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December 2011 Competitive Oil and Gas Lease Sale for the Battle Mountain District, Tonopah Field Office, Nevada

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BLM

Tonopah Field Office

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1.0 Introduction

It is the policy of the Bureau of Land Management (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 BLM Nevada State Office (NSO) conducts competitive lease sales for oil and gas lease parcels in the Battle Mountain District. The BLM 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 BLM State Office sends a list of nominated parcels to each field office where the parcels are located. The Field Office staff then review the parcels to determine:

- If they are in areas open to 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 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.

This Environmental Assessment (EA) documents the review of 155 Tonopah Field Office administered parcels nominated in the December 2011 Competitive Oil and Gas Lease Sale (Figure 1). A total of 155 parcels were originally proposed for the lease sale; three parcels are partially removed from the December lease sale due to a no surface occupancy mineral leasing restriction. A total of 19 parcels are deferred; sixteen because of sage grouse resource conflicts and 3 due to conflicts with military operations on a Public Land Order issued to United States Air Force.

An assessment of environmental impacts that might result from an oil and gas lease sale was conducted by resource specialists who relied on historical data and personal knowledge of the

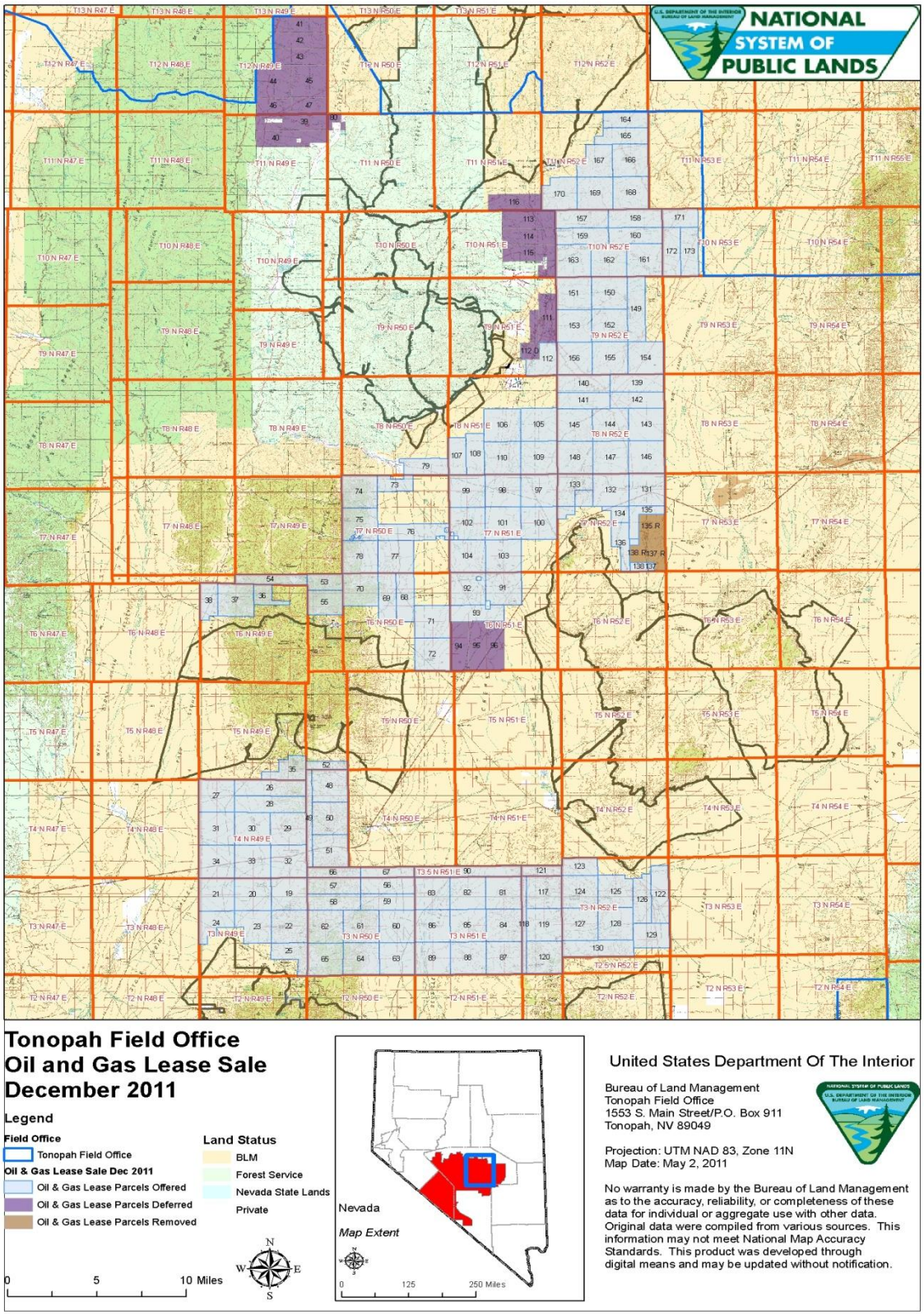

Figure 1. Location map of the December 2011 oil and gas lease sale.

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.)

At the time of this review, it is not known whether 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.

The assessment area is 564,000 acres in the Hot Creek Valley, eastern Stone Cabin, and northern Reveille Valleys located west of Railroad Valley in the northeast section of Tonopah Field Office (TFO) resource area.

2.0 Purpose and Need

The purpose of the action is to offer all or part of the 155 nominated parcels for competitive oil and gas leasing in the December 2011 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 BLM Tonopah Field Office's implementation of the requirements in Executive Order 13212 (2001) and the National Energy Policy Act (2005).

2.1 Land Use Plan Conformance

The proposed action is in conformance with the Tonopah RMP, approved on October 2, 1997, for the Tonopah Planning Area. The proposed action is in conformance with the RMP because it is specifically provided for in the following LUP decisions:

Page 22 of the RMP, under the heading "Fluid Minerals" subtitled "Objective": "To provide opportunity for exploration and development of fluid minerals such as oil, gas, and geothermal resources, using appropriate stipulations to allow for the preservation and enhancement of fragile and unique resources."

Page 22-23 of the RMP, under the heading "Fluid Minerals" subtitled "RMP Determinations" numbers 1-4: "The RMP designated 5,360,477 acres of BLM-administered federal land in the Tonopah Planning Area open for continued oil and gas leasing and development, subject to standard lease terms and conditions." All of the parcels nominated for leasing in the December 2011 Oil and Gas lease sale are within areas open to oil and gas leasing.

New information concerning wildlife issues has been developed by the Nevada Department of Wildlife (NDOW) since the Tonopah Resource Management Plan and Record of Decision (RMP) was implemented. A new RMP revision is underway that will include the new data and may extend new sage grouse, mule deer, and bighorn sheep habitat stipulations onto a few of the December 2011 parcels. A new IM providing guidance on sage grouse management and conservation is currently being developed and should be available for the next lease sale.

On June 8, 2011, several members of TFO resource staff conducted a field tour of the parcels listed for lease in the December 2011 lease sale. An inventory of the land was conducted to identify Lands with Wilderness Characteristics (LWC) according to BLM Manual 6301, Wilderness Characteristics Inventory. No LWC was identified within the acreage proposed for sale in December 2011 oil and gas lease sale.]

2.2 Relationship to Statutes, Regulations, Policy, Plans and Other Environmental Analysis

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

Federal regulations and policies require the BLM to make 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 species becoming listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS).

The BLM must adhere to Section 106 of National Historic Preservation Act (NHPA). The BLM also must comply with 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.*

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. If requested by tribes, Native American consultation is conducted for each lease sale. If Traditional Cultural Properties (TCP) or heritage-related issues are identified, such parcels are withheld 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 held back again. If no response to the second letter is received, the parcels may 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.

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.

This area was analyzed previously through the Final Regional Environmental Analysis on Oil and Gas Leasing in the Battle Mountain District Environmental Assessment (EA) (June 23, 1976). The EA is available at the Tonopah Field Office for review.

An area to the north of the proposed action was analyzed for oil and gas leasing by the Mount Lewis Field office (BLM, 2006). This environmental assessment is consistent with that

document (Oil and Gas Leasing within Portions of the Shoshone-Eureka Planning Area, Battle Mountain District, Bureau of Land Management, Environmental Assessment NV063-EA06-092, October 2006).

2.3 Scoping and Public Involvement

Native American consultation letters for the December 2011 Lease Sale were sent May 11, 2011. On June 6, 2011, resource specialists met with a representative of the Duckwater Shoshone Tribe in Hot Creek Valley. Lease parcels of interest to the tribes were visited on that day. Comments were received from the Duckwater Shoshone tribe on July 1, 2011. Some of the parcels important for the tribes had already been identified due to sage grouse resource conflicts and will be deferred from the December 2011 lease sale.

Nevada Department of Wildlife was informed (NDOW) of the December 2011 lease sale on May 6, 2011. A response letter was received from NDOW on June 28, 2011. Resource conflicts identified by NDOW are considered in this EA.

3.0 Description Of The Proposed Action and Alternatives

A total of 155 lease parcels were originally nominated and proposed for inclusion in the December 2011 Competitive Oil and Gas Lease Sale. During internal review of the current Tonopah RMP (1997), the interdisciplinary staff determined that the Proposed Action included four parcels that were wholly or partially located in no surface occupancy areas due to mineral leasing restrictions. The BLM will remove parts of three of parcels due to inaccessibility of drilling from the periphery of the parcels. Only a portion of the fourth parcel has a no surface occupancy stipulation, therefore this parcel is wholly included in the lease sale. The following 3 parcels will be partially removed from the December lease sale:

NV-11-12-135, T. 7 N., R 52 E., Section 13, S½; Section 14, SE¼, Section 24; Section 23, E½ will be removed from competitive lease sale due to mineral leasing restrictions, no surface occupancy in the Lunar Crater Backcountry Byway, and inaccessibility of exploration drilling from the outside periphery of the parcel.

The new parcel description includes T. 7 N., R. 52 E., Section 13, N½; Section 14, N½ and SW¼; Section 23, W½.

NV-11-12-137, T. 7 N., R. 52 E., Section 36, N½ and SE¼, and Section 25 will be removed from competitive lease sale due to mineral leasing restrictions, no surface occupancy in the Lunar Crater Backcountry Byway, and inaccessibility of exploration drilling from the outside periphery of the parcel.

The new parcel description includes T. 7 N., R. 52 E., Section 36, SW¼.

NV-11-12-138, T. 7 N., R. 52 E., Section 26, NE½ and S½; Section 35, N½ will be removed from competitive lease sale due to mineral leasing restrictions, no surface occupancy in the Lunar Crater Backcountry Byway, and inaccessibility of exploration drilling from the outside periphery of the parcel.

The new parcel description includes T. 7 N., R. 52 E., Section 26, NW¼; and Section 35, S½.

The following parcels are wholly or partially deferred based on current information regarding sage grouse core breeding habitat and emerging BLM sage grouse guidance:

NV-11-12-039
NV-11-12-040
NV-11-12-041
NV-11-12-042
NV-11-12-043
NV-11-12-044
NV-11-12-045
NV-11-12-046
NV-11-12-047
NV-11-12-080
NV-11-12-111
NV-11-12-112, section 26 only;

NV-11-12-113
NV-11-12-114
NV-11-12-115
NV-11-12-116

These parcels should be deferred until the new BLM guidance is finalized.

Additionally, three parcels are deferred because they are located on a land withdrawal that was issued to the United States Air Force by the Public Land Orders (PLO) 7634. The parcels are deferred because development of the parcels would interfere with the military operations and the adjacent landing strip. The deferred parcels are:

NV-11-12-094
NV-11-12-095
NV-11-12-096

3.1 Proposed Action

The Proposed Action is to recommend to the State Director that the BLM offer for competitive oil and gas leasing 136 parcels of federal minerals covering approximately 301,774.88 acres administered by the TFO. A total of 155 parcels were nominated of which 3 are partial parcels due to a no surface occupancy mineral leasing restriction. A total of 16 parcels are deferred wholly or partially due to sage grouse resource conflicts, and 3 parcels are deferred due to location conflict with military operation on withdrawal land issued to the United States Air Force. 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 the 136 parcels to address site specific concerns or new information not identified in the land use planning process. Parcel numbers, acreages, and locations of parcels are listed in Appendix A.

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.

The 136 parcels 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:

Arch Zone 7	Archeological Stipulation
NV-060-NA1	Native American Consultation required
NSO-065-06	Timing Limitation Stipulation (Sage Grouse Winter Habitat)
NV-065-13	Timing Limitation Stipulation (Bighorn Sheep Lambing)
NV-065-08	Timing Limitation Stipulation (Mule Deer Crucial Winter Habitat)
NV-065-24	Migratory Birds Nesting Season Restriction

NV-065-21 Off Highway Vehicle Restriction Stipulation
NSO-065-01 No Surface Occupancy (Jumbled Rock Petroglyphs)
NV-065-27 Threatened, Endangered, and Special Status Species (Golden Eagle)
NSO-065-3 No Surface Occupancy (Lunar Crater Special Recreation Management Area)
NV-065-28 Timing Limitation Stipulation (Raptor Nest Sites)

No additional mitigation measures are necessary at this time; however, if parcels are developed in the future, site specific mitigation measures and Best Management Practices (BMPs) would be attached as Condition of Approval (COA) for each proposed activity which would be analyzed under their own site specific analysis.

3.2 No Action Alternative

The BLM NEPA Handbook (H-1790-1) states that for EAs on externally initiated proposed actions, the No Action Alternative generally means that the proposed action would not take place. 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 155 lease parcels from the December 2011 lease sale. Surface management would remain the same and ongoing oil and gas development would continue on surrounding leased federal, private, and state lands.

3.3 Alternatives Considered but Eliminated from Further Analysis

The original parcel list sent to the field office included 155 parcels of federal minerals covering 341,128.65 acres. Review of the Tonopah Resource Management Plan and new information discussed in Section 3.0, have reduced the total acreage to 301,774.80 acres. The interdisciplinary staff determined that this list included 3 parcels that were partially located in no surface occupancy areas that are subject to mineral leasing restrictions that could not be reached for exploration drilling from the periphery of the parcels. Additionally, 16 parcels were wholly or partially deferred due to sage grouse restrictions and 3 parcels were deferred due to interference with military operations on withdrawn land. Standard terms and conditions as well as special stipulations listed in the RMP would apply to those parts of these parcels offered for sale.

The leasing of all 155 parcels as an Alternative was considered but eliminated from further analysis in this environmental assessment as it does not meet the purpose and need and would not be reasonable considering the no surface occupancy limitations outlined in the RMP (1997), interference with military operations, and in consideration of the new NDOW sage grouse information.

3.4 Reasonably Foreseeable Development Scenario

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 environmental analysis at the exploration and development stages in order to comply with NEPA.

The Proposed Action does not include exploration, development, production, or final reclamation of oil and gas resources; however, authorization of oil and gas leasing does convey a right to subsequent exploration and production activities. These later activities that are associated with oil and gas leasing would be analyzed as part of a site specific NEPA analysis when and if an Application for Permit to Drill (APD) were received.

3.4.1. General Assumptions for the Reasonably Foreseeable Development Scenario

The RFD provides the basis for the analysis of the environmental consequences 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.

3.4.2 Geology of Oil and Gas in Tonopah Field Office Administrative Area

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 results in assessment area being having some potential 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 a 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 and created 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.

3.4.3 History of Oil and Gas Exploration in the Tonopah Administrative Area

The assessment area includes Hot Creek Valley, eastern Stone Cabin, and northern Reveille Valley. Over the past 60 years, only seven permits have been issued for oil and gas drilling in

the assessment area. Four out of seven wells permitted were drilled with discouraging results. The wells were plugged and abandoned, two with minor shows of hydrocarbons. Because of the low exploration activity in the assessment area, a projection of a Reasonably Foreseeable Development Scenario is difficult to achieve. However, because the assessment area is located next to Railroad Valley with possibly similar hydrocarbon environment as in the assessment area, it is reasonable to assume that a RFD scenario can be projected using Railroad Valley hydrocarbon exploration activity as a model.

Railroad Valley is the predominate area of oil and gas production in Nevada. The basin is approximately 80 miles long and up to 20 miles wide. Most of Nevada's oil production (approximately 553,000 barrels during 2002) comes from several small oil fields in Railroad Valley, including Eagle Springs, Trap Spring, and Grant Canyon oil fields.

In 1954, Shell Oil Co. drilled and completed the Eagle Springs No. 1-35 well in Railroad Valley, Nye County; this well became the first commercial oil producer in Nevada. The Eagle Springs Field included 14 wells with average production of nearly 20,000 barrels of oil per well per year by 1968. In 1985, ten wells still produced in the field; two wells made 18,000 barrels of oil and the rest averaged 2,800 barrels for the year. Most of the Eagle Springs Field wells were shut-in (not produced) for most of 1986 because of low crude oil prices. Initial estimates of recoverable reserves for the field were 4 million barrels of oil; by the end of 1986, 3.8 million barrels had been produced.

The most prolific oil field in Nevada was discovered in 1983, when Northwest Exploration’s Grant Canyon No. 1 was drilled and completed. The Grant Canyon Field is in Railroad Valley, less than a mile east of the Bacon Flat Field. The discovery well watered out and was shut in by early 1986; at year-end, the remaining two field wells continued to produce at average rates of 2,200 and 4,100 barrels of oil per day. For a time, Grant Canyon No. 3 was the most prolific onshore oil well in the continental United States, flowing up to 4,300 barrels of oil per day. Recoverable reserve estimates are 13 million barrels of oil; 5.3 million barrels had been produced by the end of 1986.

The most recent oil discovery in Nevada was drilled in 1986: the Marathon Oil Co. Kate Spring No. 1, in Railroad Valley less than a mile south of the Eagle Springs Field. This discovery well had an initial flowing potential of 345 barrels of oil and 1,371 barrels of water per day. The well produced 1,500 barrels of oil before it was shut in because of engineering problems and low prices for crude oil.

Nevada's oil production peaked at about 4,000,000 barrels in 1990 and slipped to about 700,000 barrels in 1999. From 1953 through 1999, Nevada has produced over 46,000,000 barrels of oil of which over 20,000,000 barrels has been produced from the Grant Canyon Field and almost 13,000,000 barrels has been produced from the Trap Springs Field (Nevada Bureau of Mines and Geology, annual report).

Nevada continues to be considered a frontier state for oil exploration with 15 small oil fields in three areas of the state (Pine Valley in northern Eureka County, Railroad Valley in northeastern

Nye County, and Deadman Creek in Elko County). Since 1907, about 750 wells have been drilled. This includes about 270 wells drilled since 1986 of which about 50 were producers.

3.4.4 Trends and Projections for Oil and Gas Exploration in Nevada and Railroad Valley.

Oil production data from the Nevada Bureau of Mines and Minerals (Figure 2) show that Oil and gas production has fallen off since the early 1990s and has flattened out at less than 500,000 barrels per year. With new technologies such as horizontal drilling in plays like the Bakken in North Dakota drawing off investment and drilling equipment, it is highly unlikely that the trend would improve much over the next ten years.

However wildcatting may continue on a sporadic basis and another large discovery in Nevada could reverse this trend.

As part of the 1997 RMP, the BLM conducted a reasonable foreseeable development scenario for oil and gas (RFD). The assumptions used in the RMP are presented in the 1997 RMP document.

The RMP (1997) projected that 30 wildcat wells would be drilled through the year 2014 for a total disturbance of 296 acres. They also projected a number of additional production wells in old fields and estimated a total future surface disturbance of 131 acres. The 1997 RMP also projected the development of two additional oil fields with a total future disturbance of 944 acres.

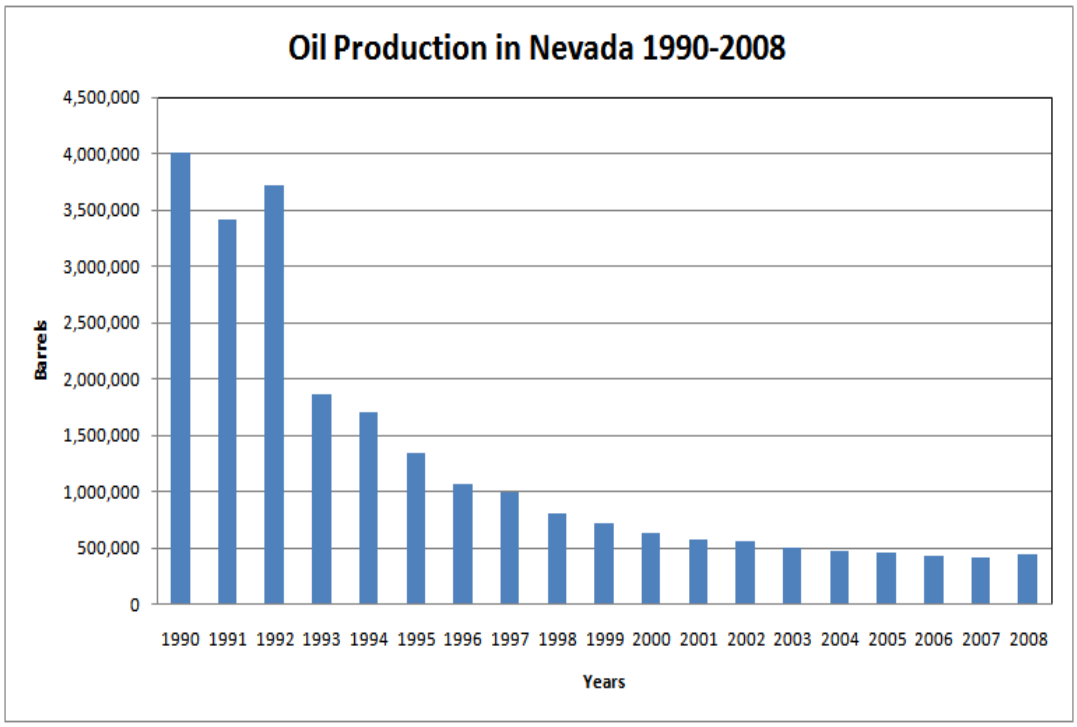

Figure 2. Oil production trends for 1990 through 2008.

Finally, the total estimated disturbance for oil and gas development in the Railroad Valley area was estimated at 1,211 acres. This calculates to about 71 acres per year of disturbance.

The RFD information in the 2006 oil and gas leasing EA in the Shoshone-Eureka planning area (October 2006), estimated 20 exploration wells and 18 production wells with associated infrastructure for a total disturbance of 627 acres. This would equate to a disturbance rate of about 63 acres per year.

These two assessments for parts of the same basin and geologic conditions provide a clear basis for estimating a very low development potential for oil and gas disturbance that might indirectly result from the December 2011 oil and gas lease sale.

Conservatively over the next ten years, 630 acres to 710 acres of disturbance could be expected to occur. Considering that the total number of acres in this lease sale is 301,774.88 acres, the total amount of disturbance based on the lease acres could be expected to be about two-tenths of a percent (0.2%). If this disturbance were compared to the entire assessment area it would even be less significant.

4.0 Affected Environment and Environmental Consequences

This section describes the resource environments that would be affected by the implementation of the Proposed Action Alternative as described in Section 3.1.

4.1 Supplemental Authorities to be considered

To comply with the NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988, BLM 1997, BLM 2008). The following table outlines the elements that must be addressed in all environmental assessments, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action or No Action Alternative affects those elements.

Table 1: Elements of the environment that may be affected by the proposed action

Element	Present Yes/No	Potentially Affected Yes/No	Rationale
Air Quality	Yes	Yes	See discussions in Sections 4.3.1. and 5.3.1.
Area of Critical Environmental Concern (ACEC)	No	No	The nominated lease parcels are not located in or near any ACECs.
Cultural Resources	Yes	Yes	See discussions in Sections 4.3.2. and 5.3.2.
Environmental Justice	No	No	Minorities and low income populations would not be disproportionately affected by the nominated lease parcels.
Floodplains	Yes	Yes	There are 100 year floodplains (FEMA Flood Zone A) in or around the nominated lease parcels. See discussion in Section 4.3.5.1.1.
Noxious Weeds and Invasive, Nonnative Species	Yes	Yes	See discussion in Sections 4.3.7. and 5.3.7.
Migratory Birds	Yes	Yes	See discussion in Sections 4.3.4.2. and 5.3.4.2.
Native American Religious Concerns	Yes	Yes	See discussions in Sections 4.3.3. and 5.3.3.
Prime or Unique Farmlands	No	No	The nominated lease parcels are not located in or near any prime or unique farmlands.
Threatened, and/or Endangered Species	No	No	There are no threatened, and/or endangered species in the assessment area.
Wastes, Hazardous or Solid	Yes	Yes	See discussion in Sections 4.3.6. and 5.3.6.
Water Quality (Surface-Ground)	Yes	Yes	See discussion in Sections 4.3.5. and 5.3.5.
Wetlands-Riparian Zones	Yes	Yes	See discussion in Sections 4.3.5. and 5.3.5.
Wild and Scenic Rivers	No	No	The nominated parcels are not located in or near any wild and scenic rivers.
Lands with Wilderness Characteristics (LWC)	No	No	A field survey by BLM staff determined that no LWC were present.
Wilderness	Yes	No	Some of the nominated lease parcels are located near the Rawhide Mt, Palisade Mesa, Moray Peak (USFS), and Antelope Range Wilderness Study Areas (WSA) but the WSAs are not affected by the nominated lease parcels.

Other resources of the human environment that have been considered for this environmental assessment (EA) are listed in the table 2. Elements that may be affected are further described in the EA. Rationale for those elements that would not be affected by the proposed action and

alternative is listed in the table below.

4.2 Other Resources

Table 2: Other resources that may be affected by the proposed action

Other Resources	Present Yes/No	Potentially Affected Yes/No	Rationale
Geology and Minerals	Yes	Yes	See discussion in Sections 4.3.8. and 5.3.8.
Soils	Yes	Yes	See discussion in Sections 4.3.9. and 5.3.9.
Vegetation	Yes	Yes	See discussion in Sections 4.3.11. and 5.3.11.
Range Resources	Yes	Yes	See discussion in Sections 4.3.10. and 5.3.10.
Recreation	Yes	Yes	See discussion in Sections 4.3.15. and 5.3.15.
Visual Resources	Yes	Yes	See discussion in Sections 4.3.14. and 5.3.14.
Socioeconomic Values	Yes	Yes	See discussion in Sections 4.3.16. and 5.3.16.
Wildlife	Yes	Yes	See discussion in Sections 4.3.4.2. and 5.3.4.1.
Special Status Species	Yes	Yes	See discussion in Sections 4.3.4.3. and 5.3.4.2.
Land & Realty	Yes	Yes	See discussion in Sections 4.3.13. and 5.3.13.
Forestry	No	No	There is no commercial harvesting in the area of the lease parcels and therefore the lease sale would not pose any significant environmental impacts.
Wild Horse and Burro	Yes	Yes	See discussion in Sections 4.3.12. and 5.3.12.

4.3 Impacts Requiring Further Analysis

The following resources have been determined, through internal scoping, to be present and potentially affected by the nominated lease parcels: air quality, cultural resources, noxious weeds, wetlands/riparian zones, minerals, soils, migratory birds, water quality/hydrology, vegetation, wild horses and burros, visual resource management, wastes (hazardous and solid), threatened and endangered species, special status species, Native American concerns, wildlife, range resources, lands and realty, recreation, and socioeconomics. These resources will be brought forth for further analysis in this Environmental Assessment.

4.3.1. Air Quality

4.3.1.1. Affected Environment:

Weather in central Nevada is characterized by low humidity with large diurnal variations in temperature. Prevailing wind patterns are generally from the west but locally follow the north-

south orientations of the mountain ranges. Occasional intense winds can cause localized dust storms which increases fugitive dust and decreases visibility.

Air quality in the assessment area has been designated as "attainment/unclassified" (which means it either meets, or is assumed to meet, the applicable federal ambient air quality standards) for all standard ("criteria") air pollutants (U.S. Environmental Protection Agency, 2007). The Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, Bureau of Air Pollution Control has been delegated responsibility by both the U. S. Environmental Protection Agency and the State of Nevada to regulate emissions of air pollutants in Nevada.

The lease parcels are not located in or adjacent to any mandatory Class I (most restrictive) federal air quality areas, U.S. Fish and Wildlife Service Class I air quality units, or American Indian Class I air quality lands.

4.3.1.2. Environmental Consequences of the Proposed Action Alternative on Air Quality:

There would be no direct impacts 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 environmental analysis at the time activities are proposed.

Potential indirect impacts would result from exploration activities where the fine-grained nature of some soils within the lease area would likely contribute to a local increase in dust particles from mineral materials mining and access road and well pad construction. The effect on air quality would be an increase in fugitive dust related to freshly disturbed ground surfaces and exhaust fumes from motorized equipment during site construction and drilling activities.

Increased traffic on the existing roads would also add to the total; however, for most drilling activities, the impacts would be minor and would occur over a two to three week period. Impacts to air quality would cease when these activities cease. The implementation of the BMPs, COAs, and mitigation measures would reduce impacts to air quality. All operations would comply with applicable air quality standards.

Since oil and gas exploration activity is expected to be minimal (see Section 3.4) impacts to air quality are not expected to be significant. The Proposed Action would not result in an exceedance of the National Ambient Air Quality Standards (NAAQS) standards.

4.3.1.3. Environmental Consequences of the No Action Alternative on Air Quality:

There would be no changes to the air quality in the assessment area as a result of the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.2. Cultural Resources

4.3.2.1. Affected Environment:

The majority of the lease parcels are located in Hot Creek Valley, an important part of the traditional territory of the Western Shoshone. The majority of lands within the proposed lease areas have not been surveyed for cultural resources. Only 2 to 5 percent of the total area of the parcels has been surveyed for cultural resources. Most of the surveys conducted within these areas have been linear surveys for roads or seismic lines. Cultural sites were identified during most of those surveys. Should exploration or development of a lease parcel be proposed, a Class III cultural survey appropriate for that project would be required if the lease parcel has not been adequately surveyed in the last 10 years.

4.3.2.2. Environmental Consequences of the Proposed Action on Cultural Resources:

There would be no direct impacts 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 environmental analysis.

Should exploration or development be authorized, cultural sites eligible for the National Register of Historic Places (NRHP) could be directly or indirectly impacted by proposed projects or increased access to previously inaccessible areas.

A good example of leasing where extensive mitigation might be required would be in the Tybo area, in the general location of parcels 36-38, 53-55, and 70. This historic mining district with its abundant cultural sites may require extensive cultural mitigation before any exploration can occur.

The preferred way to protect eligible cultural sites is to avoid them. However, avoidance of cultural sites eligible for the NRHP may not be adequate if the project results in an adverse effect to the setting and feeling of the view-shed. This may result in a loss of integrity of the site and be considered an adverse effect. When sites cannot be avoided or are indirectly impacted by a project, a Historic Preservation Treatment Plan would be developed and implemented to extract and archive data about the sites.

Environmental impacts to cultural resources are expected to be minimal. This is because activity would be minor and site specific NEPA analysis (including the incorporation of COAs, BMPs, and mitigating measures) would be conducted and appropriate mitigation measures applied to protect cultural resources.

4.3.2.3. Environmental Consequences of the No Action Alternative on Cultural Resources:

There would be no known effect to cultural under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.3. Native American Religious Concerns

4.3.3.1. Affected Environment:

Hot Creek Valley lies within the traditional territory of the Western Shoshone. Various tribes

and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and spiritual beliefs as they consider the landscape as sacred and as a provider. Sites and resources considered sacred or necessary to the continuation of tribal traditions include, but are not limited to: prehistoric and historic village sites, sources of water (hot and cold springs), pine nut gathering locations, sites of ceremony and prayer, archaeological sites, burial locations, "rock art" sites, medicinal/edible plant gathering locations, areas associated with creation stories, or any other tribally designated Traditional Cultural Property.

The majority of lands within the proposed action area have not been analyzed for cultural resources or Native American Religious Concerns. Therefore, the BLM contacted the Duckwater and Yomba Shoshone Tribes to identify areas of concern, mitigation measures, operating procedures or alternatives that may eliminate or reduce impacts to any existing tribal resources. A few locations near the lease parcels were identified as being sensitive. Other areas of concern may be identified after tribal elders are informed about the lease sales. Information sharing and an offer for consultation is on-going and further information about areas of concern to Native Americans may be shared at a later date.

4.3.3.2. Environmental Consequences of the Proposed Action on Native American Religious Concerns:

There would be no direct impacts 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 environmental analysis.

Although the act of selling oil and gas leases does not directly authorize exploration, development, or production, or any other related ground disturbance activities, there does exist the potential to impact Native American sites of a spiritual, cultural, or traditional nature. If a lease is sold, the lessee retains irrevocable rights and can foreclose the authorized officer's use of some mitigation measures. For example, according to 43 CFR § 3101.1-2, once a lease is issued to its owner, that owner has the *"right to use as much of the lease lands as is necessary to explore for, drill for, mine, extract, remove and dispose of the leased resource in the leasehold"* subject to specific nondiscretionary statutes and lease stipulations. However, impacts to cultural sites can be minimized and/or mitigated when affected Tribes provide input and actively and fully participate in the decision making process.

Environmental impacts to cultural resources are expected to be minimal because exploration activity is expected to be minor and site specific NEPA analysis (including the development of COAs, BMPs, and mitigation measures) would be applied to protect the resources.

4.3.3.3. Environmental Consequences of the No Action Alternative on Native American Religious Concerns:

There would be no effect to Native American religious concerns under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

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4.3.4. Wildlife, Special Status Species, and Migratory Birds

4.3.4.1. Wildlife

4.3.4.1.1. Affected Environment:

The proposed action area in Hot Creek, Stone Cabin, and Reveille Valleys provide habitat for a wide variety of bird, mammal, reptile, and amphibian. The RMP indicates that pronghorn antelope occur in the general area. Mule deer occupy the Hot Creek Range and The Needles and Heart Hills areas. Bighorn Sheep occur in Hot Creek, Reveille, Kawich, and the Pancake Ranges. The proposed area is habitat for several different species of raptors; including, eagles, falcon, hawks, and owls. Sage Grouse winter and summer range is identified in the Kawich Range, Hot Creek Range, the Park Range, and Little Smoky Valley, Pritchards Canyon, and Andesite Ridge.

4.3.4.1.2. Environmental Consequences of the Proposed Action on Wildlife:

There would be no direct impacts 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 environmental analysis.

For wildlife issues, the disturbance associated with production and exploration activities are essentially expected to be the same because the activities are similar. Oil and gas exploration and production activities have the potential to affect wildlife by temporary disturbance, displacement, or mortality.

The acreage of disturbance associated with oil and gas exploration and production are expected to be minimal.

The Tonopah Field Office RMP Record of Decision (BLM 1997) provides for time of year restrictions on exploration and development that are in the immediate vicinity or would cross crucial sage grouse, mule deer and bighorn sheep winter habitat and kidding areas. Stipulations have been applied to the parcels that fall within these areas of concern.

4.3.4.1.3. Environmental Consequences of the No Action Alternative on Wildlife:

There would be no change to wildlife under the No Action Alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.4.2. BLM and State of Nevada Sensitive Species and Migratory Birds

4.3.4.2.1. Affected Environment:

Sensitive Species are taxa that are not already identified as BLM Special Status Species under, federally-listed, proposed, or candidate species; or State of Nevada listed species. BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C, that is to ensure that actions authorized, funded, or carried out do not contribute to the species becoming listed. The Sensitive Species designation is normally used for

species that occur on BLM administered lands for which BLM has the capability to affect the conservation status of the species through management. The BLM Manual 6840.06 E provides factors by which a native species may be listed as "sensitive."

For a complete list of Nevada BLM Sensitive Species that have potential to occur in the assessment area see Appendix C.

Numerous migratory birds utilize the area when water is present. Any exploration activity during the migratory bird nesting season (roughly, March 1 through July 31) risks a violation of the Migratory Bird Treaty Act.

4.3.4.2.2. Environmental Consequences of the Proposed Action on Special Status Species and Migratory Birds:

There would be no direct impacts 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 environmental analysis.

Construction activities have the potential to affect migratory birds and sensitive species such as sage grouse that occur in the lease parcel areas. While little potential exists to effect the population of most bird species, ground clearing, or other habitat disturbance activities (such as road construction and drill pad construction) conducted during the migratory bird nesting season (roughly, March 1 through July 31) have the potential to destroy eggs and young of migratory birds, thereby violating the Migratory Bird Treaty Act.

Site specific COAs, BMPs, and mitigation measures have the potential of reducing the impacts of exploration and production activities on special status species and migratory birds. Site specific NEPA analysis would be implemented to avoid critical habitat for sensitive species (water sources, leks, nesting areas). Since oil and gas activities are expected to be minimal, impacts to migratory birds are expected to be insignificant.

4.3.4.2.3. Environmental Consequences of the No Action Alternative on Special Status Species and Migratory Birds:

There would be no change to special status species and migratory birds under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.5. Water Quality (Surface and Ground) and Quantity

4.3.5.1. Affected Environment:

4.3.5.1.1 Hydrographic Basins:

The proposed lease parcels are located in Hydrographic Region 10, known as the Central Region. The majority of leases are within hydrographic sub-area 156, known as Hot Creek. Additional leases are located within other hydrographic sub-areas as shown on Table 1. The following is a

summary of the Hydrographic Basins, perennial yields, and committed resources in the proposed lease area:

Sub Area	Basin Name	AREA Square Miles	Perennial Yield AF/YR	Committed Resources (01/2011)	Designated (Yes/No)
173A	Railroad Valley Southern Part	603	2,800	3,931	No
155C	Little Smoky Valley Southern Part	510	1,000	17.0	No
155B	Little Smoky Valley Central Part	57	100	2.2	No
156	Hot Creek	1036	5,500	2,623	No
149	Stone Cabin Valley	985	2,000	11,532	Yes

Table 1. Hydrographic Basins potentially affected by oil and gas lease sale.

Designated groundwater basins are basins where permitted groundwater rights approach or exceed the estimated average annual recharge and the water resources are being depleted or require additional administration. The committed resource is the total volume of permitted, certificated and vested ground-water rights which are recognized by the State Engineer and can be withdrawn in a groundwater basin in any given year.

Some lease parcels occur in or around 100 year floodplains. A detailed environmental assessment will be conducted when an APD is submitted and site specific COAs, BMPs, and mitigation measures may be included to reduce any impacts.

4.3.5.1.2. Physiography

Hot Creek Valley is an open basin extending approximately 68 miles between north-south-oriented ranges in the Basin and Range physiographic province, and varies in width from 5 to 19 miles. Mountain ranges enclosing the basin include the Hot Creek and Kawich Ranges on the west and the Pancake and Reveille Ranges on the east. Altitudes range from 9,000 feet in the Hot Creek Range to 5100 feet in Reveille Range, the low point in the valley where Hot Creek drains into Railroad Valley.

Hot Creek Valley is drained by Hot Creek which has two main tributaries, one draining the northern portion of the valley, and Reveille Wash, draining the northern half of Reveille Valley. Flows in the valley floor occur during spring runoff or in response to intense thunderstorms. Hot Creek drains southeast to Railroad Valley at State Highway 375.

Big Sand Springs Valley (Little Smoky Valley) is a closed basin extending approximately 50 miles between north-south-oriented ranges in the Basin and Range physiographic province, and varies in width from 8 to 13 miles. Big Sand Springs Valley is bounded by the Antelope, Fish Creek and Hot Creek Ranges on the west and the Pancake Range on the east. Altitudes in the

western ranges exceed 9,000 feet and those in the Pancake Range average 7,500 feet. The lowest elevation in the basin is at Lunar Lake, a playa located in the southern portion of the basin at an elevation of approximately 5,800 feet.

4.3.5.1.3. Groundwater Occurrence and Movement

Groundwater in Railroad Valley occurs in both the valley fill alluvium and underlying consolidated rocks. Most of the economically available groundwater in Railroad Valley is stored in valley fill alluvial deposits. The valley fill covers approximately 1,170 square miles in northern Railroad Valley, and approximately 400 square miles in southern Railroad Valley. Logs of oil exploration wells in central sections of Railroad Valley have depth to bedrock from 4,800 feet to 9,200 feet. The consolidated-rock aquifers consist of volcanic and carbonate rocks. Carbonates are exposed on the east side of Railroad Valley and underlie the valley fill at depth.

Groundwater in Hot Creek Valley occurs in both the valley fill alluvium and underlying volcanic rock. The shallow groundwater flow generally follows the topography, flowing down the valley axis toward the south and southeast. The direction of deep groundwater flow in the volcanic rock is generally northwest and eastward toward Railroad Valley (Boyle, Lamorey, Bassett, Pohll, Chapman 2005).

Groundwater flow in the carbonate rock province of the eastern Great Basin is conceptualized as having two components: a local component comprising flow from mountain ranges to adjacent valleys, and a regional component, where groundwater is transmitted through carbonate rocks beneath mountain ranges and valleys to discharge areas at distant springs or terminal sinks (Prudic *et al.*, 1993).

Railroad Valley is part of a regional groundwater flow system that encompasses 4,130 square miles and includes northern Railroad Valley, sub-area 173B; Hot Creek Valley, sub-area 156; Little Smoky Valley, sub-area 155C; and Little Fish Lake Valley, sub-area 150 (Bugo, 2004). Van Denburgh and Rush, 1974, calculated the water budget for Railroad Valley.

Based on the estimated inflow from Little Smoky and Hot Creek Valleys (Rush, Everett, 1966) and the number of springs, they concluded that Railroad Valley is the terminal sink for inter-valley groundwater flows by way of consolidated rocks. The groundwater in the Railroad Valley regional system discharges to extensive springs and evapotranspiration areas in the central and northern Railroad Valley.

4.3.5.1.4 Groundwater Recharge from Precipitation

Most of the precipitation occurs during either a winter rainy season or during late summer months. A high pressure condition predominates during the winter months resulting in storm systems moving from west-to-east. During the summer months, low pressure conditions predominate, resulting in southwest-to-northeast precipitation patterns. Summer precipitation events tend to produce widely scattered showers of high intensity and short duration. The average annual precipitation in the area is about 5 inches at the lower elevations and more than 20 inches in the higher elevations.

Groundwater recharge is believed to occur principally in the higher mountain ranges. The rain and snowmelt flows overland into channels, where seepage losses occur, and into fractures in the rock. Most of this water is lost. On an annual basis, as much as 90 percent of the total annual precipitation is lost through evaporation and transpiration; only an estimated 5 percent infiltrates to recharge the aquifers. Most of the recharge occurs at elevations above 6,000 feet.

4.3.5.1.5 Groundwater Quality

Groundwater generally contains less than 1,000 mg/L dissolved solids except in natural-discharge and geothermal areas. The dissolved solids in valley-fill aquifers generally are dominated by sodium, calcium, and bicarbonates. In Hot Creek Valley water from the alluvial aquifer is generally rich in calcium bicarbonates while water from the deeper volcanic aquifer is rich in sodium bicarbonates. In northern Railroad Valley calcium content generally exceeds sodium. In southern Railroad Valley, sodium dominates. Waters concentrated by evaporation are generally rich in sodium, chlorides, and sulfates.

4.3.5.2. Environmental Consequences of the Proposed Action on Water Quality (Surface and Ground) and Quantity:

There would be no direct impacts 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 environmental analysis.

Indirect impacts to water quantity from oil and gas development may occur as a result of the following: 1) the extraction and disposal of any produced ground water, and 2) any surface disturbing activities which have the potential to introduce sediment to waterways.

If exploration activities were authorized, they would likely have minimum impact because the volumes of fluid concerned would be minimal. Development phase activities would have a somewhat greater impact, primarily related to the disposal of fluids produced during reservoir testing. Impacts from these two phases would be of short duration and limited to a small area.

Oil and gas production would have minimal potential to impact water resources because produced water is re-injected into the same horizon as produced. Any fresh water aquifer is evaluated in the site specific EA and mitigated by providing protective casing as the operator drills past the aquifer.

4.3.5.3. Environmental Consequences of the No Action Alternative on Water Quality (Surface and Ground) and Quantity:

There would be no change to the water quality and hydrology under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.6. Waste, Hazardous and Solid

4.3.6.1. Affected Environment:

Oil and gas development, including exploration drilling, extraction, production facilities, pipeline transport, tanker loading and unloading, may affect the environment through production of waste fluids, air emissions, and site impacts resulting from field development and related infrastructure. Hazards that may be encountered include oil spills, produced waters, drill cuttings and fluids, and hazardous materials.

Indirect impacts would include drilling fluid or hydrocarbon spills, leakage from improperly constructed sump ponds or waste water collection systems, improperly handled brine water from drilling and accumulations of solid waste, which could impact water quality or contaminate soils. Hydrocarbon spills could include hydraulic fluid, gasoline, oil, or grease from vehicles, generators and exploration drill rigs. Brine water from exploration drilling, if improperly disposed, could raise the pH and/or salinity of existing surface waters to unacceptable levels. Generations of nonhazardous solid waste could include small amounts of trash, drill cuttings, wastewater, bentonite and cement generated during drilling operations.

4.3.6.2. Environmental Consequences of the Proposed Action on Waste, Hazardous and Solid:

There would be no direct impacts 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 environmental analysis.

4.3.6.3. Environmental Consequences of the No Action Alternative on Waste, Hazardous and Solid:

There would be no change to waste, hazardous and solid under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.7. Noxious Weeds and Invasive, Non-native Species

4.3.7.1. Affected Environment:

Approximately fifty-two species of invasive and noxious plants are known to occur in State of Nevada. Of these, four species, Russian Knapweed, Hoary Cress, Tamarisk, and perennial pepperweed are known to occur in the assessment area.

At this time, the treatment, control, and eradication of the noxious and invasive weeds is complete in the assessment area. However, the inventory process is on-going to detect small, invasive populations as they begin to move back into the assessment area. Once a population is found, the BLM coordinates with various agencies, lease operators, and land users to implement treatment to remove or control the population.

If exploration or production activities were authorized on the lease parcels, even with preventive management actions, they could result in the establishment and spread of noxious weeds on disturbed sites throughout portions of the area. Most of the noxious weeds exist mainly along the shoulders of County roads and private roads within the project area.

4.3.7.2. Environmental Consequences of the Proposed Action on Noxious Weeds and Invasive, Non-native Species:

There would be no direct impacts 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 environmental analysis.

The proposed action would authorize leasing, which in turn, through site-specific EAs would authorize roads and drill pad construction. This potential disturbance would be conducive to new infestations and have the potential to increase and spread existing populations of invasive plants, noxious weeds and pests within the assessment area. Oil and gas exploration and development may include staging, construction, maintenance, and the use of motorized vehicles for transportation of personnel and equipment, which may increase the potential for new and expanded infestations.

New, continued, and enlarged infestations of invasive plants, noxious weeds, and pests that may occur as a result of oil and gas disturbance would be minimized by implementing COA's, BMP's, and mitigation measures in a site specific EA.

4.3.7.3. Environmental Consequences of the No Action Alternative on Noxious Weeds and Invasive, Non-native Species

There would be no change in noxious weeds and invasive, nonnative species under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.8. Geology and Minerals

4.3.8.1. Affected Environment:

The majority of the nominated lease parcels are located in Hot Creek Valley with lesser numbers in the Reveille, and Stone Cabin Valleys. The valleys and the ranges separating them from the adjacent valleys are located within the Basin and Range geological province, a series of north-south oriented mountain ranges separated by broad valleys.

Hot Creek Valley is bounded on the east by the Pancake Range and by the Hot Creek Range to the west. Reveille Valley is located south of the Hot Creek Valley and is bounded by the Reveille Range to the east and the Kawich Range to the west. A variety of rocks can be found within the area including Paleozoic carbonates and clastic rocks intruded by Tertiary volcanic rocks in the Hot Creek Range and Pancake Range. The sediment accumulation in Hot Creek Valley can reach thousands of feet and is comprised of Tertiary and Pleistocene fluvial, lacustrine, and eroded volcanic rocks.

The oil fields in Railroad Valley produce from Tertiary volcanic rocks of the Garrett Ranch Group. Because of the proximity to the producing fields of Railroad Valley, the assessment area was explored for hydrocarbons looking for similar types of hydrocarbon plays. Four wells have

been drilled in Hot Creek Valley within the last 60 years. All four were plugged and abandoned. Of the four wells drilled, two were plugged with hydrocarbon shows. Hot Creek Federal No. 24-13 was plugged with minor gas shows. Needle Springs Federal 1-14 was plugged with minor showing of both oil and gas.

4.3.8.2. Environmental Consequences of the Proposed Action on Geology and Minerals:

There would be no direct impacts 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 environmental analysis.

The potential exists that oil and gas interests may overlap with those of mineral exploration. However, the majority of acres that may be used for oil and gas exploration are usually reclaimed within ten years. In most instances, oil and gas exploration and development are short term (less than one year) endeavors and hence would not appreciably affect mineral exploration and development. Agreements between oil and gas and mineral operators help to mitigate any adverse effects that might interfere with oil and gas production on a long-term basis.

Oil and gas exploration and development activities could require up to 2.5 acres in gravel pit expansion. This small acreage would not greatly increase the number of gravel pits, nor would it burden other users of gravel.

In Nevada, oil and gas wells are typically associated with elevated water temperatures (160°F), and conflicts may arise between geothermal and oil and gas exploration and/or development. These potential conflicts would be dealt with through negotiations with the operators.

4.3.8.3. Environmental Consequences of the No Action Alternative on Geology and Minerals:

There would be no change in geology and minerals under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.9. Soils

4.3.9.1. Affected Environment:

Based on soil surveys, the area of the lease parcels can be divided into five different types of landscapes with its associated soil types: playa, intermontane basin, fan piedmont, hills, and foothills.

The playa landscape contains silty, clay soils. Slopes in the area are generally 0 to 1 percent with very high runoff potential. The water erodibility is slight and wind erodibility is moderate.

The soils in the intermontane basin landscape are well drained and contain loam, sandy loam,

very gravely loamy sand, silt loam, and fine sand. Slopes in this zone range from 0 to 4 percent. The runoff is usually very low, water erodibility is slight and wind erodibility is slight to moderate.
The fan piedmont landscape can contain gravely sandy loam, gravely loam, fine sandy loam, very stony loamy sand, and very cobbly sandy loam. The slopes generally range from 2 to 8 percent with medium runoff. The soils tend to be well drained.

The hill type landscape contains very cobbly, sandy loam, very gravely, sandy loam, and very stony, loamy, fine sand. The slopes generally can be as high as 50 percent and as low as 8 percent. The wind and water erodibility are slight.

The foothills landscape contains very gravelly, fine, sandy loam, very stony, sandy loam, very gravelly, loamy sand, and very gravelly, sandy loam on 2-50 percent slopes. Water erodibility is slight to moderate and wind erodibility is slight in these types of soils. These soils are typically well drained soils.

4.3.9.2. Environmental Consequences of the Proposed Action on Soils:

There would be no direct impacts 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 environmental analysis.

Road and drill pad building and cross-country travel would impact soil surfaces. These impacts include erosion of soils, disturbance to microbiotic crusts, and soil compaction. The amount of acreage that might be disturbed over a ten year period by oil and gas exploration and production is low; therefore, the impacts to soil would be minimal. Also, at the site specific NEPA level, mitigation such as avoidance of special soils and stockpiling of topsoils are implemented to minimize any environmental impacts.

4.3.9.3. Environmental Consequences of the No Action Alternative Soils:

There would be no change in soils under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.10. Range Resources

4.3.10.1. Affected Environment:

The lease sale parcels are contained within 7 grazing allotments (Figure 3). The allotments are generally run as a yearlong, cow-calf operation. Most of the grazing permittees follow a deferred-use rotation system in which one or more pastures within the allotment are rested (not grazed) to allow the vegetation to recover. Range improvement projects such as windmills, water delivery systems (pipelines, storage tanks, and water troughs), earthen reservoirs, fences, and vegetation control projects are located within the lease parcels. The grazing requirement of the allotments average 35 acres/AUM (Animal Unit Month). In order to support a cow and calf, for one year, about 350 acres of forage is required. This equals about two cows per square mile.

4.3.10.2. Environmental Consequences of the Proposed Action on Range Resources:

There would be no direct impacts 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 environmental analysis.

It is unlikely that 35 acres (equal to 1 AUM) would be disturbed during oil and gas exploration, development, and production by conducting seismic surveys, constructing exploration well pads, roads, and gravel pit expansion. The removal of vegetation would temporarily decrease the amount of available forage for wildlife, wild horses, burros and livestock. This may reduce the AUM number, thus decreasing the amount of livestock that could forage within the allotment. The potential decrease in livestock would coincide with the area of disturbance. Exploration activities could also have a temporary effect on grazing patterns shifting and/or intensifying livestock grazing in other areas. All impacts are expected to be short term.

If exploration is proposed on any of the leases, the effects of exploration and production would be analyzed in a site-specific environmental assessment and mitigation measures developed at that time.

The impacts of the proposed action on range resources are expected to be minimal due to the relatively small amount of disturbance, concurrent reclamation, and developed site-specific mitigation.

4.3.10.3. Environmental Consequences of the No Action Alternative on Range Resources:

There would be no change to range resources under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.11. Vegetation

4.3.11.1. Affected Environment:

4.3.11.1.1. Parcels in Hot Creek, Reveille, Sand Springs, and Crater Blackrock Allotments

The majority of the parcels are located in these allotments with vegetation cover of mostly Inter-Mountain Basins Mixed Salt Desert Scrub. There are parcels that fall at least partially within Inter-Mountain Basins Greasewood Flats, Inter-Mountain Basin Big Sagebrush, Great Basin Xeric Mixed Sagebrush Shrubland, and Great Basin Pinion-Juniper Woodland (Figure 4).

The Inter-Mountain Basins Mixed Salt Desert Scrub is an extensive ecological system which includes open-canopied shrublands of typically saline basins, alluvial slopes and plains. The substrates are often saline and calcareous, medium-to fine-textured, alkaline soils, but include some coarser-textured soils. The vegetation is characterized by a typically open to moderately dense shrubland composed of shadscale, fourwing saltbrush, big sagebrush, and rabbitbrush.

The margins of playas are covered by Inter-Mountain Basins Greasewood Flats. This plant

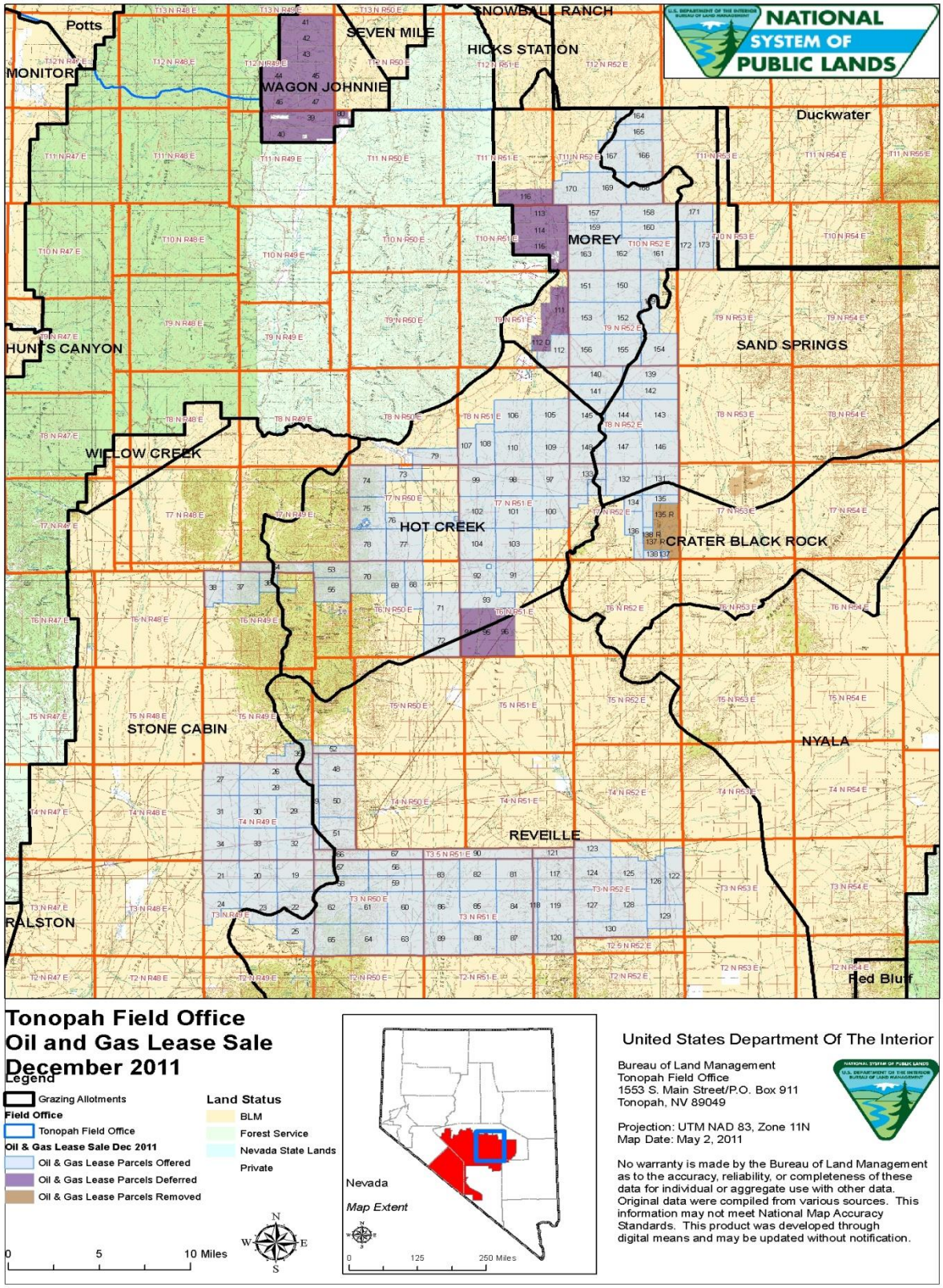

Figure 3. Allotments in the assessment area.

community typically occurs on floodplains and closed-basin bottomlands adjacent to playas. Substrates are often saline and calcareous, medium-to fine-textured, alkaline soils, but include some coarser-textured soils. Sites typically have a shallow water table and flood intermittently, but remain dry for most growing seasons. The plant community is characterized by black greasewood, basin wildrye, inland saltgrass, and alkali sacaton.

The Inter-Mountain Basins Big Sagebrush Shrubland usually occurs in the basins between mountain ranges, on plains and on foothills between 2,200-3,500 feet. Soils are usually fine to coarse textured, well-drained and non-saline. The shrublands are dominated by big sagebrush. Other shrubs may be present on some occurrences, e.g., saltbush, greasewood, and rubber rabbitbrush.

The Great Basin Xeric Mixed Sagebrush Shrubland occurs on dry flats and plains, alluvial fans, rolling hills, rocky hillslopes, saddles and ridges at elevations between 3,280 and 8,500 feet. Sites are dry, often exposed to desiccating winds, with typically shallow, rocky, non-saline soils.

The vegetation on mountain slopes, plateaus, and rolling hills in Big Sands Springs consist of the Great Basin Pinion-Juniper Woodlands.

4.3.11.1.2. Parcels in the Wagon Jonnie Allotment

The vegetation cover in Big Sands Springs Valley consists mainly of Great Basin Pinion-Juniper Woodlands, Inter-Mountain Basins Big Sagebrush Shrubland, and Inter-Mountain Basins Semi-Desert Shrub Steppe (Figure 4).

The vegetation on mountain slopes, plateaus, and rolling hills in Big Sands Springs consist of the Great Basin Pinion-Juniper Woodlands. The Great Basin Xeric Mixed Sagebrush Shrubland occurs on dry flats and plains, alluvial fans, rolling hills, rocky hillslopes, saddles and ridges at

elevations between 3,280 and 8,500 feet. Sites are dry, often exposed to desiccating winds, with typically shallow, rocky, non-saline soils.

The Inter-Mountain Basins Big Sagebrush Shrubland usually occurs in the basins between mountain ranges, on plains and on foothills between 2,200-3,500 feet. Soils are usually fine to coarse-textured, well-drained and non-saline. The shrublands are dominated by big sagebrush. Other shrubs may be present including saltbush, greasewood, and rabbitbrush.

There are small areas of Inter-Mountain Basins Greasewood Flats. This plant community typically occurs on floodplains and closed-basin bottomlands adjacent to playas. Substrates are often saline and calcareous, medium-to-fine-textured, alkaline soils, but include some coarser-textured soils. Sites typically have a shallow water table and flood intermittently, but may remain dry through most growing seasons. The plant community is characterized by black greasewood, basin wildrye, inland saltgrass, and alkali sacaton.

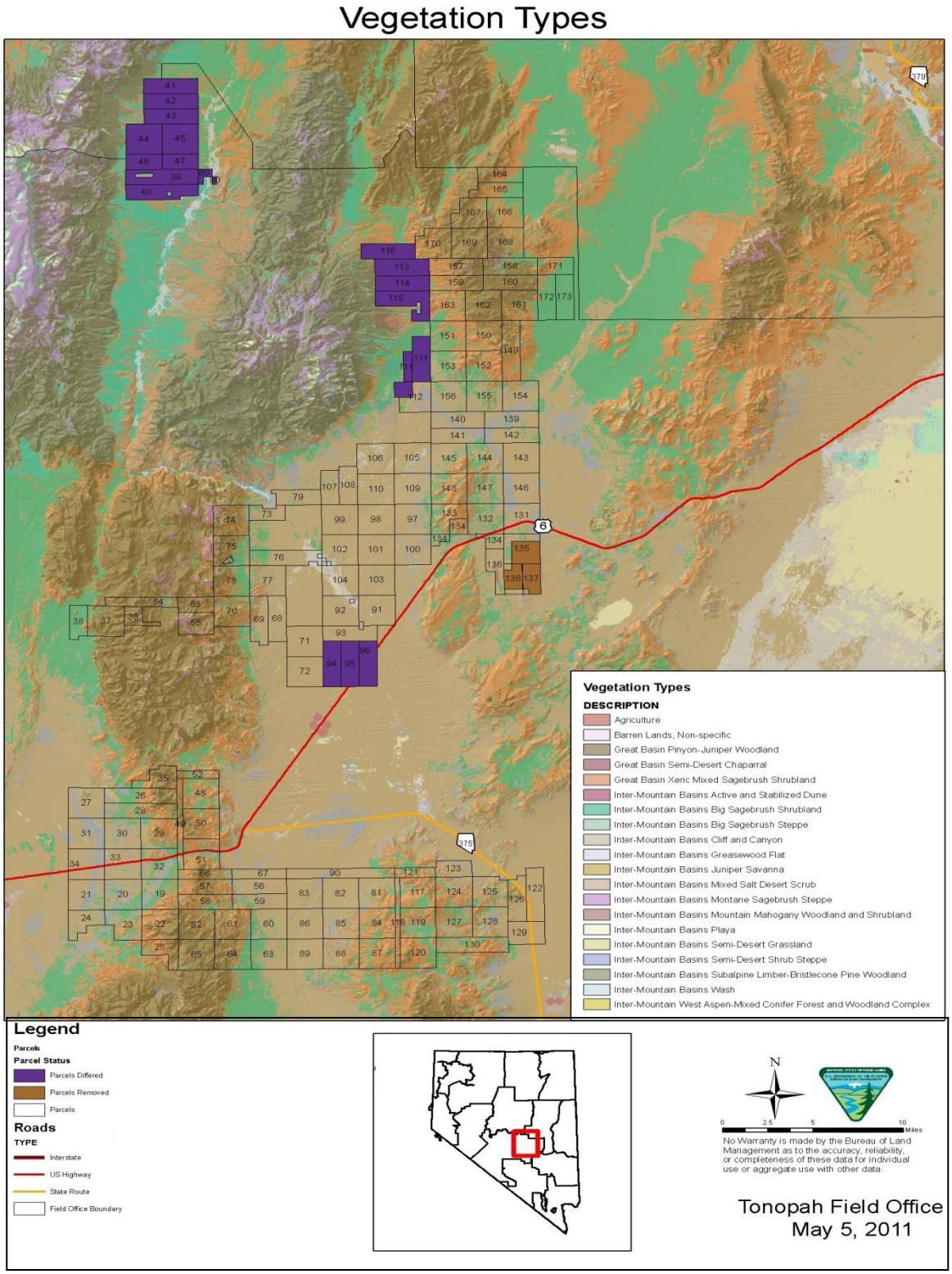

Figure 4. Vegetation types in the assessment area.

4.3.11.2. Environmental Consequences of the Proposed Action on Vegetation:

There would be no direct impacts 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 environmental analysis.

It is highly unlikely that 35 or more acres will become disturbed by seismic lines, exploration wells, road construction, and gravel pit expansion in the lease sale parcels. During the interim and final reclamation, soils require time to stabilize and the vegetation to become established. This could potentially leave exposed soils for two to three years or longer depending on the response of reclamation efforts.

The majority of the exploration is likely to occur in saltbush or sagebrush type vegetation areas, rather than pinion-juniper woodlands. Removal of vegetation would increase the amount of bare ground. This in turn could increase wind and water erosion, increase the potential for invasion by non-native and noxious species, reduce the capability for water to infiltrate the ground, and increase runoff and sediment loading.

Impacts to vegetation from exploration/development, are expected to be minor, relatively short term, and localized. In addition, site-specific mitigation measures, BMPs, and COAs would be implemented to reduce impacts.

4.3.11.3. Environmental Consequences of the No Action Alternative on Vegetation:

There would be no change in vegetation under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.12. Wild Horses and Burros

4.3.12.1. Affected Environment:

The BLM is responsible for the protection, management, and population control of wild horses and burros on public lands in accordance with the Wild and Free-Roaming Horses and Burros Act of 1971, as amended (Public Law 92-195), which states that the BLM "shall manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands." The BLM is mandated to manage wild horses and burros only within those areas where they were found at the time the Wild Free-Roaming Horse and Burro Act was passed in 1971.

Herd Management Areas (HMAs) are areas identified in the RMP for long-term management of wild horses and burros. Each HMA has an established appropriate management level (AML), a number or range that represents optimum population levels for a thriving natural ecological balance, in conformance with the Tonopah RMP, and sound multiple-use management.

Areas of the proposed oil and gas lease sales fall within the Stone Cabin, Hot Creek, Sand Springs, and Reveille HMAs.

The approximate size of the Stone Cabin HMA is 403,802 acres and has an AML of 364 wild horses. The current (time of analysis) population estimate for the Stone Cabin HMA is 476 animals.

The Hot Creek HMA is 54,656 acres with an AML of 41 wild horses, and an estimated population of 18 wild horses.

The Sand Springs HMA is 150,313 acres with an AML of 49 wild horses. Current population estimate is 285 wild horses.

The Reveille HMA includes roughly 105,500 acres with an AML of 138 wild horses. The current population on the Reveille HMA is estimated at 76 wild horses.

4.3.12.2. Environmental Consequences of the Proposed Action on Wild Horses and Burros:

There would be no direct impacts 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 environmental analysis.

Direct impacts to wild horses and burros could include temporarily influencing herd distribution through increased traffic and activities.

Mineral exploration activities are not common in or around the HMAs mentioned for analysis. Impacts to wild horses or burros may occur from minor disturbances due to an increase in human activity if an oil and gas exploration activity occurs in the valley. The impacts of such activities however, would probably be short term (e.g., less than one year) given that there are no oil fields or producing wells in these areas.

Localized and small scale vegetation disturbance could occur due to seismic exploration, road construction, overland travel, and drill pad construction. If oil or gas were discovered in the valley, increased vehicular traffic and human presence associated with oil or gas production could cause the wild horses and burros to use the developed area less and increase usage in other areas within the HMA.

Particular portions of the HMAs and wild horses could be temporarily impacted if development occurred near critical water and foraging sources. Impacts could also occur to wild horses during the peak foaling season (i.e., March 1 through June 30) if activities and exploration were to heavily increase. As a result, new foals could be orphaned, wild horses and foals may be required to increase energy expenditures and increase travel to and from forage and water. Within a short period of time, wild horses would acclimate to the presence of human activity and return to the area.

These impacts would be mitigated through project and site-specific NEPA analysis, which would be conducted for each exploration and production project.

4.3.12.3. Environmental Consequences of the No Action Alternative on Wild Horses and Burros:

There would be no change in wild horses and burros under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.13. Land and Realty

4.3.13.1. Affected Environment:

All of the proposed lease parcels are on public lands with federally controlled surface and subsurface mineral rights. Many of the parcels would require a right-of-way (ROW) in order to access the lease parcels. Some parcels include pre-existing land use authorizations such as grants, leases, permits, and withdrawals.

A withdrawal was issued by Public Land Orders (PLO) 6591 and 7634 to the United States Air Force to protect support facilities for the safe and secure operation of national defense activities at the Nevada Test and Training Range. The PLO expires on May 25, 2025. Parcel 72 is affected by this PLO.

The Department of Energy was issued PLO 7653 for the protection of the Yucca Mountain Repository-Caliente Rail Corridor from surface entry and the location of new mining claims, subject to valid existing rights but not from leasing under the mineral leasing laws. This corridor is 1-mile in width. This PLO expires on December 27, 2015.
Parcels 56, 59, 60, and 63 are within this corridor.

The Warm Springs Communication Site is encumbered with numerous communication facilities. Some of the site facilities include communications for the Department of Defense, Nevada State, and the BLM. Parcels 49-51 are within some of the above mentioned communication sites.

U.S. Highway 6 passes through numerous sale parcels. U.S. Highway 6 is composed of several Federal Aid Highway easement deed grants with a width of 400 feet. Parcels 32-34, 51, 91, 131, and 134 are affected by this ROW.

A 69 kV transmission line issued to Sierra Pacific Power Company (Nev 061469) runs parallel to U.S. Highway 6 with a width of 30 feet. Parcels 32-34, 51, 91, 131, and 134 are affected by this ROW.

Many range improvements that include pipelines, fencing, corrals, cattle guards, and other range improvement facilities exist within the sale parcel areas. Federally-owned monitoring wells occur randomly throughout the sale area.

Additionally, grants, leases, and permits may be authorized prior to any proposals for exploration by an oil and gas lessee. In both instances, the holder of land use authorization would have a valid existing right to the authorized use of public lands within the lease.

4.3.13.2. Environmental Consequences of the Proposed Action on Land and Realty:

There would be no direct impacts 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 environmental analysis.

Leasing creates a valid existing right, which could conflict with other existing or future land use authorizations. These conflicts would be mitigated through agreements between relevant operators.

Applications for ROW's may be required for roads for oil and gas exploration and production activities. These off lease ROW's would be non-exclusive where possible, that is, they can be used by the general public for other purposes such as access to public lands and would be subject to the appropriate site-specific NEPA analysis.

Impacts to existing ROW's may occur as a result of disturbance activities such as road construction. These impacts may cause temporary disruptions to ROW holders, but the Federal Land Policy and Management Act (FLPMA) requires that prior existing rights must be recognized. Any impacts to existing ROW's such as physical disturbances or disruptions in use may have to be mitigated by the lessee.

4.3.13.3. Environmental Consequences of the No Action Alternative on Land and Realty:

There would be no change to lands and realty under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.14. Visual Resources

4.3.14.1. Affected Environment:

There are four categories of Visual Resource Management (VRM) Objectives. The proposed lease parcels are within two of the VRM categories. VRM Class II
and IV objectives are described below with the appropriate lease parcels noted.

Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

The following lease parcels are within Class II Objectives: Parcels 81, 82, 84, 85, 86, 87, 88, 89, 90, 117, 118, 119, 120, 121, 123, 124, and 137.

Class IV: The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The following lease parcels are within Class IV Objectives: Parcels 19-38, 48-79, 83, 91-94, 97-110, 122, 125-136, 138-173.

4.3.14.2. Environmental Consequences of the Proposed Action on Visual Resources:

There would be no direct impacts 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 environmental analysis.

Direct impacts to the landform, vegetation and structural features of the characteristic landscape could occur during the exploration phase; however, these effects would usually be of short duration and localized in a small area. Modern seismic surveys are generally non-invasive and produce very little surface disturbance that may not be identifiable within months of survey. Drilling would temporarily impact the landscape by introducing new line, color, form and texture elements into the landscape. Brightly colored drill rigs and supporting facilities would be visible to visitors. Disturbances to vegetation from drilling could be seen for 2-5 years.

If a well drilled on one of the lease parcels produced economic amounts of oil, the construction of roads, drill pads, pipelines and power lines would result in long-term modifications to the line, form, color and texture of the characteristic landscape. Roads, drill pads and pipelines create strong horizontal linear contrasts. Vegetation and soil removal create color, textural, and linear contrasts with adjacent areas that could be highly visible long after the drilling and development facilities were removed.

While constructed features would have strong geometric and linear shapes and solid colors, small amounts of adjacent vegetation would obscure most of the features because of the typically flat character of the landscape. BMP's, mitigating measures, and SOP's would minimize the visual impact of the contrasts.

Night skies are important features of the assessment area and impacts to dark night skies may need to be mitigated at the time of site specific EA.

4.3.14.3. Environmental Consequences of the No Action Alternative on Visual Resources:

There would be no change to visual resources under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.15. Recreation

4.3.15.1. Affected Environment:

The proposed lease parcels are all within dispersed recreation areas subject to public use. Dispersed recreation areas are used by recreationists as they desire. Activities from sightseeing, pleasure driving, rock collecting, photography, hunting four-wheeling, hiking, and bird watching occur in dispersed recreation areas. Hot Creek Valley is flanked on the east by the Pancake Mountains and Hot Creek Range to the west. These areas are infrequently used by the public for camping, hunting, hiking, and other outdoor recreation activities.

4.3.15.2. Environmental Consequences of the Proposed Action on Recreation:

There would be no direct impacts 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 environmental analysis.

During the exploration phase, survey and drilling crews are likely to use available access roads and trails in the area that are also used for recreation access. The survey activities conducted during the exploration phase are likely to minimally impact recreation, if at all, due to the short duration, small crew size, and temporal nature of the surveys and drilling of wells as well as the dispersed nature of recreation activities in these areas.

Exploration of the leases would include construction activities. At this time, access roads and well pads are constructed. Increased truck traffic during this phase could affect recreation due to increased noise and dust levels and could cause temporary delays on access roads. Construction sites are likely to have limited access to the public which could, in turn, slightly decrease access to the area for recreation.

The production stage includes operation and maintenance of the constructed facilities. These activities require a small number of employees who would utilize access roads in the area but are not likely to limit the recreational use of these roads. Oil and gas production facilities are likely to have limited access to the public; however, improved access to the area for recreation may be available because of the maintained access road to the production facility.

4.3.15.3. Environmental Consequences of the No Action Alternative on Recreation:

There would be no change to recreation under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

4.3.16. Socioeconomics

4.3.16.1 Affected Environment:

The proposed lease parcels are within the northeast portion of Nye County. There would be no socio-economic impact due to leasing. However, subsequent exploration and development could provide a minor economic benefit to the local economy. The primary economic activities that contribute to the economic base for lands within the assessment area are mining, transportation, agriculture, and recreation.

Nye County is the third largest county in the United States and totals 18,064 square miles. It is located in the south-central portion of the State of Nevada. Tonopah is the county seat and is located 239 miles southeast of Reno and 207 miles northwest of Las Vegas on US Highway 95 and US Highway 6.

Nye County has a population of 46,202 (Nye County website http://www.nyecounty.net/index.aspx?nid=463) and offers a rural lifestyle with a population density of 2.4 persons per square mile. Mining, service and government represent the largest economic sectors in the county. Industry in Nye County is supported by strong transportation links to California (Nye County borders California on the south). Nye County is home to numerous mining ghost towns.

Nye County's 2010 population represents an increase of 35.3 percent from the 2000 census (U.S. Census Bureau 2010). Projections indicate that the county would grow to 46,859 persons by 2030, an increase of 6.6%. The majority of the population is white (85 percent) with about 13.6 percent of Hispanic origin.

Per capita annual income in 2009 was approximately $21,283 and median household income was approximately $43,215. The percent of persons below poverty level was 14.1% (U .S. Census Bureau 2010).

4.3.16.2. Environmental Consequences of the Proposed Action on Socioeconomics:

The only 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 as the State of Nevada retains 50 percent of the proceeds from lease sales. Any surface disturbing activities would be analyzed under a separate site specific environmental analysis.

Subsequent oil and gas exploration, development, and production could create impacts to the county economy in terms of additional jobs, income, and tax revenues. During the exploration phase, oil and gas companies typically provide in-house scientists and technicians to do the majority of this work. After initial surveys have been completed, road building and drill pad construction could occur as a result of oil and gas exploration and development activities. Road and drill pad construction could be contracted to local contractors. Wells would typically be drilled over a period of time and not at the same time. The exploration crews, ranging from 20 to 30 people, would spend portion of their salary in the local community for the duration of the project (four to eight weeks). The indirect impacts to socioeconomics within the assessment area from the proposed action based on above scenario would be minimal and of short duration.

If a significant oil field were discovered that led to development and production phase, the potential for socioeconomic impacts within the assessment area would be greater. More permanent roads and drill pads would be constructed, along with associated support facilities and transmission lines. Typically, the majority of this work is supplied by local contractors. Additionally, local businesses may realize increased revenue from the purchase of supplies, meals, rooms, etc. Local trucking and delivery companies may also benefit economically by transporting supplies and building materials. Oil production from federal lands is subject to a

12.5 percent royalty payment to the federal government. Fifty percent of that amount is provided to the state government which then provides a portion back to the counties. Taxes are paid in a variety of forms including income and property taxes by both oil production operators and their employees.

4.3.16.3. Environmental Consequences of the No Action Alternative on Socioeconomics:

There would be no change to socioeconomics under the No Action alternative as the proposed 155 lease parcels would be withdrawn from the lease sale.

5.0 Cumulative Impacts Analysis

The proposed action has been examined for cumulative effects to the project area and the surroundings. Cumulative impacts are those effects on resources within an area or region caused by a combination of past, present, and reasonable foreseeable future actions (RFFA's). These impacts may be individually minor but added together over time may become significant (40 CFR 1508.7).

The cumulative effect study area (CESA) for this environmental assessment encompasses all parcels in this lease sale (Figure 5). Oil and gas leases are leased for a 10-year time period; therefore, the same timeframe was selected for the cumulative effect study analysis.

5.1 Past and Present Actions

Nye County was the location of the first producing oil well in Nevada. Shell's Eagle Springs # 1-35 well was discovered in 1954 in Railroad Valley. The Eagle Springs discovery well attracted major oil companies to explore several of eastern Nevada's valleys which produced encouraging shows but no discoveries. The Trap Springs field was discovered in 1976 by Northwest Exploration in Railroad Valley. The most prolific oil field in Nevada was discovered in 1983, when Northwest Exploration Grant Canyon No. 1 was drilled and completed. Grant Canyon No. 1 was the most prolific onshore oil well in the continental United States, flowing up to 4,300 barrels of oil per day. Subsequently, other smaller oil fields such as Sans Spring and Kate Spring were discovered in Railroad Valley.

The oil discoveries in Railroad Valley made the nearby Hot Creek Valley an attractive target for oil and gas exploration. Seven wells were permitted to be drilled in the assessment area from 1981 to 2003. Three of the wells permitted were never drilled. Alpine Inc. drilled Needle Springs Federal 1-14 in 2003. The well reached a total depth of 8,804 ft and was plugged in 2004 with oil shows. Skippy Oil drilled Squaw Hills No. 1-15 in 1992. The well reached a total depth of 3,728 ft and was plugged in 1994 with no hydrocarbon shows. Apache Corp. drilled Hot Creek Federal No. 24-13 well in 1981 to a total depth of 11,028 ft. Although this well exhibited numerous oil and gas shows no production came from the well and the well was plugged and abandoned. Another Apache well, Warm Springs Federal No. 10-14, was drilled in 1981 to a total depth of 9,180 ft with no reported shows of either gas or oil.

In the last few years, the interest in geothermal leasing has increased in the CESA as demands for generating electricity from environmentally friendly sources has increased. There are several sources of hot springs in the CESA. Two geothermal area, Warm Springs near Hwy 6, and Hot Creek 20 miles north of Warm Springs, emerge through alluvium along the trace of major faults along the west side of Hot Creek Valley. There are currently three active geothermal leases located in northern and central sections of Hot Creek Valley and one active lease is located in Reveille Valley south of Warm Springs.

Land-use authorization; like new road, powerline and pipeline ROW's and renewal of existing ROW's associated with oil and gas or geothermal production and grazing can be expected in the future.

Historical lease sales have included hundreds of parcels in the CESA where expressions of interest were submitted by prospective lessees. There are currently 2 oil and gas leases in the CESA; however, there is no oil production from either. There have been no APD's issued in the CESA since 2003. TFO typically authorizes fewer than 4 APD's per year, mostly in Railroad Valley, and one geophysical exploration permits every 3-4 years. The oil and gas program consists mainly of speculative leasing and the drilling of wildcat wells in and around existing oil fields in the Railroad Valley.

An area several miles southwest of Moores Station was subject of a nuclear test by the U.S. Department of Energy in 1968. The area is known as the Central Nevada Test Area (CNTA). In January 19, 1968, a thermonuclear bomb was detonated at the site. The project was known as Project Faultless. The detonation was 3,200 ft below the surface and created a collapsed crater: a large, irregular subsidence block bounded by local faults, rather than the typical saucer-shaped depression. Only one test was conducted at the CNTA. There is a groundwater monitoring well at the site which is tested annually as part of the Department of Energy's Long-Term Hydrologic Monitoring program.

A Notice of Intent (NOI) has recently been submitted to conduct a low frequency seismic survey in central Hot Creek Valley.

Livestock grazing has been authorized in the past and is currently authorized. In the CESA there are approximately 766,000 acres of land under 7 grazing allotments.

The assessment area has historically been the site of active mining, exploration, and production. The Hot Creek Range was explored for a variety of mineral deposits including gold, silver, copper, lead, zinc, antimony, and barite. The majority of the production came from historic mining camps of Tybo and Morey in the mid to late 1800s. The assessment area continues as a favorable area for mining exploration and there are currently two active mining notices authorized in the area.

5.2 Reasonable Foreseeable Future Actions (RFFA's)

The proposed action does not include exploration, development, production, or final reclamation of oil and gas resources; however, authorization of oil and gas leasing does convey a right to subsequent exploration and production activities. These later activities are associated with oil and gas leasing; therefore, they are analyzed as part of the proposed action.

The proposed action does not include exploration, development, production, or final reclamation of oil and gas resources; however, authorization of oil and gas leasing does convey a right to subsequent exploration and production activities. These later activities are associated with oil and gas leasing; therefore, they are analyzed as part of the proposed action.

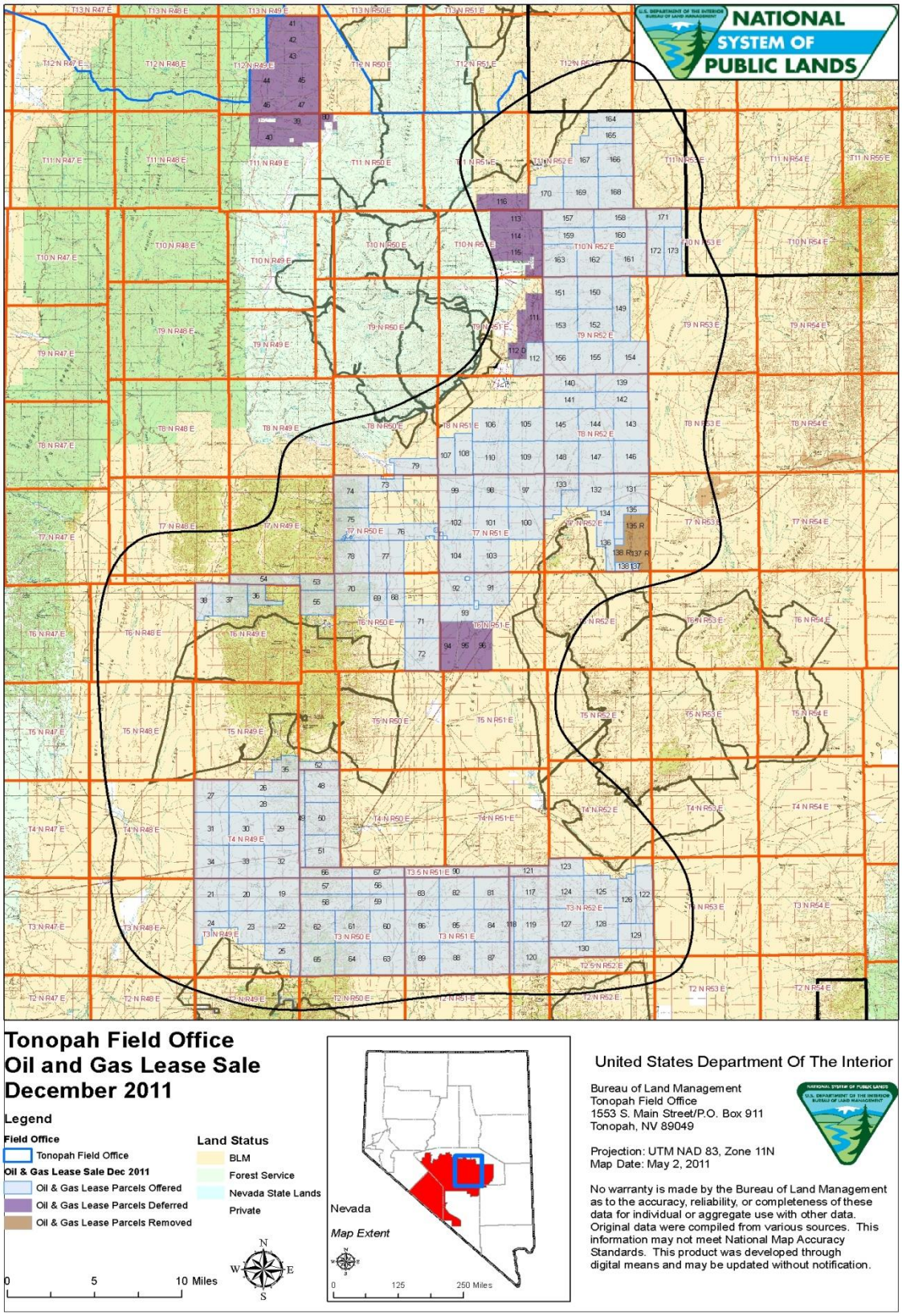

Figure 5. Cumulative Effect Study Area.

As noted in the Draft Tonopah Resource Management Plan and Environmental Impact Statement (June, 1993), the extremely complex geologic structure of the area has limited the success rate of wells to approximately 28 percent in Railroad Valley. Within the defined oil fields, the success rate is approximately 60 percent. Railroad Valley stands as a model for any future oil and gas exploration or production in the assessment area.

Reasonable Foreseeable Future Actions resulting from the proposed and similar future actions include; precious metal mining; yearly competitive oil and gas and geothermal lease sales; exploration activities that might lead to development and production; grazing, wild horse management actions, dispersed recreation, and associated land-use authorizations.

5.3 Cumulative Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Within the past 60 years, four oil and gas exploration wells have been drilled in the assessment area. All four wells were plugged and abandoned.

The 1997 RMP projections for oil and gas exploration and development in the planning area appear to have been somewhat overly optimistic, projecting 71 acres of surface disturbance per year. Little to none is anticipated in the assessment area. A geophysical survey may be conducted in the assessment area prior to any exploratory drilling. Surface disturbance associated with geophysical surveys is usually minimal. An APD may then be submitted for a wildcat well in the CESA. A site specific NEPA document would be prepared prior to approval of any application to conduct surface disturbing activities.

There is a small chance that a new oil field will be discovered within the next 10 years. If an oil field were discovered, there would, in all likelihood, be additional disturbance in the area. An additional 5 to 10 wells may be drilled in the vicinity of any new discovery and up to 30 acres of disturbance might be expected within the CESA boundary. The surface disturbance associated with a producing well would probably remain for the entire production life of the well.

Development wells include step-out or field extension wells, enhanced oil recovery wells, or other infield wells. Even though the drilling of development wells would be adjacent to or actually within areas of current production, it may require disturbance of new areas.
Surface disturbance associated with drilling a dry well would be reclaimed within a year after the well was plugged and abandoned.

Based on past actions there will be approximately 2-3 oil and gas wells per year permitted by the TFO within the next 10 years. All of the wells drilled would be wildcat exploratory wells. All are expected to be dry and would be plugged and abandoned, with reclamation being completed within one year of being abandoned.

There may be up to 100 cattle grazing in the CESA, depending upon the time of year. Nearly all of the cattle are concentrated around springs on private property with up to a couple dozen cattle grazing on public land administered by the BLM. The impact of cattle grazing part-time in the area is negligible.

Because of the general lack of water in the valleys wildlife is scarce. A few antelope and smaller species like rabbits, ground squirrels, lizards, snakes, and birds can be found. Flows in the valley floor may occur during spring runoff or in response to intense thunderstorms. The flow of water is temporary and it is not anticipated to help wildlife.

If mining exploration currently authorized, identifies economically extractable quantities of gold, a Plan of Operations for a gold mine may be authorized and depending on the size of the operations 20 to 500 acres within the CESA could be disturbed for approximately 10 years. Reclamation of the disturbance would return the site to its original condition within 15 years.

5.3.1. Cumulative Impacts on Air Quality

Past, current, proposed and foreseeable road, power line, and pipeline construction along with minerals exploration and recreation all create air quality impacts. Increased volumes of carbon dioxide, carbon monoxide, and particulates have been and would be caused by vehicle exhaust. Soil cover may be disturbed creating fugitive dust from additional travel on existing dirt roads and the construction of new access roads and well pads.

Past and foreseeable geophysical exploration have in the past and would in the foreseeable future cause very little impact to air quality because the exploration equipment would be in the area for a very short time (typically less than a week) and little or no additional surface disturbance would be created to disturb the soil.

Activities associated with drilling wells typically last less than a month and the potential to increase particulate matter from multiple trips is mitigated by placing gravel on the access roads and protecting the soil. These localized, temporary impacts are not expected to significantly affect air quality in the area or exceed air quality standards.

5.3.2. Cumulative Impacts on Cultural Resources

Past impacts to cultural resources have occurred from unauthorized collection and excavation as well as mining, grazing, off-highway vehicle use, roads and other developments. Passage of the National Historic Preservation Act of 1966 and other laws have greatly reduced impacts to cultural resources from resource development and other activities on public lands. Presently, impacts to cultural resources from activities on public land are minimal due to avoidance or development of mitigation measures. Projected cumulative impacts to cultural resources from the proposed action, when combined with past, present, and future actions are expected to be insignificant. The majority of the cultural sites in the proposed area can be avoided during lease development or mitigated.

5.3.3. Cumulative Impacts on Native American Religious Concerns

Fluid mineral leasing and exploration may contribute to the general decline in sites and associated activities of a cultural, traditional, and spiritual nature.

Presently, impacts to many cultural, traditional, spiritual sites, and associated activities have been avoided through Native American consultation efforts. Only the potential impacts to tribal resources were analyzed in this EA because it evaluates the leasing of oil and gas parcels and does not analyze areas of proposed surface disturbance where impacts might be expected. Without a specific surface disturbing activity, location, and description, identifying all impacts to specific tribal resources is not possible. As noted previously, for any future development, the BLM would produce a site-specific EA, which would discuss alternatives or measures that may reduce or eliminate impacts to Native American Religious Concerns.

5.3.4. Cumulative Impacts on Wildlife, Special Status Species, and Migratory Birds

5.3.4.1. Cumulative Impacts on Wildlife

All wildlife species have a preferred habitat. Human-caused disturbances, wildfire, deep snow, drought, or other climatic events may, cause wildlife species to move to areas of less desirable habitat. Wildlife may be forced to move into areas that may already be at carrying capacity. This may in turn result in a reduction of the population size or the viability of the habitat. In those cases where a species is indigenous to very small unique or isolated habitat and is not adaptable, the entire species could be lost.

A number of other ongoing projects and future activities in the area, such as mineral exploration, off-highway vehicle use, and livestock grazing could cumulatively impact wildlife. These activities could result in loss of habitat, habitat fragmentation, and disruption of movement patterns

It is expected that the proposed action may contribute to cumulative impacts if exploration and development of the lease parcels is authorized in the future. The reasonably foreseeable role of oil and gas exploration and development in overall impacts within the assessment area is negligible especially if effectively minimized through site-specific COAs, BMPs, and mitigation measures.

5.3.4.2. Cumulative Impacts on BLM and State of Nevada Sensitive Species and Migratory Birds

A number of other ongoing and future activities in the area, such as mineral exploration, off-highway vehicle use, and livestock grazing could cumulatively impact sensitive species and migratory birds. These activities could result in loss of habitat, habitat fragmentation, and disruption of movement patterns.

The cumulative impacts of livestock fencing associated with many of these projects and activities can have negative consequences for wildlife by impedance to movement and collision or entrapment in fencing. Fences in the assessment area include allotment boundary fences, highway ROW fences, private land fences, and numerous small riparian meadow fences.

It is expected that the proposed action may contribute to cumulative impacts, though the reasonably foreseeable role of oil and gas exploration and development in overall impacts to migratory birds within the assessment area is negligible especially if effectively mitigated.

5.3.5. Cumulative Impacts on Water Quality (Surface and Ground) and Quantity

The impacts from the proposed, ongoing, and reasonably foreseeable actions of oil and gas leasing do not appear to have an incremental effect on ground water in the CESA because the total water use in the area is minimal and is exceeded by the recharge volumes on an annual basis.

5.3.6. Cumulative Impacts on Wastes, Hazardous and Solid

The cumulative impact of hazardous and solid waste generated during the development of authorized, proposed, or reasonably foreseeable actions would be negligible because of mitigation which would be developed during site specific analysis. Additionally, federal and state governments specifically regulate each project to ensure, to the extent possible, that there are no releases of hazardous materials into the environment.

5.3.7. Cumulative Impacts on Noxious Weeds and Invasive, Non-native Species

Continued use by off-highway vehicles and cattle grazing may have contributed to the infestation and spread of invasive plants, noxious weeds, and pests within the CESA. Overall, the proposed action and possible subsequent exploration and development of oil and gas leases could increase the potential for impacts to existing native plant communities. However, measures taken in accordance with the prevention schedule and best management practices included in the plans of operations for future oil and gas projects would prevent the spread of invasive species. By implementing site specific mitigation measures, the incremental effect from past, present and future activities, would ensure that the spread or introduction of invasive plants, noxious weeds, and pests would be minimal.

5.3.8. Cumulative Impacts on Geology and Minerals

A number of other ongoing and future activities in the area, such as mineral exploration and sand and gravel pit development, could cumulatively impact mineral resources within the assessment area. These impacts include conflicts between exploration and development of mineral resources and loss of access to mineral resources. However, based on the small scale of expected disturbance from oil and gas-related activities, the cumulative impact to minerals and geology is expected to be negligible. Impacts that may exist could be mitigated by negotiations between operators.

5.3.9. Cumulative Impacts on Soils

A number of ongoing actions and future activities in the area, such as mineral exploration, off-highway vehicle use, and livestock grazing could cumulatively impact soils. These impacts include erosion of soils, disturbance of microbiotic crusts, and soil compaction. It is expected that the Proposed Action may contribute to cumulative impacts, though the reasonably foreseeable role of oil and gas exploration and development in overall impacts within the assessment area is negligible especially if effectively mitigated.

5.3.10. Cumulative Impacts on Range Resources

The disturbance associated with oil and gas exploration and development would add to the disturbance from mining exploration and off-highway vehicle use. The creation of new roads, construction of drill pads and the development of wells removes available forage for livestock. Reductions of available forage could have an impact on ranching operations. However, the cumulative impacts of the proposed action on range resources are expected to be minimal due to the relatively small area of disturbance, concurrent reclamation, and developed site-specific mitigation.

5.3.11. Cumulative Impacts on Vegetation

The disturbance associated with oil and gas exploration and development would add to the disturbance from mining exploration, and off-highway vehicles use. The creation of new roads, construction of drill pads, and the development of wells would remove vegetation and increase the amount of bare ground and susceptibility to erosion and invasion by invasive plants and noxious weeds. Further damage, in the form of compacting soils, crushing microbiotic crusts, and damage to understory grasses, shrubs, and forbs could have impacts on these ecosystems. However, the cumulative impacts of the proposed action on vegetation are expected to be minimal due to the relatively small area of disturbance, effective reclamation, and site specific mitigation.

5.3.12. Cumulative Impacts on Wild Horses and Burro

There are no burros in the assessment area. Cumulative impacts to wild horses may occur from exploration and development of oil and gas. These include increased fragmentation of wild horse habitat, and cumulative increases in vegetation and soil disturbances, which result in incremental losses in availability of quality wild horse habitat. However, the amount of surface disturbance that could impact wild horse habitat constitutes a small percentage of the land area managed for wild horses and burros.

Effects of future actions on wild horse populations would be analyzed during site specific NEPA analysis and mitigation measures would be developed to reduce impacts. Based on short-term nature of exploratory drilling and the small amount of expected disturbance, the cumulative impact to wild horses is expected to be negligible.

5.3.13. Cumulative Impacts on Land and Realty

Cumulative impacts from past, present and future activities to realty actions within the assessment area are negligible. Site-specific mitigation measures for exploration and development would ensure that the potential cumulative impacts from the proposed action would remain negligible.

5.3.14. Cumulative Impacts on Visual Resources

The cumulative impacts from past, present, and future activities as previously outlined, remain

low to moderate for visual resources due to the likelihood of large distances between actions and key vista points and limited surface disturbance. Most of the future activities would be on valley floors. Visual resources are mitigated on a case-by-case basis and many of the activities would be temporary in nature.

U.S. Hwy 6 and several county roads are the main travel routes in the assessment area. VRM classes are based on view sheds from these routes and most of the parcels are too distant to have an impact on visual resources. There are also several gravel and native surface secondary roads, ranches, farms, and electrical transmission lines. None of the future activities would create any visual impact inconsistent with the applicable VRM Class ratings for the assessment area, thus the overall cumulative impact would continue to be low to moderate.

5.3.15. Cumulative Impacts on Recreation

Increased commercial developments could increase the population of the area, which would in turn create an increase in all recreational activities such as visits to WSAs, hunting, and off-highway vehicle use in the assessment area. Given that many recreational activities are dependent upon a high quality visual/aesthetic environment, commercial developments, including fluid mineral development, has the potential to lower the quality of recreational experiences in the assessment area. However, the mitigation measures developed during site specific analysis in the CESA would ensure the quality of recreational experiences would not be significantly reduced.

5.3.16. Cumulative Impacts on Socioeconomics

The Proposed Action does not: Induce substantial growth or concentration of population, displace a large number of people, cause a substantial reduction in employment, reduce wage and salary earnings, cause a substantial net increase in county expenditures, or create a substantial demand for public services. In the volatile economy of the foreseeable future, it is expected that the cumulative and incremental socioeconomic effects of the proposed action, would be beneficial and not significant.

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7.0 Persons or Agencies Consulted

Duckwater Shoshone Tribe
Yumba Shoshone Tribe
Nevada Department of Wildlife (NDOW)

8.0 List of References

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APPENDIX A

LIST OF PARCELS
OFFERED FOR SALE IN THE
JUNE 2011 OIL AND GAS LEASE SALE

List of All Nominated Tonopah Field Office Parcels

NV-11-12-019 2559.640 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
011 ALL;
012 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-020 2558.760 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 003 LOTS 1-4;
003 S2N2,S2;
004 LOTS 1-4;
004 S2N2,S2;
009 ALL;
010 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-021 2521.400 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 005 LOTS 1-4;
005 S2N2,S2;
006 LOTS 1-7;
006 S2NE,SENW,E2SW,SE;
007 LOTS 1-4;
007 E2,E2W2;
008 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-022 2560.000 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-023 2240.000 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 015 ALL;
016 ALL;
021 E2;
022 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-024 1728.800 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 017 ALL;
018 LOTS 1-4;
018 E2,E2W2;
019 LOTS 1-4;
019 NE,E2W2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-025 1600.000 Acres
T.0030N, R.0490E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
036 E2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-026 2557.880 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
003 LOTS 1-4;
003 S2N2,S2;
004 LOTS 1-4;
004 S2N2,S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-027 2531.960 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 005 LOTS 1-4;
005 S2N2,S2;
006 LOTS 1-7;
006 S2NE,SENW,E2SW,SE;
007 LOTS 1-4;
007 E2,E2W2;
008 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-028 2560.000 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 009 ALL;
010 ALL;
011 ALL;
012 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-029 2560.000 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-030 2560.000 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 015 ALL;
016 ALL;
021 ALL;
022 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-031 2529.800 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 017 ALL;
018 LOTS 1-4;
018 E2,E2W2;
019 LOTS 1-4;
019 E2,E2W2;
020 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-032 2560.000 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
035 ALL;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-033 2560.000 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 027 ALL;
028 ALL;
033 ALL;
034 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-034 2524.680 Acres
T.0040N, R.0490E, 21 MDM, NV
Sec. 029 ALL;
030 LOTS 1-4;
030 E2,E2W2;
031 LOTS 1-4;
031 E2,E2W2;
032 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-035 1680.000 Acres
T.0050N, R.0490E, 21 MDM, NV
Sec. 025 S2;
026 S2SE;
034 SE;
035 E2,SW;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-036 961.680 Acres
T.0060N, R.0490E, 21 MDM, NV
Sec. 003 LOTS 1-4;
003 S2N2,S2;
010 N2N2;
011 N2N2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-037 2559.560 Acres
T.0060N, R.0490E, 21 MDM, NV
Sec. 004 LOTS 1-4;
004 S2N2,S2;
005 LOTS 1-4;
005 S2N2,S2;
008 ALL;
009 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-038 1365.290 Acres
T.0060N, R.0490E, 21 MDM, NV
Sec. 006 LOTS 1-7;
006 S2NE,SENW,E2SW,SE;
007 LOTS 1-4;
007 E2,E2W2;
018 LOTS 1;
018 NENW;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-039 2406.040 Acres
T.0110N, R.0490E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
003 LOTS 1-4;
003 S2NE,S2;
004 LOTS 1-4;
004 S2NW,S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-040 2360.000 Acres
T.0110N, R.0490E, 21 MDM, NV
Sec. 009 ALL;

010 ALL;
011 E2,NW,W2SW,SESW;
012 N2,N2S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-041 1923.680 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
003 LOTS 1-4;
003 S2N2,S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-042 1920.000 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 010 ALL;
011 ALL;
012 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-043 1920.000 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
015 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-044 2560.000 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 021 ALL;
022 ALL;
027 ALL;
028 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-045 2560.000 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 023 ALL;
024 ALL;
025 ALL;
026 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-046 1298.280 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 033 LOTS 1-4;
033 N2,N2S2;
034 LOTS 1-4;
034 N2,N2S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-047 1283.300 Acres
T.0120N, R.0490E, 21 MDM, NV
Sec. 035 LOTS 1-4;
035 N2,N2S2;
036 LOTS 1-4;
036 N2,N2S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-048 2558.000 Acres
T.0040N, R.0492E, 21 MDM, NV

Sec. 001 PROT ALL;
002 PROT ALL;
011 PROT ALL;
012 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-049 1261.000 Acres
T.0040N, R.0492E, 21 MDM, NV
Sec. 003 PROT ALL;
010 PROT ALL;
015 PROT ALL;
022 PROT ALL;
027 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-050 2560.000 Acres
T.0040N, R.0492E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-051 2560.000 Acres
T.0040N, R.0492E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-052 743.500 Acres
T.0050N, R.0492E, 21 MDM, NV
Sec. 034 PROT S2;
035 PROT S2;
036 PROT S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-053 1265.000 Acres
T.0060N, R.0492E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-054 1600.000 Acres
T.0060N, R.0492E, 21 MDM, NV
Sec. 003 PROT ALL;
004 PROT ALL;
005 PROT ALL;
006 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-055 1858.500 Acres
T.0060N, R.0492E, 21 MDM, NV
Sec. 011 PROT ALL;
012 PROT ALL;
013 PROT N2;
014 PROT N2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-056 1929.000 Acres

T.0030N, R.0500E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
003 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-057 1943.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 004 PROT ALL;
005 PROT ALL;
006 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-058 1915.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 007 PROT ALL;
008 PROT ALL;
009 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-059 1920.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 010 PROT ALL;
011 PROT ALL;
012 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-060 2560.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-061 2560.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 015 PROT ALL;
016 PROT ALL;
021 PROT ALL;
022 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-062 2550.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 017 PROT ALL;
018 PROT ALL;
019 PROT ALL;
020 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-063 2545.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-064 2521.000 Acres

T.0030N, R.0500E, 21 MDM, NV
Sec. 027 PROT ALL;
028 PROT ALL;
033 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-065 2509.000 Acres
T.0030N, R.0500E, 21 MDM, NV
Sec. 029 PROT ALL;
030 PROT ALL;
031 PROT ALL;
032 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-066 1247.000 Acres
T.0032N, R.0500E, 21 MDM, NV
Sec. 031 PROT ALL;
032 PROT ALL;
033 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-067 1251.000 Acres
T.0032N, R.0500E, 21 MDM, NV
Sec. 034 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-068 1921.180 Acres
T.0060N, R.0500E, 21 MDM, NV
Sec. 003 LOTS 1-4;
003 S2N2,S2;
010 ALL;
015 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-069 2001.790 Acres
T.0060N, R.0500E, 21 MDM, NV
Sec. 004 LOTS 1-4;
004 S2N2,S2;
009 ALL;
016 ALL;
021 N2NE;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-070 2553.000 Acres
T.0060N, R.0500E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;
008 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-071 2560.000 Acres
T.0060N, R.0500E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-072 2560.000 Acres
T.0060N, R.0500E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
035 ALL;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-073 1160.440 Acres
T.0070N, R.0500E, 21 MDM, NV
Sec. 003 LOTS 1,2;
003 S2N2,S2;
004 LOTS 2-4;
004 S2N2,S2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-074 2541.000 Acres
T.0070N, R.0500E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;
008 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-075 2420.000 Acres
T.0070N, R.0500E, 21 MDM, NV
Sec. 017 PROT ALL;
018 PROT ALL;
019 PROT ALL EXCL ME PATS;
020 PROT ALL EXCL ME PATS;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-076 2440.000 Acres
T.0070N, R.0500E, 21 MDM, NV
Sec. 021 ALL;
022 ALL;
023 ALL;
024 N2SE,SESE;
024
N2NE,SWNE,NW,N2SW,SWSW;
Nye County
Battle Mountain DO

NV-11-12-077 2560.000 Acres
T.0070N, R.0500E, 21 MDM, NV
Sec. 027 ALL;
028 ALL;
033 ALL;
034 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-078 2546.000 Acres
T.0070N, R.0500E, 21 MDM, NV
Sec. 029 PROT ALL;
030 PROT ALL EXCL ME PATS;
031 PROT ALL;
032 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-079 1640.000 Acres
T.0080N, R.0500E, 21 MDM, NV
Sec. 034 E2,NENW;
035 ALL;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-080 394.550 Acres
T.0110N, R.0500E, 21 MDM, NV
Sec. 006 LOTS 2-7;
006 SWNE,SENW,E2SE;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-081 2560.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
011 PROT ALL;
012 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-082 2560.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 003 PROT ALL;
004 PROT ALL;
009 PROT ALL;
010 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-083 2529.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;
008 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-084 2560.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-085 2560.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 015 PROT ALL;
016 PROT ALL;
021 PROT ALL;
022 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-086 2533.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 017 PROT ALL;
018 PROT ALL;
019 PROT ALL;
020 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-087 2560.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-088 2560.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 027 PROT ALL;
028 PROT ALL;
033 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-089 2535.000 Acres
T.0030N, R.0510E, 21 MDM, NV
Sec. 029 PROT ALL;
030 PROT ALL;
031 PROT ALL;
032 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-090 2513.000 Acres
T.0032N, R.0510E, 21 MDM, NV
Sec. 031 PROT ALL;
032 PROT ALL;
033 PROT ALL;
034 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-091 2518.140 Acres
T.0060N, R.0510E, 21 MDM, NV
Sec. 003 LOTS 1-4;
003 S2N2,S2;
004 LOTS 1-4;
004 S2N2,S2;
009 N2,N2S2,SESW,S2SE;
010 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-092 2519.340 Acres
T.0060N, R.0510E, 21 MDM, NV
Sec. 005 LOTS 1-4;
005 SENE,S2NW,S2;
006 LOTS 1-7;
006 S2NE,SENW,E2SW,SE;
007 LOTS 1-4;
007 E2,E2W2;
008 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-093 1882.460 Acres
T.0060N, R.0510E, 21 MDM, NV
Sec. 016 E2,E2W2,SWNW,W2SW;
017 ALL;
018 LOTS 1-4;
018 E2,E2W2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-094 1920.760 Acres
T.0060N, R.0510E, 21 MDM, NV
Sec. 019 LOTS 1-4;
019 E2,E2W2;
030 LOTS 1-4;
030 E2,E2W2;
031 LOTS 1-4;
031 E2,E2W2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-095 1920.000 Acres

T.0060N, R.0510E, 21 MDM, NV
Sec. 020 ALL;
029 ALL;
032 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-096 1920.000 Acres
T.0060N, R.0510E, 21 MDM, NV
Sec. 021 ALL;
028 ALL;
033 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-097 2556.860 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
011 ALL;
012 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-098 2555.920 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 003 LOTS 1-4;
003 S2N2,S2;
004 LOTS 1-4;
004 S2N2,S2;
009 ALL;
010 ALL;
Nye County
Battle Mountain DO
NV-11-12-099 2543.720 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 005 LOTS 1-4;
005 S2N2,S2;
006 LOTS 1-7;
006 S2NE,SENW,E2SW,SE;
007 LOTS 1-4;
007 E2,E2W2;
008 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-100 2560.000 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-101 2560.000 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 015 ALL;
016 ALL;
021 ALL;
022 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-102 2472.130 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 017 ALL;
018 LOTS 1-4;
018 E2,E2W2;
019 LOTS 1,2,4;
019 E2,E2NW,NESW;
020 ALL;

Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-103 2560.000 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 027 ALL;
028 ALL;
033 ALL;
034 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-104 2557.600 Acres
T.0070N, R.0510E, 21 MDM, NV
Sec. 029 ALL;
030 LOTS 1-4;
030 E2,E2W2;
031 LOTS 1-4;
031 E2,E2W2;
032 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-105 2560.000 Acres
T.0080N, R.0510E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-106 2560.000 Acres
T.0080N, R.0510E, 21 MDM, NV
Sec. 015 ALL;
016 ALL;
021 ALL;
022 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-107 1420.230 Acres
T.0080N, R.0510E, 21 MDM, NV
Sec. 019 LOTS 4;
019 SESW,S2SE;
030 LOTS 1-4;
030 E2,E2W2;
031 LOTS 1-4;
031 E2,E2W2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-108 1600.000 Acres
T.0080N, R.0510E, 21 MDM, NV
Sec. 020 S2;
029 ALL;
032 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-109 2560.000 Acres
T.0080N, R.0510E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
035 ALL;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-110 2560.000 Acres
T.0080N, R.0510E, 21 MDM, NV
Sec. 027 ALL;

028 ALL;
033 ALL;
034 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-111 2560.000 Acres
T.0090N, R.0510E, 21 MDM, NV
Sec. 012 PROT ALL;
013 PROT ALL;
014 PROT E2;
023 PROT E2;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-112 2400.000 Acres
T.0090N, R.0510E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT E2,E2W2;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-113 2167.160 Acres
T.0100N, R.0510E, 21 MDM, NV
Sec. 010 LOTS 1-4;
011 LOTS 1-4;
012 LOTS 1-4;
013 ALL;
014 ALL;
015 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-114 1920.000 Acres
T.0100N, R.0510E, 21 MDM, NV
Sec. 022 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-115 2400.000 Acres
T.0100N, R.0510E, 21 MDM, NV
Sec. 025 E2,NW,N2SW,SWSW;
026 ALL;
027 ALL;
036 E2,SWNW,SW;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-116 1920.000 Acres
T.0110N, R.0510E, 21 MDM, NV
Sec. 034 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-117 2560.000 Acres
T.0030N, R.0512E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
011 PROT ALL;
012 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-118 1013.000 Acres
T.0030N, R.0512E, 21 MDM, NV
Sec. 003 PROT ALL;
010 PROT ALL;
015 PROT ALL;
022 PROT ALL;
027 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-119 2560.000 Acres
T.0030N, R.0512E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-120 2560.000 Acres
T.0030N, R.0512E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO

NV-11-12-121 943.000 Acres
T.0032N, R.0512E, 21 MDM, NV
Sec. 034 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-122 2240.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 001 S2;
012 ALL;
013 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-123 1357.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-124 2553.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 007 PROT ALL;
008 PROT ALL;
017 PROT ALL;
018 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-125 2346.250 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 009 PROT ALL;
010 PROT S2NE,W2,SE;
015 PROT ALL;
016 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-126 1857.840 Acres

T.0030N, R.0520E, 21 MDM, NV
Sec. 011 E2,S2NW,SW;
014 ALL;
023 LOTS 1-8;
023 N2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-127 2557.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 019 PROT ALL;
020 PROT ALL;
029 PROT ALL;
030 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-128 2494.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 021 PROT ALL;
022 PROT ALL;
027 PROT ALL;
028 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-129 1920.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
035 N2;
036 N2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-130 2557.000 Acres
T.0030N, R.0520E, 21 MDM, NV
Sec. 031 PROT ALL;
032 PROT ALL;
033 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-131 2560.000 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
011 PROT ALL;
012 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-132 2560.000 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 003 PROT ALL;
004 PROT ALL;
009 PROT ALL;
010 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-133 1924.000 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-134 1766.250 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 008 PROT ALL;
015 PROT ALL;
016 PROT N2NE;
018 PROT N2,N2SW;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-135 2560.000 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-136 1441.500 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 022 PROT ALL;
027 PROT N2,SE;
034 PROT E2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-137 1281.000 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 025 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-138 1282.000 Acres
T.0070N, R.0520E, 21 MDM, NV
Sec. 026 PROT ALL;
035 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-139 2109.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
003 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-140 2079.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 004 PROT ALL;
005 PROT ALL;
006 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-141 1905.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 007 PROT ALL;
008 PROT ALL;
009 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-142 1920.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 010 PROT ALL;
011 PROT ALL;

012 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-143 2560.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-144 2560.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 015 PROT ALL;
016 PROT ALL;
021 PROT ALL;
022 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-145 2538.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 017 PROT ALL;
018 PROT ALL;
019 PROT ALL;
020 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-146 2560.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-147 2560.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 027 PROT ALL;
028 PROT ALL;
033 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-148 2548.000 Acres
T.0080N, R.0520E, 21 MDM, NV
Sec. 029 PROT ALL;
030 PROT ALL;
031 PROT ALL;
032 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-149 2559.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 002 PROT ALL;
011 PROT ALL;
014 PROT ALL;
023 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-150 2560.000 Acres
T.0090N, R.0520E, 21 MDM, NV

Sec. 003 PROT ALL;
004 PROT ALL;
009 PROT ALL;
010 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-151 2522.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;
008 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-152 2560.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 015 PROT ALL;
016 PROT ALL;
021 PROT ALL;
022 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-153 2522.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 017 PROT ALL;
018 PROT ALL;
019 PROT ALL;
020 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-154 2560.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-155 2560.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 027 PROT ALL;
028 PROT ALL;
033 PROT ALL;
034 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-156 2522.000 Acres
T.0090N, R.0520E, 21 MDM, NV
Sec. 029 PROT ALL;
030 PROT ALL;
031 PROT ALL;
032 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-157 2140.130 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 007 LOTS 1-4;
008 LOTS 1-4;
009 LOTS 1-4;
016 ALL;
017 ALL;
018 LOTS 1-4;
018 E2,E2W2;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-158 2160.200 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 010 LOTS 1-4;
011 LOTS 1-4;
012 LOTS 1-4;
013 ALL;
014 ALL;
015 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-159 1899.280 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 019 LOTS 1-4;
019 E2,E2W2;
020 ALL;
021 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-160 1920.000 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 022 ALL;
023 ALL;
024 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-161 2560.000 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
035 ALL;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-162 2560.000 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 027 ALL;
028 ALL;
033 ALL;
034 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-163 2521.600 Acres
T.0100N, R.0520E, 21 MDM, NV
Sec. 029 ALL;
030 LOTS 1-4;
030 E2,E2W2;
031 LOTS 1-4;
031 E2,E2W2;
032 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-164 1601.190 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
003 LOTS 1-2;
003 S2NE,SE;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-165 1760.000 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 010 NE,S2;
011 ALL;
012 ALL;
Nye County
Battle Mountain DO

Formerly Lease No.

NV-11-12-166 2560.000 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 024 ALL;
013 ALL;
014 ALL;
023 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-167 2240.000 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 015 ALL;
016 E2;
021 ALL;
022 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-168 2560.000 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
035 ALL;
036 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-169 2560.000 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 027 ALL;
028 ALL;
033 ALL;
034 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-170 2398.380 Acres
T.0110N, R.0520E, 21 MDM, NV
Sec. 029 ALL;
030 LOTS 3,4;
030 E2,E2SW;
031 LOTS 1-4;
031 E2,E2W2;
032 ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-171 1442.000 Acres
T.0100N, R.0530E, 21 MDM, NV
Sec. 007 PROT ALL;
008 PROT ALL;
017 PROT ALL;
018 PROT ALL;
Nye County
Battle Mountain DO

NV-11-12-172 1920.000 Acres
T.0100N, R.0530E, 21 MDM, NV
Sec. 019 PROT ALL;
030 PROT ALL;
031 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

NV-11-12-173 1920.000 Acres
T.0100N, R.0530E, 21 MDM, NV
Sec. 020 PROT ALL;
029 PROT ALL;
032 PROT ALL;
Nye County
Battle Mountain DO
Formerly Lease No.

APPENDIX B

OIL AND GAS LEASE PARCELS STIPULATIONS

ARCHAEOLOGICAL STIPULATION

These leases may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Authority: BLM Washington Office Instruction Memorandum 2005-03

Parcel	Description of Lands
ALL PARCELS	

ARCH-ZONE 7

NATIVE AMERICAN CONSULTATION REQUIRED

This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Parcel	Description of Lands
ALL PARCELS	

NV-060-NA1

TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operations and maintenance of production facilities.

Sage Grouse Winter Habitat

Sage grouse winter habitat from February 15 through May 15.

For the purpose of:

Protection of sage grouse winter habitat and during periods of stress for the birds, Tonopah RMP, p. 8 and Plan Maintenance Sheet 3.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. For guidance on the use of the stipulation, see BLM Manual 1624 and 3103.

Parcel	Description of Lands
NV-11-12-019	ALL LANDS
NV-11-12-020	T.0030N, R.0490E, 21 MDM, NV Sec. 003 E2 009 E2; 010 ALL;
NV-11-12-022	ALL LANDS
NV-11-12-023	ALL LANDS
NV-11-12-024	T.0030N, R.0490E, 21 MDM, NV Sec. 017 ALL; 019 LOTS 1-4; 019 NE,E2W2;
NV-11-12-025	ALL LANDS
NV-11-12-032	T.0040N, R.0490E, 21 MDM, NV Sec. 025 S2; 026 ALL; 035 E2,SW1/4; 036 ALL;

NV-11-12-038	T.0060N, R.0490E, 21 MDM, NV Sec. 006 LOTS 1-7; 006 S2NE,SENW,E2SW,SE; 007 LOTS 1-4; 007 E2,E2W2; 018 LOTS 1; 018 NENW;
NV-11-12-051	T.0040N, R.0492E, 21 MDM, NV Sec. 035 PROT ALL; 036 PROT ALL;
NV-11-12-056	T.0030N, R.0500E, 21 MDM, NV Sec. 002 W2; 003 PROT ALL;
NV-11-12-057	ALL LANDS
NV-11-12-058	ALL LANDS
NV-11-12-059	T.0030N, R.0500E, 21 MDM, NV Sec. 010 PROT ALL; 011 PROT ALL;
NV-11-12-060	T.0030N, R.0500E, 21 MDM, NV Sec. 014 PROT ALL; 023 PROT ALL;
NV-11-12-061	ALL LANDS
NV-11-12-062	ALL LANDS
NV-11-12-063	T.0030N, R.0500E, 21 MDM, NV Sec. 025 W2; 026 PROT ALL; 035 PROT ALL; 036 W2;
NV-11-12-064	ALL LANDS
NV-11-12-065	ALL LANDS
NV-11-12-066	ALL LANDS
NV-11-12-067	T.0032N, R.0500E, 21 MDM, NV Sec. 034 PROT ALL;

NV-11-12-105	T.0080N, R.0510E, 21 MDM, NV Sec. 014 ALL; 023 NW1/4;
NV-11-12-106	ALL LANDS
NV-11-12-108	T.0080N, R.0510E, 21 MDM, NV Sec. 020 S2;
NV-11-12-107	T.0080N, R.0510E, 21 MDM, NV Sec. 019 SESW,S2SE; 030 LOTS 1-4;
NV-11-12-140	T.0080N, R.0520E, 21 MDM, NV Sec. 006 PROT ALL;
NV-11-12-149	ALL LANDS
NV-11-12-150	ALL LANDS
NV-11-12-151	ALL LANDS
NV-11-12-152	ALL LANDS
NV-11-12-153	ALL LANDS
NV-11-12-155	T.0090N, R.0520E, 21 MDM, NV Sec. 027 N2; 028 PROT ALL; 033 W2;
NV-11-12-156	ALL LANDS
NV-11-12-157	ALL LANDS
NV-11-12-158	ALL LANDS
NV-11-12-159	ALL LANDS
NV-11-12-160	ALL LANDS
NV-11-12-161	ALL LANDS
NV-11-12-162	ALL LANDS
NV-11-12-163	ALL LANDS
NV-11-12-164	ALL LANDS
NV-11-12-165	ALL LANDS

NV-11-12-166	ALL LANDS
NV-11-12-167	ALL LANDS
NV-11-12-168	ALL LANDS
NV-11-12-169	ALL LANDS
NV-11-12-170	ALL LANDS
NV-11-12-171	T.0100N, R.0530E, 21 MDM, NV Sec. 007 PROT ALL; 018 PROT ALL;
NV-11-12-172	ALL LANDS

NSO-065-06

TIMING LIMITATION STIPULATION

No surface occupancy is allowed during the following time period. This stipulation does not apply to operation and maintenance of production facilities.

Bighorn Lambing Area

Bighorn lambing from February 1 to May 15.

For the purpose of:

Protection of bighorn sheep lambing areas, restrict activities which might be disturbing to bighorn sheep between February 1 and May 15, Tonopah RMP, p. 8.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3103.

Parcel	Description of Lands
NV-11-12-029	T.0040N, R.0490E, 21 MDM, NV Sec. 013 ALL; 014 ALL; 023 ALL; 024 ALL;
NV-11-12-049	T.0040N, R.0492E, 21 MDM, NV Sec. 003 PROT ALL; 010 PROT ALL; 015 PROT ALL; 022 PROT ALL; 027 PROT ALL; 034 PROT ALL;
NV-11-12-050	T.0040N, R.0492E, 21 MDM, NV Sec. 013 PROT ALL; 014 PROT ALL; 023 PROT ALL; 024 PROT ALL;

NV-11-12-051	T.0040N, R.0492E, 21 MDM, NV Sec. 025 PROT ALL; 026 PROT ALL; 035 PROT ALL; 036 PROT ALL;
NV-11-12-070	T.0060N, R.0500E, 21 MDM, NV Sec. 005 PROT ALL; 006 PROT ALL; 007 PROT ALL; 008 PROT ALL;
NV-11-12-074	T.0070N, R.0500E, 21 MDM, NV Sec. 005 PROT ALL; 006 PROT ALL; 007 PROT ALL; 008 PROT ALL;
NV-11-12-075	T.0070N, R.0500E, 21 MDM, NV Sec. 017 PROT ALL; 018 PROT ALL; 019 PROT ALL EXCL ME PATS; 020 PROT ALL EXCL ME PATS;
NV-11-12-078	T.0070N, R.0500E, 21 MDM, NV Sec. 029 PROT ALL; 030 PROT ALL EXCL ME PATS; 031 PROT ALL; 032 PROT ALL;

TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operations and maintenance of production facilities.

Mule Deer Crucial Winter Habitat from January 15 to May 15.

For the purpose of:

Protection of mule deer winter habitat, restrict activities which might be disturbing to mule deer between January 15 and May 15, Tonopah RMP, p. 8.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3103.

Parcel	Description of Lands
NV-11-12-069	T.0060N, R.0500E, 21 MDM, NV Sec. 004 LOTS 1-4; 004 S2N2,S2; 009 ALL; 016 W2;
NV-11-12-070	T.0060N, R.0500E, 21 MDM, NV Sec. 005 E2; 008 E2;
NV-11-12-073	T.0070N, R.0500E, 21 MDM, NV Sec. 003 W2 004 LOTS 2-4; 004 S2N2,S2;
NV-11-12-074	T.0070N, R.0500E, 21 MDM, NV Sec. 005 PROT ALL; 008 PROT ALL;

NV-11-12-075	T.0070N, R.0500E, 21 MDM, NV Sec. 017 PROT ALL; 018 E2; 019 E2 EXCL ME PATS;
NV-11-12-076	T.0070N, R.0500E, 21 MDM, NV Sec. 021 ALL;
NV-11-12-077	T.0070N, R.0500E, 21 MDM, NV Sec. 028 ALL; 033 ALL;
NV-11-12-078	T.0070N, R.0500E, 21 MDM, NV Sec. 029 PROT ALL; 030 E2 EXCL ME PATS; 031 E2; 032 PROT ALL;
NV-11-12-079	T.0080N, R.0500E, 21 MDM, NV Sec. 034 E2,NENW;
NV-11-12-149	T.0090N, R.0520E, 21 MDM, NV Sec. 011 S2; 014 PROT ALL; 023 PROT ALL;
NV-11-12-150	T.0090N, R.0520E, 21 MDM, NV Sec. 004 W2; 009 PROT ALL; 010 PROT ALL;
NV-11-12-151	ALL LANDS
NV-11-12-152	ALL LANDS
NV-11-12-153	ALL LANDS
NV-11-12-154	T.0090N, R.0520E, 21 MDM, NV Sec. 026 NW4;
NV-11-12-155	T.0090N, R.0520E, 21 MDM, NV Sec. 027 N2; 028 PROT ALL;
NV-11-12-156	T.0090N, R.0520E, 21 MDM, NV Sec. 029 PROT ALL; 030 E2;

NV-11-12-163	T.0100N, R.0520E, 21 MDM, NV Sec. 031 LOTS 1-4; 031 E2,E2W2; 032 ALL;

NSO-065-08

MIGRATORY BIRDS STIPULATION

Surface disturbing activities during the migratory bird nesting season (March 1 to July31) may be restricted in order to avoid potential violation of the Migratory Bird Act. Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, or if other evidence of nesting is observed (mating pairs, territorial defense, carrying of nesting material, transporting of food), the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites. Protection measures may include avoidance or restricting or excluding development in certain areas until nests and nesting birds will not be disturbed. After July 31, no further avian survey, will be conducted until the following year.

Parcel	Description of Lands
ALL PARCELS	

NV-065-24

OFF HIGHWAY VEHICLE RESTRICTION STIPULATION

All vehicular traffic shall be confined to existing roads and trails. New and amended right-of-way within the following areas will have to be compatible with special values of the area.

Parcels	Description of Lands
NV-11-12-026	T.0040N, R.0490E, 21 MDM, NV Sec. 001 LOTS 1-4; Sec. 001 S2N2, S2; Sec. 002 LOTS 1-3; Sec. 002 S2NE; Sec. 002 SE
NV-11-12-028	T.0040N, R.0490E, 21 MDM, NV Sec. 011 E2NE; Sec. 011 NESE; Sec. 012 ALL;
NV-11-12-035	ALL LANDS
NV-11-12-036	ALL LANDS
NV-11-12-048	ALL LANDS
NV-11-12-049	T.0040N, R.0492E, 21 MDM, NV Sec. 003 PROT ALL; Sec. 010 PROT ALL; Sec. 015 PROT ALL; Sec. 022 PROT ALL;
NV-11-12-050	ALL LANDS
NV-11-12-052	ALL LANDS
NV-11-12-053	ALL LANDS
NV-11-12-054	T.0060N, R.0492E, 21 MDM, NV Sec. 003 PROT ALL; Sec. 004 PROT ALL; Sec. 005 PROT ALL;
NV-11-12-055	ALL LANDS
NV-11-12-081	ALL LANDS
NV-11-12-082	ALL LANDS

NV-11-12-083	T.0030N, R.0510E, 21 MDM, NV Sec. 008 PROT E2;
NV-11-12-084	ALL LANDS
NV-11-12-085	ALL LANDS
NV-11-12-086	T.0030N, R.0510E, 21 MDM, NV Sec. 017 PROT ALL; Sec. 020 PROT ALL;
NV-11-12-087	ALL LANDS
NV-11-12-088	ALL LANDS
NV-11-12-089	T.0030N, R.0510E, 21 MDM, NV Sec. 029 PROT ALL; Sec. 030 PROT SESE; Sec. 031 PROT E2; Sec. 032 PROT ALL;
NV-11-12-090	T.0032N, R.0510E, 21 MDM, NV Sec. 033 PROT SE; Sec. 034 PROT ALL; Sec. 035 PROT ALL; Sec. 036 PROT ALL;
NV-11-12-117	ALL LANDS
NV-11-12-118	ALL LANDS
NV-11-12-119	T.0030N, R.0512E, 21 MDM, NV Sec. 013 PROT ALL; Sec. 014 PROT ALL; Sec. 023 PROT ALL; Sec. 024 PROT NE, NW, SW;
NV-11-12-120	T.0030N, R.0512E, 21 MDM, NV Sec. 025 PROT NWNW; Sec. 026 PROT NE, W2, W2SE, NESE; Sec. 035 PROT NW, W2SW;
NV-11-12-121	ALL LANDS
NV-11-12-123	ALL LANDS
NV-11-12-124	T.0030N, R.0520E, 21 MDM, NV Sec. 007 PROT ALL;

	Sec. 008 PROT ALL; Sec. 017 PROT NE, W2; Sec. 018 PROT ALL;
NV-11-12-125	T.0030N, R.0520E, 21 MDM, NV Sec. 009 PROT NE, W2; Sec. 016 PROT NWNW;
NV-11-12-127	T.0030N, R.0520E, 21 MDM, NV Sec. 019 PROT N2, SW;
NV-11-12-135	ALL LANDS
NV-11-12-136	T.0070N, R.0520E, 21 MDM, NV Sec. 027 PROT E2; Sec. 034 PROT E2;
NV-11-12-137	ALL LANDS
NV-11-12-138	ALL LANDS
NV-11-12-157	T.0100N, R.0520E, 21 MDM, NV Sec. 007 LOTS 1-2; Sec. 008 LOTS 1-4; Sec. 009 LOTS 2-4; Sec. 016 E2; Sec. 017 ALL; Sec. 018 LOTS 2-4; Sec. 018 SWNE, S2NW, SW;
NV-11-12-164	T.0110N, R.0520E, 21 MDM, NV Sec. 002 LOTS 1-4; Sec. 002 S2N2, SW, W2SE; Sec. 003 LOTS 1-2; Sec. 003 S2NE, SE;
NV-11-12-165	T.0110N, R.0520E, 21 MDM, NV Sec. 010 NE, S2; Sec. 011 NENW, W2NW;
NV-11-12-167	T.0110N, R.0520E, 21 MDM, NV Sec. 015 W2NE, W2; Sec. 016 E2; Sec. 021 ALL; Sec. 022 W2W2;
NV-11-12-169	T.0110N, R.0520E, 21 MDM, NV Sec. 027 W2;

	Sec. 028 ALL; Sec. 033 ALL; Sec. 034 W2E2, W2;
NV-11-12-170	T.0110N, R.0520E, 21 MDM, NV Sec. 029 E2; Sec. 032 E2;

NV-065-21

NO SURFACE OCCUPANCY STIPULATION

No surface use is allowed on the land described below (legal description or other description):

Jumbled Rock Petroglyphs

For the purpose of:

a. Preserving a significant archaeological site.

b. Preserving a site important to maintaining local Native Americans historical identity and traditional believes.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101).

Parcel	Description of Lands
NV-11-12-163	T.0100N, R.0520E, 21 MDM, NV Sec. 029 ALL;

NSO-065-01

THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it complete its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. &1531 et seq., including completion of any required procedure for conference or consultation.

Authority: BLM Washington Office Instruction Memorandum 2002-174; Endangered Species Act

For the purpose of:

Protecting the golden eagle, a BLM Special Status Species.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101).

Parcels	Description of Lands
NV-11-12-117	ALL LANDS

NV-065-27

NO SURFACE OCCUPANCY STIPULATION

No surface occupancy is allowed on the land described below (legal description or other description):

Lunar Crater Special Recreation Management Area

For the purpose of:

Protecting the Lunar Crater National Natural Landmark and preserving the recreational and scenic values and special geologic features of the Lunar Crater Special Recreation Management Area.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101).

Parcels	Description of Lands
NV-11-12-135	T.0070N, R.0520E, 21 MDM, NV Sec. 013 N½ ; 014 N½, SW½; 023 W½;
NV-11-12-136	T.0070N, R.0520E, 21 MDM, NV Sec. 027 E½; 034 E½;
NV-11-12-137	T.0070N, R.0520E, 21 MDM, NV Sec. 036 SW¼;
NV-11-12-138	T.0070N, R.0520E, 21 MDM, NV Sec. 026 NW½; 035 S½;

NSO-065-3

TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operations and maintenance of production facilities.

Raptor Nest Sites

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.

For the purpose of:

Protection of raptor nesting activities to maintain existing populations. Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. For guidance on the use of the stipulation, see BLM Manual 1624 and 3103.

Parcels	Description of Lands
NV-11-12-061	ALL LANDS
NV-11-12-081	ALL LANDS
NV-11-12-084	ALL LANDS
NV-11-12-117	ALL LANDS
NV-11-12-124	ALL LANDS
NV-11-12-128	ALL LANDS
NV-11-12-133	ALL LANDS
NV-11-12-136	ALL LANDS
NV-11-12-138	ALL LANDS
NV-11-12-145	ALL LANDS

NV-065-28

APPENDIX C

TONOPAH FIELD OFFICE SPECIAL STATUS SPECIES LIST

BLM Sensitive Species that may occur in the project area	
Mammals	**Common Name**
Euderma maculatum	Spotted bat
Eptesicus fuscus	Big brown bat
Corynorhinus townsendii	Townsend's big-eared bat
Lasionycteris noctivagans	Silver-haired bat
Lasiurus blossevillii	Western red bat
Myotis califoricus	California myotis
Myotis ciliolabrum	Western small-footed myotis
Myotis evotis	Long-eared myotis
Myotis evotis	Long-eared myotis
Myotis lucifungus	Little brown myotis
Pipistrellus Hesperus	Western pipistrelle
Brachylagus idahoensis	Pygmy rabbit
Myotis volans	Long-legged myotis
Ovis canadensi nelsoni	Desert bighorn sheep
Birds	**Common Name**
Vireo vicinior	Gray vireo
Aquila chrysaetos	Golden eagle
Athene cunucularia	Burrowing owl
Buteo regalis	Ferruginous hawk
Falco mexicanus	Prairie falcon
Lanius ludovicianus	Loggerhead shrike
Baeolophus griseus	Juniper titmouse
Ixobrychus exilis	Least bittern
Centrocercus urophasianus	Greater Sage-grouse
Gymnorhinus cyanocephalus	Pinyon jay
Spizella breweri	Brewer’s Sparrow
Pooecetes gramineus	Vesper sparrow
Sphyrapicus nuchalis	Red-naped sapsucker
Vermivora luciae	Lucy's Warbler
Plants	**Common Name**
Unclahes Rethuiac	Ruth's Milkweed
Astragalus uncialis	Currant Milkvetch
Penstemon palmeri	Palmer's penstemon