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**June 2011 Competitive Oil and Gas Lease Sale
for the Battle Mountain District,
Tonopah Field Office, Nevada
ENVIRONMENTAL ASSESSMENT**

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1. 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 a yearly competitive lease sale 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 72 Tonopah Field Office administered parcels nominated in the June 2011 Competitive Oil and Gas Lease Sale (Figure 1). A total of 88 parcels were originally proposed for the lease sale; 16 were deferred because of land use restrictions and a lack of Native American consultation on areas covered by snow during the field visit in early January, 2011. The EA verifies conformance with the approved land use plan and provides the rationale for deferring parcels from the lease sale. Additionally, it provides the rationale for any lease stipulations applied to specific parcels.

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

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 1,761,280 acres in Railroad Valley and 326,400 acres in the Big Sand Springs located in the northeast corner of Tonopah Field Office (TFO) resource area.

2. PURPOSE AND NEED

The purpose of the action is to offer all or part of the 72 nominated parcels for competitive oil and gas leasing in the June 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". The majority of the parcels nominated for leasing in the June 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 published (see sage grouse discussion on page 69). A new RMP revision is underway that will include the new data and may extend new sage grouse stipulations onto a few of the June 2011 parcels.

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 required should lease development occur.

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

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

As the BLM reviews draft parcel locations, the cultural resource staff reviews the locations to determine if any are within known areas of cultural or archeological concern. Native American consultation is conducted for each lease sale. If Traditional Cultural Properties (TCP) or heritage related issues are identified, such parcels are 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 are allowed to be offered in the next sale.

If responses are received, BLM cultural resources staff will discuss the information or issues of concern with the Native American representative to determine if all or only portions of a parcel need to be withdrawn from the sale or if special stipulations need be attached as lease stipulations. Native American consultation letters for the June 2011 Lease Sale were sent December 8, 2010. On January 11, 2011, resource specialists met with a representative of the Duckwater Shoshone Tribe in Railroad Valley. Several parcels of interest to the tribes were visited on that day. However, because of snow cover on the ground, some parcels of concern could not be evaluated. Those parcels are being deferred from the lease sale until they can be properly evaluated.

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 has been 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).

3. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Eighty-eight lease parcels were originally nominated and proposed for inclusion in the June 2011 Competitive Oil and Gas Lease Sale. During internal review of the current Tonopah RMP (1997), the interdisciplinary staff determined that there were 16 parcels that were either wholly or partially located in no surface occupancy areas due to mineral leasing restrictions. Each of the parcels has been deferred until further analysis of the parcels can be completed. The parcels are listed below:

NV-11-06-039
NV-11-06-040
NV-11-06-042
NV-11-06-043
NV-11-06-044
NV-11-06-045
NV-11-06-046
NV-11-06-047
NV-11-06-112
NV-11-06-129
NV-11-06-131
NV-11-06-133
NV-11-06-146

In addition, four parcels are being deferred because a field survey of “parcels of concern” to the Duckwater Tribe could not be accomplished due to snow cover. The deferred parcels are:

NV-11-06-135
NV-11-06-136
NV-11-06-138
NV-11-06-039

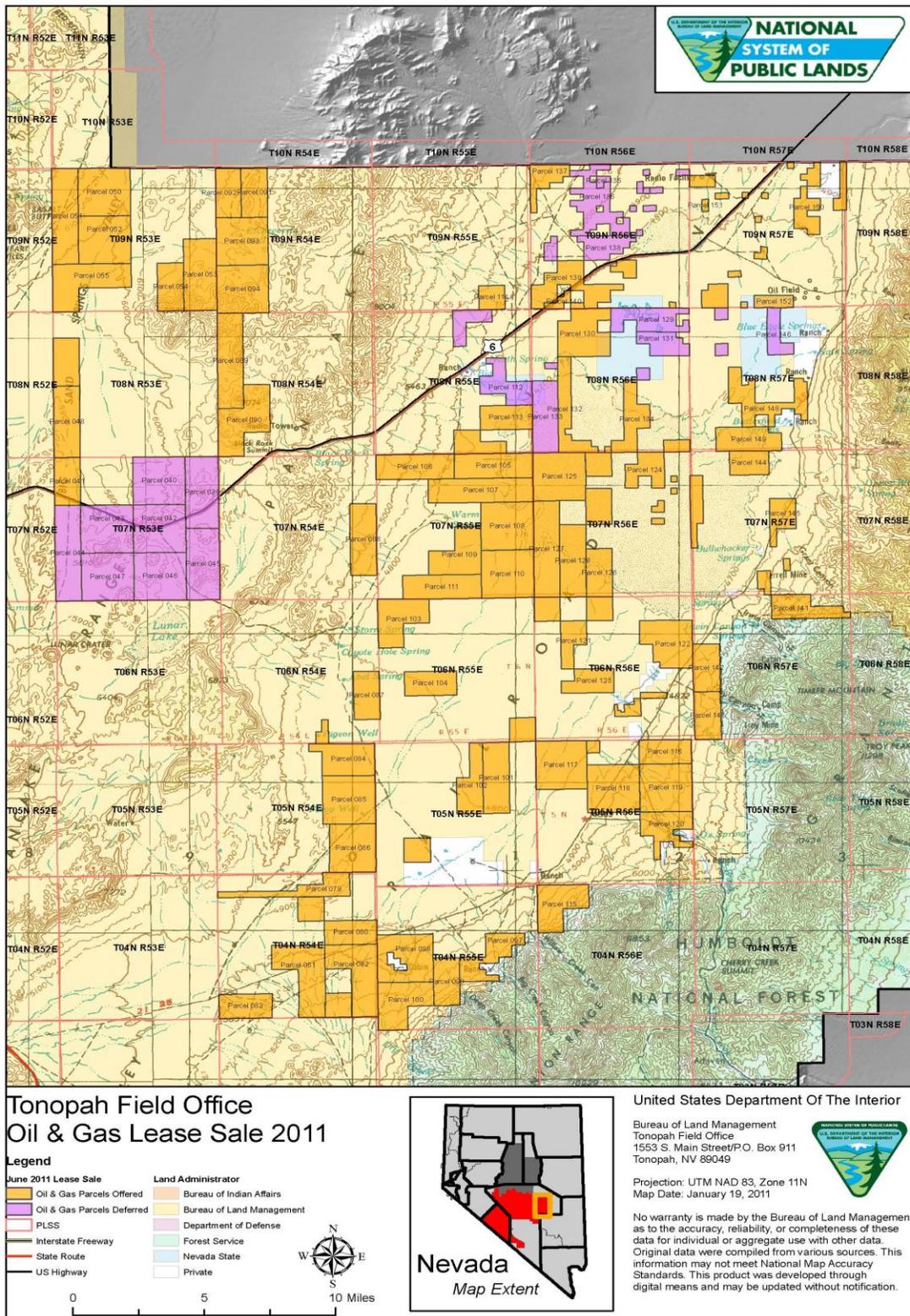


Figure 1. Location map of the oil and gas lease parcels for June 2011 lease sale.

3.1 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 85 lease parcels from the June 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.

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

3.2 Proposed Action

The Proposed Action is to recommend to the State Director that the BLM offer for competitive oil and gas leasing 72 parcels of federal minerals covering approximately 164,000 acres administered by the TFO. 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 72 parcels to address site specific concerns or new information not identified in the land use planning process.

The 72 parcels would be included in the lease sale. Parcel numbers, acreages, and locations of parcels are listed in Appendix 1.

Once sold, the lease purchaser has the right to use as much of the leased lands as is reasonably necessary to explore and drill for all of the oil and gas within the lease boundaries, subject to the stipulations attached to the lease (Title 43 CFR 3101.1-2). Oil and gas leases are issued for a 10-year period and continue for as long thereafter as oil or gas is produced in paying quantities. If a lessee fails to produce oil and gas, does not make annual rental payments, does not comply with the terms and conditions of the lease, or relinquishes the lease; ownership of the minerals revert back to the federal government and the lease can be resold.

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

The 72 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 1 of the EA:

Arch Zone 1	Archeological Stipulation
Arch Zone 2	Archeological Stipulation
Arch Zone 3	Archeological Stipulation
Arch Zone 4	Archeological Stipulation

Arch Zone 5	Archeological Stipulation
NV-060-NA1	Native American Consultation required
NSO-065-06	Timing Limitation Stipulation (Sage Grouse Winter Habitat)
NSO-065-07	Timing Limitation Stipulation (Sage Grouse Leks)
NSO-065-08	Timing Limitation Stipulation (Mule Deer Winter Habitat)
NSO-065-13	Timing Limitation Stipulation (Bighorn Lambing Area)
NSO-065-20	Timing Limitations and Controlled Surface Use Lease Stipulations

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.

It is recommended to the State Director that the BLM not offer for oil and gas leasing the 16 deferred parcels that require additional Native American consultation or that the interdisciplinary staff determined were either wholly or partially located in no surface occupancy areas due to mineral leasing restrictions (as described above). No lease stipulations (as required by Title 43 Code of Federal Registration 3131.3) would be added to these deferred parcels and acreage to address site specific concerns or new information not identified in the land use planning process. Standard terms and conditions as well as special stipulations listed in the RMP would not be applied to the deferred lease sale parcels.

3.3 Alternatives Considered but Eliminated from Further Analysis

The original parcel list sent to the field office included 88 parcels of federal minerals covering 170,505.495 acres. Review of the Tonopah Resource Management Plan and the results of Native American consultation have reduced the final parcel list to 72 parcels, containing 138,640.795 acres. Standard terms and conditions as well as special stipulations listed in the RMP would apply to these parcels.

During an internal review of the current Tonopah RMP (1997), the interdisciplinary staff determined that this list included 12 parcels that were either wholly or partially located in no surface occupancy areas due to mineral leasing restrictions. These parcels are listed above.

The leasing of all 88 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).

No other alternatives to the proposed action were apparent which would meet the purpose and need of the Proposed Action.

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 have resulted in assessment area being generally prospective for hydrocarbon production.

The development of the Antler Orogeny in the Late Devonian to Early Mississippian allowed the deposition of the organic-rich source rocks necessary for hydrocarbon development. Late Cretaceous Sevier Orogeny created stacked set of thrust sheets which buried the mid-Paleozoic organic sediments beneath a thickened crust where they could pass into the oil and gas-generating temperature and pressure windows. The Sevier Orogeny in Late Cretaceous also placed locally prospective reservoir rocks above the Mississippian source rocks in potential oil and gas traps. In geologic time following the Sevier Orogeny, the assessment area experienced varying amounts of volcanism and the development of the present-day basin and range topography. The late Tertiary volcanic rocks constitute the main reservoir of the oil fields in the Railroad Valley petroleum province.

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

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. The southern end of the valley begins near Gray Top Mountain (7,036 feet) and stretches north all the way to Mount Hamilton (10,745 feet). To the east are the Quinn Canyon, Grant Canyon, Grant, and White Pine Ranges and to the west are the Pancake and Reveille Ranges. Most of the valley lies in Nye County, but it crosses into White Pine County at its northern end.

The valley has 4 separate Wildlife Management Areas and valley communities include Carrant, Crow's Nest, Green Springs, Lockes, and Nyala. 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.

The first oil well drilled in Nevada was a 1,890-foot-deep dry hole drilled in Washoe County just southwest of Reno in 1907. Few wells were drilled in the State from 1907 to the early 1950s; these dry holes are all poorly known because no permits or other records were required until 1953.

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.

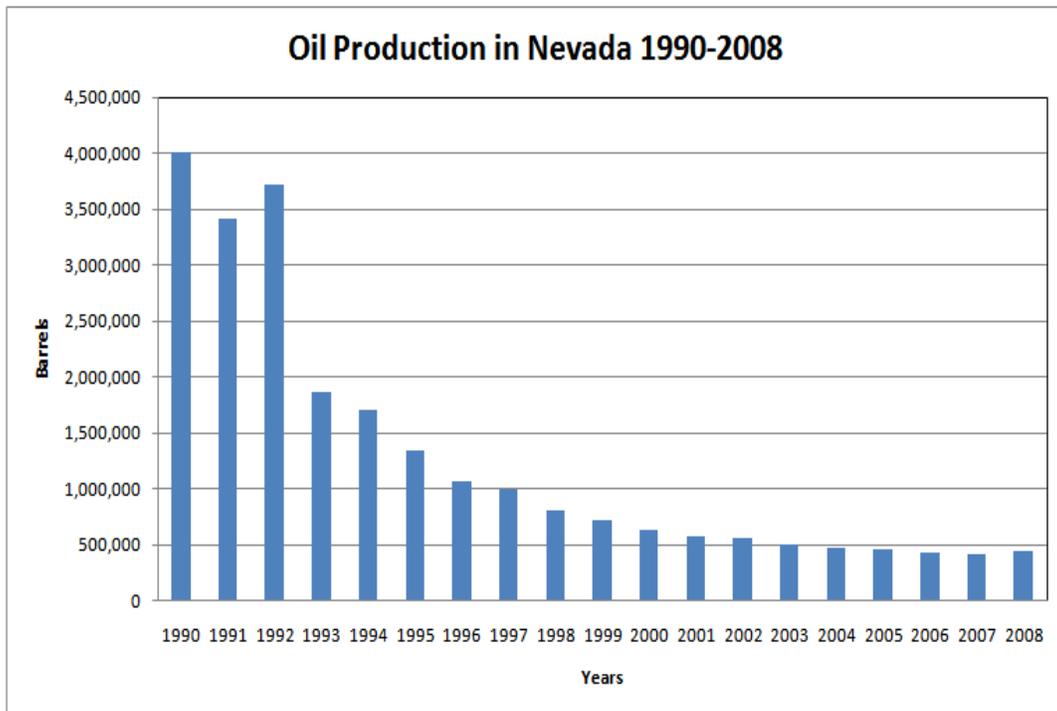


Figure 2. Oil production trends for 1990 through 2008.

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. 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 June 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 138,640.795 acres, the total amount of disturbance could be expected to be about five-tenths of a percent (0.5%).

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the resource environments that would be affected by the implementation of the Proposed Action Alternative in Section 3.2.2. above.

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.
ACECs	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	No	No	There are no floodplains in or around the nominated lease parcels.
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 4.3.4.3. and 5.3.4.3.
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	Yes	Yes	See discussion in Sections 4.3.4.1. and 5.3.4.1.
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.
Wilderness	Yes	No	Some of the nominated lease parcels are located near the Wall Wilderness Study Area (WSA) but the WSA is 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 4.3.10. and 5.3.10.
Range Resources	Yes	Yes	See discussion in Sections 4.3.12. and 5.3.12.
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 5.3.4.2.
Special Status Species	Yes	Yes	See discussion in Sections 4.3.4.3. and 5.3.4.3.
Land & Realty	Yes	Yes	See discussion in Sections 4.3.13. and 5.3.13.
Forestry	No	No	Parts of the nominated parcels are located near Humboldt National Forest but the Forest is not affected by the nominated parcels.
Wild Horse and Burro	Yes	Yes	See discussion in Sections 4.3.11. and 5.3.11.

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 and decreased visibility.

Air quality in Railroad Valley and Big Sand Springs Valley have 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 Railroad Valley as a result of the No Action alternative as the proposed 72 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 Railroad Valley, the traditional territory of the Western Shoshone and possibly the Paiute Tribes. The majority of lands within the proposed lease areas have not been surveyed for cultural resources. A predictive model (Railroad Valley Predictive Model) has been developed to help predict cultural site density within a specific area of Railroad Valley. The goal of the model is to recommend survey methods for future projects based on the likelihood of finding sites within five archaeological zones defined by the model. These zones are identified using existing habitat and archaeological data, and by doing Class II archaeological surveys in some areas. This type of modeling can be a useful tool for predicting where prehistoric sites may be located, but it is not a useful tool for predicting the location of historic or ethnohistoric sites.

To date, the model has not been adequately tested and Class III cultural surveys are required for projects within the area defined by the predictive model. The model can be used to predict the possibility of finding significant prehistoric archeological sites in a project area. However, it cannot be used to predict the possibility of finding significant historic or ethnohistoric sites or to reduce the level of survey needed for a project.

4.3.2.1.1 Lease Parcels Located Inside the Area Defined By the Railroad Valley Predictive Model:

Arch Zone 1

The following parcels are partially or wholly located within Arch Zone 1. There is a high likelihood of finding significant archaeological sites in this zone. Sites are unevenly distributed and highly diverse. There is a high to moderate likelihood of subsurface cultural deposits. Ground disturbing activities should be monitored.

Parcels: 103, 105, 107, 108, 109, 110, 111, 113, 116, 117, 118, 121, 122, 123, 126, 127, 128, 130, 139, 140, 141, 142, 144, 145, 146, 148, 149, 150, 151, 152

Arch Zone 2

The following parcels are partially or wholly located within Arch Zone 2. There is a high likelihood of finding significant archaeological sites in this zone. Site density is high, but lower than density levels found in Zone 1. Sites are unevenly distributed and highly diverse. There is a high to moderate likelihood of subsurface cultural deposits. Ground disturbing activities should be monitored.

Parcels: 87, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 113, 117, 118, 119, 120, 121, 122, 123, 125, 126, 127, 128, 130, 134, 139, 140, 141, 144, 146, 148, 149, 150, 151

Arch Zone 3

The following parcels are partially or wholly located within Arch Zone 3. There is a moderate likelihood of finding significant archaeological sites in this zone. Site density is moderately high, but lower than density levels found in Zone 1 or Zone 2. Sites are unevenly distributed and highly diverse. The number of sites eligible to the National Register of Historic Places is lower than the number eligible in zones 1 or 2.

Parcels: 84, 85, 86, 87, 101, 102, 103, 104, 105, 106, 107, 113, 114, 116, 117, 118, 119, 120, 122, 123, 137, 139, 141, 142, 143, 145, 148, 150,

Arch Zone 4

The following parcels are partially or wholly located within Arch Zone 4. There is a moderate to low likelihood of finding significant archaeological sites in this zone. Site density is low, but may be moderately high in areas abutting zones 1-3. Sites show little diversity.

Parcels: 88, 106, 113, 116, 118, 119, 120, 143

Arch Zone 5

The following parcels are partially or wholly located within Arch Zone 5. There is a low likelihood of finding significant archaeological sites in this zone. No National Register eligible sites have been identified in this zone. Site density is low and diversity is limited. This zone includes some playa areas where surveys may not be required once the predictive model is fully tested.

Parcels: 105, 107, 108, 113, 124, 125, 126, 127, 128, 130, 132, 134, 144, 149, 150

4.3.2.1.2. Lease Parcels Located Outside of the area defined by the Railroad Valley Predictive Model

Only 2 to 5 percent of the total areas of the parcels that are located outside of the area defined by the Railroad Valley Predictive Model have 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. A Class III cultural survey would be required for projects located in the following lease parcels if the lease parcel area has not been adequately surveyed in the last 10 years.

Parcels: 41, 48, 50, 51, 52, 53, 54, 55, 79, 80, 81, 82, 83, 89, 90, 91, 92, 93, 94, 97, 98, 99, 100, 115

4.3.2.1.3 Special Management Areas of the Predictive Model

These areas have been designated as Special Management Units. This designation is based on wildlife, environmental or cultural concerns. These areas may restrict ground disturbing activities or require extensive study and mitigation:

Lockes Special Management Unit

Parcels: 113

Stormy/Able Complex

Parcels: 87, 103

Trap Springs Complex

Parcels: 151

Big Well Special Management Unit

Parcels: 130

Chimney Springs Special Management Unit

Parcels: 109

Blue Eagle Special Management Unit

Parcels: 146, 152

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.

Sites can be indirectly impacted by increased access to previously inaccessible areas. Even when sites eligible under criteria a, b, and c (a. important in National, regional or local history; b. associated with an important individual; or c. a unique or representative type) are avoided, the view shed of the site may be impacted, resulting in impairing a site's integrity of setting and feeling. Most impacts can be avoided by site avoidance and reclamation; however, in rare cases, sites cannot be avoided. If a site is National Register eligible under criterion (d. significant because of data content) the impacts can only be mitigated to "no adverse impact" by data collection. However, if a site is eligible under any of the other three criteria, the effects may only be partially mitigated and the project would have an "adverse effect" under Section 106 of the National Historic Preservation Act.

Impacts to the view shed that are temporary in nature (i.e., can be mitigated by complete rehabilitation of disturbance at the end of project life) can be mitigated to "no adverse effect" through reclamation. Cultural resource surveys would be conducted for each site-specific exploration or development proposal, which would identify and avoid impacts to cultural resources.

While the majority of the parcels are located in Arch Zones 1-3, 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 the resources.

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

There would be no known effect to cultural or paleontological resources under the No Action alternative as the proposed 72 lease parcels would be withdrawn from the lease sale.

4.3.3. Native American Religious Concerns

4.3.3.1. Affected Environment:

Railroad Valley and Big Sands Springs Valley lie within the traditional territory of the Western Shoshone and possibly the Paiute Tribes. 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. Specific locations in Railroad Valley were not identified

or shared. However, this does not mean they do not exist. Future Native American Consultations in the area may reveal such sites, activities, or resources.

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 Ely 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.

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.

While the majority of the parcels are located in Arch Zones 1-3, 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, 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 change to Native American Religious Concerns under the No Action alternative as the proposed 72 lease parcels would be withdrawn from the lease sale.

4.3.4. Threatened and Endangered Species, Wildlife, Other Special Status Species, and Migratory Birds

4.3.4.1. Threatened and Endangered Species:

4.3.4.1.1. Affected Environment:

Populations of Railroad Valley springfish (federally listed as threatened) are located on private land at Locke's Ranch and Warm Springs along U.S. Highway 6 and on public land at Reynolds Springs and North Spring outside the Railroad Valley Wildlife Management Area (WMA). In addition, in 1978, the BLM and NDOW

introduced a population of Railroad Valley springfish in Chimney Spring, within the WMA. The *Railroad Valley Springfish Recovery Plan, 1997*, contains recommendations needed to improve and secure the species habitat. In addition, BLM management for Railroad Valley springfish and its habitat is included in the *1990 Railroad Valley Habitat Management Plan*.

4.3.4.1.2. Environmental Consequences of the Proposed Action on Threatened and Endangered 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.

Oil and gas exploration and production activities have the potential to affect threatened, and endangered species in the following ways:

- Temporary disturbance and displacement, or mortality, of wildlife could result from exploration and development activities and from the human presence that is required; and
- Longer term habitat loss might result from exploration or development, as a result of disturbance to soils and vegetation that remains unreclaimed or unsuccessfully reclaimed for a period of years. Reclamation, especially in low elevation and low precipitation sites, is difficult even with the best techniques and equipment, and the potential for specific site failure may be high.

The acreages of disturbance associated with oil and gas exploration and production are expected to be minimal. Impacts would be reduced by site-specific COAs, BMPs, and mitigation measures.

No drilling activities or oil and gas development is allowed (NSO) in any of the above-mentioned Railroad Valley springfish habitat (section 4.3.4.11)

4.3.4.1.3. Environmental Consequences of the No Action Alternative on Threatened and Endangered Species:

There would be no change to Threatened and Endangered Species under the No Action Alternative as the proposed 72 lease parcels would be withdrawn from the lease sale.

4.3.4.2. Wildlife

4.3.4.2.1. Affected Environment:

The proposed action area in Railroad Valley and Big Sands Springs provides habitat for a wide variety of birds, mammals, reptiles, amphibians, and fish species. The RMP indicates that pronghorn antelope occur in the general area. Mule deer occurs in the Grant and Quinn Canyon Range. Bighorn Sheep occur in Grant Range, Quinn Canyon Range, and the Pancake Range. The Wildlife Management Areas (WMAs) and the springs in Railroad Valley support several species of fish. The proposed area

is habitat for several different species of hawks and owls. Sage Grouse winter and summer range is identified in the Quinn Canyon and Grant Ranges.

4.3.4.2.2. 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 in the following ways:

- Temporary disturbance, displacement, or mortality of wildlife could result from exploration and activities from the human presence that is required; and
- Longer term habitat loss could result from exploration or development, as a result of disturbance to soils and vegetation that remains unreclaimed or unsuccessfully reclaimed. Reclamation, especially in low elevation and low precipitation sites is difficult even with the best techniques and equipment, and the potential for failure is high.

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 day and/or 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.

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

There would be no change to Wildlife under the No Action Alternative as the proposed 72 lease parcels would be withdrawn from the lease sale.

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

4.3.4.3.1. 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 need for the species to become listed. The Sensitive Species designation is normally used for species that occur on Bureau 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.”

Nevada BLM Sensitive Species that are known to occur in the Railroad Valley area include the Western snowy plover, burrowing owl, ferruginous hawk, Railroad Valley tui chub, and Railroad Valley skipper.

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.

4.3.4.3.2. 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 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.

4.3.4.3.3. 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 72 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, Central Region. The majority of leases are within hydrographic sub-area 173B, the northern part of the Railroad Valley Basin. Additional leases are located within hydrographic sub-area 173A, the southern part of the Railroad Valley Basin and hydrographic sub-area 155C, the southern part of the Little Smoky Valley Basin. 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)
173B	Railroad Valley Northern Part	2,149	75,000	26,456	No
173A	Railroad Valley Southern Part	603	2,800	3,931	No
155C	Little Smoky Valley Southern Part	510	1,000	17	No

Designated groundwater basins are basins where permitted ground water 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.

4.3.5.1.2. Physiography

Railroad Valley is a closed basin extending approximately 110 miles between north-south-oriented ranges in the Basin and Range physiographic province, and varies in width from 10 to 20 miles. Mountain ranges enclosing the basin include the White Pine, Grant and Quinn Canyon ranges on the east and Pancake range to the west. Altitudes range from over 11,000 feet in the Grant Range to 4,706 on the large playa located in the northern part of Railroad Valley (173B). Numerous small ephemeral streams drain the eastern ranges, but stream flow rarely reaches the valley floor. There are numerous springs surrounding the valley floor.

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 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. Geologic Units and Structural Features

The Railroad Valley and Big Sand Springs Valley contain four major lithologic units (Van Denbugh, 1974). The four units are: noncarbonated and carbonate rocks, older alluvium and younger alluvium. These divisions were based largely on hydrologic properties.

The noncarbonated rocks are Precambrian to Quaternary in age and are primarily volcanic tuff with lesser amounts of rhyolitic and basaltic flows and granitic intrusions. The carbonate rocks are Cambrian to Permian in age and are dominated by limestone. The noncarbonated and carbonate rocks underlie the alluvium and

form the mountains. The carbonate rocks transmit large amounts of water locally and on a regional scale. The production of the carbonate aquifers depends largely on the degree of faulting and fracturing. The limestone units, where fractured, can be highly productive aquifers. The noncarbonated rocks tend to be less permeable than the carbonate rocks. The major springs in the basin appear to be associated with carbonate rocks.

The valley fill is composed of alluvial deposits. The total thickness of alluvium in Northern Railroad Valley is as much as 9,200 feet. The older alluvium is Tertiary to Quaternary in age and underlies the valley floors and alluvial slopes. The older alluvium consists of semi-consolidated to unconsolidated lenses of gravel, sand, silt and clay. This material was eroded from the surrounding mountains and transported by flowing water. The gravel and sand layers typically have high permeability and transmit water to wells.

The younger alluvium is Quaternary in age. It overlies the older alluvium by as much as a few hundred feet in the lowest elevations of the valley. It is composed of unconsolidated lenses of gravel, sand, silt and clay. The gravel and sand lenses typically have higher permeability. The playa and lake deposits are composed of silts and clays and have low permeability and therefore are poor sources of water.

4.3.5.1.4. 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 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 Fish Lake Valley, sub-area 150, 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.

4.3.5.1.5 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.

4.3.5.1.6 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 bicarbonate. In northern Railroad Valley calcium generally exceeds sodium. In southern Railroad Valley, sodium dominates. Sodium, chloride and sulfate dominate waters concentrated by evaporation. Water beneath the playa in northern Railroad Valley is saline.

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 would 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 production.

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

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.

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.

4.3.6.3. 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 72 lease parcels would be withdrawn from the lease sale.

4.3.7. Noxious Weeds and Invasive, Nonnative Species

4.3.7.1. Affected Environment:

Fifty-two species of invasive plants and noxious weeds are known to occur in State of Nevada. Of these, four species, Russian Knapweed, Hoary Cress, Tamarisk (on the playa only), and perennial Pepperweed are known to occur in Railroad Valley.

The inventory process is on-going to detect small, invasive populations as they begin to move into the district. 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, Nonnative 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.

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

There would be no change in noxious weeds and invasive, nonnative species under the No Action alternative as the proposed 72 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 Railroad Valley (RRV) with lesser number in Big Sands Springs Valley north of Hot Creek Valley. Both valleys are located within the geological province known as Basin and Range province, a series of north-south oriented mountain ranges separated by broad valleys. Railroad Valley is bounded on the east by the Grant Range and by the Pancake Range to the west. Big Sand Springs Valley is located west of the Pancake Range. A variety of rocks can be found within the area including Paleozoic carbonates and clastics rocks intruded by Tertiary volcanic rocks in the Grant Range and Pancake Range. The sediment accumulation in RRV 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.

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 and production 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 would help to mitigate any adverse effects that would 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 amount of gravel pits, nor would it burden other users that utilize 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 impacts would be mitigated through negotiations between 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 72 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 in Railroad Valley 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. Parcels 105, 107-108, 113, 125-128, 130, 132, 144, and 149 contain this soil type.

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. Parcels 79, 80, 84-87, 98, 101, 113, 116-118, 121-123, 126-128, 139-140, 144-146, 148-152 contain this type of soil.

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. Parcels 48, 50-55, 81, 83, 89, 90-93 contain this type of soil.

The group of parcels in the hill type of 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 a low as 8 percent. The wind and water erodibility are slight. Parcels

41, 81, 89, and 90 contain this type of soil.

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. Parcels 53-54, 89, 91-94, 97, and 99 contain this type of soil.

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.

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 72 lease parcels would be withdrawn from the lease sale.

4.3.10. Vegetation

4.3.10.1. Affected Environment:

4.3.10.1.1. Parcels in Railroad Valley

The majority of the June 2011 parcels are located in the Railroad Valley with vegetation cover of Inter-Mountain Basins Greasewood Flats and Inter-Mountain Basin Mixed Salt Desert Scrub. The playa in Railroad Valley is barren to sparsely vegetated with small saltgrass stands in depressions (Figure 3).

The margins of the playa are covered by 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 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 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.

4.3.10.1.2. Parcels in Big Sands Springs Valley

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 3).

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 on some occurrences, e.g., saltbush, greasewood, and rubber rabbitbrush.

Inter-Mountain Basins Semi-Desert Shrub Steppe occurs between 7,500-9,500 feet in elevation, on valley floors, gentle slopes, or shoulders of ridges. Sites are generally alluvial fans and flats with moderate to deep soils. Substrates are generally shallow, calcareous, fine-textured soils (clays to silt-loams), derived from alluvium. Soils may be alkaline and typically moderately saline. Characteristic species include fourwing saltbrush, sage brush, rabbbrush, ephedra, and winter fat.

4.3.10.2. 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 during the timeframe of oil and gas exploration, development, and production, a great number of acres become disturbed by seismic lines, exploration wells, road construction, and gravel pit expansion. 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 Shrub 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 nonnative 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.

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

There would be no change in vegetation under the No Action alternative as the proposed 72 lease parcels would be withdrawn from the lease sale.

4.3.11. Wild Horses and Burros

4.3.11.1. Affected Environment:

The BLM is responsible for the protection, management, and control of wild horses and burros on public lands in accordance with the Wild Free-Roaming Horse and Burro 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 Sand Springs Herd Management Area (HMA) is located in the Big Sands Springs Valley. HMAs are areas identified in the Resource Management Plan (RMP) for long-term management of wild horses and burros, and are designated as “Special Management Areas.” 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. Therefore, wild horses and burros cannot be relocated elsewhere within the Assessment Area and new HMAs cannot be created for them. The approximate size of the Sand Springs West HMA is 150,313 acres and is populated with approximately 49 wild horses.

Parcels 41, 48, 50-55, and 89-94 are located within the Sand Springs HMA.

4.3.11.2. 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.

Indirect impacts to wild horses and burros could include influencing herd distribution and migration within and between the HMAs, and disturbance to the forage resource.

Mineral exploration activities are not common in Big Sand Springs Valley. 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 Big Sands Springs Valley.

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

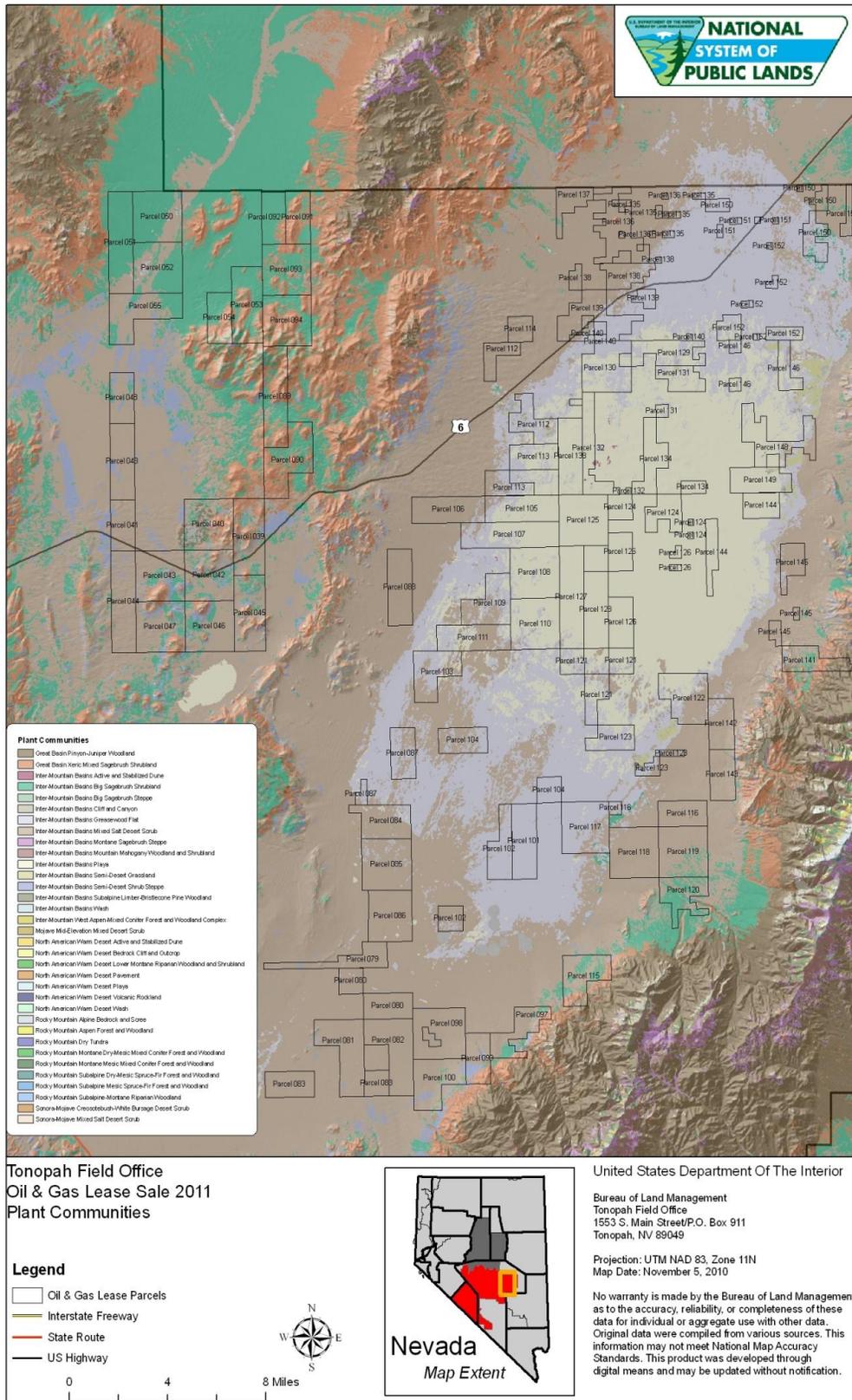


Figure 3. Vegetation types in Railroad and Big Sands Springs Valleys.

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. This could have impacts to the other areas within the HMA if increased use causes damage to the vegetation through utilization of forage resources and water sources.

Particular portions of other HMAs could be temporarily impacted if development occurred near critical water sources, or if many wells located near important winter habitat were developed. Impacts could occur to wild horses during the peak foaling season (i.e., March 1 through June 30). As a result, new foals could be orphaned or abandoned. 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 production and exploration project

4.3.11.3. 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 72 lease parcels would be withdrawn from the lease sale.

4.3.12. Range Resources

4.3.12.1. Affected Environment:

The lease sale parcels are contained within 5 grazing allotments (Figure 4). The allotments are run as a year long, 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 range from 20 to 39 acres/AUM (Animal Unit Month). In order to support one cow, for one year, about 350 acres of forage is required. This equals about two cows per square mile.

4.3.12.2. 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 many acres 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 affect on grazing patterns shifting and/or intensifying livestock grazing in other areas. All impacts are expected to be short term.

When oil or gas is found, the effects of 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.

4.3.12.3. 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 72 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 owned surface and subsurface mineral rights. Many of the parcels require granting of a right-of-way (ROW) in order to access the lease parcels. Some parcels include pre-existing land use authorizations such as grants, leases, and permits. 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.

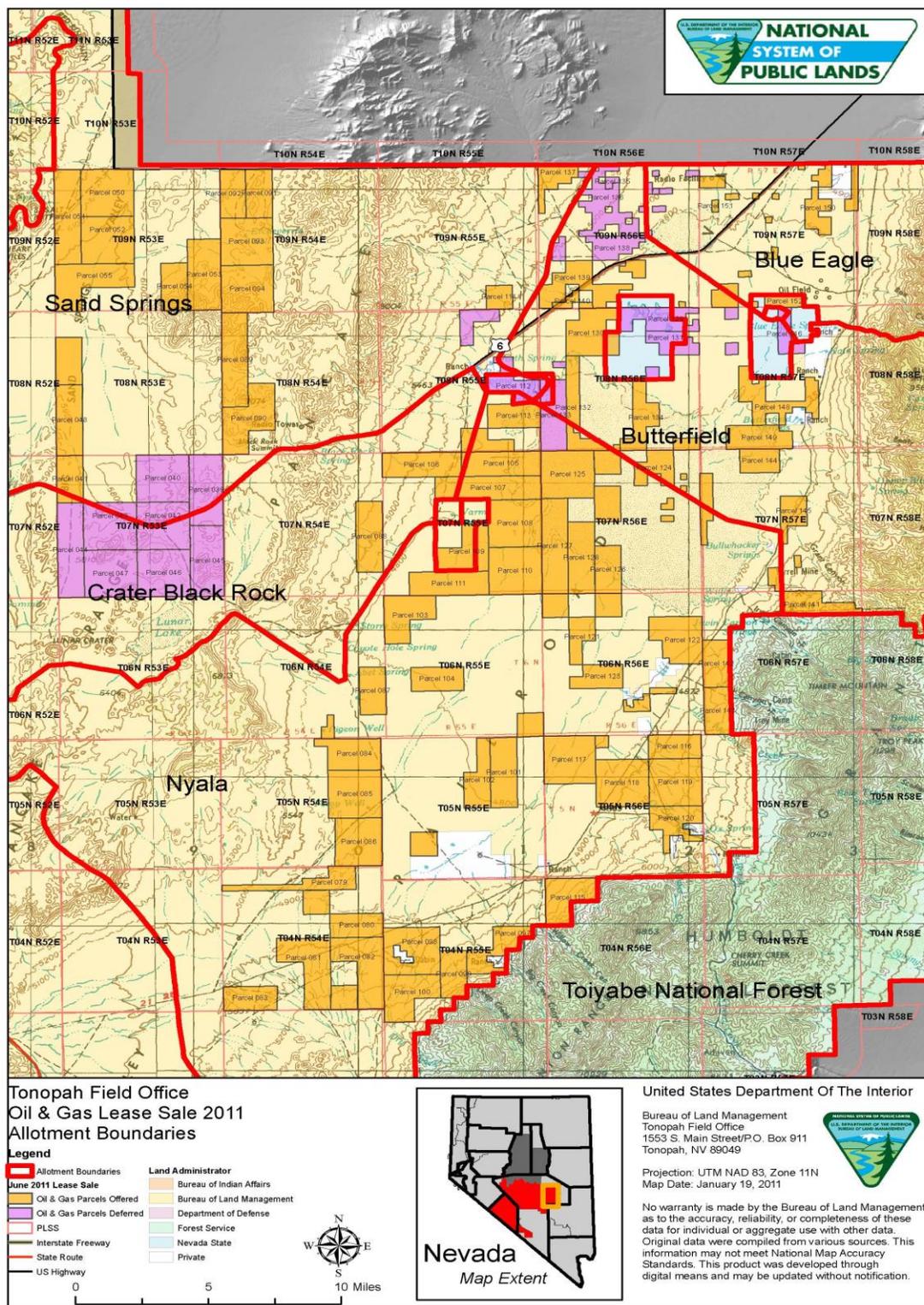


Figure 4. Location of Railroad Valley and Big Sands Springs allotment boundaries.

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 72 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 41.

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 48-111, 113-128, 130, 132, 134, 137, 139-145, 147-152.

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 survey 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 longer periods of time.

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 many of the remaining contrasts.

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 72 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 areas that 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. Railroad Valley is flanked on the east by Humboldt National Forest and Grant Range and to the west by the Pancake Mountains. 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 or closures 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 72 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, US Highway 6, and State Route 376.

Nye County has a population of nearly 40,000 and offers a rural lifestyle with a population density of 2.2 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 and the county hosts annual professional off-road competitions.

The total population of Nye County in 2000 was 32,485, which represents an increase of 83 percent since the 1990 census (Nevada State Demographer 2006). The fastest growing age group in the county is the group between 70 to 74 years of age (U.S. Census Bureau 2006b). Projections indicate that the county would grow to 40,334 persons by 2006 (Nevada State Demographer 2006). Between 1970 and 2000, Nye County's population grew at a faster rate than both the State of Nevada and the nation (U.S. Census Bureau 2006b). The majority of the population is white (89 percent) with about ten percent of Hispanic origin.

The majority of Nye County residents (60 percent) earn less than \$30,000 annually, with approximately one percent earning more than \$100,000 annually (U.S. Census Bureau 2006c). Per capita annual income is approximately \$18,000 (U.S. Census 2006c). Average earnings per job in the county are lower than the State of Nevada and the nation ([www.detr.state.nv.us/cgildataanalysis 2006](http://www.detr.state.nv.us/cgildataanalysis2006)).

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.

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.

During 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, building materials, and oil products. 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 72 lease parcels would be withdrawn from the lease sale.

5. 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. 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. 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. The most recent oil field discovered was Sans Spring, in 1993.

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

There are 8 producing oil fields in the assessment area, all in Railroad Valley. These include Trap Springs, Munson Ranch, Eagle Springs, Grant Canyon, Kate Spring, Ghost Ranch, Bacon Flat, and Sans Spring.

Historical lease sales have included hundreds of parcels in the CESA where expressions of interest were submitted by prospective lessees. Between 20 and 50 percent of the parcels have typically been sold during and the day after the lease sales. There are currently 91 oil and gas leases in the CESA; however, only 32 are producing oil. Since 2001, there have been 14 oil and gas well permits issued in the CESA. TFO typically authorizes fewer than 4 APD's per year and 1-2 geophysical exploration permits every decade.

The oil and gas program consist mainly of speculative leasing and the drilling of wildcat wells in and around existing oil fields in the Railroad Valley. Two wildcat wells were drilled in 2009 by True Oil and Makoil. Both have been plugged and abandoned. The total hydrocarbon production in 2009 amounted to 366,868 barrels of oil.

An incomplete mining Plan of Operations (Plan) has been recently filed with the Tonopah Field Office. The preliminary Plan proposes mining 20 acres of volcanic cinders northeast of the Lunar Crater Backcountry Byway for the contained gold. The recovery process is not currently discussed in the Plan and the location of the processing facility has not been determined.

Livestock grazing has been authorized in the past and is currently authorized. In the CESA there are 797,580 acres of land under 5 grazing allotments.

While some geothermal resources have been defined in the area, it is highly unlikely that investment in geothermal facilities will develop over the next ten years due to higher cost of energy transmission from geothermal resources in the CESA. According to The Nevada Mineral Industry (2008, page 145), there has been no exploration drilling for geothermal resources in Railroad or Big Sand Springs Valleys. The lack of exploration indicates that the geothermal industry is not looking to develop geothermal resources in the CESA.

The Nye County Water Resources Plan, Table 11, provides the latest data for water budgets for ground water basins in Nye County (2004, p. 33). This table shows Railroad Valley-both South and North with a combined positive water budget of 85,000 acre-feet per year. Table 18 of the same Nye County Water Resources Plan (2004, p. 50) lists the projected water use demand for oil and gas exploration and development through year 2025 at 18 acre-feet per year.

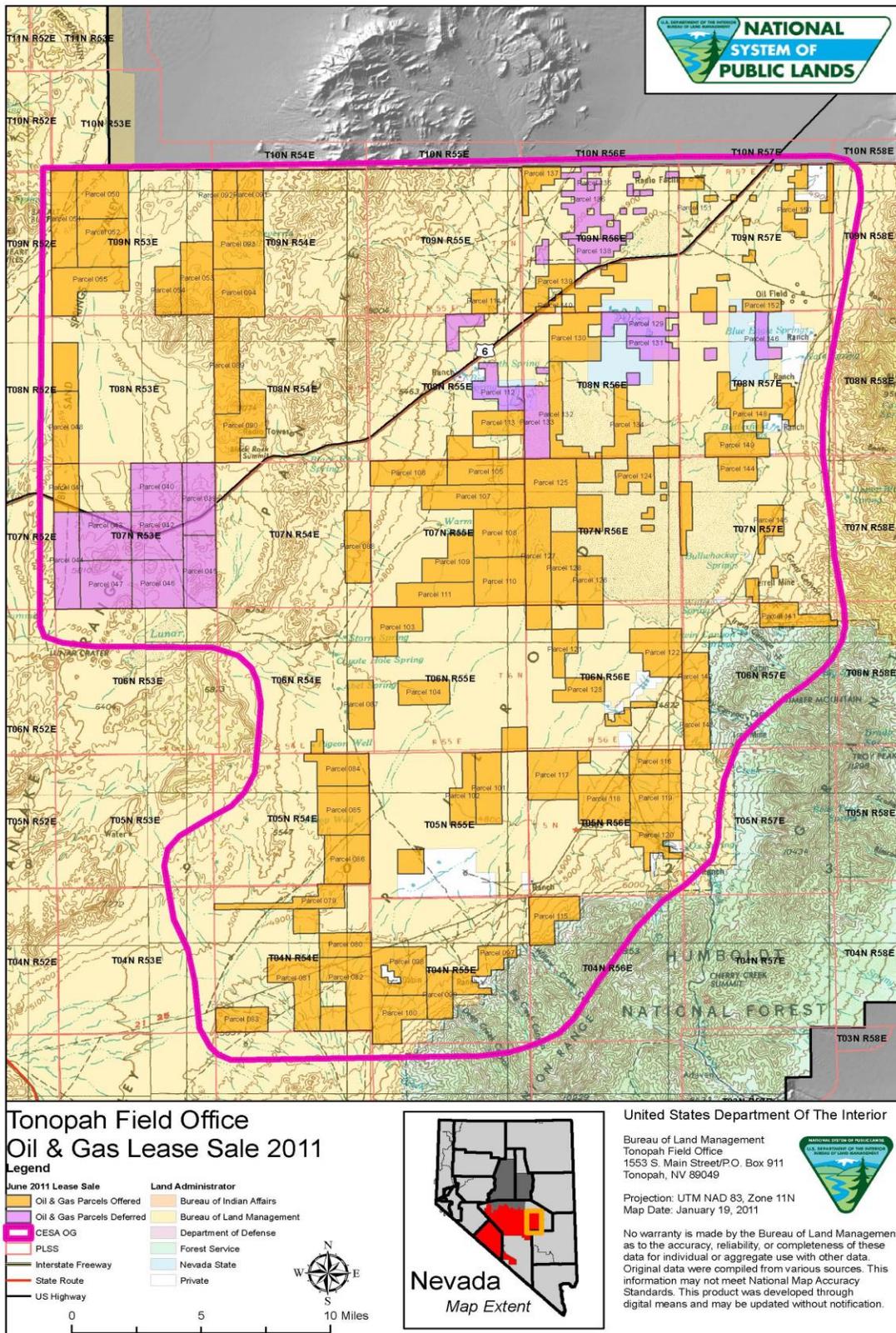


Figure 5. Cumulative Effect Study Area Map.

Sand Springs Valley is referred to as Big Smoky Valley, central portion on water budget tables in the Nye County Water Resources Plan, Table 11. The table does not show any information on water budget surplus, however outflow is noted at 200 acre-feet per year and perennial yield is 100 acre-feet for a total budget of 300 acre-feet. Projected drilling in Sand Spring Valley for oil and gas is estimated to be less than one drill hole per year. Water usage would be a fraction (one-tenth) of the projected 18 acre-feet of water projected for oil and gas exploration. If the Proposed Action is approved, one or two wells could be drilled in Sand Springs Valley over the span of this EA. If this were to occur, 1-2 acre feet of water could be used for oil and gas exploration. This would represent a small and insignificant percentage (0.6%) of the basin's water budget.

Any drilling through the Proposed Action over the next ten years would not have any significant impact to water resource use when compared to the potential positive water budget for Railroad Valley.

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 would be analyzed as part of the proposed action.

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. Within the defined oil fields the success rate is approximately 60 percent. Other than mineral exploration and development oil and gas leasing, exploration, development, and production from any future drilling programs and the continuation of highly dispersed recreation and grazing, there are no future actions anticipated in this area.

Reasonable Foreseeable Future Actions resulting from the proposed and similar future actions include; precious metal mining; yearly competitive oil and gas 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, approximately 232 oil exploration and production wells have been drilled in the Tonopah Field Office portion of the Railroad Valley. Except for two plugged and abandoned exploratory wells, no other known oil and gas exploration activity has occurred in the Big Sands Springs Valley. Majority of the oil fields are located south of Highway 6 along the road leading to the Nyala Ranch. Trap Springs and Munson Ranch fields are located north of Highway 6. Exploration activities within the area generally focus on oil and not natural gas.

The RMP projections for oil and gas exploration and development in the planning area (see p. 12 of this EA) appear to have been somewhat overestimated; however, modest amounts of

oil and gas exploration are expected to continue in Railroad Valley over the next ten years. Little to none is anticipated in the Big Sand Springs Valley area. A geophysical survey may be conducted in Railroad Valley prior to any exploratory drilling. Surface disturbance associated with geophysical surveys are usually minimal. An APD may then be submitted for a wildcat well in the CESA, or a production well within an existing field. 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. The most recently discovered new oil field, Sans Spring, was discovered in 1993. If another oil field were discovered, there would, in all likelihood, be additional disturbance of previously undisturbed lands. 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. Surface disturbance associated with drilling a dry well would be reclaimed within a year after the well was plugged and abandoned.

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 on previously undisturbed lands.

Based on past actions there will be approximately 15 oil and gas wells permitted by the TFO within the next 10 years. Approximately 60% of the wells projected to be drilled would be development wells (as opposed to wildcat exploratory wells). An estimated 10-20% of the development wells would produce economic quantities of oil, while the remainder would be unsuccessful and would be plugged and abandoned upon completion of drilling. The remaining 40% of wells expected to be drilled would be wildcat 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 valley wildlife is scarce. A few antelope and smaller species like rabbits, ground squirrels, lizards, snakes, and birds can be found. On average there is sufficient precipitation to flood the playa once every decade. Snowy plover and waterfowl have been reported on the playa when it was flooded.

If the Plan of Operations for a 20-acre gold mine is authorized and the material is processed on site, a 20 acre area within the CESA will 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, continued, proposed and foreseeable road, power line, and pipeline construction, 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, disturbing the soil cover from additional travel on existing dirt roads and the construction of new access roads and well pads, and additional drilling.

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 Threatened and Endangered Species, Wildlife, Other Special Status Species, and Migratory Birds

5.3.4.1. Threatened and Endangered Species:

A number of other ongoing and future activities in the area, such as mineral exploration, off-highway vehicles use, and livestock grazing could cumulatively impact threatened,

and endangered species. These activities could result in loss of habitat, habitat fragmentation, and disruption of movement patterns. Other cumulative impacts associated with the proposed action and other human activities, such as wildfire suppression/rehabilitation, greater sage grouse habitat improvement projects, construction of wildlife guzzlers, vegetation rehabilitation, and invasive weed treatments are inherently beneficial for threatened, endangered species habitat. These activities are implemented to enhance rangeland condition, riparian/wetland health and functionality, and improve water quality.

It is expected that ongoing and future activities in the area will not contribute significantly to cumulative impacts, and the reasonably foreseeable role of oil and gas exploration and development in overall impacts within the assessment area will be negligible, especially if effectively mitigated.

5.3.4.2. 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, although 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.

5.3.4.3. 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 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 do not appear to have an incremental effect on any area of 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, Nonnative 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 cumulative impacts to 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 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. Increased erosion would remove critical, nutrient rich top soil which is needed for vegetation to survive. Further damage, in the form of compacting soils, crushing microbiotic crusts, and damaging 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, concurrent reclamation, and developed site specific mitigation.

5.3.11. Cumulative Impacts on Wild Horses and Burro

There are no burros in the Sand Spring HMA. 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 habitat used for wild horses. 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 the Proposed Action on wild horse populations would be analyzed during site specific NEPA analysis and mitigation measures developed to reduce impacts, or restrictions developed to protect wild horses. Based on the small amount of expected disturbance from oil and gas-related activities, the cumulative impact to wild horses is expected to be negligible.

5.3.12. 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. Increased 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.

5.3.13. 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 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.

Principal existing human-made visual features within the assessment area include several county roads and US highway 6. 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 would 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.

6. MITIGATION MEASURES

Mitigation and monitoring measures would be developed in response to anticipated impacts. Mitigation measures would be deferred to the site specific analysis conducted at the APD stage of development and best management practices would be incorporated into COAs.

The following are mitigation measures recommended by the BLM for the following resources: Native American Religious Concerns, migratory birds, wildlife, threatened, endangered, and special status species, wetlands/riparian zones, and wild horses and burros.

6.1 Native American Religious Concerns

1. Oil and gas leasing is authorized under the Mineral Leasing Act of 1920 (as amended and modified by subsequent legislation) and 43 CFR 3100. Oil and gas leasing and development are recognized and acceptable uses of lands administered by the BLM under the FLPMA. However, in accordance with the National Historic Preservation Act (P.L. 89-665), the NEPA (P.L. 91-190), the FLPMA (P.L. 94-579), the American Indian Religious Freedom Act (P.L. 95-341), the Native American Graves Protection and Repatriation Act (P.L. 101-601) and Executive Order 13007, the BLM must also provide affected Tribes an opportunity to comment and consult on the proposed project. BLM must attempt to limit, reduce, or possibly eliminate any negative impacts to Native American traditional, cultural, or spiritual sites, activities, and resources.
2. The BLM reserves the right to deny or alter proposed activities associated with any surface occupancy that results from oil and gas leasing. Maintaining physical and spiritual integrity of certain locations within the BLM administrative boundary is crucial to present and future cultural, traditional, or spiritual activities. In accordance with federal legislation and executive orders, federal agencies must consider the impacts their actions may have to Native American religious concerns. Consequently, the BLM must take steps to identify locations with traditional, cultural, or religious values to Native Americans and insure that

leasing or development actions do not unduly or unnecessarily burden the pursuit of traditional religion or traditional lifeways.

3. Depending on the location of a proposed lease sale, exploration, or development, the proponent may be responsible for costs leading to the successful completion of any needed ethnographic study, government-to-government Native American Consultation, and consultation with Tribal Cultural Resource Specialists or monitors. Tribal monitors and BLM Cultural Resource Specialists may periodically visit sensitive locations within or near any lease sale, exploration, or development areas. Native American Consultation and monitoring by the BLM and Tribal Cultural Resource Specialists can occur throughout the life of a project to ensure that any identified traditional cultural properties are not deteriorating.

4. If leasing, exploration, or development (with acceptable restrictions) occurs within an area deemed culturally sensitive, the BLM would be responsible for formally educating project participants of the importance of the Native American Religious Freedom Act, that includes a clause that no one shall remove or disturb Native American historic and pre-historic physical remains or artifacts. During the project activities, if any cultural properties, items, or artifacts (stone tools, projectile points, etc.) are encountered, it must be stressed to those involved in the proposed project activities that such items are not to be collected. Cultural and archaeological resources are protected under the Archaeological Resources Protection Act (16 U.S.C. 470ii) and the FLPMA (43 U.S.C. 1701).

5. If an approved exploration or development plan is transferred from one operator to another, the new operator would consult early in the process and often with BLM Tribal Relations staff to ensure prior mitigation measures and activities, relating to Native American Religious Concerns, are maintained.

6. Though the probability of disturbing Native American gravesites within the assessment area is extremely low, inadvertent discovery procedures must be noted. Under the Native American Graves Protection and Repatriation Act, section (3)(d)(I), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

7. If any traditional cultural properties, tribal resources, and sacred sites are identified in any lease, exploration, or development area, a protective buffer zone may be acceptable, where physical avoidance is an issue, if doing so satisfies the needs of the BLM, the proponent, and affected Tribe. The size of any "buffer zone would be determined through coordination and communication between all participating entities.

8. The BLM will utilize all available cultural information (internal and tribal) to alter any site specific action in order to limit or significantly reduce any adverse impact to tribal resources, sacred sites, or areas deemed detrimental to the continuation of cultural, traditional, or spiritual lifeways.

9. Detailed information, regarding cultural resource locations and activities, is filed at the BLM and is considered highly confidential. Proponents should consult early in the process and often with BLM cultural staff regarding any oil and gas related proposal. General summaries of certain sensitive cultural data, including maps, and especially confidential Native American spiritual documentation, can only be reviewed by physically visiting the BLM.

6.2 Wildlife

Successful reclamation of disturbance to vegetation and soils may require fencing to exclude livestock. Livestock fences can pose a potential hazard, primarily to avian species. To mitigate those impacts, dark green steel T-posts with white tips would be used to increase visibility of the fence, reducing the risk of collision with the fence by both birds and mammals.

6.3 Migratory Birds

Any construction activity during migratory bird nesting season (i.e., March 1 through July 31) potentially risks violation of MBTA by destroying the eggs or young of common shrub or ground-nesting species. Exploration and development proposals on the public lands would require a migratory bird review, and may require a field survey for the presence of migratory birds. Potential impacts to migratory birds would be analyzed on a case-by-case basis. Additional site-specific mitigation measures would be developed on an individual project basis depending upon the results of the survey.

6.4 Threatened and Endangered Species Including Special Status Species

The assessment area may contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The BLM may recommend modifications to exploration and development proposals to further the BLM conservation and management objective by avoiding activities that would contribute to a need to list such a species or their habitat. The BLM may require modifications to or disapprove proposed activities that are 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 designated or proposed critical habitat.

The BLM would not approve any ground disturbing activity that may affect any such species or critical habitat until the BLM completes 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.

Exploration and development proposals on the public lands would require a special status species review, and may require a field survey for the presence of special status species. Potential impacts to special status species would be analyzed on a case-by-case basis. Additional site-specific mitigation measures would be developed on an individual project basis depending upon the results of the survey. The BLM may require modifications to, or disapprove, a proposed activity that is likely to jeopardize any special status species or its habitat. The BLM may recommend modifications of exploration proposals to avoid the

possibility that a BLM-approved activity might contribute to the listing of a special status species. The BLM would not approve any ground disturbing activity that may affect any such species or critical habitat until it meets the requirements of the ESA, including any required consultation.

The Tonopah Field Office RMP Record of Decision (BLM 1997) provides for time of day and/or time of year restrictions on exploration and development that are in the immediate vicinity or would cross crucial sage grouse, deer and pronghorn antelope winter habitat, antelope kidding areas, or raptor nesting areas. The BLM would require measures listed below for activities in habitat for the following special status species: greater sage-grouse, ferruginous hawk, and pygmy rabbit.

Disturbance to vegetation in all known greater sage-grouse habitats shall be minimized.

From March 1 through May 15, human activity shall be minimized within view (or by at least 0.5 miles) of known leks (i.e., strutting grounds) especially between midnight and 1000 hours (Pacific Daylight Time) (see Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada, BLM, October 2000).

From April 1 through August 15, known nesting and brood rearing areas (especially riparian areas where broods concentrate beginning usually in June) shall be avoided by 0.5 miles. Identified greater sage grouse wintering areas would be avoided by 0.5 miles while occupied. Most known wintering grounds in the assessment area occur at high elevations and are not likely to be affected.

Known ferruginous hawk nests would be avoided by at least 0.5 mile between March 15 and July 1.

6.5 Wetlands/Riparian zones

Wetlands/riparian zones up to and including the 100-year flood plain would be avoided. If drilling or other surface disturbing activities were proposed within 0.25 mile of surface waters or wetlands/riparian zones, the environmental analysis and record of decision may require additional mitigation. Typical measures may include the following:

1. No surface disturbance within 0.25 mile of riparian-wetlands;
 2. No fluids or soil from exploration or development activities would be allowed to enter surface waters or wetlands/riparian zones at any time;
 3. No use of surface waters would be allowed for exploration and development without the appropriate permits issued by the Nevada Division of Water Resources;
 4. Limitations on the type of equipment that may be used; and
 5. Restrictions may be imposed on activities during certain times of the day or year.
- All operations would be required to comply with all state and federal regulations concerning water quality and quantity, wetlands/riparian zones and flood plains. If the outflow of water

from a spring was negatively impacted by oil and gas operations, the BLM would require the operator to take corrective action, or the BLM would terminate the operation and charge the lessee for the reclamation costs.

6.6 Wild Horses and Burros

Impacts to wild horses during the peak foaling season would be mitigated by limiting human disturbance during peak foaling season in known foaling areas. Concurrent reclamation would help mitigate cumulative impacts that may include quality and quantity of habitat available to wild horses and increased risks for erosion and noxious weed invasion.

7. PERSONS OR AGENCIES CONSULTED

Nazila Hummer, Tonopah Field Office Geologist, Lead Preparer
Alan R. Buehler, Tonopah Field Office Supervisory Geologist
Thomas J. Seley, Field Manager, Tonopah Field Office
Larry Grey, Battle Mountain District RECO Hydrologist
Wendy Seley, Battle Mountain District RECO Realty Specialist
John Hartley, Tonopah Field Office Planning and Environmental Coordinator
Dustin Hollowell, Tonopah Field Office Wild Horse & Burro Specialist
Marc Pointel, Tonopah Field Office Rangeland Management Specialist
Sheryl Post, Tonopah Field Office Rangeland Management Specialist
Brandon Jolley, Tonopah Field Office, Rangeland Management Specialist
Devin Englestead, Tonopah Field Office Wildlife Biologist
Susan Rigby, Tonopah Field Office Archaeologist
John Manzano, Tonopah Field Office Realty Specialist
Gerald Dixon, Battle Mountain District Office Native American Coordinator
Duckwater Shoshone Tribe
Brad Hardenbrook, Nevada Division of Wildlife

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Figure 4. Location of Railroad Valley and Big Sands Springs allotments.
Figure 5. Cumulative Effect Study Area Map.

9. LIST OF REFERENCES

Buqo, Thomas S., 2009, Nye County Water Resources Plan, prepared for Nye County Department of Natural Resources and Federal Facilities, August 2004, 120 pp.
LR-2000, BLM Internal Web Site:
<http://ilmnirm0ap19103.blm.doi.net:9270/rptapp/menu.cfm?appCd=3>.

Natural Resources Conservation Service, Internet Web Site:
<http://soildatamart.nrcs.usda.gov/Report.aspx?Survey=NV783&UseState=NV>

- Nevada Commission on Mineral Resources, Division of Minerals, Oil, Gas, and Geothermal.
Internet web site: http://minerals.state.nv.us/prog_ogg.htm. Accessed May 26, 2009.
- Nevada Natural Heritage Program (NNHP). 2010. Endangered, Threatened, Candidate and/or at Risk Taxa recorded on or near the Railroad Valley Area. Nevada Department of Conservation and Natural Resources. Carson City, Nevada.
- 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.
- Oil and Gas Website [http://www.nv.blm.gov/minerals/oil and gas](http://www.nv.blm.gov/minerals/oil%20and%20gas)
- Railroad Valley, From Wikipedia, Internet web site:
[http://en.wikipedia.org/wiki/Railroad Valley](http://en.wikipedia.org/wiki/Railroad_Valley).
- Rush, F. E., Water-Resources Appraisal of Little Fish Lake, Hot Creek, and Little Smoky Valleys, Nevada- Reconnaissance Series, Report 38, State of Nevada, Department of Conservation and Natural Resources Water Resource, 1966
- Schalla, R. A., Johnson, E. H., 1994, editors, Oil Fields of The Great Basin, Nevada petroleum Society, Reno, Nevada.
- The Nevada Mineral Industry Annual Report, Nevada Bureau of Mines and Geology Web Site:
<http://www.nbmng.unr.edu/>
- U.S. Bureau of Land Management, 1986, Bureau of Land Management Manual Handbook H-8410-1 Visual Resource Inventory.
- U.S. Bureau of Land Management, 1988, Bureau of Land Management National Environmental Policy Act Handbook (BLM NEPA Handbook H-1790-1).
- U.S. Bureau of Land Management, 1997, Tonopah Resource Management Plan and Record of Decision, Battle Mountain District, Tonopah Field Office.
- U.S. Bureau of Land Management, 1993, Draft Tonopah Resources Management Plan and Environmental Impact Statement, Battle Mountain District, Tonopah Field Office.
- U.S. Bureau of Land Management, 1994, Proposed Tonopah Resource Management Plan and Final Environmental Impact Statement, Battle Mountain District, Tonopah Field Office.
- U.S. Bureau of Land Management and USDA, Forest Service, 2006, Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, The Gold Book: Fourth Edition, 76 p.
- U.S. Department of the Interior and U.S. Department of Agriculture, 2006, Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071. Bureau of Land Management. Denver, Colorado. 84 pp.

USGS National Gap Analysis Program, 2004, Provisional Digital Land Cover Map for the Southwestern United States. Version 1.0. RS/GIS Laboratory, College of Natural Resources, Utah State University.

Van Denburgh, A. S., Rush, F. E., , Water Resources Appraisal of Railroad and Penoyer Valleys, East-Central Nevada- Reconnaissance Series, Report 60, State of Nevada, Department of Conservation and Natural Resources Water Resource, 1974

Wikipedia, the free encyclopedia. <http://www.wikipedia.org>

10. LIST OF APPENDICES

Appendix A. List of Parcels Offered for Sale in the June 2011 Oil and Gas Lease Sale

Appendix B. Oil and Gas Lease Parcel Stipulations

APPENDIX A

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

List of Tonopah Field Office
Parcels

NV-11-06-041 1280.000 Acres
T.0070N, R.0530E, 21 MDM, NV
Sec. 006 PROT ALL;
007 PROT ALL;

NV-11-06-048 1280.000 Acres
T.0080N, R.0530E, 21 MDM, NV
Sec. 007 PROT ALL;
018 PROT ALL;

NV-11-06-049 1920.000 Acres
T.0080N, R.0530E, 21 MDM, NV
Sec. 019 PROT ALL;
030 PROT ALL;
031 PROT ALL;

NV-11-06-050 2558.000 Acres
T.0090N, R.0530E, 21 MDM, NV
Sec. 004 PROT ALL;
005 PROT ALL;
008 PROT ALL;
009 PROT ALL;

NV-11-06-051 2559.000 Acres
T.0090N, R.0530E, 21 MDM, NV
Sec. 006 PROT ALL;
007 PROT ALL;
018 PROT ALL;
019 PROT ALL;

NV-11-06-052 2560.000 Acres
T.0090N, R.0530E, 21 MDM, NV
Sec. 016 PROT ALL;
017 PROT ALL;
020 PROT ALL;
021 PROT ALL;

NV-11-06-053 2418.000 Acres
T.0090N, R.0530E, 21 MDM, NV
Sec. 024 PROT ALL;
025 PROT ALL;
036 PROT ALL;

NV-11-06-054 1280.000 Acres
T.0090N, R.0530E, 21 MDM, NV
Sec. 026 PROT ALL;
035 PROT ALL;

NV-11-06-055 2560.000 Acres
T.0090N, R.0530E, 21 MDM, NV
Sec. 028 PROT ALL;
029 PROT ALL;
030 PROT ALL;
031 PROT ALL;

NV-11-06-079 1438.460 Acres
T.0040N, R.0540E, 21 MDM, NV
Sec. 002 LOTS 1-4;
002 S2N2,S2;
003 S2;
004 S2S2;
005 S2S2;
006 LOTS 7;
006 SESW,S2SE;

NV-11-06-080 1920.000 Acres
T.0040N, R.0540E, 21 MDM, NV
Sec. 010 ALL;
013 ALL;
014 ALL;

NV-11-06-081 2560.000 Acres
T.0040N, R.0540E, 21 MDM, NV
Sec. 021 ALL;
022 ALL;
027 ALL;
034 ALL;

NV-11-06-082 2560.000 Acres
T.0040N, R.0540E, 21 MDM, NV
Sec. 023 ALL;
024 ALL;
025 ALL;
036 ALL;

NV-11-06-088 1920.000 Acres
T.0070N, R.0540E, 21 MDM, NV
Sec. 013 PROT ALL;
024 PROT ALL;
025 PROT ALL;

NV-11-06-083 1916.310 Acres
T.0040N, R.0540E, 21 MDM, NV
Sec. 031 LOTS 1-4;
031 E2W2,E2;
032 ALL;
035 ALL;

NV-11-06-089 2505.000 Acres
T.0080N, R.0540E, 21 MDM, NV
Sec. 006 PROT ALL;
007 PROT ALL;
018 PROT ALL;
019 PROT ALL;

NV-11-06-084 1744.360 Acres
T.0050N, R.0540E, 21 MDM, NV
Sec. 001 LOTS 1-4;
002 LOTS 1-4;
003 LOTS 1,2;
011 ALL;
012 ALL;

NV-11-06-090 2540.000 Acres
T.0080N, R.0540E, 21 MDM, NV
Sec. 020 PROT ALL;
029 PROT ALL;
030 PROT ALL;
031 PROT ALL;

NV-11-06-085 2560.000 Acres
T.0050N, R.0540E, 21 MDM, NV
Sec. 013 ALL;
014 ALL;
023 ALL;
024 ALL;

NV-11-06-091 1326.000 Acres
T.0090N, R.0540E, 21 MDM, NV
Sec. 005 PROT ALL;
008 PROT ALL;

NV-11-06-092 1290.000 Acres
T.0090N, R.0540E, 21 MDM, NV
Sec. 006 PROT ALL;
007 PROT ALL;

NV-11-06-086 2240.000 Acres
T.0050N, R.0540E, 21 MDM, NV
Sec. 025 ALL;
026 E2,E2W2;
035 E2,E2W2;
036 ALL;

NV-11-06-093 2527.000 Acres
T.0090N, R.0540E, 21 MDM, NV
Sec. 017 PROT ALL;
018 PROT ALL;
019 PROT ALL;
020 PROT ALL;

NV-11-06-087 1520.000 Acres
T.0060N, R.0540E, 21 MDM, NV
Sec. 024 PROT ALL;
025 PROT ALL;
034 PROT E2NE,SE;

NV-11-06-094 2531.000 Acres
T.0090N, R.0540E, 21 MDM, NV
Sec. 029 PROT ALL;
030 PROT ALL;
031 PROT ALL;
032 PROT ALL;

NV-11-06-102 2062.960 Acres
T.0050N, R.0550E, 21 MDM, NV
Sec. 003 LOTS 1,2;
003 S2NE,SE;
010 E2,SW;
015 ALL;
029 ALL;

NV-11-06-097 1560.000 Acres
T.0040N, R.0550E, 21 MDM, NV
Sec. 013 NW;
014 ALL;
022 NENE,W2NE,W2,SE;
023 N2NW,S2SW;

NV-11-06-103 1905.000 Acres
T.0060N, R.0550E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;

NV-11-06-098 2529.120 Acres
T.0040N, R.0550E, 21 MDM, NV
Sec. 017 ALL;
018 LOTS 1-8;
018 E2,E2NW,NESW;
019 LOTS 1-8;
019 NENE,SE,SW,E2SW,SE;
020 ALL;

NV-11-06-104 1919.000 Acres
T.0060N, R.0550E, 21 MDM, NV
Sec. 020 PROT ALL;
021 PROT ALL;
036 PROT ALL;

NV-11-06-099 1280.000 Acres
T.0040N, R.0550E, 21 MDM, NV
Sec. 021 ALL;
028 ALL;

NV-11-06-105 1986.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 001 PROT ALL;
002 PROT ALL;
003 PROT ALL;

NV-11-06-100 2093.240 Acres
T.0040N, R.0550E, 21 MDM, NV
Sec. 029 ALL;
030 LOTS 1-8;
030 E2,E2W2;
031 LOTS 1-8;
031 E2,E2W2;

NV-11-06-106 1975.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 004 PROT ALL;
005 PROT ALL;
006 PROT ALL;

NV-11-06-101 1888.300 Acres
T.0050N, R.0550E, 21 MDM, NV
Sec. 002 LOTS 1-4;
002 S2N2,S2;
011 ALL;
014 ALL;

NV-11-06-107 2560.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 009 PROT ALL;
010 PROT ALL;
011 PROT ALL;
012 PROT ALL;

NV-11-06-108 2560.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 013 PROT ALL;
014 PROT ALL;
023 PROT ALL;
024 PROT ALL;

NV-11-06-109 1920.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 022 PROT ALL;
027 PROT ALL;
028 PROT ALL;

NV-11-06-110 2560.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 025 PROT ALL;
026 PROT ALL;
035 PROT ALL;
036 PROT ALL;

NV-11-06-111 1600.000 Acres
T.0070N, R.0550E, 21 MDM, NV
Sec. 032 PROT E2;
033 PROT ALL;
034 PROT ALL;

NV-11-06-113 2240.000 Acres
T.0080N, R.0550E, 21 MDM, NV
Sec. 025 ALL;
026 ALL;
034 ALL;
035 S2;

NV-11-06-114 645.000 Acres
T.0090N, R.0550E, 21 MDM, NV
Sec. 035 PROT ALL;

NV-11-06-115 1885.000 Acres
T.0040N, R.0560E, 21 MDM, NV
Sec. 005 PROT ALL;
006 PROT ALL;
007 PROT ALL;

NV-11-06-116 1458.440 Acres
T.0050N, R.0560E, 21 MDM, NV
Sec. 001 LOTS 1-4;
001 S2N2,S2;
002 LOTS 1-4;
002 S2N2,S2;
004 LOTS 3,4;
004 S2NW;

NV-11-06-117 2516.750 Acres
T.0050N, R.0560E, 21 MDM, NV
Sec. 005 LOTS 1-4;
005 S2N2,S2;
006 LOTS 1-7;
006 S2NE,SE,SW,SE;
007 LOTS 1-4;
007 E2W2,E2;
008 ALL;

NV-11-06-118 2560.000 Acres
T.0050N, R.0560E, 21 MDM, NV
Sec. 009 ALL;
010 ALL;
015 ALL;
016 ALL;

NV-11-06-119 2560.000 Acres
T.0050N, R.0560E, 21 MDM, NV
Sec. 011 ALL;
012 ALL;
013 ALL;
014 ALL;

NV-11-06-120 1560.000 Acres
T.0050N, R.0560E, 21 MDM, NV
Sec. 023 ALL;
024 N2,N2S2,SWSW;
025 N2NW,SE,SW,S2NE;
026 NENE,W2E2;

NV-11-06-121 2231.410 Acres
T.0060N, R.0560E, 21 MDM, NV
Sec. 004 LOTS 1-4;
004 S2N2,S2;
006 LOTS 1-7;
006 S2NE,SE,SW,E2SW,SE;
008 ALL;
017 W2;

NV-11-06-122 2200.000 Acres
T.0060N, R.0560E, 21 MDM, NV
Sec. 011 ALL;
012 ALL;
013 ALL;
014 NE,N2SE,SESE;

NV-11-06-123 1595.000 Acres
T.0060N, R.0560E, 21 MDM, NV
Sec. 020 E2,SW;
021 ALL;
026 N2N2;
027
SENE,E2NESW,W2NWSW,SWSW;
027
E2SESW,S2NWSESW,SWSESW;
027 SE;

NV-11-06-124 1680.560 Acres
T.0070N, R.0560E, 21 MDM, NV
Sec. 002 LOTS 1-4;
002 S2N2,SE;
003 SE;
004 LOTS 1-4;
004 S2N2,S2;
010 NE;
011 NE;
012 NENW,NESW;

NV-11-06-125 2541.210 Acres
T.0070N, R.0560E, 21 MDM, NV
Sec. 005 LOTS 1-4;
005 S2N2,S2;
006 LOTS 1-7;
006 S2NE,SE,SW,E2SW,SE;

007 LOTS 1-4;
007 E2,E2W2;
008 ALL;

NV-11-06-126 2440.000 Acres
T.0070N, R.0560E, 21 MDM, NV
Sec. 009 S2;
014 E2NE,SWNE,S2SE;
016 ALL;
028 ALL;
033 ALL;

NV-11-06-127 2520.200 Acres
T.0070N, R.0560E, 21 MDM, NV
Sec. 018 LOTS 1-4;
018 E2,E2W2;
019 LOTS 1-4;
019 E2,E2W2;
030 LOTS 1-4;
030 E2,E2W2;
031 LOTS 1-4;
031 E2,E2W2;

NV-11-06-128 1920.000 Acres
T.0070N, R.0560E, 21 MDM, NV
Sec. 020 ALL;
029 ALL;
032 ALL;

NV-11-06-130 2241.490 Acres
T.0080N, R.0560E, 21 MDM, NV
Sec. 004 LOTS 1-4;
004 S2N2,SW;
005 LOTS 1,2;
005 S2NE,S2;
008 ALL;
009 ALL;

NV-11-06-132 1560.000 Acres
T.0080N, R.0560E, 21 MDM, NV
Sec. 017 W2;
020 W2;
029 W2;
032 W2NW,SEW,S2;
033 W2SW,SESW,SESE;

NV-11-06-134 1760.000 Acres
T.0080N, R.0560E, 21 MDM, NV
Sec. 022 E2;
026 W2;
027 E2;
034 E2,SW;
036 S2;

NV-11-06-137 939.220 Acres
T.0090N, R.0560E, 21 MDM, NV
Sec. 005 LOTS 3,4;
005 S2NW,NWSW;
006 LOTS 1-7;
006
S2NE,SEW,E2SW,N2SE,SWSE;
007 LOTS 1-4;

NV-11-06-139 2433.440 Acres
T.0090N, R.0560E, 21 MDM, NV
Sec. 027 NE,E2NW,SWNW,N2SE;
029 ALL;
030 SE;
031 LOTS 1-4;
031 NE,E2W2,N2SE;
032 N2NE;
033 NE,W2,N2SE;
034 N2NW;

NV-11-06-140 360.000 Acres
T.0090N, R.0560E, 21 MDM, NV
Sec. 031 S2SE;
032 SENW,N2SW,SWSW,S2SE;
036 SESW;

NV-11-06-141 1407.125 Acres
T.0060N, R.0570E, 21 MDM, NV
Sec. 001 PROT SW,W2SE,SESE;
002 PROT W2,SE;
003 PROT ALL;

NV-11-06-142 1320.000 Acres
T.0060N, R.0570E, 21 MDM, NV
Sec. 018 PROT ALL;
019 PROT ALL;

NV-11-06-143 1293.000 Acres
T.0060N, R.0570E, 21 MDM, NV
Sec. 030 PROT ALL;
031 PROT ALL;

NV-11-06-144 1741.120 Acres
T.0070N, R.0570E, 21 MDM, NV
Sec. 004 LOTS 1-4;
004 S2N2,S2;
005 LOTS 1,2;
005 S2NE,SE;
007 LOTS 1-4;
007 E2W2;
018 LOTS 1-4;
018 E2W2;
019 LOTS 1-4;

NV-11-06-145 1280.000 Acres
T.0070N, R.0570E, 21 MDM, NV
Sec. 015 ALL;
022 N2N2,SWNW,W2SW;
027 W2SE;
033 NE,N2SE,SESE;

NV-11-06-148 2070.000 Acres
T.0080N, R.0570E, 21 MDM, NV
Sec. 017 SE;
020 E2;
021 E2NW,SWNW,SW;
023 SW;
023
W2NENW,SENE,SENW,W2NW,SENW;
026 NW,NESW;
027 N2NE,NW,W2SW;
028 N2,SW;

NV-11-06-149 1520.000 Acres
T.0080N, R.0570E, 21 MDM, NV
Sec. 032 ALL;
033 ALL;
034 S2NW,SW

NV-11-06-150 1957.280 Acres
T.0090N, R.0570E, 21 MDM, NV
Sec. 001 LOTS 1;
001 SENE,E2SE;
002 LOTS 1;
002 S2NE,NESW,SE;
003 LOTS 1;
006 LOTS 6,7;
006 E2SW,SE;
012 E2NE,SE;
014 S2NE,NW,N2SW,SE;

NV-11-06-151 240.000 Acres
T.0090N, R.0570E, 21 MDM, NV
Sec. 007 W2SE;
008 S2NW;
009 SENE,SWNW;

NV-11-06-152 1360.000 Acres
T.0090N, R.0570E, 21 MDM, NV
Sec. 016 SWNE;
021 NESE,S2SE;
029 N2SE;
031 NENE,S2NE,SE;
032 W2;
033 SWSW,SE;
034 S2

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

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-103	ALL LANDS
NV-11-06-105	ALL LANDS
NV-11-06-107	ALL LANDS
NV-11-06-108	ALL LANDS
NV-11-06-109	ALL LANDS
NV-11-06-110	ALL LANDS
NV-11-06-111	ALL LANDS
NV-11-06-113	ALL LANDS
NV-11-06-116	ALL LANDS
NV-11-06-117	ALL LANDS
NV-11-06-118	ALL LANDS
NV-11-06-121	ALL LANDS
NV-11-06-122	ALL LANDS
NV-11-06-123	ALL LANDS
NV-11-06-126	ALL LANDS
NV-11-06-127	ALL LANDS
NV-11-06-128	ALL LANDS
NV-11-06-130	ALL LANDS
NV-11-06-139	ALL LANDS
NV-11-06-140	ALL LANDS
NV-11-06-141	ALL LANDS
NV-11-06-142	ALL LANDS
NV-11-06-144	ALL LANDS
NV-11-06-145	ALL LANDS
NV-11-06-148	ALL LANDS
NV-11-06-149	ALL LANDS
NV-11-06-150	ALL LANDS
NV-11-06-151	ALL LANDS
NV-11-06-152	ALL LANDS

ARCH-ZONE 1

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

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-087	ALL LANDS
NV-11-06-101	ALL LANDS
NV-11-06-102	ALL LANDS
NV-11-06-103	ALL LANDS
NV-11-06-104	ALL LANDS
NV-11-06-105	ALL LANDS
NV-11-06-106	ALL LANDS
NV-11-06-107	ALL LANDS
NV-11-06-108	ALL LANDS
NV-11-06-109	ALL LANDS
NV-11-06-110	ALL LANDS
NV-11-06-111	ALL LANDS
NV-11-06-113	ALL LANDS
NV-11-06-117	ALL LANDS
NV-11-06-118	ALL LANDS
NV-11-06-119	ALL LANDS
NV-11-06-120	ALL LANDS
NV-11-06-121	ALL LANDS
NV-11-06-122	ALL LANDS
NV-11-06-123	ALL LANDS
NV-11-06-125	ALL LANDS
NV-11-06-126	ALL LANDS
NV-11-06-127	ALL LANDS
NV-11-06-128	ALL LANDS
NV-11-06-130	ALL LANDS
NV-11-06-134	ALL LANDS
NV-11-06-139	ALL LANDS
NV-11-06-140	ALL LANDS
NV-11-06-141	ALL LANDS
NV-11-06-144	ALL LANDS
NV-11-06-148	ALL LANDS
NV-11-06-149	ALL LANDS

NV-11-06-150
NV-11-06-151

ALL LANDS
ALL LANDS

ARCH-ZONE 2

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

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-084	ALL LANDS
NV-11-06-085	ALL LANDS
NV-11-06-086	ALL LANDS
NV-11-06-087	ALL LANDS
NV-11-06-101	ALL LANDS
NV-11-06-102	ALL LANDS
NV-11-06-103	ALL LANDS
NV-11-06-104	ALL LANDS
NV-11-06-105	ALL LANDS
NV-11-06-106	ALL LANDS
NV-11-06-107	ALL LANDS
NV-11-06-113	ALL LANDS
NV-11-06-114	ALL LANDS
NV-11-06-116	ALL LANDS
NV-11-06-117	ALL LANDS
NV-11-06-118	ALL LANDS
NV-11-06-119	ALL LANDS
NV-11-06-120	ALL LANDS
NV-11-06-122	ALL LANDS
NV-11-06-123	ALL LANDS
NV-11-06-137	ALL LANDS
NV-11-06-139	ALL LANDS
NV-11-06-141	ALL LANDS
NV-11-06-142	ALL LANDS
NV-11-06-143	ALL LANDS
NV-11-06-145	ALL LANDS
NV-11-06-148	ALL LANDS
NV-11-06-150	ALL LANDS

ARCH-ZONE 3

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

<u>Parcels</u>	<u>Description of Lands</u>
NV-11-06-088	ALL LANDS
NV-11-06-106	ALL LANDS
NV-11-06-113	ALL LANDS
NV-11-06-116	ALL LANDS
NV-11-06-118	ALL LANDS
NV-11-06-119	ALL LANDS
NV-11-06-120	ALL LANDS
NV-11-06-143	ALL LANDS

ARCH-ZONE 4

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

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-105	ALL LANDS
NV-11-06-107	ALL LANDS
NV-11-06-108	ALL LANDS
NV-11-06-113	ALL LANDS
NV-11-06-124	ALL LANDS
NV-11-06-125	ALL LANDS
NV-11-06-126	ALL LANDS
NV-11-06-127	ALL LANDS
NV-11-06-128	ALL LANDS
NV-11-06-130	ALL LANDS
NV-11-06-132	ALL LANDS
NV-11-06-134	ALL LANDS
NV-11-06-144	ALL LANDS
NV-11-06-149	ALL LANDS
NV-11-06-150	ALL LANDS

ARCH-ZONE 5

ARCHAEOLOGICAL STIPULATION

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.

Authority: BLM Washington Office Instruction Memorandum 2005-03

These parcels are located outside of the area defined by the Railroad Valley Predictive Model. Only 2 to 5 percent of this total area 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. A Class III cultural survey will be required for projects located in these areas if that area has not been adequately surveyed in the last 10 years.

<u>Parcels</u>	<u>Description of Lands</u>
NV-11-06-048	ALL LANDS
NV-11-06-050	ALL LANDS
NV-11-06-051	ALL LANDS
NV-11-06-052	ALL LANDS
NV-11-06-053	ALL LANDS
NV-11-06-054	ALL LANDS
NV-11-06-055	ALL LANDS
NV-11-06-079	ALL LANDS
NV-11-06-080	ALL LANDS
NV-11-06-081	ALL LANDS
NV-11-06-082	ALL LANDS
NV-11-06-083	ALL LANDS
NV-11-06-089	ALL LANDS
NV-11-06-090	ALL LANDS
NV-11-06-091	ALL LANDS
NV-11-06-092	ALL LANDS
NV-11-06-093	ALL LANDS
NV-11-06-094	ALL LANDS
NV-11-06-097	ALL LANDS
NV-11-06-098	ALL LANDS
NV-11-06-099	ALL LANDS
NV-11-06-100	ALL LANDS
NV-11-06-115	ALL LANDS

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 to May 15.

For the purpose of:

- a. 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.

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-097	ALL LANDS
NV-11-06-099	ALL LANDS
NV-11-06-100	ALL LANDS
NV-11-06-115	ALL LANDS
NV-11-06-119	ALL LANDS
NV-11-06-120	ALL LANDS
NV-11-06-141	ALL LANDS
NV-11-06-142	ALL LANDS
NV-11-06-143	ALL LANDS
NV-11-06-145	ALL LANDS

NSO-065-06

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. On the land described below:

Sage Grouse Lek(s)

A 2 mile radius around a sage grouse lek(s) from March 15 to May 1. All valleys throughout the BLM Battle Mountain Resource Area.

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-143	ALL LANDS
NV-11-06-120	ALL LANDS
NV-11-06-119	ALL LANDS
NV-11-06-116	ALL LANDS

SO-065-07

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.

Deer Habitat from January 15 to May 15.

<u>Parcel</u>	<u>Description of Lands</u>
NV-11-06-116	ALL LANDS
NV-11-06-115	ALL LANDS
NV-11-06-119	ALL LANDS
NV-11-06-118	ALL LANDS
NV-11-06-120	ALL LANDS
NV-11-06-100	ALL LANDS
NV-11-06-099	ALL LANDS
NV-11-06-097	ALL LANDS
NV-11-06-142	ALL LANDS

For the purpose of:

- a. 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.

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.

Parcel

Description of Lands

NV-11-06-143

T.0060N, R.0570E, 21 MDM, NV
Sec. 030 PROT ALL;

NSO-065-13

TIMING LIMITATIONS AND CONTROLLED SURFACE USE LEASE STIPULATIONS

Wetland areas: Protection of riparian and wetland habitat. This stipulation would be applied within 500 feet of riparian or wetland vegetation to protect the values and functions of these areas. Measures required will be based on the nature, extent, and value of the area potentially affected

NV-065-20

MIGRATORY BIRDS

Surface disturbing activities during the migratory bird nesting season (March to July) 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.

Description of Lands

ALL LANDS

OFF HIGHWAY VEHICLE RESTRICTION STIPULATION

All construction and 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.

Description of Lands

NV-11-06-088	T.0070N, R.0540E, 21 MDM, NV Sec. 013 PROT ALL; 024 PROT ALL; 025 PROT ALL;
NV-11-06-103	T.0060N, R.0550E, 21 MDM, NV Sec.006 PROT ALL;
NV-11-06-109	T.0070N, R.0550E, 21 MDM, NV Sec. 022 W ¹ / ₂ ; 027 W ¹ / ₂ ; 028 PROT ALL;
NV-11-06-130	T.0080N, R.0560E, 21 MDM, NV Sec. 004 LOTS 1-4; 004 S2N2,SW; 005 LOTS 1,2; 005 S2NE,S2; 008 ALL; 009 ALL;
NV-11-06-152	T.0090N, R.0570E, 21 MDM, NV Sec. 016 SWNE; 021 NESE,S2SE; 029 N2SE; 031 NENE,S2NE,SE; 032 W2; 033 SWSW,SE; 034 S2;