

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

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**Final Environmental Assessment  
DOI-BLM-NV-L000-2013-0004-EA  
August 22, 2013**

**December 2013 Competitive Oil and Gas Lease Sale  
Ely District Office, Nevada**

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# Chapter 1 INTRODUCTION

## 1.1 Identifying Information

DECEMBER 2013 COMPETITIVE OIL AND GAS LEASE SALE

ELY DISTRICT OFFICE, NEVADA

NEPA #: DOI-BLM-NV-L000-2013-0004-EA

### 1.1.1 Background Information

Areas available for fluid mineral leasing are identified through management determinations during the planning process. These determinations designate the land as closed or open to leasing, and if open, what stipulations (resource protection) should be applied to the lease. All leases are subject to the terms and conditions of the standard lease form which allows for up to 60-day timing deferments and 200-meter (656 feet) displacements (Title 43 Code of Federal Regulations (CFR) Section 3101.1-2). Stipulations modify the lease rights beyond the standard lease terms. Constraints are considered to be either major, such as “No Surface Occupancy” (NSO), or moderate. Moderate constraints consist of timing limitations (seasonal restrictions) and controlled surface use restrictions. Timing limitations indicate that a leased area generally is open to development activities except during a specified period of time to protect identified resource values such as wildlife. Controlled surface use stipulations may require operating constraints to protect resources year round; for example, staying on existing roads (BLM 2008b, page 92).

In addition to the above major and moderate constraints, a lease notice may be attached to the lease to inform potential lessees of important resource issues under existing laws and regulations that may result in delays associated with subsequent permitting, and appropriate mitigation of those resource concerns (BLM 2008b, page 92).

Over 10 million acres (87%) of the Ely District are open to fluid mineral leasing (Table 1.1 below). Closed areas include designated wilderness and wilderness study areas. Discretionary closures and no surface occupancy areas make up about 5% of the Ely District.

Resources are further protected during operational activities through the application of Best Management Practices (BMP), as contained in the Gold Book (U.S. Department of the Interior and U.S. Department of Agriculture 2006) and the development of site-specific conditions of approval (BLM 2008b, page 92).

**Table 1.1 Summary of Fluid Mineral Leasing in Ely District**

<b>Open to Fluid Mineral Leasing</b>	<b>Acres (approx.)</b>
<b>Standard Lease Terms and Conditions</b>	<b>6,532,500</b>
<b>Moderate Restrictions (Timing/Surface Use Limitations)</b>	<b>3,277,200</b>
<b>Major Restrictions (No Surface Occupancy)</b>	<b>230,100</b>
<b>Open — Total:</b>	<b>10,039,800</b>
<b>Closed to Fluid Mineral Leasing</b>	
<b>Designated Wilderness/Wilderness Study Areas</b>	<b>1,153,500</b>
<b>Discretionary Closures</b>	<b>306,700</b>
<b>Closed — Total:</b>	<b>1,460,200</b>
<b>Total:</b>	<b>11,500,000</b>

*Note: There will be about 1,087,620 acres of lease notices that could apply to any of the above open categories.*

Under certain conditions, waivers, exceptions, and modification to lease stipulations may be granted by the Authorized Officer (AO). The circumstances for granting an exception, waiver, or modification are attached to each stipulation.

Any lease stipulation may be waived or modified as per Title 43 CFR, Section 3101.1-4. A waiver or modification is allowable only if the authorized officer determines that the factors leading to its inclusion in the lease have changed sufficiently to make requirements of the stipulation(s) no longer justified, or mitigation contained in individual permits will preclude unacceptable impacts. If the waiver or modification is of major concern to the public, such modification will be subject to a 30-day public review. This review can be held concurrent with the required 30-day posting of applications for permit to drill. Plan amendments are not required to waive, modify, or provide exception to lease stipulations.

A waiver eliminates a stipulation from the lease. The stipulation waiver can be considered concurrent with application for permit to drill approvals and can be accomplished with any NEPA vehicle available such as an environmental assessment, determination of NEPA adequacy, categorical exclusion, or any similar process available to the Ely District Office.

A modification usually is considered a long-term change in the stipulation to fit the new conditions for which the stipulation was applied; however, it can be short term as well. Depending upon the site conditions, the stipulation may or may not apply to all actions or authorizations on the leasehold. An example of a modification could be a Greater Sage-Grouse lek site that may no longer need a NSO stipulation on drilling and construction operations if the Bureau of Land Management (BLM), in consultation with Nevada Department of Wildlife (NDOW), determines that portions of the area can be occupied without adversely affecting the Sage-Grouse lek. Public notice is required only if the AO determines it is of major public concern.

An exception is a one-time exception to all or part of the stipulation for a particular action due to changed environmental conditions at the time and place of the action being considered. For example, a seasonal restriction on drilling in critical winter range could be excepted if the winter is mild and the target species have not moved onto the critical portions of the winter range (near the drilling location). In subsequent years, the conditions could change and preclude an exception being granted. Normally, exceptions are considered minor actions and, therefore, are not subject to a 30-day public review.

## **1.2 Geology of Oil and Gas in Eastern Nevada**

Many of the rock formations found within the Assessment Area are indicative of a continental plate margin converging with an oceanic plate. A combination of depositional and orogenic (mountain building) events along this margin have resulted in the Assessment Area being generally prospective for hydrocarbon production.

The development of the Antler Orogeny in the Late Devonian to Early Mississippian allowed the deposition of the organic-rich source rocks necessary for hydrocarbon development. Late Cretaceous Sevier Orogeny created stacked set of thrust sheets, which buried the mid-Paleozoic organic sediments beneath a thickened crust where they could pass into the oil and gas-generating temperature and pressure windows. The Sevier Orogeny in Late Cretaceous also placed locally prospective reservoir rocks above the Mississippian source rocks in potential oil and gas traps. In geologic time following the Sevier Orogeny, the assessment area experienced varying amounts of volcanism and the development of the present-day basin and range topography. The late Tertiary volcanic rocks constitute the main reservoir of the oil fields in the Railroad Valley petroleum province. However, the Chainman Shale and the Pilot Shale of Mississippian ages are the potentially oil-bearing formations mostly sought after in the majority of the Assessment Area. New directional drilling and hydraulic fracturing (HF) technology may allow for more extensive exploration into these tight formations not previously considered feasible.

## **1.3 History of Oil and Gas Exploration within the Ely District**

The first oil discovery in Nevada occurred in 1954 in Railroad Valley. Railroad Valley is the predominant area of oil and gas production in Nevada. Nevada's only oil refinery is located here. Most of the valley lies in Nye County, but it crosses into White Pine County at its northern end. Since 1907, over 970 wells have been drilled in Nevada. This includes about 270 wells drilled since 1986 of which about 50 were producers.

Locally, numerous exploration or "wildcat" wells have been drilled throughout White Pine, Northeast Nye, and Lincoln Counties. Even though many have had oil shows, there are currently

only two producing wells within the Ely District boundary; however, new advancements in directional drilling and HF technology may increase this number in the next ten years.

The first well drilled in the Ely District was in 1920 when the Illipah Syndicate drilled a well in the Barrel Springs area of the White Pine Range in White Pine County. The well was drilled in Section 11, Township 17 North, Range 58 East and reached a total depth of 929 feet with gas and oil shows (evidence of oil and gas) (Garside et al. 1988). The Illipah Syndicate drilled three (3) more wells in the 1920s in the Barrel Springs area with numerous oil and gas shows, but with no commercial results.

Approximately 200 wells have been drilled in the district since the 1920s. Since 1950, slightly more than 170 wells have been drilled, and 90% of them were abandoned with only two wells currently in production. Many wells had evidence of the presence of hydrocarbons, but not in commercially producible quantities.

Drilling activity in the 1950s was sparse with only one well drilled in some years, and in other years, no drilling occurred. Since 1964, an average of about four (4) wells per year has been drilled in the district, with most of the wells being drilled in White Pine County (Hess 2001). However, approximately 68 wells have been drilled in the Nye County portion of the district, and most of those are in the Railroad Valley. Most of the drilling occurred on federal leases, and the federal government owns the overwhelming amount of leased minerals. More than one-third of the wells in the district were drilled to depths of between 2,500 and 5,000 feet.

A little more than 5% of the wells were drilled to more than 10,000 feet deep. The deepest well in the district, drilled in 1983, was the Commodore Resources Outlaw Federal #1 drilled to a total depth of 13,000 feet in White Pine County (Section 1, Township 10 North, Range 70 East). The well was drilled east of the Snake Range and had reported hydrocarbon shows, but tests on the oil were not conclusive of naturally occurring hydrocarbons (Poole and Claypoole 1984).

The U.S. Geological Survey (Peterson and Grow 1995) estimated the potential undiscovered technically recoverable hydrocarbon resources for the Eastern Basin and Range area, of which the Assessment Area is part. Their estimates, when extrapolated to the district, indicate that the potential hydrocarbon resource is nearly 98 million barrels of oil and almost 16 billion cubic feet of natural gas.

These estimates are the mean values presented by Peterson and Grow (1995). Low-grade coal (lignite) is present in the district, but mineable deposits have not been found. Therefore, there is very low or no potential for coalbed natural gas resources in the Ely District. Therefore, coalbed natural gas is not included in the natural gas resource estimate.

Based on the foregoing, much of the Assessment Area has a high potential for hydrocarbons based on the following geologic characteristics:

- Presence of hydrocarbon source rocks
- Evidence of thermal maturation
- Presence of reservoir rocks with adequate porosity and permeability
- Potential for hydrocarbon traps to exist

There are places in the district where Precambrian-age metamorphic and volcanic rocks are the dominant surface rock types, but the presence of these rocks does not preclude the potential for the occurrence of deeper hydrocarbons in these areas. It is possible that hydrocarbon resources may have been buried by thrust faults or extrusive igneous rocks and that current exploration technique, exclusive of random drilling, cannot define the location or depth of these hidden potential resources.

#### **1.4 History of Oil and Gas Leasing within the Ely District**

Based on 2002 to 2012 leasing numbers, federal lease sales average approximately 395,000 acres per year (Table 1.4). The largest amount of acreage leased within the past 10 years was in 2005 where it surpassed 800,000 acres. However, since the new oil and gas leasing reform in 2011, the BLM state office put a limit of 200 parcels per sale and one sale per district office per year. At a maximum of 2,560 acres per parcel, this calculates the total leasable acreage per sale to 512,000. Taking on additional parcels and lease sales are optional to the District Office.

Table 1.4 also demonstrates the constant turnover of leased parcels. Although the BLM has leased over 3.9 million acres of public land for oil and gas development in the past 11 years, only 2 million acres remain active. The December 2013 lease sale could add another 399,873 leased acres, while over 14,000 remaining leased acres in 2002 will expire this year.

Only 30 wells were authorized in the Ely District over the past 11 years, even though there are 915 active leases covering just over 2 million acres of public land, as of July 31, 2013, based on information obtained from the LR2000 database (Table 1.4).

**Table 1.4 APDs Approved**

<b>Year Leased</b>	<b>No. of Parcels Leased</b>	<b>Leased Acreage</b>	<b>Currently Active Leases</b>	<b>Current Acreage Leased</b>	<b># of APDs Approved</b>
2002	29	109,226			1
2003	55	77,836			2
2004	119	309,539			6
2005	341	827,236			1
2006	282	675,461			3
2007	93	167,683			3
2008	278	535,768			1
2009	138	263,519			2
2010	178	551,843			2
2011	131	325,637			1
2012	66	108,483			4
<b>Totals:</b>	<b>1710</b>	<b>3,952,231</b>	<b>915</b>	<b>2,008,106</b>	<b>30</b>

#### **1.4.1 Current Leasing Review Guidelines**

It is the policy of the BLM as derived from various laws, including the Mineral Leasing Act of 1920 and the Federal Land Policy and Management Act of 1976, to make mineral resources available and to encourage development of mineral resources to meet national, regional, and local needs. The Nevada State Office conducts a yearly competitive lease sale for oil and gas lease parcels in the Ely District.

The Nevada State Office publishes a Notice of Competitive Lease Sale (NCLS) that lists lease parcels offered at the auction at least 45 days before the auction is held. The BLM bases its decision as to which parcels to offer for this competitive lease sale on current information and the management framework developed in the land use plan. Surface management of non-BLM administered lands overlaying federal minerals is determined by BLM in consultation with the appropriate surface management agency or the private surface owner.

In the process of preparing a lease sale, the Nevada State Office sends a list of nominated parcels to each Field Office (FO) where the parcels are located. The FO staff then review the parcels to determine:

- If they are in areas identified in the Ely District Record of Decision and Approved Resource Management Plan (Ely RMP) as open to fluid mineral leasing;
- If new information has become available which might change any analysis conducted during the planning process;
- If appropriate consultations have been conducted;

- What appropriate stipulations should be included; and
- If there are special resource conditions, of which potential bidders should be made aware.

Once the draft parcel review is completed and returned to the Nevada State Office, a list of available lease parcels and stipulations is made available to the public through a NCLS. Lease stipulations applicable to each parcel are specified in the Sale Notice. On rare occasions, additional information obtained after the publication of the NCLS, may result in withdrawal of certain parcels prior to the day of the lease sale.

The EA verifies conformance with the approved land use plan and provides the rationale for deferring parcels from the lease sale. Additionally, it provides the rationale for any lease stipulations applied to specific parcels.

Resource specialists, who relied on historical data, assessed environmental impacts that might result from an oil and gas lease sale, and personal knowledge of the areas involved, conducted field inspections or reviewed existing databases and file information to determine the appropriate stipulations to attach to specific parcels. This complies with National Environmental Policy Act (NEPA) of 1969, as amended (Public law 91-90, 42 USC 4321 et seq.)

For the December 2013 lease sale, 148 out of the 216 parcels received pre-sale offers of \$2 an acre. Pre-sale offers can be submitted when submitting an Expression of Interest (EOI) under the new Leasing Reform Act. If no one else bids on these parcels on the day of the competitive lease sale, the parcels will be awarded to the person who submitted the pre-sale offer.

At the time of this review, it is not known whether all nominated parcels will receive bids, if leases will be issued, or if well sites or roads might be proposed in the future. Detailed site-specific analysis of individual wells or roads would occur when an Application for Permit to Drill (APD) is submitted.

### **1.5 Purpose and Need for Action**

The purpose of the action is to offer nominated parcels for competitive oil and gas leasing in the December 2013 Competitive Oil and Gas Lease Sale. Offering nominated parcels for competitive oil and gas leasing allows private individuals or companies to explore the Federal mineral estate of lands managed by the federal government for the development of oil and gas resources.

The sale of oil and gas leases is needed to allow continued exploration for additional petroleum reserves which would help the United States meet its growing energy needs and to enable the United States to become less dependent on foreign oil sources. This action is being initiated to facilitate the Ely District Office's implementation of the requirements in Executive Order 13212

(2001) and the National Energy Policy Act (2005).

### **1.6 Conformance with BLM Land Use Plan**

The Proposed Action is in conformance with the Ely District Record of Decision and Approved Resource Management Plan (Ely RMP), which states, *“To provide for the responsible development of mineral resources to meet local, regional, and national needs, while providing for the protection of other resources and uses.”* In addition, *“Timing limitations indicate that a leased area generally is open to development activities except during a specified period of time to protect identified resource values such as wildlife”* (BLM 2008b, page 92).

This document is tiered to, and incorporates by reference, the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (RMP/FEIS). Should a determination be made that implementation of the Proposed Action would not result in significant environmental impacts or significant environmental impacts beyond those already disclosed in the existing NEPA documents, a Finding of No Significant Impact (FONSI) would be prepared to document that determination and a Decision Record (DR) issued that provides a rationale for approving the selected alternative (BLM 2007).

### **1.7 Relationship to Statutes, Regulations, or other Plans**

The Proposed Action complies with federal, state, and local laws, and regulations, and is consistent with federal, state, and local policies, and plans to maximum extent possible.

Purchasers of oil and gas leases are required to obey all applicable federal, state, and local laws and regulations including obtaining all required permits required should lease development occur.

Federal regulations and policies require the BLM to make its public land and resources available based on the principle of multiple-use. At the same time, it is BLM policy to conserve special status species and their habitats, and ensure that actions authorized by the BLM do not contribute to the need for the species to become listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS).

Compliance with Section 106 responsibilities of the National Historic Preservation Act (NHPA) are adhered to by following the BLM – Nevada State Historical Preservation Office (SHPO) protocol agreement, which is authorized by the National Programmatic Agreement between the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, and other applicable BLM handbooks.

As the BLM reviews draft parcel locations, the cultural resource staff reviews the locations to determine if any are within known areas of cultural or archeological concern. Native American consultation is conducted for each lease sale. If Traditional Cultural Properties (TCP) or heritage related issues are identified, such parcels are deferred from the sale while letters requesting information, comments, or concerns are sent to Native American representatives. If the same draft parcels appear in a future sale, a second request for information is sent to the same recipients and the parcels may be deferred again. If no response to the second letter is received, the parcels are allowed to be offered in the next sale.

If responses are received, BLM cultural resources staff will discuss the information or issues of concern with the Native American representative to determine if all or only portions of a parcel need to be withdrawn from the sale or if special stipulations need be attached as lease stipulations. Native American consultation letters for the December 2013 Lease Sale were sent May 20, 2013. The BLM received responses from the Confederated Tribes of the Goshute Reservation on May 3, 2013 and met with the Tribes on June 7, 2013. A site visit with the Duckwater Shoshone Tribe was held on July 10, 2013.

The Proposed Action and alternatives would be in conformance with the National Environmental Policy Act (NEPA) of 1969, (P.L. 91-190 as amended (42 USC §4321 et seq.); Mineral Leasing Act (MLA) of 1920 as amended and supplemented (30 USC 181 et seq.); the Federal Oil and Gas Leasing Reform Act of 1987, which includes the regulatory authority under 43 Code of Federal Regulation (CFR) 3100, Onshore Oil and Gas Leasing; General, and Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) Right-of-Way (ROW) under regulatory authority under 43 CFR 2800 for ROWs.

## **1.8 Decision to be Made**

The Ely District Office must determine whether or not to recommend leasing all or part of the nominated parcels in the upcoming December 2013 Oil and Gas Competitive Lease Sale to the Nevada BLM State Director by August 16, 2013. The Ely District must also determine which stipulations must be attached to the parcels in order to help protect the resources.

### **1.8.1 Identification of Issues**

While many issues may arise during scoping, not all of the issues raised warrant analysis. Issues raised through scoping are analyzed if:

- Analysis of the issue is necessary to make a reasoned choice between alternatives.
- The issue is significant (an issue associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of impacts).
- There is a disagreement about the best way to use a resource, or resolve an unwanted resource condition, or potentially significant effects of a proposed action or alternative.

An interdisciplinary (ID) team discussed the potential consequences of the proposed action during internal scoping held on April 29, 2013 for the Schell FO, May 6, 2013 for the Egan FO, and May 7, 2013 for the Caliente FO. The following issues were analyzed within this EA as a result of scoping:

- Tribal Interests
- Cultural Resources
- Fish and Wildlife
- Special Status Species
- Migratory Birds
- Environmental Justice
- Socioeconomics
- Visual Resources
- Wetlands/Riparian Areas
- Lands with Wilderness Characteristics

A project notice was sent to other federal agencies, Native American Tribes, the Nevada State Clearinghouse, interested publics, and grazing permittees on June 28, 2013. The preliminary EA was placed on the BLM NEPA Register website for 30 days to receive public comments until July 29, 2013. The BLM received approximately 30 external comments from individuals and government agencies on the proposed action during the 30-day comment period. Most comments expressed concerns about potential indirect effects from hydraulic fracturing, air quality, water consumption, and groundwater contamination.

The Bureau of Land Management (BLM), Ely District Office mailed invitations to tribes to consult with the Ely District Office in providing information concerning any known traditional religious sites and cultural sites of importance as required by the National Historical Preservation Act of 1966, as amended: Section 106.

Seven Tribes were notified by Certified Mail by the US Postal Service on May 20, 2013 (see Chapter 7 External Communications). On June 7, 2013 the Schell Field Office Assistant Field Manager met with the Business Council of the Confederated Tribes of the Goshute Indian Reservation in Ibapah, Utah and during the meeting the tribal leadership recommended the Bureau of Land Management (BLM) defer nominated parcels adjacent to the reservation on the western boundaries on the tribal trust lands.

On July 10, 2013 the Ely District Office received a letter from Confederated Tribes of the Goshute Reservation requesting government-to-government consultation to further discuss the Tribes' concerns. BLM has scheduled another meeting with the Business Council of the Confederated Tribes of the Goshute Reservation on September 13, 2013.

The final EA was revised to include a Reasonably Foreseeable Development scenario which resulted in additional impact analysis for the following resources:

- Special Status Species,
- Climate Change,
- Air Quality,
- Water Quality,
- Invasive and Non-native Species, and
- Vegetation Resources.

All comments received that are within the scope of the Proposed Action are addressed in this Final EA.

## **Chapter 2 Proposed Action and Alternatives**

### **2.1 Introduction**

The previous chapter presented the Purpose and Need for the proposed project along with the identified relevant issues (i.e., those elements that could be affected by the implementation of the proposed project). In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM developed a range of action alternatives; however, only a proposed action alternative and no action alternative seemed feasible. No other alternatives to the proposed action were apparent which would meet the purpose and need. The potential environmental effects resulting from the implementation of each alternative are analyzed in Chapter 4 for each of the identified issues.

The Nevada State Office submitted a list of 216 nominated parcels totaling 399,873 acres of the Ely District on May 1, 2013 (Figure 2.1 and Table 2.1). Appendix A lists all 216 parcels, the parcel number, acreage, legal description, and known stipulations. The Egan FO received 181 parcels, the Caliente FO received 19 parcels, and the Schell FO received 16 parcels. The Schell FO is the lead office on this project.

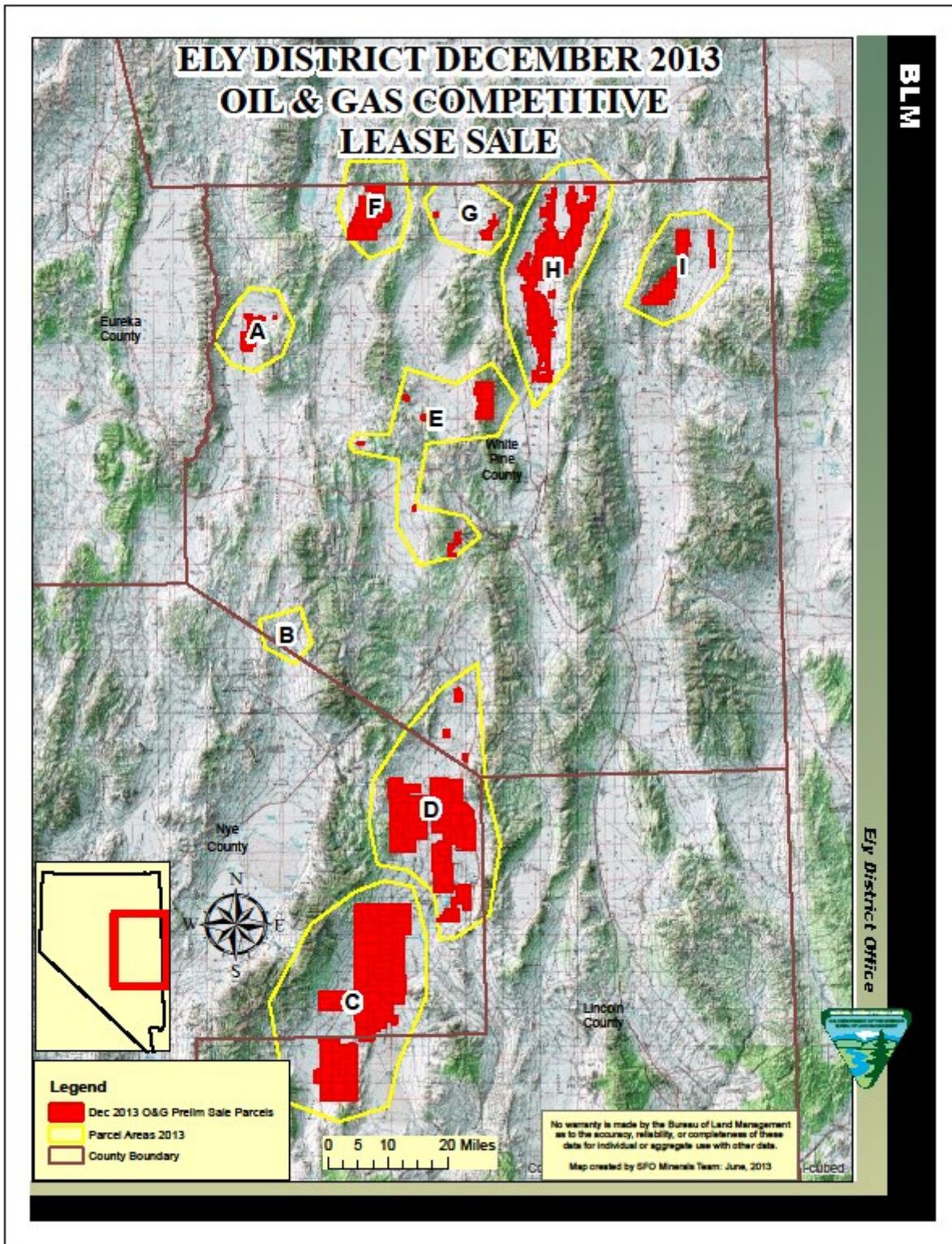


Figure 2.1 Nominated Parcels Map

**Table 2.1 Map Key for Parcels with Acreage**

AREA	AREA NAME	PARCEL NUMBERS	TOTAL ACREAGE
A	Newark Valley	1,2,3	6,175
B	N. Railroad Valley	5	710
C	Garden Valley	4,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,81,82,83,84,85,86,87,88,89,90,91,92,93,94	158,924
D	White River Valley	95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,151,152,153,154,155,156	107,581
E	Jakes Valley and South Butte Valley	71,115,116,148,149,157,158,159,160,161	12,159
F	Maverick Springs Range	72,73,74,75,76,77,78,79,80,117	21,401
G	North Butte Valley	150,162	2,184
H	Steptoe Valley	163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207	72,681
I	Antelope Valley	208,209,210,211,212,213,214,215,216	18,058
			399,873

## 2.2 Description of the Proposed Action

The Proposed Action is to recommend to the State Director that of the 216 nominated parcels, 175 parcels be offered for competitive oil and gas leasing (139 whole parcels and 36 partial parcels). Based on issues identified through scoping 77 parcels were recommended for deferral, in whole or in part. Standard terms and conditions as well as special stipulations would apply. Lease stipulations (as required by Title 43 CFR 3131.3) would be added to those parcels offered for sale to address site-specific concerns or new information not identified in the land use planning process.

Once sold, the lessee has the ability to develop the lease by exploring, drilling, and producing all of the oil and gas within the lease boundaries, subject to the stipulations attached to the lease (Title 43 CFR 3101.1-2). Oil and gas leases are issued for a 10-year period or may continue for as long thereafter as oil or gas is produced in paying quantities.

If a lessee fails to produce oil and gas, does not make annual rental payments, does not comply with the terms and conditions of the lease, or relinquishes the lease, the lease is terminated and all lessee rights revert back to the federal government and the lease may be resold.

Drilling of wells on a lease is not permitted until the lease owner or operator secures approval of a drilling permit and a surface use plan specified under Onshore Oil and Gas Orders, Notice to Lessee's (NTL's) listed in Title 43 CFR 3162.

Anyone submitting an informal EOI that certain lands be offered in an oil and gas competitive lease auction, and that the EOI includes split-estate lands (private Surface/Federal minerals) must provide, with the EOI, the name and address of the current private surface owner(s). Whenever a split-estate parcel is included in an oil and gas Notice of Competitive Lease Sale, the Bureau of Land Management (BLM) will send a courtesy letter to the surface owner(s). The letter will provide the surface owner(s) notice of the scheduled auction as well as information about the BLM's regulations and procedures for Federal oil and gas leasing and development on split-estate lands. Any EOI including split-estate lands that is submitted in the future, or is now pending with a BLM State Office, that does not provide the name and address of the surface owner(s) will not be processed by the BLM. Such lands will not be placed on a list of lands included in a Notice of Competitive Lease Sale until the required information is provided.

Some of the parcels may contain a special Cultural Resources Lease Notice stating that all development activities proposed under the authority of these leases are subject to compliance with Section 106 of the NHPA and Executive Order 13007. Standard terms and conditions as well as special stipulations listed in the RMP would also apply.

Many of the parcels have one or more of the following stipulations associated with the lease, as shown in Appendix B of the EA:

- LEASE NOTICES
  - NV-040-005-004 Historic Trails (Pony Express)
  - NV-040-005-003 Historic Sites
  - NV-040-005-002 Cultural Sites
  - NV-040-005-001 Desert Tortoise Habitat
  
- LEASE TIMING STIPULATIONS
  - NV-040-002-007 Desert Tortoise Habitat



NV-13-12-119 T.0060N, R.0610E, 21 MDM, NV  
Sec. 002 LOTS 3,4;  
Sec. 002 SWNW;  
Sec. 003 S2;  
Sec. 004 NESW, S2SW,SE;  
Sec. 005 SESE.

The following seven (7) parcels are within a ½-mile of the Kirch WMA. Originally, there was a buffer implemented around the WMA in the Schell Management Framework Plan to help protect the sensitive wetlands and lakes that exist within the WMA. This buffer was not carried forward into the Ely RMP although the rationale for maintaining the previous buffer remains the same. However, due to directional drilling limitations of typically a ½-mile or less laterally, a one-mile NSO buffer may not be appropriate. The BLM cannot lease mineral rights that are not accessible, therefore the area needs to be closed to mineral leasing and have a ½-mile NSO buffer surrounding the closed area to allow drilling companies' access on any leased land. The Ely District Office recommends that the following parcels be deferred until a RMP amendment can be approved.

NV-13-12-118 T.0060N, R.0610E, 21 MDM, NV  
Sec. 001 LOTS 1-3;  
Sec. 001 SENW, S2NE, SW, E2SE;  
Sec. 012 W2W2;  
Sec. 014 NE; S2.

NV-13-12-119 T.0060N, R.0610E, 21 MDM, NV  
Sec. 003 LOTS 1-4;  
Sec. 003 S2NE, SENW;  
Sec. 004 LOTS 3, 4;  
Sec. 004 S2NW, NWSW;  
Sec. 005 LOT 1;  
Sec. 005 S2NE, SENW, E2SW, N2SE, SWSE.

NV-13-12-120 T.0060N, R.0610E, 21 MDM, NV  
Sec. 023 W2;  
Sec. 027 N2NE,SWNE,N2NESENE;  
Sec. 027 W2SENE,S2SESENE,E2NW;  
Sec. 027 S2NWSWNW,SWSWNW;  
Sec. 027 E2W2NW,NWNWNW,SW;  
Sec. 028 SE.

NV-13-12-121 T.0060N, R.0610E, 21 MDM, NV  
Sec. 032 SE;  
Sec. 033 N2, NWSW.

NV-13-12-127 T.0070N, R.0610E, 21 MDM, NV  
Sec. 034 E2NE, NESE.

NV-13-12-128 T.0070N, R.0610E, 21 MDM, NV  
Sec. 033 S2;  
Sec. 034 W2E2, SW, SESE.

NV-13-12-151 T.0060N, R.0620E, 21 MDM, NV  
Sec. 006 LOTS 1-5;  
Sec. 006 SENW, S2NE.

The Ely District Office has been in negotiations with the Confederated Tribes of the Goshute Reservation for the past two years concerning the leasing of Federal lands surrounding their reservation. The Tribe has requested a ½-mile NSO buffer around the perimeter of the reservation to help protect their tribal lands from impacts caused by surface disturbing activities, as well as, subsurface exploration of solid and fluid minerals. The Ely District Office recommends that the following parcels be deferred until a RMP amendment can be approved.

NV-13-12-213 T.0240N, R.0680E, 21 MDM, NV  
Sec. 001 PROT E2;  
Sec. 012 PROT E2;  
Sec. 013 PROT E2;  
Sec. 024 PROT E2;  
Sec. 025 PROT E2;  
Sec. 036 PROT E2.

The following parcel is within the authorized Robinson Mine Plan of Operations boundary. The Ely District Office requested that the listed portions of the parcel be removed from this sale list and all future sale lists to avoid conflict between active mining and leasable minerals development.

NV-13-12-148 T.0160N, R.0610E,  
Sec. 012 N2NE,W2;  
Sec. 013 SWNE,W2W2,NESW,NWSE;  
Sec. 023 W2NE,SEW,NESW;  
Sec. 026 SESW, S2SE.

The following 69 parcels are within a 4-mile radius of active leks, inactive leks, and leks of unknown activity. These parcels have been deferred, in whole or in part, to meet the objectives defined in Fish and Wildlife Service's Greater Sage-Grouse Conservation Objectives Report (February 2013) for the conservation of Greater Sage-Grouse and their habitat.

NV-13-12-001	NV-13-12-027	NV-13-12-075
NV-13-12-005	NV-13-12-028	NV-13-12-078
NV-13-12-026	NV-13-12-071	NV-13-12-092

NV-13-12-093	NV-13-12-161	NV-13-12-181
NV-13-12-115	NV-13-12-162	NV-13-12-185
NV-13-12-116	NV-13-12-163	NV-13-12-186
NV-13-12-118	NV-13-12-164	NV-13-12-187
NV-13-12-119	NV-13-12-165	NV-13-12-188
NV-13-12-120	NV-13-12-166	NV-13-12-189
NV-13-12-121	NV-13-12-167	NV-13-12-193
NV-13-12-125	NV-13-12-168	NV-13-12-194
NV-13-12-128	NV-13-12-169	NV-13-12-195
NV-13-12-129	NV-13-12-170	NV-13-12-197
NV-13-12-149	NV-13-12-171	NV-13-12-201
NV-13-12-150	NV-13-12-172	NV-13-12-202
NV-13-12-152	NV-13-12-173	NV-13-12-203
NV-13-12-153	NV-13-12-174	NV-13-12-204
NV-13-12-154	NV-13-12-175	NV-13-12-206
NV-13-12-155	NV-13-12-176	NV-13-12-207
NV-13-12-157	NV-13-12-177	NV-13-12-209
NV-13-12-158	NV-13-12-178	NV-13-12-210
NV-13-12-159	NV-13-12-179	NV-13-12-211
NV-13-12-160	NV-13-12-180	NV-13-12-212

The Confederated Tribes of the Goshute Reservation requested that the BLM defer oil and gas lease parcels within Antelope (Tippett) Valley, due to concerns that oil and gas drilling and exploration contaminate groundwater resources. The federally reserved water rights on the Goshute Reservation are partially sourced from the north-northeasterly flow of groundwater from Antelope Valley. The Ely District Office recommends the following seven (7) parcels, or portions thereof, in Antelope Valley be deferred.

NV-13-12-208	T.0230N, R.0670E, 21 MDM, NV Sec. 001 LOTS 1-4; Sec. 001 S2N2,S2; Sec. 011 ALL; Sec. 012 N2NE,W2.
NV-13-12-209	T.0230N, R.0670E, 21 MDM, NV Sec. 013 W2; Sec. 014 ALL EXCL ME PATENTS; Sec. 023 ALL; Sec. 024 N2NW; Sec. 026 NE, N2NW, SE.
NV-13-12-210	T.0230N, R.0670E, 21 MDM, NV Sec. 015 ALL;

	Sec. 022 N2, N2SW, N2SE, SESE.
NV-13-12-211	T.0230N, R.0670E, 21 MDM, NV Sec. 021 N2.
NV-13-12-214	T.0240N, R.0680E, 21 MDM, NV Sec. 005 PROT ALL; Sec. 006 PROT ALL; Sec. 007 PROT ALL; Sec. 008 PROT ALL.
NV-13-12-215	T.0240N, R.0680E, 21 MDM, NV Sec. 017 PROT N2,SW; Sec. 018 PROT ALL; Sec. 019 PROT ALL; Sec. 020 PROT W2.
NV-13-12-216	T.0240N, R.0680E, 21 MDM, NV Sec. 029 PROT NW; Sec. 030 PROT NE,W2,N2SE; Sec. 031 PROT W2,SE.

### **2.3 No Action Alternative**

In accordance with BLM NEPA guidelines H-1790-1, Chapter V (BLM 2008a), this EA evaluates 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. The No Action Alternative forms the baseline from which the impacts of all other alternatives can be measured. In the case of a lease sale, this would mean that all expressions of interest to lease (parcel nominations) would be denied or rejected.

Under the No Action Alternative, the BLM would withdraw all 216 nominated lease parcels from the December 2013 lease sale. Surface management would remain the same and ongoing oil and gas development would continue on surrounding leased federal, private, and state lands.

If the BLM does not lease these Federal mineral resources, demand would likely be addressed through imports or production elsewhere.

### **2.4 Alternatives Considered but not Analyzed in Detail**

No other alternatives to the proposed action were apparent that would meet the purpose and need of the Proposed Action. No other alternatives were submitted or proposed during the public comment period.

## **2.5 Reasonably Foreseeable Development Scenario for Oil and Gas Resources**

A Reasonably Foreseeable Development scenario (RFD) for oil and gas is a long-term projection of oil and gas exploration, development, production, and reclamation activity. The RFD covers oil and gas activity in a defined area for a specified period of time. The RFD projects a baseline scenario of activity assuming all potentially productive areas can be open under standard lease terms and conditions, except those areas designated as closed to leasing by law, regulation, or executive order. The baseline RFD provides the mechanism to analyze the effects that discretionary management decisions have on oil and gas activity. The RFD also provides the basic information that is analyzed in the NEPA document under various alternatives. The RFD discloses indirect future or potential impacts that could occur once the lands are leased. Prior to any future development, the BLM would require a site-specific NEPA analysis at the exploration and development stages in order to comply with NEPA.

Fluid mineral development potential in the decision area is based on RFD scenarios for oil and gas and geothermal energy and was developed in conformance with BLM Instruction Memorandum No. 2004-089 (BLM 2004). This analysis is based largely on the reasonably foreseeable development scenarios presented in detail in the mineral report prepared for the RMP/EIS (ENSR 2004). Various additional assumptions have been incorporated based on changes in the mineral markets in the recent past. The minerals report is available at the Ely District Office. It is impossible to predict with certainty how resource development would occur in the future. The interaction of prices, markets, technology, and environmental concerns all play a role. The reasonable foreseeable development scenarios were developed based on past exploration activities and estimates of future exploration and development activity given the potential occurrence of the resources (BLM 2007, page 4.18-3).

The RFD provides the basis for the analysis of the environmental effects in Chapter 4 of this document. The RFD for the Assessment Area is based on the geology, oil and gas development history, oil and gas potential, BLM well data, and data from other EAs for oil and gas leases in eastern Nevada. The RFD scenario is made without respect to any existing or proposed leasing stipulations and conditions of approval in accordance with BLM guidance.

The Proposed Action does not include any surface disturbance, such as exploration, development, production, or final reclamation of oil and gas resources. However, the authorization of oil and gas leasing does convey a right to subsequent exploration and production activities. Therefore, this EA will consider possible impacts from potential indirect effects under RFD scenarios associated with oil and gas leasing development of the almost 400,000 acres proposed in this lease sale, which represents four percent (4%) of 10 million acres open to leasing in the Ely District.

## **General Assumptions for the Reasonably Foreseeable Development Scenario**

The following is a list of general assumptions upon which the reasonable foreseeable development scenario is based (BLM 2007).

- There would be no major regulatory changes in federal or state statutes, regulations, policy, and guidance that govern the exploration and development of fluid minerals, including lease royalty provisions and lease rental fees.
- Oil prices would remain sufficiently high to stimulate continued exploration and drilling. Recent historic highs in the price of oil may stimulate exploration activity above levels of the recent past. It is possible that higher prices may persist for the next few years. The reasonable foreseeable development scenario (ENSR 2004) is a planning tool that was developed to accommodate the maximum development that could reasonably be expected to occur. However, actual activity levels, as with prices, cannot be predicted with certainty.
- It cannot be predicted at this time how much acreage eventually would be held by production, which is entirely dependent on the discovery of commercial oil and gas fields.
- New field discoveries would be similar in size and surface disturbance to the Trap Springs and Kate Springs oil fields within Railroad Valley.
- The reasonably foreseeable development scenario is made without respect to any existing or proposed leasing stipulations and conditions of approval in accordance with BLM guidance.

## **Geophysical Exploration Assumptions**

Within the Ely District, the subsurface geology is not always accurately represented by the surface outcrop and it is for this reason exploration geologists use geophysical methods to help locate oil and gas traps. Geophysical exploration includes a variety of instruments and techniques, but all geophysical exploration is based on the measurement of one of three physical properties: A) gravitational field, B) magnetic field, and C) seismic reflection characteristics. Of these types, only seismic reflection surveys result in any detectable surface disturbance. Initial geophysical surveys may cross tens of miles in what appear to be a random pattern. These surveys attempt to piece together the local subsurface geology or confirm geologic inference. If real or perceived geologic structures of interest are located, surveys of specific areas will be intense and may be repeated frequently.

The Ely RMP projects that 30 miles of seismic surveys per year at a surface disturbance rate of 2 acres per mile would be conducted over the life of the RMP. Therefore in this EA, one can assume that there is a potential for 1.2 miles of seismic exploration per year on these 400,000 acres. At a rate of 2 acres per mile, this would equate to 2.4 acres of surface disturbance.

## **Exploration and Production Drilling Assumptions**

Actual locations of potential exploration wells and field development are unknown. The impacts associated with these activities are likely to occur anywhere within the leased parcels that are of high or moderate, or even low, potential for oil and gas resources.

The Ely RMP/FEIS assumes a total of 448 wells would be drilled resulting in total short-term (5 to 10 years) disturbance of approximately 8,400 acres and a long-term (about 20 years for producing wells) disturbance of approximately 1,400 acres (BLM 2007). Short-term disturbance as defined for the RFD scenario identifies wells in the plugged and abandoned category that would be reclaimed immediately after drilling or construction.

There have been only 30 APDs approved by the Ely District over the past 11 years and only 10 have been approved since the Ely RMP was approved. It would be highly speculative that 448 wells would be drilled over the next 15 years, even with advancements in well stimulation techniques. For the purposes of this EA, less than 5% of the total district is subject to lease, this percentage indicates that no more than 23 exploration and production wells should be expected as a result of this sale. Short-term (5 to 10 years) and long-term (over 10 years) disturbance for this EA would be approximately 420 acres and 70 acres, respectively. This assumption is supported by Table 1.4 APDs Approved (Page 6).

### *Exploration Drilling*

The RFD scenario in the Ely District RMP/EIS planned for 200 exploration wells over the life of the RMP that could result in 740 acres of short-term surface disturbance. Under the RMP scenario, approximately 1,000 miles of new roads would be created to access the well pads. This would add another 4,800 acres of short-term surface disturbance (Ely RMP/FEIS Table 4.18-2) (BLM 2007). Short-term (5 to 10 years) disturbance for this EA results in approximately 240 acres. Under this EA's Proposed Action scenario, one could then assume that up to eight (8) exploration well pads and 40 miles of new roads could be constructed within the proposed 400,000 lease acres.

Typically, constructing the roads and pads, and drilling the well should take less than six months to complete. If the well is a dry hole, then it is plugged immediately before the drill rig leaves the site. Reclamation of the pad and access road takes place once conditions permit, typically within six months of abandoning the well. If the well becomes a producer, then the access road would remain until the well is no longer producing. The pad would be reclaimed to a smaller size necessary to accommodate production operations.

### *Production*

The average geographic area for a producing oil and gas field in the United States is about 640 acres. Field sizes tend to be smaller in Nevada. There would be 40-acre spacing for wells less

than 5,000 feet in depth and 160-acre spacing for wells deeper than 5,000 feet. Most wells drilled in Nevada are deeper than 5,000 feet, so well spacing would probably be 160 acres.

The RFD scenario in the Ely RMP/FEIS planned for six (6) new production well fields within the Ely District, four (4) small fields and two (2) large fields. The four small well fields would be comprised of 88 wells, 40 being producing wells and the other 48 being plugged and abandoned. The two large well fields would be comprised of 160 wells, 100 being producing wells and the other 60 being plugged and abandoned. This RFD also included 56 miles of new access and service roads, and eight (8) miles of new pipelines for the small well fields. The two large well fields would include 55 miles of new access and service roads, and 10 miles of new pipelines. A projection of adding a new refinery to the area was also included in this RFD (Ely RMP/FEIS Table 4.18-2) (BLM 2007).

Under the RFD for this EA, one could assume that only one small well field would be developed within the proposed 400,000 lease acres. This could result in 10 producing wells and 12 other wells being plugged and abandoned. In addition, 14 miles of new access roads and two miles of pipeline could be developed. Total short- and long-term disturbance would be approximately 185 acres and 90 acres, respectively.

### **Hydraulic Fracturing**

Most of the public's concerns can be associated with well development and the use of hydraulic fracturing (HF) to stimulate a well. With the level of public interest in the HF aspects of well drilling and completion operations, it warrants the inclusion of HF as a resource issue in BLM NEPA documents.

Although there is no surface disturbance associated with lease sales, new technology in well stimulation may increase the likelihood of developing oil and gas leases that may not have otherwise been developed only a few years ago. HF is a well stimulation process used to maximize the extraction of underground resources – oil, natural gas and geothermal energy. The HF process includes the acquisition of water/mixing of chemicals, well perforating and production zone fracturing, and HF flow-back disposal.

In the United States, HF has been used since the 1940's. Early on, the HF process utilized pressures that are of a much smaller magnitude than those used today.

The BLM currently does not have any regulations in place regarding HF, but is working on drafting new regulations. However, the State of Nevada's Division of Minerals (NDOM) does have regulations that require the reporting of the amount and type of chemicals used in a HF operation in "FracFocus" within 60 days of HF completion for public disclosure as part of the Conditions of Approval for all oil and gas drilling permits and sundry notices that include the HF

process. For more information concerning FracFocus and hydraulic fracturing see the FracFocus website at [www.fracfocus.org](http://www.fracfocus.org) and the Division of Minerals website at [minerals.state.nv.us](http://minerals.state.nv.us).

The HF process involves the injection of a fracturing fluid and a proppant (sand, gravel, or particles of other material such as sintered bauxite or ceramic beads suspended in the fracturing fluid) into the hydrocarbon bearing formation under sufficient pressure to further open existing fractures and/or create new fractures. This allows the hydrocarbons to more readily flow into the wellbore. HF has gained interest recently as hydrocarbons previously trapped in low permeability tight sand and shale formations are now technically and economically recoverable. As a result, oil and gas production has increased significantly in the United States.

Prior to the development of hydrocarbon bearing tight gas and shale formations, domestic production of conventional resources had been declining. In response to this decline, the federal government in the 1970's through 1992, passed tax credits to encourage the development of unconventional resources. It was during this time that the HF process was further advanced to include the high-pressure multi-stage HF used today.

The effect of HF on the oil and gas economies has been tremendous. An April 2011 Congressional report (Committee on Energy and Commerce 2011) notes that “as a result of hydraulic fracturing and advances in horizontal drilling technology, natural gas production in 2010 reached the highest level in decades.” In some areas, the rate of drilling increased by more than an order of magnitude. For example, in the Marcellus Shale, “drilling companies were issued roughly 3,300 Marcellus gas-well permits in Pennsylvania in 2010, up from just 117 in 2007” (Urbina, Ian, 2011).

HF typically uses “slick water,” which is a mixture of water, sand, and other chemical ingredients with a number of purposes, including increasing viscosity of the fluid and impeding bacterial growth or mineral deposition. Modern HF involves drilling vertically into shale formations up to hundreds of thousands of feet deep, and horizontally from 1,000 to 6,000 feet away from the well (CFBD & SC v. BLM & Salazar 2013). The total volume of fracturing fluids is generally 95-99% water. The amount of water needed to fracture a well depends on the geologic basin, the formation, and type of well (vertical, horizontal, directional), and the proposed completion process.

To ensure that HF is conducted in a safe and environmentally sound manner, the BLM approves and regulates all drilling and completion operations, and related surface disturbance on Federal public lands. Operators must submit APDs to the BLM field office. Prior to approving an APD, the BLM identifies all potential subsurface formations that will be penetrated by the wellbore. This includes all groundwater aquifers and any zones that would present potential safety or

health risks that may need special protection measures during drilling, or that may require specific protective well construction measures.

Once the geologic analysis is completed, the BLM reviews the company's proposed casing and cementing programs to ensure the well construction design is adequate to protect the surface and subsurface environment, including the potential risks identified by the geologist and all known or anticipated zones with potential risks.

Before HF takes place, all surface casing and some deeper, intermediate zones are required to be cemented from the bottom of the cased hole to the surface. The cemented well is pressure tested to ensure there are no leaks and a cement bond log is run to ensure the cement has bonded to the casing and the formation. If the fracturing of the well is considered to be a "non-routine" fracture for the area, the BLM will always be onsite during those operations as well as when abnormal conditions develop during the drilling or completion of a well.

Drilling and completion techniques may vary in different basins depending on the local geologic strata and depth of the producing zone. Generally, HF can be described as follows:

- Water, proppant, and chemical additives are pumped at extremely high pressures down the wellbore.
- The fracturing fluid is pumped through perforated sections of the wellbore and into the surrounding formation, creating fractures in the rock. The proppant holds the fractures open during production of the well.
- Company personnel continuously monitor and gauge pressures, fluids and proppants, studying how the propping agent reacts when it hits the bottom of the wellbore, slowly increasing the density of proppant to water as the HF progresses.
- This process may be repeated multiple times, in "stages" to reach maximum areas of the formation(s). The wellbore is temporarily plugged between each stage to maintain the highest water pressure possible and get maximum fracturing results in the rock.
- The plugs are drilled or removed from the wellbore and the well is tested for results.
- The pressure is reduced and the fracturing fluids are returned up the wellbore for disposal or treatment and re-used, leaving the sand in place to prop open the fractures and allow the oil/gas to flow.

Wells that undergo HF may be drilled vertically, horizontally, or directionally and the resultant fracture induced by HF can be vertical, or horizontal, or both. Wells may extend to depths greater than 20,000 feet or less than 1000 feet, and horizontal sections of a well may extend several thousand feet from the production pad on the surface. Exploration wells in the Ely District are normally drilled to depths between 3,000 – 12,000 feet.

Drilling muds, drilling fluids, water, and HF fluids are stored in onsite tanks or lined pits during the drilling and/or completion process. Equipment transport and setup can take several days, and the actual HF and flowback process can occur in a few days up to a few weeks. For oil wells, the flowback fluid from the HF operations is treated in an oil-water separator before it is stored in a lined pit or tank located on the surface. Where gas wells are flowed back using a “green completion process”, fluids are run through a multi-phase separator, which are then piped directly to enclosed tanks or to a production unit.

### *Water Consumption*

Public concern over the amount of water used in HF has increased over the last couple of years. There are numerous groundwater protection regulations already in place, and new increases in protection are in the works at state and federal levels, while the debate over HF continues at all levels of government. Because of the increased interest in Nevada’s potential for oil discovery, this issue has come under scrutiny. Prior to the advancements in HF and directional drilling, 20,000 to 80,000 gallons of water was consumed per well, but with today’s advanced fracturing techniques, water consumption can be in excess of eight (8) million gallons of water per well.

All water rights and usage is controlled by the Nevada Division of Water Resources, not the BLM. Nevada water law has the flexibility to accommodate new and growing uses of water in Nevada while protecting those who have used the water in the past. Nevada water law is based on two fundamental concepts: prior appropriation and beneficial use. Prior appropriation (also known as "first in time, first in right") allows for the orderly use of the state's water resources by granting priority to senior water rights (Nevada Water Law 2013). This concept ensures the senior uses are protected, even as new uses for water are allocated.

In Nevada, any water usage for oil and gas development has to be applied for through the Nevada Division of Water Resources and awarded a temporary permit for a specific amount of water to complete drilling and well development activities, including possibility of HF the well. The operator either has to drill their own water supply well on location or obtain water from a private individual that has existing water rights and haul the water to their location. Once the oil well operation is completed (including HF), continued use of the water is prohibited, and the temporary water well must be plugged according to state standards for well abandonment.

### *Water Contamination Potential*

There is a broad array of chemicals that can be used as additives in a fracture treatment including, but not limited to, hydrochloric acid, anti-bacterial agents, corrosion inhibitors, gelling agents (polymers), surfactants, and scale inhibitors. The 1-5% of chemical additives translates to a minimum of 5,000 gallons of chemicals for every 1.5 million gallons of water used to fracture a well (Paschke 2011).

Produced water, a byproduct of oil and gas production, may be considered another potential contributor of groundwater contamination. The majority of produced water in Nevada is reintroduced into deep brine formations by way of Underground Injection Control (UIC) wells. A permit to inject produced water must be obtained prior from the Nevada Division of Water Resources and an approved sundry notice by the BLM. The BLM receives its guidelines and directions for disposal of produced water from Onshore Order #7. Certain oil and gas exploration and production wastes occurring at or near wellheads are exempt from the Clean Water Act, such as: drilling fluids; produced water; drill cuttings; well completion, treatment, and stimulations fluids to name a few. In general, the exempt status of exploration and production waste depends on how the material was used or generated as waste, not necessarily whether the material is hazardous or toxic. For example, some exempt exploration and production wastes might be harmful to human health and the environment, and many non-exempt wastes might not be as harmful (EPA 2002).

### *Air Quality*

There is a potential for impacts to air quality associated with lease development activities, such as, fugitive dust produced from well pad and access road construction, pipeline construction, hauling freshwater and produced water to and from well sites. All of these activities can be considered temporary or short term.

Emissions of Volatile Organic Compounds (VOCs), hydrogen sulfide (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>), and methane (CH<sub>4</sub>) can be associated with well development and well production activities. Nevada does not have any known wells with H<sub>2</sub>S. Gases from the oil and gas production stream, such as H<sub>2</sub>S, CO<sub>2</sub>, VOCs, light organics volatilized from exempt wastes in reserve pits, impoundments or production equipment were exempt from the Clean Air Act regulations by the EPA in 2002 (EPA 2002). Air quality for Nevada is regulated and monitored by Nevada Division of Environmental Protection (NDEP).

The activities that are associated with oil and gas exploration and production would be further analyzed in depth as part of a site-specific NEPA analysis when and if an APD or Notice were received.

# Chapter 3 Affected Environment

## 3.1 Introduction

This chapter describes the existing environment in the project area including physical, biological, social, and economic resources.

## 3.2 General Setting

There are no known oil reserves within any of the proposed parcel areas. The oil-bearing formations sought in White Pine County are the Chainman and Pilot shales, as well as, Devonian age subthrust structures known to be present in some valleys within the Assessment Area. The nominated parcels have been segregated into eight areas of analysis (Figure 2.1).

**Area A** contains three (3) parcels located in Newark Valley, all within the basin and partially within the playa lakebed, bounded by Buck Mountain to the east and the Diamond Range to the west. Most of these parcels are susceptible to dust storms that occur frequently in this section of Newark Valley. Local traffic is limited to ranchers and Barrick Gold's Bald Mountain Mine. No exploration wells have ever been drilled in these parcels. However, historically there have been seven (7) exploration wells drilled within the Newark Valley basin north of Highway 50. Three (3) of these wells reported shows or signs of oil and or gas, but nothing in producible amounts at the time they were drilled.

**Area B** is a single 710-acre parcel in northern Railroad Valley located northeast of the Duckwater Reservation and six (6) miles south of Green Springs. The parcel is on the eastern flank of the Bull Creek drainage and is dominated by low scrubs and sagebrush. Ranching/grazing dominate the current use for this area. The BLM recently approved an APD to drill an exploration well seven (7) miles to the north near Green Springs. There have been four (4) exploration wells drilled in northern Railroad Valley to date and only one (1) reported any show of oil. The well was not put into production before it was plugged and abandoned.

**Area C** is the largest area comprised of 80 parcels located in Garden, Coal and White River valleys, and encompasses most of the Golden Gate Range. It is a mixture of sagebrush communities on benches and valleys to sparsely vegetated rugged terrain. Agriculture and grazing dominate the public use of this area. The Golden Gate Range is predominately considered a big game crucial winter habitat. Four (4) exploration wells were drilled in this section of Coal Valley and only one (1) well drilled in Garden Valley. Only one of the wells in Coal Valley reported oil shows, but was never developed into a producing well. Another was converted into a water well.

**Area D** is a group of 56 parcels located all within North White River Valley, predominately on the west side of Highway 318. North White River Valley is bounded to the east by the South Egan Range and Far South Egans Wilderness areas and to the west by the Grant Range. At the southern end of Area D is the Kirch Wildlife Management Area (WMA) managed by the Nevada Department of Wildlife. The primary management emphasis on the WMA is the protection of wetlands and waterfowl. This area is also used for hunting, fishing, and recreational camping by the public. Sagebrush communities dominate the landscape in this valley. Other uses include grazing, ranching and agriculture.

Forty-four (44) exploration wells have been drilled so far in northern White River Valley. Two (2) additional exploration APDs for this area have been approved by the BLM in the past year, however neither well has yet to be drilled. Sixteen (16) of these wells reported either oil shows, gas shows, or both.

**Area E** is a diverse, broad area with only ten (10) parcels in it. This area encompasses part of the Ruth Robinson Mine, Jakes Valley, Butte Mountains, Butte Valley, and the Egan Range. Only one (1) parcel is on a valley bottom, while the rest are on hillsides, benches, or mountainous terrain. Thirteen (13) exploration wells were drilled near or within this area and nine (9) reported either oil shows, gas shows, or both.

**Area F** is a remote area in the Maverick Springs Range in the northern edge of the District containing ten (10) parcels bound by Ruby Valley to the west and Long Valley to the east. All roads are primitive at best and the area is approximately half way between Ely and Elko. No exploration wells have been drilled in this area in the past.

**Area G** has two (2) parcels located in the District's northern end of Butte Valley. Parcel #150's hilly terrain rests on the western edge of the valley. Parcel #162 is on the eastern most edge of the valley surrounding the Paris Ranch and adjacent to the Goshute Canyon Wilderness area. Only two (2) exploration wells have been drilled near these areas and both reported oil and gas shows.

**Area H** contains 45 parcels all within the northern end of Steptoe Valley bounded by the Egan range to the west and the Schell Creek Range to the east. The southern end terminates just south of Monte Neva Hot Springs. This area is predominately used for agriculture and grazing. Only three (3) exploration wells have been drilled near this area and one (1) reported an oil show.

**Area I** has nine (9) parcels in Antelope Valley. Eight (8) of them are along the eastern Antelope Range bench. The single parcel on the valley floor borders the Goshute Reservation. Only two (2) exploration wells have been drilled near this area in the past and one (1) reported an oil show.

### 3.3 Resources/Concerns Analyzed

The following sections evaluate resources for the potential for significant impacts to occur, either directly or indirectly, due to implementation of the proposed action. Potential impacts were evaluated in accordance with criteria listed in section 1.5 of this paper to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely District in particular.

The Supplemental Authorities and Ely District additional resources to consider are listed in Table 3.3. Elements that may be affected would be further described in this EA. A rationale for elements that may or may not be adversely affected is also included in Table 3.3.

At the time of this review, it is not known whether all nominated parcels will receive bids, if leases will be issued, or if well sites or roads might be proposed in the future. Detailed site-specific analysis of individual wells or roads would occur when an APD is submitted.

**Table 3.3** Supplemental Authorities and Ely District additional resources to consider.

<b>Resource/Concern</b>	<b>Issue(s) (Y/N)</b>	<b>Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis</b>
<b>Air Quality</b>	<b>Y</b>	<b>There are no direct impacts to air quality associated with leasing, since there isn't any surface disturbance. However, there is a potential for indirect impacts associated with lease development activities that could potentially affect air quality. Those potential indirect impacts are analyzed in this EA.</b>
<b>Cultural Resources</b>	<b>Y</b>	<b>Analyzed in Potentially Affected Resources and Environmental Effects sections due to potential impacts.</b>
Native American Religious and Other Concerns	N	A consultation letter to tribes was sent and a meeting with the Goshute Tribal Council took place on June 7, 2013. Site-specific NEPA analysis and cultural surveys would be required prior to any future development of the leased parcels.
<b>Heritage Special Designations (Historic Trails, ACEC's designated for Cultural Resources)</b>	<b>Y</b>	<b>Analyzed in Potentially Affected Resources and Environmental Effects sections.</b>

<b>Resource/Concern</b>	<b>Issue(s) (Y/N)</b>	<b>Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis</b>
<b>Water Resources and Water Rights</b>	<b>Y</b>	<b>There are no direct impacts to water resources associated with leasing, since there isn't any surface disturbance. However, there is a potential for indirect impacts associated with lease development activities that could potentially affect water resources. Those potential indirect impacts are analyzed in this EA.</b>
<b>Water Quality, Drinking/Groundwater</b>	<b>Y</b>	<b>Analyzed in Potentially Affected Resources and Environmental Effects sections.</b>
<b>Fish and Wildlife</b>	<b>Y</b>	<b>The leasing of parcels has no surface disturbance and therefore would not affect fish and wildlife species; however wildlife occur within the parcels and could be impacted if oil and gas development were to occur.</b>
<b>Special Status Animal Species, other than those listed or proposed by the FWS as Threatened or Endangered</b>	<b>Y</b>	<b>The leasing of parcels has no surface ground disturbance and therefore would not affect special status animal species; however numerous special status animal species occur within the parcels and could be impacted if oil and gas development were to occur.</b>
<b>Special Status Plant Species, other than those listed or proposed by the FWS as Threatened or Endangered</b>	<b>Y</b>	<b>The leasing of parcels has no surface disturbance and therefore would not affect sensitive plants; however sensitive plants occur within the parcels and could be impacted if oil and gas development were to occur.</b>
<b>FWS Listed or proposed for listing Threatened or Endangered Species or critical habitat.</b>	<b>Y</b>	<b>The federally endangered White River spinedace (<i>Lepidomeda albivallis</i>) and federally threatened Railroad Valley springfish (<i>Crenichthys nevadae</i>) occur within the same hydrobasins of leased parcels.</b>
<b>Environmental Justice</b>	<b>Y</b>	<b>Several proposed lease parcels are considered split-estate (i.e. private surface, federal subsurface). Analyzed in the Potentially Affected Resources and Environmental Effects sections.</b>
<b>Socioeconomics</b>	<b>Y</b>	<b>Analyzed in Potentially Affected Resources and Environmental Effects sections.</b>

Resource/Concern	Issue(s) (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Noxious and Invasive Weeds	Y	There are no direct impacts associated with leasing, since there isn't any surface disturbance. However, there is a potential for indirect impacts associated with lease development activities that could potentially affect the spread of noxious and invasive species. Those potential indirect impacts are analyzed in this EA.
Lands with Wilderness Characteristics (LWC)	Y	25 of the proposed parcels overlap nine units which were found to possess Lands with Wilderness Character
Soil Resources	Y	There are no direct impacts to soil resources associated with leasing, since there isn't any surface disturbance. However, there is a potential for indirect impacts associated with lease development activities that could potentially affect soil resources. Those potential indirect impacts are analyzed in this EA.
Visual Resources Management (VRM)	Y	Analyzed in Potentially Affected Resources and Environmental Effects sections.
Vegetative Resources (including Riparian/Wetland vegetation)	Y	There are no direct impacts to vegetation associated with leasing, since there isn't any surface disturbance. However, there is a potential for indirect impacts associated with lease development activities that could potentially affect vegetation. Those potential indirect impacts are analyzed in this EA.
Wastes, Hazardous or Solid	Y	No known hazardous or solid waste sites exist in the project areas, but hazardous waste could be an indirect byproduct of exploration and production drilling. Analyzed in Environmental Effects section.
Floodplains	N	Some Parcels are within flood areas on GIS flood maps. Flood plains are not an issue for lease sales. Any concerns during development of parcels subsequent to lease sales would be handled through design features, mitigation measures, and/or project stipulations.

<b>Resource/Concern</b>	<b>Issue(s) (Y/N)</b>	<b>Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis</b>
Farm Lands (Prime or Unique)	N	Prime Farmlands are not an Issue for lease sales since soil disturbance is not associated with lease sales per se. Prime Farmlands would be considered in subsequent parcel development operations to ascertain if the pertinent soil associations would be effected by parcel development.
Human Health and Safety	N	Resource would not be affected by proposed action. A detailed analysis is not required.
Wild and Scenic Rivers	N	Resource is not present.
Wild Horses	N	No impacts to horses would occur from the leasing of land. A detailed analysis is not required.
Wilderness/ WSA	N	None of the proposed parcels are within designated wilderness or WSA boundaries. A 1,000-ft. buffer has been established around these features for additional protection of the resource. A detailed analysis is not required.
Paleontological Resource	N	A BLM records search was conducted to ensure that no known paleontological resources were present in the parcels that have special interest or importance to the general public. A detailed analysis is not required.
Migratory Birds	N	Several species of migratory birds are known to have a distribution that overlaps with the project area. Long-term population trends of migratory birds would not be affected by the leasing of parcels. If drilling were to occur during the nesting season, parcels would be surveyed prior to exploration, to prevent potential effects to nesting migratory birds.

### 3.3.1 Air Quality & Climate Change

The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for criteria pollutants, including carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). Exposure to air pollutant concentrations greater than the NAAQS has been shown to have a detrimental impact on human health and the environment. The EPA has delegated regulation of air quality under the federal Clean Air Act to the State of Nevada. In addition to the criteria pollutants, regulations also exist to control the release of hazardous air pollutants (HAPs). HAPs

are chemicals that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. EPA currently lists 188 identified compounds as hazardous air pollutants, some of which can be emitted from oil and gas development operations, such as benzene, toluene, and formaldehyde. Ambient air quality standards for HAPs do not exist; rather these emissions are regulated by the source type, or specific industrial sector responsible for the emissions.

Ambient air quality in the affected environment (i.e. compliance with the NAAQS) is demonstrated by monitoring for ground level (i.e. receptor height) atmospheric air pollutant concentrations. In general, the ambient air measurements show that existing air quality in the region is good. Concentrations for the criteria air pollutants are below the applicable state and federal ambient air quality standards. However, recent ozone monitoring data (shown below) suggests ambient concentrations are approaching the 8 hour air quality standard of 0.075 ppm during the summer ozone season (3 year average of the annual 4th highest 8-hour average). Ozone is not emitted directly from sources, but is chemically formed in the atmosphere via interactions of oxides of nitrogen (NOX) and volatile organic compounds (VOCs) in the presence of sunlight and under certain meteorological conditions (NOX and VOCs are Ozone precursors). Ozone formation and prediction is complex, generally results from a combination of significant quantities of VOCs and NOX emissions from various sources within a region, and has the potential to be transported across long ranges. For more information on pollutant monitoring values, including the other criteria pollutants not shown below, please visit the EPA's AirData website at [www.epa.gov/airdata](http://www.epa.gov/airdata).

There is broad scientific consensus that humans are changing the chemical composition of our atmosphere. Activities such as fossil fuel combustion, deforestation, and other changes in land use are resulting in the accumulation of trace greenhouse gasses (GHGs) such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), water vapor, and several industrial gases in our atmosphere. An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, primarily by trapping and decreasing the amount of heat energy radiated by the earth back into space. The phenomenon is commonly referred to as global warming. Global warming is expected, in turn, to affect weather patterns, average sea level, ocean acidification, chemical reaction rates, precipitation rates, etc., which is commonly referred to as climate change. The Intergovernmental Panel on Climate Change (IPCC) has predicted that the average global temperature rise between 1990 and 2100 could be as great as 5.8°C (10.4°F), which could have massive deleterious impacts on the natural and human environments. Although GHG levels have varied for millennia (along with corresponding variations in climatic conditions), industrialization and burning of fossil carbon sources have caused GHG concentrations to increase measurably, from approximately 280 ppm in 1750 to 396 ppm in 2012 (as of June). The rate of change has also been increasing as more industrialization and population growth is occurring around the globe. This fact is demonstrated by data from the Mauna Loa CO<sub>2</sub> monitor in Hawaii that documents atmospheric concentrations of CO<sub>2</sub> going back to 1960, at which point

the average annual CO<sub>2</sub> concentration was recorded at approximately 317 ppm. The record shows that approximately 70% of the increases in atmospheric CO<sub>2</sub> concentration or build up, since pre-industrial times has occurred within the last 50 years.

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. Climate change includes both historic and predicted climate shifts that are beyond normal weather variations.

### **3.3.2 Cultural Resources (including Heritage Special Designations) Affected Environment**

The cultural landscape on the Ely District has evidence of a long history of human occupation. The earliest commonly accepted date for human presence in the Eastern Great Basin is approximately 10,000 to 11,000 years before present and has been consistently, though not densely populated up to the present day (Aikens and Madsen 1986). The historic cultural landscape encompasses artifacts, features, and sites related to mining, ranching, agriculture, and the settlement of the American West. Data for the assessment of cultural resources was reviewed from the Nevada Cultural Resource Inventory System (NVCRIS), GLO Records, the National Register of Historic Places online database, and records housed at the BLM Ely District Office. Based on current records, some identified parcels do contain dense deposits of cultural resources. Additional data was provided by the Confederated Tribes of the Goshute Reservation (CTGR) in a letter sent in response to BLM's request for public comment and through tribal consultation. Other considerations were suggested by the Nevada State Historic Preservation Office (SHPO).

A Class I literature review was conducted to ensure that cultural sites with extraordinary significance or importance to the general public were not present in the parcels, i.e. national or state historic monuments, public interpretation sites. A brief explanation of the potential substantial cost in time and money of mitigating project effects to cultural sites will also be included. Class III cultural inventory is recommended before the approval of any ground disturbing activities for all parcels. The vast majority of the acreage for the 2013 Lease Sale has not been adequately inventoried for cultural resources. Below is a list of cultural resource concerns for each Assessment Area. Due to the extremely large amount of acreage encompassed by the Assessment Areas, a brief summary was prepared, defining the known cultural resources present and identifying areas that need additional inventory.

Area A: This relatively small area contains 3 archeological sites that in 2008 were determined to be eligible for the National Register. Previous inventories are not recent or comprehensive enough to provide enough sufficient additional information. Permitting of exploration or development activities may be contingent upon the completion of an adequate Class III inventory for parcels within this area.

Area B: This area contains sites that may be eligible to the National Register. In addition, there

are paleontological concerns within the area. Previous inventories in this parcel are not recent enough or comprehensive enough to clear the parcel for development. Permitting of exploration or development activities may be contingent on the completion of an adequate Class III inventory for parcels within this area.

Area C: This extensive area contains many potentially eligible sites, including historic structures. The previous inventories that were completed in the northern portion of the area identified only isolates. However, the central portion contains at least one prehistoric site that is eligible for inclusion to the National Register. The site includes manuports, diagnostic artifacts, and evidence of prehistoric structures. Adequate cultural resource inventory for the southern portion of area C has not been completed. Permitting of exploration or development activities may be contingent on the completion of an adequate Class III inventory for parcels within this area.

Area D: A cultural resource inventory done in 1993 identified at least one National Register eligible site within the Assessment Area. Additionally, an inventory completed in 2009 identified at least one other National Register eligible site. There are other potentially eligible sites present as well. Several potentially eligible historic structures are located within area D including the townsite of White River, the White River Post Office, the Emigrant Station at White River, and the Silver Spring Station. Permitting of exploration or development activities would be contingent on the completion of an adequate Class III inventory for parcels within this area.

Area E: The majority of the parcels available within this area have not been surveyed for cultural resources. The two parcels in the southern end of the area have known sites within them. The inventories that have been completed in this Assessment Area tended to find isolates and lithic scatters. However, because the majority of the area has not been inventoried, there is a high possibility of incidental discovery of prehistoric and historic sites. The previously completed inventories discovered significant Paleo-indian artifacts including a well-formed crescent.

Of particular interest in the northeast portion of this area is the town site of Hunter. The site was identified in 1985 and recommended as eligible for inclusion on the National Register. The site was said to be in excellent condition at the time of recording. A historic smelter, trash dumps, and post office are associated with this site. A site revisit is recommended to determine if National Register nomination is an appropriate option for this site. As most of the surrounding area has never been inventoried, and taking into account the presence of historic sites as well as important Paleo-indian sites, adequate Class III inventory must be completed before exploration and development activities begin.

Area F: This Assessment Area contains a segment of the Pony Express Trail that is considered a contributing element to its significance and integrity in regards to eligibility and listing on the National Register. The site record associated with it was last updated in 1999. In addition, the site record indicates that a portion of the Overland Stage road is located within this parcel. All other cultural resource inventory activity was done in the 1970's, early 1980's, and 1992. These

inventories noted the presence of two antelope traps within the Assessment Area. Other records for sites identified in this area are incomplete and would not be considered adequate by contemporary standards. Therefore, this parcel has not been adequately inventoried for cultural resources. A Class III inventory is recommended for parcels within this area before the approval of exploration or development activities. In addition, if an APD is submitted within the Pony Express Trail buffer, the BLM will consult with the National Park Service (NPS): National Trails Office and the Pony Express Association on how best to protect the resource from the proposed action.

Area G: This Assessment Area has been surveyed for cultural resources in the early 1980's, 1998, and 2002. The more recent inventories located a number of significant lithic scatters determined to be eligible to the National Register. The portions of the Assessment Area that have been inventoried contain several large lithic scatters, mainly in the western portion. However, the 1998 inventory located a lithic scatter so large that the western, eastern, and southern boundaries of the site have never been determined. Permitting of exploration or development activities may be contingent on the completion of an adequate Class III inventory for parcels within this area.

Area H: In 2007, a segment of the Jackass Express route and the Central Overland Stage route were identified within this Assessment Area. The Pony Express diverted from these earlier routes in the Steptoe Valley (southern portion of the area). Several parcels within area H include portions of these historic linear resources. Other cultural resources within this parcel are generally not eligible for the National Register. However, a prehistoric site in the northern portion of the Assessment Area was determined to be eligible. The proximity to Goshute Lake is also concerning because of the potential for incidental discovery of cultural resources. Permitting of exploration or development activities may be contingent on the completion of an adequate Class III inventory and further Native American consultation for parcels within this area. In addition, if an APD is submitted within the Pony Express Trail buffer, the BLM will consult with the NPS: National Trails Office and the Pony Express Association on how best to protect the resource from the proposed action.

Area I: This Assessment Area borders the western boundary of the Confederated Tribes of the Goshute Indian Reservation, making it especially sensitive in regards to cultural resources, including TCPs. According to a letter received August 1, 2013, the CTGR indicated that, "Parcels in Antelope Valley occur at an Indian massacre site eligible as a historic property under the National Register Criteria A."

Sites recorded within Area I were originally inventoried in the early 1980's. There is at least one historic site that is potentially eligible for the National Register, in addition to the massacre site identified by the CTGR. Further research and possibly subsurface testing would be necessary to ascertain the condition and nature of the historic site. The Chinn home site and associated sheep ranching structures may need an architectural survey if they still exist. As of the early 1980's, these resources were in fair to poor condition. Additionally, the Pony Express Historical

Monument, the Tippet town site, the Tippet Post Office, the Antelope Springs Station, and portions of the Lincoln Highway all fall within the Assessment Area. Permitting of exploration or development activities may be contingent on the completion of an adequate Class III inventory and additional tribal consultation for parcels within this area. If an APD is submitted within the Pony Express Trail buffer, the BLM will consult with the NPS: National Trails Office and the Pony Express Association on how best to protect the resource from the proposed action. If an APD is submitted that may adversely affect the Lincoln Highway, the Lincoln Highway Association will be consulted on how to best protect this resource as well.

### **3.3.2.1 Heritage Special Designations (Historic Trails, ACEC's designated for Cultural Resources) Affected Environment**

The Pony Express National Historic Trail meanders through approximately 150 miles of the Ely District. Several of the parcels intersect with the trail and or fall within the trail's viewshed. If an APD is submitted within the Pony Express Trail buffer, the BLM will consult with the NPS: National Trails Office and the Pony Express Association on how best to protect the resource from adverse effects of the proposed action.

### **3.3.3 Water Resources Affected Environment**

This EA incorporates by reference and tiers to the RMP/FEIS. Ground water and surface water conditions are described in Section 3.3 of the RMP/FEIS. Trends and current management of ground water, surface water, water rights, and water quality are also discussed in Section 3.3.

#### *Regulatory Background*

Objectives for Water Resources and Water Quality are listed in the Ely RMP (BLM 2008b). The Ely RMP requires that authorized activities on public lands do not degrade water quality. This includes compliance with the Clean Water Act and Nevada Water Pollution Control Regulations (Nevada Revised Statute 445A) and compliance with the Memorandum of Understanding between the BLM and Nevada Division of Environmental Protection, dated September 2004. Objective WR-2 also requires the integration of land health standards, best management practices, and appropriate mitigation measures into authorized activities to ensure water quality meets state requirements and BLM resource management objectives in BLM Manual 7240 Nevada Supplement.

#### *Groundwater*

Ground water conditions are described in Section 3.3 of the RMP/FEIS. Precipitation moves from areas of recharge to surface waters via alluvial aquifers and on the surface during spring melt and rain storms. A portion of annual precipitation infiltrates to deeper bedrock aquifers that may contribute to springs. Springs and groundwater inputs generally occur in both bedrock and alluvial aquifers along valley bottoms. Many of the drainages have interrupted flow characteristics (i.e., some reaches are ephemeral with water moving in the alluvium and other reaches there is surface expression) as a result of groundwater recharge characteristics. There is

Groundwater stored in both the Carbonate Rock Aquifer Province and Basin-Fill (alluvial) Aquifers within the district. Carbonate Aquifer Systems are not extensively utilized (BLM 2007).

The RMP/FEIS summarizes water availability in the shallow alluvial aquifers (Basins) of the planning area. The perennial yield values shown in Table 3.3-1 of the RMP/FEIS were derived by the state to estimate the water in shallow alluvial aquifers that can be withdrawn without creating substantial drawdown in the water table. Perennial yield is a hydrologic concept; it generally is about equal to the estimated net annual recharge. It should be noted that values for perennial yields are subject to change, and represent estimates from Nevada Division of Water Resources which are periodically updated. Other values exist from other sources. Additional investigations of perennial yield and potential pumping effects are being undertaken for water development projects and NEPA actions involving the planning area (SNWA, 2013).

The committed resources represent the total volume of permitted, certificated, and vested groundwater rights recognized by the Nevada Division of Water Resources in each basin. Groundwater quality in shallow alluvial aquifers of the planning area is highly variable. Evapotranspiration by phreatophytic plant communities accounts for a significant consumption of groundwater recharge resources. Consumptive use of soil moisture and groundwater by plant transpiration is one of the major factors affecting water availability in the planning area (BLM 2007).

#### *Surface Water*

Figure 2.1, Nominated Parcels Map, shows Areas “A” through “I”. Table 2.1 Map Key for Parcels with Acreage summarizes size of areas and locations of parcels.

Area A: Newark Valley is located in a shallow alluvial aquifer.

Area B: N. Railroad Valley is a small area located in a shallow alluvial aquifer.

Area C: Garden Valley, is located in a shallow alluvial aquifer; it has parcels within proximity (greater than ½ mile NSO) to the Kirch Wildlife Management Area; water availability and impacts may require further examination during the APD process.

Area D: White River Valley is located in, a shallow alluvial aquifer; it has parcels within proximity to numerous private agricultural uses of springs Kirch; water availability and impacts may require further examination during the APD process.

Area E: Jakes Valley consists of scattered parcels located in two valleys and mountain slopes; road construction, steep terrain, and soils may require further examination during the APD process.

Area F: Maverick Springs Range has portions within proximity to Ruby Marsh National Wildlife Refuge: water availability and impacts may require further examination during the APD process.

Areas G, H, I: Butte Valley, Steptoe Valley and Antelope Valley are generally located in shallow alluvial aquifer. The presence of sloughs and surface water in Area H, Steptoe Valley, may require further examination for water availability and impacts during the APD process

Surface water resources in the eastern Great Basin include perennial, intermittent, and ephemeral streams, marshlands and small lakes, intermittently inundated playas, and manmade impoundments. The RMP/FEIS describes surface water conditions in some detail. Salinity management tamarisk control, and soil erosion is also discussed. Most streams in the planning area are ephemeral and flow from the mountains to seep into unconsolidated deposits or are diverted for irrigation. Map 3.3-1 in the RMP/FEIS shows the approximate location of perennial streams and mapped springs within the overall boundary of the planning area. The classification of waters in White Pine, northeastern Nye, and Lincoln counties (Nevada Administrative Code 445A.124 to 445A.127) are presented in Table 3.3-2 of the RMP/FEIS. This table shows that many reservoirs are Class B or Class C waters, while most streams in the planning area are Class A waters. See the RMP/FEIS for definitions.

Table 3.3-1 of the RMP/FEIS shows the groundwater demands and estimated perennial yield in the planning area (per hydrographic areas). Many of these hydrographic areas are designated basins, indicating that the Nevada Division of Water Resources would closely monitor future groundwater use and may not issue new groundwater permits (BLM 2007).

### **3.3.4 Fish and Wildlife Affected Environment**

The Assessment Area includes nine (9) groups of parcels across the Ely District. These parcels are expected to provide habitat for a large number of wildlife species. Many species of birds, mammals, reptiles, amphibians, fish and invertebrates may find any one of the proposed lease areas suitable habitat. A few parcels proposed for leasing fall in areas of special importance to one or more wildlife species, such as crucial winter range for mule deer. These areas may have special stipulations concerning drilling activities, which will have to be followed by anyone proposing to develop specific sites (Appendix B).

#### **3.3.4.1 Special Status plant and animal species other than those listed as Threatened or Endangered Affected Environment**

BLM Manual 6840 entitled Special Status Species Management states BLM special status species are those that 1) are listed or proposed for listing under the Endangered Species Act

(ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). Additionally, all federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species. A number of the parcels proposed for leasing have populations of special status plants or animals. See Appendix D for complete list of Special Status Species that have the potential to be affected directly or indirectly by oil and gas leasing.

The Greater Sage-Grouse has recently been determined by the Fish and Wildlife Service (FWS) that the species is “warranted for listing but precluded by species of higher priority” and categorized it as a Candidate species. The BLM is emphasizing conservation measures to promote sustainable Greater Sage-Grouse populations and conservation of its habitat. The BLM is in the process of preparing land use plans amendments to be applied to public lands with Greater Sage-Grouse.

There is Preliminary Primary Habitat (PPH) and Preliminary General Habitat (PGH) located within the watersheds with leased parcels. There are no parcels with PPH, which are areas that have been identified as having the highest conservation value to maintaining sustainable Greater Sage-Grouse populations which include breeding, nesting, brood-rearing, and winter concentration areas. Additionally, there are no parcels that contain Sage-Grouse leks. There are numerous parcels with PGH, which are areas of occupied seasonal or year-round habitat outside of priority habitat.

Parcels within PGH were analyzed using GIS and knowledge of Greater Sage-Grouse use to determine if any parcels should be deferred based on importance of habitat. One full parcel and a portion of another parcel were deferred for protection of important Greater Sage-Grouse habitat. Additionally, parcels within a four mile radius of active, inactive, or unknown Sage-Grouse leks were deferred to protect important nesting and early brood-rearing habitat.

The White River Valley’s unique geology and hydrology provides unique habitat for a number of the sensitive plant and fish species, such as Sunnyside green gentian (*Frasera gypsicola*), Tiehm blazingstar (*Mentzelia tiehmii*), Eastwood milkvetch (*Asclepias eastwoodiana*), Newark Valley tui chub (*Gila bicolor newarkensis*), relict dace (*Relictus solitaries*), White River desert sucker (*Catostomus clarki intermedius*), and White River speckled dace (*Rhinichthys osculus ssp 7*).

Numerous groundwater dependent springs are scattered throughout the valleys and provide habitat for sensitive springsnails, such as Pahrnagat pebblesnail (*Pyrgulopsis merriami*), Northern Steptoe pyrg (*P. serrata*), and traverse gland pyrg (*P. cruciglans*). Springsnails are highly sensitive to water quantity and quality changes. Additionally there are numerous sensitive birds, bats, small mammals that inhabit oil and gas lease parcels. Areas with special status

species have special stipulations concerning drilling activities, which will have to be followed by anyone proposing to develop specific sites (Appendix B).

#### **3.3.4.2 FWS Listed or Proposed for Listing Threatened, Endangered, or Critical Habitat**

Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires that BLM land managers ensure that any action authorized, funded, or carried out by the BLM is not likely to jeopardize the continued existence of any Federally Designated Threatened or Endangered (T&E) species, and that the action avoids any appreciable reduction in the likelihood of recovery of affected species.

The White River spinedace (*Lepidomeda albivallis*), is federally endangered under the Endangered Species Act. This endangered species inhabits Flag Spring in the Kirch Wildlife Management Area of the White River Valley hydrobasin. There is approximately 3 acres of designated critical habitat and it is the only current population in Nevada. Water diversion is identified as a major threat to this endangered species in its Recovery Plan (USFWS 1994).

The Railroad Valley springfish (*Crenichthys nevadae*), is a federally threatened under the Endangered Species Act. This species inhabits Big Warm Springs and Little Warm Springs on Duckwater Tribal Land in the Railroad Valley hydrobasin. Both springs are designated critical habitat for the Railroad Valley springfish. Threats to this species include habitat alteration, non-native aquatic species introductions, and ground water depletion (USFWS 1996).

If drilling were to occur within the hydrobasin of these two federally listed fish, it would be subject to Section 7 consultation under the Endangered Species Act with the level of consultation to be determined based upon the project site-specific proposed action. This process would occur concurrently with the site-specific NEPA analysis in which a Biological Assessment would be submitted to the US Fish and Wildlife Service (USFWS) outlining BLM's recommended mitigation measures to protect the species, if needed. Consultation would be completed prior to a decision being signed for any specific action which may have an effect on a listed species. See Appendix B of parcels requiring section 7 consultation due to the presence of a federally threatened or endangered species.

#### **3.3.5 Environmental Justice Affected Environment**

The proposed lease parcels are located in both Lincoln and White Pine counties. Lincoln County's total population, according to the 2000 Census, is approximately 4,165 with a population density of less than one person per square mile. The median household income is approximately \$32,000 and, according to the Bureau of Labor Statistics, the unemployment rate in February 2011 was 12.5 percent. White Pine County's total population is approximately 9,181 with a population density of right at 1 person per square mile. The median household income is \$36,688 and the unemployment rate in February 2011 was 9.3 percent.

Several proposed lease parcels overlap private property and are considered split-estates, a case where the subsurface minerals are federally owned and the private ownership is limited to the surface of the land. In these instances, no authorization is necessary from the Federal Government to conduct geophysical operations. The operator, following the purchase of the lease, must make a good faith effort to notify and work with the private surface owner before entering private surface to stake a well location and access road or to conduct cultural or biological surveys. The BLM will invite the surface owner to participate in the onsite and final reclamation inspections and will take into consideration the needs of the surface owner when reviewing the APD or Reenter and reclamation plans and when approving final abandonment and reclamation. The BLM will offer the surface owner the same level of surface protection that the BLM provides on Federal surface. The BLM will not apply standards or conditions that exceed those that would normally be applied to Federal surface, even when requested by the surface owner. Prior to approval of the APD (or Sundry Notice to conduct new surface disturbing activities), the operator must certify as part of the complete application that a good faith effort had been made to reach a surface use agreement with the private surface owner and that an agreement was reached or that it failed. If the surface owner and operator fail to reach an agreement, the operator must file a bond with the BLM (\$1,000 minimum) for the benefit of the surface owner to cover compensation, such as for reasonable and foreseeable loss of crops and damages to tangible improvements. Prior to approving the APD, the BLM will advise the surface owner of the right to object to the sufficiency of the bond and will review the value of the bond if the surface owner objects. The BLM will either confirm the current bond amount or establish a new amount. Once the operator has filed an adequate bond, the BLM may approve the APD. Following APD approval, the operator and the surface owner may appeal the BLM's final decision on the bond amount.

The operator must negotiate in good faith with the surface owner. Negotiating in good faith provides a forum through which the operator and surface owner can discuss the preferences and needs of both the surface owner and the operator. In addressing those needs, the operator may be able to modify the development proposal to both minimize damage to the surface owner's property while reducing reclamation and surface damage costs. A typical drilling operation would require approximately five acres to accommodate uses including the well pad, reserve pit, flare pit, multiple trailers to serve as living quarters for crew members, pipe racks, a well, chemical storage, possible frack fluid tanks, possible production tanks, and roads to access the site.

### **3.3.6 Socioeconomics Affected Environment**

The proposed lease parcels are located within White Pine County, Lincoln County, and Nye County. White Pine County's total population, according to the 2010 Census, is approximately 10,030 with a population density of right at 1.1 persons per square mile. The median household income is \$48,063 and the unemployment rate in October 2011 was 8.3 percent.

Lincoln County's total population, according to the 2010 Census, is approximately 5,345, with a population density of right at .5 persons per square mile. The median household income is \$42,662 and the unemployment rate in October 2011 was 6.2 percent.

Nye County has experienced considerable population growth in the last few decades: the population of Nye County was about 9,000 people in 1980; 18,000 people in 1990; 32,000 people in 2000, and about 44,000 people in 2010 (US Census Bureau 1995, 2000, 2010). Nye County is the third-largest county in the continental United States in terms of land area, and the vast majority of this land area is managed by the federal government. Of the 11,560,960 acres that comprise Nye County, 822,711 acres, or just over 7% of the total, is private land (Nye County 1994). As of 1990, 18% of Nye County residents made their living in mining, which includes oil and gas extraction (Nye County 1994).

Nye County: Median household income was \$41,181 (per 2005-2009 average); per capita income was \$22,687; and 18.9% of people fell below the poverty level. Unemployment rates in the county have ranged from a high of 18.8% in 2010 to a low of 3.1% in 1990. The average unemployment in 2010 was 16.5% (Bureau of Labor and Statistics 2011).

### 3.3.7 Noxious and Invasive Weeds

Noxious and invasive species are documented within the parcel areas. Further spreading of these species can have a negative impact on biodiversity and natural ecosystems by out-competing native vegetation. There are no direct impacts associated with leasing, since there isn't any ground disturbance; however, there is a potential for indirect impacts associated with lease development activities that could potentially affect the spread of noxious and invasive species.

Invasive species, such as cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) are found in all parcels areas. Listed below are noxious species found within each parcel area:

Area A: Black Henbane (*Hyoscyamus niger*), Hoary Cress (*Cardaria draba*), Bull Thistle (*Cirsium vulgare*), Musk Thistle (*Carduus nutans*), Spotted Knapweed (*Centaurea maculosa*), Russian Knapweed (*Acroptilon rupens*), Perennial Pepperweed (*Lepidium latifolium*), Water Hemlock (*Cicuta spp.*), Canada Thistle (*Cirsium arvense*), Poison Hemlock (*Conium maculatum*).

Area B: Bull Thistle (*Cirsium vulgare*), Hoary Cress (*Cardaria draba*), Perennial Pepperweed (*Lepidium latifolium*), Russian Knapweed (*Acroptilon rupens*), Musk Thistle (*Carduus nutans*).

Area C: Scotch Thistle (*Onopordum acanthium*), Hoary Cress (*Cardaria draba*), Russian Knapweed (*Acroptilon rupens*), Salt Cedar (*Tamarix spp.*), Bull Thistle (*Cirsium vulgare*),

Canada Thistle (*Cirsium arvense*), Musk Thistle (*Carduus nutans*), Poison Hemlock (*Conium maculatum*).

Area D: Russian Knapweed (*Acroptilon rupens*), Dalmatian Toadflax (*Linaria dalmatica*), Perennial Pepperweed (*Lepidium latifolium*), Spotted Knapweed (*Centaurea maculosa*), Hoary Cress (*Cardaria draba*), Salt Cedar (*Tamarix spp.*), Bull Thistle (*Cirsium vulgare*), Scotch Thistle (*Onopordum acanthium*).

Area E: Bull Thistle (*Cirsium vulgare*), Salt Cedar (*Tamarix spp.*), Hoary Cress (*Cardaria draba*), Musk Thistle (*Carduus nutans*), Spotted Knapweed (*Centaurea maculosa*), Johnson Grass (*Sorghum halepense*), Russian Knapweed (*Acroptilon rupens*), Scotch Thistle (*Onopordum acanthium*), Black Henbane (*Hyoscyamus niger*), Water Hemlock (*Cicuta spp.*), Canada Thistle (*Cirsium arvense*).

Area F: Hoary Cress (*Cardaria draba*), Black Henbane (*Hyoscyamus niger*), Musk Thistle (*Carduus nutans*).

Area G: Musk Thistle (*Carduus nutans*), Bull Thistle (*Cirsium vulgare*), Hoary Cress (*Cardaria draba*), Canada Thistle (*Cirsium arvense*), Water Hemlock (*Cicuta spp.*), Scotch Thistle (*Onopordum acanthium*).

Area H: Bull Thistle (*Cirsium vulgare*), Musk Thistle (*Carduus nutans*), Canada Thistle (*Cirsium arvense*), Hoary Cress (*Cardaria draba*), Russian Knapweed (*Acroptilon rupens*), Spotted Knapweed (*Centaurea maculosa*), Salt Cedar (*Tamarix spp.*), Squarrose Knapweed (*Centaurea virgata*), Perennial Pepperweed (*Lepidium latifolium*).

Area I: Bull Thistle (*Cirsium vulgare*), Musk Thistle (*Carduus nutans*), Perennial Pepperweed (*Lepidium latifolium*), Canada Thistle (*Cirsium arvense*), Salt Cedar (*Tamarix spp.*), Scotch Thistle (*Onopordum acanthium*), Russian Knapweed (*Acroptilon rupens*), Water Hemlock (*Cicuta spp.*).

### **3.3.8 Lands with Wilderness Characteristics**

On June 1, 2011, the Secretary of the Department of the Interior issued a memorandum to the BLM Director that in part affirms BLM's obligations relating to wilderness characteristics under Sections 201 and 202 of the Federal Land Management Policy Act. The BLM released Manuals 6310 and 6320 in March 2012, which provide direction on how to conduct and maintain wilderness characteristics inventories and provides guidance on how to consider whether to update a wilderness characteristics inventory.

The primary function of an inventory is to determine the presence or absence of wilderness characteristics. An area having wilderness characteristics is defined by:

- Size - at least 5,000 acres of contiguous, roadless federal land,
- Naturalness, and
- Outstanding opportunities for solitude or primitive and unconfined types of recreation.
- The area may also contain supplemental values (ecological, geological, or other features of scientific, educational, scenic, or historical values).

The Nevada BLM completed the original wilderness review in 1979, and issued an initial wilderness inventory decision in 1980. At that time, the inventory found wilderness character present in one unit. It was designated as Goshute Canyon Wilderness Study Area in 1980. Portions of which became the Goshute Canyon Wilderness in 2006.

In 2011, the Ely District Office BLM began updating the lands with wilderness characteristics (LWC) inventory on a project-by-project basis until there is a land use plan revision. The project area has had an inventory update. Of the 216 proposed Oil & Gas lease parcels, 25 overlap 9 units of lands with wilderness characteristics. Of these, three of the units were found to possess wilderness characteristics on their own merits (Table 3.3.8). The remaining six inherited the outstanding opportunities of the adjacent wilderness (Goshute Canyon, South Egan Range and Far South Egans Wildernesses). There has not been a land use plan amendment to determine if or how these LWC units would be preserved to protect the wilderness characteristics. The following LWC units cover a total of 18,133 acres. These units lie within parcel areas C, D, H and I.

Table 3.3.8 Units containing LWC which overlap oil and gas parcels

LWC Unit Number	Acres	Natural	Solitude	Recreation	Supplemental Value	LWC present?
NV-040-243-3-2013	72,228	Yes	Yes	Yes	Yes	Yes
NV-040-009-2011	22,358	Yes	Yes	Yes	Archaeological cultural	Yes
NV-040-004-1-2011	25,461	Yes	Yes	Yes		Yes
NV-040-172-2012	19,992	Yes	Yes	Yes	cultural values likely	Yes*
NV-040-015-2-2011	706	Yes	Yes	Yes	No	Yes*
NV-040-172-2-2013	11,648	Yes	Yes	Yes	No	Yes*
NV-040-015A-9-2012	4,693	Yes	Yes	Yes	n/a	Yes*

LWC Unit Number	Acres	Natural	Solitude	Recreation	Supplemental Value	LWC present?
NV-040-015A-2a-2012	8,003	Yes	Yes	Yes	No	Yes*
NV-040-015A-8-2012	507	Yes	Yes	Yes	n/a	Yes*

\*this unit possesses wilderness characteristics based on the adjacent designated wilderness

### 3.3.9 Soil Resources Affected Environment

For the purposes of this EA the Affected Environment for the proposed oil and gas leasing area is the same as that described in Section 3.4 of the RMP/FEIS (BLM 2007).

### 3.3.10 Visual Resource Management Affected Environment

The proposed parcels nominated for lease fall within Visual Resource Management Classes II, III, and IV (Table 3.3.10-1). Visual resources are identified through the Visual Resource Management (VRM) inventory. This inventory consists of a scenic quality evaluation, sensitivity level analysis and a delineation of distance zones. Based on these factors, BLM-administered lands are placed into four visual resource inventory classes: VRM Class I, II, III and IV. Class I and II are the most valued, Class III represents a moderate value and Class IV is of the least value. VRM classes serve two purposes: (1) as an inventory tool that portrays the relative value of visual resources in the area, and (2) as a management tool that provides an objective for managing visual resources. Table 3.3.10-2 lists the VRM classes for each parcel area.

**Table 3.3.10-1 VRM Classification Objectives**

VRM CLASS	Visual Resource Objective	Change Allowed (Relative Level)	Relationship to the Casual Observer
<b>Class I</b>	Preserve the existing character of the landscape. Manage for natural ecological changes.	Very Low	Activities should not be visible and must not attract attention.
<b>Class II</b>	Retain the existing character of the landscape.	Low	Activities may be visible, but should not attract attention.
<b>Class III</b>	Partially retain the existing character of the landscape.	Moderate	Activities may attract attention, but should not dominate the view.

<b>VRM CLASS</b>	<b>Visual Resource Objective</b>	<b>Change Allowed (Relative Level)</b>	<b>Relationship to the Casual Observer</b>
<b>Class IV</b>	Provide for management activities, which require major modification of the existing character of the landscape.	High	Activities may attract attention, may dominate the view, but are still mitigated

**Table 3.3.10-2 VRM Class by Parcel Area**

<b>Parcel Area</b>	<b>VRM Class</b>	<b>Percentage of Parcel Area within specified Class</b>
<b>Area A</b>	III	97
	IV	3
<b>Area B</b>	III	100
<b>Area C</b>	II	42
	III	53
	IV	5
<b>Area D</b>	III	56
	IV	44
<b>Area E</b>	II	34
	III	54
	IV	12
<b>Area F</b>	II	33
	III	50
	IV	17
<b>Area G</b>	III	50
	IV	50
<b>Area H</b>	II	8
	III	89
	IV	3
<b>Area I</b>	II	29
	III	69
	IV	2

### **3.3.11 Vegetative Resources (including Wetland/Riparian Vegetation) Affected Environment**

For the purposes of this EA the Affected Environment for the purposed oil and gas leasing area is the same as that described in Section 3.5 of the RMP/FEIS (BLM 2007).

# Chapter 4 Environmental Effects

## 4.1 Introduction

Approximately two (2) million of the 10 million acres open to fluid mineral leasing in the Ely District are currently leased. This leaves 80% of the land available for leasing. Therefore, based on current leasing and development trends for the Ely District, it is expected that only 1,680 acres of the 8,400 acres (20%) potential disturbance estimated in the RFD scenario for oil and gas would be disturbed. If one considers the increase in possible oil and gas production potential by the advancements made in formation stimulation (HF), then there could be the potential for an additional 10% to 25% increase in surface disturbance over the next ten years associated with additional well fields and all the additional equipment and water needed to perform such operations. A 25% increase in surface disturbance would increase the potential surface disturbance from 1,680 acres to 3,780 acres, which is still within the RFD scenario described in the RMP/FEIS.

Approximately 8,400 acres, as estimated in the RFD scenario would be disturbed by oil and gas exploration activities. Oil exploration and production activities involve the potential for soil compaction, erosion, excavation, and losses of soil quality in these areas. The effects of surface disturbance on soils vary based on soil type, texture, moisture content, depth, and slope. Vegetation removal for roads and well pad construction can alter existing drainage patterns and contribute to accelerated gully and rill erosion, especially on steeper slopes. Soil compaction would be expected on areas utilized by heavy equipment for oil and gas exploration, development, and production. Compaction typically is greatest when soil moisture is high and where heavy equipment activities are concentrated. Soil compaction reduces vegetation productivity because it decreases root penetration and water infiltration.

Within the State of Nevada, a Memorandum of Understanding for exploration and mining reclamation exists between the BLM and the Nevada Division of Environmental Protection. Reclamation permits are supported by site-specific reclamation plans which are submitted and maintained according to an agency review and approval process. If approved, a permit defines post-project land uses, growth media salvage and replacement, seedbed amendments and erosion controls, site drainage, public safety provisions, roads, recontouring and revegetation practices, post-treatment monitoring, and other site restoration considerations according to best management practices. As a result, and given the comparatively small extent of mineral exploration and extraction acreage in the Assessment Area, the effects of these activities on soil resources are expected to be minimal.

These impacts would be mitigated through the use of management actions and best management practices and other conditions of approval imposed during the permitting process on a specific site-by-site basis.

## 4.2 Air Quality & Climate Change

### 4.2.1 Proposed Action Effects on Air Quality & Climate Change

Air resources include air quality, air quality related values (AQRVs), and climate change. As part of the planning and decision making process, BLM considers and analyzes the potential effects of BLM and BLM-authorized activities on air resources.

The EPA air quality index (AQI) is an index used for reporting daily air quality (<http://www.epa.gov/oar/data/geosel.html>) to the public. The index tells how clean or polluted an area's air is and whether associated health effects might be a concern. The EPA calculates the AQI for five criteria air pollutants regulated by the Clean Air Act (CAA): ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established NAAQS to protect public health. An AQI value of 100 generally corresponds to the primary NAAQS for the pollutant. The following terms help interpret the AQI information:

- **Good** – The AQI value is between 0 and 50. Air quality is considered satisfactory and air pollution poses little or no risk.
- **Moderate** – The AQI is between 51 and 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.
- **Unhealthy for Sensitive Groups** – When AQI values are between 101 and 150, members of “sensitive groups” may experience health effects. These groups are likely to be affected at lower levels than the general public. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution. The general public is not likely to be affected when the AQI is in this range.
- **Unhealthy** – The AQI is between 151 and 200. Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.
- **Very Unhealthy** – The AQI is between 201 and 300. This index level would trigger a health alert signifying that everyone may experience more serious health effects.

AQI data show that there is little risk to the general public from air quality in the analysis area (Table 4.2.1).

The decision to offer the identified parcels for lease would not result in any direct emissions of air pollutants. However, any future exploration or development of these leases will result in emissions of criteria, HAP and GHG pollutants. The additional emissions could result in an incremental increase in overall emissions of pollutants, in the region depending on any

contemporaneous activities occurring at the same time when potential exploration and development occurring on the lease would happen.

Table 4.2.1-1. US EPA – Air Data Air Quality Index Report (2012)

County*	# Days in Period	# Days Rated Good or No Data	# Days Rated Moderate	# Days Rated Unhealthy for Sensitive Groups	# Days Rated Unhealthy	# Days Rated Very Unhealthy
White Pine	322	242	76	4	0	0
Nye	366	344	24	1	0	0

\* Lincoln County Data unavailable.  
<http://www.epa.gov/airdata/> accessed August 19, 2013)

While the act of leasing the parcels would produce no substantial air quality effects, potential future development of the lease could lead to increases in area and regional emissions. Since it is unknown if the parcels would be developed, or the extent of the development, it is not possible to reasonably quantify potential air quality effects through dispersion modeling or another applicable method at this time. Further, the timing, construction and production equipment specifications and configurations, and specific locations of activities are also unforeseeable at this time. Additional air effects will be addressed in a subsequent analysis when lessees file an APD. All proposed activities including, but not limited to, exploratory drilling activities would be subject to applicable local, State, and Federal air quality laws and regulations.

Any subsequent activity authorized after APD approval could include soil disturbances resulting from the construction of well pads, access roads, pipelines, power lines, and drilling. Any disturbance is expected to cause increases in fugitive dust and potentially inhalable particulate matter (specifically PM10 and PM2.5) in the project area and immediate vicinity. Particulate matter, mainly dust, may become airborne when drill rigs and other vehicles travel on dirt roads to drilling locations. Air quality may also be affected by exhaust emissions from engines used for drilling, transportation, gas processing, compression for transport in pipelines, and other uses. These sources will contribute to potential short and long term increases in the following criteria pollutants: carbon monoxide, ozone (a secondary pollutant, formed photochemically by combining VOC and NOX emissions), nitrogen dioxide, and sulfur dioxide. Non-criteria pollutants (for which no national standards have been set) such as carbon dioxide, methane, nitrous oxide, air toxics (e.g., benzene), and total suspended particulates (TSP) could also be emitted. Certain pollutants may be significant when evaluating AQRV for effects on visibility

and atmospheric deposition. Significance will depend greatly on the proximity to sensitive receptors, area meteorology, and the background levels of AQRV at any sensitive receptor. Dust control measures, such as applying a layer of gravel over the travel surfaces, watering travel surfaces, and reducing speed along the roadways can be very effective in mitigating dust issues.

During exploration and development, ‘natural gas’ may at times be flared and/or vented from conventional, coal bed methane, and shale wells. The gas is likely to contain volatile organic compounds that could also be emitted from reserve pits, produced water disposal facilities, and/or tanks located at the site. The development stage may likely include the installation of pipelines for transportation of raw product. New centralized collection, distribution and/or gas processing facilities may also be necessary.

### *Mitigation*

The BLM encourages industry to incorporate and implement BMPs to reduce impacts to air quality by reducing emissions, surface disturbances, and dust from field production and operations. Measures may also be required as COAs on permits by either the BLM or the applicable state air quality regulatory agency. The BLM also manages venting and flaring of gas from federal wells as described in the provisions of Notice to Lessees (NTL) 4A, Royalty or Compensation for Oil and Gas Lost.

Some of the following measures could be imposed at the development stage:

- flaring or incinerating hydrocarbon gases at high temperatures to reduce emissions of incomplete combustion;
- emission control equipment of a minimum 95 percent efficiency on all condensate storage batteries;
- emission control equipment of a minimum 95 percent efficiency on dehydration units, pneumatic pumps, produced water tanks;
- vapor recovery systems where petroleum liquids are stored;
- tier II or greater, natural gas or electric drill rig engines;
- secondary controls on drill rig engines;
- no-bleed pneumatic controllers (most effective and cost effective technologies available for reducing VOCs);
- gas or electric turbines rather than internal combustion engines for compressors;
- NO<sub>x</sub> emission controls for all new and replaced internal combustion oil and gas field engines;
- water dirt and gravel roads during periods of high use and control speed limits to reduce fugitive dust emissions;
- interim reclamation to re-vegetate areas of the pad not required for production facilities and to reduce the amount of dust from the pads.
- co-located wells and production facilities to reduce new surface disturbance;
- directional drilling and horizontal completion technologies whereby one well provides access to petroleum resources that would normally require the drilling of several vertical wellbores;
- gas-fired or electrified pump jack engines;
- velocity tubing strings;

- cleaner technologies on completion activities (i.e. green completions), and other ancillary sources;
- centralized tank batteries and multi-phase gathering systems to reduce truck traffic;
- forward looking infrared (FLIR) technology to detect fugitive emissions; and
- air monitoring for NO<sub>x</sub> and ozone.

More specific to reducing GHG emissions, the table below describes in detail commonly used technologies to reduce methane emissions from natural gas, coal bed natural gas, and oil production operations. Table 4.2.1-2. Selected Methane Emission Reductions Reported Under the USEPA Natural Gas STAR Program, displays common methane emission technologies reported under the Program and associated emission reduction, cost, maintenance and payback data.

In the context of the oil sector, additional mitigation measures to reduce GHG emissions include methane reinjection and CO<sub>2</sub> injection.

Furthermore, the EPA is expected to promulgate new federal air quality regulations that would require GHG emission reductions from many oil and gas sources.

Table 4.2.1-2. Selected Methane Emission Reductions Reported Under the USEPA Natural Gas STAR Program <sup>1</sup>

Source Type / Technology	Annual Methane Emission Reduction <sup>1</sup> (Mcf/yr)	Capital Cost Including Installation (\$)	Annual Operating and Maintenance Cost (\$)	Payback (Years or Months)	Payback Gas Price Basis (\$/Mcf)
<b>Wells</b>					
Reduced emission (green) completion	7,000 <sup>2</sup>	\$1K – \$10K	>\$1,000	1 – 3 yr	\$3
Plunger lift systems	630	\$2.6K – \$10K	NR	2 – 14 mo	\$7
Gas well smart automation system	1,000	\$1.2K	\$0.1K – \$1K	1 – 3 yr	\$3
Gas well foaming	2,520	>\$10K	\$0.1K – \$1K	3 – 10 yr	NR
<b>Tanks</b>					
Vapor recovery units on crude oil tanks	4,900 – 96,000	\$35K – \$104K	\$7K – \$17K	3 – 19 mo	\$7
Consolidate crude oil production and water storage tanks	4,200	>\$10K	<\$0.1K	1 – 3 yr	NR
<b>Glycol Dehydrators</b>					
Flash tank separators	237 – 10,643	\$5K – \$9.8K	Negligible	4 – 51 mo	\$7
Reducing glycol circulation rate	394 – 39,420	Negligible	Negligible	Immediate	\$7

Source Type / Technology	Annual Methane Emission Reduction <sup>1</sup> (Mcf/yr)	Capital Cost Including Installation (\$)	Annual Operating and Maintenance Cost (\$)	Payback (Years or Months)	Payback Gas Price Basis (\$/Mcf)
Zero-emission dehydrators	31,400	>\$10K	>\$1K	0 – 1 yr	NR
<b>Pneumatic Devices and Controls</b>					
Replace high-bleed devices with low-bleed devices					
End-of-life replacement	50 – 200	\$0.2K – \$0.3K	Negligible	3 – 8 mo	\$7
Early replacement	260	\$1.9K	Negligible	13 mo	\$7
Retrofit	230	\$0.7K	Negligible	6 mo	\$7
Maintenance	45 – 260	Negl. to \$0.5K	Negligible	0 – 4 mo	\$7
Convert to instrument air	20,000 (per facility)	\$60K	Negligible	6 mo	\$7
Convert to mechanical control systems	500	<\$1K	<\$0.1K	0 – 1 yr	NR
<b>Valves</b>					
Test and repair pressure safety valves	170	NR	\$0.1K – \$1K	3 – 10 yr	NR
Inspect and repair compressor station blowdown valves	2,000	<\$1K	\$0.1K – \$1K	0 – 1 yr	NR
<b>Compressors</b>					
Install electric compressors	40 – 16,000	>\$10K	>\$1K	>10 yr	NR
Replace centrifugal compressor wet seals with dry seals	45,120	\$324K	Negligible	10 mo	\$7
<b>Flare Installation</b>	2,000	>\$10K	>\$1K	None	NR
Source: Multiple EPA Natural Gas STAR Program documents.					
<sup>1</sup> Unless otherwise noted, emission reductions are given on a per-device basis (e.g., per well, per dehydrator, per valve, etc). <sup>2</sup> Emission reduction is per completion, rather than per year.					
K = 1,000 mo = months Mcf = thousand cubic feet of methane NR = not reported yr = year					

#### **4.2.2 No Action Alternative Effects on Air Quality & Climate Change**

The No Action Alternative would not impact air quality or climate change in the area. Activities on current leased parcels adjacent to the proposed parcels would still be permitted.

### **4.3 Cultural Resources (including Heritage Special Designations) Environmental Effects**

#### **4.3.1 Proposed Action Effects on Cultural Resources**

A records search was conducted to identify cultural resources that have special interest or importance to the general public, such as national or state historic monuments and public interpretation sites were present in the nominated lease parcels. The records show that several parcels intersect or are in close proximity to the Lincoln Highway historic roadway. Particular segments of the Lincoln Highway have been determined eligible to the National Register of Historic Places, while other segments have yet to be evaluated for the Register. Per the stipulations set forth in the Ely RMP, all lease development within one (1) mile of the centerline of the Lincoln Highway route must include a visual resources analysis as part of the location specific NEPA analysis (BLM 2008b).

The leasing of oil and gas parcels does not entail ground-disturbing activities as part of the undertaking. Furthermore, all subsequent activities on leased parcels shall be subject to Section 106 of the NHPA and further NEPA study. Therefore, this undertaking will not result in impacts to cultural resources in and of itself; however, ground disturbance from lease development may result in substantial impacts to cultural resources. Lands within a lease may contain areas of known high potential for cultural resources. The lease parcels may also contain historic properties, TCP, and/or sacred sites currently unknown to the BLM that were not identified during the lease parcel review process. Mitigation measures may be required to avoid, minimize or mitigate adverse effects to historic properties and TCPs. The costs of these mitigation measures will be borne by the lessee. The BLM may disapprove proposed exploration and/or development activities that are likely to adversely affect historic properties, TCPs, or sacred sites for which no mitigation measures are possible. Any party proposing oil and gas exploration or development on leased parcels shall be responsible for all costs related to conducting Section 106 of the NHPA. The successful leasing of a parcel does not guarantee the feasibility of future oil and gas exploration or development because of those costs.

The following parcels have been identified as having high potential for cultural resources or historic properties.

NV-13-12-013

T.0010N, R.0580E, 21 MDM, NV

Sec. 021 ALL;

Sec. 022 ALL;

Sec. 027 ALL;

Sec. 028 ALL.

NV-13-12-047 T.0040N, R.0590E, 21 MDM, NV  
Sec. 017 PROT ALL;  
Sec. 018 PROT ALL;  
Sec. 019 PROT ALL;  
Sec. 020 PROT ALL.

NV-13-12-051 T.0040N, R.0590E, 21 MDM, NV  
Sec. 029 PROT ALL;  
Sec. 030 PROT ALL;  
Sec. 031 PROT ALL.

NV-13-12-147 T.0120N, R.0610E, 21 MDM, NV  
Sec. 024 W2NE,S2NW,S2;  
Sec. 025 ALL.

NV-13-12-150 T.0250N, R.0610E, 21 MDM, NV  
Sec. 008 SW,W2SE.

NV-13-12-152 T.0080N, R.0620E, 21 MDM, NV  
Sec. 005 LOTS 1-4;  
Sec. 005 S2N2,S2;  
Sec. 006 LOTS 1-7;  
Sec. 006 S2NE,SENW,E2SW,SE;  
Sec. 007 LOTS 1-4;  
Sec. 007 E2,E2W2;  
Sec. 008 ALL.

NV-13-12-153 T.0080N, R.0620E, 21 MDM, NV  
 Sec. 017 ALL;  
 Sec. 018 LOTS 1-4;  
 Sec. 018 E2,E2W2;  
 Sec. 019 E2;  
 Sec. 020 ALL.

NV-13-12-155 T.0090N, R.0620E, 21 MDM, NV  
 Sec. 030 LOTS 2-4;  
 Sec. 030 SWNE,E2SW,SE;  
 Sec. 031 LOTS 1-4;  
 Sec. 031 E2,E2W2;  
 Sec. 032 NWNW,S2NW,SW,W2SE.

NV-13-12-163 T.0210N, R.0630E, 21 MDM, NV  
 Sec. 025 LOTS 2,3,5;  
 Sec. 025 W2SWNE,S2NW,W2SW;  
 Sec. 036 LOTS 1,3,4,6,8,9,11,12;  
 Sec. 036 LOTS 14;  
 Sec. 036 NWNW.

NV-13-12-165 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 013 ALL;  
 Sec. 014 LOTS 1,3,4,6,7,10,15;  
 Sec. 014 E2NE;  
 Sec. 023 LOTS 1,3,4,6,7,9;  
 Sec. 023 W2SE,SESE;  
 Sec. 024 LOTS 1,3,4,6;  
 Sec. 024 N2,E2SW,SE.

NV-13-12-167 T.0230N, R.0630E, 21 MDM, NV  
 Sec. 001 LOTS 1-4;  
 Sec. 001 S2N2,S2;  
 Sec. 002 LOTS 1,3,4;  
 Sec. 002 W2NESW,SE;  
 Sec. 002 SENE,E2SWNE,S2NW,W2SW;  
 Sec. 011 E2;  
 Sec. 012 ALL.

NV-13-12-173 T.0210N, R.0640E, 21 MDM, NV  
 Sec. 017 N2,SE;  
 Sec. 018 NE,E2W2.

NV-13-12-174	T.0210N, R.0640E, 21 MDM, NV Sec. 019 LOTS 3,4; Sec. 019 SESW,S2SE; Sec. 020 E2,S2SW; Sec. 028 S2NW; Sec. 029 E2,S2SW; Sec. 030 SESE; Sec. 031 LOTS 1-4; Sec. 031 E2E2; Sec. 032 ALL.
NV-13-12-184	T.0240N, R.0640E, 21 MDM, NV Sec. 002 S2; Sec. 011 ALL; Sec. 014 ALL; Sec. 015 ALL.
NV-13-12-185	T.0240N, R.0640E, 21 MDM, NV Sec. 003 LOTS 3,4; Sec. 003 S2NW,SW; Sec. 004 LOTS 1-4; Sec. 004 S2N2,S2; Sec. 009 ALL; Sec. 010 W2; Sec. 016 ALL.
NV-13-12-193	T.0250N, R.0640E, 21 MDM, NV Sec. 001 LOTS 1,2,7-10; Sec. 001 SE; Sec. 003 LOTS 4,5,12; Sec. 003 W2SW; Sec. 004 LOTS 9,11,12; Sec. 004 SW,E2SE,SESWSE,E2SWSE; Sec. 008 ALL; Sec. 012 E2E2.
NV-13-12-197	T.0250N, R.0640E, 21 MDM, NV Sec. 032 E2,SWNW,W2SESW,NESWSW; Sec. 032 SWSESW; Sec. 033 ALL; Sec. 034 W2.

Avoidance is the preferred measure of mitigation in order to preserve and protect the resource.

#### **4.3.2 No Action Alternative Effects on Cultural Resources**

The No Action Alternative would not impact cultural resources in the area.

### **4.3.3 Proposed Action Effects on Heritage Special Designations (Historic Trails, ACEC's designated for Cultural Resources)**

Lease parcels along the Pony Express National Historic Trail may contain areas of known high potential for cultural resources. Properties known at the time of lease announcement that are listed on or eligible for the National Register of Historic Places will be avoided, where possible, by means of lease exclusions or by limits on surface use. The preferred avoidance option is to exclude areas containing National Register of Historic Places eligible sites from leasing and all forms of surface disturbance. Cultural sites not avoided may require consultation with State Historic Preservation Officer and treatment plans. Per the stipulations present in Nevada Instruction Memorandum No. NV-2004-004, a visual resources analysis up to five miles from the Pony Express centerline may be required as part of the NEPA analysis for lease parcel development.

### **4.3.4 No Action Alternative Effects on Heritage Special Designations (Historic Trails, ACEC's designated for Cultural Resources)**

The No action Alternative would not impact the Pony Express Trail.

## **4.4 Water Resources Environmental Effects**

### **4.4.1 Proposed Action Effects on Water Resources**

As previously stated, the sale of parcels and issuance of oil and gas leases is strictly an administrative action. The act of offering, selling, and issuing federal oil and gas leases does not produce impacts to water quality and surface water. Nominated lease parcels will be reviewed against the Ely RMP, and stipulations are attached to mitigate any known environmental or resource conflicts that may occur on a given lease parcel. On-the-ground impacts would not occur until a lessee applies for and receives approval to drill on the lease. Environmental consequences for water resources are discussed in Section 4.36 of the RMP/FEIS (BLM 2007).

The BLM cannot determine at the leasing stage whether or not a proposed parcel will actually be sold, or if it is sold and issued, whether or not the lease would be explored or developed. Consequently, the BLM cannot determine exactly where a well or wells may be drilled or what technology that may be used to drill and produce wells, so the impacts listed below are generic, rather than site-specific.

Additional NEPA analysis will be conducted prior to approval of an APD and will provide site-specific analysis for the well location. Exploration and development activities in Areas A through I (Figure 2.1, Nominated Parcels Map), will be assessed on a site-specific and wellhead basis for environmental impacts and water quality impacts before they would be approved. Appropriate stipulations (or none) in compliance with the Ely RMP and specifically Objective WR-2 will be applied to leases to address determined vulnerability.

### *Assumptions*

For the purposes of this EA, less than 5% of the total district is subject to lease. This percentage indicates that no more than 23 exploration and production wells should be expected as a result of this sale. This assumption is supported by Table 1.4 APDs Approved. Short-term (5 to 10 years) disturbance for this EA would be approximately 420 acres. Maximum expected short-term (5 to 10 years) disturbance resulting from Pad and Road Construction for this EA would be approximately 240 acres.

**Direct and Indirect Effects, Surface Water:** Subsequent development of a lease may result in long-and short term alterations to the hydrologic regime depending upon the intensity of development. Clearing, grading, and soil stockpiling activities associated with exploration and development actions could alter short term overland flow and natural groundwater recharge patterns resulting in *de minimis* risk<sup>1</sup>. Potential impacts include surface soil compaction caused by construction equipment and vehicles, which would likely reduce the soil's ability to absorb water, increasing the volume and rate of surface runoff. New oil and gas roads and pads, pipelines, and powerlines, could cut slopes and alter channel and floodplain characteristics at drainage crossings. The combination of increased surface disturbance, surface runoff, decreased infiltration and changes in drainage features could result in increased peak flows in *de minimis*. The success or failure of integrated measures, BMPs, and appropriate mitigation measures designed to manage stormwater and reduce erosion during construction and operation of oil and gas facilities will determine much of the impact with regard to surface waters, including road construction.

Runoff associated with storm events could increase sediment/salt loads in surface waters down gradient of the disturbed areas. Sediment may be deposited and stored in minor drainages where it could be readily moved downstream (within closed basins) during heavy storms. Sediment from future development activity may be carried into contained basins and sloughs where water quality classifications could be exceeded. The land-locked nature of most lease parcels and distance of other parcels to potentially impacted surface waters would restrict effect on the amount of sediment and salt contributed by lease exploration and development activities. Surface erosion would be greatest during the construction and would be controlled through integrated measures, BMPs, and appropriate mitigation measures. The magnitude of the impacts to surface water resources from future development activities depends on the proximity of disturbances to drainage channels, slope aspect and gradient, degree and area of soil disturbance, soil character, duration of construction activities, and the timely implementation and success/failure of mitigation measures. Natural factors which attenuate the transport of sediment and salts into

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<sup>1</sup> *de minimis* risk. In risk assessment, it refers to a level of risk that is too small to be concerned with. Some refer to this as a "virtually safe" level. National Library of Medicine [Toxicology Glossary - http://sis.nlm.nih.gov/enviro/iupacglossary/glossaryr.html](http://sis.nlm.nih.gov/enviro/iupacglossary/glossaryr.html)

susceptible water bodies include water available for overland flow; the texture of the eroded material; the amount and kind of ground cover; the slope shape, gradient, and length; and surface roughness. Impacts would likely be greatest shortly after the start of construction activities and would likely decrease in time due to stabilization, reclamation, and revegetation efforts. Minor long-term direct and indirect impacts to the watershed and hydrology could continue for the life of surface disturbance from water discharge from roads, road ditches, and well pads, but would decrease once all well pads and road surfacing material has been removed and reclamation of well pads, access roads, pipelines, and powerlines has taken place (Appendix C). Short-term direct and indirect impacts to the watershed and hydrology from access roads that are not surfaced with impervious materials would occur and would likely decrease in time due to reclamation efforts. Limiting factors include absence of hydraulic connectivity, the small area affected and implementation of integrated measures, BMPs, and appropriate mitigation measures.

Although there is potential for oil and gas development to contribute sediment loads to aquatic systems, there is no reasonable likelihood that siting adjustments, State and federally-imposed sedimentation and storm-control measures, and reclamation strategies would fail to provide adequate means to effectively prevent substantive off-site transport and delivery of sediments or fluids that may impair downstream riparian or aquatic conditions in the closed basins.

**Direct and Indirect Effects, Groundwater:** HF is designed to change the producing formations' physical properties by increasing the flow of water and gas around the well bore. Hydraulic fracturing may also introduce chemical additives into the producing formations. Chemical additives used in completion activities for the well will be introduced into the producing formations, but should mostly be pumped back out before production. Production zones generally do not contain freshwater.

HF is designed to change the producing formations' physical properties by increasing the flow of water, gas, and/or oil around the well bore. This change in physical properties may open up new fractures or enhance existing fractures that could result in freshwater aquifers being contaminated with natural gas, condensate and/or chemicals used in drilling, completion and hydraulic fracturing. Impacts to groundwater resources could occur due to failure of well integrity, failed cement, surface spills, and/or the loss of drilling, completion and hydraulic fracturing fluids into groundwater. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator and location specific. Concentrations of these additives also vary considerably and are not always known since different mixtures can be used for different purposes in gas development and even in the same well bore.

Loss of drilling fluids may occur at any time in the drilling process due to changes in porosity or other properties of the rock being drilled through for both the surface casing and the production hole. When this occurs, drilling fluids may be introduced into the surrounding formations which

could include freshwater aquifers, if it occurs when drilling the surface casing. Some or all of the produced water from these leases is likely to be injected in wells for disposal. Petroleum products and other chemicals could result in groundwater contamination through a variety of operational sources including but not limited to pipeline and well casing failure, well (gas and water) construction, and spills. Similarly, improper construction and management of reserve and evaporation pits could degrade ground water quality through leakage and leaching. The potential for negative impacts to groundwater caused from hydraulic fracturing, are currently being investigated by the Environmental Protection Agency. Authorization of the proposed projects would require full compliance with local, state, and federal directives and stipulations that relate to surface and groundwater protection.

If contamination of freshwater aquifers from oil and gas development occurs, changes in groundwater quality could impact springs and residential wells if these springs and residential wells are sourced from the same aquifers that have been affected. Direct impacts to surface water would likely be greatest shortly after the start of construction activities and would likely decrease in time due to natural stabilization, and reclamation efforts. Impacts to groundwater would be less evident and occur on a longer time scale. Construction activities would occur over a relatively short period (commonly less than a month); however, natural stabilization of the soil can sometimes takes years to establish to the degree that will adequately prevent accelerated erosion caused by compaction and removal of vegetation. Spills or produced fluids (e.g., saltwater, oil, fracking chemicals, and/or condensate in the event of a breach, overflow, or spill from storage tanks) could result in contamination of the soil onsite, or offsite, and may potentially impact surface and groundwater resources in the long term (BLM 2013).

Currently, water use to drill one well ranges between 1 and 6 million gallons. In fracturing a well, companies have estimated that generally they use a ratio of 0.5 percent hydraulic chemical fluid mix to 1.5 million gallons of water. That translates to a minimum of 5,000 gallons of chemicals into one well for every 1.5 million gallons of water used to fracture a well (Paschke 2011).

Not all wells resulting from ADP will employ fracturing and water consumption will be temporary. Oil and gas wells are cased and cemented at a depth below all usable water zones; consequently impacts to water quality at springs and residential wells are not expected. However, faulty cementing or well casing could result in methane migration to upper zones. Should hydrocarbon or associated chemicals for oil and gas development in excess of EPA/WDEQ standards for minimum concentration levels migrate into culinary water supply wells, springs, or systems, it could result in these water sources becoming non-potable.

#### **4.4.2 No Action Alternative Effects on Water Resources**

There would be no direct, indirect or cumulative impacts to the soils from oil and gas development under the No Action Alternative.

## **4.5 Fish and Wildlife Environmental Effects**

### **4.5.1 Proposed Action Effects on Fish and Wildlife**

There would be no direct effects from issuing new oil and gas leases because leasing does not directly authorize oil and gas exploration and development activities. Direct impacts from these activities would be analyzed under a separate site-specific NEPA Analysis. The RFD scenario discloses indirect future or potential impacts that could occur once the parcels are leased.

Oil and gas exploration and production activities, as outlined in the RFD scenario, have the potential to affect wildlife in the following ways:

- Temporary disturbance, displacement, or mortality of wildlife could result from exploration and development.
- Long-term habitat loss and habitat fragmentation could result from exploration or development, as well as, permanent loss of habitat due to unreclaimed or unsuccessfully reclaimed sites. Reclamation, especially in low elevation and low precipitation sites, is difficult even with the best techniques and equipment and the potential for failure is high.
- Degredation to habitat and quality forage due to the possible establishment and spread of noxious weeds from exploration and development.
- The potential of groundwater contamination from spills or evaporation pond runoff and/or overflow could change the water chemistry at springs, altering aquatic habitat. This could possibly alter survivorship and reproduction of aquatic species; however it is believed the contamination of groundwater is highly unlikely to occur.
- Pumping of groundwater in the general vicinity of springs could possibly cause reduced water quantity or possible de-watering of riparian areas. Reduction of water could also alter water chemistry affecting riparian species. Changes in water quantity and quality could alter the survivorship and reproduction of aquatic species; however it is believed that the amount of water necessary for drilling would not affect neighboring springs.

Timing stipulations outlined in Appendix B would minimize these effects to fish and wildlife.

### **4.5.2 No Action Alternative Effects on Fish and Wildlife**

The No Action Alternative would not impact fish and wildlife.

## **4.6 Special Status Species**

### **4.6.1 Proposed Action Effects on FWS Listed or Proposed for Listing Threatened, Endangered, or Critical Habitat**

There would be no direct effects from issuing new oil and gas leases because leasing does not directly authorize oil and gas exploration and development activities. However there would be indirect effects from leasing as described in the RFD scenario. The pumping of groundwater in the same hydrobasin of a federally listed fish species could possibly alter the quantity and quality

of spring water, thereby negatively affecting survivorship and reproduction. It is currently unknown if the amount of water consumption needed for drilling operations could affect the groundwater table. It is believed that the amount of water necessary for drilling would not affect neighboring springs.

There is also the potential of groundwater contamination from spills or evaporation pond runoff and/or over flow could change the water chemistry at springs, altering aquatic habitat. Changes in water quality/quantity and groundwater contamination, may affect the survivorship and reproduction of federally threatened or endangered fish.

Section 7 consultation would take place prior to any drilling activities during the site-specific NEPA analysis, with level of consultation to be determined based upon the project site-specific proposed action. Specific mitigation measures determined by the BLM would be enforced to prevent or minimize the take of a listed species as a result of drilling.

The following parcels may require Section 7 consultation prior to any surface disturbance due to the proximity of the White River Spinedace and Railroad Valley Springfish. The BLM must ensure that the impacts from the operation do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. The operator, U.S. Fish and Wildlife Service, and the BLM also must reach concurrence that the proposed actions are below the jeopardy or adverse modification threshold. If it is determined that through the review of the plan of operation and the use of mitigation measures that the operation is not below the jeopardy or adverse modification threshold, the project would not go forward.

<b><u>Parcels</u></b>	<b><u>Description of Lands</u></b>
NV-13-12-042	T.0040N, R.0590E, 21 MDM, NV Sec. 001 PROT E2,E2W2.
NV-13-12-045	T.0040N, R.0590E, 21 MDM, NV Sec. 012 PROT E2,E2NW,SW.
NV-13-12-046	T.0040N, R.0590E, 21 MDM, NV Sec. 013 PROT NE, W2NW, N2SE.
NV-13-12-054	T.0050N, R.0590E, 21 MDM, NV Sec. 001 PROT ALL; Sec. 002 PROT ALL; Sec. 003 PROT ALL; Sec. 010 PROT ALL.
NV-13-12-055	T.0050N, R.0590E, 21 MDM, NV Sec. 004 PROT ALL; Sec. 005 PROT ALL; Sec. 008 PROT ALL;

Sec. 009 PROT ALL.

NV-13-12-056 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 006 PROT ALL;  
 Sec. 007 PROT ALL.

NV-13-12-057 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 011 PROT ALL;  
 Sec. 012 PROT ALL;  
 Sec. 013 PROT ALL.

NV-13-12-058 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 014 PROT ALL;  
 Sec. 023 PROT ALL;  
 Sec. 024 PROT ALL.

NV-13-12-059 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 015 PROT ALL;  
 Sec. 016 PROT ALL;  
 Sec. 021 PROT ALL;  
 Sec. 022 PROT ALL.

NV-13-12-060 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 017 PROT ALL;  
 Sec. 018 PROT E, NW, NESW, SE;  
 Sec. 019 PROT NE, E2SE;  
 Sec. 020 PROT ALL.

NV-13-12-062 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 027 PROT ALL;  
 Sec. 028 PROT ALL;  
 Sec. 033 PROT N2N2;  
 Sec. 034 PROT N2N2.

NV-13-12-063 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 029 PROT E2, NW, NESW;  
 Sec. 030 PROT NENE.

NV-13-12-064 T.0050N, R.0590E, 21 MDM, NV  
 Sec. 035 PROT N2, NESE;  
 Sec. 036 PROT ALL.

NV-13-12-061 T.0050N, R.0590E, 21 MDM, NV

Sec. 025 PROT ALL;  
 Sec. 026 PROT ALL.

NV-13-12-065 T.0060N, R.0590E, 21 MDM, NV  
 Sec. 019 LOTS 1-4;  
 Sec. 019 E2, E2W2;  
 Sec. 020 ALL.

NV-13-12-066 T.0060N, R.0590E, 21 MDM, NV  
 Sec. 021 ALL;  
 Sec. 022 N2, SW, S2SE;  
 Sec. 027 ALL;  
 Sec. 028 ALL.

NV-13-12-067 T.0060N, R.0590E, 21 MDM, NV  
 Sec. 023 N2, S2S2, NESE;  
 Sec. 024 ALL;  
 Sec. 025 ALL;  
 Sec. 026 ALL.

NV-13-12-068 T.0060N, R.0590E, 21 MDM, NV  
 Sec. 029 ALL;  
 Sec. 032 ALL;  
 Sec. 033 ALL.

NV-13-12-069 T.0060N, R.0590E, 21 MDM, NV  
 Sec. 030 LOTS 1-4;  
 Sec. 030 E2, E2W2;  
 Sec. 031 LOTS 1-4;  
 Sec. 031 E2, E2W2.

NV-13-12-070 T.0060N, R.0590E, 21 MDM, NV  
 Sec. 034 ALL;  
 Sec. 035 ALL;  
 Sec. 036 ALL.

NV-13-12-083 T.0040N, R.0600E, 21 MDM, NV  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2, S2;  
 Sec. 006 LOTS 1-7;  
 Sec. 006 S2NE, SENW, E2SW, SE.

NV-13-12-084	T.0040N, R.0600E, 21 MDM, NV Sec. 007 LOTS 1-4; Sec. 007 E2, E2W2; Sec. 008 ALL; Sec. 017 ALL; Sec. 018 LOT 1; Sec. 018 NE, NENW; E2SE.
NV-13-12-085	T.0040N, R.0600E, 21 MDM, NV Sec. 020 ALL. N2, N2SW, SESW, SE.
NV-13-12-086	T.0040N, R.0600E, 21 MDM, NV Sec. 029 ALL; Sec. 030 LOTS 1-4; Sec. 030 E2, E2W2; Sec. 031 LOTS 1-4; Sec. 031 E2, E2W2; Sec. 032 ALL.
NV-13-12-087	T.0050N, R.0600E, 21 MDM, NV Sec. 004 LOTS 1-4; Sec. 004 S2N2, S2; Sec. 005 LOTS 1-4; Sec. 005 S2N2, S2; Sec. 006 LOTS 1-7; Sec. 006 S2NE, SENW, E2SW, SE.
NV-13-12-088	T.0050N, R.0600E, 21 MDM, NV Sec. 007 LOTS 1-4; Sec. 007 E2,E2W2; Sec. 008 ALL; Sec. 009 ALL.
NV-13-12-089	T.0050N, R.0600E, 21 MDM, NV Sec. 017 ALL; Sec. 018 LOTS 1-4; Sec. 018 E2, E2W2; Sec. 019 LOTS 1-4; Sec. 019 E2, E2W2.
NV-13-12-090	T.0050N, R.0600E, 21 MDM, NV Sec. 020 ALL; Sec. 029 ALL; Sec. 032 ALL.

NV-13-12-091	T.0050N, R.0600E, 21 MDM, NV Sec. 030 LOTS 1-4; Sec. 030 E2, E2W2; Sec. 031 LOTS 1-4; Sec. 031 E2, E2W2.
NV-13-12-092	T.0060N, R.0600E, 21 MDM, NV Sec. 019 LOTS 1-4; Sec. 019 E2, E2W2; Sec. 020 ALL; Sec. 021 ALL.
NV-13-12-093	T.0060N, R.0600E, 21 MDM, NV Sec. 028 ALL; Sec. 029 ALL; Sec. 030 LOTS 1, 2; Sec. 030 E2, E2NW.
NV-13-12-094	T.0060N, R.0600E, 21 MDM, NV Sec. 031 LOTS 1-4; Sec. 031 E2, E2W2; Sec. 032 ALL; Sec. 033 ALL.
NV-13-12-095	T.0080N, R.0600E, 21 MDM, NV Sec. 001 PROT ALL; Sec. 002 PROT ALL; Sec. 003 PROT ALL.
NV-13-12-096	T.0080N, R.0600E, 21 MDM, NV Sec. 004 PROT ALL; Sec. 009 PROT ALL; Sec. 016 PROT ALL.
NV-13-12-097	T.0080N, R.0600E, 21 MDM, NV Sec. 005 PROT ALL; Sec. 006 PROT ALL.
NV-13-12-098	T.0080N, R.0600E, 21 MDM, NV Sec. 007 PROT ALL; Sec. 008 PROT ALL; Sec. 017 PROT ALL.

NV-13-12-099 T.0080N, R.0600E, 21 MDM, NV  
Sec. 010 PROT ALL;  
Sec. 014 PROT ALL;  
Sec. 015 PROT ALL.

NV-13-12-100 T.0080N, R.0600E, 21 MDM, NV  
Sec. 011 PROT ALL;  
Sec. 012 PROT ALL;  
Sec. 013 PROT ALL.

NV-13-12-101 T.0080N, R.0600E, 21 MDM, NV  
Sec. 018 PROT ALL;  
Sec. 019 PROT ALL;  
Sec. 020 PROT ALL.

NV-13-12-102 T.0080N, R.0600E, 21 MDM, NV  
Sec. 021 PROT ALL;  
Sec. 022 PROT ALL;  
Sec. 023 PROT ALL;  
Sec. 024 PROT ALL.

NV-13-12-103 T.0080N, R.0600E, 21 MDM, NV  
Sec. 027 PROT ALL;  
Sec. 034 PROT ALL.

NV-13-12-104 T.0080N, R.0600E, 21 MDM, NV  
Sec. 028 PROT ALL;  
Sec. 032 PROT ALL;  
Sec. 033 PROT ALL.

NV-13-12-105 T.0080N, R.0600E, 21 MDM, NV  
Sec. 029 PROT ALL;  
Sec. 030 PROT ALL;  
Sec. 031 PROT ALL.

NV-13-12-106 T.0090N, R.0600E, 21 MDM, NV  
Sec. 005 PROT ALL;  
Sec. 006 PROT ALL;  
Sec. 007 PROT ALL.

NV-13-12-107 T.0090N, R.0600E, 21 MDM, NV  
Sec. 008 PROT ALL;  
Sec. 009 PROT ALL;  
Sec. 010 PROT ALL;  
Sec. 011 PROT ALL.

NV-13-12-108 T.0090N, R.0600E, 21 MDM, NV  
Sec. 016 PROT ALL;  
Sec. 017 PROT ALL;  
Sec. 018 PROT ALL.

NV-13-12-109 T.0090N, R.0600E, 21 MDM, NV  
Sec. 019 PROT ALL;  
Sec. 020 PROT ALL.

NV-13-12-110 T.0090N, R.0600E, 21 MDM, NV  
Sec. 021 PROT ALL;  
Sec. 022 PROT ALL;  
Sec. 023 PROT ALL.

NV-13-12-111 T.0090N, R.0600E, 21 MDM, NV  
Sec. 024 PROT ALL;  
Sec. 025 PROT ALL;  
Sec. 036 PROT ALL.

NV-13-12-112 T.0090N, R.0600E, 21 MDM, NV  
Sec. 026 PROT ALL;  
Sec. 027 PROT ALL;  
Sec. 034 PROT ALL;  
Sec. 035 PROT ALL.

NV-13-12-113 T.0090N, R.0600E, 21 MDM, NV  
Sec. 028 PROT ALL;  
Sec. 032 PROT ALL;  
Sec. 033 PROT ALL.

NV-13-12-114 T.0090N, R.0600E, 21 MDM, NV  
Sec. 029 PROT ALL;  
Sec. 030 PROT ALL;  
Sec. 031 PROT ALL.

NV-13-12-118 T.0060N, R.0610E, 21 MDM, NV  
 Sec. 001 LOTS 1-4;  
 Sec. 001 S2N2, S2;  
 Sec. 012 ALL;  
 Sec. 013 N2NE,W2,E2SE;  
 Sec. 014 ALL.

NV-13-12-119 T.0060N, R.0610E, 21 MDM, NV  
 Sec. 002 LOTS 3,4;  
 Sec. 002 SWNW;  
 Sec. 003 LOTS 1-4;  
 Sec. 003 S2NE,SENW,S2;  
 Sec. 004 LOTS 3,4;  
 Sec. 004 S2NW,S2;  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2,S2.

NV-13-12-120 T.0060N, R.0610E, 21 MDM, NV  
 Sec. 023 W2;  
 Sec. 026 SWSWNW, SENW, SW;  
 Sec. 026 E2, N2NW, E2SWNW, S2NWSWNW;  
 Sec. 027 N2NE, SWNE, N2NESENE;  
 Sec. 027 S2NWSWNW, SWSWNW, S2;  
 Sec. 027 W2SENE, S2SESENE, E2NW;  
 Sec. 027 E2W2NW, NWNWNW;  
 Sec. 028 SE.

NV-13-12-121 T.0060N, R.0610E, 21 MDM, NV  
 Sec. 032 SE;  
 Sec. 033 ALL;  
 Sec. 034 ALL;  
 Sec. 035 ALL.

NV-13-12-122 T.0070N, R.0610E, 21 MDM, NV  
 Sec. 003 LOTS 1-4;  
 Sec. 003 S2N2, SW, W2SE;  
 Sec. 004 LOTS 1-4;  
 Sec. 004 S2N2,S2.

NV-13-12-123 T.0070N, R.0610E, 21 MDM, NV  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2, S2;  
 Sec. 008 ALL;  
 Sec. 009 ALL.

NV-13-12-124	T.0070N, R.0610E, 21 MDM, NV Sec. 010 ALL; Sec. 015 ALL; Sec. 022 W2E2, NW, E2SW.
NV-13-12-125	T.0070N, R.0610E, 21 MDM, NV Sec. 016 ALL; Sec. 017 ALL; Sec. 020 ALL; Sec. 021 N2, SW, W2SE.
NV-13-12-126	T.0070N, R.0610E, 21 MDM, NV Sec. 021 E2SE; Sec. 022 W2SW.
NV-13-12-127	T.0070N, R.0610E, 21 MDM, NV Sec. 022 E2E2; Sec. 027 E2E2; Sec. 034 E2NE, NESE.
NV-13-12-128	T.0070N, R.0610E, 21 MDM, NV Sec. 027 W2E2, W2; Sec. 028 ALL; Sec. 033 ALL; Sec. 034 W2E2, W2, SESE.
NV-13-12-129	T.0070N, R.0610E, 21 MDM, NV Sec. 029 ALL; Sec. 032 ALL.
NV-13-12-130	T.0080N, R.0610E, 21 MDM, NV Sec. 001 LOTS 1; Sec. 001 SENE, E2SE; Sec. 012 E2; Sec. 013 NE, S2NW, S2; Sec. 014 S2N2, S2.

NV-13-12-131 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 001 LOTS 2,3,4;  
 Sec. 001 SWNE, S2NW, SW, W2SE;  
 Sec. 002 LOTS 1-4;  
 Sec. 002 S2N2, S2;  
 Sec. 011 ALL;  
 Sec. 012 W2;  
 Sec. 013 N2NW;  
 Sec. 014 N2N2.

NV-13-12-132 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 003 LOTS 1-4;  
 Sec. 003 S2N2, S2;  
 Sec. 004 LOTS 1-4;  
 Sec. 004 S2N2, S2;  
 Sec. 005 LOTS 1,3,4;  
 Sec. 005 S2N2, S2;  
 Sec. 008 ALL.

NV-13-12-133 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 009 ALL;  
 Sec. 010 ALL.

NV-13-12-134 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 015 ALL;  
 Sec. 016 ALL;  
 Sec. 017 ALL;  
 Sec. 022 ALL.

NV-13-12-135 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 023 ALL;  
 Sec. 026 ALL;  
 Sec. 027 ALL.

NV-13-12-136 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 024 ALL;  
 Sec. 025 ALL;  
 Sec. 036 ALL.

NV-13-12-137 T.0080N, R.0610E, 21 MDM, NV  
 Sec. 028 S2;  
 Sec. 032 ALL;  
 Sec. 033 ALL;  
 Sec. 034 ALL.

NV-13-12-138 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 001 S2N2, S2;  
 Sec. 002 S2NE, SENW, E2SW, SE;  
 Sec. 011 E2, E2NW;  
 Sec. 012 ALL;  
 Sec. 013 N2, E2SW, SE.

NV-13-12-139 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 003 LOTS 2,3,4;  
 Sec. 003 S2N2, S2;  
 Sec. 010 ALL;  
 Sec. 011 W2SW;  
 Sec. 014 N2, SW, N2SE, SWSE;  
 Sec. 015 ALL.

NV-13-12-140 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 004 LOTS 1-4;  
 Sec. 004 S2N2, S2;  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2, S2;  
 Sec. 008 ALL.

NV-13-12-141 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 009 ALL;  
 Sec. 016 ALL;  
 Sec. 017 ALL;  
 Sec. 020 ALL.

NV-13-12-142 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 021 ALL;  
 Sec. 022 ALL;  
 Sec. 023 S2SE;  
 Sec. 023 SENE, NENW, W2W2, SESW, NESE;  
 Sec. 024 N2, SW, W2SE.

NV-13-12-143 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 025 ALL;  
 Sec. 026 ALL;  
 Sec. 035 ALL;  
 Sec. 036 ALL.

NV-13-12-144 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 027 ALL;  
 Sec. 028 ALL;  
 Sec. 029 ALL;  
 Sec. 030 LOTS 1-4;  
 Sec. 030 E2, E2W2.

NV-13-12-145 T.0090N, R.0610E, 21 MDM, NV  
 Sec. 031 LOTS 1-4;  
 Sec. 031 E2, E2W2;  
 Sec. 032 N2NE, W2, SESE;  
 Sec. 033 ALL;  
 Sec. 034 ALL.

NV-13-12-146 T.0110N, R.0610E, 21 MDM, NV  
 Sec. 027 N2, SW, S2SE.

NV-13-12-147 T.0120N, R.0610E, 21 MDM, NV  
 Sec. 024 W2NE, S2NW, S2;  
 Sec. 025 ALL.

NV-13-12-148 T.0160N, R.0610E, 21 MDM, NV  
 Sec. 012 N2NE, W2;  
 Sec. 013 SWNE, W2W2, NESW, NWSE;  
 Sec. 023 W2NE, NW, N2SW, SWSW;  
 Sec. 026 W2W2, SESW, S2SE.

NV-13-12-151 T.0060N, R.0620E, 21 MDM, NV  
 Sec. 006 LOTS 1-7;  
 Sec. 006 S2NE, SENW, E2SW, SE;  
 Sec. 007 LOTS 1-4;  
 Sec. 007 E2, E2W2;  
 Sec. 018 LOTS 1-4;  
 Sec. 018 E2, E2W2;  
 Sec. 019 LOTS 1-4;  
 Sec. 019 E2, E2W2.

NV-13-12-152 T.0080N, R.0620E, 21 MDM, NV  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2, S2;  
 Sec. 006 LOTS 1-7;  
 Sec. 006 S2NE, SENW, E2SW, SE;  
 Sec. 007 LOTS 1-4;  
 Sec. 007 E2, E2W2;  
 Sec. 008 ALL.

NV-13-12-153	T.0080N, R.0620E, 21 MDM, NV Sec. 017 ALL; Sec. 018 LOTS 1-4; Sec. 018 E2, E2W2; Sec. 019 E2; Sec. 020 ALL.
NV-13-12-154	T.0080N, R.0620E, 21 MDM, NV Sec. 029 ALL; Sec. 030 LOTS 1-4; Sec. 030 E2, E2W2; Sec. 031 LOTS 1-4; Sec. 031 E2, E2W2; Sec. 032 ALL.
NV-13-12-155	T.0090N, R.0620E, 21 MDM, NV Sec. 030 LOTS 2-4; Sec. 030 SWNE, E2SW, SE; Sec. 031 LOTS 1-4; Sec. 031 E2, E2W2; Sec. 032 NWNW, S2NW, SW, W2SE.
NV-13-12-156	T.0100N, R.0620E, 21 MDM, NV Sec. 018 E2.

#### **4.6.2 No Action Alternative Effects on FWS Listed or Proposed for Listing Threatened, Endangered, or Critical Habitat**

There would be no effects to the White River spinedace or the Railroad Valley springfish from the proposed action, as no leases would be issued for the parcels covered in this document.

#### **4.6.3 Proposed Action Effects on Special Status species other than those listed as Threatened or Endangered**

There would be no direct effects from issuing new oil and gas leases because leasing does not directly authorize oil and gas exploration and development activities. Direct impacts from these activities would be analyzed under a separate site-specific NEPA analysis. The RFD scenario discloses indirect future or potential impacts that could occur once the parcels are leased.

Effects to special status animal species if drilling were to occur would be similar as outlined for fish and wildlife above. There may be loss of some individuals of special status plants; however surveys would be conducted prior to drilling to avoid individual plants or populations. Timing stipulation outlined in Appendix B would minimize these above effects to special status wildlife

species. Site-specific analysis will be required for any APD resulting from the proposed leasing action, including surveys for species such as the pygmy rabbit. Additionally, a site-specific NEPA analysis would include mitigation measures to minimize effects on such species.

#### **4.6.4 No Action Alternative Effects on Special Status species other than those listed as Threatened or Endangered**

There would be no change to special status species under the no action alternative as the proposed oil and gas lease parcels would be withdrawn from the lease sale.

### **4.7 Environmental Justice Environmental Effects**

#### **4.7.1 Proposed Action Effects on Environmental Justice**

There are no known disadvantaged populations that would be affected by the proposed action. However, the lease parcels that overlap private property could potentially have an impact on the character, usage, or integrity of the private land due to the surface occupancy associated with energy development. In addition to the approximate five acres of development per well, there would also be greater activity from construction and operation of the facility, potential residency of maintenance staff, and the opportunity cost of lost use of the developed area. Due to the regulations of the split-estate arrangement, the landowner has little control over allowing the use on their land, but can negotiate with the operator to determine parameters of development.

#### **4.7.2 No Action Alternative Effects on Environmental Justice**

The No Action Alternative would have no impact on Environmental Justice.

### **4.8 Socioeconomics Environmental Effects**

#### **4.8.1 Proposed Action Effects on Socioeconomics**

A direct effect of issuing new oil and gas leases on socioeconomics within the Assessment Area would be the generation of revenue from the sale of the leases. The State of Nevada would receive 49 percent of the proceeds from the initial sale of each lease parcel.

Subsequent oil and gas exploration, development, and production could create additional impacts. During the exploration phase, oil and gas companies typically provide in-house scientists and technicians to do the majority of the work. After initial surveys have been completed, road building, drill pad, and other construction and reclamation activities could occur as a result of oil and gas exploration and development activities. Much of this work could be contracted to local contractors, producing a potential economic impact to the local area through additional jobs, income, and added demand for additional services. Any oil exploration or development on these parcels may provide these counties with positive financial gains.

#### **4.8.2 No Action Alternative Effects on Socioeconomics**

The No Action Alternative would not impact the current socioeconomic climate in the area.

## **4.9 Noxious and Invasive Weeds**

### **4.9.1 Proposed Action Effects on Noxious and Invasive Weeds**

Each APD would result in additional disturbance throughout the future project areas creating opportunity for noxious weeds to spread. Cheatgrass and other weedy annuals are common along roadsides and other disturbed areas. These and the other species of noxious weeds are spread by vehicle traffic, livestock, and wind, water, recreational vehicles, and wildlife. There would also be potential for new weeds to be transported onto the site on equipment used for construction activities. Any disturbance of soil or removal of vegetation would create opportunity for weeds to establish or spread into the surrounding plant community. In disturbed areas, bare soils and the lack of competition from an established perennial plant community would allow weed species opportunity to grow and produce seed. However, successful reclamation using a seed mix adapted to the site in conjunction with integrated weed management would create an opportunity to improve vegetative communities and reduce the amount of weedy species in the project area.

The act of offering, selling, and issuing federal oil and gas leases does not produce invasive/non-native species impacts. Subsequent development produces impacts in the form of ground disturbance. The construction of an access road and well pad may unintentionally contribute to the establishment and spread of noxious weeds. Noxious weed seed could be carried to and from the project areas by numerous methods, including construction equipment, the drilling rig and transport vehicles. The main mechanism for seed dispersion on the road and well pad is by equipment and vehicles that were previously used and or driven across or through noxious weed infested areas. The potential for the dissemination of invasive and noxious weed seed may be elevated by the use of construction equipment typically contracted out to companies that may be from other areas.

Prior to any ground disturbing activities, further analysis addressing the potential effects related to noxious, non-native species would be conducted.

Principles of integrated pest management, including herbicide application, shall be employed to control and minimize noxious and invasive weeds. Proposed mitigation measures, including noxious and invasive weed control, would be developed upon environmental analysis of each site-specific APD.

### **4.9.2 No Action Alternative Effects on Noxious and Invasive Weeds**

The lease sale and subsequent development of the parcels would not occur; thereby no further impact to non-native invasive species would occur.

## **4.10 Lands with Wilderness Characteristics Environmental Effects**

### **4.10.1 No Action Alternative Effects on Lands with Wilderness Characteristics**

The proposed action to authorize oil and gas leasing would impact, and potentially eliminate, wilderness character in the nine units, when and if exploration and production activities occur.

Short-term (5-10 years) disturbances would have a dramatic and negative effect on the LWC units by reducing and possibly eliminating the wilderness character. Depending on the location and density of exploration wells, the LWC units may be reduced to areas of less than 5,000 acres; naturalness would be eliminated across portions of the units; and opportunities for solitude or a primitive and unconfined type of recreation may be eliminated.

If exploration wells are plugged and abandoned, they would be reclaimed immediately after drilling or construction. Therefore, in the long term, it is possible that all disturbances would be reclaimed allowing the area to return to a natural state; and opportunities for solitude or a primitive and unconfined type of recreation would return. Impacts to size may also be reclaimed after exploration, but depending on the extent of wells and associated facilities (roads, gravel pits, etc.) impacts may remain that could continue to eliminate LWCs based on size.

For any producing wells, the impacts would be long term (20 years) or much longer. At that point, the impacts to LWC would be considered permanent.

### **4.10.2 No Action Alternative Effects on Lands with Wilderness Characteristics**

Under the No Action Alternative, all expressions of interest to lease would be denied or rejected. Therefore, there would be no human-caused alterations to the existing landscape and there would be no impacts to the wilderness characteristics.

## **4.11 Soil Resources Environmental Effects**

### **4.11.1 Proposed Action Effects on Soil Resources**

The act of offering, selling, and issuing federal oil and gas lease does not create impacts to soil. Impacts to soil, both direct and indirect, would occur when the lease is developed in the future. The potential impacts would be analyzed on a site-specific basis prior to oil and gas development.

If oil and gas development were to occur in the proposed area(s) for leasing, impacts would occur due to ground disturbance and potential reduction of water resources. Most of the disturbance would be in the form of well pad construction, roads to access the well pad, road spurs off of the main well pad access road and the large amount of water resources needed to extract the petroleum resources. The soil resources that would primarily be affected would be the areas dominated by soil types sensitive to ground disturbance and water table reduction (i.e. silty and wetland soils).

If oil and gas development were to occur in the proposed area(s) for leasing, the magnitude and extent this would affect the soil resources in the area is directly proportional to the amount of oil and gas development that would occur in the given area. One could extrapolate the potential magnitude and extent of these affects by reviewing the disturbance scenario in Section 2.5 Reasonably Foreseeable Development Scenario for Oil and Gas Resources.

#### **4.11.2 No Action Alternative Effects on Soil Resources**

Under the No Action Alternative, the lease sale would not occur and, therefore, no impacts to soil resources would occur.

### **4.12 Visual Resource Management Environmental Effects**

#### **4.12.1 Proposed Action Effects on Visual Resource Management**

Areas C, E, F, H, and I have portions of VRM Class II (Table 3.3.10-2). Exploration and development within these parcels may not meet the VRM Class II objectives. Objectives for VRM Classes III and IV would be met by incorporating design features. The objectives of each VRM class would be taken into consideration for the development of lease parcels. Modifications to decrease visual contrast may include, but not limited to, painting of facilities, the use of low profile tanks, placing facilities to avoid or minimize visibility from travel corridors, residential areas, and other sensitive observation points, the use of existing vegetation would be considered when designing the position of certain pads to blend into the existing characteristic landscape, feathering edges of the well pads to avoid stark line contrasts and blend with the surrounding landscape, when possible. When an APD is submitted a site-specific visual contrast rating would be conducted. The contrast rating will identify what types of mitigation is needed to minimize the visual contrast. Those recommended mitigation measures would be incorporated into site-specific NEPA or become applicant committed mitigation measures incorporated into the APD as a means to meet the VRM class objectives, at the beginning of the project planning phase.

#### **4.12.2 No Action Alternative Effects on Visual Resource Management**

The No Action Alternative would not impact the current visual resources in the area. Activities on current leased parcels adjacent to the proposed parcels would still be permitted.

### **4.13 Vegetative Resources (including Wetlands/Riparian Vegetation) Environmental Effects**

#### **4.13.1 Proposed Action Effects on Vegetative Resources (including Wetlands/Riparian Vegetation)**

The act of offering, selling, and issuing federal oil and gas lease does not create impacts to vegetation. Impacts to vegetation, both direct and indirect, would occur when the lease is developed in the future. The potential impacts would be analyzed on a site-specific basis prior to oil and gas development.

If oil and gas exploration and development were to occur in the proposed area(s) for leasing, impacts would occur due to ground disturbance and potential reduction of water resources. Most of the disturbance would be in the form of well pad construction, roads to access the well pad, road spurs off of the main well pad access road and the large amount of water resources needed to extract the petroleum resources. The vegetation resources that would primarily be affected would be the areas dominated by upland vegetation communities and associated soil types sensitive to ground disturbance and water table reduction (i.e. winterfat plant communities/the associated silty soils and riparian/spring vegetation).

If oil and gas exploration and development were to occur in the proposed area(s) for leasing, the magnitude and extent this would affect the vegetative resources in the area is directly proportional to the amount of oil and gas development that would occur in the given area. One could extrapolate the potential magnitude and extent of these affects by reviewing the disturbance scenario in Section 2.5 Reasonably Foreseeable Development Scenario for Oil and Gas Resources.

The potential impacts of oil and gas leasing on upland vegetation communities would be:

1. Reduction or loss in production, distribution and vigor of sensitive upland plant communities (i.e. winterfat) due to oil and gas activities.
2. Introduction of invasive plant species to upland plant communities by way of oil and gas activities.

If oil and gas exploration and development were to occur in the proposed area(s) for leasing, the magnitude and extent this would affect the riparian/spring vegetative resources in the area is directly proportional to the amount of oil and gas development that would occur in the given area. Riparian vegetation is reliant upon both precipitation in the form of rain and snow, in conjunction with ground water table levels of the given area. One could extrapolate the potential magnitude and extent of these affects by reviewing the Water consumption scenario in Section 2.5 Reasonably Foreseeable Development Scenario for Oil and Gas Resources.

The potential impacts of oil and gas leasing on riparian vegetation communities would be:

1. Reduction or loss in production and vigor of riparian plant communities due to oil and gas activities and associated water table loss.
2. A contraction or drying up of existing riparian plant communities' distribution due to oil and gas activities, and associated water table loss.
3. Introduction of invasive plant species to riparian plant communities by way of oil and gas activities.

#### **4.13.2 No Action Alternative Effects on Vegetative Resources (including Wetlands/Riparian Vegetation)**

Under the No Action Alternative, the lease sale would not occur and no impacts to vegetative resources (including wetlands/riparian vegetation) would occur.

#### **4.14 Waste, Hazardous or Solid**

##### **4.14.1 Proposed Action Effects on Wastes, Hazardous or Solid**

The lease parcels fall under environmental regulations that impact exploration and production waste management and disposal practices and impose responsibility and liability for protection of human health and the environment from harmful waste management practices or discharges. Any potential for waste impact would not occur until post-lease development activities are initiated. Any subsequent activity authorized after APD approval could be in the form of drilling fluid spills, solid chemical spills, fuel spills, trash scatter on and off the well pads, and hydrocarbon or gas releases.

The lease sale parcels are regulated under the Resource Conservation and Recovery Act (RCRA), Subtitle C regulations. Leaseholders proposing development would be required to have approved Spill Prevention Control and Countermeasure Plans, if the applicable requirements of 40 CFR 112 are met, and comply with all requirements for reporting of undesirable events.

##### **4.14.2 No Action Alternative Effects on Waste, Hazardous or Solid**

The No Action Alternative would not impact hazardous or solid wastes in the area.

## **Chapter 5 Cumulative Effects Analysis**

### **5.1 Past Actions**

The Ely District is rich in natural resources and the cumulative effects study area has been used for a wide array of activities over the years. Mining, grazing, recreation, realty actions, and oil exploration have been conducted throughout the Ely District and more than likely, will continue for many more years. While more than 200 wells have been drilled in the Ely District so far, only two are in production.

### **5.2 Present Actions**

Mining, grazing, recreation, realty actions, and oil exploration are being conducted throughout the District and more than likely, will continue for many more years.

### **5.3 Reasonable Foreseeable Future Actions**

There are many new projects coming to rural Nevada, especially around Ely. Several wind development projects, solar projects, transmission lines, and a groundwater development project are being proposed in the Ely District. Due to the current prices of gold and oil, the potential for

much more exploration and development for each of these commodities are likely to occur in the Ely District in the future.

Although the proposed action does not include exploration, development, production, or final reclamation of oil and gas resources, authorization of oil and gas leasing does convey a right to subsequent exploration and development activities. Even though these later activities can be associated with oil and gas leasing, they would be analyzed in a separate, site-specific NEPA document, once an application to drill or notice of intent is received.

The RFD scenario in the Ely RMP projects that a total of 448 wells would be drilled resulting in total short-term (5 to 10 years) disturbance of approximately 8,400 acres and a long-term (about 20 years for producing wells) disturbance of approximately 1,400 acres. It also suggests that a new field discovery similar in size and surface disturbance to the Trap Springs and Kate Springs oil fields within Railroad Valley could be made over the next several years. Short-term disturbance as defined for the reasonably foreseeable development scenario includes locations for wells in the plugged and abandoned category that would be reclaimed immediately after drilling or construction.

For the purposes of this EA, less than 5% of the total district is subject to lease, this percentage indicates that no more than 23 exploration and production wells should be expected as a result of this sale. Short-term (5 to 10 years) and long-term (over 10 years) disturbance for this EA would be approximately 420 acres and 70 acres, respectively. Railroad Valley, Lake Valley, White River Valley, and Long Valley appear to be the focus of future exploration in the Ely District. Several APDs are expected from these areas over the next few years.

Under the RFD for this EA, one could assume that only one small well field would be developed within the proposed 400,000 lease acres. This could result in 10 producing wells and 12 other wells being plugged and abandoned. In addition, 14 miles of new access roads and two miles of pipeline could be developed. Total short- and long-term disturbance would be approximately 185 acres and 90 acres, respectively.

## **5.4 Cumulative Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

### **5.4.1 Air Quality & Climate Change Cumulative Impacts**

Leasing the parcels would have no direct impacts on air quality. Any potential effects from sale of lease parcels could occur at the time the leases are developed.

Potential impacts of development could include increased airborne soil particles blown from new well pads or roads; exhaust emissions from drilling equipment, compressors, vehicles, and dehydration and separation facilities, as well as potential releases of GHGs and VOCs during

drilling or production activities. The amount of increased emissions cannot be precisely quantified at this time since it is not known for certain how many wells might be drilled, the types of equipment needed if a well were to be completed successfully (e.g., compressor, separator, dehydrator), or what technologies may be employed by a given company for drilling any new wells. The degree of impact would also vary according to the characteristics of the geologic formations from which production occurs, as well as the scope of specific activities proposed in an APD.

Current monitoring data show that criteria pollutants concentrations are below applicable air quality standards, indicating good air quality. The potential level of development and mitigation described below is expected to maintain this level of air quality by limiting emissions. In addition, pollutants would be regulated through the use of state-issued air quality permits or air quality registration processes developed to maintain air quality below applicable standards.

### **Greenhouse Gas Emissions**

Sources of GHGs associated with development of lease parcels could include construction activities, operations, and facility maintenance in the course of oil and gas exploration, development, and production. Estimated GHG emissions are discussed for these specific aspects of oil and gas activity because the BLM has direct involvement in these steps. However, the current proposed activity is to offer parcels for lease. No specific development activities are currently proposed or potentially being decided upon for any parcels being considered in this EA. Potential development activities would be analyzed if the BLM receives an APD on any of the parcels considered here.

The assessment of GHG emissions and climate change is in its formative phase. Climate change impacts can be predicted with much more certainty over global or continental scales. Existing models have difficulty reliably simulating and attributing observed temperature changes at small scales. On smaller scales, natural climate variability is relatively larger, making it harder to distinguish changes expected due to external forcings (such as contributions from local activities to GHGs).

It is currently not possible to know with certainty the net impacts from lease parcel development on climate. The inconsistency in results of scientific models used to predict climate change at the global scale, coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. It is therefore beyond the scope of existing science to relate a specific source of GHG emission or sequestration with the creation or mitigation of any specific climate-related environmental effects. Although the effects of GHG emissions in the global aggregate are well-documented, it is currently impossible to determine what specific effect GHG emissions resulting from a particular activity might have on the environment. For additional information on

environmental effects typically attributed to climate change, please refer to the cumulative effects discussion below.

While it is not possible to predict effects on climate change of potential GHG emissions discussed above in the event of lease parcel development for alternatives considered in this EA, the act of leasing does not produce any GHG emissions in and of itself. Releases of GHGs could occur at the exploration/development stage.

#### **5.4.2 Cultural Resources Cumulative Impacts**

Cultural resources include, but are not limited to, historic cemeteries and townsites, rockshelters, caves, rock art, and Paleo-Indian sites. The primary impact mechanisms that could affect cultural resources within the district include off-highway vehicle and recreational use, minerals development, land disposal, fire, special designations, and livestock grazing. Some of these mechanisms would have a negative impact on cultural resources, which would be mitigated through project abandonment, redesign, and, if necessary, data recovery. However, some of these mechanisms may have a positive or beneficial impact on cultural resources, such as protection under an ACEC designation.

Any program, activity, or project has an effect on a cultural resource if it alters any of the characteristics or criteria that may qualify the resource for inclusion on the National Register of Historic Places or otherwise affects a cultural property's legally protected status. Impacts to cultural properties are considered adverse if the effect diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Negative or adverse effects can include, but are not limited to: physical destruction of or damage to all or part of a property; alteration of a property (e.g., restoration, rehabilitation, stabilization); removal of a property from its historic location; or, transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation (BLM 2007).

#### **5.4.3 Water Resources Cumulative Impacts**

The cumulative effects analysis area for water resources includes the closed to semi-closed basins of White Pine, Lincoln, and northeastern Nye counties located within the boundaries of the planning area. The CESA is the same as the RMP for Water Resources. This EA incorporates by reference the RMP/FEIS Cumulative Effects analysis for Water Resources (BLM 2007). The RMP analysis lost two Coal Fired Plants at the time of writing, but has gained three large Mining Operations in the EIS stage, (Bald, Pan, and Gold Rock); and the net impact is equivalent. Other CESA impacts to water resources from activities other than oil and gas development includes dispersed recreation (mostly hunting) and livestock grazing. Dispersed recreation in the lease parcels may result in erosion in some localized areas from vehicle use. Livestock grazing may lead to localized erosion in some areas. In general, oil & gas surface disturbance within the boundaries of the lease parcels are likely to lead to limited increased erosion and instability of soils in local areas which would increase sediment and salt loading in

confined basins *de minimis*. There may be some loss of water quality characteristics in groundwaters that may or may not be used as water sources in the future. Oil and gas exploration and development would likely add to sediment and salt loads, but may not be measurable. The actual leasing of the parcels would not contribute to existing riparian disturbances, nor is future development expected to have any measurable contribution cumulatively to degradation of riparian character. Avoidance of riparian habitats, reclamation strategies and State and federally-imposed sediment and storm-control measures provide effective means of controlling excess sediment transport to those systems that support riparian communities.

Cumulative impacts of the RMP/FEIS would be minimized over the long term by extensive vegetation management and administration of other land utilizing a balanced ecological system approach. Salinity inputs to the Colorado River system would be reduced over time. Short-term increases in runoff, soil erosion, and related sedimentation may occur on those areas where vegetation treatments occur. Interrelated projects would have the potential to create impacts on both surface and groundwater resources through additional erosion and sedimentation as a result of land disturbance, further consumption of available water resources, and additional releases of undesirable water quality constituents (e.g., industrial chemicals, treated domestic effluent) into receiving waters. The net effects on water resources from the RMP/FEIS and the interrelated projects may result in substantial cumulative impacts (BLM 2007).

#### **5.4.4 Fish and Wildlife Cumulative Impacts**

All wildlife species have preferred habitats, some of which may be seasonal. Many disturbances, both natural and human caused may result in wildlife moving to less optimal habitats, which may already be at carrying capacity. This could result in reductions in population sizes due to less successful reproduction or direct mortality. Species dependent on very restricted habitats may be especially affected. A number of ongoing and future activities combined could result in loss of specific habitats, fragmentation and disruption of movement patterns. The stipulations required through the RMP or those determined to be needed on a site-specific basis will help to minimize impacts from these activities.

#### **5.4.5 Special Status Species Cumulative Impacts**

##### **5.4.5.1 Federally Threatened or Endangered Cumulative Impacts**

The combination of past, present and future activities could cumulatively impact the White River spine dace. The Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS and accompanying Biological Opinion, is a future action that has fully evaluated the environmental effects of groundwater withdrawal to Flag Springs and the White River spinedace. These impacts could result in loss of aquatic habitat, resulting in reductions in reproductive success or may have direct adverse effects on individuals in populations, which are small to begin with. Any future actions in listed species habitat would be subject to Section 7 Consultation under the Endangered Species Act with the level of consultation to be determined

based upon the project site-specific proposed action. Consultation would be completed prior to a decision being signed for any specific action which may have an effect on a listed species.

#### ***5.4.5.2 Special Status Species other than those listed as Threatened or Endangered Cumulative Impacts***

The combination of past, present and future activities could cumulatively impact special status species other than those listed as threatened or endangered. These impacts could result in loss of habitats, which may uniquely support some species, may fragment habitats resulting in reductions in reproductive success of some species, or may have direct adverse effects on individuals in populations, which are small to begin with. Mitigation requirements for projects may help to reduce impacts to the extent that they do not reach the level of causing species to require listing as Threatened or Endangered.

#### **5.4.6 Environmental Justice Cumulative Impacts**

There are no cumulative effects related to environmental justice resulting from the proposed action; however, if exploration and development of these leases occurs at some point in the future, there may be cumulative impacts on leases with split estates. Prior to any exploration or development, additional site-specific NEPA review would be required.

#### **5.4.7 Socioeconomics Cumulative Impacts**

If other construction projects were to occur at the same time as any future exploration or development activities related to these leases, the direct and indirect economic impacts to the local area could be magnified. There are no cumulative impacts expected to result directly from the proposed action.

#### **5.4.8 Noxious and Invasive Weeds**

Future development within the proposed lease sale parcels would result in additional vegetation loss and surface disturbance. Past and present oil and gas activities in the area have already created disturbance, and oil and gas development is anticipated to continue throughout the area. Successful reclamation would reduce the risk to healthy plant communities and provide an opportunity to improve degraded vegetative communities within the project area.

#### **5.4.9 Lands with Wilderness Characteristics Cumulative Impacts**

There are no cumulative impacts expected to result directly from the proposed action since the proposed action does not include any surface disturbance. However, it does authorize the right to future exploration and production activities. At the time the lease parcels are sold and exploration and development takes place, then potential impacts would be discussed in a site-specific NEPA process.

#### **5.4.10 Visual Resource Management Cumulative Impacts**

The reasonably foreseeable future actions listed in Section 5.3 would have an impact on visual resources, including APDs. A number of ongoing and future activities combined could result in direct and indirect impacts to visual resources, particularly to VRM Class II areas. VRM Class

III and IV areas would have site-specific design features incorporated and future activities would attempt to avoid VRM Class I areas. The stipulations required through the RMP or those determined to be needed on a site-specific basis will help to minimize impacts from these activities.

## Chapter 6 List of Acronyms Used

ACEC	Area of Critical Environmental Concern
AO	Authorized Officer
APD	Application for Permit to Drill
AQRV	Air Quality Related Values
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
COA	Condition of Approval
CTGR	Confederated Tribes of the Goshute Reservation
DOI	Department of the Interior
DR	Decision Record
EA	Environmental Assessment
EOI	Expression of Interest
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy & Management Act
FO	Field Office
FONSI	Finding of No Significant Impact
GIS	Geographic Information Systems
GHG	Greenhouse Gasses
HAP	Hazardous Air Pollutants
HF	Hydraulic Fracturing
ID	Interdisciplinary
IPCC	Intergovernmental Panel on Climate Change
LWC	Lands with Wilderness Characteristics
NAAQS	National Ambient Air Quality Standards
NCLS	Notice of Competitive Lease Sale
NDEP	Nevada Division of Environmental Protection

NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NSO	No Surface Occupancy
NTL	Notice to Lessee
PGH	Preliminary General Habitat
POD	Plan of Development
PPH	Preliminary Primary Habitat
RFD	Reasonably Foreseeable Development
RMP	Resource Management Plan
ROW	Right-of-Way
SHPO	Nevada State Historic Preservation Office
T&E	Threatened and Endangered
TCP	Traditional Cultural Properties
TSP	Total Suspended Particulates
USFWS	United States Fish & Wildlife Service
VOC	Volatile Organic Compounds
VRM	Visual Resource Management
WMA	Wildlife Management Area

## Chapter 7 External Communications

Table 7.1 List of Tribes

NAME	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
<b>Confederated Tribes of the Goshute Reservation, NV-UT</b>	Native American Consultation	<b>Comments received</b>
<b>Tribe of the Duckwater Shoshone Tribe, NV</b>	Native American Consultation	<b>Comments received.</b>
<b>Ely Shoshone Tribe of Nevada</b>	Native American Consultation	No comments received
<b>Las Vegas Paiute Tribe of the Las Vegas Indian Colony</b>	Native American Consultation	No comments received
<b>Moapa Band of Paiute Indians of the Moapa River Indian Reservation, NV</b>	Native American Consultation	No comments received
<b>Paiute Indian Tribe of Utah</b>	Native American Consultation	No comments received
<b>Yomba Shoshone Tribe of the Yomba Reservation, NV</b>	Native American Consultation	No comments received

Table 7.2 List of Federal, State and County Agencies

NAME	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
<b>Great Basin National Park</b>	Consultation	No comments received.
<b>Environmental Protection Agency</b>	Consultation	No comments received.
<b>U.S. Fish and Wildlife Service</b>	Consultation	<b>Comments received.</b>
<b>Nevada State Clearinghouse</b>	Consultation and input	<b>Comments received.</b>
<b>Nevada Department of Wildlife</b>	Consultation and input	<b>Comments received</b>
<b>State Historic Preservation Office</b>	Consultation and input	<b>Comments received.</b>
<b>Nye County Commission</b>	Consultation	No comments received.
<b>Lincoln County Commissioners</b>	Consultation	No comments received.
<b>White Pine County Commission</b>	Consultation and input	<b>Comments received.</b>

## Chapter 8 List of Preparers:

NAME	TITLE	TASK ASSIGNMENT
<b>Paul Nordstrom</b>	Geologist	Minerals
<b>Jennifer McGuire</b>	Archeologist	Cultural Resources/Paleontology
<b>Marian Lichtler</b>	Wildlife Biologist	Special Status Species
<b>Nancy Herms</b>	Wildlife Biologist	Wildlife/Migratory Birds
<b>Solomon Odom</b>	Planning and Environmental Specialist	NEPA; Socioeconomics; Environmental Justice
<b>Erin Rajala</b>	Outdoor Recreation Planner	Recreation and Visual Resources
<b>Emily Simpson</b>	Project lead/ Outdoor Recreation Planner (Wilderness)	Wilderness/WSA/Wild & Scenic Rivers/LWC
<b>Ben Noyes</b>	Wild Horse/Burro Specialist	Wild Horse & Burros
<b>Elena Montenegro-Long</b>	Realty Specialist	Land Uses
<b>Alicia Hankins</b>	Land Law Examiner	Land Uses
<b>Craig Hoover</b>	Range Management Specialist	Rangeland, Grazing, Vegetative Resources, Air Quality, Soils, Riparian/Wetlands, Farmlands, and Floodplains
<b>Matt Rajala</b>	Fire Management Specialist (Fire Planner)	Fire Management
<b>Randy Johnson</b>	Unit Aviation Manager	Hazardous Materials
<b>Melanie Peterson</b>	Assistant Field Manager, Nonrenewable Resources	Hazardous Materials
<b>Elvis Wall</b>	Native American Coordinator	Native American Religious and other Concerns
<b>Dave Davis</b>	Geologist/leasing consultant	Minerals
<b>Travis Young</b>	Planning & Environmental Coordinator	Water Resources
<b>Chris McVicars</b>	Natural Resource Specialist	Invasive, Non-native Species

## Chapter 9 List of References:

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## **Chapter 10. List of Appendices:**

Appendix A: December 2013 Nominated Parcels

Appendix B: December 2013 Parcels with Attached Stipulations

Appendix C: BLM Best Management Practices (BMP)

Appendix D: Special Status Species List

Appendix E: Environmental Mitigation Best Practices

APPENDIX A. DECEMBER 2013 SALE PRELIMINARY PARCEL LIST

**NV-13-12-001                    1941.930 Acres**

T.0220N, R.0560E, 21 MDM, NV  
 Sec. 001    SENW,NESW;  
           003  
 S2SWNW,N2SW,SESW,W2SE;  
           004    SW,N2SE,SWSE;  
           005    LOTS LOTS 3,4;  
           005    S2NW;  
           006    LOTS LOTS 1,2;  
           006    S2NE;  
           008    ALL;  
           009    NWNE,W2,SWSE;

White Pine County  
 Ely DO  
 PGH  
 Formerly Lease No.

**NV-13-12-002                    1910.600 Acres**

T.0220N, R.0560E, 21 MDM, NV  
 Sec. 017    ALL;  
           019    LOTS LOTS 1-4;  
           019    E2,E2W2;  
           020    ALL;

White Pine County  
 Ely DO  
 Formerly Lease No.

**NV-13-12-003                    2302.800 Acres**

T.0220N, R.0560E, 21 MDM, NV  
 Sec. 029    ALL;  
           030    LOTS LOTS 1-4;  
           030    E2,E2W2;  
           031    LOTS LOTS 1-4;  
           031    E2,E2W2;  
           032    N2NE,W2;

White Pine County  
 Ely DO  
 Formerly Lease No.

**NV-13-12-004                    1280.000 Acres**

T.0010N, R.0570E, 21 MDM, NV  
 Sec. 012    ALL;  
           013    ALL;

Lincoln County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN91466  
 Formerly Lease No.

**NV-13-12-005                    710.160 Acres**

T.0140N, R.0570E, 21 MDM, NV  
 Sec. 031    LOTS LOTS 1-12;  
           031    E2;

White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90160  
 PGH  
 Formerly Lease No.

**NV-13-12-006                    1920.280 Acres**

T.0010N, R.0580E, 21 MDM, NV  
 Sec. 001    LOTS LOTS 1-4;  
           001    S2N2,S2;  
           002    LOTS LOTS 1-4;  
           002    S2N2,S2;  
           012    ALL;

Lincoln County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN91465  
 Formerly Lease No.

**NV-13-12-007                    1919.640 Acres**

T.0010N, R.0580E, 21 MDM, NV  
 Sec. 003    LOTS LOTS 1-4;  
           003    S2N2,S2;  
           004    LOTS LOTS 1-4;  
           004    S2N2,S2;  
           010    ALL;

Lincoln County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN91466  
 Formerly Lease No.

**NV-13-12-008                    2554.870 Acres**

T.0010N, R.0580E, 21 MDM, NV  
 Sec. 005    LOTS LOTS 1-4;  
           005    S2N2,S2;  
           006    LOTS LOTS 1-7;  
           006    S2NE,SE,SENW,E2SW,SE;  
           007    LOTS LOTS 1-4;  
           007    E2,E2W2;  
           008    ALL;

Lincoln County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN91466  
 Formerly Lease No.

NV-13-12-009 1920.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 009 ALL;  
015 ALL;  
016 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91466  
Formerly Lease No.

NV-13-12-010 1920.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 011 ALL;  
013 ALL;  
014 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91465  
Formerly Lease No.

NV-13-12-011 1282.670 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 017 ALL;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91466  
Formerly Lease No.

NV-13-12-012 1921.120 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 019 LOTS LOTS 1-4;  
019 E2,E2W2;  
020 ALL;  
030 LOTS LOTS 1-4;  
030 E2,E2W2;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91467  
Formerly Lease No.

NV-13-12-013 2560.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 021 ALL;  
022 ALL;  
027 ALL;  
028 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91467  
Formerly Lease No.

NV-13-12-014 1840.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 023 ALL;  
024 E2,E2NW,SW;  
025 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91465  
Formerly Lease No.

NV-13-12-015 1920.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 026 ALL;  
035 ALL;  
036 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91467  
Formerly Lease No.

NV-13-12-016 1921.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 029 ALL;  
031 LOTS LOTS 1-4;  
031 E2,E2W2;  
032 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91467  
Formerly Lease No.

NV-13-12-017 1280.000 Acres  
T.0010N, R.0580E, 21 MDM, NV  
Sec. 033 ALL;  
034 ALL;

Lincoln County

Ely DO  
PENDING PRESALE OFFER NO. NVN91467  
Formerly Lease No.

NV-13-12-018 2160.000 Acres  
T.0020N, R.0580E, 21 MDM, NV  
Sec. 013 SW,S2SE;

023 ALL;  
024 ALL;  
026 ALL;  
Lincoln County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91463  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-019 1920.000 Acres  
T.0020N, R.0580E, 21 MDM, NV  
Sec. 016 ALL;  
021 ALL;  
022 ALL;  
Lincoln County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91464  
Formerly Lease No.

NV-13-12-020 2553.140 Acres  
T.0020N, R.0580E, 21 MDM, NV  
Sec. 017 ALL;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;  
019 LOTS LOTS 1-4;  
019 E2,E2W2;  
020 ALL;  
Lincoln County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91464  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-021 2560.000 Acres  
T.0020N, R.0580E, 21 MDM, NV  
Sec. 025 ALL;  
034 ALL;  
035 ALL;  
036 ALL;  
Lincoln County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91463  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-022 1920.000 Acres  
T.0020N, R.0580E, 21 MDM, NV  
Sec. 027 ALL;  
028 ALL;

033 ALL;  
Lincoln County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91464  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-023 2554.880 Acres  
T.0020N, R.0580E, 21 MDM, NV  
Sec. 029 ALL;  
030 LOTS LOTS 1-4;  
030 E2,E2W2;  
031 LOTS LOTS 1-4;  
031 E2,E2W2;  
032 ALL;  
Lincoln County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91464  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-024 1918.440 Acres  
T.0030N, R.0580E, 21 MDM, NV  
Sec. 001 LOTS LOTS 1-4;  
001 S2N2,S2;  
012 ALL;  
013 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91476  
PGH  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-025 2556.280 Acres  
T.0030N, R.0580E, 21 MDM, NV  
Sec. 002 LOTS LOTS 1-4;  
002 S2N2,S2;  
003 LOTS LOTS 1-4;  
003 S2N2,S2;  
010 ALL;  
011 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91477  
PGH  
Formerly Lease No.

NV-13-12-026 2553.240 Acres  
T.0030N, R.0580E, 21 MDM, NV  
Sec. 004 LOTS LOTS 1-4;  
004 S2N2,S2;  
005 LOTS LOTS 1-4;  
005 S2N2,S2;  
006 LOTS LOTS 1-7;  
006 S2NE, SENW, E2SW, SE;  
009 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91477  
PGH  
Formerly Lease No.

NV-13-12-027 2543.400 Acres  
T.0030N, R.0580E, 21 MDM, NV  
Sec. 007 LOTS LOTS 1-4;  
007 E2,E2W2;  
008 ALL;  
017 ALL;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91477  
PGH  
Formerly Lease No.

NV-13-12-028 1920.000 Acres  
T.0030N, R.0580E, 21 MDM, NV  
Sec. 014 ALL;  
015 ALL;  
016 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91477  
PGH  
PLO 7653 CALIENT CORRIDOR  
Formerly Lease No.

NV-13-12-029 1601.180 Acres  
T.0020N, R.0590E, 21 MDM, NV  
Sec. 003 LOTS LOTS 1-4;  
003 S2N2;  
004 LOTS LOTS 1-4;  
004 S2N2,S2;  
009 ALL;  
Nye and Lincoln Counties  
Ely DO  
PENDING PRESALE OFFER NO. NVN91479

PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-030 2239.670 Acres  
T.0020N, R.0590E, 21 MDM, NV  
Sec. 005 LOTS LOTS 1-4;  
005 S2N2,S2;  
006 LOTS LOTS 1-7;  
006 S2NE, SENW, E2SW, SE;  
007 E2;  
008 ALL;  
Nye and Lincoln Counties  
Ely DO  
PENDING PRESALE OFFER NO. NVN91479  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-031 1922.720 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 001 LOTS LOTS 1-4;  
001 S2N2,S2;  
002 LOTS LOTS 1-4;  
002 S2N2,S2;  
012 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91478  
PGH  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-032 2559.840 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 003 LOTS LOTS 1-4;  
003 S2N2,S2;  
004 LOTS LOTS 1-4;  
004 S2N2,S2;  
009 ALL;  
010 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91478  
PGH  
Formerly Lease No.

NV-13-12-033 1901.660 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 005 LOTS LOTS 1-4;  
005 S2N2,S2;

006 LOTS LOTS 1-7;  
006 S2NE, SENW, E2SW, SE;  
007 LOTS LOTS 1-4;  
007 E2, E2W2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91476  
PGH  
Formerly Lease No.

NV-13-12-034 1914.680 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 008 ALL;  
017 ALL;  
018 LOTS LOTS 1-4;  
018 E2, E2W2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91476  
PGH  
Formerly Lease No.

NV-13-12-035 1920.000 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 011 ALL;  
013 ALL;  
014 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91478  
PGH  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-036 1280.000 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 015 ALL;  
016 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91478  
PGH  
Formerly Lease No.

NV-13-12-037 2558.980 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 019 LOTS LOTS 1-4;  
019 E2, E2W2;  
020 ALL;

029 ALL;  
030 LOTS LOTS 1-4;  
030 E2, E2W2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91479  
PGH  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-038 1760.000 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 021 E2, N2NW, S2SW;  
028 ALL;  
033 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91479  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-039 2560.000 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 022 ALL;  
023 ALL;  
024 ALL;  
027 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91824  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-040 2560.000 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 025 ALL;  
026 ALL;  
034 ALL;  
035 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91824  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-041 1281.360 Acres  
T.0030N, R.0590E, 21 MDM, NV  
Sec. 031 LOTS LOTS 1-4;  
031 E2, E2W2;

032 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91479  
Formerly Lease No.

NV-13-12-042 1996.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 001 PROT ALL;  
002 PROT ALL;  
003 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91474  
PGH  
Formerly Lease No.

NV-13-12-043 1920.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 004 PROT ALL;  
009 PROT ALL;  
016 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91473  
PGH  
Formerly Lease No.

NV-13-12-044 2560.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 005 PROT ALL;  
006 PROT ALL;  
007 PROT ALL;  
008 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91473  
PGH  
Formerly Lease No.

NV-13-12-045 1995.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 010 PROT ALL;  
011 PROT ALL;  
012 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91474  
PGH

Formerly Lease No.

NV-13-12-046 1994.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 013 PROT ALL;  
014 PROT ALL;  
015 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91474  
PGH  
Formerly Lease No.

NV-13-12-047 2560.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 017 PROT ALL;  
018 PROT ALL;  
019 PROT ALL;  
020 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91473  
PGH  
Formerly Lease No.

NV-13-12-048 1920.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 021 PROT ALL;  
027 PROT ALL;  
028 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91474  
PGH  
Formerly Lease No.

NV-13-12-049 1994.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 022 PROT ALL;  
023 PROT ALL;  
024 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91474  
PGH  
Formerly Lease No.

NV-13-12-050 1353.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 025 PROT ALL;  
026 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91475  
PGH  
Formerly Lease No.

NV-13-12-051 1922.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 029 PROT ALL;  
030 PROT ALL;  
031 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91476  
PGH  
Formerly Lease No.

NV-13-12-052 2002.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 032 PROT ALL;  
033 PROT ALL;  
034 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91476  
PGH  
Formerly Lease No.

NV-13-12-053 1879.000 Acres  
T.0040N, R.0590E, 21 MDM, NV  
Sec. 035 PROT ALL;  
036 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91475  
PGH  
Formerly Lease No.

NV-13-12-054 1697.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 001 PROT ALL;  
002 PROT ALL;  
003 PROT ALL;  
010 PROT ALL;

Nye County

Ely DO  
PENDING PRESALE OFFER NO. NVN91470  
PGH  
Formerly Lease No.

NV-13-12-055 1966.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 004 PROT ALL;  
005 PROT ALL;  
008 PROT ALL;  
009 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91470  
PGH  
Formerly Lease No.

NV-13-12-056 986.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 006 PROT ALL;  
007 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91470  
PGH  
Formerly Lease No.

NV-13-12-057 2083.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 011 PROT ALL;  
012 PROT ALL;  
013 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91471  
PGH  
Formerly Lease No.

NV-13-12-058 2000.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 014 PROT ALL;  
023 PROT ALL;  
024 PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91471  
PGH  
Formerly Lease No.

NV-13-12-059 2560.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 015 PROT ALL;  
016 PROT ALL;  
021 PROT ALL;  
022 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91470  
PGH  
Formerly Lease No.

NV-13-12-060 2560.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 017 PROT ALL;  
018 PROT ALL;  
019 PROT ALL;  
020 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91470  
PGH  
Formerly Lease No.

NV-13-12-061 1358.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 025 PROT ALL;  
026 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91472  
PGH  
Formerly Lease No.

NV-13-12-062 2560.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 027 PROT ALL;  
028 PROT ALL;  
033 PROT ALL;  
034 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91472  
PGH  
Formerly Lease No.

NV-13-12-063 2560.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 029 PROT ALL;  
030 PROT ALL;  
031 PROT ALL;  
032 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91473  
PGH  
Formerly Lease No.

NV-13-12-064 1357.000 Acres  
T.0050N, R.0590E, 21 MDM, NV  
Sec. 035 PROT ALL;  
036 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91472  
PGH  
Formerly Lease No.

NV-13-12-065 1339.640 Acres  
T.0060N, R.0590E, 21 MDM, NV  
Sec. 019 LOTS LOTS 1-4;  
019 E2,E2W2;  
020 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91468  
PGH  
Formerly Lease No.

NV-13-12-066 2480.000 Acres  
T.0060N, R.0590E, 21 MDM, NV  
Sec. 021 ALL;  
022 N2,SW,S2SE;  
027 ALL;  
028 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91468  
PGH  
Formerly Lease No.

NV-13-12-067 2440.000 Acres  
T.0060N, R.0590E, 21 MDM, NV  
Sec. 023 N2,S2S2,NESE;  
024 ALL;

025 ALL;  
026 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91468  
Formerly Lease No.

NV-13-12-068 1920.000 Acres  
T.0060N, R.0590E, 21 MDM, NV  
Sec. 029 ALL;  
032 ALL;  
033 ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91468  
PGH  
Formerly Lease No.

NV-13-12-069 1402.800 Acres  
T.0060N, R.0590E, 21 MDM, NV  
Sec. 030 LOTS LOTS 1-4;  
030 E2,E2W2;  
031 LOTS LOTS 1-4;  
031 E2,E2W2;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91468  
PGH  
Formerly Lease No.

NV-13-12-070 1920.000 Acres  
T.0060N, R.0590E, 21 MDM, NV  
Sec. 034 ALL;  
035 ALL;  
036 ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91469  
Formerly Lease No.

NV-13-12-071 160.000 Acres  
T.0190N, R.0590E, 21 MDM, NV  
Sec. 020 S2S2;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-072 2557.360 Acres  
T.0250N, R.0590E, 21 MDM, NV  
Sec. 003 LOTS LOTS 1-4;  
003 S2N2,S2;  
004 LOTS LOTS 1-4;  
004 S2N2,S2;  
009 ALL;  
010 ALL;

White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-073 2160.000 Acres  
T.0250N, R.0590E, 21 MDM, NV  
Sec. 008 E2;  
015 ALL;  
016 ALL;  
017 E2,E2NW,SW;

White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-074 2200.000 Acres  
T.0250N, R.0590E, 21 MDM, NV  
Sec. 013 ALL;  
014 ALL;  
023 ALL;  
024 NW,N2SW,SWSW;

White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-075 2120.000 Acres  
T.0250N, R.0590E, 21 MDM, NV  
Sec. 019 SENE,SE;  
020 ALL;  
021 ALL;  
022 ALL;

White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-076 2080.000 Acres  
T.0250N, R.0590E, 21 MDM, NV

Sec. 026	W2E2,W2;	Ely DO	
027	ALL;	PGH	
034	ALL;	Formerly Lease No.	
035	W2;		
White Pine County			
Ely DO			
PGH			
Formerly Lease No.			
NV-13-12-077	2480.000 Acres	NV-13-12-081	1937.000 Acres
T.0250N, R.0590E,	21 MDM, NV	T.0030N, R.0600E,	21 MDM, NV
Sec. 028	E2,W2NW,SW;	Sec. 005	PROT ALL;
029	ALL;	006	PROT ALL;
032	ALL;	007	PROT ALL;
033	ALL;	008	PROT ALL;
White Pine County		Nye County	
Ely DO		Ely DO	
SPLIT ESTATE 970474		PENDING PRESALE OFFER NO. NVN91478	
PGH		PLO 7653 CALIENTE CORRIDOR	
Formerly Lease No.		Formerly Lease No.	
NV-13-12-078	1085.640 Acres	NV-13-12-082	872.000 Acres
T.0250N, R.0590E,	21 MDM, NV	T.0030N, R.0600E,	21 MDM, NV
Sec. 030	LOTS LOTS 3,4;	Sec. 030	PROT ALL;
030	E2,E2SW;	031	PROT N2NE,NW;
031	LOTS LOTS 1-4;	Nye County	
031	E2,E2W2;	Ely DO	
White Pine County		PENDING PRESALE OFFER NO. NVN91824	
Ely DO		PLO 7653 CALIENTE CORRIDOR	
PGH		Formerly Lease No.	
Formerly Lease No.		NV-13-12-083	1264.290 Acres
NV-13-12-079	1920.000 Acres	T.0040N, R.0600E,	21 MDM, NV
T.0260N, R.0590E,	21 MDM, NV	Sec. 005	LOTS LOTS 1-4;
Sec. 022	ALL;	005	S2N2,S2;
023	ALL;	006	LOTS LOTS 1-7;
024	ALL;	006	S2NE,SENW,E2SW,SE;
White Pine County		Nye County	
Ely DO		Ely DO	
PGH		PENDING PRESALE OFFER NO. NVN91472	
Formerly Lease No.		PGH	
NV-13-12-080	2560.000 Acres	Formerly Lease No.	
T.0260N, R.0590E,	21 MDM, NV	NV-13-12-084	2531.960 Acres
Sec. 033	ALL;	T.0040N, R.0600E,	21 MDM, NV
034	ALL;	Sec. 007	LOTS LOTS 1-4;
035	ALL;	007	E2,E2W2;
036	ALL;	008	ALL;
White Pine County		017	ALL;
		018	LOTS LOTS 1-4;
		018	E2,E2W2;
		Nye County	
		Ely DO	
		PENDING PRESALE OFFER NO. NVN91475	

PGH  
Formerly Lease No.

NV-13-12-085            1267.940 Acres  
T.0040N, R.0600E, 21 MDM, NV  
Sec. 019    LOTS LOTS 1-4;  
         019    E2,E2W2;  
         020    ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91475  
PGH  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-086            2539.520 Acres  
T.0040N, R.0600E, 21 MDM, NV  
Sec. 029    ALL;  
         030    LOTS LOTS 1-4;  
         030    E2,E2W2;  
         031    LOTS LOTS 1-4;  
         031    E2,E2W2;  
         032    ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91475  
PGH  
PLO 7653 CALIENTE CORRIDOR  
Formerly Lease No.

NV-13-12-087            1915.590 Acres  
T.0050N, R.0600E, 21 MDM, NV  
Sec. 004    LOTS LOTS 1-4;  
         004    S2N2,S2;  
         005    LOTS LOTS 1-4;  
         005    S2N2,S2;  
         006    LOTS LOTS 1-7;  
         006    S2NE, SENW,E2SW, SE;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91471  
PGH  
Formerly Lease No.

NV-13-12-088            1905.380 Acres  
T.0050N, R.0600E, 21 MDM, NV  
Sec. 007    LOTS LOTS 1-4;  
         007    E2,E2W2;  
         008    ALL;

009    ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91471  
PGH  
Formerly Lease No.

NV-13-12-089            1890.080 Acres  
T.0050N, R.0600E, 21 MDM, NV  
Sec. 017    ALL;  
         018    LOTS LOTS 1-4;  
         018    E2,E2W2;  
         019    LOTS LOTS 1-4;  
         019    E2,E2W2;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91471  
PGH  
Formerly Lease No.

NV-13-12-090            1920.000 Acres  
T.0050N, R.0600E, 21 MDM, NV  
Sec. 020    ALL;  
         029    ALL;  
         032    ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91472  
PGH  
Formerly Lease No.

NV-13-12-091            1243.700 Acres  
T.0050N, R.0600E, 21 MDM, NV  
Sec. 030    LOTS LOTS 1-4;  
         030    E2,E2W2;  
         031    LOTS LOTS 1-4;  
         031    E2,E2W2;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91472  
PGH  
Formerly Lease No.

NV-13-12-092            1921.260 Acres  
T.0060N, R.0600E, 21 MDM, NV  
Sec. 019    LOTS LOTS 1-4;  
         019    E2,E2W2;  
         020    ALL;  
         021    ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91469  
PGH  
Formerly Lease No.

NV-13-12-093            1761.200 Acres  
T.0060N, R.0600E, 21 MDM, NV  
Sec. 028    ALL;  
      029    ALL;  
      030    LOTS LOTS 1 & 2;  
      030    E2,E2NW;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN 91469  
PGH  
Formerly Lease No.

NV-13-12-094            1920.640 Acres  
T.0060N, R.0600E, 21 MDM, NV  
Sec. 031    LOTS LOTS 1-4;  
      031    E2,E2W2;  
      032    ALL;  
      033    ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91469  
PGH  
Formerly Lease No.

NV-13-12-095            1980.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 001    PROT ALL;  
      002    PROT ALL;  
      003    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91456  
Formerly Lease No.

NV-13-12-096            1940.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 004    PROT ALL;  
      009    PROT ALL;  
      016    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91456  
Formerly Lease No.

NV-13-12-097            1379.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 005    PROT ALL;  
      006    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91455  
Formerly Lease No.

NV-13-12-098            1977.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 007    PROT ALL;  
      008    PROT ALL;  
      017    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91456  
Formerly Lease No.

NV-13-12-099            1920.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 010    PROT ALL;  
      014    PROT ALL;  
      015    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91456  
Formerly Lease No.

NV-13-12-100            1920.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 011    PROT ALL;  
      012    PROT ALL;  
      013    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91456  
Formerly Lease No.

NV-13-12-101            2033.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 018    PROT ALL;  
      019    PROT ALL;  
      020    PROT ALL;

Nye County  
Ely DO

PENDING PRESALE OFFER NO. NVN91457  
PGH  
Formerly Lease No.

NV-13-12-102            2560.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 021    PROT ALL;  
         022    PROT ALL;  
         023    PROT ALL;  
         024    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91457  
PGH  
Formerly Lease No.

NV-13-12-103            1269.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 027    PROT ALL;  
         034    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91457  
Formerly Lease No.

NV-13-12-104            1907.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 028    PROT ALL;  
         032    PROT ALL;  
         033    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91457  
PGH  
Formerly Lease No.

NV-13-12-105            2031.000 Acres  
T.0080N, R.0600E, 21 MDM, NV  
Sec. 029    PROT ALL;  
         030    PROT ALL;  
         031    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91457  
PGH  
Formerly Lease No.

NV-13-12-106            2045.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 005    PROT ALL;  
         006    PROT ALL;  
         007    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91454  
Formerly Lease No.

NV-13-12-107            2560.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 008    PROT ALL;  
         009    PROT ALL;  
         010    PROT ALL;  
         011    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91454  
Formerly Lease No.

NV-13-12-108            1973.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 016    PROT ALL;  
         017    PROT ALL;  
         018    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91454  
Formerly Lease No.

NV-13-12-109            1335.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 019    PROT ALL;  
         020    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91454  
Formerly Lease No.

NV-13-12-110            1920.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 021    PROT ALL;  
         022    PROT ALL;  
         023    PROT ALL;

Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91454  
Formerly Lease No.

NV-13-12-111 1920.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 024 PROT ALL;  
025 PROT ALL;  
036 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91455  
Formerly Lease No.

NV-13-12-112 2560.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 026 PROT ALL;  
027 PROT ALL;  
034 PROT ALL;  
035 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91455  
Formerly Lease No.

NV-13-12-113 1920.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 028 PROT ALL;  
032 PROT ALL;  
033 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91455  
Formerly Lease No.

NV-13-12-114 2033.000 Acres  
T.0090N, R.0600E, 21 MDM, NV  
Sec. 029 PROT ALL;  
030 PROT ALL;  
031 PROT ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91455  
Formerly Lease No.

NV-13-12-115 200.000 Acres  
T.0170N, R.0600E, 21 MDM, NV  
Sec. 014 NESW,S2SW;  
023 N2NW;  
White Pine County

Ely DO  
Formerly Lease No.

NV-13-12-116 200.000 Acres  
T.0200N, R.0600E, 21 MDM, NV  
Sec. 015 SWNE,NW,NWSE;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-117 1735.040 Acres  
T.0250N, R.0600E, 21 MDM, NV  
Sec. 006 LOTS LOTS 1-7;  
006 S2NE,SE,SW,SE;  
007 LOTS LOTS 1-4;  
007 E2,E2W2;  
008 NWNW;  
018 LOTS LOTS 1-4;  
018 NENE,W2NE,E2W2,NWSE;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-118 2399.860 Acres  
T.0060N, R.0610E, 21 MDM, NV  
Sec. 001 LOTS LOTS 1-4;  
001 S2N2,S2;  
012 ALL;  
013 N2NE,W2,E2SE;  
014 ALL;

Nye County  
Ely DO  
PLO 3441 SUNNYSIDE WMA  
Formerly Lease No.

NV-13-12-119 1840.180 Acres  
T.0060N, R.0610E, 21 MDM, NV  
Sec. 002 LOTS LOTS 3,4;  
002 SWNW;  
003 LOTS LOTS 1-4;  
003 S2NE,SE,SW,S2;  
004 LOTS LOTS 3,4;  
004 S2NW,S2;  
005 LOTS LOTS 1-4;  
005 S2N2,S2;

Nye County  
Ely DO

PGH  
PLO 3441 SUNNYSIDE WMA  
Formerly Lease No.

Ely DO  
PENDING PRESALE OFFER NO. NVN91462  
Formerly Lease No.

NV-13-12-120 1730.000 Acres  
T.0060N, R.0610E, 21 MDM, NV  
Sec. 023 W2;  
026 SWSWNW, SENW, SW;  
026  
E2, N2NW, E2SWNW, S2NWSWNW;  
027 N2NE, SWNE, N2NESENE;  
027 S2NWSWNW, SWSWNW, S2;  
027  
W2SENE, S2SESENE, E2NW;  
027 E2W2NW, NWNWNW;  
028 SE;  
Nye County  
Ely DO  
PLO 7026  
Formerly Lease No.

NV-13-12-124 1680.000 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 010 ALL;  
015 ALL;  
022 W2E2, NW, E2SW;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91462  
Formerly Lease No.

NV-13-12-121 2080.000 Acres  
T.0060N, R.0610E, 21 MDM, NV  
Sec. 032 SE;  
033 ALL;  
034 ALL;  
035 ALL;  
Nye County  
Ely DO  
Formerly Lease No.

NV-13-12-125 2480.000 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 016 ALL;  
017 ALL;  
020 ALL;  
021 N2, SW, W2SE;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91462  
Formerly Lease No.

NV-13-12-122 1202.360 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 003 LOTS LOTS 1-4;  
003 S2N2, SW, W2SE;  
004 LOTS LOTS 1-4;  
004 S2N2, S2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91460  
Formerly Lease No.

NV-13-12-126 160.000 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 021 E2SE;  
022 W2SW;  
Nye County  
Ely DO  
Formerly Lease No.

NV-13-12-123 1920.880 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 005 LOTS LOTS 1-4;  
005 S2N2, S2;  
008 ALL;  
009 ALL;  
Nye County

NV-13-12-127 440.000 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 022 E2E2;  
027 E2E2;  
034 E2NE, NESE;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91462  
N88107 WHITE RIVER VALLEY ACEC  
Formerly Lease No.

NV-13-12-128 2280.000 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 027 W2E2, W2;

028 ALL;  
033 ALL;  
034 W2E2,W2,SESE;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91462  
Formerly Lease No.

NV-13-12-129 1280.000 Acres  
T.0070N, R.0610E, 21 MDM, NV  
Sec. 029 ALL;  
032 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91462  
Formerly Lease No.

NV-13-12-130 1520.040 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 001 LOTS LOTS 1;  
001 SENE,E2SE;  
012 E2;  
013 NE,S2NW,S2;  
014 S2N2,S2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91461  
Formerly Lease No.

NV-13-12-131 2321.640 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 001 LOTS LOTS 2,3,4;  
001 SWNE,S2NW,SW,W2SE;  
002 LOTS LOTS 1-4;  
002 S2N2,S2;  
011 ALL;  
012 W2;  
013 N2NW;  
014 N2N2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91461  
N88107 WHITE RIVER VALLEY ACEC  
Formerly Lease No.

NV-13-12-132 2521.780 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 003 LOTS LOTS 1-4;  
003 S2N2,S2;

004 LOTS LOTS 1-4;  
004 S2N2,S2;  
005 LOTS LOTS 1,3,4;  
005 S2N2,S2;  
008 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91459  
Formerly Lease No.

NV-13-12-133 1280.000 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 009 ALL;  
010 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91461  
Formerly Lease No.

NV-13-12-134 2560.000 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 015 ALL;  
016 ALL;  
017 ALL;  
022 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91460  
Formerly Lease No.

NV-13-12-135 1920.000 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 023 ALL;  
026 ALL;  
027 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91460  
Formerly Lease No.

NV-13-12-136 1920.000 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 024 ALL;  
025 ALL;  
036 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91460  
Formerly Lease No.

NV-13-12-137 2240.000 Acres  
T.0080N, R.0610E, 21 MDM, NV  
Sec. 028 S2;  
032 ALL;  
033 ALL;  
034 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91460  
Formerly Lease No.

NV-13-12-141 2560.000 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 009 ALL;  
016 ALL;  
017 ALL;  
020 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91458  
Formerly Lease No.

NV-13-12-138 2440.000 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 001 S2N2, S2;  
002 S2NE, SENW, E2SW, SE;  
011 E2, E2NW;  
012 ALL;  
013 N2, E2SW, SE;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91458  
PGH  
Formerly Lease No.

NV-13-12-142 2240.000 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 021 ALL;  
022 ALL;  
023 S2SE;  
023  
SENE, NENW, W2W2, SESW, NESE;  
024 N2, SW, W2SE;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91459  
Formerly Lease No.

NV-13-12-139 2559.700 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 003 LOTS LOTS 2, 3, 4;  
003 S2N2, S2;  
010 ALL;  
011 W2SW;  
014 N2, SW, N2SE, SWSE;  
015 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91458  
Formerly Lease No.

NV-13-12-143 2560.000 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 025 ALL;  
026 ALL;  
035 ALL;  
036 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91461  
N88107 WHITE RIVER VALLEY ACEC  
Formerly Lease No.

NV-13-12-140 1921.400 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 004 LOTS LOTS 1-4;  
004 S2N2, S2;  
005 LOTS LOTS 1-4;  
005 S2N2, S2;  
008 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91458  
Formerly Lease No.

NV-13-12-144 2547.720 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 027 ALL;  
028 ALL;  
029 ALL;  
030 LOTS LOTS 1-4;  
030 E2, E2W2;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91459  
Formerly Lease No.

NV-13-12-145 2349.020 Acres  
T.0090N, R.0610E, 21 MDM, NV  
Sec. 031 LOTS LOTS 1-4;  
031 E2,E2W2;  
032 N2NE,W2,SESE;  
033 ALL;  
034 ALL;  
Nye County  
Ely DO  
PENDING PRESALE OFFER NO. NVN91459  
Formerly Lease No.

NV-13-12-146 560.000 Acres  
T.0110N, R.0610E, 21 MDM, NV  
Sec. 027 N2,SW,S2SE;  
White Pine County  
Ely DO  
NVN88107 WHITE RIVER VALLEY ACEC  
Formerly Lease No.

NV-13-12-147 1120.000 Acres  
T.0120N, R.0610E, 21 MDM, NV  
Sec. 024 W2NE,S2NW,S2;  
025 ALL;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-148 1320.000 Acres  
T.0160N, R.0610E, 21 MDM, NV  
Sec. 012 N2NE,W2;  
013 SWNE,W2W2,NESW,NWSE;  
023 W2NE,NW,N2SW,SWSW;  
026 W2W2,SESW,S2SE;  
White Pine County  
Ely DO  
Formerly Lease No.

NV-13-12-149 320.000 Acres  
T.0200N, R.0610E, 21 MDM, NV  
Sec. 031 PROT  
SENW,SW,W2SE,SESE;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-150 240.000 Acres  
T.0250N, R.0610E, 21 MDM, NV  
Sec. 008 SW,W2SE;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-151 2460.400 Acres  
T.0060N, R.0620E, 21 MDM, NV  
Sec. 006 LOTS LOTS 1-7;  
006 S2NE,SENW,E2SW,SE;  
007 LOTS LOTS 1-4;  
007 E2,E2W2;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;  
019 LOTS LOTS 1-4;  
019 E2,E2W2;  
Nye County  
Ely DO  
Formerly Lease No.

NV-13-12-152 2556.950 Acres  
T.0080N, R.0620E, 21 MDM, NV  
Sec. 005 LOTS LOTS 1-4;  
005 S2N2,S2;  
006 LOTS LOTS 1-7;  
006 S2NE,SENW,E2SW,SE;  
007 LOTS LOTS 1-4;  
007 E2,E2W2;  
008 ALL;  
Nye County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-153 2236.220 Acres  
T.0080N, R.0620E, 21 MDM, NV  
Sec. 017 ALL;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;  
019 E2;  
020 ALL;  
Nye County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-154 2543.780 Acres  
T.0080N, R.0620E, 21 MDM, NV  
Sec. 029 ALL;  
030 LOTS LOTS 1-4;  
030 E2,E2W2;  
031 LOTS LOTS 1-4;  
031 E2,E2W2;  
032 ALL;

Nye County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-155 1395.630 Acres  
T.0090N, R.0620E, 21 MDM, NV  
Sec. 030 LOTS LOTS 2-4;  
030 SWNE,E2SW,SE;  
031 LOTS LOTS 1-4;  
031 E2,E2W2;  
032 NWNW,S2NW,SW,W2SE;

Nye County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-156 320.000 Acres  
T.0100N, R.0620E, 21 MDM, NV  
Sec. 018 E2;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-157 2246.000 Acres  
T.0200N, R.0620E, 21 MDM, NV  
Sec. 001 PROT ALL;  
002 PROT ALL EXCL ME  
PATENTS;  
003 PROT E2W2 EXCL ME  
PATS;  
003 PROT E2 EXCL ME  
PATENTS;  
010 PROT N2,N2SW,SE;  
White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-158 2560.000 Acres  
T.0200N, R.0620E, 21 MDM, NV  
Sec. 011 PROT ALL;  
012 PROT ALL;  
013 PROT ALL;  
014 PROT ALL;

White Pine County  
Ely DO  
Formerly Lease No.

NV-13-12-159 1760.000 Acres  
T.0200N, R.0620E, 21 MDM, NV  
Sec. 015 PROT E2;  
022 PROT E2E2;  
023 PROT ALL;  
024 PROT ALL;

White Pine County  
Ely DO  
PGH  
Formerly Lease No.

NV-13-12-160 2498.000 Acres  
T.0200N, R.0620E, 21 MDM, NV  
Sec. 025 PROT ALL EXCL ME  
PATENTS;  
026 PROT ALL EXCL ME  
PATENTS;  
035 PROT ALL EXCL ME  
PATENTS;  
036 PROT ALL EXCL ME  
PATENTS;

White Pine County  
Ely DO  
Formerly Lease No.

NV-13-12-161 800.000 Acres  
T.0200N, R.0620E, 21 MDM, NV  
Sec. 027 PROT E2;  
034 PROT E2,E2W2;

White Pine County  
Ely DO  
Formerly Lease No.

NV-13-12-162 1920.000 Acres  
T.0250N, R.0620E, 21 MDM, NV  
Sec. 013 W2NW,NWSW;  
023 NE,NENW;  
024 SWNE,NWNW,S2NW,NWSW;

026 SWNE, S2NW, SW;  
 027 SWSW, E2SW, SE;  
 034 E2, E2W2, NWNW;  
 035 W2;  
 White Pine County  
 Ely DO  
 PGH  
 Formerly Lease No.  
  
 NV-13-12-163 470.890 Acres  
 T.0210N, R.0630E, 21 MDM, NV  
 Sec. 025 LOTS LOTS 2, 3, 5;  
 025 W2SWNE, S2NW, W2SW;  
 036 LOTS LOTS  
 1, 3, 4, 6, 8, 9, 11, 12;  
 036 LOTS LOTS 14;  
 036 NWNW;  
 White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90274  
 SPLIT ESTATE 27-70-0094  
 Formerly Lease No.  
  
 NV-13-12-164 1910.990 Acres  
 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 001 LOTS LOTS 1-4;  
 001 S2N2, S2;  
 002 LOTS LOTS 1, 2;  
 002 S2NE, SE;  
 011 LOTS LOTS 1, 3, 4, 6;  
 011 NE, E2SE;  
 012 ALL;  
 White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90271  
 Formerly Lease No.  
  
 NV-13-12-165 1708.480 Acres  
 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 013 ALL;  
 014 LOTS LOTS  
 1, 3, 4, 6, 7, 10, 15;  
 014 E2NE;  
 023 LOTS LOTS  
 1, 3, 4, 6, 7, 9;  
 023 W2SE, SESE;  
 024 LOTS LOTS 1, 3, 4, 6;  
 024 N2, E2SW, SE;  
 White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90271

Formerly Lease No.  
  
 NV-13-12-166 816.610 Acres  
 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 025 LOTS LOTS 7, 9, 14, 16;  
 025 E2, E2NW;  
 036 LOTS LOTS  
 1, 6, 7, 9, 10, 13, 15;  
 036 NE, E2SE;  
 White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90271  
 Formerly Lease No.  
  
 NV-13-12-167 2117.490 Acres  
 T.0230N, R.0630E, 21 MDM, NV  
 Sec. 001 LOTS LOTS 1-4;  
 001 S2N2, S2;  
 002 LOTS LOTS 1, 3, 4;  
 002 W2NESW, SE;  
 002  
 SENE, E2SWNE, S2NW, W2SW;  
 011 E2;  
 012 ALL;  
 White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90266  
 Formerly Lease No.  
  
 NV-13-12-168 1950.000 Acres  
 T.0230N, R.0630E, 21 MDM, NV  
 Sec. 013 SWNW, SW;  
 014  
 NE, E2NW, E2W2NW, SWSWNW, S2;  
 015 E2SESE;  
 015  
 N2NE, SWNE, W2SENE, W2NESE;  
 023 ALL;  
 024 W2;  
 White Pine County  
 Ely DO  
 PENDING PRESALE OFFER NO. NVN90266  
 SPLIT ESTATE 27-79-0021  
 Formerly Lease No.  
  
 NV-13-12-169 1640.000 Acres  
 T.0230N, R.0630E, 21 MDM, NV  
 Sec. 025 E2NE, SWNW, SE;  
 026 E2, NW;

035 E2NE,SE;  
036 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90266  
Formerly Lease No.

NV-13-12-170 1400.000 Acres  
T.0240N, R.0630E, 21 MDM, NV  
Sec. 014 SE;  
023 W2E2,E2NW,SWNW,SW;  
024 E2E2;  
025 E2;  
026 W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90265  
SPLIT ESTATE 27-79-0019  
Formerly Lease No.

NV-13-12-171 2021.360 Acres  
T.0240N, R.0630E, 21 MDM, NV  
Sec. 027 E2,E2SW;  
034 N2,SE;  
035 LOTS LOTS  
4,6,8,9,11,13,14,16;  
035 W2,SESE;  
036 E2,E2NW,SWNW,SW;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90265  
Formerly Lease No.

NV-13-12-172 2236.990 Acres  
T.0210N, R.0640E, 21 MDM, NV  
Sec. 005 LOTS LOTS 1-4;  
005 S2NS,S2;  
006 LOTS LOTS 1-7;  
006 S2NE,SENE,E2SW,SE;  
007 E2;  
008 ALL;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90273  
PGH  
Formerly Lease No.

NV-13-12-173 800.000 Acres  
T.0210N, R.0640E, 21 MDM, NV

Sec. 017 N2,SE;  
018 NE,E2W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90273  
MATERIAL SITE NEV067377  
PGH  
Formerly Lease No.

NV-13-12-174 2078.900 Acres  
T.0210N, R.0640E, 21 MDM, NV  
Sec. 019 LOTS LOTS 3,4;  
019 SESW,S2SE;  
020 E2,S2SW;  
028 S2NW;  
029 E2,S2SW;  
030 SESE;  
031 LOTS LOTS 1-4;  
031 E2E2;  
032 ALL;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90274  
NVN88048 RMP  
PGH  
Formerly Lease No.

NV-13-12-175 1897.370 Acres  
T.0220N, R.0640E, 21 MDM, NV  
Sec. 005 LOTS LOTS 1-4;  
005 S2N2,S2;  
006 LOTS LOTS 1-7;  
006 S2NE,SENE,E2SW,SE;  
007 LOTS LOTS 1-4;  
007 E2,E2W2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90767  
MATERIAL SITE NEV 067376  
Formerly Lease No.

NV-13-12-176 1910.500 Acres  
T.0220N, R.0640E, 21 MDM, NV  
Sec. 008 ALL;  
017 ALL;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90767  
Formerly Lease No.

NV-13-12-177            640.000 Acres  
T.0220N, R.0640E, 21 MDM, NV  
Sec. 009    SW;  
      016    N2,SW;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90767  
PGH  
Formerly Lease No.

NV-13-12-178            1899.000 Acres  
T.0220N, R.0640E, 21 MDM, NV  
Sec. 019    LOTS LOTS 1-4;  
      019    E2,E2W2;  
      030    LOTS LOTS 1-4;  
      030    E2,E2W2;  
      031    LOTS LOTS 1-4;  
      031    E2,E2W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90270  
Formerly Lease No.

NV-13-12-179            2160.000 Acres  
T.0220N, R.0640E, 21 MDM, NV  
Sec. 020    ALL;  
      028    W2NE,NW;  
      029    ALL;  
      032    ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90270  
MATERIAL SITE NEV 067391  
Formerly Lease No.

NV-13-12-180            630.450 Acres  
T.0230N, R.0640E, 21 MDM, NV  
Sec. 006    LOTS LOTS 1-7;  
      006    S2NE, SENW, E2SW, SE;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90267  
Formerly Lease No.

NV-13-12-181            2440.440 Acres  
T.0230N, R.0640E, 21 MDM, NV

Sec. 019    LOTS LOTS 1-4;  
      019    E2W2,SE;  
      029    W2NW,SW;  
      030    LOTS LOTS 1-4;  
      030    E2,E2W2;  
      031    LOTS LOTS 1-4;  
      031    E2,E2W2;  
      032    W2E2,W2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90766  
Formerly Lease No.

NV-13-12-182            640.000 Acres  
T.0230N, R.0640E, 21 MDM, NV  
Sec. 021    ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90766  
PGH  
Formerly Lease No.

NV-13-12-183            1919.200 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 001    LOTS LOTS 1-4;  
      001    S2N2,S2;  
      012    ALL;  
      013    ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90262  
MATERIAL SITE NEV 02257  
PGH  
Formerly Lease No.

NV-13-12-184            2240.000 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 002    S2;  
      011    ALL;  
      014    ALL;  
      015    ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90263  
PGH  
Formerly Lease No.

NV-13-12-185            2558.820 Acres  
T.0240N, R.0640E, 21 MDM, NV

Sec. 003 LOTS LOTS 3,4;  
003 S2NW,SW;  
004 LOTS LOTS 1-4;  
004 S2N2,S2;  
009 ALL;  
010 W2;  
016 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90263  
Formerly Lease No.

NV-13-12-186 1615.540 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 005 LOTS LOTS  
1,2,5,7,9,10,12,13;  
005 LOTS LOTS 15;  
005  
S2NE, SENW, E2SW, SWSW, SE;  
006 LOTS LOTS 8-12,14-  
19,21,22,24;  
007 LOTS LOTS 22,24-27;  
007 LOTS LOTS  
5,6,8,9,11,13-18,20;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90263  
Formerly Lease No.

NV-13-12-187 1904.780 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 008 ALL;  
017 ALL;  
018 LOTS LOTS 1-4;  
018 E2,E2W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90263  
Formerly Lease No.

NV-13-12-188 1884.780 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 019 LOTS LOTS 1-4;  
019 E2,E2W2;  
030 LOTS LOTS 1-4;  
030 E2,E2W2;  
031 LOTS LOTS 1-4;  
031 E2,E2W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90264

Formerly Lease No.  
NV-13-12-189 2560.000 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 020 ALL;  
021 ALL;  
028 ALL;  
029 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90264  
Formerly Lease No.

NV-13-12-190 2560.000 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 022 ALL;  
023 ALL;  
026 ALL;  
027 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90264  
MATERIAL SITE CC22966  
PGH  
Formerly Lease No.

NV-13-12-191 1200.000 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 024 N2,N2S2,S2SW,SESE;  
025 W2NE,SENE,NW,S2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90262  
MATERIAL SITE CC22966  
PGH  
Formerly Lease No.

NV-13-12-192 1200.000 Acres  
T.0240N, R.0640E, 21 MDM, NV  
Sec. 034 E2,N2NW,SW;  
035 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90264  
MATERIAL SITE NEV02258  
PGH  
Formerly Lease No.

NV-13-12-193 1793.750 Acres  
T.0250N, R.0640E, 21 MDM, NV  
Sec. 001 LOTS LOTS 1,2,7-10;  
001 SE;  
003 LOTS LOTS 4,5,12;  
003 W2SW;  
004 LOTS LOTS 9,11,12;  
004  
SW, E2SE, SENWSE, E2SWSE;  
008 ALL;  
012 E2E2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90260  
PGH  
Formerly Lease No.

NV-13-12-194 1660.000 Acres  
T.0250N, R.0640E, 21 MDM, NV  
Sec. 009  
E2NE, E2NWNE, SWNWNE, SWNE;  
009 E2E2SW, SE;  
009  
NWNENW, W2NW, W2SENW, W2SW;  
010 W2W2;  
015 W2W2;  
016 E2, E2W2, W2W2NW;  
017 NE, N2NW, SENW;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90260  
PGH  
Formerly Lease No.

NV-13-12-195 1210.000 Acres  
T.0250N, R.0640E, 21 MDM, NV  
Sec. 020  
SWSWSE, NESESE, SWSESE;  
020  
E2NESE, S2NWSE, N2SWSE;  
021 E2, SW;  
028 ALL;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90259  
PGH  
Formerly Lease No.

NV-13-12-196 440.000 Acres  
T.0250N, R.0640E, 21 MDM, NV

Sec. 025 SESE;  
036 E2, E2SW;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90259  
PGH  
Formerly Lease No.

NV-13-12-197 1360.000 Acres  
T.0250N, R.0640E, 21 MDM, NV  
Sec. 032  
E2, SWNW, W2SENW, NESWSW;  
032 SWSESW;  
033 ALL;  
034 W2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90259  
PGH  
Formerly Lease No.

NV-13-12-198 800.000 Acres  
T.0260N, R.0640E, 21 MDM, NV  
Sec. 026  
E2E2NW, NWNW, W2SWNW, E2SW;  
026  
W2NWSW, NWSWSW, SESWSW;  
034  
NESW, NWNESE, NWSE, E2SESE;  
034  
N2N2, SWNE, W2SENE, SENW;  
035

E2NW, E2W2NW, SWSWNW, W2SW;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90258  
Formerly Lease No.

NV-13-12-199 1666.960 Acres  
T.0240N, R.0650E, 21 MDM, NV  
Sec. 005 LOTS LOTS 3,4;  
005 S2NW, SW;  
006 LOTS LOTS 1-6;  
006 S2NE, SE;  
007 LOTS LOTS 1-4;  
007 E2;  
008 W2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90262  
PGH

Formerly Lease No.

NV-13-12-200            650.140 Acres  
T.0240N, R.0650E, 21 MDM, NV  
Sec. 018    LOTS LOTS 1-4;  
         018    NE,NWSE;  
         019    LOTS LOTS 1-4;  
         030    LOTS LOTS 1;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90262  
PGH  
Formerly Lease No.

NV-13-12-201            1896.580 Acres  
T.0250N, R.0650E, 21 MDM, NV  
Sec. 003    LOTS LOTS 1-4;  
         003    S2;  
         004    S2S2;  
         009    ALL;  
         010

N2, SW, E2SE, N2NWSE, SENWSE;  
         010  
N2SWNWSE, SESWNWSE, SWSE;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90261  
PGH  
SPLIT ESTATE  
Formerly Lease No.

NV-13-12-202            1534.360 Acres  
T.0250N, R.0650E, 21 MDM, NV  
Sec. 006    LOTS LOTS 1-5;  
         006    SE;  
         007    LOTS LOTS 1-4;  
         007    E2;  
         008    ALL;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90261  
PGH  
SPLIT ESTATE  
Formerly Lease No.

NV-13-12-203            1440.000 Acres  
T.0250N, R.0650E, 21 MDM, NV  
Sec. 016    ALL;  
         021    N2, SW, N2SE, SWSE;

                         028    NENW, W2W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90261  
PGH  
Formerly Lease No.

NV-13-12-204            2067.890 Acres  
T.0250N, R.0650E, 21 MDM, NV  
Sec. 017    ALL;  
         018    LOTS LOTS 1-4;  
         018    E2;  
         019    LOTS LOTS 1;  
         019    NE, E2SE;  
         020    ALL;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90261  
PGH  
Formerly Lease No.

NV-13-12-205            2210.560 Acres  
T.0250N, R.0650E, 21 MDM, NV  
Sec. 029    ALL;  
         030    LOTS LOTS 1-4;  
         030    E2;  
         031    LOTS LOTS 1-4;  
         031    E2;  
         032    N2, SW, W2SE;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90261  
PGH  
MATERIAL SITE NEV 02250  
Formerly Lease No.

NV-13-12-206            1280.000 Acres  
T.0260N, R.0650E, 21 MDM, NV  
Sec. 026    ALL;  
         027    E2;  
         035    E2;

White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90257  
MATERIAL SITE CC018203  
Formerly Lease No.

NV-13-12-207            1165.000 Acres  
T.0260N, R.0650E, 21 MDM, NV

Sec. 029 W2;  
030 E2SESENE;  
031 E2;  
032 N2,SW,NESE;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90257  
Formerly Lease No.

NV-13-12-208 1680.040 Acres  
T.0230N, R.0670E, 21 MDM, NV  
Sec. 001 LOTS LOTS 1-4;  
001 S2N2,S2;  
011 ALL;  
012 N2NE,W2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90765  
PGH  
Formerly Lease No.

NV-13-12-209 2395.010 Acres  
T.0230N, R.0670E, 21 MDM, NV  
Sec. 013 W2;  
014 ALL EXCL ME PATENTS;  
023 ALL;  
024 N2NW;  
026 ALL;  
035 N2NW;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90765  
PGH  
Formerly Lease No.

NV-13-12-210 2440.000 Acres  
T.0230N, R.0670E, 21 MDM, NV  
Sec. 015 ALL;  
022 ALL;  
027 ALL;  
034 N2N2,SWNW,S2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90256  
PGH  
Formerly Lease No.

NV-13-12-211 1920.000 Acres  
T.0230N, R.0670E, 21 MDM, NV

Sec. 021 ALL;  
028 ALL;  
033 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90256  
PGH  
Formerly Lease No.

NV-13-12-212 1910.400 Acres  
T.0230N, R.0670E, 21 MDM, NV  
Sec. 029 ALL;  
031 LOTS LOTS 1-4;  
031 E2W2,E2;  
032 ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90256  
Formerly Lease No.

NV-13-12-213 1920.000 Acres  
T.0240N, R.0680E, 21 MDM, NV  
Sec. 001 PROT E2;  
012 PROT E2;  
013 PROT E2;  
024 PROT E2;  
025 PROT E2;  
036 PROT E2;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90252  
Formerly Lease No.

NV-13-12-214 2540.000 Acres  
T.0240N, R.0680E, 21 MDM, NV  
Sec. 005 PROT ALL;  
006 PROT ALL;  
007 PROT ALL;  
008 PROT ALL;  
White Pine County  
Ely DO  
PENDING PRESALE OFFER NO. NVN90254  
PGH  
Formerly Lease No.

NV-13-12-215 2064.000 Acres  
T.0240N, R.0680E, 21 MDM, NV  
Sec. 017 PROT N2,SW;  
018 PROT ALL;

019 PROT ALL;  
020 PROT W2;

White Pine County

Ely DO

PENDING PRESALE OFFER NO. NVN90254

PGH

Formerly Lease No.

NV-13-12-216 1186.000 Acres

T.0240N, R.0680E, 21 MDM, NV

Sec. 029 PROT NW;

030 PROT NE,W2,N2SE;

031 PROT W2,SE;

White Pine County

Ely DO

PENDING PRESALE OFFER NO. NVN90254

PGH

Formerly Lease No.

APPENDIX B. DECEMBER 2013 PARCEL STIPULATIONS

**LEASE NOTICE**

**National Historic Trails**

Lands within this lease are in proximity to or contain portions of the Pony Express National Historic Trail. Oil and gas exploration and development activities between a minimum of three and a maximum of five miles of the Pony Express National Historic Trail shall undergo a visual assessment in conjunction with environmental review to determine if the activity will adversely affect the visual integrity (IM No. NV-2004-004, "Historic Landscape Management Along National Historic Trails"). Appropriate mitigation will take place as necessary to maintain the management corridor in as natural a condition as possible.

**Pony Express Trail:**

<b><u>Parcels</u></b>	<b><u>Description of Lands</u></b>
NV-13-12-073	T.0250N, R.0590E, 21 MDM, NV Sec. 015 S2; Sec. 016 S2S2.
NV-13-12-074	T.0250N, R.0590E, 21 MDM, NV Sec. 014 SW; Sec. 023 ALL; Sec. 024 NW, N2SW, SWSW.
NV-13-12-075	T.0250N, R.0590E, 21 MDM, NV Sec. 019 SENE, SE; Sec. 020 S2, NE, S2NW; Sec. 021 ALL; Sec. 022 ALL.
NV-13-12-076	T.0250N, R.0590E, 21 MDM, NV Sec. 026 W2E2, W2; Sec. 027 ALL.
NV-13-12-077	T.0250N, R.0590E, 21 MDM, NV Sec. 028 E2, W2NW, SW; Sec. 029 ALL; Sec. 032 N2, N2SW; Sec. 023 N2, N2SW.

NV-13-12-078 T.0250N, R.0590E, 21 MDM, NV  
 Sec. 030 LOTS 3, 4;  
 Sec. 030 E2, E2SW;  
 Sec. 031 LOT 1;  
 Sec. 031 E2NW, NE, S2SE.

NV-13-12-115 T.0170N, R.0600E, 21 MDM, NV  
 Sec. 014 NESW, S2SW;  
 Sec. 023 N2NW.

NV-13-12-164 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 001 LOTS 1-4;  
 Sec. 001 S2N2,S2;  
 Sec. 002 LOTS 1,2;  
 Sec. 002 S2NE,SE;  
 Sec. 011 NE;  
 Sec. 012 N2, NESE.

NV-13-12-169 T.0230N, R.0630E, 21 MDM, NV  
 Sec. 026 S2NW,W2SE, SESE;  
 Sec. 035 E2NE,SE;  
 Sec. 036 S2NE, NW, S2.

NV-13-12-175 T.0220N, R.0640E, 21 MDM, NV  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2,S2;  
 Sec. 006 LOTS 1-7;  
 Sec. 006 S2NE,SE,SENW,E2SW,SE;  
 Sec. 007 LOTS 1-3;  
 Sec. 007 NE, E2NW, NESW, N2SE.

NV-13-12-176 T.0220N, R.0640E, 21 MDM, NV  
 Sec. 008 ALL;  
 Sec. 017 E2E2.

NV-13-12-177 T.0220N, R.0640E, 21 MDM, NV  
 Sec. 009 SW;  
 Sec. 016 N2,SW.

NV-13-12-181 T.0230N, R.0640E, 21 MDM, NV  
 Sec. 031 LOTS 3-4;  
 Sec. 031 E2,E2SE, SE;  
 Sec. 032 W2SW, SESW, SWSE.

NV-13-12-208 T.0230N, R.0670E, 21 MDM, NV  
Sec. 001 LOTS 1;  
Sec. 001 S2NE, E2SW, SE;  
Sec. 011 SENE, SE;  
Sec. 012 N2NE,W2.

NV-13-12-209 T.0230N, R.0670E, 21 MDM, NV  
Sec. 013 W2;  
Sec. 014 NE, E2NW, NESW, S2SW, SE EXCL ME  
PATENTS;  
Sec. 023 ALL;  
Sec. 024 N2NW;  
Sec. 026 ALL;  
Sec. 035 N2NW.

NV-13-12-210 T.0230N, R.0670E, 21 MDM, NV  
Sec. 022 S2S2;  
Sec. 027 ALL;  
Sec. 034 N2N2,SWNW,S2.

NV-13-12-211 T.0230N, R.0670E, 21 MDM, NV  
Sec. 021 S2S2;  
Sec. 028 ALL;  
Sec. 033 ALL.

NV-13-12-212 T.0230N, R.0670E, 21 MDM, NV  
Sec. 029 ALL;  
Sec. 031 LOTS 1-4;  
Sec. 031 E2W2,E2;  
Sec. 032 ALL.

NV-13-12-213 T.0240N, R.0680E, 21 MDM, NV  
Sec. 025 PROT S2NE, SE;  
Sec. 036 PROT E2.

NV-13-12-216 T.0240N, R.0680E, 21 MDM, NV  
Sec. 031 PROT NESW, S2SW, SE.

## LEASE NOTICE

### **Historic Sites**

Lands within this lease are in proximity to or contain portions of Hastings Cutoff, the Lincoln Highway, or the Osceola Ditch. Oil and gas exploration and development activities within one mile of these sites must undergo a visual assessment in conjunction with environmental review to determine if the activity will adversely affect the visual integrity. Appropriate mitigation will take place as necessary to maintain the management corridor in as natural a condition as possible.

### **Lincoln Highway:**

#### Parcels

#### Description of Lands

NV-13-12-148	T.0160N, R.0610E, 21 MDM, NV Sec. 012 N2NE, W2; Sec. 013 SWNE, W2W2, NESW, NWSE; Sec. 023 W2NE, NENW.
NV-13-12-172	T.0210N, R.0640E, 21 MDM, NV Sec. 005 LOTS 1,2; Sec. 005 S2NE, SE; Sec. 008 NE, SESW, SE.
NV-13-12-173	T.0210N, R.0640E, 21 MDM, NV Sec. 017 NE, E2NW, SE.
NV-13-12-174	T.0210N, R.0640E, 21 MDM, NV Sec. 020 NE, N2SE; Sec. 028 S2NW; Sec. 029 NE, SESW, SE; Sec. 032 NE, NENW, S2NW, S2.
NV-13-12-177	T.0220N, R.0640E, 21 MDM, NV Sec. 009 SW; Sec. 016 N2, SW.
NV-13-12-179	T.0220N, R.0640E, 21 MDM, NV Sec. 020 E2; Sec. 028 W2NE, NW; Sec. 029 E2; Sec. 032 E2.

NV-13-12-182 T.0230N, R.0640E, 21 MDM, NV  
Sec. 021 ALL.

NV-13-12-183 T.0240N, R.0640E, 21 MDM, NV  
Sec. 001 LOTS 1-4;  
Sec. 001 S2N2,S2;  
Sec. 012 ALL;  
Sec. 013 ALL.

NV-13-12-184 T.0240N, R.0640E, 21 MDM, NV  
Sec. 002 SE;  
Sec. 011 NE, E2NW, S2;  
Sec. 014 ALL;  
Sec. 015 SENE, NESE, S2SE.

NV-13-12-190 T.0240N, R.0640E, 21 MDM, NV  
Sec. 022 NE, E2SW, SE;  
Sec. 023 ALL;  
Sec. 026 ALL;  
Sec. 027 NE, NENW, S2NW, S2.

NV-13-12-191 T.0240N, R.0640E, 21 MDM, NV  
Sec. 024 N2,N2S2,S2SW,SESE;  
Sec. 025 W2NE,SENE,NW,Sw, N2SE, SWSE.

NV-13-12-192 T.0240N, R.0640E, 21 MDM, NV  
Sec. 034 E2,N2NW,SW;  
Sec. 035 ALL.

NV-13-12-196 T.0250N, R.0640E, 21 MDM, NV  
Sec. 025 SESE;  
Sec. 036 E2,E2SW.

NV-13-12-199 T.0240N, R.0650E, 21 MDM, NV  
Sec. 005 LOTS 3,4;  
Sec. 005 S2NW,SW;  
Sec. 006 LOTS 1-6;  
Sec. 006 S2NE,SE;  
Sec. 007 LOTS 1-4;  
Sec. 007 E2;  
Sec. 008 W2.

NV-13-12-200 T.0240N, R.0650E, 21 MDM, NV  
 Sec. 018 LOTS 1-4;  
 Sec. 018 NE,NWSE;  
 Sec. 019 LOTS 1-4;  
 Sec. 030 LOTS 1.

NV-13-12-201 T.0250N, R.0650E, 21 MDM, NV  
 Sec. 003 LOTS 1-4;  
 Sec. 003 S2;  
 Sec. 004 S2SE;  
 Sec. 009 NE, NENW, S2NW, S2;  
 Sec. 010 N2,SW,E2SE,N2NWSE,SESWSE;  
 Sec. 010 N2SWNWSE,SESWNWSE,SWSE.

NV-13-12-202 T.0250N, R.0650E, 21 MDM, NV  
 Sec. 008 NESE, S2SE.

NV-13-12-203 T.0250N, R.0650E, 21 MDM, NV  
 Sec. 016 ALL;  
 Sec. 021 N2,SW,N2SE,SWSE;  
 Sec. 028 NENW,W2W2.

NV-13-12-204 T.0250N, R.0650E, 21 MDM, NV  
 Sec. 017 NE, E2NW, S2;  
 Sec. 019 E2E2, SWNE;  
 Sec. 020 ALL.

NV-13-12-205 T.0250N, R.0650E, 21 MDM, NV  
 Sec. 029 ALL;  
 Sec. 030 LOTS 1-4;  
 Sec. 030 E2;  
 Sec. 031 LOTS 1-4;  
 Sec. 031 E2;  
 Sec. 032 N2,SW,W2SE.

NV-13-12-206 T.0260N, R.0650E, 21 MDM, NV  
 Sec. 035 NENE, S2NE, SE.

NV-13-12-208 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 001 LOTS 1;  
 Sec. 001 S2NE, E2SW, SE;  
 Sec. 011 SENE, SE;  
 Sec. 012 N2NE,W2.

NV-13-12-209 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 013 W2;  
 Sec. 014 NE, E2NW, NESW, S2SW, SE EXCL ME  
 PATENTS;  
 Sec. 023 ALL;  
 Sec. 024 N2NW;  
 Sec. 026 ALL;  
 Sec. 035 N2NW.

NV-13-12-210 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 022 S2S2;  
 Sec. 027 ALL;  
 Sec. 034 N2N2,SWNW,S2.

NV-13-12-211 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 021 S2S2;  
 Sec. 028 ALL;  
 Sec. 033 ALL.

NV-13-12-212 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 029 ALL;  
 Sec. 031 LOTS 1-4;  
 Sec. 031 E2W2,E2;  
 Sec. 032 ALL.

NV-13-12-213 T.0240N, R.0680E, 21 MDM, NV  
 Sec. 025 PROT S2NE, SE;  
 Sec. 036 PROT E2.

NV-13-12-216 T.0240N, R.0680E, 21 MDM, NV  
 Sec. 031 PROT NESW, S2SW, SE;

NV-13-12-209 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 026 ALL;  
 Sec. 035 N2NW.

NV-13-12-210 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 022 ALL;  
 Sec. 027 ALL;  
 Sec. 034 N2N2,SWNW,S2.

NV-13-12-211 T.0230N, R.0670E, 21 MDM, NV  
 Sec. 021 ALL;  
 Sec. 028 ALL;  
 Sec. 033 NE, NENW, NWSW.

NV-13-12-212

T.0230N, R.0670E, 21 MDM, NV  
Sec. 029 E2NE, NESE.

## LEASE NOTICE

### **Cultural Sites**

Lands within this lease contain areas of known high potential for cultural resources. Properties known at the time of lease announcement that are listed on or eligible for the National Register of Historic Places will be avoided, where possible, by means of lease exclusions or by limits on surface use. The preferred avoidance option is to exclude areas containing National Register of Historic Places eligible sites from leasing and all forms of surface disturbance. Cultural sites not avoided may require consultation with State Historic Preservation Officer and treatment plans.

### Parcels

### Description of Lands

#### **Jakes Valley Paleo Shorel**

NV-13-12-115

T.0170N, R.0600E, 21 MDM, NV  
Sec. 014 NESW, S2SW;  
Sec. 023 N2NW.

#### **Goshute Lake**

NV-13-12-193

T.0250N, R.0640E, 21 MDM, NV  
Sec. 001 LOTS 1,2,7, 8, 9, 10;  
Sec. 001 SE;  
Sec. 003 LOTS 4,5,12;  
Sec. 003 W2SW;  
Sec. 004 LOTS 9,11,12;  
Sec. 004 SW,E2SE,SEWSE,E2SWSE;  
Sec. 008 E2NE, E2SE;  
Sec. 012 E2E2.

NV-13-12-194

T.0250N, R.0640E, 21 MDM, NV  
Sec. 009 E2NE,E2NWNW,SWNWNW,SWNE;  
Sec. 009 E2E2SW,SE;  
Sec. 009 NWNENW,W2NW,W2SEW,W2SW;  
Sec. 010 W2W2.

NV-13-12-198

T.0260N, R.0640E, 21 MDM, NV  
Sec. 026 E2E2NW,NWNW,W2SWNW,E2SW;  
Sec. 026 W2NWSW,NWSWSW,SESWSW;  
Sec. 034 NESW,NWNESE,NWSE,E2SESE;  
Sec. 034 N2N2,SWNE,W2SENE,SEW;  
Sec. 035 E2NW,E2W2NW,SWSWNW,W2SW.

NV-13-12-201 T.0250N, R.0650E, 21 MDM, NV  
Sec. 004 SWSW;  
Sec. 009 W2W2.

NV-13-12-202 T.0250N, R.0650E, 21 MDM, NV  
Sec. 006 LOTS 1-5;  
Sec. 006 N2SE, SWSE;  
Sec. 007 LOTS 1-4;  
Sec. 007 E2;  
Sec. 008 S2NE, NW, S2.

NV-13-12-203 T.0250N, R.0650E, 21 MDM, NV  
Sec. 016 W2NW, NWSW.

NV-13-12-204 T.0250N, R.0650E, 21 MDM, NV  
Sec. 017 N2, N2S2;  
Sec. 018 LOTS 1-3;  
Sec. 018 NE, N2SE.

NV-13-12-207 T.0260N, R.0650E, 21 MDM, NV  
Sec. 029 W2;  
Sec. 030 E2SESENE;  
Sec. 031 E2;  
Sec. 032 N2,SW,NESE.

**LEASE NOTICE**

**Desert Tortoise Habitat**

Lands within this lease will require Section 7 consultation prior to any surface disturbance in desert tortoise habitat. The BLM must ensure that the impacts from the operation do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. The operator, U.S. Fish and Wildlife Service, and the BLM also must reach concurrence that the proposed actions are below the jeopardy or adverse modification threshold. If it is determined that through the review of the plan of operation and the use of mitigation measures that the operation is not below the jeopardy or adverse modification threshold, the project would not go forward.

**Parcels**

**Description of Lands**

NONE

## LEASE TIMING STIPULATIONS

### **Resource: Desert Tortoise Habitat**

**Stipulation:** Timing Limitation. No surface activity would be allowed within desert tortoise habitat from March 1 through October 31 without concurrence from the Forest Service.

**Objective:** To protect desert tortoise during the most active period to maintain desert tortoise populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with U.S. Fish and Wildlife Service, if the operator submits a plan that demonstrates that impacts from the proposed action would not adversely affect desert tortoise habitat.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with U.S. Fish and Wildlife Service, determines that portions of the area can be occupied without adversely affecting desert tortoise. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with U.S. Fish and Wildlife Service, determines that the entire leasehold is no longer occupied by desert tortoise.

### Parcels

### Description of Lands

NONE

## LEASE TIMING STIPULATIONS

### **Resource: Desert Bighorn Sheep Habitat**

**Stipulation:** Timing Limitation. No surface activity would be allowed within occupied desert bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31.

**Objective:** To protect desert bighorn sheep from disturbance during lambing and the crucial hot summer months to maintain existing populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting desert bighorn sheep. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold is no longer occupied by desert bighorn sheep.

### Parcels

### Description of Lands

NONE

## LEASE TIMING STIPULATION

### **Resource: Big Game Crucial Winter Habitat**

**Stipulation:** Timing Limitation. No surface activity would be allowed within big game crucial winter range from November 1 through March 31.

**Objective:** To protect elk, mule deer, and pronghorn antelope from disturbance during the crucial winter period to maintain wildlife populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area no longer contain winter habitat. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife determines that the entire leasehold no longer contains crucial winter range for big game.

<u>Parcels</u>	<u>Description of Lands</u>
NV-13-12-001	T.0220N, R.0560E, 21 MDM, NV Sec. 001 SENW, NESW.
NV-13-12-006	T.0010N, R.0580E, 21 MDM, NV Sec. 001 LOTS 1-4; Sec. 001 S2N2, S2; Sec. 012 ALL.
NV-13-12-009	T.0010N, R.0580E, 21 MDM, NV Sec. 015 SE.
NV-13-12-010	T.0010N, R.0580E, 21 MDM, NV Sec. 013 ALL; Sec. 014 SW, S2NW, W2SE.
NV-13-12-013	T.0010N, R.0580E, 21 MDM, NV Sec. 022 E2, E2W2; Sec. 027 E2.
NV-13-12-014	T.0010N, R.0580E, 21 MDM, NV Sec. 023 ALL; Sec. 024 E2, E2NW, SW; Sec. 025 ALL.
NV-13-12-015	T.0010N, R.0580E, 21 MDM, NV Sec. 026 ALL;

Sec. 035 ALL;  
 Sec. 036 ALL.

NV-13-12-017 T.0010N, R.0580E, 21 MDM, NV  
 Sec. 034 E2, SW.

NV-13-12-018 T.0020N, R.0580E, 21 MDM, NV  
 Sec. 013 SW, S2SE;  
 Sec. 023 E2E2;  
 Sec. 024 ALL;  
 Sec. 026 E2E2.

NV-13-12-021 T.0020N, R.0580E, 21 MDM, NV  
 Sec. 025 ALL;  
 Sec. 035 E2NE;  
 Sec. 036 ALL.

NV-13-12-029 T.0020N, R.0590E, 21 MDM, NV  
 Sec. 003 NW;  
 Sec. 004 LOTS 1-4;  
 Sec. 004 S2N2, S2;  
 Sec. 009 ALL.

NV-13-12-030 T.0020N, R.0590E, 21 MDM, NV  
 Sec. 005 LOTS 1-4;  
 Sec. 005 S2N2, S2;  
 Sec. 006 LOTS 1-7;  
 Sec. 006 S2NE, SENW, E2SW, SE;  
 Sec. 007 E2;  
 Sec. 008 ALL.

NV-13-12-031 T.0030N, R.0590E, 21 MDM, NV  
 Sec. 001 LOTS 1-4;  
 Sec. 001 S2N2, S2;  
 Sec. 002 LOTS 1-4;  
 Sec. 002 S2N2, S2;  
 Sec. 012 NW, W2SW.

NV-13-12-032 T.0030N, R.0590E, 21 MDM, NV  
 Sec. 003 LOTS 1-4;  
 Sec. 003 S2N2, S2;  
 Sec. 004 LOTS 1-4;  
 Sec. 004 S2N2, S2;  
 Sec. 009 E2, E2W2, NWNW;  
 Sec. 010 ALL.

NV-13-12-033	T.0030N, R.0590E, 21 MDM, NV Sec. 005 LOT 1; Sec. 005 NESE, SENE.
NV-13-12-034	T.0030N, R.0590E, 21 MDM, NV Sec. 017 SE.
NV-13-12-035	T.0030N, R.0590E, 21 MDM, NV Sec. 011 ALL; Sec. 013 W2NW; Sec. 014 ALL.
NV-13-12-036	T.0030N, R.0590E, 21 MDM, NV Sec. 015 ALL; Sec. 016 E2, E2W2, W2SW, SWNW.
NV-13-12-037	T.0030N, R.0590E, 21 MDM, NV Sec. 019 SESE; Sec. 020 ALL; Sec. 029 ALL; Sec. 030 E2, E2SW, SENW.
NV-13-12-038	T.0030N, R.0590E, 21 MDM, NV Sec. 021 E2, N2NW, S2SW; Sec. 028 ALL; Sec. 033 ALL.
NV-13-12-039	T.0030N, R.0590E, 21 MDM, NV Sec. 022 ALL; Sec. 023 W2, W2E2; Sec. 027 ALL.
NV-13-12-040	T.0030N, R.0590E, 21 MDM, NV Sec. 026 W2; Sec. 034 W2, NE, W2SE.
NV-13-12-041	T.0030N, R.0590E, 21 MDM, NV Sec. 031 LOTS 1-4; Sec. 031 E2, E2W2; Sec. 032 ALL.

NV-13-12-042 T.0040N, R.0590E, 21 MDM, NV  
Sec. 001 PROT ALL;  
Sec. 002 PROT ALL;  
Sec. 003 E2E2.

NV-13-12-043 T.0040N, R.0590E, 21 MDM, NV  
Sec. 016 S2, S2N2.

NV-13-12-045 T.0040N, R.0590E, 21 MDM, NV  
Sec. 010 E2;  
Sec. 011 PROT ALL;  
Sec. 012 PROT ALL.

NV-13-12-046 T.0040N, R.0590E, 21 MDM, NV  
Sec. 013 PROT ALL;  
Sec. 014 PROT ALL;  
Sec. 015 S2, NE.

NV-13-12-047 T.0040N, R.0590E, 21 MDM, NV  
Sec. 017 SE, E2SW, S2NE;  
Sec. 020 E2, E2NW.

NV-13-12-048 T.0040N, R.0590E, 21 MDM, NV  
Sec. 021 PROT ALL;  
Sec. 027 PROT ALL;  
Sec. 028 PROT ALL.

NV-13-12-049 T.0040N, R.0590E, 21 MDM, NV  
Sec. 022 PROT ALL;  
Sec. 023 PROT ALL;  
Sec. 024 PROT ALL.

NV-13-12-050 T.0040N, R.0590E, 21 MDM, NV  
Sec. 025 PROT ALL;  
Sec. 026 PROT ALL.

NV-13-12-051 T.0040N, R.0590E, 21 MDM, NV  
Sec. 029 NE, E2SE.

NV-13-12-052 T.0040N, R.0590E, 21 MDM, NV  
Sec. 033 PROT ALL;  
Sec. 034 PROT ALL.

NV-13-12-053	T.0040N, R.0590E, 21 MDM, NV Sec. 035 PROT ALL; Sec. 036 PROT ALL.
NV-13-12-054	T.0050N, R.0590E, 21 MDM, NV Sec. 001 SE.
NV-13-12-055	T.0050N, R.0590E, 21 MDM, NV Sec. 004 W2, W2E2; Sec. 005 PROT ALL; Sec. 008 PROT ALL; Sec. 009 NW, W2NE, N2SW, SWSW.
NV-13-12-056	T.0050N, R.0590E, 21 MDM, NV Sec. 006 PROT ALL; Sec. 007 PROT ALL.
NV-13-12-057	T.0050N, R.0590E, 21 MDM, NV Sec. 012 SE, E2NE, SWNE, E2SW; Sec. 013 E2, E2NW.
NV-13-12-058	T.0050N, R.0590E, 21 MDM, NV Sec. 024 E2.
NV-13-12-060	T.0050N, R.0590E, 21 MDM, NV Sec. 017 NW, N2SW, N2NE; Sec. 018 N2, SW, N2SE.
NV-13-12-061	T.0050N, R.0590E, 21 MDM, NV Sec. 025 E2, E2W2, W2SW; Sec. 026 SESE.
NV-13-12-064	T.0050N, R.0590E, 21 MDM, NV Sec. 035 PROT ALL; Sec. 036 PROT ALL.
NV-13-12-065	T.0060N, R.0590E, 21 MDM, NV Sec. 019 LOTS 1-4; Sec. 019 E2, E2W2; Sec. 020 W2, W2E2.
NV-13-12-068	T.0060N, R.0590E, 21 MDM, NV Sec. 029 W2, SE, W2NE; Sec. 032 ALL; Sec. 033 W2W2.

NV-13-12-069 T.0060N, R.0590E, 21 MDM, NV  
Sec. 030 LOTS 1-4;  
Sec. 030 E2, E2W2;  
Sec. 031 LOTS 1-4;  
Sec. 031 E2, E2W2.

NV-13-12-081 T.0030N, R.0600E, 21 MDM, NV  
Sec. 005 N2N2, SENE;  
Sec. 006 N2N2.

NV-13-12-083 T.0040N, R.0600E, 21 MDM, NV  
Sec. 005 LOTS 3,4;  
Sec. 005 S2NW,SW;  
Sec. 006 LOTS 1-7;  
Sec. 006 S2NE,SE,SW,E2SW,SE.

NV-13-12-084 T.0040N, R.0600E, 21 MDM, NV  
Sec. 007 LOTS 1-4;  
Sec. 007 E2, E2W2;  
Sec. 017 W2W2;  
Sec. 018 LOTS 1-4;  
Sec. 018 E2, E2W2.

NV-13-12-085 T.0040N, R.0600E, 21 MDM, NV  
Sec. 019 LOTS 1-4;  
Sec. 019 E2, E2W2;  
Sec. 020 W2.

NV-13-12-086 T.0040N, R.0600E, 21 MDM, NV  
Sec. 029 W2, SE, W2NE;  
Sec. 030 LOTS 1-4;  
Sec. 030 E2, E2W2  
Sec. 031 LOTS 1-4;  
Sec. 031 E2, E2W2;  
Sec. 032 ALL.

NV-13-12-087 T.0050N, R.0600E, 21 MDM, NV  
Sec. 004 W2SW;  
Sec. 005 LOTS 1-4;  
Sec. 005 S2N2, S2;  
Sec. 006 LOTS 1-3;  
Sec. 006 S2, S2,NW, S2NE.

NV-13-12-088 T.0050N, R.0600E, 21 MDM, NV  
Sec. 007 LOTS 1-4;  
Sec. 007 E2, E2W2;  
Sec. 008 ALL;  
Sec. 009 E2NW.

NV-13-12-089 T.0050N, R.0600E, 21 MDM, NV  
Sec. 017 NW, W2NE, W2SW;  
Sec. 018 LOTS 1-4;  
Sec. 018 E2, E2W2;  
Sec. 019 LOTS 1-4;  
Sec. 019 E2W2, W2SE, NE.

NV-13-12-090 T.0050N, R.0600E, 21 MDM, NV  
Sec. 020 NWNW;  
Sec. 032 SW.

NV-13-12-091 T.0050N, R.0600E, 21 MDM, NV  
Sec. 030 LOTS 1-4;  
Sec. 030 E2W2, W2E2;  
Sec. 031 LOTS 1-4;  
Sec. 031 E2, E2W2.

NV-13-12-094 T.0060N, R.0600E, 21 MDM, NV  
Sec. 031 S2SE;  
Sec. 032 S2SW.

NV-13-12-095 T.0080N, R.0600E, 21 MDM, NV  
Sec. 001 PROT ALL;  
Sec. 002 PROT ALL;  
Sec. 003 PROT ALL.

NV-13-12-096 T.0080N, R.0600E, 21 MDM, NV  
Sec. 004 PROT ALL;  
Sec. 009 PROT ALL;  
Sec. 016 PROT ALL.

NV-13-12-097 T.0080N, R.0600E, 21 MDM, NV  
Sec. 005 PROT ALL;  
Sec. 006 NE, E2NW, E2SE.

NV-13-12-098 T.0080N, R.0600E, 21 MDM, NV  
Sec. 007 SESE;  
Sec. 008 PROT ALL;  
Sec. 017 PROT ALL.

NV-13-12-099 T.0080N, R.0600E, 21 MDM, NV  
Sec. 010 PROT ALL;  
Sec. 014 PROT ALL;  
Sec. 015 PROT ALL.

NV-13-12-100 T.0080N, R.0600E, 21 MDM, NV  
Sec. 011 PROT ALL;  
Sec. 012 PROT ALL;  
Sec. 013 PROT ALL.

NV-13-12-101 T.0080N, R.0600E, 21 MDM, NV  
Sec. 018 PROT ALL;  
Sec. 019 PROT ALL;  
Sec. 020 PROT ALL.

NV-13-12-102 T.0080N, R.0600E, 21 MDM, NV  
Sec. 021 PROT ALL;  
Sec. 022 N2, W2SW;  
Sec. 023 N2, SE, N2SW, SESW;  
Sec. 024 W2, W2E2, NENE.

NV-13-12-104 T.0080N, R.0600E, 21 MDM, NV  
Sec. 028 W2, W2E2, NENE;  
Sec. 032 PROT ALL;  
Sec. 033 NW, NWSW.

NV-13-12-105 T.0080N, R.0600E, 21 MDM, NV  
Sec. 029 PROT ALL;  
Sec. 030 E2;  
Sec. 031 E2.

NV-13-12-110 T.0090N, R.0600E, 21 MDM, NV  
Sec. 021 SE, S2SW;  
Sec. 022 S2, S2N2;  
Sec. 023 S2.

NV-13-12-111 T.0090N, R.0600E, 21 MDM, NV  
Sec. 024 SWSW;  
Sec. 025 W2, W2SE;  
Sec. 036 W2, SE, W2NE.

NV-13-12-112 T.0090N, R.0600E, 21 MDM, NV  
Sec. 026 PROT ALL;  
Sec. 027 PROT ALL;  
Sec. 035 PROT ALL;  
Sec. 036 PROT ALL.

NV-13-12-113 T.0090N, R.0600E, 21 MDM, NV  
Sec. 028 PROT ALL;  
Sec. 032 PROT ALL;  
Sec. 033 PROT ALL.

NV-13-12-114 T.0090N, R.0600E, 21 MDM, NV  
Sec. 029 S2, NE, S2NW;  
Sec. 030 SE;  
Sec. 031 E2.

NV-13-12-160 T.0200N, R.0620E, 21 MDM, NV  
Sec. 025 PROT SESE EXCL ME PATENTS;  
Sec. 036 PROT E2NE, SE EXCL ME PATENTS.

NV-13-12-213 T.0240N, R.0680E, 21 MDM, NV  
Sec. 001 PROT NE.

## LEASE TIMING STIPULATION

### **Resource: Big Game Calving/Fawning/Kidding/Lambing Grounds**

**Stipulation:** Timing Limitation. No surface activity would be allowed within big game calving/fawning/kidding/lambing grounds from April 15 through June 30.

**Objective:** To protect elk, mule deer, pronghorn antelope, and Rocky Mountain bighorn sheep from disturbance during calving, fawning, kidding, and lambing to maintain wildlife populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting big game calving, fawning, kidding, and lambing. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife determines that the entire leasehold no longer contains big game calving/fawning/kidding/lambing grounds.

#### Parcels

#### Description of Lands

NV-13-12-079

T.0260N, R.0590E, 21 MDM, NV  
Sec. 022 ALL;  
Sec. 023 ALL;  
Sec. 024 ALL.

NV-13-12-080

T.0260N, R.0590E, 21 MDM, NV  
Sec. 033 NENE;  
Sec. 034 N2, N2NE;  
Sec. 035 E2, NW, N2SW;  
Sec. 036 W2, W2NE.

## LEASE TIMING STIPULATION

### **Resource: Raptor Nest Sites**

**Stipulation:** Timing Limitation. No surface activity would be allowed from May 1 through July 15 within 0.5 mile of a raptor nest site which has been active within the past five years.

**Objective:** To protect raptor nesting activities to maintain existing populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting raptor nesting activity. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife determines that the entire leasehold no longer contains raptor nest sites.

#### Parcels

#### Description of Lands

NV-13-12-143	T.0090N, R.0610E, 21 MDM, NV Sec. 036 ALL.
NV-13-12-199	T.0240N, R.0650E, 21 MDM, NV Sec. 008 NENW, S2NW, SW;
NV-13-12-213	T.0240N, R.0680E, 21 MDM, NV Sec. 001 PROT N2NE.
NV-13-12-215	T.0240N, R.0680E, 21 MDM, NV Sec. 020 PROT W2.
NV-13-12-216	T.0240N, R.0680E, 21 MDM, NV Sec. 029 PROT NW.

## LEASE TIMING STIPULATION

### **Resource: Sage-Grouse Nesting Habitat Associated with Leks**

**Stipulation:** Timing Limitation. No surface activity would be allowed within two miles of a Greater Sage-Grouse lek from March 1 through May 15 (June 15).

**Objective:** To protect Sage-Grouse nesting activities associated with leks to maintain Sage-Grouse populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting Sage-Grouse nesting activity. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife determines that the entire leasehold no longer contains nesting habitat for Sage-Grouse.

#### Parcels

#### Description of Lands

NV-13-12-027	T.0030N, R.0580E, 21 MDM, NV Sec. 007 SWSW; Sec. 018 W2.
NV-13-12-119	T.0060N, R.0610E, 21 MDM, NV Sec. 005 LOTS LOTS 3,4; Sec. 005 S2NW, SW, W2SE, SESE.
NV-13-12-149	T.0200N, R.0610E, 21 MDM, NV Sec. 031 PROT SENW,SW,W2SE,SESE.
NV-13-12-150	T.0250N, R.0610E, 21 MDM, NV Sec. 008 SW,W2SE.
NV-13-12-157	T.0200N, R.0620E, 21 MDM, NV Sec. 003 PROT NENE, W2NE,NW,N2SW EXCL ME PATENT.
NV-13-12-160	T.0200N, R.0620E, 21 MDM, NV Sec. 025 PROT SE EXCL ME PATENTS; Sec. 036 PROT NE, E2NW, SENW, SW, SE EXCL ME PATENTS;

NV-13-12-164 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 002 NWSE; S2SE;  
 Sec. 011 E2;  
 Sec. 012 W2NW, SW.

NV-13-12-165 T.0220N, R.0630E, 21 MDM, NV  
 Sec. 013 W2;  
 Sec. 014 NE, E2SE;  
 Sec. 023 E2NE, SE;  
 Sec. 024 N2NW, SWNW, NWSW.

NV-13-12-170 T.0240N, R.0630E, 21 MDM, NV  
 Sec. 014 SE;  
 Sec. 023 SWNE, NENW, S2NW, SW, W2SE  
 Sec. 026 W2.

NV-13-12-171 T.0240N, R.0630E, 21 MDM, NV  
 Sec. 027 E2, E2SW;  
 Sec. 034 N2, NESE, W2SE;  
 Sec. 035 NW, NWSW.

NV-13-12-172 T.0210N, R.0640E, 21 MDM, NV  
 Sec. 005 LOT 1;  
 Sec. 005 SENE.

NV-13-12-177 T.0220N, R.0640E, 21 MDM, NV  
 Sec. 016 NE, SENW, NESW, S2SW;

NV-13-12-179 T.0220N, R.0640E, 21 MDM, NV  
 Sec. 028 W2NE, NW;  
 Sec. 029 E2SE;  
 Sec. 032 NE, N2SE, SESE.

NV-13-12-186 T.0240N, R.0640E, 21 MDM, NV  
 Sec. 005 LOTS 5, 9;  
 Sec. 006 LOTS 8-11, 15-18;  
 Sec. 007 LOTS 9, 11, 20, 22, 24.

NV-13-12-195 T.0250N, R.0640E, 21 MDM, NV  
 Sec. 020 SWSWSE;

NV-13-12-197 T.0250N, R.0640E, 21 MDM, NV  
 Sec. 032 W2NE, SWNW, W2SE, NESWSW,  
 SWSESW, NWSE.

NV-13-12-201 T.0250N, R.0650E, 21 MDM, NV  
Sec. 003 LOTS 1-4;  
Sec. 003 S2;  
Sec. 010 NE,E2NW, NWNW, NESW,  
Sec. 010 N2NWSE,N2SWNWSE,SESWNWSE,SWSE.

NV-13-12-206 T.0260N, R.0650E, 21 MDM, NV  
Sec. 026 SENE, NESW, S2SW, SE;  
Sec. 035 E2.

NV-13-12-211 T.0230N, R.0670E, 21 MDM, NV  
Sec. 033 SW, NWSE, S2SE.

NV-13-12-212 T.0230N, R.0670E, 21 MDM, NV  
Sec. 031 SESW, NESE, S2SE;  
Sec. 032 S2.

**LEASE TIMING STIPULATION**

**Resource: Sage-Grouse Winter Range**

**Stipulation:** Timing Limitation. No surface activity would be allowed within winter range for Sage-Grouse from November 1 through March 31.

**Objective:** To protect Sage-Grouse from disturbance during the crucial winter period to maintain Sage-Grouse populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area no longer contain Sage-Grouse winter habitat. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife determines that the entire leasehold no longer contains winter range for Sage-Grouse.

**Parcels**

**Description of Lands**

NV-13-12-115

T.0170N, R.0600E, 21 MDM, NV  
Sec. 014 NESW, S2SW;  
Sec. 023 N2NW.

NV-13-12-160

T.0200N, R.0620E, 21 MDM, NV  
Sec. 036 PROT E2SE.

**LEASE – NO SURFACE OCCUPANCY STIPULATIONS**

**Resource: Threatened and Endangered, and Sensitive Species**

**Stipulation:** No ground disturbing activities would be allowed within the boundaries of areas known to contain unusually high concentrations of threatened, endangered, or BLM or State sensitive species. No surface occupancy would be allowed within the:

Ash Springs ACEC  
Baking Powder Flat ACEC  
Condor Canyon ACEC  
Highland Range ACEC  
Lower Meadow Valley Wash ACEC  
Schlesser Pincushion ACEC  
Shoshone Ponds ACEC  
Swamp Cedar ACEC  
White River Valley ACEC

**Purpose:** To protect threatened and endangered and sensitive species. Avoid BLM-approved activities that contribute to a need to list a species or its habitat as threatened and endangered.

**Exception:** None

**Modification:** None

**Waiver:** None

**Parcels**

**Description of Lands**

NV-13-12-131

T.0080N, R.0610E, 21 MDM, NV  
Sec. 001 LOTS 2,3,4;  
Sec. 001 SWNE,S2NW,SW,W2SE;  
Sec. 002 LOTS 1-4  
Sec. 002 S2N2,S2;  
Sec. 011 ALL;  
Sec. 012 W2;  
Sec. 013 N2NW;  
Sec. 014 N2N2.

NV-13-12-143

T.0090N, R.0610E, 21 MDM, NV  
Sec. 025 W2NE, NW, SW, W2SE;  
Sec. 026 ALL,  
Sec. 035 ALL,  
Sec. 036 W2NE, NW, SW, W2SE.

NV-13-12-146

T.0110N, R.0610E, 21 MDM, NV  
Sec. 027 SW.

**LEASE – NO SURFACE OCCUPANCY STIPULATIONS**

**Resource: Desert Tortoise ACEC**

**Stipulation:** No surface occupancy would be allowed within the Beaver Dam Slope ACEC or the Mormon Mesa ACEC.

**Purpose:** These areas encompass the habitat which has been determined to be critical to the survival of the desert tortoise population. The desert tortoise is a listed species under the Endangered Species Act.

**Exception:** The authorized officer may grant an exception (allow surface occupancy) upon completion of formal consultation with the U.S. Fish and Wildlife Service that yields a no-jeopardy opinion if a plan of development is submitted that does not significantly impact tortoise habitats or populations. The plan of development must demonstrate no significant impact will occur through mitigation of impacts, compensation (in accordance with BLM policy), and restoration of the land to pre-disturbance condition.

**Modification:** None

**Waiver:** None

**Parcels**

**Description of Lands**

NONE

## LEASE – NO SURFACE OCCUPANCY STIPULATIONS

### **Resource: Natural, Scenic, and Recreation Sites**

**Stipulation:** No ground disturbance activities would be allowed within the boundaries of areas that exhibit exceptional natural, scenic, or recreational values. No Surface Occupancy would be allowed within the:

- Blue Mass Scenic Area ACEC
- Cleve Creek Recreation Site
- Egan Crest Trailhead
- Garnet Hill
- Illipah Reservoir
- Kirch Wildlife Management Area
- Sacramento Pass Recreation Site
- Ward Mountain Recreation Site
- White Pine County Shooting Range

**Purpose:** To protect the public's opportunity for quality recreation experiences at those sites developed for those purposes.

To prevent user conflicts and incompatible uses in areas with high recreational values and significant amounts of recreational activity. To control the visual impacts of activities and facilities within acceptable levels.

**Exception:** None

**Modification:** None

**Waiver:** A waiver may be granted for a site if it is moved or eliminated.

### Parcels

### Description of Lands

NV-13-12-118	T.0060N, R.0610E, 21 MDM, NV Sec. 001 LOT 4; Sec. 001 SWNW; Sec. 014 NW.
NV-13-12-119	T.0060N, R.0610E, 21 MDM, NV Sec. 002 LOTS 3,4; Sec. 002 SWNW; Sec. 003 S2; Sec. 004 NESW, S2SW,SE; Sec. 005 SESE.
NV-13-12-127	T.0070N, R.0610E, 21 MDM, NV Sec. 022 E2E2; Sec. 027 E2E2; Sec. 034 E2NE,NESE.

**LEASE – NO SURFACE OCCUPANCY STIPULATIONS**

**Resource: BLM Facilities**

**Stipulation:** No surface occupancy would be allowed within the following withdrawal areas:

Caliente Field Station

Pony Springs Fire Station

**Purpose:** To protect the operation and maintenance of the BLM's facilities.

**Exception:** None

**Modification:** None

**Waiver:** None

**Parcels**

**Description of Lands**

NONE

**LEASE – NO SURFACE OCCUPANCY STIPULATIONS**

**Resource: Paleontological Sites**

**Stipulation:** No ground disturbance activities would be allowed within the boundaries of areas of known paleontological sites/locales. No surface occupancy would be allowed within the: Andies Mine Trilobite Site

**Purpose:** To preserve and protect significant vertebrate fossils and paleontological sites.

**Exception:** None

**Modification:** None

**Waiver:** None

**Parcels**

**Description of Lands**

NONE

**LEASE – NO SURFACE OCCUPANCY STIPULATIONS**

**Resource: Cultural Sites**

**Stipulation:** No ground disturbance activities would be allowed within the boundaries of cultural properties and archaeological/historic districts determined to be eligible or potentially eligible to the National Register of Historic Places. No surface occupancy would be allowed within the:

- Baker Archaeological Site ACEC
- Rock Animal Corral Archaeological Site
- Honeymoon Hill/City of Rocks ACEC
- Mount Irish ACEC
- Pahroc Rock Art ACEC
- Rose Guano Bat Cave ACEC
- Shooting Gallery ACEC
- Snake Creek Indian Burial Cave ACEC
- Sunshine Locality National Register District
- White River Archaeological District

**Purpose:** To protect significant cultural properties and archaeological districts and their settings.

**Exception:** None.

**Modification:** None.

**Waiver:** None.

**Parcels**

**Description of Lands**

NONE

## LEASE- NO SURFACE OCCUPANCY STIPULATION

### **Resource: Sage-Grouse Leks**

**Stipulation:** No surface occupancy. No surface use would be allowed within 0.25 mile of a Sage-Grouse lek.

**Objective:** To protect Sage-Grouse breeding activities and the integrity of the habitat associated with Sage-Grouse leks to maintain Sage-Grouse populations.

**Exception:** An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action would not affect breeding activity nor degrade the integrity of the habitat associated with the Sage-Grouse lek.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting the Sage-Grouse lek.

**Waiver:** The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the lek has been inactive for at least five consecutive years or the habitat has changed such that there is no likelihood the lek would become active.

### Parcels

### Description of Lands

NONE

## APPENDIX C. SECTION 1 RESOURCE PROGRAM BEST MANAGEMENT PRACTICES

### **1.1 Introduction**

Section 1 contains best management practices developed by the Ely Field Office. They have been organized by the primary resource the best management practices would benefit or protect. Each best management practice could actually be implemented by a number of resource programs within the Field Office. Between the Draft RMP/EIS and the Proposed RMP/Final EIS, certain best management practices have been incorporated into Chapter 2.0 as management actions, edited for clarity, or deleted because they are no longer appropriate. Best management practices would be implemented at the discretion of the Ely Field Office on a project-specific basis, depending on the specific characteristics of the project area and the types of disturbance being proposed. They may not be appropriate to implement in all cases. It has been assumed for impact analysis that best management practices would be implemented wherever appropriate.

### **1.2 Air Resources**

- 1.2.1 Use dust abatement techniques on unpaved, unvegetated surfaces to minimize airborne dust.
- 1.2.2 Post and enforce speed limits (e.g., 25 miles per hour) to reduce airborne fugitive dust.
- 1.2.3 Cover construction materials and stockpiled soils if they are a source of fugitive dust.
- 1.2.4 Use dust abatement techniques before and during surface clearing, excavation, or blasting activities.

### **1.3 Water Resources**

- 1.3.1 Avoid the application of fire retardant or foam within 300 feet of a stream channel or waterway, when possible, except for the protection of life and property. Aerial application and use of retardants and foams would be consistent with national policy guidelines established by the National Office of Fire and Aviation, as amended.
- 1.3.2 Fire engines that have surfactant foam mixes in tanks must be fitted with an anti-siphon (back flow protection valve) if filled directly from a stream channel.
- 1.3.3 Construct a containment barrier around all pumps and fuel containers utilized within 100 feet (30.5 meters) of a stream channel. The containment barrier would be of sufficient size to contain all fuel being stored or used on site.
- 1.3.4 Prior to use on lands administered by the Ely Field Office, all fire suppression equipment from outside the planning area utilized to extract water from lakes, streams, ponds, or spring sources (e.g., helicopter buckets, draft hoses, and screens) will be thoroughly rinsed to remove mud and debris and then disinfected to prevent the spread of invasive aquatic species. Rinsing equipment with disinfectant solution will not occur within 100 feet of natural water sources (i.e., lakes, streams, or springs). Ely suppression equipment utilized to extract water from water sources known to be contaminated with invasive aquatic species, as identified by the U.S. Fish and Wildlife Service and Nevada Department of Wildlife, also will be disinfected prior to use elsewhere on lands administered by the Ely Field Office.

- 1.3.5 Do not dump surfactant foam mixes from fire engines within 600 feet of a stream channel.
- 1.3.6 Do not conduct fire retardant mixing operations within 600 feet of a stream channel.
- 1.3.7 Remove all modifications made to impound or divert stream flow by mechanical or other means to facilitate extraction of water from a stream for fire suppression efforts when suppression efforts are completed.
- 1.3.8 When drafting or dipping water during fire operations, continuously monitor water levels at the site that water is being removed from. Do not allow water extraction to exceed the ability of the recharge inflow to maintain the water levels that exist at the time initial attack efforts began. If the water level drops below this predetermined level, all water removal would cease immediately until water levels are recharged.
- 1.3.8 When possible, do not cross or terminate fire control lines at the stream channel. Terminate control lines at the edge of the riparian zone at a location determined appropriate to meet fire suppression objectives based on fire behavior, vegetation/fuel types, and fire fighter safety.
- 1.3.10 Construct access roads and fords that cross stream channels to BLM road standards.
- 1.3.11 Do not construct new roads or mechanical fire control lines or improve existing roads within 300 feet of a stream channel unless authorized by the BLM Field Manager or Authorized Officer.
- 1.3.12 Limit stream crossings on travel routes and trails to the minimal number necessary to minimize sedimentation and compaction. The BLM Authorized Officer will determine if any impacts need to be rehabilitated by the permittee.
- 1.3.13 Conduct mixing of herbicides and rinsing of herbicide containers and spray equipment only in areas that are a safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes, or wells).
- 1.3.14 A water well may be accepted by the BLM Ely Field Office upon completion of operations. The BLM authorized officer will make the determination whether to accept the well based upon the submission of the well completion forms and relevant hydrogeologic data reports. The well must be installed by drillers licensed by the state of Nevada according to specifications in Nevada Revised Statutes Title 48, Chapter 534.

#### **1.4 Soil Resources**

- 1.4.1 Require the use of specialized low-surface impact equipment (e.g., balloon tired vehicles) or helicopters, as determined by the BLM Authorized Officer, for activities in off-road areas where it is deemed necessary to protect fragile soils and other resource values.
- 1.4.2 During periods of adverse soil moisture conditions caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought, suspend activities on existing roads that could create excessive surface rutting. When adverse conditions exist, the operator would contact the BLM Authorized Officer for an evaluation and decision based on soil types, soil moisture, slope, vegetation, and cover.
- 1.4.3 When preparing the site for reclamation, include contour furrowing, terracing, reduction of steep cut and fill slopes, and the installation of water bars, as determined appropriate for site-specific conditions.

1.4.4 Upon completion or temporary suspension of mining operations, backfill all holes and trenches and re-contour the pit to the natural slope, if possible, with pit walls greater than 3 feet in height knocked down and sloped at 3 horizontal to 1 vertical or to the original topography, whichever is less.

1.4.5 Restoration requirements include reshaping, re-contouring, and/or resurfacing with topsoil, installation of water bars, and seeding on the contour. Removal of structures such as culverts, concrete pads, cattle guards, and signs would usually be required. Fertilization and/or fencing of the disturbance may be required. Additional erosion control measures (e.g., fiber matting and barriers) to discourage road travel may be required.

## **1.5 Vegetation Resources**

1.5.1 Where seeding is required, use appropriate seed mixture and seeding techniques approved by the BLM Authorized Officer.

1.5.2 The BLM Authorized Officer will specify required special handling and recovery techniques for Joshua trees, yucca, and some cactus in the southern part of the planning area on a site-specific basis.

1.5.3 Keep removal and disturbance of vegetation to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.).

1.5.4 Generally, conduct reclamation with native seeds that are representative of the indigenous species present in the adjacent habitat. Document rationale for potential seeding with selected nonnative species. Possible exceptions would include use of nonnative species for a temporary cover crop to out-complete weeds. In all cases, ensure seed mixes are approved by the BLM Authorized Officer prior to planting.

1.5.5 Certify that all interim and final seed mixes, hay, straw, and hay/straw products are free of plant species listed on the Nevada noxious weed list.

1.5.6 An area is considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable vegetative cover has been established. Use the Nevada Guidelines for Successful Revegetation prepared by the Nevada Division of Environmental Protection, the BLM, and the U.S. Department of Agriculture Forest Service (or most current revision or replacement of this document) to determine if revegetation is successful.

1.5.7 Reclamation bond release criteria would include the following:

The perennial plant cover of the reclaimed area would equal or exceed perennial cover of selected comparison areas (normally adjacent habitat). If the adjacent habitat is severely disturbed, an ecological site description may be used as a cover standard. Cover is normally crown cover as estimated by the point intercept method. Selected cover can be determined using a method as described in Sampling Vegetation Attributes, Interagency Technical Reference, 1996, BLM/RS/ST-96/002+1730. The reclamation plan for the area project would identify the site-specific release criteria and associated statistical methods in the reclamation plan or permit.

1.5.8 Utility companies will manage vegetation in their rights-of-way for safe and reliable operation while maintaining vegetation and wildlife habitat.

1.5.9 Respread weed-free vegetation removed from the right-of-way to provide protection, nutrient recycling, and seed source.

## **1.6 Fish and Wildlife**

1.6.1 Install wildlife escape ramps in all watering troughs, including temporary water haul facilities, and open storage tanks. Pipe the overflow away from the last water trough on an open system to provide water at ground level.

1.6.2 As appropriate, mark certain trees on BLM-administered lands for protection as wildlife trees.

1.6.3 Consider seasonal distribution of large wildlife species when determining methods used to accomplish weed and insect control objectives.

1.6.4 Protect active raptor nests in undisturbed areas within 0.25 mile of areas proposed for vegetation conversion using species-specific protection measures. Inventory areas containing suitable nesting habitat for active raptor nests prior to the initiation of any project.

1.6.5 When used to pump water from any pond or stream, screen the intake end of the draft hose to prevent fish from being ingested. Screen opening size would be a maximum of 3/16 inch (4.7 millimeters).

1.6.6 Special recreation use permittees will take action to ensure that race participants and spectators do not harass wildlife.

## **1.7 Special Status Species**

1.7.1 Avoid line-of-sight views between the power poles along powerlines and Sage-Grouse leks, whenever feasible.

1.7.2 Use current science, guidelines, and methodologies (Avian Power Line Interaction Committee 1994, 1996, 2005) for all new and existing powerlines to minimize raptor and other bird electrocution and collision potential.

1.7.3 When managing weeds in areas of special status species, carefully consider the impacts of the treatment on such species. Wherever possible, hand spraying of herbicides is preferred over other methods.

1.7.4 Do not conduct noxious and invasive weed control within 0.5 mile of nesting and brood rearing areas for special status species during the nesting and brood rearing season.

1.7.5 To the greatest extent possible, survey all mine adits and shafts slated for closure for bat presence and use prior to being closed. Minimize impacts to bat roosts and bat habitat through the use of current science, guidelines, and methodologies when closing and abandoning mine adits.

1.7.6 Develop grazing systems to minimize conflicts with special status species habitat.

1.7.7 For streams currently occupied by any special status species, do not allow extraction of water from ponds or pools if stream inflow is minimal (i.e., during drought situations) and extraction of water would lower the existing pond or pool level.

1.7.8 When new spring developments are constructed on BLM lands and BLM has the authority to design the project, the source and surrounding riparian area will be fenced, the spring will be developed in a manner that leaves surface water at the source and maintains the associated riparian area, water will be provided outside the enclosure in a manner that provides drinking water for large ungulates, wild horses, and/or livestock so they are less likely to break into the enclosure.

1.7.9 Salt and mineral supplements:

- Base placement of salt and mineral supplements on site-specific assessment.
- Normally place salt and mineral supplements at least 0.5 mile away from riparian areas, sensitive sites, populations of special status plant species, cultural resource sites.
- Place salt at least 0.5 mile from any water source including troughs.
- Place salt and mineral supplements at least 1 mile from Sage-Grouse leks.

1.7.9 Water hauling:

- Place water haul sites at least 0.5 mile away from riparian areas, cultural sites, and special status species locations.
- Limit water hauling to existing roads when possible.

## **1.8 Wild Horses**

1.8.1 To protect wild horses and wildlife flag all new fences every 16 feet with white flagging that is at least 1 inch wide and has at least 12 inches hanging free from the top wire of the fence.

1.8.2 If a project involves heavy or sustained traffic, require road signs for safety and protection of wild horses and wildlife.

## **1.9 Cultural Resources**

1.9.1 Ensure that all activities associated with the undertaking, within 100 meters of the discovery, are halted and the discovery is appropriately protected, until the BLM authorized officer issues a Notice to Proceed. A Notice to Proceed may be issued by the BLM under any of the following conditions:

- Evaluation of potentially eligible resource(s) results in a determination that the resource(s) are not eligible;
- The fieldwork phase of the treatment option has been completed; and
- The BLM has accepted a summary description of the fieldwork performed and a reporting schedule for that work.

1.9.2 The operator will inform all persons associated with the project that knowingly disturbing cultural resources (historic or archaeological) or collecting artifacts is illegal.

1.9.3 The BLM may approve cross-country operations of seismic trucks and support vehicles on bare frozen ground or over sufficient snow depth (vehicle traffic does not reveal the ground) so as to prevent surface disturbance.

1.9.4 Perform viewshed reclamation when the setting of a site contributes to the significance of the property.

## **1.10 Paleontological Resources**

1.10.1 When paleontological resources of potential scientific interest are encountered (including all vertebrate fossils and deposits of petrified wood), leave them intact and immediately bring them to the attention of the BLM Authorized Officer.

### **1.11 Visual Resources**

1.11.1 On industrial facilities authorized by the Ely Field Office, utilize anti-glare light fixtures to limit light pollution.

1.11.2 During the implementation of vegetation treatments, create irregular margins around treatment areas to better maintain the existing scenic character of the landscape.

1.11.3 When feasible, bury utility lines on public land when in the viewshed of residential or community development.

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## **1.12 Travel Management and Off-highway Vehicle Use**

1.12.1 Design access roads requiring construction with cut and fill to minimize surface disturbance and take into account the character of the landform, natural contours, cut material, depth of cut, where the fill material would be deposited, resource concerns, and visual contrast. Avoid construction of access roads on steep hillsides and near watercourses where alternate routes provide adequate access.

1.12.2 Where adverse impacts or safety considerations warrant, limit or prohibit public access when authorizing specific routes to areas or sites under permit or lease.

## **1.13 Recreation**

1.13.1 Do not allow surface or underground disturbance to occur within 100 yards (horizontally or vertically) of known cave resources.

1.13.2 Where appropriate, do not allow ground disturbing activities within 100 yards of cave entrances, drainage areas, subsurface passages, and developed recreation sites. Do not dispose of waste material or chemicals in sinkholes or gates by cave entrances. If during construction activities any sinkholes or cave openings are discovered, cease construction activities and notify the BLM authorized officer.

## **1.14 Livestock Grazing**

### **1.14.1 Water troughs**

- Place troughs connected with spring developments outside of riparian and wetland habitats to reduce livestock trampling damage to wet areas.

- Control trough overflow at springs with float valves or deliver the overflow back into the native channel.

1.14.2 Based on allotment situations and circumstances associated with livestock grazing and multiple use management, implement any or all of the following appropriate management practices on winterfat dominated ecological sites.

- Develop grazing systems to control or rest grazing use on winterfat sites after March 1 or when the critical growing season begins. Allow spring grazing use during the critical growing period if a grazing rotation system that provides rest from grazing during the critical growing period at least every other year for all areas is in place. Utilization during the critical growth period should not exceed 35 percent under any circumstances.

- Place salt and supplements at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- Locate sheep bedding grounds and camps at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- Locate water haul sites at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- Construct livestock reservoirs away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- If water wells are approved to be drilled in winterfat dominated sites, strive to pipe the water at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

## **1.15 Mineral Extraction**

1.15.1 Applications for permit to drill would follow the best management practices as outlined in the BLM oil and gas Gold Book ([http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices/gold\\_book.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html)), as well as on-shore regulations, individual surface use plans, and conditions of approval that may be part of the Record of Decision for EISs or Decision Records for environmental assessments/Findings of No Significant Impacts, Documentation of NEPA Adequacy, and Categorical Exclusions prepared for site-specific projects.

1.15.2 Do not permit blasting if it would be detrimental to the significant characteristics of archeological or historical values, recreation areas, known caves, water wells, or springs.

1.15.3 Notify the BLM authorized officer within 5 days of completion of reclamation work so that timely compliance inspections can be completed.

## **1.16 Watershed Management**

1.16.1 Manage activities, uses, and authorizations on burned areas to best meet resource management objectives established for the area in specific stabilization, restoration, or activity plans. The BLM authorized officer may open areas to livestock grazing based upon those considerations.

## **1.17 Fire Management**

1.17.1 Notify valid existing land users (such as mine claimants, holders of rights-of-way, and livestock permittees) prior to implementation of prescribed fires that may affect their investments.

1.17.2 Remove vegetation, where appropriate, to protect facilities (e.g., range improvements, communication sites, and recreation sites).

1.17.3 Within the area of operation, every effort will be made to prevent, control, or suppress any fire. Firefighting equipment may be required to be on site while operations are in progress, depending on hazards inherent in the type of operation and fire hazard levels. Report uncontrolled fires immediately to the BLM Ely Field Office Manager or Authorized Officer. The BLM Fire Dispatch telephone number is (775) 289-1925 or 1-800-633-6092. After working hours, call 911 or the White Pine County Sheriff's Office at (775) 289-8801, the Lincoln County Sheriff's Office at (775) 962 5151, or the Nye County Sheriff's Office at (775) 482-8101.

## **1.18 Noxious and Invasive Weed Management**

1.18.1 Control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.

1.18.2 When maintaining unpaved roads on BLM-administered lands, avoid the unnecessary disturbance of adjacent native vegetation and the spread of weeds. Grade road shoulders or barrow ditches only when necessary to provide for adequate drainage. Minimize the width of grading operations. The BLM Authorized Officer will meet with equipment operators to ensure that they understand this objective.

## **1.19 Health and Safety**

1.19.1 Consider nozzle type, nozzle size, boom pressure, and adjuvant use and take appropriate measures for each herbicide application project to reduce the chance of chemical drift.

1.19.2 All applications of approved pesticides will be conducted only by certified pesticide applicators or by personnel under the direct supervision of a certified applicator.

1.19.3 Prior to commencing any chemical control program, and on a daily basis for the duration of the project, the certified applicator will provide a suitable safety briefing to all personnel working with or in the vicinity of the herbicide application. This briefing will include safe handling, spill prevention, cleanup, and first aid procedures.

1.19.4 Store all pesticides in areas where access can be controlled to prevent unauthorized/untrained people from gaining access to the chemicals.

1.19.5 Do not apply pesticides within 440 yards (0.25 mile) of residences without prior notification of the resident.

1.19.6 Areas treated with pesticides will be adequately posted to notify the public of the activity and of safe re-entry dates, if a public notification requirement is specified on the label of the product applied.

The public notice signs will be at least 8 1/2" x 11" in size and will contain the date of application and the date of safe re-entry.

1.19.7 The recreation permittee will post warning signs at all known mine shafts and other hazardous areas that occur within 100 feet of a race course or pit/spectator area and will verbally inform race participants of all hazards at the pre-race meeting.

1.19.8 The recreation permittee will assume liability for and cleanup of any and all releases of hazardous substances or oil (more than one quart) disposed on public land as defined in the National Oil and Hazardous Substances Contingency Plan (Title 40 Code of Federal Regulations Subpart 300). The permittee will immediately notify the BLM Authorized Officer of any and all releases of hazardous substances or oil (more than one quart) on public land.

1.19.9 Properly dispose of all tailings, dumps, and deleterious materials or substances. Take measures to isolate, control, and properly dispose of toxic and hazardous materials.

1.19.10 Remove and properly dispose of all trash, garbage, debris, and foreign matter. Maintain the disposal site and leave it in a clean and safe condition. Do not allow burning at the site.

1.19.11 Do not drain oil or lubricants onto the ground surface. Immediately clean up any spills under 25 gallons; clean up spills over 25 gallons as soon as possible and report the incident to the BLM Authorized Officer and Nevada Division of Environmental Protection.

1.19.12 The operator will work with the BLM Authorized Officer on the containment of drilling fluids and drill hole cuttings. Adequately fence, post, or cover mud and separation pits, and hazardous material storage areas.

1.19.13 Locate powder magazines at least 0.25 mile from traveled roads. Attend loaded shot holes and charges at all times. Use explosives according to applicable federal and state regulations.

1.19.14 Containerize petroleum products such as gasoline, diesel fuel, helicopter fuel, and lubricants in approved containers. Properly store hazardous materials in separate containers to prevent mixing, drainage, or accidents.

## APPENDIX D. BLM SENSITIVE SPECIES

BLM Sensitive Species (2012) that occur or have the potential to occur within the parcels, or may be affected if drilling were to occur. This list was developed by conducting a GIS review of available data.

Common Name	Scientific Name
<b>Birds</b>	
Northern Goshawk	<i>Accipiter gentilis</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Western Burrowing Owl	<i>Athene cuniculariaa hypugaea</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>
Perigrine Falcon	<i>Falco peregrinus</i>
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Black Rosy-finch	<i>Leucosticte atrata</i>
Lewis Woodpecker	<i>Melanerpes lewis</i>
Sage Thrasher	<i>Oreoscoptes montanus</i>
Brewer's Sparrow	<i>Spizella breweri</i>
<b>Mammals</b>	
pallid bat	<i>Antrozous pallidus</i>
pygmy rabbit	<i>Brachylagus idahoensis</i>
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
big brown bat	<i>Eptesicus fuscus</i>
spotted bat	<i>Euderma maculatum</i>
silver-haired bat	<i>Lasionycteris noctivagans</i>
western red bat	<i>Lasiurus blossevillii</i>
hoary bat	<i>Lasiurus cinereus</i>
dark kangaroo mouse	<i>Microdipodops megacephalus</i>
California myotis	<i>Myotis californicus</i>
western small-footed myotis	<i>Myotis ciliolabrum</i>
long-eared myotis	<i>Myotis evotis</i>
little brown myotis	<i>Myotis lucifugus</i>
fringed myotis	<i>Myotis thysanodes</i>
long-legged myotis	<i>Myotis volans</i>
Yuma myotis	<i>Myotis yumanensis</i>
western pipistrelle	<i>Pipistrellus hesperus</i>
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
<b>Fish</b>	
Newark Valley tui chub	<i>Gila bicolor newarkensis</i>
relict dace	<i>Relictus solitarius</i>
White River spinedace*	<i>Lepidomeda albivalis</i>
White River desert sucker	<i>Catostomus clarki intermedlius</i>
White River speckled dace	<i>Rhinichthys osculus ssp 7</i>
Railroad Valley springfish*	<i>Crenichthys nevadae</i>
<b>Molluscs</b>	
Pahranaagat pebblesnail	<i>Pyrgulopsis merriami</i>
Northern Steptoe pyrg	<i>Pyrgulopsis serrata</i>
Southern Steptoe pyrg	<i>Pyrgulopsis sulcata</i>

<b>Common Name</b>	<b>Scientific Name</b>
Transverse gland pyrg	<i>Pyrgulopsis cruciglans</i>
Flat-topped Steptoe pyrg	<i>Pyrgulopsis planulata</i>
grated tryonia	<i>Tryonia clathrata</i>
Sub-globose Steptoe Ranch pyrg	<i>Pyrgulopsis orbiculata</i>
Landyes pyrg	<i>Pyrgulopsis landyei</i>
<b>Insects</b>	
Steptoe Valley crescentspot	<i>Phyciodes pascoensis arenacolor</i>
White River wood nymph	<i>Cercyonis pegala pluvialis</i>
White River Valley skipper	<i>Hesperia uncas grandiosa</i>
<b>Amphibians</b>	
Northern leopard frog	<i>Rana pipiens</i>
<b>Plants</b>	
Sunnyside green gentian	<i>Fraseria gypsicola</i>
Tiehm blazingstar	<i>Mentzelia tiehmii</i>
Eastwood milkweed	<i>Asclepias eastwoodiana</i>

## APPENDIX E. ENVIRONMENTAL MITIGATION BEST PRACTICES

- The geologic suitability of the formation should be assessed including structure and stratigraphy, local and regional hydrology, the areal extent and permeability of confining zones, and the anticipated impacts of fracturing (on conductivity, porosity and permeability, hydrology, rock mechanics, etc.).
- Detailed models based on relevant geologic and engineering factors should be constructed to help determine the “zone of contact” of the induced fractures (i.e., the physical and chemical extent of fractures and displaced fluids), and consider cumulative impacts.
- Existing and abandoned wells within the zone of contact should be evaluated and repaired as necessary to prevent them from becoming pathways for injected or displaced fluids to migrate into drinking water.
- Operators and service companies should also have plans for managing cumulative water use and wastewater handling that outline key aspects such as the source, timing, and necessary volume; methods for on-site storage, maximizing recycling and non-potable water use, and mitigating environmental impacts; chemical additives to be used; produced water composition; and assessment of disposal options.
- Wells that will be fractured must be constructed, starting with careful selection of drilling fluid and proper hole cleaning and conditioning to ensure a strong bonding of cement and casing.
- Wells must isolate drinking water from brines, hydrocarbons and other contaminants and should be tested using casing pressure tests, cement compressive strength tests, casing show tests, and cement evaluation logs.
- Operators should develop comprehensive plans for groundwater monitoring before and after hydraulic fracturing takes place, including installation of appropriately spaced, dedicated groundwater monitoring wells.
- During hydraulic fracturing, actual fracture growth and placement should be measured using tiltmeters, microseismic techniques, and possibly tracers in fracturing fluid, (Mordick).
- Environmental Mitigation Best Practices under development by the Environmentally Friendly Drilling Systems Program (EFDS; [www.efdsystems.org](http://www.efdsystems.org)):
- Maximize the amount of reservoir that can be accessed from a single well pad. Consider small footprint drilling rigs and rollout roads made of heavy-weight composite fencing that hold potential to further mitigate surface disturbance from drilling rigs.
- Reduce the footprint of hydraulic fracturing through centralized frac facilities that involve offsite operations and innovative fracturing technologies, such as a novel process using minimal pumping equipment, low volumes of frac fluid, and green additives. acoustic fences to mitigate noise impacts, handheld air quality monitoring devices, membrane treatment methods for recycling flowback and produced water, and mobile field site water treatment systems. Techniques for on-site brine (produced water) treatment and analysis should be evaluated, (Burnett).

### **Other Key points include:**

- Both radioactive and chemical tracers can be used for tracking the placement of frac fluids in the sub-surface. Typically, the proppant (sand) is tagged with the tracer and then injected, and a tool is put down the wellbore to determine in which perforation the tracer was placed.
- Research institutions are working on the development of field-portable dissolved methane detectors/sensors.

- Casing and cementing in the intermediate zone between the base of the surface casing and top of production casing of the wellbore are important because stray gas migration may pose greater risk to groundwater than frac fluids. Currently, only the State of New York requires cementing in that zone.
- Biocides are added to frac fluid stream in the same manner as sand is and must be handled safely.
- Incorporation of a health impacts assessment into the pre-planning stage of drilling and fracturing, conducted in collaboration with local organizations and institutions, may be a useful step toward addressing public health concerns.
- Pre-planning and site characterization should include identification of abandoned wells that could be within range of a planned frac job to prevent fluid migration into potentially degraded wells that could serve as conduits to a groundwater aquifer.
- Flowback and produced waters have high salinity concentrations, but not typically so high that they cannot be treated sufficiently to be re-used for fracturing.

Other:

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- Known water bearing zones in the project area are generally protected by drilling requirements and reviewed as part of the drilling plan that is contained in the Application for Permit to Drill (APD).
- Stormwater Pollution Prevention and Control Plans are required by the State of Nevada before any surface disturbance associated with construction actions greater than 1 acre in size. On a case-by-case basis, the Authorized Officer may require additional erosion control measures to reduce the volume of surface runoff and subsequent sediment transport. The operator would stockpile the topsoil from the surface of well pads which would be used for surface reclamation of the well pads. Reserve pits would be re-contoured and reseeded as described in the APD. Upon abandonment of the wells and/or when access roads are no longer in service, the Authorized Officer would issue instructions and/or orders for surface reclamation/restoration of the disturbed areas as described in the APD and implement interim reclamation measures.
- Mitigations normally restrict surface disturbing activities within 500 feet of surface water and/or riparian areas to protect the water and riparian resources and within ¼ mile of occupied residences.
- All depletions would require consultation with USFWS and all water discharged would require State permits under the National Pollution Discharge Elimination System (NPDES) and approval by the BLM at the APD stage; potential impacts would be mitigated at that time.
- The use of practices such as but not limited to closed-loop mud systems or plastic-lined reserve pits would reduce or eliminate seepage of drilling fluid into the soil and eventually reaching groundwater.
- The casing and cementing requirements imposed on proposed wells would reduce or eliminate the potential for groundwater contamination from drilling muds and other surface sources.
- Interim reclamation of the portion of the well pad not needed for production operation, re-vegetating the portion of the pad that is needed for production operations, as well as re-vegetating road ditches would reduce long-term impact.

Additional mitigation could include, but would not be limited to:

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- the use of recycled water for drilling below the surface casing zone, installation of backflow preventers, drilling oil and gas related water wells to aquifers below those providing residential water and then cementing from the nearest shale/clay zone below the deepest culinary/livestock water well in the vicinity back to the surface, and
- insuring that access to water wells is only provided to authorized users.
- Using the lowest quality water necessary and cementing the water well to surface will reduce the chances that oil and gas related water wells are not drawing from the aquifers providing the residential water or allowing the mixing of lower quality waters with potable sources.
- Additionally, drilling with oil-base mud or in areas where shallow groundwater may be encountered, the use of closed-loop or semi-closed loop drilling systems may be required.
- Floodplains would be managed in accordance with Executive Order 11988.

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And Bibliography Sources