

**FINDING OF NO SIGNIFICANT IMPACT  
AND DECISION RECORD  
FOR  
FLUID MINERAL LEASING WITHIN SIX AREAS ON THE CARSON CITY DISTRICT  
Environmental Assessment  
DOI-BLM-NV-C030-2009-0003-EA**

**INTRODUCTION**

Fluid mineral lease applications have been filed on 59 parcels covering approximately 117,150 acres of federal land within the Bureau of Land Management (BLM) Carson City District (CCD) management area, and within the Bureau of Reclamation (BOR) Lahontan Basin Area Office management area. The Proposed Action is to lease some or all of these pending lease applications, as well as any anticipated future lease applications within six lease areas of known fluid mineral resource potential.

Fluid minerals include non-renewable energy resources such as oil and gas as well as geothermal resources, a source of renewable energy. Oil and gas resources on federal lands are subject to lease under the Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 *et seq.*), and the onshore oil and gas leasing regulations (43 CFR 3100). Geothermal resources on federal lands are subject to lease under the Geothermal Steam Act of 1970, as amended (30 USC § 1001, *et seq.*), and geothermal resource leasing regulations (43 CFR §3200).

This environmental assessment (EA), DOI-BLM-NV-C030-2009-0003-EA, evaluates the impacts on the natural and human environment that could result from issuing leases for fluid mineral resources. The issuance of leases for fluid mineral resources is a federal action, a commitment to resource development, and confers on the lessee the right to future exploration and development. The four stages of fluid mineral resource development that may occur on a lease include exploration, development, production, and closeout/abandonment. Each of the four stages requires separate site-specific environmental analysis and BLM authorization when ground-disturbing activities are proposed. The issuance of a lease does not, however, confer on the lessee the right to explore for or develop geothermal resources beyond the level of casual use. As a result, there are no direct impacts from the issuance of fluid mineral leases.

Nevertheless, it is reasonably anticipated that issuing a lease would result in subsequent exploration, development, production, and closeout/abandonment activities by the lessee. The impact analysis in the EA characterizes the potential for impacts for all resources in each lease area. The determination of environmental risk is resource-specific and is based on a number of factors, including the presence and extent of resources within each lease area, the extent of resources in the surrounding area, and the quality of existing data.

The BLM administers fluid mineral leases on lands managed by other federal agencies including the BOR. Hence, BLM and other federal land together will be referred to as federal lands. Federal lands also include split estate lands, where the government disposed of the surface estate and retained the mineral rights. The BOR has determined that the following lands under their management within the Fallon Lease Area are not available for geothermal leasing:

- T. 19 N., R. 28 E., Mount Diablo Base and Meridian (MDM),
  - Sec. 22: E2E2SWSWSW, S2N2SESWSW, S2SESWSW;
  - Sec. 23: SESW, SWSE;
  - Sec. 28: SENW; N2SWNW, SESWNW, N2SWSWNW;
  - Sec. 29: SENE, SENW.

T. 18 N., R. 29 E., MDM,  
Sec. 02: NENE;  
Sec. 06: Lots 3, 4, 8 and 9;  
Sec. 18: SESESE;  
Sec. 21: W2SE, N2NESE, SWNESE, W2SENESE, W2NESESE, W2SESE;  
Sec. 35: NENESENW, S2SE;

The following BLM managed lands are closed to fluid mineral leasing pursuant to the Carson City District Office Consolidated Resource Management Plan (2001):

1. The following lands due to high resource values (Geothermal leasing only);

Fallon Lease Area;

T. 18 N., R. 30 E., MDM,  
Sec. 15: W2NE, E2NW;  
Sec. 21: SWNE, S2NW, S2.

2. Lands withdrawn under the Military Lands Withdrawal Act of 1999 (Geothermal leasing only);

Dixie and Edwards Creek Valley Lease Area;

T. 20 N., R. 34 E., MDM,  
Sec. 2: Lots 2 to 4; SENE, S2NW, SW, and W2SE;  
Sec. 3: Lot 1; SENE, E2NE, and E2SE;  
Sec. 10: E2E2;  
Sec. 11: W2E2 and W2;  
Sec. 26: W2E2 and W2;  
Sec. 27: All;  
Sec. 28: E2E2 (east of State Route 121 [Dixie Valley Rd.] ROW);  
Sec. 33: E2E2 (east of State Route 121 [Dixie Valley Rd.] ROW);  
Sec. 34: All;

T. 21 N., R. 34 E., MDM,  
Sec. 25: Lots 1 and 2; W2NE, and NW;

T. 21 N., R. 35 E., MDM,  
Sec. 17: W2;  
Sec. 18: Lots 5 to 11; and E2SESENE.

3. Fallon Naval Air Station;

All military lands in the Fallon Lease Area are closed to fluid mineral leasing.

## **PLAN CONFORMANCE AND CONSISTENCY**

The Proposed Action has been reviewed for conformance with the Carson City District Office Consolidated Resource Management Plan (2001) and is found to be consistent with current BLM policies, plans and programs.

## **FINDING OF NO SIGNIFICANT IMPACT DETERMINATION**

Based on the analysis of the *Fluid Mineral Leasing within Six Areas on the Carson City District Environmental Assessment*, DOI-BLM-NV-C030-2009-0003-EA, I have determined that the action will not have a significant effect on the human environment and an environmental impact statement (EIS) will not be prepared. This finding is based on the context and intensity of the project as described:

### **Context:**

The Proposed Action is to issue pending and anticipated future leases for fluid mineral resources on the federal lands open to leasing which are encompassed by six discrete “lease areas” within Churchill, Lander, Lyon, Mineral and Nye Counties, Nevada. The six lease areas comprising the Proposed Action are described as:

#### Wabuska Lease Area,

T. 15 N., R. 25 E., MDM,  
Lyon County, Nevada;

#### Fallon Lease Area,

T. 18 & 19 N., R. 28, 29 & 30 E., MDM,  
Churchill County, Nevada;

#### Dixie and Edwards Creek Valley Lease Area,

T. 19 N.; R. 37, 38, 39 & 40 E., MDM,  
T. 20 N.; R. 34, 35, 37, 38 & 39 E., MDM,  
T. 21 N.; R. 34, 35, 36, 38,39 & 40 E., MDM,  
T. 22 & 23 N.; R.36, 37, 38, 39 & 40 E., MDM,  
T. 24 N.; R. 38, 39 & 40 E., MDM,  
Churchill and Lander Counties, Nevada;

#### Gabbs Valley Lease Area,

T. 11, 12 & 13 N.; R. 32, 33, 34, 35 & 36 E., MDM,  
T. 14 N., S 1/2; R. 32, 33, 34, 35, 36 & 37 E., MDM,  
Mineral and Nye Counties, Nevada;

#### Teels Marsh Lease Area,

T. 4 N., R. 32 & 33 E., MDM,  
Mineral County, Nevada; and,

#### Rhodes Salt Marsh Lease Area,

T. 5 N., R. 35 & 36 E., MDM,  
Mineral County, Nevada

The six lease areas cover approximately one-million acres and encompass BLM, BOR and Department of Defense (DOD) managed lands that are open to fluid mineral leasing. Lands not included for consideration within the subject lease areas, and therefore not assessed under the Proposed Action, are any lands not open to fluid mineral leasing such as lands within Wilderness Areas, Wilderness Study Areas (WSAs), Areas of Critical Environmental Concern (ACECs), or National Conservation Areas. Also excluded are tribal lands, wildlife refuges, wildlife management areas, and private land with titles that include all fluid mineral rights.

**Intensity:**

The Council on Environmental Quality (CEQ) regulations include the following ten considerations for evaluating intensity:

1) *Impacts that may be both beneficial and adverse.*

None of the environmental effects discussed in detail in the EA are considered significant, nor do the effects exceed any known threshold of significance, either beneficial or adverse. The Proposed Action is the issuance of fluid mineral leases and is classified as non-surface disturbing type of activity.

2) *The degree to which the selected alternative will affect public health or safety:*

The Proposed Action is to issue leases for fluid mineral resources within the six areas analyzed in the EA. This is non-surface disturbing type of activity. However, it is reasonable to expect resource exploration and development which could affect public health or safety but those types of activities would be subject to further environmental analysis when considered. These types of issues would be addressed through conditions of approval for such actions.

3) *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas.*

There are no park lands, prime farm lands, wild and scenic rivers, or ecologically critical areas in or near the sites proposed.

Known cultural resources are located in such a fashion (size, density and placement) that avoidance is feasible during development of fluid mineral resources. The potential for locating additional cultural resources within the six proposed lease areas ranges from low to high. The Fallon and Teels Marsh Lease Areas are expected to have the highest potential to contain unknown cultural resources. A no surface occupancy restriction is stipulated in the Carson City District Office Consolidated Resource Management Plan (2001) for areas with the highest potential for unknown cultural resources within the Fallon Lease Area. The remaining lease areas are expected to have a high to moderate potential to contain unknown cultural resources. It is considered highly unlikely that the Proposed Action would have an adverse effect to historic properties. Prior to any placement of equipment or personnel onsite, a full inventory of all proposed sites will be conducted in accordance with provisions outlined in the Nevada State Protocol Agreement between the BLM and SHPO.

4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

The effects of the Proposed Action on the human or natural environment were determined to be negligible. Leasing of fluid mineral resources is a non-surface disturbing action and the effects on the land are not likely to be controversial.

5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

The Proposed Action is not unique or unusual. The action described in the EA is issuance of leases for fluid mineral resources. There are no predicted effects on the human environment that are considered highly uncertain or involve unique or unknown risks.

6) *The degree to which the action may establish a precedent for future actions with significant effects or presents a decision in principle about a future consideration.*

The Energy Policy Act of 2005 (Act) supplemented and amended the Mineral Leasing Act of 1920, and the Geothermal Steam Act of 1970 and new regulations for the implementation of the new Act are approved. The issuance of a lease does not confer on the lessee the right to explore for or develop geothermal resources beyond the level of casual use. As a result, there are no direct impacts resulting from the issuance of geothermal leases.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

All resource values were evaluated for cumulative impacts and determined that cumulative impacts would be negligible. Subsequent actions for fluid mineral resource exploration and/or development would be evaluated for cumulative impacts in associated environmental analysis and would be addressed through mitigation of the proposed future action and conditions of approval.

8) *The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*

As described in the EA, the project will not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historical resources.

9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under ESA of 1973.*

Rhodes Salt Marsh Lease Area's eastern boundary is within 1 mile of Blue Link Spring which houses the endangered Hiko White River Springfish. The southeastern and southwestern portions of the Fallon Lease Area could contain potential habitat for the endangered southwest willow flycatcher. As described in the EA, no other known threatened or endangered species or critical habitat has been identified in the six lease areas considered in the EA. The issuance of leases for geothermal resources is non-surface disturbing and any future exploration and development actions would be evaluated in a future environmental analysis for the future project.

10) *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

As described in the EA, the Proposed Action does not violate any known Federal, State, or local law or requirement imposed for protection of the environment. Specialists from BLM Carson City District Office and the Bureau of Reclamation Lahontan Basin Area were involved in preparation of the EA and officials from Churchill, Lander, Lyon, Mineral and Nye Counties, the Yomba Shoshone Tribe, the Yerington Paiute Tribe, the Walker River Paiute Tribe, the Timbisha Shoshone Tribe, and the Fallon Paiute-Shoshone Tribe were notified of the proposal.

**DECISION**

I have determined that the following areas or portions thereof on BOR managed lands, as described in DOI-BLM-NV-C030-2009-0003-EA and as stipulated are suitable for fluid mineral leasing:

Fallon Lease Area

- T. 18 N., R. 28 E., MDM,
  - Sec. 6: Lots 3-7; SENW, E2SW;
  - Sec. 7: Lots 1-4; W2E2, E2W2;
  - Sec. 16: SW;
  - Sec. 17: All;
  - Sec. 18: Lots 1-4; E2, E2W2;
  - Sec. 27: SWSW;
  - Sec. 34: W2W2, SESW;
  
- T. 19 N., R. 28 E., MDM,
  - Sec. 1: Lots 1-4; S2N2, S2;
  - Sec. 2: Lots 1-4; S2N2, S2;
  - Sec. 3: Lots 1 and 2; S2NE, SE;
  - Sec. 4: Lots 1 and 2; S2NE, N2SE;
  - Sec. 6: Lots 5 and 7;
  - Sec. 8: SWNE, W2SE;
  - Sec. 10: NENE, N2SE, SESE;
  - Sec. 11: All;
  - Sec. 12: All;
  - Sec. 13: NWNW;
  - Sec. 14: W2NE, NW;
  - Sec. 15: N2, N2S2, SWSW, SESE;
  - Sec. 16: NENE, SE;
  - Sec. 17: N2NE, NW;
  - Sec. 21: N2NE, E2NENW, SESW;
  - Sec. 22: N2NW, SWNW;
  - Sec. 23: SWSW;
  
- T. 18 N., R. 29 E., MDM,
  - Sec. 1: Lots 1-4; S2N2, N2S2, SESW, S2SE;
  - Sec. 2: SENE, N2SE;
  - Sec. 6: Lot 5; SENW;
  - Sec. 12: Lot 1; NE;
  - Sec. 13: S2NW, S2;
  - Sec. 21: E2SENESE, E2NESESE;
  
- T. 19 N., R. 29 E., MDM,
  - Sec. 1: Lots 1-3; S2NE, SENW, S2;
  - Sec. 3: SW;
  - Sec. 4: SE;
  - Sec. 5: Lots 3 and 4; S2NW, SW;
  - Sec. 6: Lots 1-7; S2NE, SENW, E2SW, SE;
  - Sec. 7: Lots 1-4; NE, E2W2, W2SE;
  - Sec. 10: All;

- Sec. 11: W2, SE;
- Sec. 12: E2, SW;
- Sec. 13: N2, N2S2;
- Sec. 14: All;
- Sec. 15: E2, E2W2;
- Sec. 16: S2S2;
- Sec. 17: SESE;
- Sec. 20: E2NESESW, SWNWSESW, E2, SENW, NESW, S2SESW, W2NWSWSW, SWSWSW, E2SESWSW, NESESW;
- Sec. 22: NE, E2NW, SWNW, SW, N2SE, W2NWSWSE;
- Sec. 23: NENE, W2NE, NW, N2SW;
- Sec. 25: SESESENE;
- Sec. 27: W2NENW, NWNW, S2NW;
- Sec. 28: NE, N2NW;
- Sec. 29: SWNE, N2NE, NENW, N2NWNW;
- Sec. 36: S2SE;

T. 18 N., R. 30 E., MDM,

- Sec. 4: Lots 1-4; S2N2, S2;
- Sec. 5: Lots 1-4; S2N2, S2;
- Sec. 6: Lots 1-7; S2NE, SENW, E2SW, SE;
- Sec. 7: Lots 1-4; E2, E2W2;
- Sec. 8: All;
- Sec. 9: All;
- Sec. 16: All;
- Sec. 17: All;
- Sec. 18: Lots 2-4; SE, SENW, E2SW;
- Sec. 19: Lot 1; E2, E2W2;
- Sec. 20: All;
- Sec. 29: All;
- Sec. 30: Lots 3 and 4; NE, E2W2, SE;
- Sec. 31: Lots 1, 3 and 4; NE, NENW, E2SW, SE;
- Sec. 32: All;

T. 19 N., R. 30 E., MDM,

- Sec. 5: Lots 1-4; S2N2, S2;
- Sec. 6: Lots 1-7; S2NE, SENW, E2SW, SE;
- Sec. 7: Lots 1 and 2; NE, E2NW;
- Sec. 18: Lot 1; NENW;
- Sec. 31: Lots 3 and 4; E2SW, SE;
- Sec. 32: All;
- Sec. 33: E2, W2NW, E2SW;
- Sec. 34: S2NE, W2, SE;
- Sec. 35: E2, S2NW, SW;
- Sec. 36: All;

I have determined that BLM managed lands which are open to fluid mineral leasing on the following areas, as described in DOI-BLM-NV-C030-2009-0003-EA and as stipulated are suitable for leasing:

Wabuska Lease Area,

T. 15 N., R. 25 E., MDM,

Fallon Lease Area,

T. 18 & 19 N., R. 28, 29 & 30 E., MDM,

Dixie and Edwards Creek Valley Lease Area,

T. 19 N.; R. 37, 38, 39 & 40 E., MDM,

T. 20 N.; R. 34, 35, 37, 38 & 39 E., MDM,

T. 21 N.; R. 34, 35, 36, 38, 39 & 40 E., MDM,

T. 22 & 23 N.; R. 36, 37, 38, 39 & 40 E., MDM,

T. 24 N.; R. 38, 39 & 40 E., MDM,

Minus the portions of T. 21 through 24 N., R. 40 E., in Battle Mountain Field Office

Gabbs Valley Lease Area,

T. 11, 12 & 13 N.; R. 32, 33, 34, 35 & 36 E., MDM,

T. 14 N., S 1/2; R. 32, 33, 34, 35, 36 & 37 E., MDM,

Mineral and Nye Counties, Nevada;

Teels Marsh Lease Area,

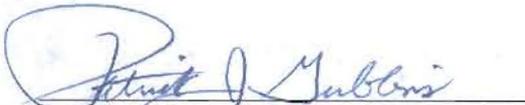
T. 4 N., R. 32 & 33 E., MDM,

Mineral County, Nevada; and,

Rhodes Salt Marsh Lease Area,

T. 5 N., R. 35 & 36 E., MDM,

Mineral County, Nevada



Patrick J. Gubbins  
Acting Manager,  
Carson City District Office

1/9/09  
Date

Attachment: BLM and BOR Fluid Mineral Lease Stipulations

**FLUID MINERAL LEASING WITHIN SIX AREAS ON THE CARSON CITY DISTRICT  
CHURCHILL, LANDER, LYON, MINERAL AND NYE COUNTIES, NEVADA  
EA No. DOI-BLM-NV-C030-2009-0003-EA**

## **Fluid Mineral Lease Stipulations**

The following lease stipulations have been developed for fluid mineral leasing and other reasonably foreseeable development (RFD) activities associated with fluid mineral exploration and development within the six leasing areas, or “project area”, for the Proposed Action including: RMP level closures or restrictions; SOPs; recommended stipulations and BMPs from the Programmatic Environmental Impact Statement (PEIS) for Geothermal Leasing in the Western United States; the respective Bureau of Reclamation (BOR) Special Administrative Stipulations for both oil & gas and geothermal leasing; and, the standard oil & gas and geothermal lease forms (3100-11 and 3200-24).

### **Resource Management Plan (RMP) Level Decisions**

Land use planning decisions from the CCDO Consolidated Resource Management Plan (CRMP) are responsible for the following CCDO fluid mineral stipulations unless otherwise noted. The lessee shall comply with the following stipulations unless they are modified by mutual agreement of the lessee and the Authorized Officer (AO). Federal lands in the project area are open to mineral and energy development activity with the following exceptions.

#### Areas Closed to Leasing

##### 1. Key Areas

- a. On the following lands due to high resource values (Geothermal leasing only):

##### Fallon Lease Area

T. 18 N., R. 30 E.

Section 15: W $\frac{1}{2}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$

Section 21: SW $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$

- b. Lands withdrawn under the Military Lands Withdrawal Act of 1999 (Geothermal leasing only).

##### Dixie and Edwards Creek Valley Lease Area

T. 20 N., R. 34 E.

Section 2: lots 2 to 4, SE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ , and W $\frac{1}{2}$ SE $\frac{1}{4}$

Section 3: lot 1, SE $\frac{1}{4}$ NE $\frac{1}{4}$ , E $\frac{1}{2}$ NE $\frac{1}{4}$ , and E $\frac{1}{2}$ SE $\frac{1}{4}$

Section 10: E $\frac{1}{2}$ E $\frac{1}{2}$

Section 11: W $\frac{1}{2}$ E $\frac{1}{2}$  and W $\frac{1}{2}$

Section 26: W $\frac{1}{2}$ E $\frac{1}{2}$  and W $\frac{1}{2}$

Section 27: All

Section 28: E $\frac{1}{2}$ E $\frac{1}{2}$  (east of State Route 121 [Dixie Valley Rd.] ROW)

Section 33: E $\frac{1}{2}$ E $\frac{1}{2}$  (east of State Route 121 [Dixie Valley Rd.] ROW)

Section 34: All

T. 21 N., R. 34 E.

Section 25: lots 1 and 2, W $\frac{1}{2}$ NE $\frac{1}{4}$ , and NW $\frac{1}{4}$

T. 21 N., R. 35 E.

Section 17: W $\frac{1}{2}$

Section 18: lots 5 to 11, and E $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$

c. Fallon Naval Air Station

This stipulation applies to all military lands in the Fallon Lease Area

Areas Where Some Restrictions Apply to Both Oil & Gas and Geothermal Leasing

1. No surface occupancy (NSO)

a. Within 500 feet of any water.

b. On the following lands due to high resource values:

Fallon Lease Area<sup>1</sup>

T. 18 N., R. 30 E.

Section 19:	E½
Section 20:	All
Section 22:	All
Section 27:	All
Section 28:	All
Section 29:	All
Section 30:	NE¼
Section 32:	E½, NW¼
Section 33:	All
Section 34:	All
Section 35:	All
Section 36:	All

2. Seasonal Restrictions on Activities

a. Spring Restrictions

Sage Grouse Strutting Grounds North of Cold Springs.

The lands subject to this stipulation include a portion of the Dixie and Edwards Creek Valley Lease Area North of Cold Springs.

All Occupied Raptor Eyries

b. March 1 to July 30

Sage Grouse Habitat in the Pine Nut Mountains.

The lands subject to this stipulation include all or part of the Wabuska Lease Area.

c. February 1 to September 1

Prairie Falcon Habitat in the Excelsior Mountains.

The lands subject to this stipulation include a portion of the Teels Marsh Lease Area.

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<sup>1</sup> This stipulation is supported by the pending Record of Decision for the PEIS for Geothermal Leasing in the Western United States (BLM and USFS, 2008) which will serve to amend the CRMP.

## **Standard Operating Procedures (SOPs)**

In addition to the restrictions on leasing authority contained in the Geothermal Steam Act, the Mineral Leasing Act, RMPs, and other established law or regulation, as described in Chapter 1, the following SOPs set forth in the CRMP define the approach to managing leasable mineral exploration and development in the CCDO management area. The SOPs common to all resources in the CCDO management area are also listed.

### Standard Operating Procedures for Fluid Minerals Resource Management Actions

1. Oil, gas, and geothermal exploration and production upon federal lands are conducted through leases with the BLM and are subject to terms and stipulations to comply with all applicable federal and state laws pertaining to various considerations for sanitation, water quality, wildlife, safety, and reclamation. Stipulations may be site specific and are derived from the environmental analysis process.
2. Geophysical exploration permits for oil, gas or geothermal resources may be obtained prior to leasing of the lands. Mitigation of any resource conflicts identified in the review process will be stipulated in the permit.
3. Wilderness Study Areas are closed to mineral leasing.

### Standard Operating Procedures Common to All Resource Management Actions

1. An environmental review (i.e., environmental assessment) will be prepared before projects are developed except when they are covered by categorical exclusion or previous analysis deemed adequately through a Determination of NEPA Adequacy (DNA) so that implementation, modification, or abandonment of the project may be considered depending on identified impacts.
2. Permanent roads will not be constructed into temporary project sites. Existing access roads, off road travel, or temporary roads which will be rehabilitated after construction activity will be used.
3. Application of herbicides on proposed treatment areas will be in accordance with procedures established in BLM Manual 9011 and 9015 and the Final Environmental Impact Statement and Record of Decision, Vegetation Treatment on BLM Lands in Thirteen Western States (1991). Herbicide use on BLM lands in California is covered by California Vegetation Management Final Environmental Impact Statement (1988).
4. All areas of new surface disturbance will be rehabilitated, where such action is necessary and practical, to replace ground cover and prevent erosion.
5. Construction of all fences (except in cases of public safety) will conform to the objectives and specifications in BLM Manual 1737 to minimize impacts to wildlife, wild horses, recreation, and visual resources.
6. The clearing of vegetation from all project sites will be restricted to the minimum amount necessary.

7. All construction, maintenance, or rehabilitation activities on public lands will use every reasonable means to minimize erosion and soil damage, including but not limited to, construction of water bars, cross ditches, or other structures as required by the authorized officer.
8. Authorized public land users will remove or dispose of all waste in accordance with a plan approved by the authorized officer and in a manner consistent with federal, state and local laws and regulations.
9. Activities in key fish and wildlife areas will, when necessary, be restricted during periods of breeding, nesting, spawning, lambing, or calving activity, and during major migrations of fish and wildlife.
10. All operations by authorized public land users will be conducted in such a manner as will avoid:  
(a) permanent blockage of any drainage system; (b) changing the character, or causing the pollution or siltation, of rivers, streams, reservoirs, ponds, water holes, or springs; and (c) damaging fish and wildlife resources and habitats.
11. Authorized public land users will take such measures as are necessary to assure unrestricted passage and movement of fish and wildlife. No artificial structure or stream channel alteration that would cause a blockage to the movement of fish will be allowed.
12. Authorized public land users will comply with construction practices and mitigating measures established by 33 CFR 323.4, which sets forth the parameters of the “nationwide permit” required by section 404 of the Clean Water Act. If the proposed action exceeds the parameters of the nationwide permit, the holder will obtain an individual permit from the appropriate office of the Army Corps of Engineers and provide the authorized officer with a copy of the same. Failure to comply with this requirement will be cause for suspension or termination of their authorization.
13. Authorized public land users will rebuild or repair roads, fences, and established trails that may be destroyed or damaged by construction, operation, or maintenance of the authorized project and build or maintain suitable crossings for existing roads and significant trails that intersect the project.
14. Benefit/cost analysis will be performed on improvements required to implement new livestock allotment management plans (AMPs) and other appropriate activity plans subsequent to the EIS. The benefit/cost analysis will be performed in compliance with BLM policy.
15. During the pre-construction and construction periods, the BLM will make modifications to any land use authorization necessary to maintain stability of geologic materials, fish and wildlife habitats, the environment, and the public interest.
16. The BLM will, if necessary, suspend any construction maintenance activity if there is an immediate threat to life (including wildlife and aquatic life), property, or the environment.
17. Public land users will abate any conditions, created by implementation of their project, that could potentially cause irreparable harm or damage to any person or property.

18. Revegetation of disturbed areas will be required as specified by the BLM. The appropriate seed mixture and proper planting techniques will be specified by the BLM.
19. Authorized public land users will construct, maintain, operate, and/or modify structures or facilities as directed by the BLM to protect and minimize adverse effects upon raptors and other wildlife.
20. Authorized land users will comply with state and federal laws applicable to the authorized use and such additional state and federal laws, along with implementing regulations, that may be enacted and issued during the term of their authorization.
21. Authorized public land users will ensure that activities in connection with the authorization will not violate applicable water quality standards or related facility siting standards established by or pursuant to applicable federal or state laws.
22. Authorized public land users will prevent or control damage to scenic, aesthetic, cultural and environmental values (including damage to fish and wildlife habitat), damage to federal property and hazards to public health and safety.
23. Authorized public land users will comply with state standards for public health and safety, environmental protection and siting, construction, operation, and maintenance when those standards are more stringent than federal standards.

### **Stipulations from the Final Programmatic EIS for Geothermal Leasing**

The BLM and U.S. Forest Service (FS) prepared the Final PEIS for Geothermal Leasing in the Western United States to standardize geothermal and fluid mineral leasing and the permitting for fluid minerals operations on federal lands. That document consolidated and updated many of the mitigation measures, standard stipulations, and Conditions of Approval (COA) from various BLM and FS documents addressing geothermal and fluid mineral leasing and development, including RMPs, forest plans, and other environment documents for fluid mineral leasing and development. The Record of Decision (ROD) from that document, signed on December 17, 2008, will serve to amend and update existing RMPs and forest plans to provide for the consistent mitigation of fluid minerals operations by federal land management agencies. The recommended stipulations in the ROD for the Final PEIS are as follows:

#### No Surface Occupancy Lease Stipulations

No Surface Occupancy (NSO) stipulations are considered a major constraint as they do not allow for surface development. These NSO stipulations are applied to the standard lease form as condition of the lease. These NSO stipulations would be applied by the authorizing officer as appropriate when the standard terms and conditions, other less restrictive lease stipulations, and best management practices for permit approval are determined to be insufficient to achieve the resource protection objectives.

1. Designated or proposed critical habitat for listed species under the Endangered Species Act of 1973 (as amended) if it would adversely modify the habitat. For listed or proposed species without designated habitat, NSO would be implemented to the extent necessary to avoid jeopardy.

2. Within the boundary of properties designated or eligible for the National Register of Historic Places, including National Landmarks and National Register Districts and Sites; and additional lands outside the designated boundaries to the extent necessary to protect values where the setting and integrity is critical to their designation or eligibility.
3. Areas with important cultural and archaeological resources, such as traditional cultural properties and Native American sacred sites, as identified through consultation.
4. Water bodies, riparian areas, wetlands, playas, and 100-year floodplains.
5. Developed recreational facilities, special-use permit recreation sites (e.g., ski resorts and camps), and areas with significant recreational use with which geothermal development is deemed incompatible; excluding direct use applications.
6. Designated National Scenic and Recreational Rivers under the Wild and Scenic River Act.
7. Segments of rivers determined to be potentially eligible for Wild and Scenic Rivers (WSR) status by virtue of a WSR inventory, including a corridor of 0.25 miles from the high water mark on either side of the bank.

#### Timing Limitations and Controlled Surface Use Lease Stipulations

Where standard lease terms and permit-level decisions are deemed insufficient to protect sensitive resources but where an NSO is deemed overly restrictive, the BLM would apply seasonal or time limited (TL) stipulations or controlled surface use (CSU) stipulations to leases.

The following CSUs would be applied by the authorizing officer as appropriate for the specific area and site conditions.

1. *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.
2. *Protection of visual resources.* This stipulation would be applied to BLM VRM Class II areas (VRM Class III management objectives would be met through conditions of approval applied during the permit approval process, and may be referenced in a lease notice); NFS lands with a Scenery Management System integrity level of High; and other sensitive viewsheds, such as within the visual setting of National Scenic and Historic Trails or near residential areas.
3. *Protection of recreational areas.* This stipulation would be applied to minimize the potential for adverse impacts to recreational values, both motorized and non-motorized, and the natural settings associated with the recreational activity.
4. *Compatibility with urban interface.* This stipulation would be applied to minimize the potential for adverse impacts to residential areas, schools, or other adjacent urban land uses.
5. *Protection of erosive soils and soils on slopes greater than 30 percent.* This stipulation would be applied to minimize the potential for adverse impacts to erosive soils as defined as severe or very severe erosion classes based on Natural Resources Conservation Service (NRCS) mapping.

6. *Protection of important habitat and migration corridors.* This stipulation would be applied to protect the continuity of migration corridors and important habitat.

### Other Lease Stipulations

#### *Protection of Geothermal Features*

Under the following situations, the BLM or FS would apply stipulations to protect the integrity of geothermal resource features, such as springs and geysers. If it is determined that geothermal operations are reasonably likely to result in a significant adverse effect to such a feature, then BLM would decline to issue the lease.

- The BLM or FS would include stipulations to protect any significant thermal features of a National Park System unit that could be adversely affected by geothermal development. These stipulations will be added, if necessary, when the lease or permit is issued, extended, renewed or modified (43 CFR 3201.10[b]).
- Any leases that contain thermal features (e.g., springs or surface expressions) would have a stipulation requiring monitoring of the thermal features during any exploration, development, and production of the lease to ensure that there are no impacts to water quality or quantity.

#### *Endangered Species Act Stipulation*

In accordance with BLM Instruction Memorandum No. 2002-174, the BLM will apply the following stipulation on any leases where threatened, endangered, or other special status species or critical habitat is known or strongly suspected. Additionally, the BLM will provide a separate notification through a lease notice to prospective lessees identifying the particular special status species that are present on the lease parcel offered.

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

#### *Sensitive Species Stipulation*

For agency designated sensitive species (e.g., sage grouse), a lease stipulation (NSO, CSU, or TL) would be imposed for those portions of high value/key/crucial species habitat where other existing measures are inadequate to meet agency management objectives.

#### *Cultural Resources Stipulation*

In accordance with BLM Instruction Memorandum No. 2005-003, the BLM will apply the following stipulation to protect cultural resources:

*“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.”*

#### *Roadless Area Stipulation*

The FS manages about 51,477,000 acres of land that is designated as inventoried roadless areas. A non-discretionary restriction would be placed on any leases within NFS inventoried roadless areas. Specifically, no new road construction or reconstruction would be allowed in designated roadless areas. If future legislation or regulations change the roadless area designation, the restriction would be revised along with any appropriate environmental review.

#### **Best Management Practices from the Final Programmatic EIS for Geothermal Leasing**

The BLM and FS would require project-specific mitigation measures to permits. The agency’s first priority is to mitigate impacts on-site. When the agency determines that impacts cannot be mitigated to an acceptable level onsite, it may be necessary to deny the permit, ask the applicant to modify the proposal, or mitigate remaining impacts off-site. Best Management Practices (BMPs) are state-of-the-art mitigation measures and may be incorporated into the permit application by the lessee or may be included in the approved use authorization by the BLM as conditions of approval (COA). COA are not lease stipulations, but they are site-specific and enforceable requirements to minimize, mitigate, or prevent impacts to resource values from an intended operation. COA can limit or amend the specific actions proposed by the operator. The recommended BMPs stated in the Record of Decision (ROD) for the Final PEIS for Geothermal Leasing in the Western United States (BLM and USFS, 2008) that may be included in the approved use authorization by the BLM as COA are as follows:

#### Information Collection & Monitoring

##### *General*

1. Prior to geothermal exploration and development, a complete subsurface geotechnical investigation will be conducted to analyze the soil and geologic conditions. The investigation will evaluate and identify potential geologic hazards and would provide remedial grading recommendations, foundation and slab design criteria, and soil parameters for the design of geothermal power infrastructure.
2. The operator will collect available information describing the environmental and socio-cultural conditions in the vicinity of the proposed project and will provide the information to the agency.
3. A monitoring program will be developed by the operator to ensure that environmental conditions are monitored during the exploration and well drilling, testing, construction, and utilization and reclamation phases. The monitoring program requirements, including adaptive management strategies, will be established at the project level to ensure that potential adverse impacts of geothermal development are mitigated. The monitoring program will identify the monitoring requirements for each major environmental resource present at the site, establish metrics against which monitoring observations can be measured, identify potential mitigation measures, and establish protocols for incorporating monitoring observations and additional mitigation measures

into ongoing activities. The operator will provide results of the monitoring program to the agency in an annual report.

4. [Refer to the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and USFS, 2007) for reclamation-specific monitoring.]
5. The operator will comply with the Secretary of Agriculture's rules and regulations for all use and occupancy of the NFS lands prior to approval of an exploration plan by the Secretary of Interior and for uses of all existing improvements, such as forest development roads, within and outside the area permitted by the Secretary of Interior; and use and occupancy of the NFS lands not authorized by an exploration plan approved by the Secretary of Interior.

#### *Paleontological and Cultural Resources*

1. Before any specific permits are issued under leases, treatment of cultural resources will follow the procedures established by the Advisory Council on Historic Preservation for compliance with Section 106 of the National Historic Preservation Act. A pedestrian inventory will be undertaken of all portions that have not been previously surveyed or are identified by BLM as requiring inventory to identify properties that are eligible for the NRHP. Those sites not already evaluated for NRHP eligibility will be evaluated based on surface remains, subsurface testing, archival, and/or ethnographic sources. Subsurface testing will be kept to a minimum whenever possible if sufficient information is available to evaluate the site or if avoidance is an expected mitigation outcome. Recommendations regarding the eligibility of sites will be submitted to the BLM, and a treatment plan will be prepared to detail methods for avoidance of impacts or mitigation of effects. The BLM will make determinations of eligibility and effect and consult with SHPO as necessary based on each proposed lease application and project plans. 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. Avoidance of impacts through project design will be given priority over data recovery as the preferred mitigation measure. Avoidance measures include moving project elements away from site locations or to areas of previous impacts, restricting travel to existing roads, and maintaining barriers and signs in areas of cultural sensitivity. Any data recovery will be preceded by approval of a detailed research design, Native American Consultation, and other requirements for BLM issuance of a permit under the Archaeological Resources Protection Act.
2. If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a cultural resources management plan will be developed. This plan will address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and earthmoving in the high potential area. A report will be prepared documenting these activities. The cultural resources management plan also will (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land.

3. Operators will determine whether paleontological resources exist in a project area on the basis of the sedimentary context of the area, a records search for past paleontological finds in the area, and/or, depending on the extent of existing information, a paleontological survey.
4. If paleontological resources are present at the site, or if areas with a high potential to contain paleontological material have been identified, a paleontological resources management plan will be developed. This plan will include a mitigation plan for avoidance, removal of fossils, or monitoring. If an area exhibits a high potential but no fossils were observed during survey, monitoring by a qualified paleontologist may be required during excavation and earthmoving in the sensitive area. The operator will submit a report to the agency documenting these activities. The paleontological resources management plan also will (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of fossils on public land.

#### *Water Resources*

1. Operators will develop a storm water management plan for the site to ensure compliance with applicable regulations and prevent offsite migration of contaminated storm water or increased soil erosion.
2. Operators will gain a clear understanding of the local hydrogeology. Areas of groundwater discharge and recharge and their potential relationships with surface water bodies will be identified.
3. Operators will avoid creating hydrologic conduits between two aquifers during foundation excavation and other activities.

#### *Vegetation and Fish and Wildlife*

1. The operator will conduct surveys for plant and animal species that are listed or proposed for listing as threatened or endangered and their habitats in areas proposed for development where these species could potentially occur, following accepted protocols and in consultation with the USFWS or NMFS, as appropriate. Particular care should be taken to avoid disturbing listed species during surveys in any designated critical habitat. The operator will monitor activities and their effects on ESA-listed species throughout the duration of the project.
2. The operator will identify important, sensitive, or unique habitat and biota in the project vicinity and site and should design the project to avoid (if possible), minimize, or mitigate potential impacts on these resources. The design and siting of the facilities will follow appropriate guidance and requirements from the BLM, FS, and other resource agencies, as available and applicable.

#### *National Scenic and Historic Trails*

When any ROW application includes remnants of a National Historic Trail, is located within the viewshed of a National Historic Trail's designated centerline, or includes or is within the viewshed of a trail eligible for listing on the NRHP, the operator will evaluate the potential visual impacts to the trail associated with the proposed project and identify appropriate mitigation measures for inclusion in the operation plan.

### *Air Quality and Climate*

The operator will coordinate with the [State Air Quality Division] to develop and implement an air quality monitoring plan.

### Planning, Location, and Design

#### *Traffic Planning*

Operators will consult with local planning authorities regarding increased traffic prior to the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) will be identified and addressed in the traffic management plan.

#### *Roads & Pads*

1. To plan for efficient use of the land, necessary infrastructure will be consolidated wherever possible.
2. Existing roads and pad sites will be used to the maximum extent feasible, but only if located in a safe and environmentally sound location. No new roads and pad sites will be constructed without agency authorization. If new roads and pad sites have been authorized, they will be designed and constructed by the operator to the appropriate agency standard, no higher than necessary to accommodate their intended function. Roads and pad sites will be routinely maintained by the operator maintain public safety and to minimize impacts to the environment such as erosion, sedimentation, fugitive dust, loss of vegetation.
3. An access road siting and management plan will be prepared incorporating existing Agency standards regarding road design, construction, and maintenance such as those described in the BLM 9113 Manual and the Surface Operating Standards for Oil and Gas Exploration and Development (i.e., the Gold Book, 4th Edition, 2007).
4. A traffic management plan will be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan will incorporate measures such as informational signs, flaggers when equipment may result in blocked throughways, and traffic cones to identify any necessary changes in temporary lane configuration.
5. Where possible, access roads will be located to follow natural contours and minimize side hill cuts and fills. Excessive grades on roads, road embankments, ditches, and drainages shall be avoided, especially in areas with erodible soils.
6. Roads will be designed so that changes to surface water runoff are minimized and new erosion is not initiated.
7. Access roads will be located to minimize stream crossings. All structures crossing streams will be located and constructed so that they do not decrease channel stability or increase water velocity. Operators will obtain all applicable federal and state water crossing permits.
8. Roads will be located away from drainage bottoms and avoid wetlands, if practicable.

#### *Geotechnical Analysis*

The operator will perform a detailed geotechnical analysis prior to the construction of any structures; so they will be sited to avoid any hazards from subsidence or liquefaction (i.e., the changing of a saturated soil from a relatively stable solid state to a liquid during earthquakes or nearby blasting).

#### *Visual Mitigation*

The operator will incorporate visual design considerations into the planning and design of the project to minimize potential visual impacts of the proposal and to meet the VRM objectives of the area and the agency.

#### *Visual Design Considerations*

1. Construct low-profile structures whenever possible to reduce structure visibility.
2. Select and design materials and surface treatments to repeat or blend with landscape elements.
3. Site projects outside of the viewsheds of publically accessible vantage points, or if this cannot be avoided, as far away as possible;
4. Site projects to take advantage of both topography and vegetation as screening devices to restrict views of projects from visually sensitive areas;
5. Site facilities away from and not adjacent to prominent landscape features (e.g., knobs and water features);
6. Avoid placing facilities on ridgelines, summits, or other locations such that they will be silhouetted against the sky from important viewing locations;
7. Collocate facilities to the extent possible to use existing and shared rights-of-way, existing and shared access and maintenance roads, and other infrastructure to reduce visual they do not bisect ridge tops or run down the center of valley bottoms.
8. Site linear features (aboveground pipelines, rights-of-way, and roads) to follow natural land contours rather than straight lines (particularly up slopes) when possible. Fall-line cuts should be avoided.
9. Site facilities, especially linear facilities, to take advantage of natural topographic breaks (i.e., pronounced changes in slope) to avoid siting facilities on steep side slopes.
10. Where available, site linear features such as rights-of-ways and roads to follow the edges of clearings (where they will be less conspicuous) rather than passing through the centers of clearings.
11. Site facilities to take advantage of existing clearings to reduce vegetation clearing and ground disturbance, where possible.
12. Site linear features (e.g., trails, roads, rivers) to cross other linear features at right angles whenever possible to minimize viewing area and duration.

13. Site and design structures and roads to minimize and balance cuts and fills and to preserve existing rocks, vegetation, and drainage patterns to the maximum extent possible.
14. Use appropriately colored materials for structures or appropriate stains and coatings to blend with the project's backdrop. Refer to the Standard Environmental Colors chart available from the BLM.
15. Use non-reflective or low-reflectivity materials, coatings, or paints whenever possible.
16. Paint grouped structures the same color to reduce visual complexity and color contrast.
17. Design and install efficient facility lighting so that the minimum amount of lighting required for safety and security is provided but not exceeded and so that upward light scattering (light pollution) is minimized. This may include, for example, installing shrouds to minimize light from straying off-site, properly directing light to only illuminate necessary areas, and installing motion sensors to only illuminate areas when necessary.
18. Site construction staging areas and laydown areas outside of the viewsheds of publically accessible vantage points and visually sensitive areas, where possible, including siting in swales, around bends, and behind ridges and vegetative screens.
19. Discuss visual impact mitigation objectives and activities with equipment operators prior to commencement of construction activities.
20. Mulch or scatter slash from vegetation removal and spread it to cover fresh soil disturbances or, if not possible, bury or compost slash.
21. If slash piles are necessary, stage them out of sight of sensitive viewing areas.
22. Avoid installing gravel and pavement where possible to reduce color and texture contrasts with existing landscape.
23. Use excess fill to fill uphill-side swales resulting from road construction in order to reduce unnatural-appearing slope interruption and to reduce fill piles.
24. Avoid downslope wasting of excess fill material.
25. Round road-cut slopes, vary cut and fill pitch to reduce contrasts in form and line, and vary slope to preserve specimen trees and nonhazardous rock outcroppings.
26. Leave planting pockets on slopes where feasible.
27. Combine methods of re-establishing native vegetation through seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas and staging of construction enabling direct transplanting.
28. Revegetate with native vegetation establishing a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape.”

29. Provide benches in rock cuts to accent natural strata.
30. Use split-face rock blasting to minimize unnatural form and texture resulting from blasting.
31. Segregate topsoil from cut and fill activities and spread it on freshly disturbed areas to reduce color contrast and to aid rapid revegetation.
32. Bury utility cables in or adjacent to the road where feasible.
33. Minimize signage and paint or coat reverse sides of signs and mounts to reduce color contrast with existing landscape.
34. Prohibit trash burning; store trash in containers to be hauled off-site for disposal.
35. Undertake interim restoration during the operating life of the project as soon as possible after disturbances. During road maintenance activities, avoid blading existing forbs and grasses in ditches and along roads.
36. Randomly scarify cut slopes to reduce texture contrast with existing landscape and to aid in revegetation.
37. Cover disturbed areas with stockpiled topsoil or mulch, and revegetate with a mix of native species selected for visual compatibility with existing vegetation.
38. Restore rocks, brush, and natural debris whenever possible to approximate preexisting visual conditions.

#### *Air Quality and Climate*

The operator will prepare and submit to the agency an Equipment Emissions Mitigation Plan for managing diesel exhaust. An Equipment Emissions Mitigation Plan will identify actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and nitrogen oxides associated with construction and drilling activities. The Equipment Emissions Mitigation Plan will require that all drilling/construction related engines are maintained and operated as follows:

- Are tuned to the engine manufacturer's specification in accordance with an appropriate time frame.
- Do not idle for more than five minutes (unless, in the case of certain drilling engines, it is necessary for the operating scope).
- Are not tampered with in order to increase engine horsepower.
- Include particulate traps, oxidation catalysts, and other suitable control devices on all drilling/construction equipment used at the project site.
- Use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area.

- Include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent Licensed Mechanical Engineer. Equipment suitable for control devices may include drilling equipment, work over and service rigs, mud pumps, generators, compressors, graders, bulldozers, and dump trucks.

### *Health and Safety*

1. Operators will develop a hazardous materials management plan addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan will identify all hazardous materials that would be used, stored, or transported at the site. It will establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan will also identify requirements for notices to federal and local emergency response authorities and include emergency response plans.
2. Operators will develop a waste management plan identifying the waste streams that are expected to be generated at the site and addressing hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. This plan will address all solid and liquid wastes that may be generated at the site.
3. Operators will develop a spill prevention and response plan identifying where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions for each material or waste, the locations of spill response kits on site, a procedure for ensuring that the spill response kits are adequately stocked at all times, and procedures for making timely notifications to authorities.
4. A safety assessment will be conducted to describe potential safety issues and the means that would be taken to mitigate them, including issues such as site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.
5. A health and safety program will be developed to protect both workers and the general public during construction and operation of geothermal projects.
6. Regarding occupational health and safety, the program will identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents; and measures for reducing occupational electric and magnetic fields [EMF] exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program will include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies will be established.

7. Regarding public health and safety, the health and safety program will establish a safety zone or setback for generators from residences and occupied buildings, roads, ROWs, and other public access areas that is sufficient to prevent accidents resulting from the operation of generators. It will identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or rehabilitation activities. It will also identify measures to be taken during the operation phase to limit public access to hazardous facilities (e.g., permanent fencing would be installed only around electrical substations, and facility access doors would be locked).
8. Operators will consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) will be identified and addressed in the traffic management plan.
9. Operators will develop a fire management strategy to implement measures to minimize the potential for a human-caused fire.

#### *Livestock Grazing*

The operator will coordinate with livestock operators to minimize impacts to livestock operations.

#### *Noxious Weeds and Pesticides*

1. Operators will develop a plan for control of noxious weeds and invasive species, which could occur as a result of new surface disturbance activities at the site. The most recent recommendations at the state and local level should be incorporated into any operating plan for the geothermal exploration and development. The plan will address monitoring, education of personnel on weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching will be required. If trucks and construction equipment are arriving from locations with known invasive vegetation problems, a controlled inspection and cleaning area will be established to visually inspect construction equipment arriving at the project area and to remove and collect seeds that may be adhering to tires and other equipment surfaces.
2. If pesticides are used on the site, an integrated pest management plan will be developed to ensure that applications would be conducted within the framework of all Federal, State, and local laws and regulations and entail only the use of EPA-registered pesticides.

#### *Vegetation and Fish and Wildlife*

The operator shall prepare a habitat restoration plan to avoid (if possible), minimize, or mitigate negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan will identify revegetation, soil stabilization, and erosion reduction measures that will be implemented to ensure that all temporary use areas are restored. The plan will require that restoration occur as soon as possible after completion of activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

#### Construction

##### *Traffic Management*

1. Traffic will be restricted to the roads developed for the project. Use of other unimproved roads will be restricted to emergency situations. Signs will be placed along roads to identify speed

limits, travel restrictions, and other standard traffic control information. Signs directing vehicles to alternative park access and parking will be posted in the event construction temporarily obstructs recreational parking areas near trailheads. Whenever active work is being performed, the area will be posted with “construction ahead” signs on any adjacent access roads or trails that might be affected.

2. Project personnel and contractors will be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions, to ensure safe and efficient traffic flow and to reduce wildlife collisions and disturbance and fugitive dust.
3. When practical, construction activities will be avoided during high recreational use periods.

#### *Roads & Pads*

1. The operator will obtain agency authorization prior to borrowing soil or rock material from agency lands.
2. Road use will be restricted during the wet season if road surfacing is not adequate to prevent soil displacement, rutting, etc., and resultant stream sedimentation.
3. Access roads and on-site roads will be surfaced with aggregate materials where necessary to provide a stable road surface, support anticipated traffic, reduce fugitive dust, and prevent erosion.
4. Dust abatement techniques will be used before and during surface clearing, excavation, or blasting activities. Dust abatement techniques will be used on unpaved, unvegetated surfaces to minimize fugitive dust. Speed limits (e.g., 25 mph [40 kph]) will be posted and enforced to reduce fugitive dust. Construction materials and stockpiled soils will be covered if they are a source of fugitive dust.
5. Culvert outlets will be rip-rapped to dissipate water energy at the outlet and reduce erosion. Catch basins, roadway ditches, and culverts will be cleaned and maintained regularly.

#### *Pipelines*

Pipelines constructed above ground due to thermal gradient induced expansion and contraction will rest on cradles above ground level, allowing small animals to pass underneath. Projects should be analyzed to ensure adequate passage for all wildlife species. The pipeline will be raised higher to allow wildlife passage where needed. Because pipeline corridors through certain habitat types can alter local predator-prey dynamics by providing predators with lines of sight and travel corridors, large projects should be analyzed to ensure there will be no significant changes to predator prey balance.

#### *Utilities*

Underground utilities will be installed to minimize the amount of open trenches at any given time, keeping trenching and backfilling crews close together. Avoid leaving trenches open overnight. Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 100 feet.

## Specific Resources

### *Cultural and Paleontological Resources*

Unexpected discovery of cultural or paleontological resources during construction will be brought to the attention of the responsible BLM authorized officer immediately. Work will be halted in the vicinity of the find to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed.

### *Noise*

The operator will take measurements to assess the existing background noise levels at a given site and compare them with the anticipated noise levels associated with the proposed project.

1. Within [2] miles of existing, occupied residences, geothermal well drilling or major facility construction operations will be restricted to non-sleeping hours (7:00 am to 10:00 pm).
2. All equipment will have sound-control devices no less effective than those provided on the original equipment. All construction equipment used will be adequately muffled and maintained.
3. All stationary construction equipment (i.e., compressors and generators) will be located as far as practicable from nearby residences.
4. If blasting or other noisy activities are required during the construction period, nearby residents will be notified by the operator at least 1 hour in advance.
5. Explosives will be used only within specified times and at specified distances from sensitive wildlife or streams and lakes, as established by the federal and state agencies.

### *Noxious Weeds and Pesticides*

1. The use of certified, weed-free mulch will be required when stabilizing areas of disturbed soil.
2. If trucks and construction equipment are arriving from locations with known invasive vegetation problems, a controlled inspection and cleaning area will be established to visually inspect construction equipment arriving at the project area and to remove and collect seeds that may be adhering to tires and other equipment surfaces.
3. Fill materials and road surfacing materials that originate from areas with known invasive vegetation problems will not be used.
4. Revegetation, habitat restoration and weed control activities will be initiated as soon as possible after construction activities are completed.
5. Use of pesticides must be approved by the agency. Pesticide use will be limited agency approved pesticides and will only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

### *Waste Management*

1. All refueling will occur in a designated fueling area that includes a temporary berm to limit the spread of any spill.

2. Drip pans will be used during refueling to contain accidental releases.
3. Drip pans will be used under fuel pump and valve mechanisms of any bulk fueling vehicles parked at the construction site.
4. Any containers used to collect liquids will be enclosed or screened to prevent access to contaminants by wildlife, livestock, and migratory birds.
5. Spills will be immediately addressed per the spill management plan, and soil cleanup and removal initiated as soon as feasible.

#### *Wild Horses and Burros*

1. The operator will ensure employees, contractors, and site visitors avoid harassment and disturbance of wild horses and burros, especially during reproductive (e.g., breeding and birthing) seasons. In addition, any pets will be controlled to avoid harassment and disturbance of wild horses and burros.
2. Observations of potential problems regarding wild horses or burros, including animal mortality, will be immediately reported to the agency.

#### *Wildlife*

1. The operator will ensure that employees, contractors, and site visitors avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, pets will be controlled or excluded to avoid harassment and disturbance of wildlife.
2. Ponds, tanks and impoundments (including but not limited to drill pits) containing liquids can present hazards to wildlife. Any liquids contaminated by substances which may be harmful due to toxicity, or fouling of the fur or feathers (detergents, oils), should be excluded from wildlife access by fencing, netting or covering at all times when not in active use. Liquids at excessive temperature should likewise be excluded. If exclusion is not feasible, such as a large pond, a hazing program based on radar or visual detection, in conjunction with formal monitoring, should be implemented. Clean water impoundments can also present a trapping hazard if they are steep-sided or lined with smooth material. All pits, ponds and tanks should have escape ramps functional at any reasonably anticipated water level, down to almost empty. Escape ramps can take various forms depending on the configuration of the impoundment. Earthen pits may be constructed with one side sloped 3:1 or greater lined ponds can use textured material; straight-sided tanks can be fitted with expanded metal escape ladders.

#### Operations/Utilization

“Good housekeeping” procedures will be developed by the operator to ensure that during all phases of exploration and operation the site will be kept clean of noxious weeds, debris, litter, garbage, fugitive trash or waste, and graffiti. Scrap heaps and dumps are prohibited. Storage yards are to be minimized to that which is absolutely necessary.



## OIL AND GAS SPECIAL STIPULATION - BUREAU OF RECLAMATION

To assist in preventing damage to any Bureau of Reclamation dams, reservoirs, canals, ditches, laterals, tunnels, and related facilities, and contamination of the water supply therein, and to avoid interference with recreation development and/or impacts to fish and wildlife habitat, the lessee agrees that the following conditions shall apply to all exploration and developmental activities and other operation of the works thereafter on lands covered by this lease:

1. Prior to commencement of any surface-disturbing work including drilling, access road work, and well location construction, a surface use and operations plan will be filed with the appropriate officials. A copy of this plan will be furnished to the Resource Division Manager, Lahontan Basin Area Office, Bureau of Reclamation, 705 North Plaza Street, Room 320, Carson City, Nevada 89701, for review and consent prior to approval of the plan. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, water pollution, and unnecessary damages to the surface vegetation and other resources, including cultural resources, of the United States, its lessees, permittees, or licensees, and to provide for the restoration of the land surface and vegetation. The plan shall contain provisions as the Bureau of Reclamation may deem necessary to maintain proper management of the water, recreation, lands, structures, and resources, including cultural resources, within the prospecting drilling, or construction area.

Drilling sites for all wells and associated investigations such as seismograph work shall be included in the above-mentioned surface use and operation plan.

If later explorations require departure from or additions to the approved plan, these revisions or amendments, together with a justification statement for proposed revisions, will be submitted for approval to the Resource Division Manager, Lahontan Basin Area Office, Bureau of Reclamation, or their authorized representative.

Any operations conducted in advance of approval of an original, revised, or amended prospecting plan, or which are not in accordance with an approved plan constitute a violation of the terms of this lease. The Bureau of Reclamation reserves the right to close down operations until such corrective action, as is deemed necessary, is taken by the lessee.

2. No occupancy of the surface of the following areas is authorized by this lease. It is understood and agreed that the use of these areas for Bureau of Reclamation purposes is superior to any other use. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project where the United States owns 100 percent of the fee mineral interest.

- a. Within 500 feet on either side of the centerline of any and all roads or highways within the leased area.
- b. Within 200 feet on either side of the centerline of any and all trails within the leased area.
- c. Within 500 feet of the normal high-water line of any and all live streams in the leased area.
- d. Within 400 feet of any and all recreation developments within the leased area.
- e. Within 400 feet of any improvements either owned, permitted, leased, or otherwise authorized by the Bureau of Reclamation within the leased area.
- f. Within 200 feet of established crop fields, food plots, and tree/shrub plantings within the leased area.
- g. Within 200 feet of slopes steeper than a 2:1 gradient within the leased area.
- h. Within established rights-of-way of canals, laterals, and drainage ditches within the leased area.
- i. Within a minimum of 500 feet horizontal from the centerline of the facility or 50 feet from the outside toe of the canal, lateral, or drain embankment, whichever distance is greater, for irrigation facilities without clearly marked rights-of-way within the leased area.
- j. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected, Reclamation may consider, on a case-by-case basis, waiving the requirement specified in Section 2 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

3. No occupancy of the surface or surface drilling will be allowed in the following areas. In addition to, no directional drilling will be allowed that would intersect the subsurface zones delineated by a vertical plane in these areas. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project where the United States owns 100 percent of the fee mineral interest.

- a. Within 1,000 feet of the maximum water surface, as defined in the Standard Operating Procedures (SOP), of any reservoirs and related facilities located within the leased area.
- b. Within 2,000 feet of dam embankments and appurtenance structures such as spillway structures, outlet works, etc.
- c. Within one-half (1/2) mile horizontal from the centerline of any tunnel within the leased area.
- d. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected. Reclamation may consider, on a case-by-case basis, waiving the requirements specified in Section 3 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

4. The distances stated in items 2 and 3 above are intended to be general indicators only. The Bureau of Reclamation reserves the right to revise these distances as needed to protect Bureau of Reclamation facilities.

5. There will be no discharges into any Bureau of Reclamation water delivery or drainage facilities.

6. Lessee shall not use Bureau of Reclamation operation and maintenance roads for lease related access without prior written approval of the Bureau of Reclamation.

7. The use of explosives in any manner shall be so controlled that the works and facilities of the United States, its successors and assigns, will in no way be endangered or damaged. In this connection, an explosives use plan shall be submitted to and approved by the Resource Division Manager, Lahontan Basin Area Office, Bureau of Reclamation, or their authorized representative.

8. There is also reserved to the United States, the right of its officers, agents, employees, licensees and permittees, at all proper times and places freely to have ingress to, passage over, and egress from all of said lands for the purpose of exercising, and protecting the rights reserved herein.

9. Bureau of Reclamation will review all road or bridge crossings, piping or closure of any reclamation project feature, and review NEPA and Cultural clearances on an individual basis.

10. The lessee shall be liable for all damage to the property of the United States, its successors and assigns, resulting from the exploration, development, or operation of the works contemplated by this lease, and shall further hold the United States, its successors and assigns, and its officers, agents, and employees, harmless from all claims of third parties for injury or damage sustained or in any way resulting from the exercise of the rights and privileges conferred by this lease.

11. The lessee shall be liable for all damage to crops or improvements of any entryman, nonmineral applicant, or patentee, their successors and assigns, caused by or resulting from the drilling or other operations of the lessee, including reimbursement of any entryman or patentee, their successors and assigns, for all construction, operation, and maintenance charges becoming due on any portion of their said lands damaged as a result of the drilling or other operations of the lessee.

12. In addition to any other bond required under the provisions of this lease, the lessee shall provide such bond as the United States may at any time require for damages which may arise under the liability provisions of sections ten (10) and eleven (11) above.

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Signature of Lessee, or Agent

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Date



## GEOTHERMAL SPECIAL STIPULATION - BUREAU OF RECLAMATION

To assist in preventing damage to any Bureau of Reclamation dams, reservoirs, canals, ditches, laterals, tunnels, and related facilities, and contamination of the water supply therein, and to avoid interference with recreation development and/or impacts to fish and wildlife habitat, the lessee agrees that the following conditions shall apply to all exploration and developmental activities and other operation of the works thereafter on lands covered by this lease:

1. Prior to commencement of any surface-disturbing work including drilling, access road work, and well location construction, a surface use and operations plan will be filed with the appropriate officials. A copy of this plan will be furnished to the Resource Division Manager, Lahontan Basin Area Office, Bureau of Reclamation, 705 North Plaza Street, Room 320, Carson City, Nevada 89701, for review and consent prior to approval of the plan. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, water pollution, and unnecessary damages to the surface vegetation and other resources, including cultural resources, of the United States, its lessees, permittees, or licensees, and to provide for the restoration of the land surface and vegetation. The plan shall contain provisions as the Bureau of Reclamation may deem necessary to maintain proper management of the water, recreation, lands, structures, and resources, including cultural resources, within the prospecting drilling, or construction area.

Drilling sites for all wells and associated investigations such as seismograph work shall be included in the above-mentioned surface use and operation plan.

If later explorations require departure from or additions to the approved plan, these revisions or amendments, together with a justification statement for proposed revisions, will be submitted for approval to the Resource Division Manager, Lahontan Basin Area Office, Bureau of Reclamation, or their authorized representative.

Any operations conducted in advance of approval of an original, revised, or amended prospecting plan, or which are not in accordance with an approved plan constitute a violation of the terms of this lease. The Bureau of Reclamation reserves the right to close down operations until such corrective action, as is deemed necessary, is taken by the lessee.

2. No occupancy of the surface of the following areas is authorized by this lease. It is understood and agreed that the use of these areas for Bureau of Reclamation purposes is superior to any other use. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project where the United States owns 100 percent of the fee mineral interest.

- a. Within 500 feet on either side of the centerline of any and all roads or highways within the leased area.
- b. Within 200 feet on either side of the centerline of any and all trails within the leased area.
- c. Within 500 feet of the normal high-water line of any and all live streams in the leased area.
- d. Within 400 feet of any and all recreation developments within the leased area.
- e. Within 400 feet of any improvements either owned, permitted, leased, or otherwise authorized by the Bureau of Reclamation within the leased area.
- f. Within 200 feet of established crop fields, food plots, and tree/shrub plantings within the leased area.
- g. Within 200 feet of slopes steeper than a 2:1 gradient within the leased area.
- h. Within established rights-of-way of canals, laterals, and drainage ditches within the leased area.
- i. Within a minimum of 500 feet horizontal from the centerline of the facility or 50 feet from the outside toe of the canal, lateral, or drain embankment, whichever distance is greater, for irrigation facilities without clearly marked rights-of-way within the leased area.
- j. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected, Reclamation may consider, on a case-by-case basis, waiving the requirement specified in Section 2 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

3. No occupancy of the surface or surface drilling will be allowed in the following areas. In addition to, no directional drilling will be allowed that would intersect the subsurface zones delineated by a vertical plane in these areas. The following restrictions apply only to mineral tracts located within the boundary of a Bureau of Reclamation project where the United States owns 100 percent of the fee mineral interest.

- a. Within 1,000 feet of the maximum water surface, as defined in the Standard Operating Procedures (SOP), of any reservoirs and related facilities located within the leased area.
- b. Within 2,000 feet of dam embankments and appurtenance structures such as spillway structures, outlet works, etc.
- c. Within one-half (1/2) mile horizontal from the centerline of any tunnel within the leased area.
- d. Providing that appropriate environmental compliance measures can be ensured, and providing further that Reclamation project works and other public interests can be protected. Reclamation may consider, on a case-by-case basis, waiving the requirements specified in Section 3 hereof. **HOWEVER, LESSEES ARE ADVISED THAT OBTAINING SUCH A WAIVER CAN BE A DIFFICULT, TIME CONSUMING, AND COSTLY PROCESS WITH NO GUARANTEE THAT RECLAMATION WILL GRANT THE REQUESTED WAIVER.**

4. The distances stated in items 2 and 3 above are intended to be general indicators only. The Bureau of Reclamation reserves the right to revise these distances as needed to protect Bureau of Reclamation facilities.

5. There will be no discharges into any Bureau of Reclamation water delivery or drainage facilities.

6. Lessee shall not use Bureau of Reclamation operation and maintenance roads for lease related access without prior written approval of the Bureau of Reclamation.

7. The use of explosives in any manner shall be so controlled that the works and facilities of the United States, its successors and assigns, will in no way be endangered or damaged. In this connection, an explosives use plan shall be submitted to and approved by the Resource Division Manager, Lahontan Basin Area Office, Bureau of Reclamation, or their authorized representative.

8. There is also reserved to the United States, the right of its officers, agents, employees, licensees and permittees, at all proper times and places freely to have ingress to, passage over, and egress from all of said lands for the purpose of exercising, and protecting the rights reserved herein.

9. The Lessor reserves the ownership of brines and condensates and the right to receive or take possession of all or any part thereof following the extraction or utilization by Lessee of the heat energy and byproducts other than demineralized water associated therewith subject to such rules and regulations as shall be prescribed by the Secretary of the Interior. If the Lessor elects to take the brines and condensates, the Lessee shall deliver all or any portion thereof to the Lessor at any point in the Lessee's geothermal gathering system after separation of the steam and brine products or from the disposal system as specified by the Lessor for the extraction of said brines and condensates by such means as the Lessor may provide and without cost to the Lessee.

There is no obligation on the part of the Lessor to exercise its reserved rights. The Lessor shall not be liable in any manner if those rights are not exercised, and, in that event, the Lessee shall dispose of the brines and condensates in accordance with applicable laws, rules and regulations. The Lessor reserves the right to conduct on the leased lands, testing and evaluation of geothermal resources which the Lessor determines are required for its desalination research programs for utilization of geothermal fluids. These programs may include shallow temperature gradient hole underground exploration, if they are conducted in a manner compatible with lease operations and the production by Lessee of geothermal steam and associated geothermal resources.

Lessor reserves the right to erect, maintain, and operate any and all facilities, pipelines, transmission lines, access roads, and appurtenances necessary for desalination on the leased premises. Any desalting plants, piping, wells, or other equipment installed by the Lessor on the leased premises shall remain the property of the Lessor; and the Lessee shall conduct his operations in a manner compatible with the operation and maintenance of any desalting plants, piping, wells, or other equipment installed by the Lessor. Any brines and condensates removed by the Lessor shall be replaced without cost to the Lessee with fluids as compatible with reservoir fluids as the brines or condensates that the Lessor removed and where the Lessor and Lessee determine that they are needed by the Lessee for his operation or for reinjection into the geothermal anomalies.

The Lessor and the Lessee, if authorized by law, may enter into cooperative agreements for joint development and production of geothermal resources from the leased premises consistent with applicable laws and regulations. Any geophysical, geological, geochemical, and reservoir hydraulic data collected by either the Bureau of Reclamation or the Lessee will be made available upon request to the other party, and the data furnished to Reclamation by the Lessee shall be considered confidential so long as the following conditions prevail:

a. Until the Lessee notifies Reclamation that there is no requirement to retain the submitted data in confidential status or until Lessee relinquishes all interest in the leased area from where the information was obtained.

b. Reclamation shall not incorporate data received from the Lessee in its publications or reports during the period that confidential data are being retained without written authorization from the Lessee.

c. Information obtained by Reclamation, and upon request submitted to the Lessee, shall not be used in publications or reports issued by Lessee without written consent of Reclamation until the data have been published or otherwise given distribution by Reclamation.

10. Bureau of Reclamation will review all road or bridge crossings, piping or closure of any reclamation project feature, and review NEPA and Cultural clearances on an individual basis.

11. The lessee shall be liable for all damage to the property of the United States, its successors and assigns, resulting from the exploration, development, or operation of the works contemplated by this lease, and shall further hold the United States, its successors and assigns, and its officers, agents, and employees, harmless from all claims of third parties for injury or damage sustained or in any way resulting from the exercise of the rights and privileges conferred by this lease.

12. The lessee shall be liable for all damage to crops or improvements of any entryman, nonmineral applicant, or patentee, their successors and assigns, caused by or resulting from the drilling or other operations of the lessee, including reimbursement of any entryman or patentee, their successors and assigns, for all construction, operation, and maintenance charges becoming due on any portion of their said lands damaged as a result of the drilling or other operations of the lessee.

13. In addition to any other bond required under the provisions of this lease, the lessee shall provide such bond as the United States may at any time require for damages which may arise under the liability provisions of sections eleven (11) and twelve (12) above.

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Signature of Lessee, or Agent

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Date