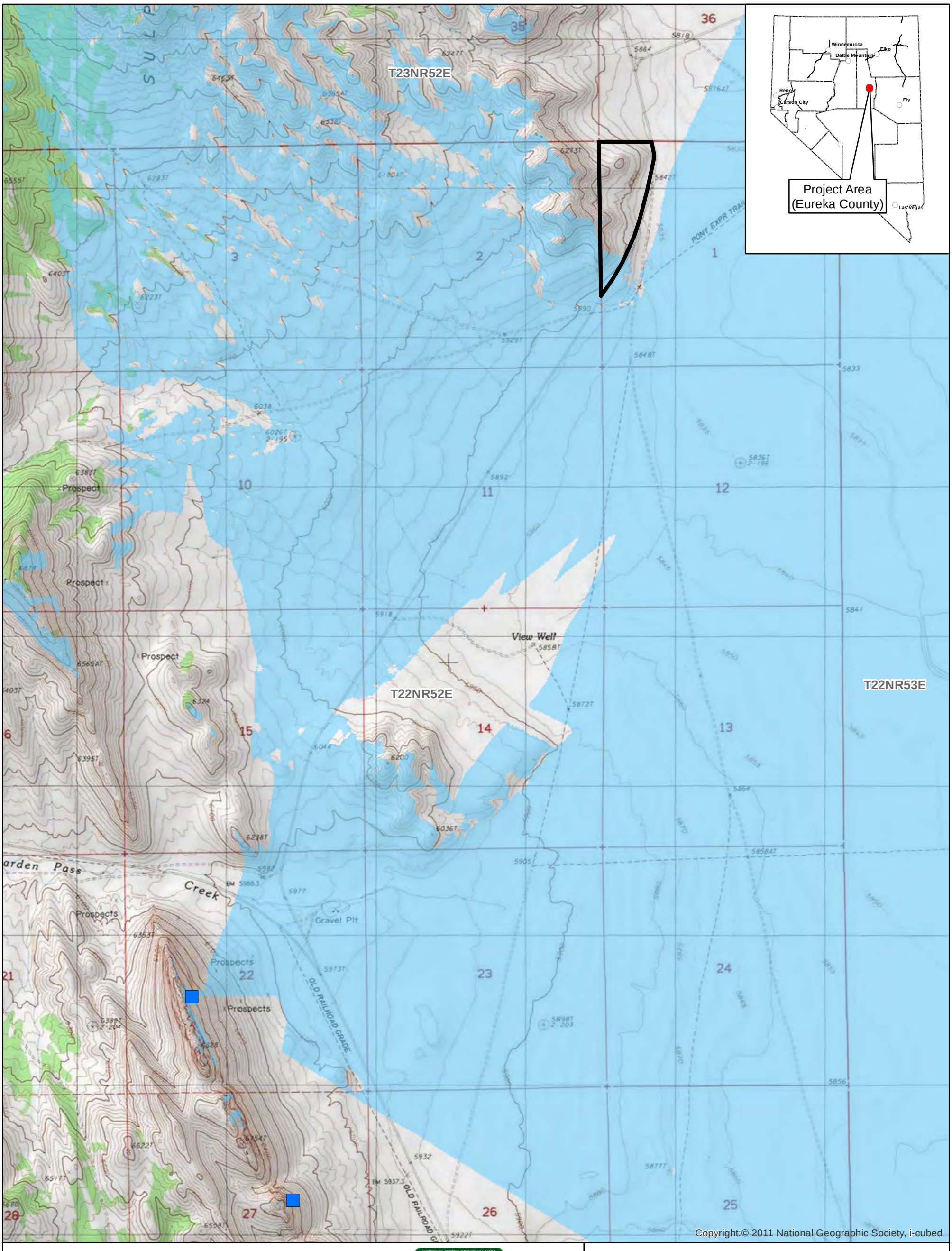
Ferruginous hawk uses sagebrush, piñon-juniper woodlands and salt desert scrub habitats year round in northern Nevada. Ferruginous hawks in Nevada reportedly prefer landscapes where human presence is minimal, and they are generally more sensitive to nest disturbances than most other raptors (GBBO 2010).

The NDOW has stated that eight ferruginous hawk nest sites have been identified in the vicinity of the Project Area and waterline route and ROW (NDOW 2012a). These nests have been identified in Sections 2, 3, 11, 14, 15 and 23 of T22N, R52E, MDB&M.

Loggerhead Shrike

Loggerhead shrikes are typically associated with greasewood and sagebrush communities. They also frequent open country in valleys and foothills. Dense stands of trees and shrubs are used for nesting and roosting sites, as well as for hunting perches (NatureServe 2012).

During the October 2012 biological surveys conducted by Enviroscientists, no loggerhead shrikes were observed within the Project Area or ROW. There is, however, potential habitat within the Project Area and ROW, and loggerhead shrike may utilize the Project Area or ROW during breeding season (Enviroscientists 2012).



Explanation

- Project Area
- Eagle Nest (Status Unknown)

Viewshed

- Not Visible
- Visible

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Golden Eagle Nest Locations and Viewshed

Figure 3.2.9

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Brewer's Sparrow

The Brewer's sparrow is typically associated with montane shrubland, sagebrush, and salt desert scrub habitats. This species prefers high shrub density and relatively large habitat patches and mosaics of varying shrub densities. Nesting habitat often consists of dense crown tall shrubs (GBBO 2010).

During the October 2012 biological surveys conducted by Enviroscientists, no Brewer's sparrows were observed within the Project Area or ROW. There is, however, potential habitat within the Project Area and ROW, and Brewer's sparrow are likely to utilize the Project Area and ROW during breeding season (Enviroscientists 2012).

Swainson's Hawk

Swainson's hawks can be associated with Great Basin and Mojave lowland riparian, agriculture, sagebrush and wet meadow habitats. Ideal habitat features include large riparian nesting trees, agricultural fields, and open shrublands within relatively close proximity. Nesting habitat often consists of platforms in old large trees, cliff ledges, juniper, and old raptor or heron nests (GBBO 2010).

No Swainson's hawks or nests were observed within the Project Area or ROW during the October 2012 survey by Enviroscientists. The NDOW, however, reported the Swainson's hawk has a distribution range that includes the Project Area and four-mile buffer area.

Western Burrowing Owl

Western burrowing owls breed throughout the western United States (US). in open grassland areas. In northern Nevada, the burrowing owl occurs as a summer breeder and migrates south during the winter (Herron et al. 1985). Burrowing owl breeding sites are strongly dependent on the presence of burrows constructed by prairie dogs, ground squirrels, or badgers but may also create their own burrows. Prime burrowing owl habitat must be open, have short vegetation, and contain an abundance of burrows.

During the October 2012 biological survey conducted by Enviroscientists, one burrow was located in the Project Area that was a suitable size and location for use by western burrowing owls, but no western burrowing owls were observed during the biological survey. Suitable habitat for western burrowing owls is present in the Project Area and ROW (Enviroscientists 2012).

Long-Eared Owl

Long-eared owls are located throughout southern and eastern British Columbia and the western U.S. Habitat for long-eared owls include desert oases, deciduous and evergreen forests, and shrubland. They typically forage in open grassy areas, but they may forage in forests (NatureServe 2012).

During the October 2012 biological survey, no long-eared owls were observed in the Project Area or ROW (Enviroscientists 2012). The NDOW reported distribution ranges include the Project Area, ROW, and a four-mile buffer area (NDOW 2012a).

Short-Eared Owl

Short-eared owls are typically located in dense grasslands and are relatively uncommon in Nevada. Short-eared owls, however, can be found in diverse types of open country where sufficient small mammal populations are present. Short-eared owls forage in wet meadow or grasslands bordered by open shrublands (GBBO 2010).

No short-eared owl were observed during the October 2012 biological survey conducted by Enviroscientists, but the NDOW reported distribution ranges for the short-eared owl include the Project Area, ROW, and a four-mile buffer area (NDOW 2012a).

Northern Goshawk

The Northern goshawk commonly nests in mature aspen stands in Nevada and has been reported in piñon-juniper woodlands. They forage over montane shrubland and undisturbed coniferous forests (GBBO 2010).

The portions of the Project Area and ROW that have vegetation represent potential foraging habitat. During the October 2012 biological survey by Enviroscientists, no northern goshawks were observed, but the NDOW noted northern goshawk distribution ranges include the Project Area, ROW, and a four-mile buffer area (NDOW 2012a).

Peregrine Falcon

Peregrine falcons are typically concentrated around Lake Mead, but their historical breeding range occurred throughout a greater portion of Nevada. Migrating falcons have used marshes and nearby uplands throughout the State for foraging sites. They typically nest in cliffs usually 40 to 640 feet in height (GBBO 2010).

The portions of the Project Area and ROW that have vegetation represent potential foraging habitat. During the October 2012 biological survey by Enviroscientists, no peregrine falcons were observed, but the NDOW noted peregrine falcon distribution ranges include the Project Area, ROW, and a four-mile buffer area (NDOW 2012a).

Dark Kangaroo Mouse

Dark kangaroo mouse (*Microdipodops megacephalus*) is found throughout North America and is located in scrubland and sagebrush habitat (NatureServe 2012). No dark kangaroo mice were observed during the October 2012 survey performed by Enviroscientists nor was suitable habitat noted (Enviroscientists 2012). The NDOW response letter, however, noted dark kangaroo mice have been observed within the vicinity (four-mile buffer) of the Project Area (NDOW 2012a).

Long-Eared Myotis

The NNHP identified the Project Area as potentially having suitable habitat for the long-eared myotis (*Myotis evotis*). The long-eared myotis is found throughout North America and is located in grassland, shrubland, hardwood and conifer forests, and conifer and hardwood woodland (NatureServe 2012). The October 2012 biological survey by Enviroscientists identified no abandoned mines within the Project Area, which would be potential habitat for the long-eared myotis. No other significant roosting habitat, such as caves or rock outcrops, is present within the Project Area or ROW.

3.2.9.2 Environmental Consequences and Mitigation Measures

Several BLM sensitive raptor and bird species have been observed or are likely to occur in the Project Area and ROW. A maximum 62.2 acres of habitat would be disturbed over the five-year Project life as a result of implementation of the Proposed Action.

Approximately 1.2 acres of disturbance would be associated with the overland travel for the installation of the waterline. Surface disturbance for the waterline would be temporary and limited to crushed vegetation during installation and removal of the waterline. This area contains a Eureka County maintained drainage ditch and has been disturbed by Eureka County maintenance activities. Minimal impacts to sensitive species, including habitat, therefore, would occur within the 1.2 acres.

Vegetation removal and ground disturbance would result in a reduction of breeding habitat for sensitive birds in the Project Area. Ground disturbance and facility construction would also reduce the available habitat for sensitive small mammals.

The Proposed Action includes measures to avoid impacts to nesting migratory birds and raptors (Section 2.1.16); therefore, the destruction of active nests or disruption of breeding behavior of sensitive bird species would not occur as a result of the Proposed Action. Reclamation would begin at the earliest practicable time within the areas considered inactive, without potential, or completed. Reestablishment of vegetation would take place within three years of Project reclamation. Although long-term restoration of essential/irreplaceable habitat would occur in the Project Area as surface disturbance is reclaimed and revegetated, short-term indirect impacts to special status species would occur due to the short-term temporary loss of vegetation as a result of Project-related surface disturbance.

Impacts to the individual sensitive species that are known or have the potential to occur in the Project Area are further discussed below. Since the impacts from the waterline would be temporary, i.e., limited to the installation and removal of the waterline, and the area has been previously disturbed by Eureka County maintenance activities, the waterline disturbance area is not included in the impact analysis for the sensitive species listed below.

Greater Sage-Grouse

The Project would impact a maximum of 61 acres of PPH through surface disturbing activities. This area would be reclaimed and revegetated when the Project was completed. Greater sage-grouse are extremely sensitive to discrete disturbances, which are defined as disturbances that

have a distinct measurable impact in space and time (BLM 2012d). Although the impact is temporary, the PPH would be impacted, and during the life of the Project, studies suggest greater sage-grouse tend to avoid developed areas (BLM 2012d).

Implementation of Environmental Protection Measures

- ***Greater sage-grouse Populations –*** Implementing additional operational timing and vehicle restrictions (triggered if lek attendance at the Pony Express lek and Pony Express 2 lek fall below 50 percent of the average peak male attendance) is intended to prevent further declines in greater sage-grouse populations near the Project Area. Reducing the hours of operation during the breeding season would reduce the potential of elevated noise levels to disturb females that are nesting near the Project Area, which could improve nest success and productivity. Further, restricting vehicle travel along the Saddler-Brown Road would also limit noise levels, reduce potential disturbance at the leks, and reduce the potential of grater sage-grouse colliding with vehicles.

- ***Noise and Truck Travel –*** Restrictions on operational noise, truck frequency, and vehicle speed from four a.m. to ten a.m. during the breeding season would reduce the potential for high levels of disturbance at the Pony Express and Pony Express 2 leks. Likewise, if operational noises do not exceed 10 dBA greater sage-grouse at leks would not likely be disturbed. A 10 dBA increase is perceived as a doubling of sound and is considered a likely indicator of disturbance for greater sage-grouse.

  Noise and travel restrictions would greatly benefit greater sage-grouse at Pony Express 2 because this lek is closer to the Project Area, and male birds strut less than 200 feet from the Saddler-Brown Road. Recent studies indicate that preventing anthropogenic noise and other disturbance at leks may be an important mechanism for preventing greater sage-grouse population decline. Conversely, chronic anthropogenic noise at leks contributes to declines in greater sage-grouse populations (Holloran 2005 and Blickley, et al. 2012). The primary mechanism causing population reductions is not clear. However, it is hypothesized that exposure to anthropogenic noise at leks could have indirect or direct impacts on male fitness by reducing lek attendance, masking important vocalizations, or increasing their susceptibility to predators.

Mitigation Measures

- ***PPH –*** The Project would disturb a maximum of 61 acres of PPH. However, disturbance would occur in distinct phases, therefore PPH mitigation would be commensurate with the acreage of each phased levels of disturbance as they are proposed. In order to mitigate the impacts to PPH, Ames would provide one of the following mitigation measures:

  - Using hand-thinning to remove pinyon pine and juniper (PJ) trees in areas that are determined to be actively encroaching into PPH. PJ would be removed from a minimum of one acre up to three acres of habitat for every one acre disturbed. Removal would occur within PPH in areas that have been analyzed through NEPA. PJ removal would result in periodic, temporary disturbance to wildlife during the implementation phase. In order to minimize impacts to breeding and nesting sage-grouse, PJ thinning would not occur from March 1 – June 30. Preferred locations for PJ removal include areas that have

been identified by the BLM, NDOW, or research studies as important migration corridors, riparian areas, or nesting habitat. Preferred locations include areas that would directly benefit sage-grouse from the Pony Express leks. Ames would consult with the BLM prior to implementing any PJ removal project;

- Purchasing and attaching 1,500 sage-grouse flight deterrents (i.e. fence markers) for every acre of disturbance. Fence markers would be attached to fences within PPH. Preferred locations for flight deterrents include fenced areas in migration corridors or near leks (within 1.25 miles; see IM 2012-043) and nesting areas. Ames would consult with the BLM prior to implementing this project; or

- Funding and building exclosures surrounding springs, meadows, or other riparian areas identified as important sage-grouse brood-rearing habitat. One one- to five-acre exclosure would be built for every 12 acres of habitat disturbed. The size and location of the exclosures would be determined by the BLM. Jack and rail pipe fence would be the preferred fencing type, although other fence material may be more appropriate in some circumstances. The BLM would determine which fence type should be used. Preferred locations include habitat that has been identified as important brood-rearing habitat for sage-grouse. Preferred locations include wet meadows and springs in the Roberts Mountains because these areas have been used in the past by sage-grouse from the Pony Express lek (Blomberg 2013a and 2013b). Areas that have been affected by human development or encroachment by native or non-native flora, but are still of medium quality for late brood rearing should be considered for restoration projects, with those areas at higher elevation in montane sagebrush communities given higher priority. Probability of successful restoration in these medium quality habitats is likely greater than in areas that have already suffered severe degradation and are now of low or unsuitable quality.

Implementation of Mitigation Measures

Implementation of one of the mitigation measures would serve to mitigate impacts from the Project related disturbance. The identified environmental mitigation measures would provide the following mitigation:

- Thinning of Phase PJ has proven to be an effective method of improving the usefulness of sagebrush habitat for greater sage-grouse. PJ removal would reduce the number of perches available for greater sage-grouse avian predators and improve forb and grass cover;

- IM 2012-043 recommends marking fences with flight deterrents to improve visibility. Marking fences in PPH with flight deterrents would reduce the probability that greater sage-grouse would collide with fences (Stevens 2011); and

- Riparian exclosures would limit the access of livestock and wild horses to riparian areas, which would enhance efforts to restore riparian vegetation communities and hydrologic function. Greater sage-grouse would benefit mainly because well-functioning springs, streams and wet meadows are critical for the survival of their young.

Based on the combination of all of the proposed mitigation measures and the expected results listed above, localized impacts to sage-grouse would be offset by off-site mitigation within the surrounding area that is used by the same population. Therefore, implementation of the Proposed Action is not anticipated to result in substantial impacts to greater sage-grouse.

Golden Eagle

Potential golden eagle nesting habitat (cliffs) is not present in the Project Area, and the NDOW reported that no golden eagle nests are known to occur within a ten-mile radius of the Project Area (NDOW 2012a). Studies conducted by SRK and Enviroscientists, however, identified golden eagle nests within four miles of the Project Area (SRK 2007 and Enviroscientists 2012). The status of both of these nests is unknown. The Proposed Action, therefore, would have no direct impact on golden eagles or their nesting habitat. The Proposed Action, however, would be within the line of site of the northernmost golden eagle nest from a portion of the Project Area. Surface disturbing activities associated with the Proposed Action would temporarily impact a maximum of 61 acres of golden eagle foraging habitat, and the line of site for the eagle nest would be temporarily impacted from a portion of the Project Area if the nest is occupied.

Ferruginous Hawk

The NDOW identified eight ferruginous hawk nests within the vicinity of the Project Area. No ferruginous hawk nests were observed within the Project Area. In order to avoid impacts to individual ferruginous hawks and their habitat, implementation of the environmental protection measure outlined in Section 2.1.16 for migratory birds would ensure that prior to surface disturbance, nesting surveys for migratory birds (including ferruginous hawk) would be conducted and any identified nests would be avoided.

Western Burrowing Owl

Western burrowing owl was not observed in the Project Area, but there is potential habitat within the Project Area. Construction and operation of the Project would directly affect western burrowing owl habitat through removal of vegetation in areas proposed for surface disturbance. Burrowing owl habitat in the Project Area is limited to open arid areas with sparse vegetation and suitable soils. Potential impacts to breeding from the Project would include possible direct loss of nests (e.g., crushing) or indirect effects (e.g., abandonment) from increased noise and human presence within close proximity to an active nest site. Implementation of the environmental protection measure outlined in Section 2.1.16 for migratory birds would ensure that prior to surface disturbance a nesting survey for migratory birds (including western burrowing owl) would be conducted and active burrows and nests avoided.

Loggerhead Shrike

Loggerhead shrikes were not observed in the Project Area but have the potential to occur. Construction and operation of the Project would directly affect loggerhead shrike habitat through removal of vegetation in areas proposed for surface disturbance. A maximum of 61 acres of habitat would be directly removed over the five-year Project life as a result of implementation of the Proposed Action. Potential impacts to breeding from the Project would include possible direct loss of nests (e.g., crushing) or indirect effects (e.g., abandonment) from increased noise

and human presence within close proximity to an active nest site. Implementation of the environmental protection measure outlined in Section 2.1.16 for migratory birds would ensure that prior to surface disturbance, a nesting survey for migratory birds (including loggerhead shrike) would be conducted and nests avoided. Vegetation removal would result in a reduction of breeding habitat for loggerhead shrike in the Project Area.

Brewer's Sparrow

Brewer's sparrow was not observed in the Project Area but has the potential to occur. Construction and operation of the Project would directly affect potential Brewer's sparrow habitat through removal of vegetation in areas proposed for surface disturbance. A maximum of 61 acres of habitat would be directly removed over the five-year Project life as a result of implementation of the Proposed Action. Potential impacts to breeding from the Project would include possible direct loss of nests (e.g., crushing) or indirect effects (e.g., abandonment) from increased noise and human presence within close proximity to an active nest site. Implementation of the environmental protection measure outlined in Section 2.1.16 for migratory birds would ensure that prior to surface disturbance a nesting survey for migratory birds (including Brewer's sparrow) would be conducted and nests avoided. Vegetation removal would result in a reduction of breeding habitat for Brewer's Sparrow in the Project Area.

Northern Goshawk

No nesting habitat is available in the Project Area. The portions of the Project Area that have vegetation represents potential foraging habitat. The NDOW has stated that no raptor nest sites, except for ferruginous hawk, have been identified in the vicinity of the Project Area (NDOW 2012a). The Proposed Action, therefore, would have no direct impact on northern goshawk or their nesting habitat. Surface disturbing activities associated with the Proposed Action would temporarily impact a maximum of 61 acres of northern goshawk foraging habitat.

Long-Eared Owl

No nesting habitat is available in the Project Area. The portions of the Project Area that have vegetation represents potential foraging habitat. The NDOW has stated that no raptor nest sites, except for ferruginous hawk, have been identified in the vicinity of the Project Area (NDOW 2012a). The Proposed Action, therefore, would have no direct impact on long-eared owl or their nesting habitat. Surface disturbing activities associated with the Proposed Action would temporarily impact a maximum of 61 acres of long-eared owl foraging habitat.

Short-Eared Owl

No nesting habitat is available in the Project Area. The portions of the Project Area that have vegetation represents potential foraging habitat. The NDOW has stated that no raptor nest sites, except for ferruginous hawk, have been identified in the vicinity of the Project Area (NDOW 2012a). Surface disturbing activities associated with the Proposed Action would temporarily impact a maximum of 61 acres of short-eared owl foraging habitat.

Peregrine Falcon

No nesting habitat is available in the Project Area. The portions of the Project Area that have vegetation represents potential foraging habitat. The NDOW has stated that no raptor nest sites, except for ferruginous hawk, have been identified in the vicinity of the Project Area (NDOW 2012a). Surface disturbing activities associated with the Proposed Action would temporarily impact a maximum of 61 acres of peregrine falcon foraging habitat.

Long-Eared Myotis

The biological survey conducted in October 2012 by Enviroscientists did not report suitable habitat for the long-eared myotis. The Proposed Action is, therefore, not likely to impact long-eared myotis nesting habitat.

3.2.10 Transportation

3.2.10.1 Affected Environment

The Project Area is accessed via Saddler Brown Road, which is maintained by Eureka County. This road is located on BLM-administered lands, but the BLM has not granted a ROW to Eureka County or any other entity. Eureka County considers this a public road. Saddler Brown Road intersects with SR 278 approximately 3.76 miles to the southwest of the Project Area. SR 278 traverses north/south and intersects with US 50 to the south and I-80 to the north.

Saddler Brown Road is maintained by Eureka County, and annual traffic counts are not conducted. Saddler Brown Road, however, is a rural road and traffic volumes are low due to lack of development along this route. SR 278 is a state road, owned and operated by the Nevada Department of Transportation (NDOT). The road is classified as a rural major collector (NDOT 2003). Rural major collector roads generally serve travel on an intracounty basis and travel distances tend to be shorter than arterial routes (FHWA 1989). The annual average daily trips (AADT) in 2011 0.1 mile north of the intersection of SR 278 and US 50 was 740 (NDOT 2012a). Of these vehicles, 49 were multi-trailer vehicles, with 43 of the vehicles having seven axles (NDOT 2012b).

3.2.10.2 Environmental Consequences

Ames would use Saddler Brown Road for haul trucks to deliver processed material to purchasers in Eureka County. Haul trucks would travel to SR 278 and either head north or south to I-80 or US 50, respectively. Ames anticipates the majority of the trucks would head south on SR 278 because the company has an existing aggregate operation in Carlin. The Carlin operation would likely provide aggregate for customers along the I-80 corridor. A maximum of ten haul truck trips per day would be generated. This would equal 20 vehicle trips per day, as a vehicle trip is counted for each direction.

Transportation impacts to Saddler Brown Road and SR 278 would be temporary and would terminate when the Project was completed. Due to the low number of vehicles trips per day, there would be minimal impact to Saddler Brown Road and SR 278. SR 278 has an existing AADT of 740. It is designed to transport vehicles intracounty, and is the primary north/south access route for Eureka County. The addition of 20 vehicle trips per day would not affect the

level of service. Saddler Brown Road is a rural road with low traffic volumes. The addition of 20 vehicle trips per day would have minimal impacts, and impacts would be lessened by disbursement of trips throughout the day.

3.2.11 Vegetation

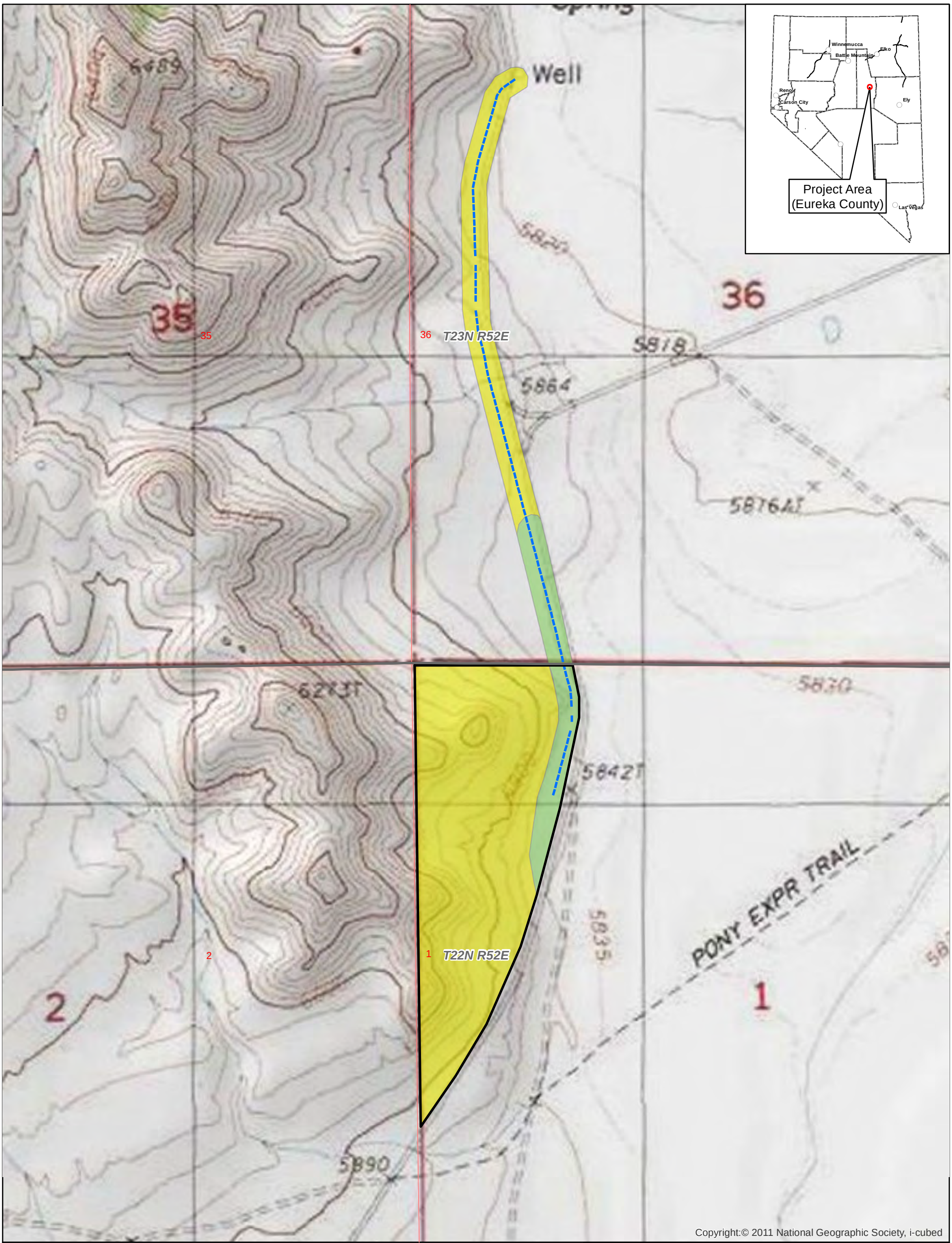
3.2.11.1 Affected Environment

Two ecological sites were observed within the Project Area and ROW: R028BY013NV, Silty 8-10" P.Z. (Silty), and F028BY062NV, Shallow Calcareous Loam 8-10" P.Z (Shallow Loam) (Enviroscientists 2012) (Figure 3.2.12).

During the 2012 vegetation survey, 81 acres were surveyed, which was slightly larger than the Project Area and ROW combined (Enviroscientists 2012). The Silty ecological site covers approximately ten acres of the Project Area and ROW. The dominant vegetation species observed during the October 2012 survey performed by Enviroscientists were winterfat (*Krascheninnikovia lanata*) and Indian ricegrass (*Achnatherum humenoides*), with Wyoming big sagebrush (*Artemisia tridentata* subsp. *wyomingensis*), greasewood (*Sarcobatus vermiculatus*), shadscale (*Atriplex confertifolia*), budsage (*Artemisia spinecens*), and yellow rabbitbrush (*Chrysothamnus vicidiflorus*) in lower abundance. Additional grasses observed included Sandberg's bluegrass (*Poa secunda*) and bottlebrush squirreltail (*Elymus elimoides*). The Shallow Loam ecological site covers approximately 71 acres of the Project Area and ROW. The dominant species observed during the October 2012 survey performed by Enviroscientists for this ecological site were black sagebrush, Sandberg's bluegrass, bottlebrush squirreltail, and Indian ricegrass, with Wyoming big sagebrush, shadscale, yellow rabbitbrush, winterfat, dwarf goldenweed (*Ericameria nana*), and Mormon tea (*Ephedra viridis*) in lower abundance. Forbs were interspersed with the shrubs and included spiny phlox (*Phlox hoodii*), littleleaf pussytoes (*Antennaria microphylla*), stemless mock goldenweed (*Stenotus acaulis*), orange globemallow (*Sphearalcea munroana*), and rough-sea cryptantha (*Cryptantha flaviculata*). Table 3.2-5 identifies the soils series associated with each Ecological Site.

Table 3.2-5: Ecological Sites within the Project Area and ROW

Ecological Site	Soil Series	Acres
Eco Site ID # R028BY013NV, Silty 8-10" P.Z. (Silty)	Hayeston-Silverado	5.36
	Hymas-Ansping	0.13
	Shipley silt loam, 0 to 2 percent slopes	1.28
	Shipley silt loam, moderately saline-alkaki, 0 to 2 percent slopes	3.56
Eco Site ID # F028BY062NV, Calcareous Loam 8-10" P.Z. (Shallow Loam)	Diannev silty clay loam	4.4
	Hayeston-Silverado	25.64
	Hymas-Ansping	35.94
	Shipley silt loam, 0 to 2 percent slopes	4.7
	Shipley silt loam, moderately saline-alkaki, 0 to 2 percent slopes	0.09



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Explanation

- Project Area
- Pipeline Route

NRCS Soil Survey NV621 (Ecological Sites)

- Silty 8 - 10" P.Z., R028BY013NV
- Shallow Calcareous Loam 8 - 10" P.Z., F028BY062NV

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Battle Mountain, NV 89820

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BUREAU OF LAND MANAGEMENT

SADDLER BROWN PIT

Ecological Sites within the Project Area

Figure 3.2.11

04/03/2013

3.2.11.2 Environmental Consequences

A maximum of 62.2 acres would be disturbed over the five-year Project life as a result of implementation of the Proposed Action. Approximately 1.2 acres of this disturbance would result from the installation of the waterline. Surface disturbance would be limited to overland travel during installation, which would result in crushed vegetation. The impact would be temporary and no reclamation would be needed.

The surface disturbance associated with Project would be reclaimed and reseeded concurrently, whenever feasible. Any surface disturbance related to the Proposed Action would not result in the loss of any unique vegetation community but would still result in the temporary loss of vegetation. Reclamation associated with the proposed surface facilities would begin upon completion of Project activities using the BLM-approved seed mixture shown in Table 2.1-2. Monitoring activities are included in the Proposed Action, which would ensure that the revegetation meets reclamation standards.

3.2.12 Visual Resources

3.2.12.1 Affected Environment

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 (Table 3.2-4). Each management class portrays the relative value of the visual resources and serves as a tool that describes the visual management objectives (BLM 1986b).

Table 3.2-6: BLM Visual Resource Management Classes

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

Source: BLM 1986

Lands within the Project Area are currently designated as VRM Class IV. The objective of this class is described in Table 3.2-4.

3.2.12.2 Environmental Consequences

The Proposed Action would result in short-term visual impacts principally affecting the visual elements of line and color. The Project would be visible along the adjacent ROW. Surface disturbance to vegetation communities associated with the Project would cause temporary color contrasts that would be minimized long-term by the successful reclamation and revegetation of Project-related surface disturbance. Temporary structures and mobile equipment would be removed from the Project site subsequent to the completion of the Project. All disturbed areas within the Project Area would be regraded and recontoured to approximate the topography of the existing terrain prior to disturbance. The effects of the Proposed Action on visual resources would be consistent with BLM prescribed Class IV VRM objectives.

3.2.13 Waste, Hazardous and Solid

3.2.13.1 Affected Environment

All refuse generated by the Project would be disposed of at an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of on site. Toxic substances that would be utilized under the Proposed Action include diesel fuel, gasoline, lubricating grease, antifreeze, and solvents used to maintain and operate Project equipment and vehicles.

Chemicals and materials anticipated to be used at the Project Area are listed in Table 3.2-3. The quantities of each substance to be stored on site are not yet known, except for the diesel fuel, which would be stored in a 10,000 gallon AST.

Table 3.2-7: Hazardous Materials to be Used and Stored at Saddler Brown Pit

Substance	Storage Location	Reportable Spill Quantity
Diesel fuel (10,000 gallons)	Fuel Storage Pad within processing area	The reportable quantity for petroleum products such as gasoline, diesel, and hydraulic fluid is 25 gallons or 3 yd^3 of contaminated material, or the presence on or in ground water.
Oils (lubricant, hydraulic, other)	Fuel Storage Pad with processing area	The reportable quantity for hazardous waste is based on the Federal EPA guidelines established under Title III List of Lists (40 CFR 302.4).
Ethylene glycol	Fuel Storage Pad within processing area	The reportable quantity for ethylene glycol is 5,000 lbs., and is based on the Federal EPA guidelines established under Title III List of Lists (40 CFR 302.4).
Cleaning solvents	Fuel Storage Pad within processing area	The reportable quantity for hazardous chemicals is based on the Federal EPA guidelines established under Title III List of Lists (40 CFR 302.4).

The delivery of materials to the Project Area would be by common carrier. The schedule of delivery of materials would depend on the rate of usage, with diesel fuel being the material to be most frequently delivered.

3.2.13.2 Environmental Consequences

The Proposed Action would result in the use, handling, and disposal of the following materials classified as hazardous by 49 CFR 172.101: diesel fuel; gasoline; antifreeze; lubricating greases; and solvents. All hazardous materials would be transported to and from the Project Area in accordance with the United States Department of Transportation (USDOT) hazardous materials

regulations. All regulated wastes would be managed in accordance with applicable federal, state and local requirements. All spills, regardless of size, would be reported immediately to Ames' Project Manager, who would be responsible for the clean-up of spills. Spills of petroleum products would be recorded and reported to the appropriate local, state, and federal agencies as required by applicable regulations. Solid wastes would be disposed of off-site in an approved landfill facility consistent with applicable regulations.

3.2.14 Water Resources (Ground)

3.2.14.1 Affected Environment

Ground water

The Project Area is located within the Diamond Valley hydrographic basin. Ground water within this basin is mostly contained within extensive valley-fill deposits of the hydrographic basins and, to a lesser extent, within the consolidated rocks that form the mountain blocks and underlie the valley-fill ground water system of the valley floor. Diamond Valley is a topographically closed basin with no known ground water outflow (Inflow Hydrology 2013).

Ground water utilized for this Project would either be obtained from an existing groundwater well located north of the Project area on private land or would be obtained by drilling a new production well within the initial area of disturbance. The owner of the existing well has sufficient water rights to supply Ames' Project. Ames would apply to the State Engineer for the appropriate approvals for a change in the point of diversion or change in use.

There are approximately 12 wells within a five mile radius of Ames' proposed new production well. Three of these wells are for stockwater use. The closest well is 0.9 mile from the proposed production well location (Inflow Hydrology 2013).

If the new production well is drilled, water would be diverted from a third-party, who has an existing NDWR authorized water right appropriation within the basin. Ames' production well would have a flow of approximately 100 gpm. No net increase to water consumption would occur from the authorized water use.

3.2.14.2 Environmental Consequences

A drawdown analysis was conducted in 2013 to determine the potential impacts (water level drawdown) to existing wells and ground water users within a five mile radius of the Project from the new production well. Due to the small pumping rate that would occur as a result of the new production well use, the estimated potential drawdown ranges between 2.7 feet and less than one foot over the five-year life of the Project. The potential for lowering water levels in nearby stockwater wells is considered minimal and would likely have no impact on the ability of adjacent wells to operate (Info Hydrology 2013).

3.2.15 Wildlife

3.2.15.1 Affected Environment

Wildlife habitat in the vicinity of the Project Area and ROW is similar to habitat throughout the Great Basin Region. In October 2012, Enviroscientists performed a general wildlife survey in the Project Area and ROW. In addition, the USFWS and the NDOW were contacted regarding the presence of wildlife species within and near the Project Area. The following discussion summarizes the results of the survey including which species were observed or detected within the Project Area and ROW, as well as species likely to be present or to utilize the Project Area and ROW based on the information provided by the USFWS and the NDOW (USFWS 2012 and NDOW 2012a).

Mammals

In addition to the special status species discussed in Section 3.2.9, wildlife detected in the Project Area and ROW included mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus)*, wild horse (*Equus caballus*), woodrat (*Neotoma* spp.), desert cottontail (*Sylvilagus audobom*), and Beldings ground squirrel (*Spermophilus beldingi*) (Enviroscientists 2012). In addition, the NDOW reported dark kangaroo mouse and gray fox (*Urocyon cinereoargenteus*) have been observed in the Project Area vicinity (four-mile radius buffer) (NDOW 2012a).

Birds

A list of migratory birds, including raptors that have the potential to occur within the Project Area and ROW is included in the discussion in Section 3.2.4. Additionally, the NDOW reported the chukar partridge (*Alectoris chukar*) also occur in the Project Area. (NDOW 2012a).

Amphibians and Reptiles

During the October 2012 survey by Enviroscientists, no amphibians or reptiles were observed. The NDOW response noted coachwhip (*Masticophis flagellum)* and long-nosed leopard lizard (*Gambelia wislizenii)* have been observed in the Project Area vicinity (four-mile buffer radius) (NDOW 2012a).

There are no perennial or ephemeral streams, shown as blue-line streams on the United States Geological Survey 7.5 minutes topographic map, located within the Project Area or ROW.

Fish

No perennial streams or native fish habitat occur in the Project Area.

3.2.15.2 Environmental Consequences

Direct impacts to wildlife would consist of temporary habitat loss and disturbance from human activity and noise. A maximum of 62.2 acres would be disturbed over the five-year Project life as a result of implementation of the Proposed Action. Approximately 1.2 acres of disturbance

would occur as result of the installation and removal of the waterline. Disturbance would be limited to overland travel during the installation and removal of the waterline and reclamation would not be required. The impacts from this disturbance would be temporary and minimal.

No long-term impacts to wildlife habitat are likely to occur within the Project Area since reclamation would take place within one year after Project completion and reestablishment of vegetation would likely occur within three years. Reclamation activities would occur concurrently with Project activities when feasible.

Mining activities (including construction of the haul road, water storage ponds, and operation of equipment) could disturb wildlife due to the presence of humans and by creating noise and dust. Some wildlife would avoid the area due to noise, while other wildlife would adapt to noise.

Hoary cress has been observed within the Project Area and ROW, along Saddler Brown Road (BLM 2012b). This noxious and invasive species reduces the quality of habitat for wildlife. Project-related activities increase the potential for the spread of this species, in addition to the spread of other noxious weeds and invasive species; thus further reducing the quality of wildlife habitat. Ames would implement the environmental protection measures outlined in Section 2.1.16, which would mitigate or reduce the impact of noxious weeds and invasive species to wildlife habitat.

A freshwater pond and a sedimentation pond would be located within the Project Area. Ames would mitigate potential impacts to wildlife by incorporating design features that would allow wildlife to escape from the ponds as identified in the environmental protection measures outlined in Section 2.1.16.

Although long-term improvement of habitat could occur in the Project Area as surface disturbance is reclaimed and revegetated and a greater amount of forb species becomes available for wildlife foraging, minimal short-term indirect impacts to wildlife would occur due to the short-term temporary loss of vegetation as a result of Project-related surface disturbance.

Impacts to specific wildlife groups within the Project Area are discussed in more detail below. Since impacts from the installation and removal of the waterline would be temporary and minimal, the impacts to specific wildlife groups within the ROW and area of waterline on private land are not included in the following analysis.

Small mammals

Due to ground disturbance activities, there would be a potential of direct mortality to small mammals, e.g., being crushed by vehicles or equipment. To mitigate or reduce this potential impact, Ames would implement the mitigation measures identified in Section 2.1.16.

Ground disturbance activities would also impact small mammal habitat by removing vegetation and rocks and disturbing burrows. These impacts would be short-term, and habitat would be restored during reclamation.

Large mammals

Large mammals, such as mule deer and pronghorn antelope, may avoid the Project Area due to noise generated by the Project. Other large mammals, such as coyotes and wild horses, may adapt to the noise and disturbance from the Project. Fencing around the perimeter would prevent larger mammals from entering the Project Area. These impacts would temporarily reduce the available habitat area for large mammals. Fencing would be removed during reclamation, and the Project Area would be revegetated and reclaimed as specified in Section 2.1.14.

Birds

Surface disturbance would affect available nesting area and could potentially destroy nests located within the disturbance areas. Removal of vegetation would reduce foraging areas. Impacts would be temporary, as areas would be reclaimed upon Project completion.

Amphibians and Reptiles

Amphibians are not present within the Project Area and ROW. Reptiles would be impacted by surface disturbance activities, which would remove vegetation and disturb soil. Surface disturbance would remove potential habitat. Loss of vegetative cover and burrows could result in greater mortality due to predators. Snakes would be impacted by disturbance to dens and soils and potential destruction of eggs during breeding season. Temporary disturbance would reduce foraging area.

3.3 No Action Alternative

The No Action Alternative would result in no new disturbance on BLM-administered lands in the Project Area if no material sale is approved. Temporary impacts related to the Proposed Action (loss of habitat, disturbance to soil, loss of livestock grazing, and use of ground water) would not occur under the No Action Alternative.

For the No Action Alternative, however, there would be potential impacts to certain resources: noxious, invasive, non-native species, air quality, and transportation. Invasive non-native species pale madwort, halogeton, tansy mustard, and cheatgrass that were identified within the Project Area would have the potential to spread as habitat improvements, including reclamation and revegetation efforts described in the Proposed Action, would not occur under the No Action Alternative.

It is also likely under the No Action Alternative that construction aggregate would have to be derived from aggregate facilities located in Carlin, or Battle Mountain, Nevada, resulting in overall greater transport distance from source to point of use, and greater impacts to air quality.

The transportation network would also be impacted under the No Action Alternative as trucks transporting aggregate material would need to travel greater distances and use more roads to transport aggregate material from Carlin or Battle Mountain facilities to the Eureka County area.

4 CUMULATIVE IMPACTS

4.1 Introduction

A cumulative impact is defined under federal regulations as follows:

> "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

For the purposes of this EA, the cumulative impacts are the sum of all past, present (including proposed actions), and reasonably foreseeable future actions (RFFAs) resulting primarily from mining, commercial activities, and public uses. The purpose of the cumulative analysis in this EA is to evaluate the significance of the Proposed Action's contributions to cumulative environment.

As required under the NEPA and the regulations implementing NEPA, this chapter addresses those cumulative effects on the environmental resources in the Cumulative Effects Study Areas (CESAs) which could result from the implementation of the Proposed Action and No Action Alternative, past actions, present actions, and RFFAs. The extent of the CESA will vary with each resource based on the geographic or biologic limits of that resource. As a result, the list of projects considered under the cumulative analysis may vary according to the resource being considered. In addition, the length of time for cumulative effects analysis will vary according to the duration of impacts from the Proposed Action on the particular resource. For the purposes of this analysis and under federal regulations, 'impacts' and 'effects' are assumed to have the same meaning and are interchangeable.

The cumulative impacts analysis was accomplished through the following three steps:

Step 1: Identify, describe, and map the CESAs for each resource to be evaluated in this chapter.

Step 2: Define time frames, scenarios, and acreage estimates for cumulative impact analysis.

Step 3: Identify and quantify the location of potential specific impacts from the Proposed Action and evaluate these contributions to the overall impacts.

4.2 Cumulative Effects Study Areas

Environmental consequences of the Proposed Action were evaluated previously in Chapter 3 for the various environmental resources. The resources that have the potential to be cumulatively impacted by the Proposed Action within the identified CESAs are discussed in the following sections. Based on the previous analysis of each environmental resource, the Proposed Action would have such a minimal impact to the following resources that it would not have cumulative impacts: Cultural Resources, Land Use, Native American Traditional Value, Noxious Weeds, Invasive and Non-native Species, Livestock Grazing, Transportation, Visual Resources, Wastes, Hazardous and Solid, and Water Resources (Ground).

The following resources have been brought forward for cumulative impact analysis: Air Quality, Migratory Birds, Soils, Special Status Species, Vegetation, and Wildlife.

The geographical areas considered for the analysis of cumulative effects vary in size and shape to reflect each evaluated resource and its potential area of impact from the Proposed Action, as determined through the analysis in Chapter 3.

The Air Quality CESA was developed using a 10-kilometer buffer around the Project Area and the transportation route.

The Lower Slough Creek Frontal Diamond Valley Hydrographic Basin is the CESA for Migratory Birds, Special Status Species, Soils, Vegetation, and Wildlife. This determination was based on the local wildlife use area and location of the Project relative to the location and patterns of subsurface waters and aquifers, and the location and patterns of surface waters and drainages relative to the Project Area.

Table 4.2-1 describes each CESA by resource. Figures 4.1.1 and 4.1.2 show the CESA boundaries.

Table 4.2-1: Cumulative Effects Study Areas

Resource	CESA	Description of CESA	Size (acres)
Air Quality*	Air Quality CESA	10-kilometer buffer around Project Area and transportation route	245,388
Wildlife, Migratory Birds, Special Status Species, Soils, Vegetation, and Wildlife	Watershed CESA	Lower Slough Creek Frontal Diamond Valley Hydrographic Basin	267,950

**For climate change, the CESA is global.*

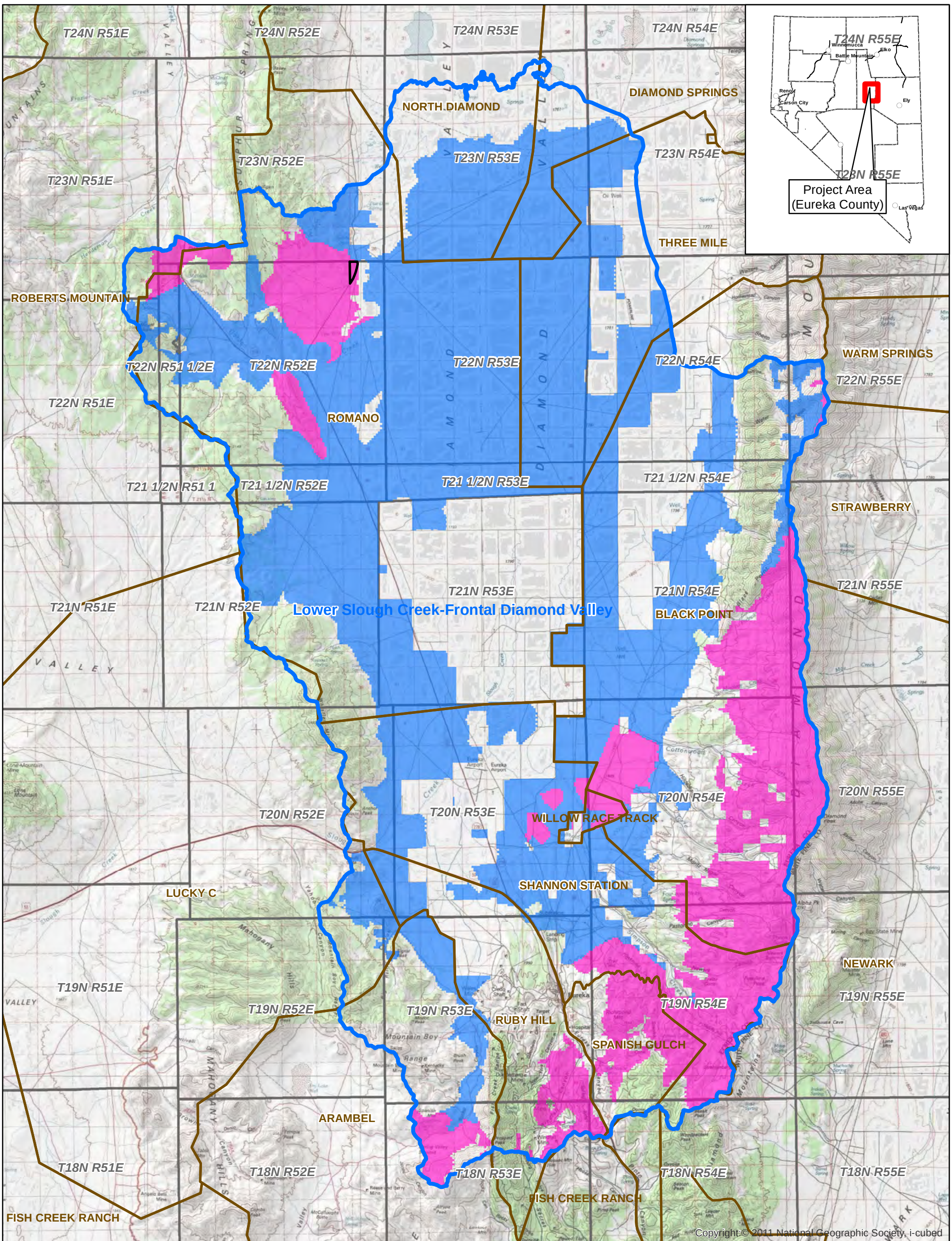
4.2.1 Past, Present and Reasonably Foreseeable Future Actions

4.2.1.1 Past and Present Actions

Past and present activities in the CESAs include livestock grazing, mineral exploration, mining, wildlife habitat management, utility and other ROWs, and recreational use.

Wildland Fires

There have been no recorded wildland fires within the Project Area. No recorded wildland fires have occurred in the Watershed CESA or Air Quality CESA. Only one small unnamed wildland fire has occurred in the vicinity of the Project, approximately 11 miles distant (east) from the Project Area.



Explanation

- Project Area
- HUC-5 Watershed_CESA Boundary
- Grazing Allotments

BLM-USFS NV GSG Habitat

- Preliminary Priority Habitat (PPH)
- Preliminary General Habitat (PGH)
- Areas to be completed

Resources:
Migratory Birds
Soils
Special Status Species
Vegetation
Wildlife

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Mount Lewis Field Office
50 Bastian Road
Battle Mountain, NV 89820

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0 1.25 2.5 5 Miles

N

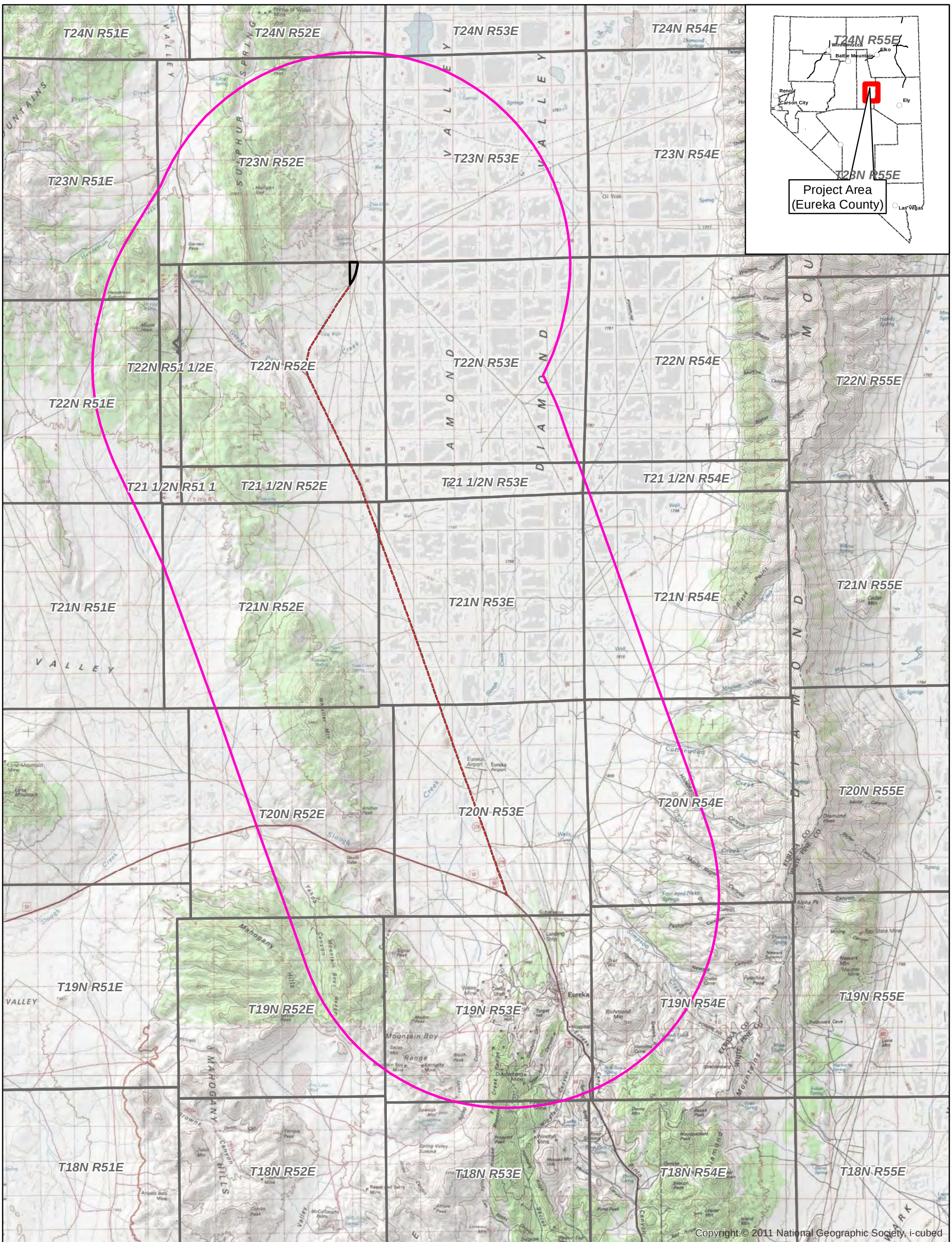
BUREAU OF LAND MANAGEMENT

SADDLER BROWN PIT

Watershed CESA

Figure 4.1.1

04/03/2013



Explanation

- Project Area
- Air Quality CESA Boundary
- Truck Route

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0 1.25 2.5 5 Miles

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BUREAU OF LAND MANAGEMENT

SADDLER BROWN PIT

Air Quality CESA

Figure 4.1.2

04/03/2013

Rights-of-Way

The LR2000 database maintained by the BLM was queried by Township and Range to show the past and present ROWs that have been approved within the Watershed CESA. (The Air Quality CESA is contained within the Watershed CESA). These ROWs include the following: telecommunications; power transmission; roads and highways; communication sites; irrigation and water facilities; wind projects; mineral material disposal sites; and other ROWs. The approximate total acreage of existing and approved ROWs within the Watershed CESA is listed in Table 4.2-2. The exact acreage of surface disturbance associated with these ROWs cannot be quantified; however, it is assumed that these types of ROWs and the construction and maintenance associated with these facilities would create a level of surface disturbance that would contribute to cumulative impacts to various resources. In addition, certain types of ROWs can fragment habitat or create barriers or hazards for wildlife passage. The LR2000 database was queried on December 11, 2012, for the Watershed CESA; therefore, any newly approved ROWs that have been added to the LR2000 database after this date are not included in the analysis.

Table 4.2-2: Past and Present Rights-of-Way Acres in within the Watershed CESA

ROW Type	Watershed CESA (acres)
Roads and Highways	7,358
Telecommunications	1,505
Power Transmission	10,106
Communication Sites	211
Irrigation/Water Facilities and Pipelines	479
Mineral Material Disposal Sites	475
Material Sites	1,335
Wind Energy Facilities	14,344
Other	23
Total	**35,836**

Mineral Exploration and Mining

The LR2000 database was queried by Township and Range to show the past and present mineral exploration or mining activities (i.e., authorized Notices, closed Notices, and authorized and closed plans of operation) that have been issued within the Watershed CESA. Past and present mineral exploration and mining activities in the CESA include historic exploration and mining operations. Table 4.2-3 shows the results of the LR2000 query, in acres, of the exploration and mining activities within the CESA. The LR2000 database was queried on December 11, 2012 for the Watershed CESA; therefore, any newly authorized Notices or plans of operation that have been added to the LR2000 database after this date are not included in the analysis. These activities include mineral exploration activities currently being conducted by Mosquito Mining Co. southeast of the Project Area that consists of authorized disturbance of 0.55 acres. Eureka Moly has three authorized Notices for 4.7, 4.6 and 4.6 acres respectively, west of the Project Area. Three additional Notices are each owned/operated by Basin and Range Resources, BH Minerals USA, Inc., and Barrick Gold respectively, within the southernmost portion of the

Watershed CESA. The Ruby Hill Mine, with 750 acres of authorized surface disturbance, is located within southernmost portion of the Watershed CESA.

Other past projects include Project Glister, an abandoned gold mine located in the southernmost portion of the Watershed CESA that was operated by Ussram Exploration Company with a total surface disturbance of 17 acres.

Table 4.2-3: Past and Present Minerals Disturbance Acres in the Watershed CESA

CESA	Authorization Status	Total Acres of Disturbance
Watershed CESA	Closed Notices (83)	162
	Authorized Notices (8)	26
	Authorized and Closed Plans of Operation (9)	943
	Watershed CESA Total	**1,131**

4.2.1.2 Reasonably Foreseeable Future Actions

The RFFAs within the CESAs include electric, gas, and telephone ROW maintenance; livestock grazing; aggregate exploration, mining and processing; dispersed recreation; road maintenance; and potential wildland fires. These activities have the potential to continue during the next five-year period. Surface disturbance associated with pending mining and ROW projects are shown in Table 4.2-4.

Table 4.2-4: Pending Disturbance within the Watershed CESA

CESA	Pending Disturbance	Total Acres of Pending Disturbance
Watershed CESA	Pending Plans (4)*	3,568
	Pending Notices (1)	1
	Pending Pipeline	7
	Pending Communication Sites	10
	Watershed CESA Total	**3,586**

* The Mount Hope Project has been approved for a total of 8,355 acres of surface disturbance within a 22,866-acre Project Area. Approximately 10,024 acres of the Mount Hope Project boundary are within the watershed CESA. Approximately 3,404 acres of approved surface disturbance are within the Watershed CESA. The calculations for this CESA analysis only consider surface disturbance associated with the Mount Hope Project that falls within the Watershed CESA.

4.3 Evaluation of Potential Cumulative Impacts

The CEQ does not give clear guidance in describing the intensity of impacts for a given resource; however, “low adverse effect,” “moderate adverse effect,” “high adverse effect,” “beneficial

effect," and "no effect" are used in an example shown on page A-8 of Considering Cumulative Effects under the NEPA (CEQ 1997). For the purpose of the cumulative assessments in this EA, high impacts would be those impacts that were considered significant; medium impacts would be those impacts that were considered moderate and would occur over an extended time frame, and low impacts would be considered minimal and short term in length.

4.3.1 Air Quality

The CESA for air quality is the Air Quality CESA, which encompasses approximately 235,388 acres and is shown on Figure 4.1.2.

Past and Present Actions: Past and present actions that have had the potential to impact air quality include livestock grazing, fire management, mineral exploration and mining, ROW construction and maintenance, and dispersed recreation that disturbed or impacted soils creating fugitive dust or that have had the potential to generate emissions. There are approximately 16 miles of SR 278 within the Air Quality CESA, as well as approximately 10.23 miles of paved or gravel roads within the CESA that would have contributed to fugitive dust emissions by way of vehicle travel. The impacts associated with all past and present actions have had the potential to create surface disturbance and contribute to soil erosion and degradation of access roads leading to fugitive dust. However, most of these impacts are temporary in nature, ceasing when road travel and other activities stop.

RFFAs: Livestock grazing, wildland fire, ROW construction and maintenance, mineral exploration and mining, and dispersed recreation have the potential to continue to occur within the Air Quality CESA and have the potential to impact air quality. Some of these emissions would be localized and subject to NDEP BAPC air quality permits and compliance, development of mitigation measures, and implementation of environmental protection measures. Other emissions would be more long-term and basin-wide.

Climate Change

Past and Present Actions: Global past and present actions include the nation's continued use of fossil fuels for commercial, residential, and industrial uses. Examples of actions from around the globe include, but are not limited to, burning of fossil fuels for electricity, manufacturing, and transportation; deforestation and land surface change; agricultural and livestock operations; and fugitive methane emissions associated with pipelines and coal/oil/natural gas production. Past and present actions also include the use of fossil fuels for the operation of vehicles (BLM 2011). Local actions, i.e., actions within Eureka County, include the operation of motor vehicles, the operation of the Eureka County Airport, and the use of fossil fuels for power generation for business, industry, and personal uses.

RFFAs: Continued use of fossil fuels for power generation and motor vehicles is likely to occur within the CESA for the foreseeable future. Additionally, other activities associated with GHGs, such as raising of livestock, would continue within the CESA.

4.3.1.1 Proposed Action

Impacts to air quality from the Proposed Action would be limited to particulate and combustion emissions and fugitive dust. The incremental contribution of the Proposed Action's particulate

and combustion emissions and fugitive dust to the cumulative air quality environment would be relatively small compared to the existing cumulative air environment, and cumulative emissions are generally dispersed. Stationary sources would be regulated by the NDEP BAPC under individual permits to ensure that impacts would be reduced to levels that are consistent with the ambient air quality standards. Environmental Protection Measures outlined in Section 2.1.16 would help minimize the potential effects of fugitive dust on air quality. The Proposed Action would therefore, have low impacts to air quality.

Impacts to climate change associated with the Proposed Action would be limited to emissions from the use of motor vehicles and the use of the diesel power generator. These impacts would be temporary and emission levels would be reduced at the end of the Project. Climate change is a global issue, and the impacts from the Proposed Action, when analyzed on a global scale, would be minimal.

4.3.1.2 No Action Alternative

Under the No Action Alternative, incremental cumulative impacts to air quality within the CESA would result from past and present actions and RFFAs. Under the No Action Alternative, no new surface disturbance would result on BLM-administered lands in the Project Area. With the No Action Alternative, however, aggregate would need to be obtained from another source. Ames would most likely supply aggregate material from its Carlin or Battle Mountain Nevada facilities. This would result in aggregate being derived from a more distant source resulting in an overall greater transportation distance from source to point of use and greater impacts to air quality.

Under the No Action Alternative, incremental cumulative impacts to climate change within the CESA would result from past and present actions and RFFAs. The incremental effects would be similar to or greater than the Proposed Action because the distance from the source of aggregate to the point of use would be greater, resulting in more vehicle miles traveled.

4.3.2 Migratory Birds

The CESA for migratory birds is the Watershed CESA, which includes approximately 267,950 acres and is shown on Figure 4.1.1.

Past and Present Actions: Past and present actions that could have impacted migratory birds include wildlife habitat management, utility and other ROWs, mineral exploration, mining, livestock grazing, and dispersed recreation. Impacts to migratory birds could have resulted from the following: 1) destruction of habitat associated with building roads and clearing vegetation; 2) disruption from human presence or noise from drill rigs, water trucks, and four wheel drive pickups; or 3) direct impacts or harm to migratory birds that would result if trees and shrubs containing viable nests were cut down or ground nests destroyed by construction or ranching equipment. Impacts to migratory birds from recreation activities would include destruction of native vegetation or nesting areas from off-road vehicles that traveled off established roadways. Impacts to migratory birds from livestock grazing include trampling of vegetation or nesting areas near streams, springs, or riparian areas within the Watershed CESA.

Authorized and closed mineral exploration and mining Notices and plans of operation total approximately 1,131 acres (approximately 0.004 percent of the CESA) of surface disturbance.

Approximately 35,836 acres of ROWs were issued within the Watershed CESA that had the potential to create surface disturbance and disturb migratory bird habitat and vegetation. The Watershed CESA includes all or portions of the Roberts Mountain, Diamond Springs, North Diamond, Romano, Three Mile, Black Point, Willow Race Track, Shannon Station, Spanish Gulch, Ruby Hill, Lucky C, and Arambel grazing allotments. Livestock grazing and associated management contributes to the spread of invasive species which can have an indirect effect on migratory birds. However, disturbance to migratory birds from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species. The past and present actions that are quantifiable have disturbed approximately 14 percent of the CESA. There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, became naturally stabilized, or have naturally revegetated over time.

RFFAs: Potential impacts to migratory birds from grazing, dispersed recreation, roads, ROWs, mineral activities, or loss of native vegetation associated with potential wildland fires could occur. There is no way to quantify acreage of potential impacts to migratory birds or their habitat within the CESA as a result of dispersed recreation, grazing, or potential wildland fires. Pending ROW projects reported in LR2000 in the Wildlife CESA account for 17 acres of potential impact associated with communication sites and pipelines. There are approximately 3,569 acres of pending minerals projects located with the CESA. All pending minerals projects are required to incorporate protection measures for migratory birds and are not expected to directly harm migratory birds, but may result in habitat removal or alteration.

4.3.2.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of the CESA (267,950 acres). The Proposed Action (62.2 acres) would impact approximately 0.0002 percent of the CESA. Due to the small impact within the CESA, the impacts to migratory birds from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.14 and the environmental protection measures outlined in Section 2.1.16. Based on the above analysis and findings, incremental impacts to migratory birds as a result of the Proposed Action, when compared with the impacts from the past and present actions and RFFAs, are expected to be low.

4.3.2.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of this CESA. Under the No Action Alternative, incremental cumulative impacts to migratory birds within the CESA would result from past and present actions and RFFAs; however, the incremental contribution of this alternative is less than the Proposed Action because there is less surface disturbance. There would be no mining activities from the Project, and therefore no disturbance within the Project Area that would remove vegetation and disturb habitat or potentially impact nests.

4.3.3 Soils

Past and Present Actions: Past impacts to soil resources would have included an increase in sedimentation and erosion potential as a result of the removal of vegetation and the alteration of

surface soil conditions. These impacts could have been caused by dispersed recreation, mining, mineral exploration, or the construction of roads and utility infrastructure. Similar impacts would be caused by the present actions of recreation, livestock grazing, mining, mineral exploration, and the maintenance of roads and utility infrastructure. Reclamation and reseeding of disturbed areas would minimize the impacts to soil resources. Therefore, the impacts to soil resources as a result of past and present actions are considered to be low to moderate.

Reasonably Foreseeable Future Actions: Mineral exploration, mining, and road and utility infrastructure maintenance could result in additional loss of stabilizing vegetation cover or other potential impacts to soil resources. However, the restoration/reclamation of areas disturbed by RFFAs would mitigate the potential impacts to soil resources within the CESAs. Therefore, impacts to soil resources as a result of RFFAs are considered to be low to moderate.

4.3.3.1 Proposed Action

A total of the quantifiable past and present actions and RFFA disturbance within the Watershed CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of the Watershed CESA (267,950 acres). The Proposed Action (61 acres) would impact 0.0002 percent of the CESA. Surface disturbance would increase the potential for erosion of soils. Impacts would be reduced with the implementation of Environmental Protection Measures outlined in Section 2.1.16 and BMPs. Incremental impacts to soils from the Proposed Action, when combined with past and present actions and RFFAs, would be minimal.

4.3.3.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of this CESA. Under the No Action Alternative, incremental cumulative impacts to soils within the CESA would result from past and present actions and RFFAs; however, the incremental contribution of this alternative is less than the Proposed Action because there is less surface disturbance.

4.3.4 Special Status Species (Plants and Animals)

The CESA for special status species is the Watershed CESA, which includes approximately 267,950 acres and is shown on Figure 4.1.1. Within the Watershed CESA, approximately 41,752 acres are greater-sage grouse PPH, and approximately 114,925 acres are greater sage-grouse PGH (Figure 4.1.1).

Past and Present Actions: Past and present actions that could have impacted special status species include livestock grazing, fire management, mineral exploration, mining, ROW construction and maintenance, and dispersed recreation. These activities had the potential to have impacted water resources and wildlife habitat, or result in direct impacts to individuals in travel routes. Impacts to special status species from these activities include loss of forage, cover, and habitat, as well as disturbance of mating and brood rearing practices.

Authorized and closed mineral exploration and mining Notices and plans of operation total approximately 1,131 (approximately 0.004 percent of the CESA) of surface disturbance. Approximately 35,836 acres of ROWs were issued within the Watershed CESA that had the potential to create surface disturbance and disturb habitat for special status species and

vegetation. The Watershed CESA includes all or portions of the Roberts Mountain, Diamond Springs, North Diamond, Romano, Three Mile, Black Point, Willow Race Track, Shannon Station, Spanish Gulch, Ruby Hill, Lucky C, and Arambel grazing allotments. However, disturbance to special status species from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species. The past and present actions that are quantifiable have disturbed approximately 14 percent of the CESA. There are no data on the number of acres reclaimed. State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have naturally revegetated over time. Disturbance to special status species habitat from past and present actions may have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species; however, reclamation activities did not necessarily always occur on old mine sites, resulting in continued impacts to special status species.

These past and present actions have modified the quality and quantity of greater sage-grouse habitat within the Watershed CESA. Additionally, the landscape within the Watershed CESA has been altered over time as a result of the proliferation of agricultural activity that has eliminated an unknown quantity of suitable greater sage-grouse habitat. The actual amount of disturbance to greater sage-grouse PPH and PGH within the Watershed CESA as a result of past and present actions is unquantifiable. The nature of these activities and disturbances that include livestock grazing, fire management, mineral exploration, mining, ROW construction and maintenance, and dispersed recreation would be difficult to calculate in direct correlation to their disturbance on PPH and PGH habitat. However, disturbance to PPH and PGH may have been reclaimed and reseeded subsequent to mining projects and fire management activities.

RFFAs: Potential impacts to special status species from grazing, dispersed recreation, roads, ROWs, minerals activities or loss of native vegetation associated with potential wildland fires could occur. There is no way to quantify the potential impacts to sensitive species or their habitat as a result of dispersed recreation, grazing, or potential wildland fires. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 3,569 acres of pending minerals projects were reported in the LR2000 database within the Watershed CESA, and approximately 17 acres of pending ROW projects. Pending minerals projects all are required to incorporate protection measures and mitigation measures for special status species, which would reduce any cumulative impacts to special status species.

The impacts to greater sage-grouse PPH and PGH within the Watershed CESA as a result of RFFAs is unquantifiable and contingent on unknown future actions. RFFAs in the Watershed CESA would be affected by the policy direction of the BLM in implementing policies, procedures, and protection measures for the benefit of greater sage-grouse populations.

4.3.4.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of the CESA (267,950 acres). The Proposed Action (62.2 acres) would impact approximately 0.0002 percent of the CESA. Due to the small impact within the CESA, the impacts to special status species from the Proposed Action in combination with past and present actions and RFFAs would be minimal. Impacts would also be reduced with the planned reclamation described in Section 2.1.14. Based on the above analysis

and findings, incremental impacts to special status species as a result of the Proposed Action, when combined with the impacts from the past and present actions and RFFAs, are expected to be minimal.

The Proposed Action would result in 61 acres of surface disturbance within greater sage-grouse PPH. This would impact approximately 0.14 percent of greater sage-grouse PPH (41,752 acres) within the Watershed CESA. These impacts would be mitigated as a result of reclamation and environmental protection measures outlined in Section 2.1.14 and Section 2.1.16 respectively.

4.3.4.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of this CESA. Under the No Action Alternative, incremental cumulative impacts to special status species within the CESA would result from past and present actions and RFFAs; however, the incremental contribution of this alternative is less than the Proposed Action because there is less surface disturbance.

4.3.5 Vegetation

The CESA for vegetation is the Watershed CESA, which encompasses approximately 267,950 acres and is shown on Figure 4.1.1.

Past and Present Actions: Past actions that could have impacted vegetation include livestock grazing, mineral exploration and mining, ROW construction and maintenance, and dispersed recreation.

Authorized and closed mineral exploration and mining Notices or Plans of Operation total approximately 1,131 acres of surface disturbance (approximately 0.004 percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have been naturally revegetated over time. Approximately 35,836 acres of ROWs were issued within the CESA that had the potential to create surface disturbance. The Watershed CESA includes all or portions of the of the Roberts Mountain, Diamond Springs, North Diamond, Romano, Three Mile, Black Point, Willow Race Track, Shannon Station, Spanish Gulch, Ruby Hill, Lucky C, and Arambel grazing allotments, and livestock grazing and associated management likely contributes to changes in vegetation structure and the spread of invasive species.

RFFAs: Potential impacts to vegetation could result from grazing, dispersed recreation, roads, wildfires, ROWs, and mineral activities. Impacts associated with RFFAs would be similar to impacts described for past and present actions. Approximately 3,569 acres of pending minerals projects were reported in the LR2000 database within the Watershed CESA, and approximately 17 acres of pending ROW projects. Impacts to vegetation from the potential impacts from dispersed recreation, grazing, and wildland fires could include the removal of vegetation and compaction, mixing, and erosion of soils, and changes in plant community structure and diversity.

4.3.5.1 Proposed Action

Past and present actions and RFFA disturbance within the CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of the CESA (267,950 acres). The Proposed Action (62.2 acres) would impact approximately 0.0002 percent of the CESA. Due to the small impact within the CESA, the impacts to vegetation from the Proposed Action in combination with past and present actions and RFFAs would be low. Impacts would also be reduced with the planned reclamation described in Section 2.1.14, the environmental protection measures outlined in Section 2.1.16, and the environmental mitigation measures identified in Section 3.2.9.2.

4.3.5.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of this CESA. Under the No Action Alternative, incremental cumulative impacts to vegetation within the CESA would result from past and present actions and RFFAs; however, the incremental contribution of this alternative is less than the Proposed Action because there is less surface disturbance.

4.3.6 Wildlife

The CESA for wildlife is the Watershed CESA, which encompasses approximately 267,950 acres and is shown on Figure 4.1.1.

Past and Present Actions: Past and present actions that are likely to have had impacted to wildlife include livestock grazing, fire management, mineral exploration, mining, ROW construction and maintenance, and dispersed recreation. These activities are likely to have impacts to wildlife habitat, or result in direct impacts to individuals in travel routes. Impacts to wildlife and game animals from these activities include loss of forage, cover, and habitat as well as disturbance of mating and brood rearing practices. The greatest impact would be from off-road use that removes habitat.

Authorized and closed mineral exploration and mining Notices or plans of operation total 1,131 acres of surface disturbance (approximately 0.004 percent of the CESA). State and federal regulations require reclamation; therefore, it is reasonable to assume that some areas have been reclaimed, become naturally stabilized, or have naturally revegetated over time. Approximately 35,836 acres of ROWs were issued within the Watershed CESA that had the potential to create surface disturbance and disturb habitat and vegetation. However, disturbance to wildlife and game species from past and present actions would have been reduced through reclamation and seeding of disturbed areas and natural recolonization of native species.

RFFAs: Potential impacts to wildlife from grazing, recreation, roads, ROWs, mineral activities or loss of native vegetation associated with potential wildland fires could occur. There are no specific data on the potential impacts to wildlife species or their habitat as a result of recreation, grazing, or potential wildland fires. Approximately 3,569 acres of pending minerals projects were reported in the LR2000 database within the Watershed CESA. These pending minerals projects are all required to incorporate environmental protection measures for wildlife.

4.3.6.1 Proposed Action

Past and present actions and RFFA disturbance within the Watershed CESA is 1,131 acres, which is an impact to approximately 0.004 percent of the Watershed CESA (267,950 acres). The Proposed Action (62.2 acres) would impact approximately 0.0002 percent of the CESA. Due to the small impact within the Watershed CESA, the incremental cumulative impacts to wildlife or their habitat from the Proposed Action, in combination with past and present actions and RFFAs would be low. Impacts to wildlife from noise sources may occur, but would be temporary. Impacts would also be reduced with the reclamation plan described in Section 2.1.14 and the environmental protection measures outlined in Section 2.1.16.

4.3.6.2 No Action Alternative

A total of the past and present actions and RFFA disturbance within this CESA is approximately 40,553 acres, which is an impact to approximately 15 percent of this CESA. Under the No Action Alternative, incremental cumulative impacts to wildlife within the CESA would result from past and present actions and RFFAs; however, the incremental contribution of this alternative is less than the Proposed Action because there is less surface disturbance.

5 CONSULTATION AND PUBLIC INPUT

5.1 List of Preparers

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Kent Bloomer	Weed Management Specialist
Alden Shallcross	Hydrologist
Ethan Ellsworth	Wildlife Biologist
Ashley Johnson	Rangeland Management Specialist
Joshua Tibbetts	Prescribed Fire/Fuels Specialist
Kathy Graham	GIS Specialist
Cheryl LaRoque	Hazardous Materials Specialist

Enviroscientists, Inc.

Audra Miller	Project Manager
Jess Kohler	GIS/Resource Specialist
Daniel Robison	Senior Biologist/Environmental Specialist
Nick Mitrovich	Environmental Specialist
Opal Adams	Technical Review/Editing
Richard DeLong	Technical Review/Editing

Ames Construction, Inc.

Leonard (Lennie) Boteilho	Senior Manager
Chris Ennes	Environmental Manager

5.2 Persons, Groups and Agencies Contacted

Federal Agencies

U.S Fish and Wildlife Service

State Agencies

State of Nevada, Department of Conservation and Natural Resources, Nevada Natural Heritage Program

State of Nevada, Department of Wildlife

Native Americans

South Fork, Battle Mountain, and Elko Bands of the Te-Moak Tribe of Western Shoshone

5.3 Public Involvement

Public scoping is discretionary under NEPA. Public scoping was not conducted in association with the Project due to the remote location of the Project Area and the absence of residences within a one-mile radius.

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APPENDIX A

BATTLE MOUNTAIN SENSITIVE SPECIES LIST

AND

FEDERAL ENDANGERED, THREATENED, PROPOSED, AND CANDIDATE SPECIES LIST

APPENDIX A
BLM NEVADA SENSISTIVE SPECIES LIST
BATTLE MOUNTAIN

Scientific Name	Common Name	Potential to Occur in Project Area
Amphibians		
Bufo nelsoni	Amagosa Toad	No
Rana luteiventris	Columbia spotted frog (including Toiyabe spotted frog subpopulation)	No
Birds		
Accipiter gentilis	Northern goshawk	No
Aquila chrysaetos	Golden Eagle	Yes
Athene cunicularia hpugaea	Western Burrowing Owl	Yes
Buteo regalis	Ferruginous hawk	No
Buteo swainsoni	Swainson's hawk	No
Centrocercus urophasianus	Greater Sage-grouse	Yes
Charadrius alexandrinus nivosus	Western snowy plover	No
Empidonax traillii extimus	Southwestern willow flycatcher	No
Falco peregrinus	Peregrine falcon	No
Gymnorhinus cyanocephalus	Pinyon Jay	No
Haliaeetus leucocephalus	Bald eagle	No
Lanius ludovicianus	Logerhead shrike	Yes
Leucosticte atrata	Black Rosy-finch	No
Melanerpes lewis	Lewis woodpecker	No
Oreoscoptes montanus	Sage Thrasher	No
Spizella breweri	Brewer's sparrow	Yes
Fish		
Crenichthys nevadae	Railroad Valley Springfish	No
Gila bicolor ssp. 5	Hot Creek Valley tui chub	No
Gila bicolor ssp. 7	Railroad Valley tui chub	No
Gila bicolor ssp. 4	Fish Lake Valley tui chub	No
Rhinichthys osculus spp 5	Monitor Valley speckled dace	No
Mammals		
Antrozous pallidus	Pallid Bat	No
Brachylagus idahoensis	Pygmy rabbit	No
Corynorhinus townsendii	Townsend's big-eared bat	No
Eptesicus fuscus	Big brown bat	No
Euderma maculatum	Spotted bat	No
Lasionycteris noctivagans	Silver-haired bat	No
Lasiurus blossevillii	Western red bat	No
Lasiurus cinereus	Hoary bat	No
Microdipodops megacephalus	Dark kangaroo mouse	Yes
Microdipodops pallidus	Pale kangaroo mouse	No
Myotis californicus	California myotis	No
Myotis cilioabrum	Western small-footed myotis	No
Myotis evotis	Long-eared myotis	No
Myotis lucifugus	Little brown myotis	No
Myotis thysanodes	Fringed myotis	No
Myotis velifer	Cave myotis	No
Myotis volans	Long-legged myotis	No
Nyctinomops macrotis	Big free-tailed bat	No
Ochotona princeps	Pika	No
Ovis canadensis	Bighorn sheep	No
Pipistrellus hesperus	Western pipistrelle	No
Tadarida brasiliensis	Brazilian free-tailed bat	No
Thomomys bottae abstrusus	Fish Spring pocket gopher	No
Thomomys bottae curatus	San Antonio pocket gopher	No

Reptiles		
none		N/A
Insects		
Aegialia crescenta	Crescent Dunes aegialian scarab	No
Aegialia knighti	Aegialian scarab beetle	No
Aphodius sp. 2	Crescent Dunes aphodius scarab	No
Cercyonis oetus alkalorum	Big Smoky wood nymph	No
Cercyonis pegala pluvialis	White River wood nymph	No
Hesperia miriamae longaevicola	White Mountains skipper	No
Hesperia uncas fulvapalla	Railroad Valley skipper	No
Hesperia uncas grandiosa	White River Valley skipper	No
Philotiella speciosa septentrionalis	Great Basin small blue	No
Serica ammomenisco	Crescent Dunes serican scarab	No
Serica psammobunus	Sand Mountain serican scarab	No
Mollusks		
Anodonta californiensis	California floater	No
Pyrgulopsis anatina	Southern duckwater pryg	No
Pyrgulopsis basiglans	Large-gland Carico pyrg	No
Pyrgulopsis carinata	Carinate Duckwater pyrg	No
Pyrgulopsis dixensis	Dixie Valley pyrg	No
Pyrgulopsis micrococcus	Oasis Valley pyrg	No
Pyrgulopsis wongi	Wongs pyrg	No
Plants		
Asclepias eastwoodiana	Eastwood milkweed	No
Astragalus cimae var. *cimae*	Cima milkvetch	No
Astragalus eurylobus	Needle Mountains milkvetch	No
Astrogalus funereus	Black wollypod	No
Astragalus pseudiodanthus	Tonopah milkvetch	No
Astragalus toquimanus	Toquima milkvetch	No
Astragalus uncialis	Currant milkvetch	No
Boechera falcifructa	Elko rockcress	No
Castilleja salsuginosa	Monte Neva paintbrush	No
Cordylanthus tecopensis	Tecopa birdbeak	No
Cymopterus goodrichii	Goodrich biscuitroot	No
Epilobium nevadense	Nevada willowherb	No
Eriogonum anemophilum	Windloving buckwheat	No
Eriogonum beatleyae	Beatley buckwheat	No
Eriogonum lewisii	Lewis buckwheat	No
Eriogonum tiehmii	Tiehm buckwheat	No
Frasera gypsicola	Sunnyside green gentian	No
Glossopetalon pungens var. *glabarum*	Smooth dwarf greasebush	No
Grusonia pulchella	Sand cholla	No
Ivesia arizonica var. *saxosa*	Rock purpusia	No
Jamesia terapetala	Waxflower	No
Johanneshowellia crateriorum	Lunar Crater buckwheat	No
Lupinus holmgrenianus	Holmgren lupine	No
Oryctes nevadensis	Oryctes	No
Parthenium ligulatum	Low feverfew	No
Penstemon pahutensis	Pahute Mesa beardtongue	No
Penstemon palmeri var. *macranthus*	Lahontan beardtongue	No
Penstemon pudicus	Bashful beardtongue	No
Penstemon tiehmii	Tiehm beardtongue	No
Phacelia filiae	Clarke phacelia	No
Pahcelia minutissimo	Least phacelia	No
Polyctenium williamsiae	Williams combleaf	No
Sclerocactus blainei	Blaine pincushion	No
Sclerocactus nyensis	Tonopah pincushion	No
Silene nachlingerae	Nachlinger catchfly	No
Smelowskia homgrenii	Holmgren Smelowskia	No
Sphaeralcea caespitosa var. *williamsiae*	Railroad Valley globemallow	No
Tonestus graniticus	Lone Mountain goldenhead	No
Trifolium andinum var. *podocephalum*	Currant Summit clover	No
Viola lithion	Rock Violet	No

APPENDIX A
FEDERAL ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
EUREKA COUNTY

Scientific Name	Common Name	Potential to Occur in Project Area
Amphibians		
Rana luteiventris	Columbia spotted frog (including Toiyabe spotted frog subpopulation)	No
Bird		
Centrocercus urophasianus	Greater sage-grouse	Yes
Fish		
Oncorhychus clarkii henshawi	Lahontan cutthroat trout	No