



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Mount Lewis Field Office
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Battle Mountain, Nevada 89820
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In Reply Refer To:
N-88118
3200 (NVB0100)

JUN 04 2010

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DECISION

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Scott Kessler
Ormat Nevada, Inc.
6225 Neil Road, Suite 300

Utilization Plan (N-88118), ROW's
(N-88390, N-88368, N-87409, N-
88391) Site License, CP, and ROW
Grants for the Jersey Valley
Geothermal Project, NV

1. INTRODUCTION

Ormat is proposing to construct, operate and maintain the Jersey Valley Geothermal Development Project (Jersey Valley Project). The Project includes the construction and operation of a power generating facility, geothermal well fields, geothermal production and injection pipelines, access roads and ancillary support facilities. Additionally, an approximately 27.5-mile overhead 120 kV transmission line would be constructed, originating at the proposed Jersey Valley power plant, trending north-northeast through Buffalo Valley, and terminating at the proposed Sierra Pacific Power Company (SPPCo.) Bannock Substation.

In May 2007, the Bureau of Land Management (BLM), Humboldt River Field Office (HRFO), (formerly known as the Winnemucca Field Office), approved an Environmental Assessment (EA) for Ormat's Jersey Valley Geothermal Exploration Project. The project included the drilling and testing of observation and full-sized wells and building access roads, as appropriate. The five currently approved wells under this EA (NV063-EA06-100) are: 18-27, 81-28, 44-28, 86-29 and 33-33 (well 86-29 was subsequently relocated to well site 14-27).

In June 2007, Ormat created the Jersey Valley Federal Geothermal Unit (NVN-83483X), which is comprised of federal geothermal leases NVN-74881, NVN-74883, NVN-77481, NVN-77482 and NVN-77483, and is in Pershing and Lander Counties, Nevada.

In November 2008, the BLM, HRFO approved an EA for the Jersey Valley II Geothermal Exploration Project, also for the drilling and testing of observation and full-sized wells and access road construction, as appropriate.

In March 2010, pursuant to a Memorandum of Understanding for the management of this project with the HRFO, Ormat submitted the Utilization Plan for the Jersey Valley geothermal power plant and the Plan of Developments (POD) for the power line and road to the BLM MLFO. In March 2010, Ormat submitted a draft Environmental Assessment for the Jersey Valley geothermal power plant, and right-of-ways for the transmission line and the road to the BLM MLFO.

Environmental Assessment (EA), DOI-BLM-NV-063-EA08-091, dated April, 2010, has been reviewed through the interdisciplinary team process; as well as being sent to the Nevada State Clearinghouse and the public for a 15 day comment period. The EA was sent to 99 individual interest groups and companies, including the County Commissioners for Lander and Pershing Counties and the Lander County Public Land Use Advisory Committee (PLUAC).

Following the comment period, the MLFO received comments from the Nevada Department of Wildlife and Mike and Barb Stremmer. The comment responses are included in Appendix F Comment Responses. There were no significant changes to the EA based on comments.

Bonding is required (43 CFR 3273.19) in order to ensure that the operator performs all obligations of the lease contract, including but not limited to; royalty obligations, plugging wells, surface reclamation, and cleanup of abandoned operations. BLM may increase the required bond amount that was determined to be \$100,000 for the Geothermal Power Plant and \$1,175,000 for the ROW's.

Ormat Nevada Inc. relinquished the leases for the Buffalo Valley Geothermal Leases in May, 2010. The references and statements to the Buffalo Valley geothermal power plant have been withdrawn from the EA, DOI-BLM-NV-0630EA08-091. The withdrawing of the Buffalo Valley power plant from the EA will result in fewer impacts to resources (127 acres of total permanent disturbance with the Buffalo Valley Plant versus 82 acres of permanent disturbance minus the Buffalo Valley Plant). As a result, the MLFO amended the EA to reflect this revision to the analysis as well as incorporate public comments. The EA is attached for reference (Attachment B).

DECISION

I have concluded that the interests of the public would be best served by selecting the proposed action, of EA DOI-BLM-NV-063-EA08-091 (Attachment B), dated April, 2010.

The BLM MLFO has determined that installation, construction, and operation of the Jersey Valley Geothermal Plant would not result in significant impacts to the environment and an Environmental Impact Statement (EIS) is not required based on the Environmental Assessment (EA) DOI-BLM-NV-063-EA08-091 (Attachment B) and Finding of No Significant Impact (FONSI) (Attachment C).

Therefore, it is my decision to:

- 1. Approve Ormat Nevada Inc. Utilization Plan and Operations Plan for the Jersey Valley Geothermal Project with the required conditions of approval specified in Attachment E.**

We received Ormat's Utilization Plan to construct, operate and maintain the Jersey Valley Geothermal Development Project (Jersey Valley Project) in March 2010. The Project includes the construction and operation of a geothermal power generating facility, geothermal well fields, geothermal production and injection pipelines, access roads and ancillary support facilities (Attachment A and B).

The Jersey Valley geothermal project is located within the Jersey Valley geothermal unit, and encompasses approximately 8,470 acres of public and private lands in Sections 15-16, 20-22, 27-29 and 32-34, Township 27 North, Range 40 east (T.27N. R.40E.), Mount Diablo Baseline and Meridian (MDB&M), and the entirety of Section 3 and portions of Sections 4 and 5, T.26N. R.40E., MDB&M (Attachment A).

The regulations, 43 CFR 3270 through 3279 cover the permitting and operating procedures for the utilization of geothermal resources.

- 2. Approve the issuance of the Site License, Commercial Use Permit and Construction Permit for the Ormat Nevada Inc. Jersey Valley Geothermal Project.**

BLM received the Site License application for the Jersey Valley geothermal power plant from Ormat on April 28, 2010. Enclosed in the application were the site plan drawing and legal description for the proposed power plant. The regulation, 43 CFR 3273 provides direction and guidance for Site License.

The Commercial Use Permit has not been received and must be submitted and approved prior to the commencement of operation of the GEOT power plant. The regulations at, 43 CFR 3274 provides direction and guidance for the Commercial Use Permit submission.

The Construction Permit was submitted on May 14, 2010 and is approved in accordance with 43 CFR 3272.

3. Approve the issuance of ROW grants N-87409, N-88368, N-88390 and N-88391.

In accordance with Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761) the ROW grants specified above are approved. Attachment G includes the Form 2800-14 for each ROW. The attached ROW Grants must be signed prior to proceeding with construction.

In accordance with the provisions of 43 CFR 2801.10 (b) and 3200.5 (b), this decision is immediately effective and remain in effect while appeals are pending unless a stay is granted in accordance with §4.21(b).

RATIONALE

The Proposed Action in combination with the mitigation measures detailed in EA DOI-BLM-NV-063-EA08-091 and the attached FONSI show that all practicable means to avoid or minimize environmental impacts have been adopted and that unnecessary or undue degradation of the public lands will not occur as a result of construction within the project area.

A FONSI has been determined and is based on consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA. BLM specialist, contractors, other government agencies through research and the use of regulations as well as policies were utilized in the development of mitigations measures during the NEPA process. The mitigation measures developed into conditions of approvals and/or stipulations which provided the necessary direction to avoid significant impact.

The Proposed Action is in conformance with the Shoshone-Eureka Resource Management Plan Record of Decision (1986) and the Winnemucca Management Framework Plan (1982).

The Proposed Action is in conformance with the President's National Energy Policy of 2005 as per Instruction Memorandum (IM-2002-053), as put forth in Executive Order 13212 and will not have an adverse impact on energy development, production, supply, and/or distribution. The EA and FONSI support this decision.

The BLM is required to act on applications for geothermal development and associated off lease facilities in accordance with the federal regulations at 43 CFR 3200 and 2800 respectively. In doing so, BLM is required to comply with federal laws such as NEPA and the Federal Land Policy Management Act (FLPMA). These Decision are in conformance with the National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190) as amended (72 USC 4321 et.seq.); General and Title V of the Federal Land Management Policy Act of 1976 (FLPMA).

APPEAL PROVISIONS

Decisions may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

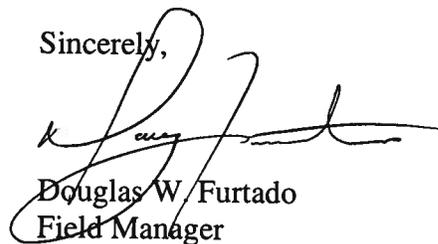
If you wish to file a petition pursuant to regulation 43 CFR 4.21 (b) for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed in this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

STANDARDS FOR OBTAINING A STAY

Except as otherwise provided by law or other pertinent regulations, a petition for a stay of a decision pending shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

Sincerely,



Douglas W. Furtado
Field Manager
Mount Lewis Field Office

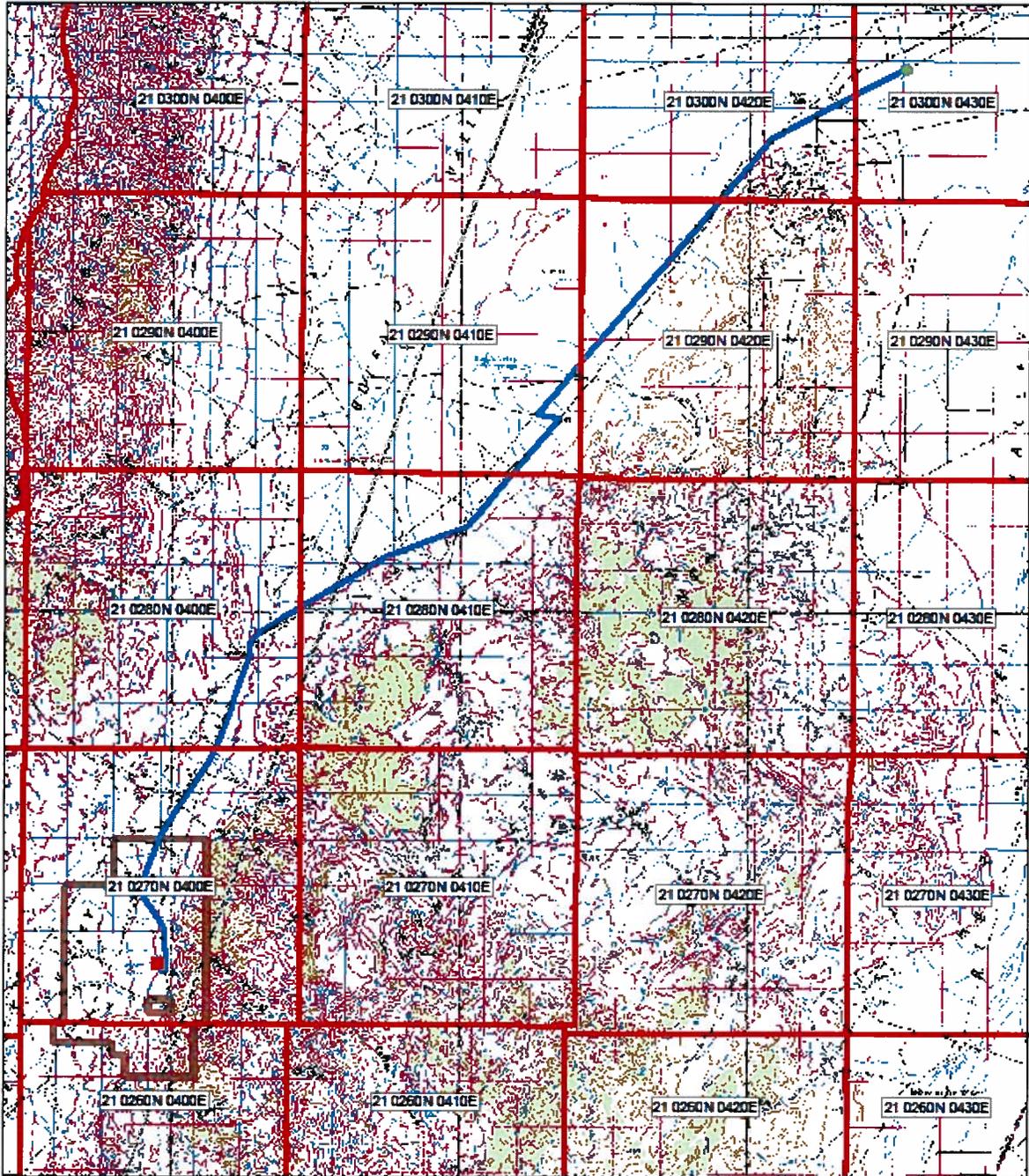
Attachments

- A. MAPS
- B. ENVIRONMENTAL ASSESSMENT
- C. FONSI
- D. ROW GRANTS FORMS 2800-14
- E. CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION
- F. EA COMMENT RESPONSES
- G. MAILING LIST

**Attachment A
Maps**

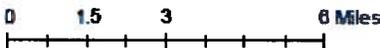
- A1. Vicinity Map**
- A2. Unit Map**
- A3. Road Map**

A1. Vicinity Map



Legend

-  Proposed Transmission Line Corridor
-  Jersey Valley Geothermal Unit Area
-  Staging Area
-  Township Boundary



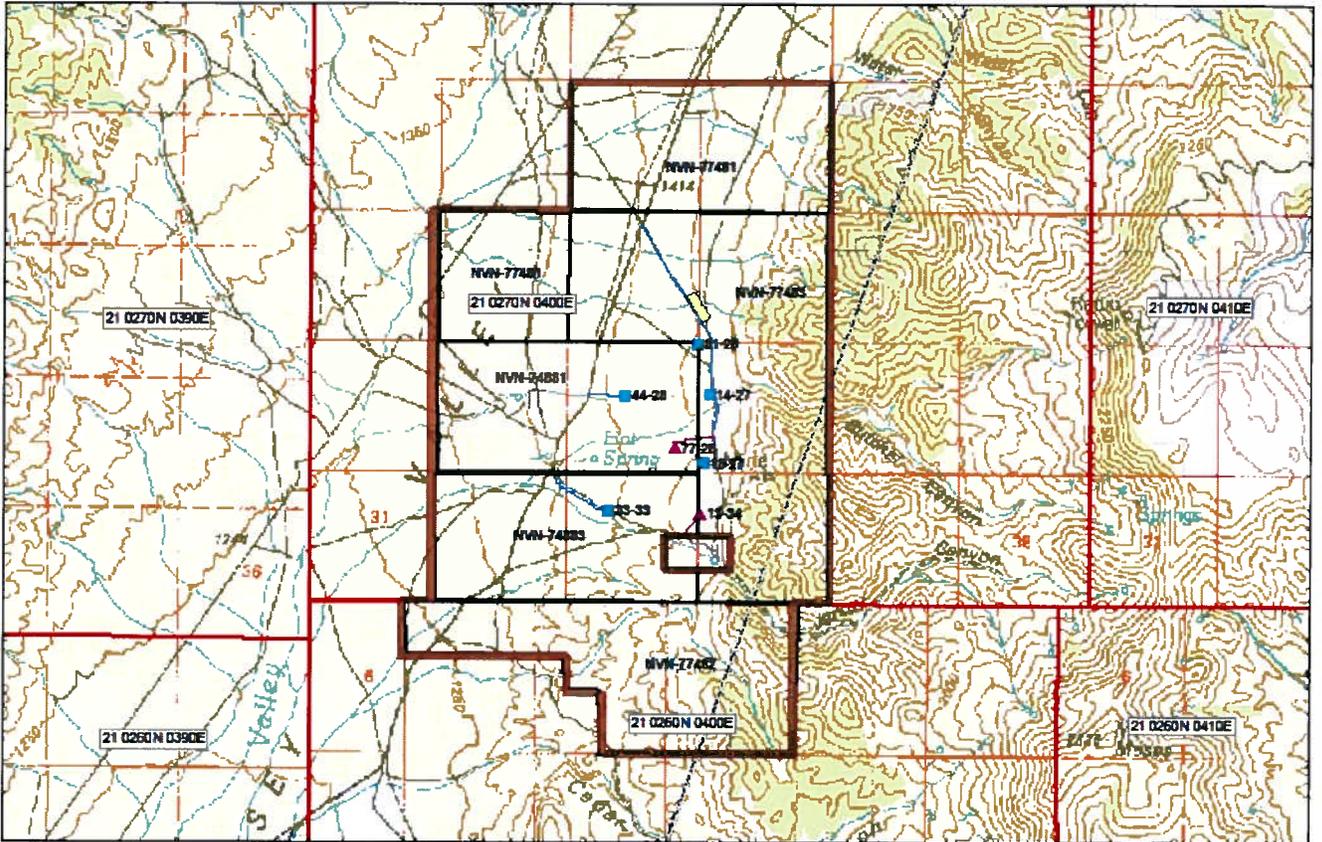
U.S. Department of the Interior

Battle Mountain District
 Projection: UTM NAD 83, Zone 11N
 May 2010



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

A2. Unit Map



Land Status and Currently Approved Activities

U.S. Department of the Interior

- Legend**
- Previously Approved Well Site (2007)
 - ▲ Previously Approved Well Site (2008)
 - Previously Approved Access Road (2007)
 - Previously Approved Access Road (2008)
 - Approved Geothermal Source
 - ▭ Geothermal Lease Boundary
 - ▭ Jersey Valley Geothermal Unit Area (NVN-834833)
 - ▭ Landowner
 - ▭ Bureau of Land Management
 - ▭ Private



0 0.5 1 2 Miles

Battle Mountain District
 Projection: UTM RAD 83, Zone 11N
 May 2010



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**ATTACHMENT B
ENVIRONMENTAL ASSESSMENT**

U.S. Department of the Interior

Bureau of Land Management
Environmental Assessment DOI-BLM-NV-063-EA08-091
DATE: May 2010

Jersey Valley
Geothermal Development Project
Pershing and Lander Counties, Nevada

ENVIRONMENTAL ASSESSMENT

Battle Mountain District Office

Bureau of Land Management
50 Bastian Road
Battle Mountain, Nevada 89820-1240
Phone: 775-635-4000
Fax: 775-635-4034

**Ormat Nevada, Inc.
Jersey Valley Geothermal Development Project
Environmental Assessment**

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Appendix A: Geothermal Lease Stipulations

Ormat Nevada, Inc.
Jersey Valley Geothermal Development Project
Environmental Assessment

1 INTRODUCTION

1.1 BACKGROUND

Ormat Nevada, Inc. (Ormat) has conducted geothermal exploration activities within the Jersey Valley area of Pershing County, Nevada (see Figure 1). A summary of these activities and project approvals is provided below.

In May 2007, the Bureau of Land Management (BLM), Humboldt River Field Office (HRFO), (formerly known as the Winnemucca Field Office), approved an Environmental Assessment (EA) for Ormat's Jersey Valley Geothermal Exploration Project. The project included the drilling and testing of observation and full-sized wells and building access roads, as appropriate. The five currently approved wells under this EA (NV063-EA06-100) are: 18-27, 81-28, 44-28, 86-29 and 33-33 (well 86-29 was subsequently relocated to well site 14-27) (see Figure 2). Total surface disturbance associated with the Jersey Valley Exploration Project was less than 10 acres.

In June 2007, Ormat created the Jersey Valley Federal Geothermal Unit (NVN-83483X), which is comprised of federal geothermal leases NVN-74881, NVN-74883, NVN-77481, NVN-77482 and NVN-77483, and is in Pershing and Lander Counties, Nevada (see Figure 2).

In November 2008, the BLM, HRFO approved an EA for the Jersey Valley II Geothermal Exploration Project, also for the drilling and testing of observation and full-sized wells and access road construction, as appropriate. The two currently approved wells under this EA (LLNV-WO1000-2009-002-EA) are 77-28 and 13-34 (see Figure 2). Total surface disturbance associated with the Jersey Valley II Exploration Project was less than 10 acres.

Based on the successful results of the exploration activities within the Jersey Valley Unit, Ormat has determined that the geothermal resources are capable of commercial production. As such, Ormat is proposing the Jersey Valley Geothermal Development Project.

1.2 LOCATION AND SUMMARY OF PROPOSED ACTION

Ormat is proposing to construct, operate and maintain the Jersey Valley Geothermal Development Project (Jersey Valley Project or Project). The Project includes the construction and operation of a power generating facility, a geothermal wellfield, geothermal production and injection pipelines, access roads and ancillary support facilities. Additionally, an approximately 27.59-mile overhead 120 kV transmission line (NVN-87409) would be constructed, originating at the proposed Jersey Valley power plant, trending north-northeast and terminating at the proposed Sierra Pacific Power Company (SPPCo.) Bannock substation (see Figure 3).

Jersey Valley Geothermal Development Project
 Environmental Assessment: NV063-EA08-091

The Jersey Valley Project is located within the Jersey Valley geothermal unit, and encompasses approximately 8,470 acres of public and private lands in Sections 15-16, 20-22, 27-29 and 32-34, Township 27 North, Range 40 east (T.27N. R.40E.), Mount Diablo Baseline and Meridian (MDB&M), and the entirety of Section 3 and portions of Sections 4 and 5, T.26N. R.40E., MDB&M (see Figure 2).

The Proposed Action also includes the construction and operation of an approximately 27.59-mile overhead electrical transmission line originating at the proposed Jersey Valley power plant and terminating at the proposed SPPCo. substation (see Figure 3). Table 1 shows what has been submitted to the BLM on behalf of the Project.

Table 1: Project Submittals

	Operations Plan ¹		Utilization Plan ²		ROW/PoD ³	
	Original	Revised	Original	Revised	Original	Revised
Jersey Valley	April 2009	March 2010	April 2009	April 2010	n/a	n/a
Transmission Line	n/a	n/a	n/a	n/a	April 2009	April 2010
New Road	n/a	n/a	n/a	n/a	March 2010	April 2010
¹ For approval to drill and test those geothermal wells located on public lands managed by the BLM which would be used for production and injection of geothermal fluid for the Project. ² For approval of the utilization facilities (i.e. power plant, pipelines, etc.) located on public lands managed by the BLM. ³ For those portions of the transmission line corridor and the new road located on public lands managed by the BLM.						

1.3 PURPOSE AND NEED

Background

Ormat’s purpose of the Project is to commercially develop the geothermal resources within the federal geothermal unit; to construct and operate a commercial geothermal power plant and wellfield within the unit; and to transport generated electricity from the Project to a power purchaser in compliance with the Nevada State mandated Renewable Portfolio Standard. The purpose of the Project’s transmission line and electrical substation is to provide the electrical interconnection with the existing SPPCo./Nevada Energy (NVE) electrical transmission system at the proposed junction in an economically viable manner which minimizes transmission line energy losses and adverse environmental impacts. Ormat needs to be able to produce geothermal resources in commercial quantities from the Unit or the federal geothermal leases will terminate.

Agency’s Purpose and Need

Under the Federal Land Policy and Management Act of 1976 and its implementing regulations, including 43 CFR 2800, BLM must respond to Ormat’s ROW applications. Under the terms of the Geothermal Steam Act, its revisions of 2007, and its implementing regulations; and the Programmatic Geothermal Environmental Impact Statement and its Record of Decision of December, 2008. BLM must respond to the proposed plans, applications and programs submitted

by the lessee or the lessee's designated operator. The BLM is also required to comply with NEPA and the Council on Environmental Quality (CEQ) regulations.

The Agency's need for the Proposed Action is to respond to the submitted Operations Plan, Utilization Plan and FLPMA ROW applications submitted by the proponent to construct and operate the Jersey Valley Geothermal Development Project.

The BLM has determined that an EA would be needed to evaluate and disclose the potential environmental impacts associated with this proposed action and any reasonable alternatives to the proposed action which would include a no action alternative. This EA will serve as a decision-making tool to assist BLM Battle Mountain District Office (BMDO) in its determination to approve the proposed action, require modification or deny the proposed action. At the conclusion of the EA process, the BLM must determine if the proposed action and/or any modifications of the proposed action would cause significant environmental impacts to the human environment. If no such impact would occur, then a Finding of No Significant Impact (FONSI) would be prepared, and the BLM would approve the submitted Operations Plan, Utilization Plan and Right-of-Way applications. If, at any time during the analysis, a determination of significant impacts is made that could not be appropriately mitigated at the EA level, an Environmental Impact Statement (EIS) would be required.

1.4 LAND USE PLAN CONFORMANCE

The Jersey Valley Unit Area and the southern half of the proposed transmission line are administered by the BLM through the HRFO. The area is subject to the BLM WFO Sonoma-Gerlach Management Framework Plan (MFP), dated July 9, 1982. Objective M-5 of the MFP states "Make energy resources available on all public lands and other lands containing federally owned minerals." The MFP provides for the development of geothermal resources in noncompetitive areas and all Known Geothermal Resource Areas (KGRAs) except those which are areas of significant environmental conflict or have historical and/or cultural significance.

The northern half of the proposed transmission line is administered by the BLM through the MLFO and is subject to the BLM Shoshone-Eureka Resource Management Plan (RMP), which was approved in 1986.

Part II, Section E, "Management Actions Not Expressly Addressed by the Resource Management Plan," of the RMP includes the section "Minerals Objectives and Management Decisions," brought forward unaltered from the earlier BLM "Management Framework Plan" (Record of Decision, page 29). Minerals Objectives 1, 2 and 3 lead to Management Decision #2 (Leaseable Minerals - Geothermal Steam). The three objectives are:

- Objective 1: Make available and encourage development of mineral resources to meet national, regional and local needs consistent with national objectives for an adequate supply of minerals.

Jersey Valley Geothermal Development Project
Environmental Assessment: NV063-EA08-091

- Objective 2: Assure that mineral exploration, development and extraction are carried out in such a way as to minimize environmental and other resource damage and to provide, where legally possible, for the rehabilitation of lands.
- Objective 3: Develop detailed mineral resource data in areas where different resources conflict so that informed decisions may be made that result in optimum use of the lands.

Management Decision #2 (Leaseable Minerals – Geothermal Steam), states that: “All areas designated by the BLM as prospectively valuable for geothermal steam will be open for exploration and development unless withdrawn or restricted from mineral entry. All public lands disposed of in these areas will have the geothermal resources reserved to the federal government.” (BLM 1987).

The Proposed Action is in conformance with the Sonoma-Gerlach MFP and Shoshone-Eureka RMP.

1.5 RELATIONSHIP TO LAWS, REGULATIONS AND OTHER PLANS

The EA has been prepared in accordance with the following statutes and implementing regulations, Policies and Procedures:

- The National Environmental Policy Act of 1969, as amended (Public Law [PL] 91-190, 42 U.S.C. 4321 (*et seq.*);
 - 40 CFR 1500 (*et seq.*). Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.
 - Considering Cumulative Effects under the National Environmental Policy Act [CEQ 1997];
 - USDI requirements (Departmental Manual 516, Environmental Quality [USDI 2007]);
 - BLM NEPA Handbook (H-1790 1) (BLM 1988 and BLM 2008a);
- The Federal Land Policy and Management Act of 1976 (PL 94 579, 43 U.S.C. 1761 (*et seq.*);
 - 43 CFR 2800, Rights-of-Way, Principles and Procedures; Rights-of-Ways under the Federal Land Policy and Management Act and the Mineral Leasing Act; Final Rule, April 22, 2005.
- The Geothermal Steam Act of 1970 (Act) (30 USC 1001-1025).
 - 43 CFR 3200, Geothermal Resources Leasing and Operations; Final Rule, May 2, 2007.
- The 2005 Energy Policy Act; The National Energy Policy, Executive Order 13212;
- Best Management Practices as defined in the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (Gold Book); and

Other environmental analysis documents which were used in production of this EA:

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- Programmatic Environmental Assessment Geothermal Leasing and Exploration Shoshone-Eureka Planning Area (BLM BMFO 2002);
- Geothermal Resources Programmatic Leasing Environmental Assessment (BLM WFO 2002);
- Jersey Valley Geothermal Exploration Project Environmental Assessment (BLM 2007); and
- Jersey Valley II Geothermal Exploration Project Environmental Assessment (BLM 2008d,)

1.6 IDENTIFIED ISSUES

The scope of this EA is based upon specific issues and concerns identified by BLM, other federal agencies, state agencies and local agencies. These issues and concerns include:

- Avoidance of cultural resource sites;
- Riparian vegetation associated with the Hot Springs;
- Special Status Species;
- The quality and quantity of waters on public lands; and
- Invasive, nonnative species

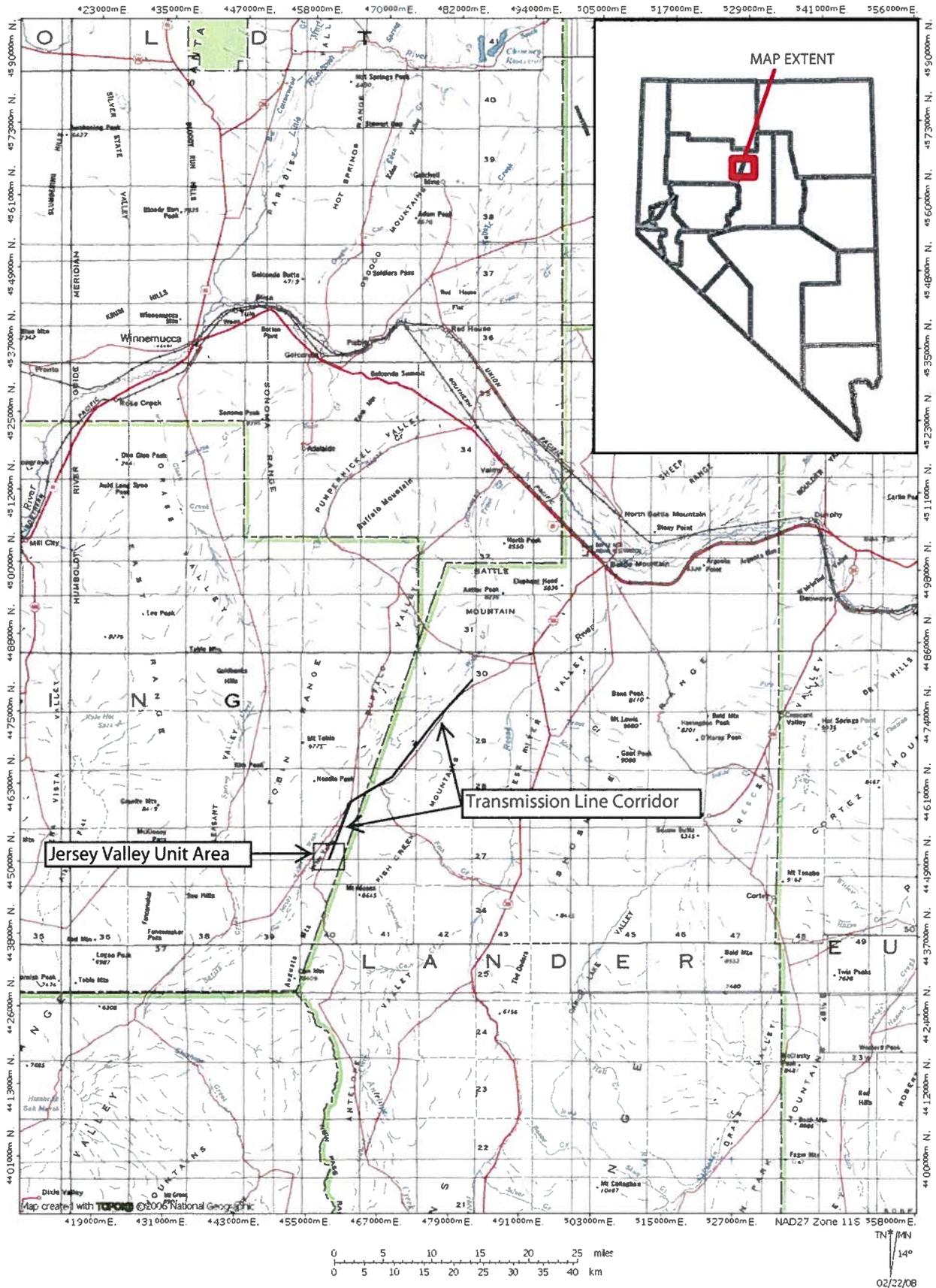
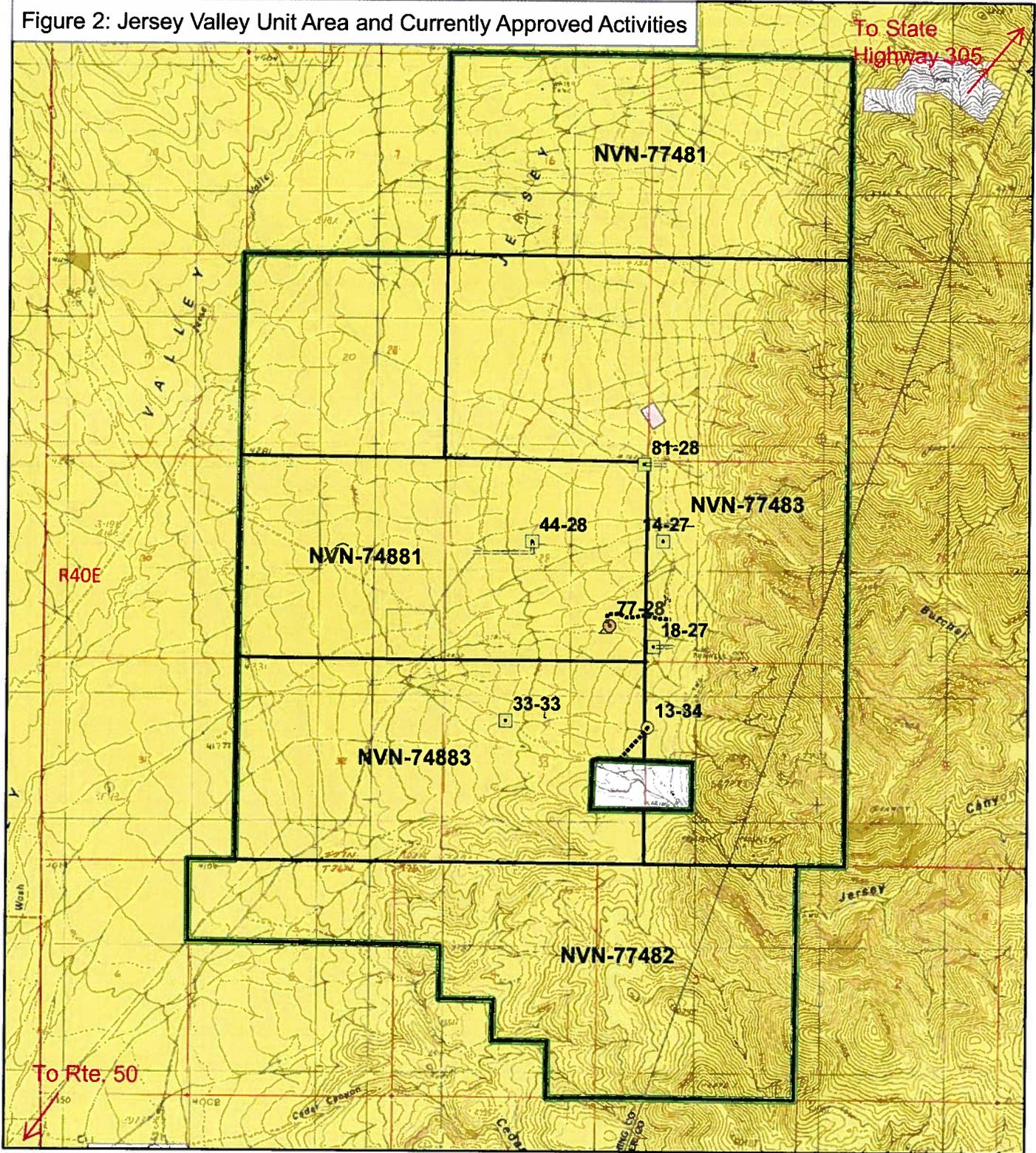


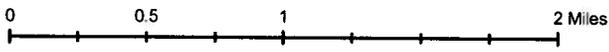
Figure 1: Project Vicinity Map

Figure 2: Jersey Valley Unit Area and Currently Approved Activities



LEGEND

- Currently Approved Well Site (2007)
- Currently Approved Well Site (2008)
- Currently Approved Access (2007)
- Currently Approved Access (2008)
- Currently Approved Gravel Source
- Geothermal Lease Boundary
- Jersey Valley Geothermal Unit Area (NVN-83483X)
- Bureau of Land Management Land
- Private Land



United States Department of the Interior

Bureau of Land Management
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, NV 89820



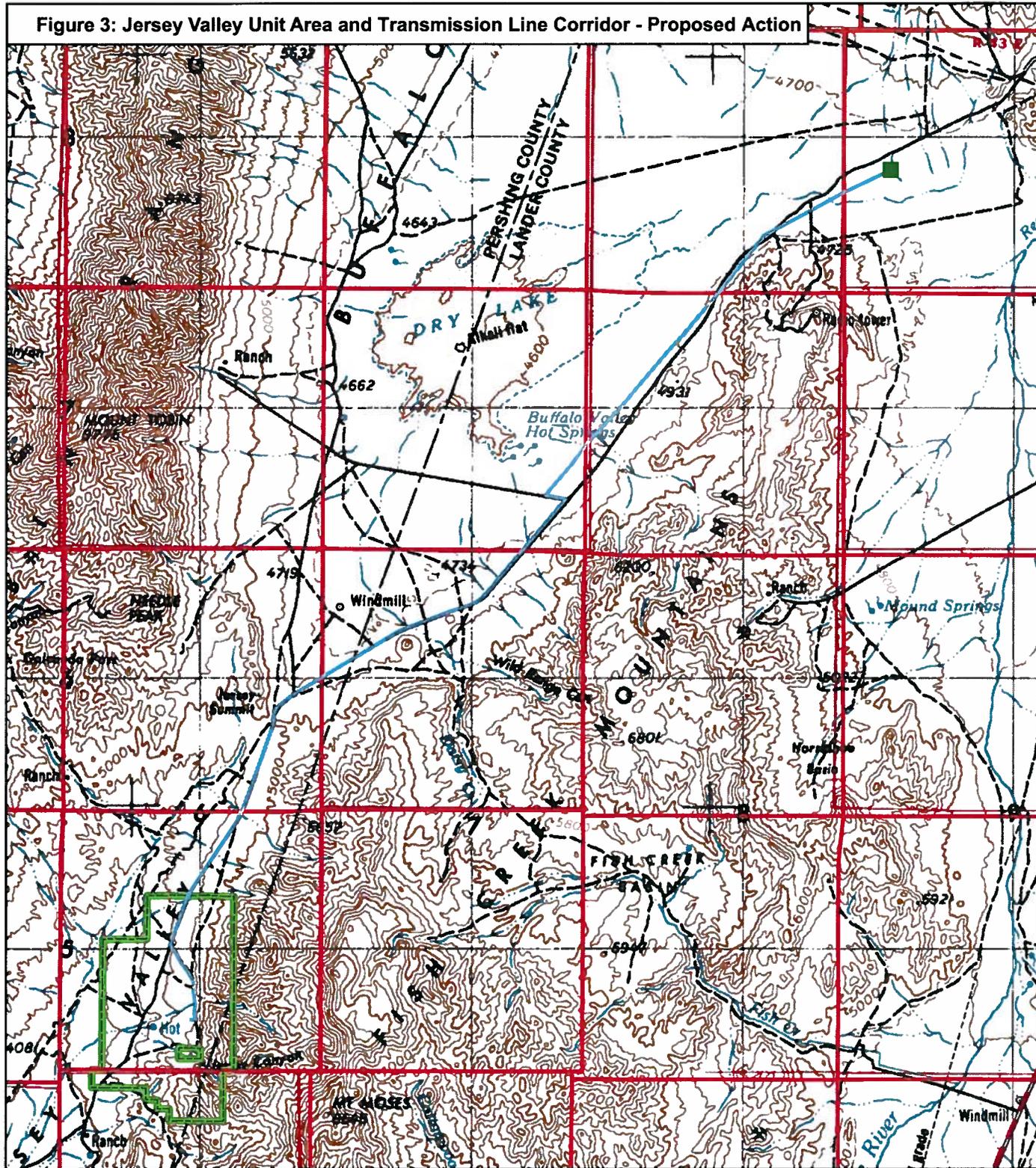
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The data shown on the map uses the Universal Transmator (Zone 11N) Coordinate system and uses the NAD83 projection.

Map Date: November 3, 2009

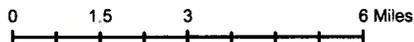


Figure 3: Jersey Valley Unit Area and Transmission Line Corridor - Proposed Action



LEGEND

- Bannock Substation - Proposed
- 120 kV Power ROW - Proposed
- Jersey Valley Geothermal Unit Area (NVN-83483X)



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Map Date: November 3, 2009



2 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

2.1.1 The Power Plant

The Jersey Valley power plant will be an approximately 30 Megawatt (MW) geothermal power plant. The proposed power plant would be located in the SE1/4, SE1/4 Section 28 T.27N., R.40E. A switching station, used to transform generated low voltage to the higher voltage required for a transmission line, would be constructed within the power plant boundaries as shown in Figure 4.

A microwave communication tower would be about eight (8) feet tall; a radome antenna on a monopole; and attached to the power plant building. The tower will transmit to the Fencemaker microwave building/tower. It would also be built within the Jersey Valley power plant area and would consist of a microwave antenna, aimed west toward the existing communication link on the Tobin Range (NVN-57070). This system would be used to deliver signals from control centers and other remote locations, report operating status, and provide voice communication from dispatchers to power plant operators and maintenance personnel. This system would be considered an exclusive use communications system for Ormat.

Permanent and temporary surface disturbance for the power plant can be found in Table 5.

2.1.1.1 Operation and Maintenance Procedures

The Ormat power plant will utilize a binary design with an air-cooled heat rejection system.

The geothermal fluids for the binary power plant will be produced from the production wells by pumping. Once delivered to the power plant, the heat in the geothermal fluid will be transferred to the “binary” (or secondary) fluid in multiple stage non-contact heat exchangers. The binary turbine units will use pentane (C₅H₁₂), a flammable but non-toxic hydrocarbon, as the binary fluid, which circulates in a closed loop. The heat from the geothermal fluid vaporizes the binary fluid, which turns the binary turbine and electrical generator to make electricity.

The vaporized binary fluid exits the turbine and is condensed back into a liquid in a shell-and-tube, non-contact, air-cooled condenser. The condensed binary fluid is then pumped back to the heat exchangers for re-heating and vaporization, completing the closed cycle.

The residual geothermal fluid from the heat exchangers is pumped under pressure out to the geothermal injection wells through the injection pipelines and injected back into the geothermal reservoir. The geothermal fluid will flow through the binary power plant in a closed system, with no emissions of non-condensable gases to the atmosphere.

The air-cooled condenser will range between 28 and 35 feet in height and are about two-thirds the length of the binary power plant site. In addition to the geothermal fluid handling system, turbine-generators and turbine building, control and support buildings, the substation and electrical systems, and the binary fluid storage tank(s); the power plant site will include a water storage tank and pumps for non-potable uses and fire protection.

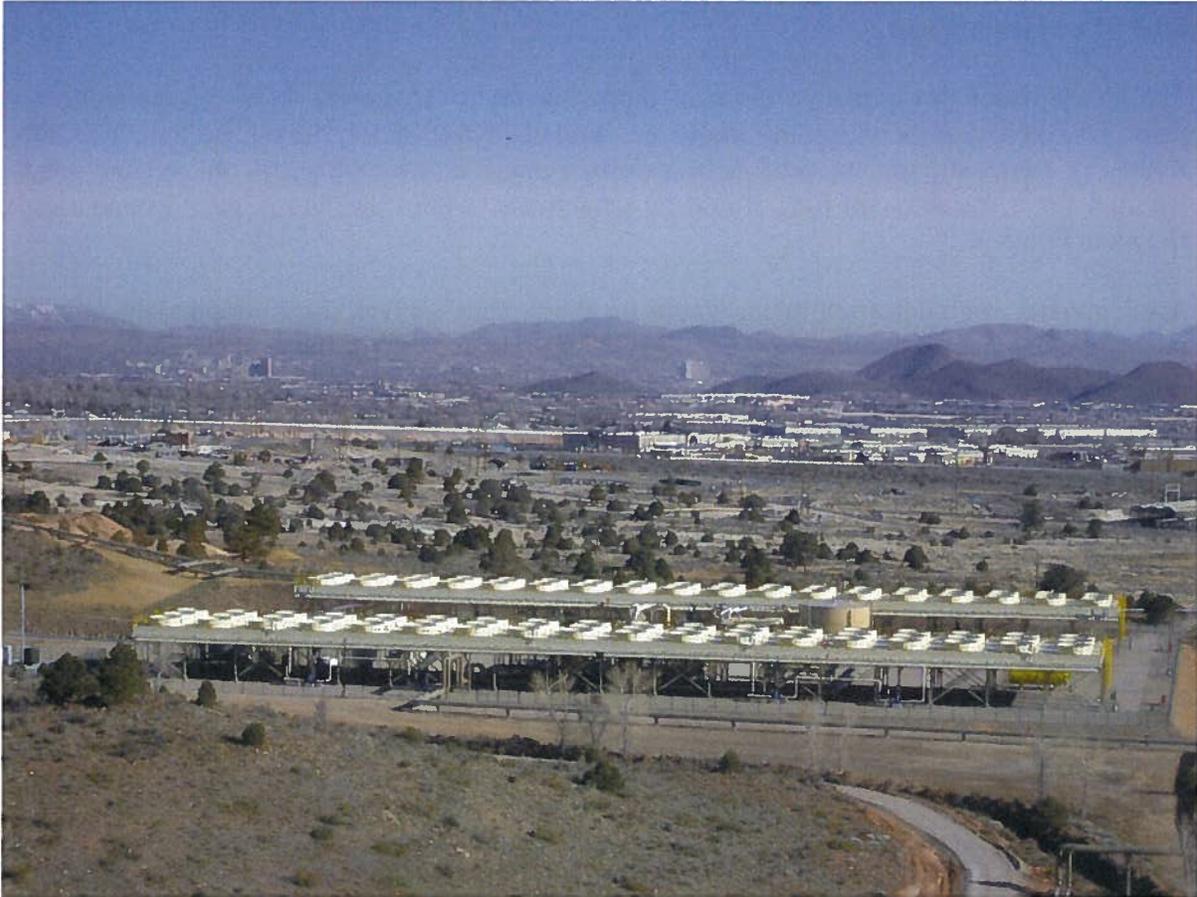


Photo 1: Air Cooled Geothermal Power Plant

2.1.1.2 Construction Procedures and Surface Disturbance

Power plant site preparation activities would begin with clearing, earthwork, drainage and other improvements necessary for commencement of construction. Clearing would include removal of organic material, stumps, brush and slash.

A portion of the power plant site and adjacent well pads would be devoted to equipment and materials laydown, storage, construction equipment parking, small fabrication areas, office trailers and parking. Equipment and materials laydown space is required for large turbine parts, structural steel, piping spools, electrical components, switchyard apparatus, and building parts. Mobile trailers or similar suitable facilities (e.g., modular offices) would be brought to the site to

be used as construction offices for owner, contractor, and subcontractor personnel. Travel trailers would be used for construction management to reside on the site and would provide for 24 hour management and emergency response. Parking would be provided for construction workers and visitors within the power plant area.

Temporary utilities will be provided for the construction offices, the laydown area, and the power plant site. Temporary construction power will be supplied by a temporary generator and, if available when the transmission line is completed, at the site by utility-furnished power. Area lighting will be provided for safety and security. Drinking water will be imported and distributed daily. Portable toilets will be provided throughout the site, office and travel trailers and would connect to temporary septic holding systems.

Consistent with safety requirements, power plant buildings, structures, security fencing, pipe, etc. would each be painted an appropriate color (likely covert green) to blend with the area and minimize visibility.

The proposed power plant site is downgradient from a significant watershed, though it does not interrupt the current shallow drainage channel for this watershed. The nature of alluvial streambeds is lateral migration over time, due to erosion and deposition. Low-impact earthen berms are proposed to direct storm event runoff towards a controlled "low water crossing" in the access roadway, and to influence the alluvial runoff to maintain its current channel location during the life of the power plant.

Three berms are proposed; two directing run-on to the access road, and one providing a safety barrier against channel migration adjacent to the plant site; a total of 2700 LF. Each berm would be constructed by balanced removal of upslope material, probably by small bulldozer dipped blade, cutting about 12" deep. The removed material would be placed in a 12" tall berm downhill of the cut. The total disturbance width is about 17 ft. The total disturbed area from these features is 1.05 acres (see also Table 5).

2.1.2 Wells, Wellfields, Well Maintenance and Other Ancillary Facilities

The Proposed Action includes the construction and operation of geothermal fluid production and injection wells, access roads, geothermal fluid pipelines and a power generation facility within the Jersey Valley Geothermal Unit (Jersey Valley Unit Area or Unit Area).

Production wells flow geothermal fluid to the surface. Injection wells are used to inject geothermal fluid from the power plant into the geothermal reservoir. Injection ensures the longevity and renewability of the geothermal reservoir. The number of geothermal production and injection wells required for the Project is principally dependent on the productivity (or injectivity) of the wells and the temperature and pressure of the produced geothermal fluid.

Within the Jersey Valley Unit Area, Ormat expects that 17 geothermal production wells and 7 geothermal injection wells are needed (see Figure 4). Each well is or would be located on a well pad in the shape of a rectangle and approximately 4.2 acres in size.

Reserve pits would be constructed in accordance with best management practices identified in the “Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (The Gold Book)” (Fourth Edition – 2007) on each pad for the containment and temporary storage of water, drill cuttings and waste drilling mud during drilling operations. Geothermal fluid produced from the well during flow testing will also drain to the reserve pit. The reserve pit waste will be sampled for hazardous contaminants. Typical tests may include the Toxicity Characteristic Leaching Procedure (TCLP) (EPA Method 1311), tested for heavy metals; pH (EPA method 9045D); Total Petroleum Hydrocarbons/Diesel (EPA Method 8015B); and Oil and Grease (EPA Method 413.1).

The reserve pits would be fenced with an enclosure fence on three sides and then fenced on the fourth side once drilling has been completed to prevent access by persons, wildlife or livestock. The fence would remain in place until pit reclamation begins. For the drilling of each well, the reserve pit would measure approximately 75 feet by 200 feet by 10 feet deep. Figure 10 shows the recommended construction standards for enclosure fences in livestock areas (Gold Book, Fourth Edition – 2007).

Permanent and temporary surface disturbance associated with the geothermal wellfields can be found in Table 5.

2.1.2.1 Well Drilling and Testing

Specific drilling information is provided in Table 2.

Table 2: Well Drilling Specifics

Rig Type	Rig Height (ft.)	Trucks Needed (on average)	Drilling Time (days) ¹	Workers On Site	Depth Drilled (ft.)
Large rotary drilling rig	160-170	25+ tractor/trailer 8 small trucks	45 ²	Avg. = 9-10 Max = 18	7,000
¹ Difficulties encountered during the drilling process, including the need to re-drill the well, could as much as double the time required to successfully complete each well. ² Drilling would be conducted 24 hours a day, 7 days a week.					

The drilling supervisor and mud logger would typically sleep in a trailer on the active drill site while the well is being drilled. The drilling crew may also live “on site” during the drilling operations in a self-contained “bunkhouse” (sleeping quarters, galley, water tank and septic tank) or portable trailers which would be placed on one of the drill sites not being actively drilled to accommodate the drill rig workers.

“Blow-out” prevention equipment would be utilized while drilling below the surface casing. During drilling operations, a minimum of 10,000 gallons of cool water and 12,000 pounds of inert, non-toxic, non-hazardous barite (barium sulfate) would likely be stored at each well site for use in preventing uncontrolled well flow (“killing the well”), as necessary.

The well bore would be drilled using non-toxic, temperature-stable drilling mud composed of a bentonite clay-water or polymer-water mix for all wells. Variable concentrations of additives

would be added to the drilling mud as needed to prevent corrosion, increase mud weight, and prevent mud loss. Some of the mud additives may be hazardous substances (see Section 3.11), but they would only be used in low concentrations that would not render the drilling mud toxic. Additional drilling mud would be mixed and added to the mud system as needed to maintain the required quantities.

Each well may need to be worked over or redrilled. Depending on the circumstances encountered, working over a well may consist of lifting the fluid in the well column with air or gas or stimulation of the formation using dilute acid or rock fracturing techniques.

Well redrilling may consist of: 1) reentering and redrilling the existing well bore; 2) reentering the existing well bore and drilling and casing a new well bore; or 3) sliding the rig over a few feet on the same well pad and drilling a new well bore through a new conductor casing. While the drill rig is still over the well, the residual drilling mud and cuttings would be flowed from the well bore and discharged to the reserve pit.

Short-Term Well Testing

Each test, lasting approximately 3 to 5 days on average, would consist of flowing the well into the reserve pit or portable steel tanks brought onto the well site while monitoring geothermal fluid temperatures, pressures, flow rates, chemistry and other parameters. An “injectivity” test may also be conducted by injecting the produced geothermal fluid from the reserve pit or steel tanks back into the well and the geothermal reservoir. The drill rig would likely be moved from the well site following completion of these short-term test(s). Each short-term well test is expected to flow approximately 1.5 million gallons.

Long-Term Well Testing

One or more long-term flow test(s) of each well drilled would likely be conducted following the short-term flow test(s) to more accurately determine long-term well and geothermal reservoir productivity. The long-term flow test(s), each lasting between 7-30 days, would be conducted by pumping the geothermal fluids from the well through onsite test equipment closed to the atmosphere (using a line shaft turbine pump or electric submersible pump) to the reserve pit. Each long-term well test is expected to flow approximately 15 million gallons.

A surface booster pump would then pump the residual produced geothermal water/fluid from the reserve pit through a temporary 8” to 10” diameter pipeline to either inject the fluid into one of the other geothermal wells drilled within the Project area or to the reserve pit on another well pad. The temporary pipeline would either be laid “cross-country” or on the surface of the disturbed shoulders on the access roads connecting the geothermal full-size wells (as required, roads would be crossed by trenching and burying the temporary pipe in the trench). The onsite test equipment would include standard flow metering, recording, and sampling apparatus.

2.1.2.2 Well Operations

Once the well is drilled and well head completed, an industrial grate is placed over the hole to prevent humans and wildlife from falling into the cellar.

Each of the production wells would be equipped with a pump to bring the geothermal fluid to the surface under pressure. The electricity to power the well pump motors would be supplied via an electric conductor installed from the power plant along the connecting pipelines.

Wellhead dimensions for the production wells are not expected to exceed a height of fifteen feet above the ground surface or four feet in diameter. Wellhead dimensions for the injection wells would be much smaller.

An approximately 15-foot by 15-foot by 10-foot high motor control building may be located within approximately 50 feet of each production well.

2.1.3 GEOTHERMAL PIPELINES

Geothermal production pipelines bring the geothermal fluid from the production wells to the power plant. Geothermal injection pipelines deliver the cooled geothermal fluid from the power plant to the injection wells.

Approximately 4.72 miles of production pipeline and 2.85 miles of injection pipeline would be constructed within the Jersey Valley Unit Area (see Figure 4). The production and injection pipeline routes generally follow the shortest distance from each well pad to the next well pad or the power plant in order to minimize the amount of pipe required, reduce heat losses, reduce the energy required to move the fluids, and to minimize the amount of ground disturbance. Additionally, the proposed pipeline routes generally follow existing or proposed roads to facilitate ongoing monitoring and future maintenance.

The final alignment of the pipeline routes would be dictated by the specific wells completed for the project and the need to match fluid characteristics and balance fluid volumes in these pipelines.

Permanent and temporary surface disturbance associated with pipeline construction activities can be found in Table 5.

2.1.3.1 Operation and Maintenance Procedures of Pipeline

The pipelines would be periodically inspected for leak detection, safety and vandalism during normal operations. The pipelines also would be subject to periodic ultrasonic thickness testing to detect any substantial thinning of the pipe wall.

2.1.4 Rights-of-Way for the Power Line and Access Road

The Proposed Action also includes the construction and operation of an approximately 27.59-mile overhead electrical transmission line (NVN-87409) originating at the proposed Jersey Valley power plant and terminating at the proposed SPPCo. Bannock substation (see Figure 3).

An additional ROW is requested from Lander County's Buffalo Valley Road to the proposed SPPCo. Bannock substation and/or switching station. The proposed road is located seven (7) miles west of the junction of Highway 305 and the Buffalo Valley junction, and extends south approximately 0.50 miles to the substation and/or switching station (see Figure 11).

2.1.5 Transmission Line Corridor

Ormat is also proposing to construct, operate and maintain an approximately 27.59 mile overhead 120 kV transmission line, originating at the proposed Jersey Valley power plant site and terminating at a proposed SPPCo. Bannock substation in the NE1/4, SE1/4 Section 28, T30N, R43E; which is located on private lands (see Figure 3). The proposed transmission line would require a 200-foot wide ROW (90-foot permanent width and an additional 110-foot temporary width required for construction).

Design characteristics can be found in Table 3.

Table 3: Transmission Line Typical Design Characteristics

Line length	Approximately 27.59 miles
Type of structure	Single pole
Structure height	Single pole: 55 to 70 feet
Span length	Single pole: Approximately 300 to 400 feet
Number of structures/mile	Single pole: Approximately 14 to 18 per mile
Voltage	120,000

2.1.5.1 Facility Design Factors and Additional Components

The transmission line would be designed to meet all temperature, wind, voltage, span and structure height clearance requirements. The proposed transmission line would also provide raptor protection in compliance with the standards described in the "Suggested Practices for Raptor Protection on Power Lines, The State of the Art in 2006" (APLIC 2006). To prevent perching, a cone (Kaddas Enterprises type KE1058 or equal) would be installed on the top of each transmission line pole along the entirety of the transmission line (see Figure 12 and Figure 13).

Staging areas would be located on public land and would be used to temporarily store materials required for construction (see Table 4 and Figure 5).

Table 4: Staging Area Locations

Staging Areas	Township/Range	Legal Description (Section Number & Aliquot Part)
Jersey Valley Power Plant Area	T.27N., R.40E.	SE1/4, SE1/4 Section 28
NVE Substation Area	T.30N., R.43E.	NW1/4, NW1/4 Section 19

Pulling stations, required for installing the conductors, would be located approximately every two to three miles within the ROW. Pulling of the conductors would be accomplished by trucks capable of off-road travel. Grading or clearing of the surface would occur only when absolutely necessary for safe access or for installing the conductors and would only occur within the proposed ROW. These pulling stations would each be used for only short periods of time during the final construction process and would be reclaimed as necessary upon project completion.

Permanent and temporary surface disturbance associated with transmission line construction activities can be found in Table 5.

2.1.6 Site Access and Road Construction

The Project Area is accessed by traveling south on State Route 305 from Battle Mountain approximately 11.5 miles to Copper Basin Road. Turn right onto Copper Basin Road and travel southwest for approximately 11 miles. Continue onto County Road 121 for approximately 12 miles. County Road 121 becomes Jersey Valley Road. Continue on Jersey Valley Road for approximately 8 miles. Turn left onto an unnamed dirt road traveling southeast and traverse for approximately 1.5 miles and proceed to the signed area on the west side of the road (see Figure 3).

Numerous other roads and “two-tracks” exist within and around the Jersey Valley Unit Area and transmission line corridor. To the extent feasible, existing roads will be utilized for project construction and operation. Existing roads would be maintained as necessary to prevent the formation of deep ruts.

Within the Jersey Valley Unit Area, approximately 4.10 miles of new access roads will be constructed (see Figure 4). All road construction would be approximately 22 feet wide.

Large portions of the proposed transmission line would be constructed along existing roads and/or County maintained roads. However, some two-track roads may be needed along some portions of the proposed transmission line. Portions of approximately 1,910 feet of existing roads in Sections 18-20, T.30N., R.43E. will need to be improved (i.e. widened, graded, or bladed) and/or constructed (see Figure 11). From the southern portion of the existing road to be improved, approximately 1,310 feet of new road would be constructed to access the proposed substation and/or switching station (see Figure 11).

Permanent and temporary surface disturbance associated with access road construction can be found in Table 5.

2.1.6.1 Construction Procedures and Surface Disturbance of the Transmission Line

Transmission line poles would be transported to the staging areas via commercial trucks. Approximately 25 semi-truck-trailer loads would be required to bring the materials to the staging areas. Once at the staging areas, the poles would be transported to individual installation sites via flat bed trucks designed for overland travel.

A standard truck-mounted auger and backhoe would be used to drill the holes for pole installation. The poles would be lifted by crane and installed with the assistance of a boom truck.

Additionally, three existing transmission line poles (NVN-48871) will need to be repaired or replaced in the W1/4 Section 20, T.30N., R.43E.

Construction of the new Bannock Substation would be conducted by SPPCo. Within the substation site, SPPCo. will construct a switching station consisting of 3-120kV breakers, associated switches, take off structures and bus work. This will include all grounding, fencing and control enclosures.

2.1.6.2 Construction Procedures and Surface Disturbance for the Pipelines and Well Fields

The geothermal fluid pipelines would be constructed from seamless, welded-steel pipe. They are expected to range in diameter from 8 inches to 24 inches. Two to three inches of insulation and a protective aluminum sheath would jacket the steel production pipes, increasing the diameter of the finished production pipelines by up to six inches.

Horizontal and/or vertical expansion loops (a square bend in the pipeline approximately 30 feet in length by 30 feet in width) would be constructed about every 250 to 350 feet along the production pipelines. Expansion loops allow the pipeline to flex as it lengthens and shortens due to heating and cooling. Fewer expansion loops are needed along the injection pipelines, as the injection pipelines are subject to less heating and cooling.

The pipelines would be constructed near ground level (averaging about one foot of ground clearance) on steel supports called "sleepers." Sleepers support the pipeline and are constructed approximately every 30 feet. Table 5 depicts the total disturbed area.

When completed, the top of the new geothermal pipelines would average three feet above the ground surface. However, a number of pipeline lengths could be up to six feet in height to accommodate terrain undulations and to facilitate movement of wildlife and livestock through the wellfield.

Electrical power and instrumentation cables for the wells would then either be installed in steel conduit constructed along the same pipe sleepers or buried in a trench dug along the pipeline route. If the trenching option for the power and control cables is selected, an approximately

12-inch wide trench would be excavated to an average depth of approximately three feet deep along the pipeline sleepers.

The pipelines would be constructed across roads to allow continued vehicle access, either by trenching under the road, or running the roadbed up and over the pipeline. Photo 2 below shows a typical pipeline with electrical cables.



Photo 2: Typical Pipeline with Electrical Cables

2.1.6.3 Operation and Maintenance Procedures for the Transmission Line

Maintenance would include transmission line and pole repair and/or replacement. No routine maintenance would be performed on the transmission line. Ormat would annually inspect the transmission line from a light, off-road vehicle. Repairs and/or facility replacement would transpire, as necessary. Routine travel within the ROW is not expected.

2.1.7 Water Requirements and Source

For activities within the Jersey Valley Unit Area, water required for well drilling could range up to as much as 30,000 gallons per day. Water requirements for grading, construction, and dust control would average substantially less. Construction of the power plant and related facilities would require approximately 5,000 gallons per day (5.60 acre-feet per year) during construction of the power plant.

Water necessary for construction activities within the Jersey Valley Unit Area will be obtained from established private ranch sources Home Station Ranch (NW1/4 Section 7, T.26N., R.40E.) or McCoy Ranch (SE1/4 Section 29, T.26N., R.39E.) and trucked onsite (see Figure 6). Additional water may be obtained from a well owned by the Saval Ranch Company on private lands within the Jersey Valley unit (NW1/4, SW1/4 Section 34, T.27N. R.40E.) and piped to the power plant site (see Figure 6). The temporary construction pipeline would be laid on the side of the existing roads and no additional surface disturbance is anticipated.

Up to approximately 325 gallons of water will be consumed per day for the facility operations (0.37 acre-feet per year). This water will be obtained from the established private ranch sources identified above (see Figure 6). This water, used for septic purposes, will be trucked to the power plant and stored onsite. Drinking water will be purchased from a commercial bottled water source.

2.1.8 Aggregate Requirements and Source(s)

As much as possible, native materials (derived from grading to balance cut and fill) will be used for site and road building materials.

For activities within the Jersey Valley Unit Area, total aggregate required for the well pad and access road construction is estimated at 40,250 cubic yards. Approximately 92,000 cubic yards of surfacing material may be needed for power plant and pipeline construction. Aggregate would be obtained from an established Lander County aggregate pit in NE1/4, SE1/4, Section 21, T.27N. R.40E. Additionally, the existing pit will be expanded approximately 5.5 acres to the southeast (SW1/4, SW1/4 Section 22, T.27N. R.40E.) to accommodate the Project's aggregate needs (see Figure 4).

Permanent and temporary surface disturbance associated with aggregate sources can be found in Table 5.

2.1.9 Work Force and Schedule

Drilling would be conducted by a crew of 9-10 workers with as many as 18 workers on site during short periods. Power plant and pipeline construction would likely require a maximum of up to 50 workers, with an average of 20 workers after grading and excavation. Substation and/or switching station construction would be conducted by approximately 25-30 workers for site and grid layout; thereafter, approximately 5 workers would be needed for construction of the

substation and/or switching station. Construction of the transmission line would require approximately 20 workers. Once operating, the Project would have approximately 20 employees. The power plants would be staffed and approximately 5 employees may be onsite at a given time.

Construction of the power plant and well field facilities would require 12 months once all permits are obtained and equipment orders scheduled. Transmission line construction is expected to take approximately 6 months. Commercial operations are anticipated to commence in the fourth quarter of 2010.

2.1.10 Project Decommissioning and Site Reclamation

The estimated life of the Project is 50 years.

Once drilling is complete, approximately half of the drill pad area can be reclaimed, but the remaining half must be kept clear for ongoing operations and the potential need to work on or re-drill the well. The portions of the cleared well sites not needed for operational and safety purposes would be recontoured to a final or intermediate contour that would blend with the surrounding topography as much as possible. Areas able to be reclaimed will be ripped, tilled, or disked on contour, as necessary and reseeded with native grasses and forbs. The stockpiled topsoils will also be spread on the area to aid in revegetation.

At the end of Project operations the wells would be plugged and abandoned as required by BLM regulations and NAC 534.420. Abandonment typically involves filling the well bore with clean, heavy abandonment mud and cement until the top of the cement is at ground level, which is designed to ensure that fluids would not move across these barriers into different aquifers. The well head (and any other equipment) would then be removed, the casing cut off well below ground surface and the hole backfilled to the surface.

All roads would be reclaimed. Reclamation would include recontouring the roads back to the original contour, seeding, controlling noxious weeds and may include other techniques to improve reclamation success, such as ripping, scarifying, replacing topsoil, pitting and mulching.

All above-ground equipment, including the power plant and ancillary facilities and the pipelines and their supports, would be removed and reclaimed. Reclamation would include placing fill in any trenches and compacting, regrading cut-and-fill slopes to restore the original contour, replacing topsoil and revegetating in accordance with a reclamation plan.

Poles, conductors, and hardware associated with the 120 kV transmission line would remain in place for future use. When time to be removed, the remaining holes would be filled with soil gathered from the immediate vicinity. The areas where the poles were removed would be raked to match the surrounding topography. Bladed areas would be recontoured and seeded with the appropriate seed mix.

Ormat would prepare a site reclamation plan for BLM approval prior to plan implementation. The plan would address restoring the surface grades, surface drainage, revegetation of cleared areas and weed management. Stormwater diversion would remain in place until successful revegetation is attained.

2.1.11 Adopted Environmental Protection Measures

Ormat would comply with all special lease stipulations which are applicable to the proposed Project operations on these leases (see Appendix A). In addition, Ormat would implement the following additional environmental protection measures:

- Water would be applied to the ground during the construction and utilization of the drill pads, access roads, and other disturbed areas as necessary to control dust.
- Portable chemical sanitary facilities would be available and used by all personnel during periods of well drilling and/or flow testing, and construction. These facilities would be maintained by a local contractor.
- To prevent the spread of invasive, nonnative species, all contractors will be required to power wash their vehicles and equipment, including body and undercarriage, prior to entering public lands managed by the BLM.
- All construction and operating equipment would be equipped with applicable exhaust spark arresters. Fire extinguishers would be available on the active sites. Water that is used for construction and dust control would be available for fire fighting. Personnel would be allowed to smoke only in designated areas, and they would be required to follow applicable BLM regulations regarding smoking.
- Cut and fill activities have been minimized through the selection of the power plant site and pipeline routes. Off-site storm water would be intercepted in ditches and channeled to energy dissipaters as necessary to minimize erosion around the power plant. To minimize erosion from storm water runoff, access roads would be maintained consistent with the best management practices applicable to development roads. BLM best management practices for storm water would be followed, as applicable, on public lands.
- Geothermal fluids would not be discharged to the ground under normal operating conditions. Accidental discharges of geothermal fluids are unlikely because of frequent inspections, ultrasonic testing of the pipeline, flow and pressure monitoring and well pump and pipeline valve shutdown features.
- Following project construction, areas of disturbed land no longer required for operations would be reclaimed to promote the reestablishment of native plant and wildlife habitat.
- Any areas containing cultural resources of significance would be avoided, or the potential for impacts mitigated in a manner acceptable to the BLM. Ormat employees, contractors, and suppliers would be reminded that all cultural resources are protected and if uncovered shall be left in place and reported to the Ormat representative and/or their supervisor.
- A buffer of approximately 30 to 50 meters would be established around eligible and unevaluated cultural sites that lie very close to project activities. When initial

construction is close to the buffered areas, an archaeological monitor would be present to insure that eligible and unevaluated cultural sites are not disturbed.

- The power plant, pipelines, wellheads, pump motors and motor control buildings would each be painted an appropriate color to blend with the area and minimize visibility.
- The proposed transmission line would also provide raptor protection in compliance with the standards described in the “Suggested Practices for Raptor Protection on Power Lines, The State of the Art in 2006.”
- An anti-perching device, (a cone, Kaddas Enterprises type KE1058 or equal) would be installed on the top of each transmission line pole along the entirety of the transmission line (see Figure 12 and Figure 13).
- All power poles will utilize BLM-approved raptor deterrents.
- Bird flight diverters will be attached to the transmission line conductors located immediately over the open water areas of the Jersey Valley and Buffalo Valley hot springs, and out to approximately 100 feet on each side of the hot springs. The spacing of the diverters will be approximately 15 feet between each device.
- Should construction be planned within the greater sage-grouse wintering season, prior to the commencement of construction, areas proposed for disturbance will be surveyed by a qualified biologist to determine if wintering concentrations of sage-grouse exist. Any wintering concentrations of birds will be avoided by 0.6 miles.
- Construction noise would be minimized through practices which avoid or minimize actions which may typically generate greater noise levels, or generate distinctive impact noise.
- Ormat will obtain and comply with an Underground Injection Control (UIC) permit, as appropriate.

2.2 ALTERNATIVES

NEPA requires that a reasonable range of alternatives to the Proposed Action be considered that could feasibly meet the objectives of the Proposed Action as defined in the purpose and need for the project [40 CFR 1502.14(a)]. The range of alternatives required is governed by a “rule of reason” (i.e., only those feasible alternatives necessary to permit a reasoned choice need be considered). Reasonable alternatives are those that are practical or feasible based on technical and economic considerations [46 Federal Register 18026 (March 23, 1981), as amended; 51 Federal Register 15618 (April 25, 1986)].

Alternatives to the Proposed Action must be considered and assessed whenever there are unresolved conflicts involving alternative uses of available resources (BLM 1988 and BLM 2008a). One alternative to the Proposed Action has been identified to reduce or avoid potential effects to bat species within the Jersey Valley Unit Area.

2.2.1 Alternative 1

Alternative 1 differs from the Proposed Action only within the Jersey Valley Unit Area. Whereas the wellfield remains the same under Alternative 1, the power plant, pipeline system, road

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network, construction water pipeline alignment and transmission line corridor have been relocated (see Figure 7, Figure 8 and Figure 9).

The Alternative 1 power plant would be located on approximately 9-acres in the SE1/4, NW1/4 Section 28 T.27N. R.40E. (see Figure 7).

Approximately 3.17 miles of production pipeline and 3.03 miles of injection pipeline are proposed under Alternative 1 (see Figure 7). The Alternative 1 production pipeline is approximately 0.55 miles longer than the Proposed Action. The Alternative 1 injection pipeline is approximately 0.18 miles longer than the Proposed Action.

Approximately 4.71 miles of new road would be constructed under Alternative 1 (Figure 7), as opposed to 4.10 miles constructed under the Proposed Action.

The transmission line corridor is slightly different from the Proposed Action in that the transmission line originates at the power plant in the SE1/4, NW1/4 Section 28 T.27N. R.40E., and follows the county road due north (see Figure 9). When the Alternative 1 transmission line enters Section 16, T.27N. R.40E., the route becomes identical to the Proposed Action alignment. The length of the Alternative 1 alignment is virtually identical to the Proposed Action alignment and the associated surface disturbances are the same.

Permanent and temporary surface disturbance comparing the Proposed Action with Alternative 1 can be found in Table 5.

2.3 SURFACE DISTURBANCE SUMMARY

A comparison of the temporary and permanent surface disturbance associated with the Proposed Action and Alternative 1 can be found in Table 5.

Table 5: Proposed Action and Alternative 1 Surface Disturbance

	Proposed Action		Alternative 1	
	Temporary	Permanent	Temporary	Permanent
<i>Jersey Valley Unit Area</i>				
Injection Wells	28.70	14.35	28.70	14.35
Production Wells	69.70	34.85	69.70	34.85
Injection Pipeline	6.91	1.73	7.35	1.84
Production Pipeline	11.45	2.86	8.99	2.25
Power Plant	9.0	9.0	9.0	9.0
Access Roads	9.95	4.97	11.43	5.72
Aggregate Source	5.50	5.50	5.50	5.50
Berm/Diversion Ditch	1.05	1.05	1.05	1.05
<i>SUB-TOTAL</i>	<i>142.26</i>	<i>74.31</i>	<i>141.72</i>	<i>74.56</i>
<i>Transmission Line Corridor</i>				
Pole Placement	13.85	0.02	13.85	0.02

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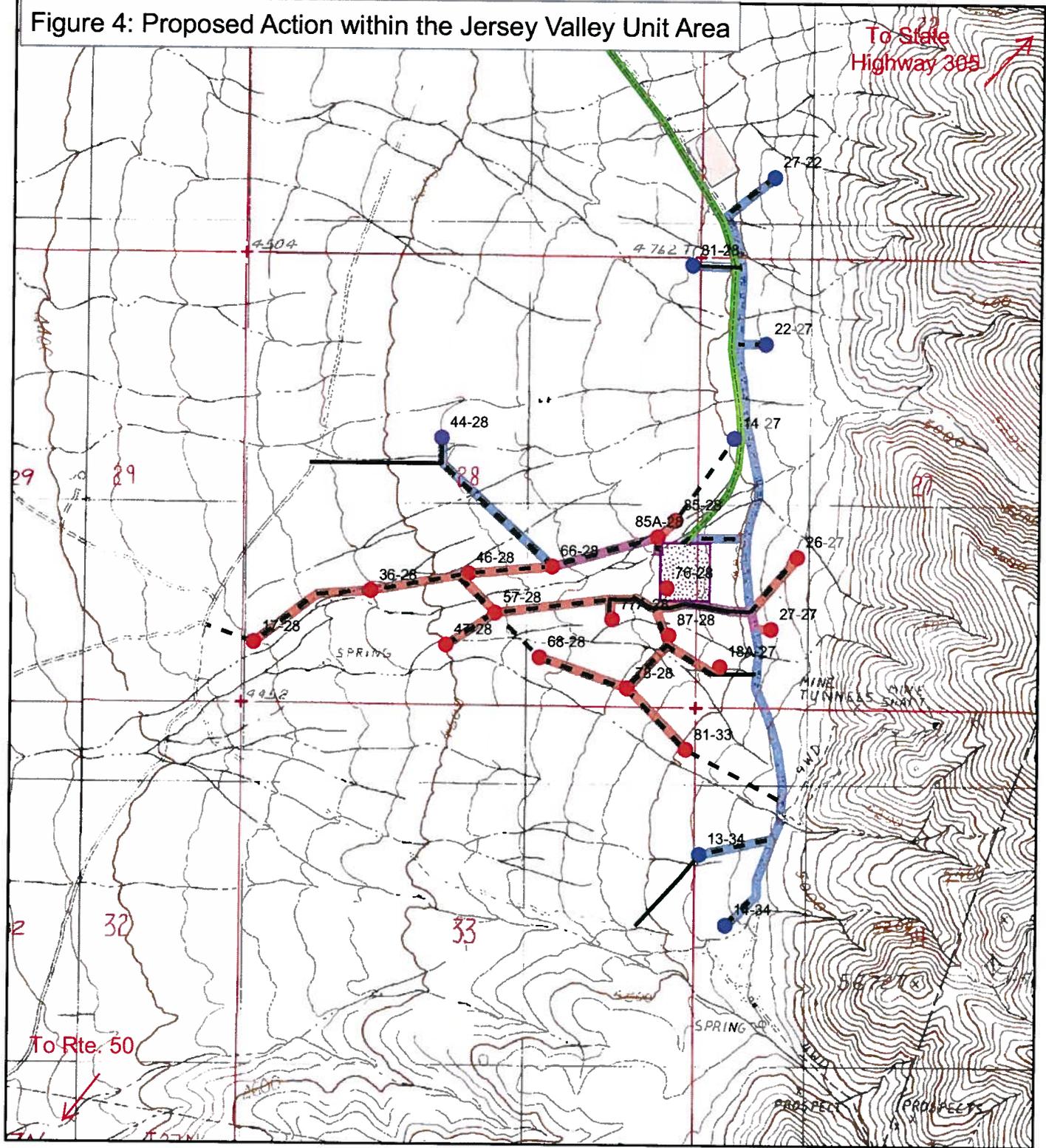
	Proposed Action		Alternative 1	
	Temporary	Permanent	Temporary	Permanent
Staging Areas	4.0	0	4.0	0
Substation	5.75	5.75	5.75	5.75
Pole Reconstruction	0.69	0	0.69	0
Access Roads	0.78	0.58	0.78	0.58
<i>SUB-TOTAL</i>	<i>25.07</i>	<i>6.35</i>	<i>25.07</i>	<i>6.35</i>
TOTAL	167.33	80.66	166.79	80.91

Total permanent surface disturbance is slightly (0.25 acre) greater with Alternative 1.

No Action Alternative

The No Action Alternative would occur if Ormat was prevented from implementing the Project as proposed on federal lands, and the environmental effects from implementation of the Project would not occur as proposed. Implementation of the No Action Alternative would not meet Ormat's purpose and need for the proposed Project. Selection of the No Action Alternative may also impair geothermal development rights granted to Ormat through the issuance of the Unit.

Figure 4: Proposed Action within the Jersey Valley Unit Area



T27N, R40E

LEGEND

- Injection Well
- Production Well
- Existing Access
- - - Proposed Access
- 120 kV Power ROW - Proposed Action
- Power Plant Location
- Proposed Gravel Source
- Injection Pipeline
- Production Pipeline
- Injection and Production Pipelines

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Map Date: November 18, 2009

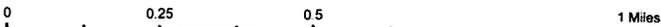
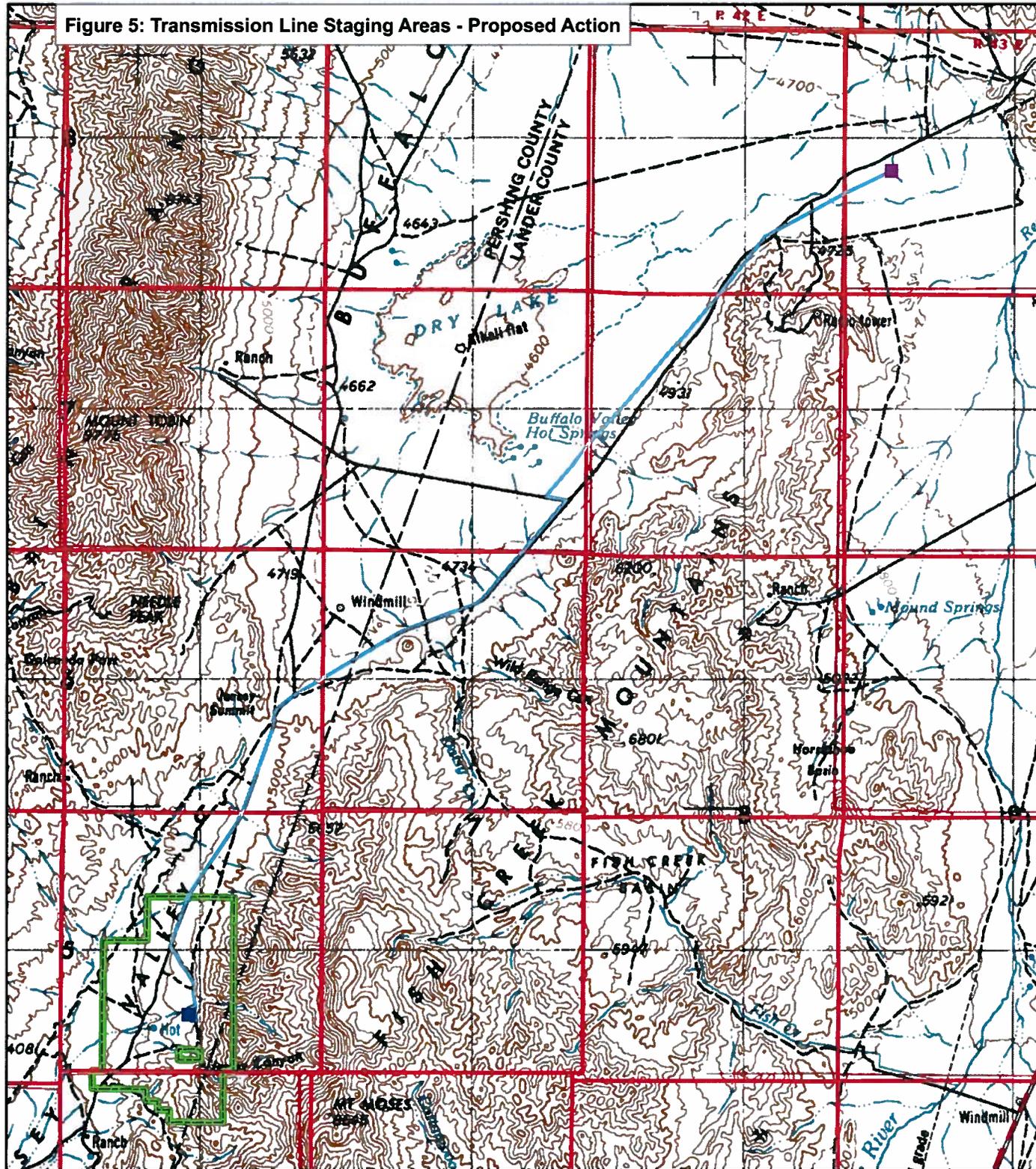


Figure 5: Transmission Line Staging Areas - Proposed Action



LEGEND

- Jersey Valley Staging Area
- Bannock Substation
- 120 kV Power ROW - Proposed
- Jersey Valley Geothermal Unit Area (NVN-83483X)

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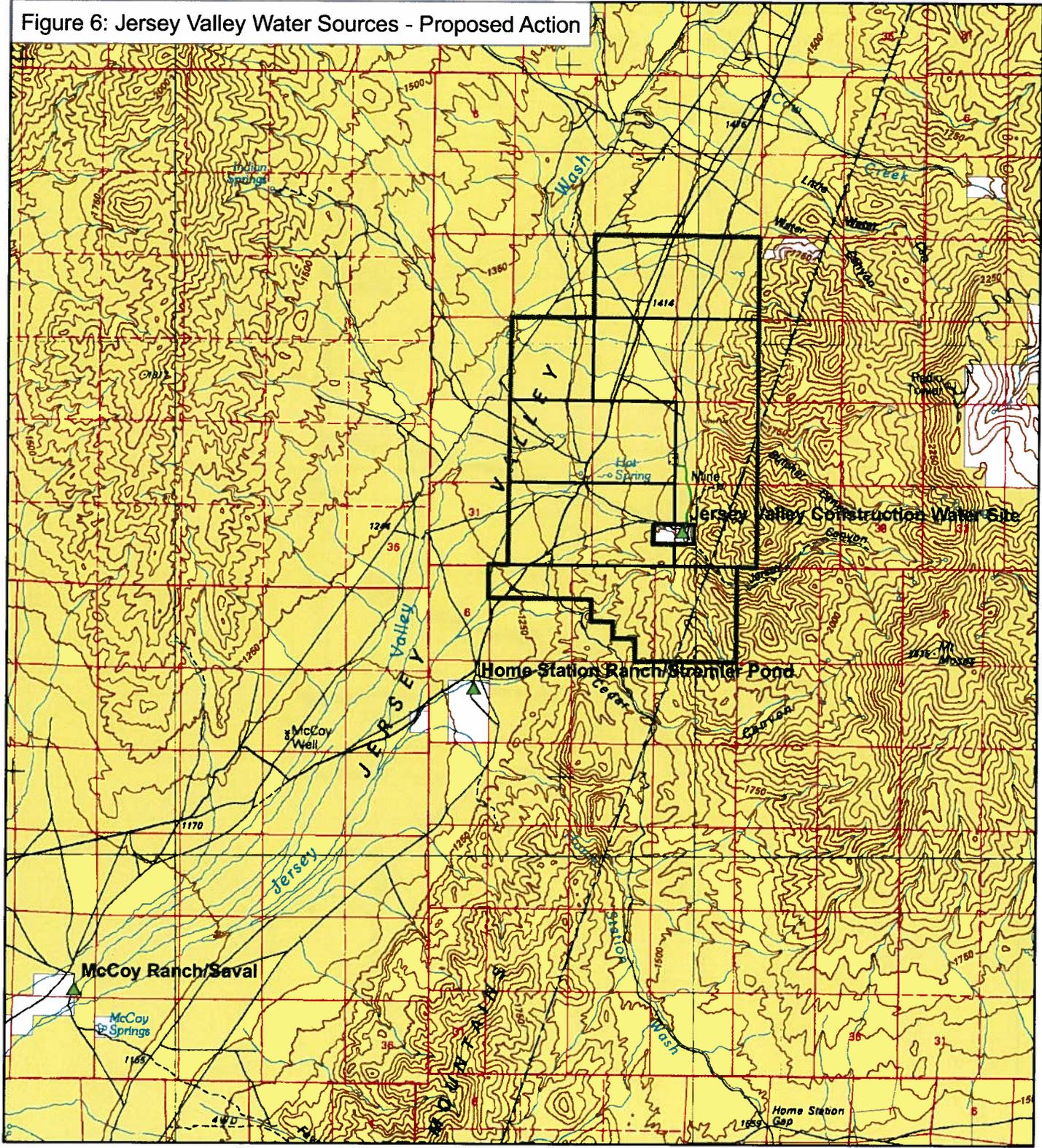
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Map Date: November 3, 2009

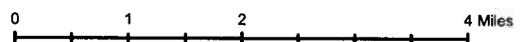


Figure 6: Jersey Valley Water Sources - Proposed Action



LEGEND

-  Possible Water Sources
-  Proposed Power Plant (9.2 acres)
-  Proposed Temporary Construction Water Pipeline
-  Geothermal Lease Boundary
-  Jersey Valley Geothermal Unit Area (NVN-83483X)
-  Bureau of Land Management Land
-  Private Land



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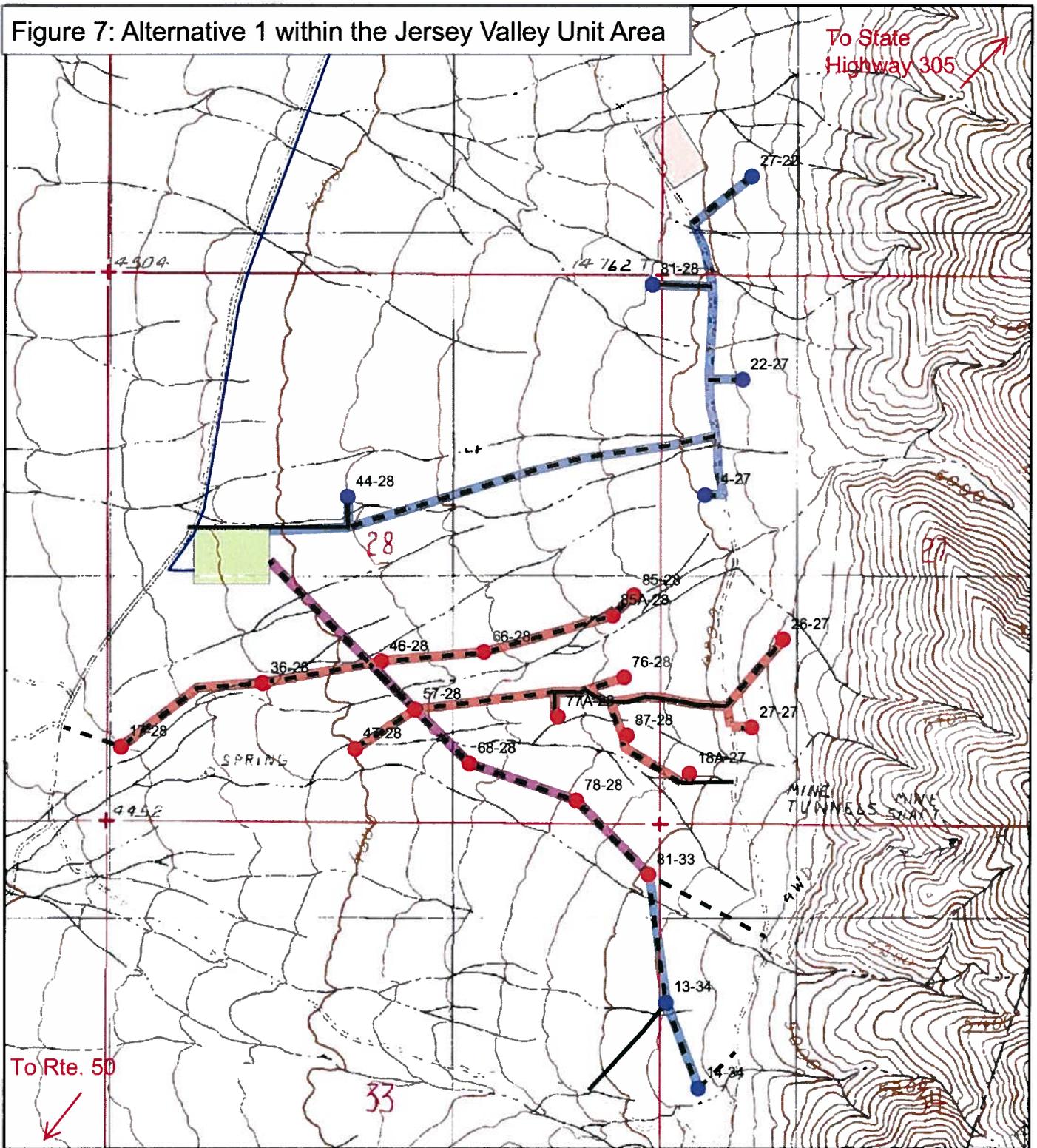
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Map Date: November 3, 2009

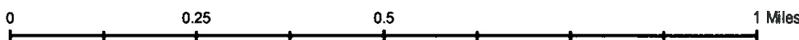


Figure 7: Alternative 1 within the Jersey Valley Unit Area



LEGEND

- Alternative Power Plant Location
- Injection Pipeline
- Injection and Production Pipelines
- Production Pipeline
- Injection Well
- Production Well
- Proposed 120kV Transmission Line - Alternative
- Existing Access
- Proposed Access
- Proposed Gravel Source



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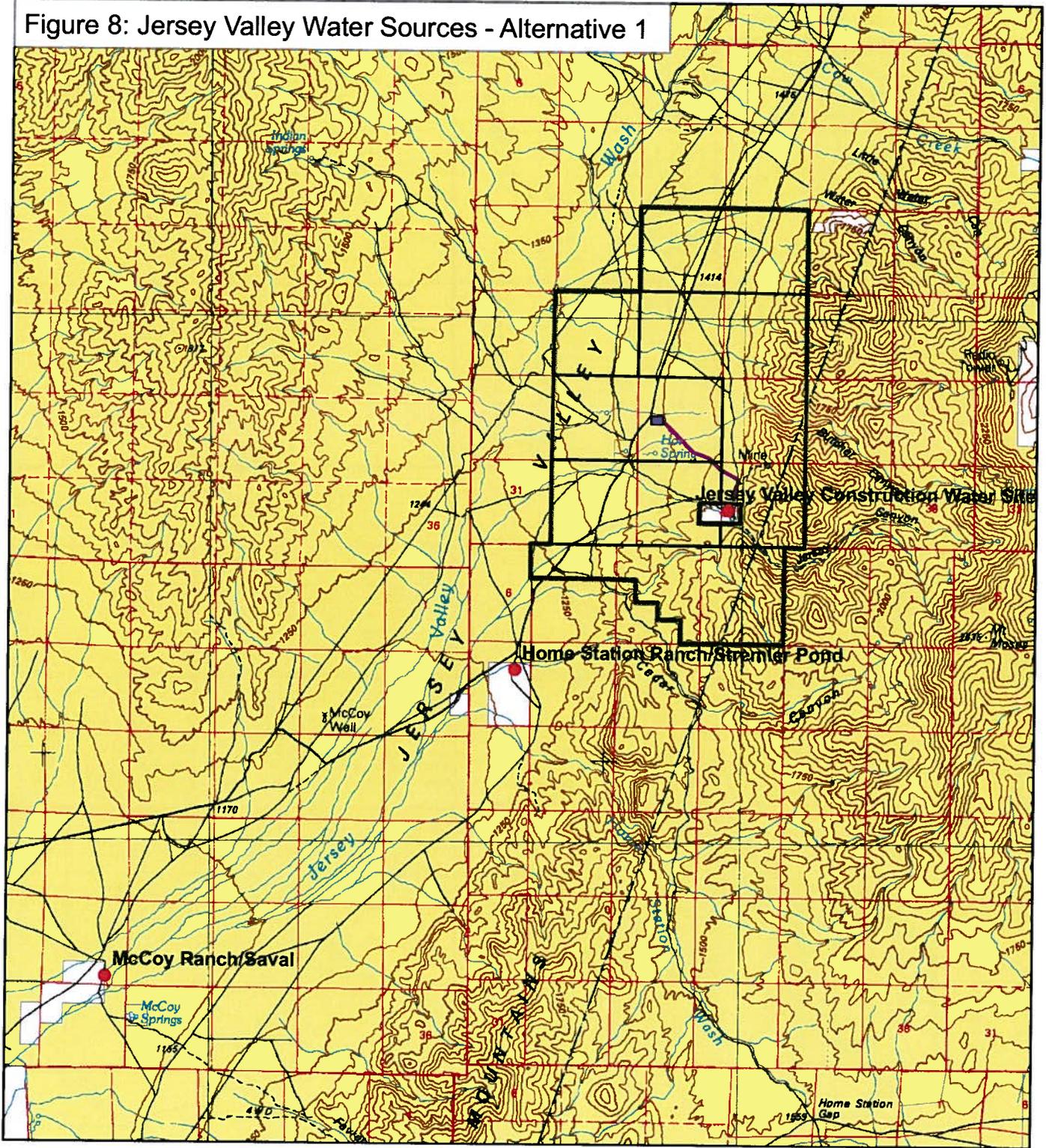
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Map Date: November 30, 2009



Figure 8: Jersey Valley Water Sources - Alternative 1



LEGEND

- Possible Water Source
- Geothermal Lease Boundary
- Jersey Valley Geothermal Unit Area (NVN-83483X)
- Alternative Power Plant Location
- Temporary Construction Pipeline
- Bureau of Land Management Land
- Private Land

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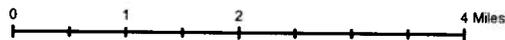
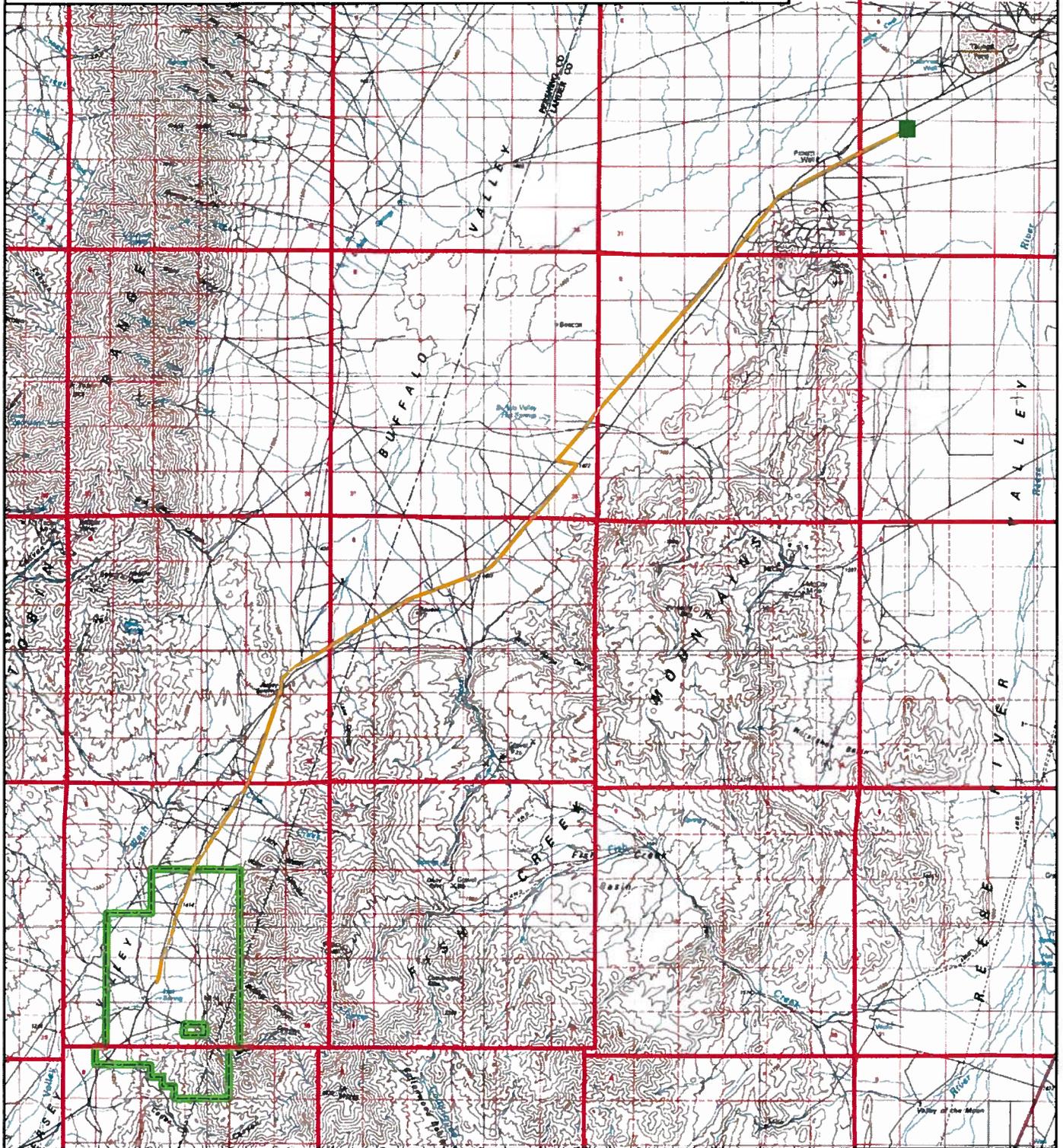
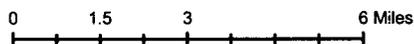


Figure 9: Jersey Valley Unit Area and Transmission Line Corridor - Alternative 1



LEGEND

- Bannock Substation - Proposed
- Proposed Power ROW 120kV - Alternative 1
- Jersey Valley Geothermal Unit Area (NVN-83483X)



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Map Date: November 22, 2009



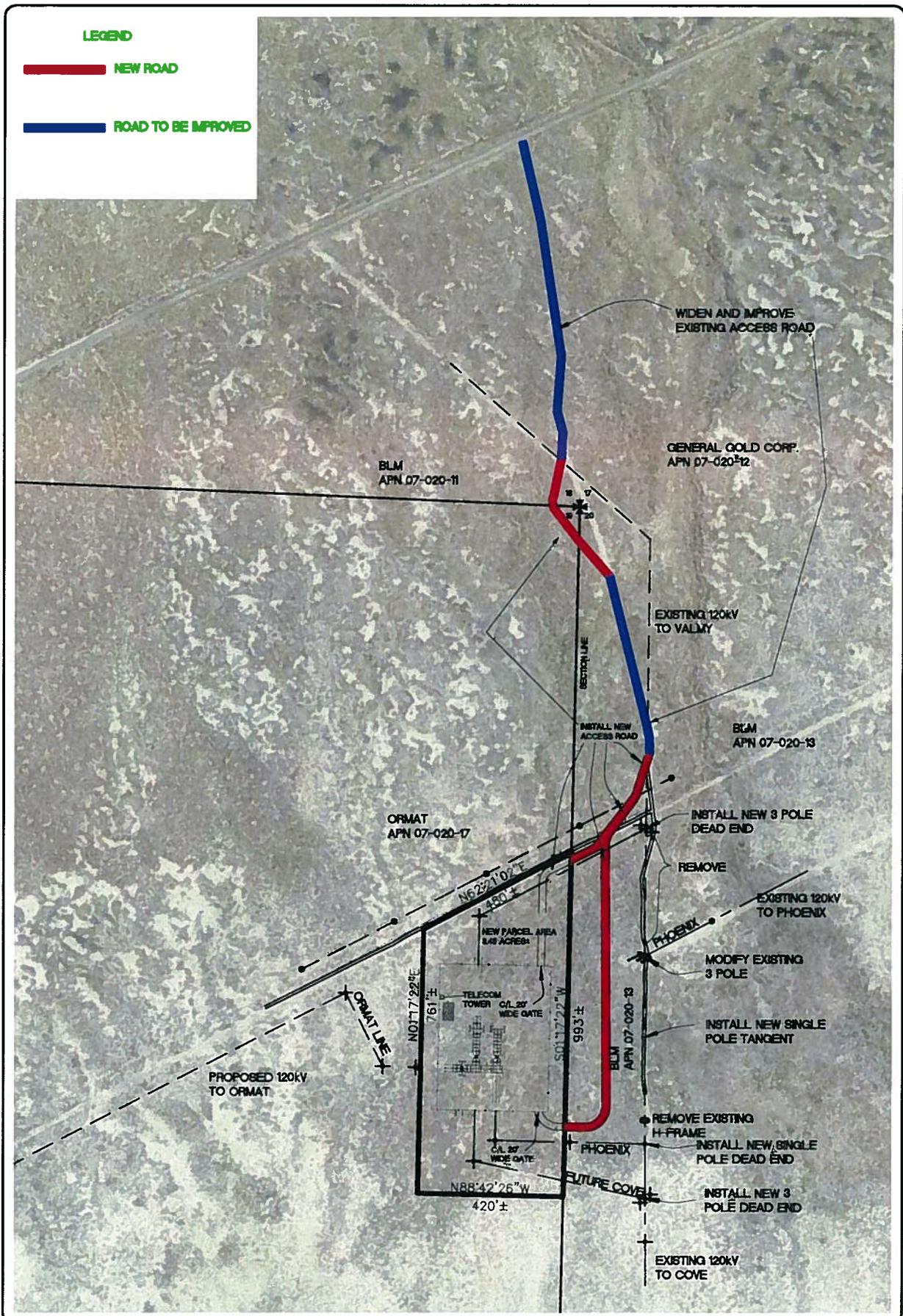


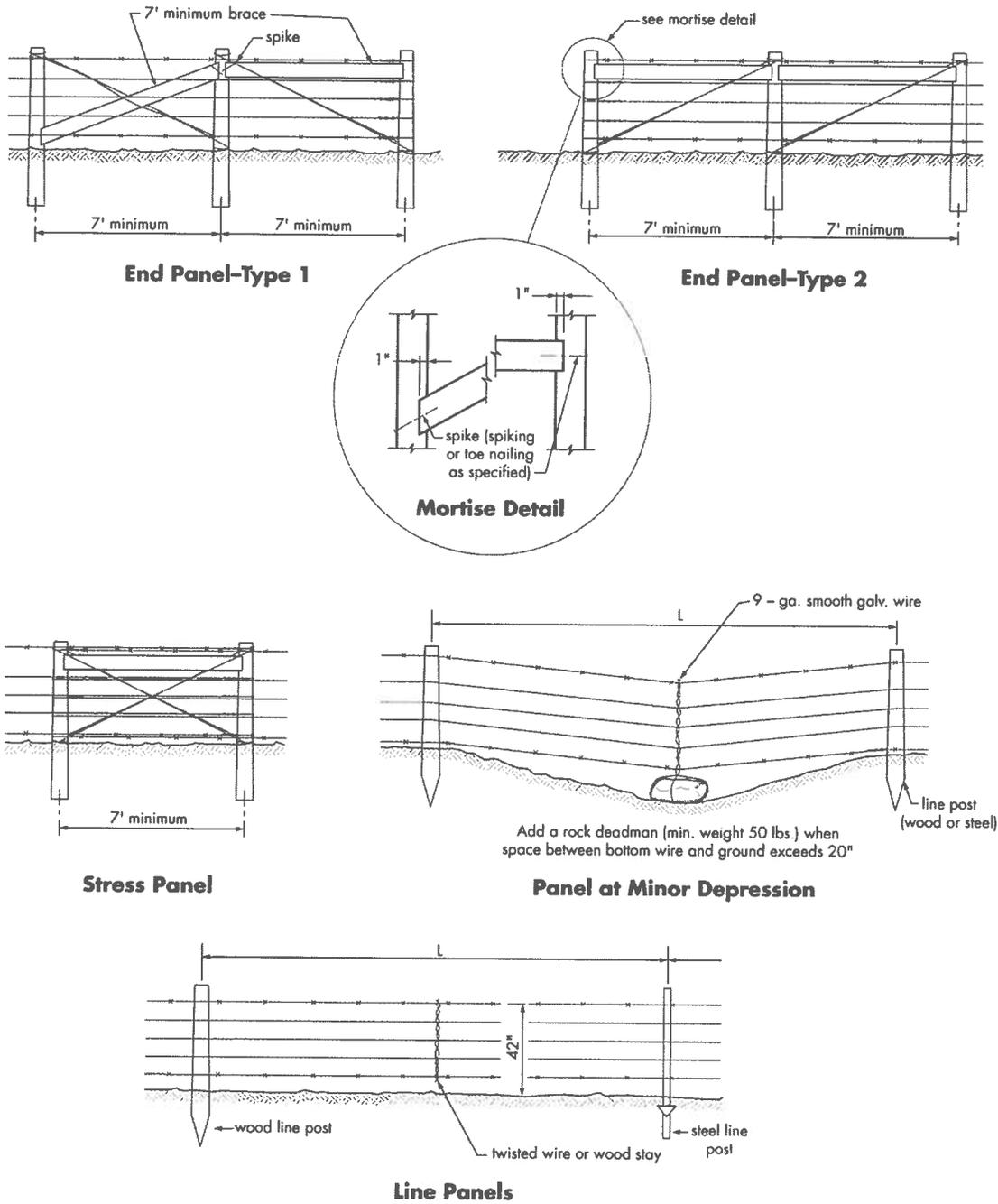
Figure 11: Proposed Substation Layout and Access

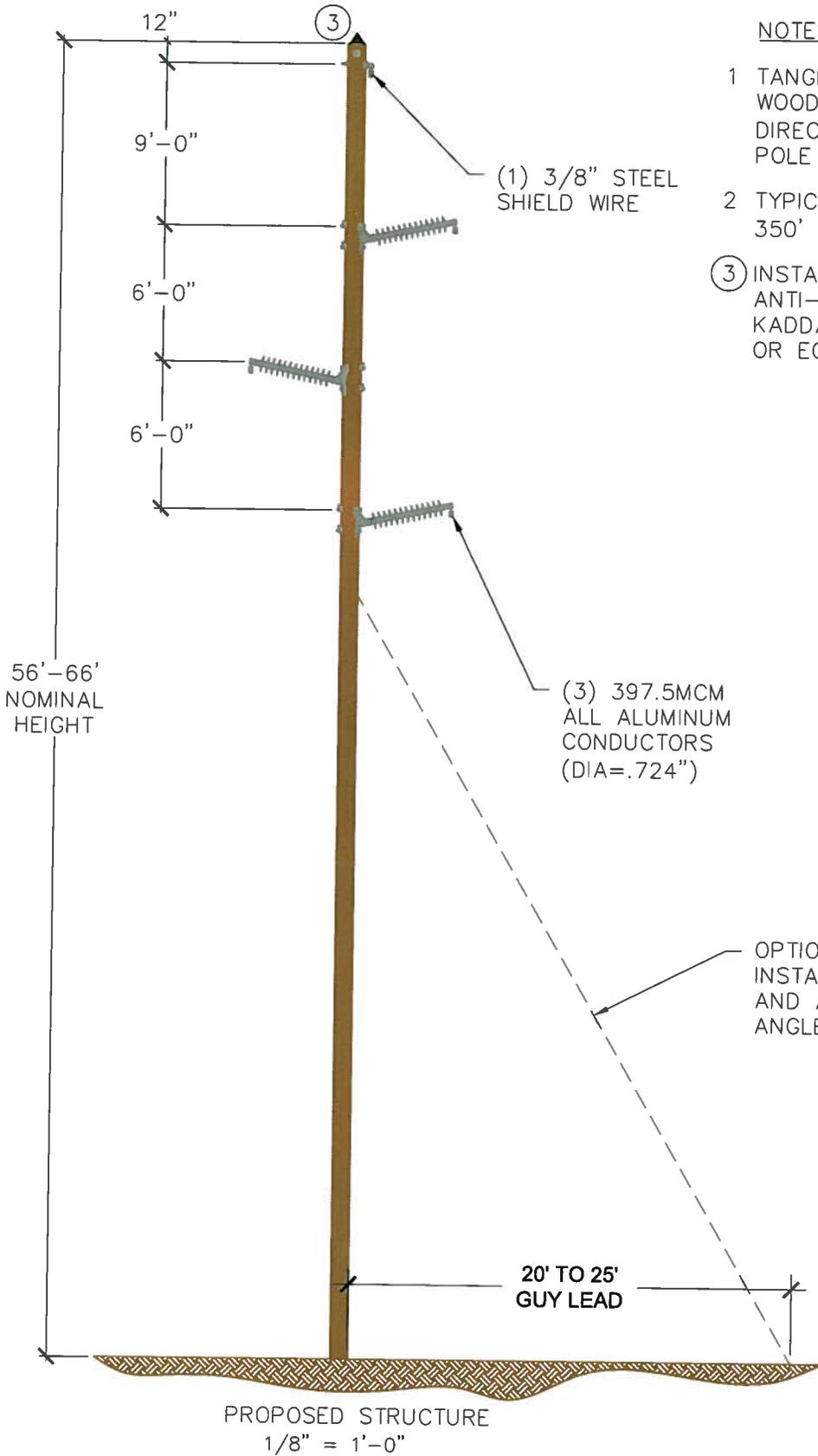


SURVEYOR:	LDL
PHONE NUMBER:	775-834-5391
PROJECT NUMBER:	1745402142
PROJECT:	NVSPC 81 US TT

DATE PLOTTED: 07/15/2011 10:00 AM

Figure 10: Recommended Construction Standards for Enclosure Fences in Livestock Areas





NOTES

- 1 TANGENT STRUCTURES WILL BE WOOD OR WEATHERING STEEL POLES, DIRECT BURIED 10% +2' OF TOTAL POLE LENGTH.
- 2 TYPICAL SPAN LENGTHS WILL BE 350' TO 400'
- (3) INSTALL POLE TOP CONE FOR ANTI-PERCHING AS REQUIRED. KADDAS ENTERPRISES TYPE KE1058 OR EQUAL.



ORMAT JERSEY VALLEY 120 KV LINE

Figure 12: Single Pole Structure

SHEET 1 OF 1

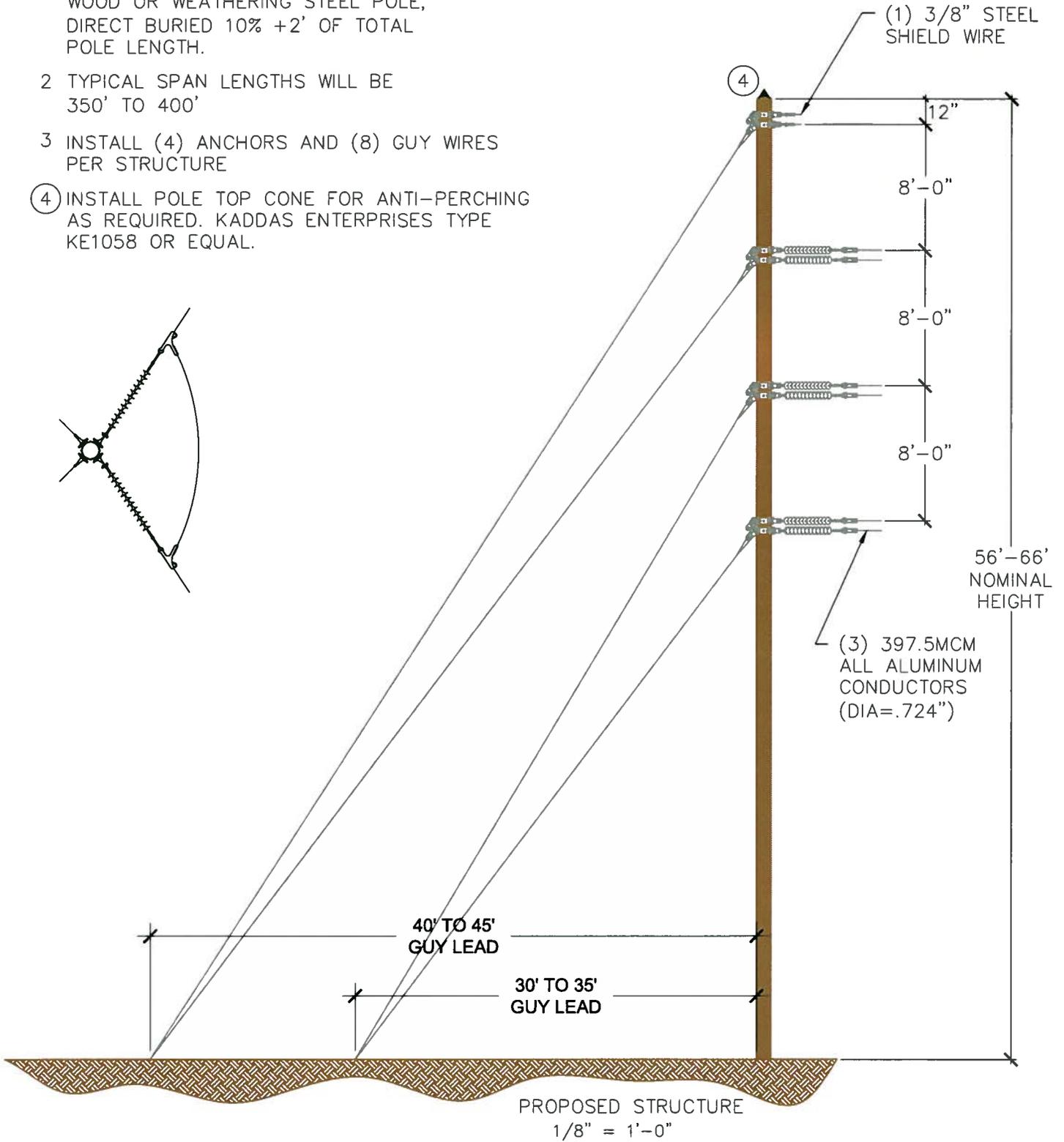
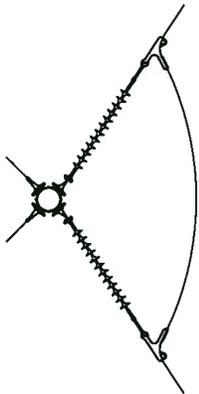
DRAWING NUMBER

ST274

DWN.	ENG'R.	CHK'D.	APPRV.	DATE	REV.
JDR			JAL	04/10	

NOTES

- 1 HEAVY ANGLE STRUCTURES WILL BE WOOD OR WEATHERING STEEL POLE, DIRECT BURIED 10% +2' OF TOTAL POLE LENGTH.
- 2 TYPICAL SPAN LENGTHS WILL BE 350' TO 400'
- 3 INSTALL (4) ANCHORS AND (8) GUY WIRES PER STRUCTURE
- ④ INSTALL POLE TOP CONE FOR ANTI-PERCHING AS REQUIRED. KADDAS ENTERPRISES TYPE KE1058 OR EQUAL.



						ORMAT JERSEY VALLEY 120 KV LINE		SHEET 1 OF 1	
						Figure 13: Single Pole Angle Structure			
DWN.	ENG'R.	CHK'D.	APPRV.	DATE	REV.				
JDR			JAL	04/10					

3 AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

To comply with NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988 and BLM 2008a). Table 6 outlines the elements that must be addressed in all environmental assessments, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action or No Action Alternative affects those elements.

Table 6: Supplemental Authorities

Element	Present Yes/No	Affected Yes/No	JUSTIFICATION
Air Quality	YES	YES	See section 3.2
Cultural Resources	YES	NO	See section 3.3
Environmental Justice	NO	NO	No minority or low income populations would be disproportionately affected by the proposed Project.
Fish Habitat	NO	NO	There is no fish habitat in the Jersey Valley Unit Area or transmission line corridor.
Floodplains	NO	NO	There are no FEMA-designated 100-year floodplains in the Jersey Valley Unit Area or transmission line corridor.
Forests and Rangeland	YES	YES	There is no forestry within either the Jersey Valley Unit Area or within the transmission line corridor. See section 3.12 for rangeland information.
Migratory Birds	YES	YES	See section 3.5
Native American Religious Concerns	YES	YES	See section 3.4
Threatened, and/or Endangered, Species	YES	NO	See section 3.5
Wastes, Hazardous or Solid	YES	YES	See section 3.11
Water Quality Drinking-Ground	YES	YES	See section 3.9
Wetlands and Riparian Zones	YES	YES	See section 3.10
Wild and Scenic Rivers	NO	NO	There are no wild and scenic rivers in the Jersey Valley Unit Area or transmission line corridor.
Wilderness	NO	NO	There are no wilderness areas within the Jersey Valley Unit Area or the transmission line corridor

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Other resources of the human environment that have been considered for this EA are listed in Table 7 below.

Table 7: Other Resources

Other Resources	Present Yes/No	Affected Yes/No	JUSTIFICATION
Geology and Minerals	YES	NO	Geology and Minerals would not be adversely affected by implementation of the Proposed Action. Geothermal resources are a leasable mineral and given that the resource is not consumed during plant operations, geothermal resources should not be affected.
Paleontological Resources	YES	NO	The southern portion of the Jersey Valley Unit area <u>may</u> host supporting geologic structures for vertebrate paleontological resources. However the Project is located north of these geological structures, and is not projected to affect vertebrate paleontological resources.
Soils	YES	YES	See section 3.7
Invasive, Nonnative Species and Noxious Weeds	YES	YES	See section 3.6
Vegetation	YES	YES	See section 3.8
Wildlife Resources	YES	YES	See section 3.5
Recreation	YES	YES	See section 3.13
Visual Resources	YES	YES	See section 3.14
Socio-Economic Values	YES	YES	See section 3.15
Special Status Species	YES	YES	See section 5.50
Areas of Critical Environmental Concern	NO	NO	The proposed Project is not located in or near any ACECs.
Prime or Unique Farmlands	NO	NO	There are no prime or unique farmlands within the Jersey Valley Unit Area or transmission line corridor.
Wild Horse and Burro	NO	NO	The Jersey Valley Unit Area and the proposed transmission line are not located within a Herd Management Area (HMA).
Land Use Authorizations	YES	YES	See section 3.16

3.2 AIR QUALITY

3.2.1 Affected Environment

The Nevada Department of Conservation and Natural Resources (NDCNR), Division of Environmental Protection (NDEP), Bureau of Air Pollution Control (BAPC) has been delegated

responsibility by both the federal Environmental Protection Agency (USEPA) and the State of Nevada to regulate air pollution and emissions of air pollutants in all areas of the State, other than Clark and Washoe Counties.

Air quality in Lander and Pershing Counties has been designated as “attainment/unclassified” (which means it either meets, or is assumed to meet, the applicable federal ambient air quality standards) for all standard (“criteria”) air pollutants [ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, inhalable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), lead particles and hydrogen sulfide] (U.S. EPA 2009).

Neither the Jersey Valley Unit Area nor the transmission line corridor are located in or adjacent to any mandatory Class I (most restrictive) Federal air quality areas, U.S. Fish and Wildlife Service Class I air quality units, or American Indian Class I air quality lands.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

The primary pollutant of concern during construction activities would be particulates in the form of fugitive dust. Fugitive dust would be generated from earth-moving activities and travel on unpaved roads during power plant, drill pad, pipeline, road construction and drilling activities. Based on implementation of environmental protection measures specified by Ormat, water and gravel would be applied to the ground as necessary to control dust (see Section 2.1.11). Each of the well pads, access roads and the power plant site would be surfaced with aggregate to minimize dust. This would minimize fugitive dust emission during construction activities.

The dust which could be generated when drilling with air would be controlled by a separator/muffler, and only the air and water vapor would be discharged to the air.

An NDEP-BAPC Surface Area Disturbance Permit, documenting the areas of proposed disturbance and the best practical dust control methods to be used, will be required for the Project because the surface disturbed by the Project would be greater than 5 acres. Best practical dust control methods applicable to the project activities include use of water trucks to spray water on disturbed areas on a regular basis; pre-watering of areas to be disturbed; graveling of roadways, storage areas and staging areas; posting and limiting vehicle speeds to 10 to 15 miles per hour, and use of wind fences to reduce wind impacts. Implementation of the applicable best practical dust control methods, through compliance with the Surface Area Disturbance Permit, would minimize fugitive dust emissions during construction, operation and decommissioning of the project.

Combustion emissions of criteria air pollutants [nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), and particulate matter less than or equal to 10 microns in diameter (PM₁₀)], criteria air pollutant precursors [volatile organic compounds (VOCs)] and air toxics (small quantities of diesel PM, acetaldehyde, benzene, and formaldehyde) would be released during well drilling and construction activities from the diesel engines used.

Small quantities of naturally occurring non-condensable gases, such as carbon dioxide (CO₂), hydrogen sulfide (H₂S), nitrogen (N₂), and methane (CH₄), would be emitted to the air during geothermal well testing. With a binary power plant, some of the binary working fluid (pentane) would be released to the atmosphere from gaskets, rotating seals, and flanges during operations. Also during normal operations, a small quantity of air enters the pentane loop in the air-cooled condenser. This air leaked into the pentane loop is discharged back to the atmosphere through a stack, along with a small quantity of pentane. During major maintenance activities on the pentane side of the binary power plant units, the liquid pentane would first be transferred to the pentane storage tank. However, not all of the pentane can be removed in this manner, and the residual pentane would be discharged to the atmosphere when the binary power plant unit is opened. All of these releases, estimated to average about 12 tons per year, are regulated through a permit issued by BAPC to ensure that these emissions do not result in ambient concentrations of ozone (which can be created from the reaction of ambient concentrations of hydrocarbons and NO_x) in excess of the applicable AAQS.

3.2.2.2 Alternative 1

The air quality impacts from construction, operation, maintenance and reclamation of Alternative 1 would be identical to those described for the Proposed Action.

3.3 CULTURAL RESOURCES

3.3.1 Affected Environment

Cultural resource surveys were conducted by Kautz Environmental in 2008 and 2009. The area surveyed (area of potential effect, APE) consisted of two large blocks, one in Lander County totaling 4,146 acres, and one in Pershing County totaling 2,493 acres, as well as a transmission line corridor totaling 1,282 acres (Kautz 2009).

The survey resulted in the identification and evaluation of 99 archaeological sites, seven of which were previously recorded resources. These include 62 historic sites, 33 prehistoric sites and 4 sites which contain both prehistoric and historic components. In addition to the archaeological sites, 161 isolated finds were also observed and recorded.

Seven archaeological sites are recommended eligible for listing on the National Register of Historic Places (NRHP), which include four prehistoric scatters. Fourteen prehistoric scatters remain unevaluated. The remaining 78 sites are recommended not eligible for listing on the NRHP (Kautz 2009).

3.3.2 Environmental Consequence

3.3.2.1 Proposed Action

All surface disturbing activities associated with the proposed project would avoid the recommended eligible and unevaluated cultural resources. A buffer of approximately 30 to

50 meters would be established around eligible and unevaluated cultural sites that lie very close to project activities. When initial construction is close to the buffered areas, an archaeological monitor would be present to insure that eligible and unevaluated cultural sites are not disturbed (see Section 2.1.11). As such, the proposed Project would have no impact on any archaeological sites that are either unevaluated or recommended eligible for nomination to the NRHP.

Regulations implementing the Archaeological Resources Protection Act (ARPA), codified at 43 CFR 7, as well as regulations implementing the Native American Graves Protection and Repatriation Act (NAGPRA), codified at 43 CFR 10, both provide protection for historic properties, cultural resources, and Native American funerary items and/or physical remains located on federal land. In addition, ARPA provides for the assessment of criminal and/or civil penalties for damaging cultural resources. To ensure compliance with the ARPA and NAGPRA, the following mitigation measure is proposed:

Mitigation Measure

Any unplanned discovery of cultural resources, human remains, items of cultural patrimony, sacred objects, or funerary items, requires that all activity in the vicinity of the find ceases, and notification be made to Doug Furtado, Field Manager, Mt. Lewis Field Office, 50 Bastian Way, Battle Mountain, NV, 89820 (775-635-4000), by telephone, with written confirmation to follow, immediately upon such discovery. The location of the find should not be publicly disclosed and any human remains must be secured and preserved in place until a Notice to Proceed is issued by the authorized officer.

3.3.2.2 Alternative 1

As with the Proposed Action, surface disturbing activities associated with Alternative 1 would avoid the recommended eligible and unevaluated cultural resources. The impacts to cultural resources of Alternative 1 would be the same as for the Proposed Action. Mitigation proposed under the Proposed Action would be equally applicable to Alternative 1.

3.4 NATIVE AMERICAN RELIGIOUS CONCERNS

3.4.1 Affected Environment

Located within the traditional territory of the Western Shoshone (and possibly some Paiute) Tribes, the BLM MLFO administrative boundary contains spiritual/traditional/cultural resources, sites, and social practices that aid in maintaining and strengthening social, cultural, and spiritual integrity. Recognized tribes with known interests within the BLM MLFO administrative boundary are the Te-Moak Tribe of Western Shoshone (Elko, South Fork, Wells, and Battle Mountain Bands), Duck Valley Sho-Pai Tribes of Idaho and Nevada, Duckwater Shoshone Tribe, Ely Shoshone Tribe, Yomba Shoshone, the Timbisha Shoshone Tribe, and various other Tribal groups, community members, and individuals.

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Though archaeological data and theory states that the Western Shoshone (Newe) began to inhabit the Great Basin area around 600 years ago, contemporary Western Shoshone contend they were here since “time immemorial.” Social activities that define the culture took place across the Great Basin. Pine nut gathering, edible and medical plant gathering, hunting and fishing, spiritual/ceremonial practices, and trade occurred as the Great Basin peoples practiced a mobile hunting and gathering lifestyle. As with the delicate and sensitive nature of the fragile resources of the Great Basin, the native cultures appeared to be heavily impacted by social, cultural, and environmental change, which rapidly accompanied the non-native migration from east to west. Confined to reservations and “encouraged” to participate in a more sedentary lifestyle (farming and cattle ranching), the Western Shoshone and other Great Basin tribes continued to practice certain cultural/spiritual/traditional activities, visited their sacred sites, and hunted and gathered the available game and medicinal/edible plants. Through oral history, the practice of handing down knowledge from the elders to the younger generations, many Western Shoshone continue to maintain a world view not unlike that of their ancestors.

Such sites of importance include, but are not limited to: existing antelope traps; certain mountain tops used for prayer; medicinal and edible plant gathering locations; prehistoric and historic village sites and gravesites; sites associated with creation stories; hot and cold springs; material used for basketry and cradle board making; locations of stone tools such as points and grinding stones (mono and metate); chert and obsidian quarries; hunting sites; sweat lodge locations; locations of consistent pine nut harvesting, family gathering, and camping; boulders used for offerings and medicine gathering; tribally identified Traditional Cultural Properties (TCP’s); TCP’s found eligible to the National Register of Historic Places; rock shelters; “rock art” locations; lands that are near, within, or bordering current reservation boundaries; lands included in tribal land acquisition efforts that involve the Nevada Congressional Delegation, water sources in general, which are considered the “life blood of the Earth and all who dwell upon it.”

Specifically, the cultural resources inventory of the Jersey Valley Unit Area and transmission line corridor identified ninety-nine archaeological sites (seven of which were previously recorded), including both historic and prehistoric resources. Of these, seven have been recommended by Kautz as eligible for inclusion on the National Register of Historic Places (NRHP), and fourteen sites remain unevaluated due to their location in coppice dunes, with the potential to contain intact, stratified cultural deposits (Kautz 2009) (see also Section 3.3).

In accordance with the National Historic Preservation Act (P.L. 89-665), the National Environmental Policy Act (P.L. 91-190), the Federal Land Policy and Management Act (P. L.94-579), the American Indian Religious Freedom Act (P.L. 95-341), the Native American Graves Protection and Repatriation Act (P.L. 101-601) and Executive Order 13007, the BLM must also provide affected tribes an opportunity to comment and consult on the proposed Project. BLM must attempt to limit, reduce, or possibly eliminate any negative impacts to Native American traditional/cultural/ sites, activities, and resources.

The BLM initiated consultation with the following Tribes: Battle Mountain Band Council, Te-Moak Tribe of Western Shoshone, Yomba Shoshone Tribe and the Duckwater Shoshone Tribe. To date, the Battle Mountain Band has primarily been the most active and participating tribal

entity with a field visit having been conducted on June 4, 2009. Recent communications with tribal leadership has resulted in another field tour request by the Battle Mountain Band Chairman. Arrangements are forthcoming.

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

Concerns and discussion topics raised to date include impacts to identified cultural resources within the proposed Project Area, and also impacts to hot springs.

- BLM law enforcement monitoring significant sites especially Jersey Valley hot springs;
- Eliminating impacts to wildlife during heavy construction periods especially near water sources and allowing access to water sources up the canyons above the Project Area;
- Responsibility for road maintenance and improvement;
- Tribal monitor/observer opportunities during transmission line, facility and pipeline construction and any planned or inadvertent data recovery efforts;
- Maintaining existing access routes (trails and roads) and not increasing access to formerly inaccessible locations;
- Ensuring no drawdown of hot and cold spring sources and preventing any continued degradation of local springs; and
- Undeniable impacts to cold and hot water sources as a result of previous mining and geothermal projects throughout Nevada.

Adopted environmental protection measures and mitigations have been proposed which address these concerns and include avoidance of all eligible and unevaluated cultural resource sites and implementation of a hydrologic monitoring plan (see Sections 2.1.11, 3.9.2, and 3.3.2). Additionally, geothermal lease stipulations (see Appendix A), direct that adverse impacts to springs are not allowed.

Vehicles, equipment, and personnel used for planning, exploration, construction and maintenance purposes can have negative impacts to areas utilized by native peoples and associated artifacts as identified in Section 3.3. Long and short term noise and visual impacts can have a detrimental impact to existing cultural/traditional/spiritual activities that may occur in certain areas. As consistently stated during previous communications, sacred sites such as prayer, sweat lodge, medicinal/strength gathering, and edible/medicinal plant gathering locations must remain quiet and undisturbed and a sense of reverence maintained.

The physical remains of past cultural and subsistence practices and activities (antelope traps, points, flakes, stone tools, grinding stones, etc...) are also considered to be extremely important and sacred due to such artifacts having been made by the ancestors and considered the evidence of thousands of years of native inhabitation. Archaeological sites within or in close proximity to certain project boundaries have been known to experience various levels of degradation, thus eliminating not only the physical evidence of native occupation, but also archaeological data, which can produce a better understanding of past and present cultures. Archaeological data along

with native oral history can reveal information pertaining to past cultural activities and associated social practices, trade routes, subsistence activities, environmental changes, etc.

Roads leading to project activities, can experience further use by members of the public to access formerly inaccessible locations. If members of the general public increasingly utilize Project roads, the cultural/traditional/spiritual integrity of any adjacent Native use site may be compromised.

Also, the act of drilling wells (regardless of the data being sought) is often viewed by traditional practitioners and believers as being harmful to “mother earth” due to impacts to underground and surface waters, which are considered the “life blood of the Earth and all who dwell upon it.” Other than consumption by people, wildlife, and plant species, certain hot and cold spring locations are also used for healing and spiritual purposes. For this specific Project to date, contemporary traditional/cultural uses have not been identified within or near the Project boundaries. However, continued consultation may reveal otherwise.

During the Project activities, if any cultural properties, items, or artifacts (stone tools, Projectile points, etc...) are encountered, it must be stressed to those involved in the proposed Project activities that such items are not to be collected. Cultural and Archaeological resources are protected under the Archaeological Resources Protection Act (16 U.S.C 470ii) and the Federal Land Management Policy Act (43 U.S.C. 1701). The above language is applicable to previously identified artifacts and site locations, surface artifacts possibly missed during the original survey, and any subsurface artifacts (below ground).

Though the possibility of disturbing Native American gravesites within most Project areas is extremely low, inadvertent discovery procedures must be noted. Under the Native American Graves Protection and Repatriation Act, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

If any traditional cultural properties or artifacts are identified before or during development activities, a protective “buffer zone” may be acceptable, where physical avoidance is an issue, and if doing so satisfies the needs of the BLM, the proponent, and affected Tribe. The size of any “buffer zone” would be determined through coordination and communication between all participating entities. All NRHP-eligible and unevaluated cultural sites that were identified during the cultural resources inventory would be avoided.

3.4.2.2 Alternative 1

The impacts to Native American Religious Concerns from the construction, operation, maintenance and reclamation of Alternative 1 would be the same as those described for the Proposed Action.

3.5 WILDLIFE (INCLUDING THREATENED AND ENDANGERED SPECIES, SPECIAL STATUS SPECIES AND MIGRATORY BIRDS)

3.5.1 Affected Environment

A biological survey of portions of the Jersey Valley Unit Area and the entire transmission line corridor was conducted by Great Basin Ecology in May 2008 (GBE 2008). Subsequent to the May 2008 biological survey, additional areas of proposed surface disturbing activities were identified at the transmission line substation area. A survey of this area was conducted on April 22, 2009.

Similar wildlife species are likely to be found within the Jersey Valley Unit Area and transmission line corridor. These species include a variety of small mammals, raptors, reptiles and insects and are identified and described below.

Common mammalian species include the black-tailed jackrabbit (*Lepus californicus*), kangaroo rats (*Dipodomys sp.*), coyote (*Canus latrans*), badger (*Taxidea taxus*), and a variety of other small mammals (i.e. mice, voles, ground squirrels, etc) (GBE 2008).

The Jersey Valley Unit Area does not have any known raptor nests nor does it provide suitable nesting habitat. One previously active prairie falcon nest and one previously active burrowing owl nest exist within 1 mile of the proposed transmission corridor and will be addressed further in the Special Status Species Section. No other known raptor nests or suitable habitat exists within the transmission corridor.

Foraging habitat for raptors such as golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), prairie falcon (*Falco mexicanus*), ferruginous hawk (*Buteo regalis*), and northern harrier (*Circus cyaneus*) may be found within the Jersey Valley Unit Area and along the transmission line corridor.

A variety of reptiles have the potential to occur within the Jersey Valley Unit Area and transmission line corridor. Such species include the western whiptail lizard (*Cnemidophorus tigris*), leopard lizard (*Gambemia wislizenii*) and western fence lizard (*Sceloporus occidentalis*). The Great Basin rattlesnake (*Crotalus atrox*) is likely to occur in the broken rocks and brush habitats on the east side of the Jersey Valley Unit Area.

The BLM identified mule deer (*Odocoileus hemionus*), bighorn sheep (*Ovis canadensis nelsoni*) and pronghorn antelope (*Antilocapra americana*) habitat as potentially occurring within portions of the Jersey Valley Unit Area and/or the transmission line corridor, as described below.

Mule deer

Mule deer move between various zones from the forest edges at higher elevations to the desert floor, depending on the season. While the mule deer occupies almost all types of habitat within its range, it seems to prefer arid, open areas and rocky hillsides. Seasonal movements involving

migrations from higher elevations (summer ranges) to lower winter ranges are associated, in part, with decreasing temperatures, severe snowstorms, and snow depths that reduce mobility and food supply. Mule deer in the arid southwest may migrate in response to rainfall patterns (Stamm 2006).

Mule deer crucial winter, summer or year round habitat has not been identified in the Unit Area or the transmission line corridor (NDOW 2005b, NDOW 2005c and NDOW 2005e). Mule deer winter habitat was identified in only the easternmost portion of the Jersey Valley Unit Area (NDOW 2005d).

Bighorn sheep

Bighorn sheep inhabit alpine meadows, grassy mountain slopes and foothill country near rugged, rocky cliffs and bluffs, allowing for quick escape. In winter, Bighorn sheep prefer slopes 2,500-5,000 feet where annual snowfall is less than 60 inches a year, because they cannot paw through deep snow to feed. Their summer range is between 6,000-8,500 feet in elevation (Stamm 2006).

There are no bighorn sheep migration corridors within the Unit Area or the transmission line corridor (NDOW 2005a). The eastern half of the Jersey Valley Unit Area and the central and northern portions of the transmission line corridor have been mapped as bighorn sheep distribution habitat (NDOW 2005a).

Pronghorn antelope

Pronghorn antelope inhabit the grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts (Stamm 2006).

The westernmost portion of the Jersey Valley Unit Area and the southern half of the transmission line corridor have been mapped as potential Pronghorn antelope habitat (NDOW 2007). The northern half of the transmission line corridor has been mapped as year-round Pronghorn antelope habitat (NDOW 2007).

Threatened and Endangered Species

Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended, requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) concerning species listed under the ESA. Consistent with this requirement, a letter requesting information regarding threatened and endangered species which may occur within the Unit Area and the transmission line corridor was sent to the USFWS on August 11, 2008.

The USFWS responded in a letter dated September 12, 2008 that, to the best of their knowledge, no listed or proposed species exist in the subject area (USFWS 2008).

In February 2008, the Nevada Natural Heritage Program (NNHP) provided a Sensitive Taxa Record Search for endangered, threatened, candidate and/or at risk plant and animal taxa

recorded within or near the Jersey Valley Unit Area and the proposed transmission line corridor (NNHP 2008a and 2008b). No threatened or endangered species were identified.

Special Status Species

The USFWS expressed concern that the proposed Project activities could potentially impact the greater sage grouse (*Centrocercus urophasianus*) and the pygmy rabbit (*Brachylagus idahoensis*).

The NNHP identified (either within the proposed Project area or a 5 km buffer around the subject lands): Lahontan beardtongue (*Penstemon palmeri* var. *macranthus*), windloving buckwheat (*Eriogonum anemophilum*) and Reese River phacelia (*Phacelia glaberrima*). Habitat may also be available for the Sadas pyrg (*Pyrgulopsis sadai*) and the Dixie Valley pyrg (*Pyrgulopsis dixensis*) (NNHP 2008a and 2008b).

Additionally, the BLM MLFO requested surveys for burrowing owls and bats, and identified the ferruginous hawk (*Buteo regalis*), prairie falcon (*Falco mexicanus*) and golden eagle (*Aquila chrysaetos*) as potentially within or adjacent to the proposed Project Area.

Greater Sage-Grouse

Greater sage-grouse use sagebrush habitats with significant grass and forb components. Breeding habitat consists of habitat suitable for leks, nesting, and early brood-rearing areas. Suitable nesting and early brood rearing habitats are dominated by sagebrush with a healthy herbaceous understory. From late June to early November, sage-grouse will use a variety of moist and mesic habitats where succulent forbs are found. These habitats include riparian areas, wet meadows, lakebeds, farmlands, uplands including sagebrush and recently burned areas. During the winter months sage-grouse feed almost exclusively on sagebrush. Sagebrush stands with canopy covers of 10-30% and winter cover heights of at least 25 centimeters above the snow is needed. Topographic relief and a diversity of sagebrush heights in an area are important (Stamm 2006).

All of the seasonal habitats for sage-grouse were either lacking within the surveyed portions of the Jersey Valley Unit Area or were only present in marginal condition. No extensive stands of sagebrush were present and no signs of sage-grouse were observed (GBE 2008).

The sagebrush within the transmission line corridor may occasionally serve as sage-grouse winter habitat for birds that normally spend the entire year in the Fish Creek Mountains or in the Tobin Range. In rare years when snow accumulation in these mountain areas is sufficiently deep to cover the sagebrush, sage-grouse may use the valley floor sagebrush (GBE 2008). Although some potential movement between the Fish Creek Mountains and the Tobin Range exists, data suggests this movement is seldom and unlikely. Based on radio telemetry data gathered from 2003-04 in the Fish Creek Mountains, sage-grouse in the Fish Creeks appear to be non-migratory, spending the entirety of the year in that range. In addition, no locations of individuals were recorded within 2 miles of any portion of the Project vicinity. Also, Great Basin Ecology

did not observe any sage-grouse sign within the transmission line corridor during their 2008 survey.

Pygmy Rabbit

Pygmy rabbits are North America's smallest rabbits, and the only rabbits that commonly construct their own burrows, usually in stands of tall, dense sagebrush in locations with deep, loose soils. Pygmy rabbits are patchily distributed throughout most of the Great Basin. Though locally common, these animals have apparently never been generally abundant during historical times, and may have undergone serious population declines, habitat and population fragmentation, and local extinction in recent decades. Pygmy rabbits are sagebrush obligates and their decline is probably closely related to loss and degradation of sagebrush habitats (Stamm 2006).

Pygmy habitat was marginal within the surveyed portions of the Jersey Valley Unit Area and neither pygmy rabbits nor their sign (i.e. burrows, droppings, etc.) were observed (GBE 2008). The sagebrush associated with some of the drainages crossed by the transmission line corridor appeared to be suitable habitat for the pygmy rabbit. These drainages were extensively surveyed and no pygmy rabbits or their sign were observed during the field survey (GBE 2008).

Lahontan beardtongue

Lahontan beardtongue is a tall perennial herb with wand-like stems and showy pink tubular flowers with darker markings. It is typically found along washes, roadsides and canyon floors, particularly on carbonate-containing substrates, usually where subsurface moisture is available throughout most of the summer (NNHP 2001c). It is found at elevations between 3,400 and 4,550 feet amsl.

Given the elevation and soils within the Jersey Valley Unit Area, suitable habitat could exist. However, the only water sources available throughout the summer were the hot springs and the associated soils are not suitable for this species. No Lahontan beardtongue was observed during the survey period within the Jersey Valley Unit Area (GBE 2008). Within the transmission line corridor, neither Lahontan beardtongue populations nor suitable habitat were observed (GBE 2008).

Windloving buckwheat

At high elevations the Windloving buckwheat is found on dry, exposed, relatively barren and undisturbed, gravelly, limestone or volcanic ridges and ridgeline knolls, on outcrops or shallow rocky soils over bedrock, with *Artemisia arbuscula*, *Ericameria viscidiflora*, *Poa secunda*, *Elymus elymoides*, *Arenaria kingii*, etc. At low elevations the Windloving buckwheat is found on dry, relatively barren and undisturbed knolls and slopes of light-colored, platy volcanic tuff weathered to form stiff clay soils, on all aspects, with *Tetradymia canescens*, *Ericameria nauseosa*, *E. viscidiflora*, *Atriplex confertifolia*, *Elymus elymoides*, *Elymus cinereus*, *Astragalus calycosus*, etc (NNHP 2001a).

Suitable habitat may be present within the surveyed portions of the Jersey Valley Unit Area, however no individuals were observed during the field survey (GBE 2008). Habitat may also be present along portions of the transmission line corridor, however the season long grazing on this area has reduced the plant diversity over time and this species was not observed during the field survey (GBE 2008).

Reese River Phacelia

Reese River Phacelia habitat is open, dry to moist, alkaline, nearly barren, sometimes scree covered, whitish to brownish shrink-swell clay soils derived from fluvio-lacustrine volcanic ash and tuff deposits, generally on the steeper slopes of low hills, bluffs, and badlands in the shadscale-greasewood, sagebrush, and lower pinyon-juniper zones with *Atriplex confertifolia*, *A. canescens*, *Artemisia tridentata*, *Sarcobatus vermiculatus*, *tetradymia*, *Phacelia gymnoclada*, *Cleomella*, etc (NNHP 2001b).

Suitable habitat may be present within the surveyed portions of the Jersey Valley Unit Area, however no species were observed during the field survey (GBE 2008). No Reese River Phacelia populations were observed along the transmission line corridor (GBE 2008).

Sadas pyrg and Dixie Valley pyrg

The Sadas pyrg (*Pyrgulopsis sadai*) and Dixie Valley pyrg (*P. dixensis*) are both springsnails associated with freshwater seeps and springs. While the springs occupied by springsnails vary in their water quality and quantity, generally speaking, the springs need to be perennial, have moderate to high flows, cool temperatures, and good water quality. Springs that have been developed or heavily impacted by livestock, wild horses, or wildlife, are not as likely to have springsnails as springs with good water quality and riparian vegetation (GBE 2008).

The perennial water sources within the Jersey Valley Unit Area consisted of two springs, neither possesses cool water and flows were very low. Additionally, both springs were impacted by wild horses and livestock and did not appear to be suitable habitat for springsnails. No springsnails were observed within either spring (GBE 2008). No perennial waters occurred along the transmission line corridor, and therefore, no suitable habitat for the springsnails existed (GBE 2008).

Western burrowing owl

Western burrowing owls inhabit open terrain and typically create a nest by occupying an abandoned burrow created by other animals such as a badger (*Taxidea taxus*). They are also found in roadside berms (Stamm 2006).

Burrowing owl habitat is marginal within the surveyed portions of the Jersey Valley Unit Area. One historically active burrowing owl nest exists within 1 mile of the proposed transmission corridor thus surveys were completed specific to this species. Numerous burrows were observed during GBE's 2008 survey, but no sign of burrowing owl activity was observed. The survey was

conducted during the nesting season and it is likely owls would have been observed if present (GBE 2008). Northern portions of the transmission corridor appeared suitable for burrowing owls. The more extensive sagebrush stands were evidence that these areas were not seasonally saturated. None of the burrows observed showed any signs of burrowing owl activity and no burrowing owls were observed during the field survey (GBE 2008).

Townsend's big-eared bat and pallid bat

Townsend's big-eared bat (*Corynorhinus townsendii*) is associated with areas containing caves and cave analogs for roosting habitat. Townsend's big-eared bat requires spacious cavern-like structures for roosting during all stages of its lifecycle (Pierson et al. 1999).

The pallid bat (*Antrozous pallidus*) breeds in arid deserts and grasslands, often near rocky outcrops and water. It is present but less abundant in evergreen and mixed conifer woodland. The bat will usually roost in a rock crevice or building, and less often in a cave, tree hollow, or mine.

There is a major bat maternity colony and hibernaculum located within Sections 27 and 34, T.27N., R.40E. of the Jersey Valley Unit Area. The spring areas and associated vegetation provide for foraging habitat. The desert shrub and sagebrush vegetation communities also provide foraging habitat for the Townsend's big-eared bat and the pallid bat (GBE 2008).

The transmission line corridor is located in potential foraging habitat for the Townsend's big-eared bat and the pallid bat in the Battle Mountain Range, near the Phoenix Mine. However, no suitable roosting habitat occurs along the transmission line corridor (GBE 2008).

Ferruginous hawk

The ferruginous hawk is a nesting-summer resident of the planning area. A number of nests have been recorded over the years. Juniper trees are the preferred nesting sites of the ferruginous hawk, and nests are often constructed in juniper "stringers" which overlook large open areas on alluvial fans. Prey consists primarily of ground squirrels in the spring and early summer and jackrabbits in late summer and fall. Ferruginous hawks are more sensitive to nest disturbance than most raptors (Stamm 2006). An active ferruginous hawk nest was found within the transmission corridor in April 2009. Suitable foraging habitat for ferruginous hawks exists throughout the Project vicinity.

Prairie falcon

The Prairie Falcon has a body length of 15 – 20 inches, a 3½ foot wingspan, and weighs 1 – 2 pounds. Prairie Falcons inhabit hills, canyons, and mountains of arid grasslands and shrub-steppes of southwestern Canada, western United States, Baja California, and northern Mexico. An active prairie falcon nest was identified in 2000 within 1 mile of the proposed transmission corridor. Suitable foraging habitat for prairie falcon exist throughout the Project vicinity.

Golden eagle

The golden eagle is Nevada's largest resident bird of prey, sometimes weighing over twelve pounds and having a wingspan that may exceed seven feet. This bird is highly adaptable, has world-wide distribution and is a common year-long resident of the planning area. Golden eagles feed primarily on small mammals-jackrabbits, cottontails, and ground squirrels-though they are capable of taking larger prey (Stamm 2006). There have been many sightings of golden eagle in the Project vicinity, though there are no known nests nearby.

Migratory Birds

Migratory birds may be found in the proposed Project area as either seasonal residents or as migrants. Provisions of the Migratory Bird Treaty Act (16 USC 701-718h) prohibit the killing of any migratory birds, including the taking of any nest or egg, without a permit. Executive Order 13186, titled "Responsibilities of Federal Agencies to Protect Migratory Birds," was signed on October 1, 2001 to further enhance and ensure the protection of migratory birds. Migratory bird species utilize almost all of the Shoshone-Eureka Planning Area during some time of the year.

Bird species include meadowlarks (*Sturnella meglectus*), horned larks (*Eremophila alpestris*), mourning doves (*Zenaidura macroura*), and barn swallows (*Hirunda rustica*). Red-winged blackbirds (*Agelaius phoeniceus*) and killdeer (*Charadrius vociferous*) were observed near the two spring areas within the Jersey Valley Unit Area. House finches (*Carpodacus mexicanus*) were observed and heard along the eastern Jersey Valley Unit Area boundary near the pinyon-juniper woodlands on the hill slopes.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Surface disturbance associated with construction activities would result in the loss of wildlife habitat. The direct displacement of wildlife would result from the surface disturbance required for construction of the drilling pads, power plant site, pipelines, transmission line, switching station and access roads. A slight reduction in wildlife carrying capacity would be expected to occur for some species, but most wildlife would be expected to adjust and relocate to similar habitat that is abundant in the Project vicinity.

The transmission line poles would provide perching sites for raptors. The approximately 27.59-mile-long transmission line would also increase the potential for bird collisions, electrocution and bird mortality. However, Ormat has agreed to adopt transmission line raptor protection practices which would minimize bird electrocutions with the transmission line and reduce bird mortality. Additionally, to prevent perching, (a cone, Kaddas Enterprises type KE1058 or equal) would be installed on the top of each transmission line pole along the entirety of the transmission line (see Figure 12, Figure 13 and Section 2.1.11).

Project-generated noise could also keep some animals away from areas directly affected by surface disturbance during the construction, drilling and power plant operations. Other indirect

effects could result from general human activity, which could displace individuals or reduce breeding success of species that are sensitive to human activity. The indirect effects would be temporary and short-term for the proposed construction and drilling operations, but would continue over the life of the Project for power plant operations. Wildlife would be able to re-occupy the disturbed areas upon completion of the Project and site reclamation. There should be no residual impacts to wildlife resources.

Threatened and Endangered Species

There would be no impacts to threatened and endangered species as none are known to exist within the surveyed portions of the Jersey Valley Unit Area and proposed transmission line corridor.

Special Status Species

Sage-Grouse

No impacts to sage-grouse are expected within the Jersey Valley Unit Area as sage-grouse habitat is marginal and no sage-grouse were observed during the biological survey. Within the transmission line corridor, sage-grouse may use the sagebrush in the valley floor as winter habitat on the rare occasions when the snow accumulation in the Fish Creek Mountains or the Tobin Range is sufficiently deep to cover the sagebrush. To reduce the potential impacts to wintering concentrations of sage-grouse, Ormat has committed to adopt protection measures which would reduce potential impacts to sage-grouse (see Section 2.1.11).

Pygmy Rabbit

No impacts to pygmy rabbits are expected within the Jersey Valley Unit as pygmy rabbit habitat is marginal and no pygmy rabbits were observed during the biological survey. As some of the sagebrush associated with a few of the drainages crossed by the transmission line corridor were suitable habitat for pygmy rabbits, potential impacts to pygmy rabbits exist during construction of the transmission line. However, transmission line poles could be located outside of, and “span,” the existing drainages. As no surface disturbing activities associated with construction of the transmission line are proposed within any pygmy rabbit habitat, direct impacts to pygmy rabbits are minimal.

The additional traffic resulting from the construction crew traffic will increase the amount of dust in the area and will increase the probability of running over a pygmy rabbit. However, the rough roads will limit the speed of the vehicles. Ormat has also proposed to apply water to the ground during the construction and utilization of the drill pads and access roads as necessary to control dust (see Section 2.1.11). Therefore, the proposed Project may impact individuals, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species.

Lahontan Beardtongue

Given the marginal Lahontan Beardtongue habitat and the absence of this species observed in the surveyed portions of the Jersey Valley Unit Area and proposed transmission line corridor, it is not likely that the proposed Project would have an effect on this species.

Windloving buckwheat

No impacts to the Windloving buckwheat are expected within the Jersey Valley Unit Area and proposed transmission line corridor as habitat is marginal and no species were observed during the biological survey.

Reese River Phacelia

No impacts to the Reese River Phacelia are expected within the surveyed portions of the Jersey Valley Unit Area and proposed transmission line corridor as none were observed during the biological survey.

Sadas Pyrg and Dixie Valley Pyrg

No impacts to the Sadas Pyrg and Dixie Valley Pyrg are expected as none were found within the springs within the Jersey Valley Unit Area and suitable habitat is not known to exist. There is no suitable habitat for the spring snails within the transmission line corridor and no impacts are anticipated.

Western burrowing owl

As western burrowing owl habitat is marginal within the surveyed portions of the Jersey Valley Unit Area, and no burrowing owls were observed during the survey, activities conducted within the Jersey Valley Unit Area would not likely have an effect on the burrowing owl.

The northern portions of the transmission line corridor appeared suitable for burrowing owls, though no owls were observed. The survey was conducted during the nesting season and it is likely owls would have been observed if present. A mitigation measure (see below in Migratory Birds section) has been recommended, which should reduce potential impacts to burrowing owls.

Townsend's big-eared bat and pallid bat

Potential impacts to bat roosting habitat are not anticipated. To avoid potential impacts to those bats which use the mine adits located in Sections 27 and 34, T27N, R40E, Federal Geothermal Lease NVN-77483 applies a "no surface occupancy" restriction to lands within 0.25 mile of these adits. No activities are proposed which would occur within 0.25 miles of these adits and no impacts are anticipated.

However, bats may forage within the riparian areas of the Jersey Valley Unit. As there are no surface disturbing activities proposed within any riparian area, there will be no direct impacts to riparian vegetation and there should be no impacts to bat species. Additionally, geothermal lease stipulations (see Appendix A), direct that adverse impacts to springs are not allowed, therefore indirect impacts to the associated riparian vegetation are not anticipated. Mitigation requiring hydrologic monitoring has been recommended (see Section 3.9.2). Lights used for drilling at night and power plant operations may attract and concentrate moths and other insects on which the bats may feed, which could be a beneficial effect.

Ferruginous hawk, prairie falcon and golden eagle

Impacts to ferruginous hawks, prairie falcons, and golden eagles include potential electrocution through direct strikes to transmission lines when flying or when attempting to perch on transmission lines poles. To reduce potential impacts to raptors and deter raptors from the Project vicinity, Ormat has proposed an environmental protection measure (see Section 2.1.11).

An additional mitigation measure (see below in Migratory Birds section) has been recommended, which should reduce potential impacts to nesting birds.

Migratory Birds

Construction of the proposed Project (regardless of the season constructed) would result in the direct loss of potential migratory bird habitat until reclaimed. Project construction is temporary and short-term. Migratory birds would adjust and relocate to abundant similar habitat in the vicinity and beyond.

Project-generated construction and drilling noise (estimated at an average 83 decibels (dBA) at a distance of 50 feet) could also keep some migratory birds away from areas generating this noise (typically areas of new surface disturbance). Other indirect effects could result from general human activity, which could displace individuals or reduce breeding success of species that are sensitive to human activity.

The indirect impacts would be temporary and short-term for the proposed construction and drilling operations, but would continue over the life of the Project for power plant operations. Migratory birds would be able to re-occupy the disturbed areas upon completion of the Project and site reclamation. There should be negligible residual impacts to migratory birds.

To avoid the potential for direct destruction of a nest during surface disturbing activities, the following mitigation is proposed.

Mitigation Measure:

Initial ground disturbing activities would not be conducted during the migratory bird nesting season (April 1-August 15) unless necessary, and then only after inventories for migratory birds and nests were conducted by a qualified biologist acceptable to the BLM.

This survey would be conducted to identify either breeding adult birds or nest sites within the specific areas to be disturbed. If active nests are present within the areas to be disturbed, Ormat would coordinate with the BLM or appropriate state officials, as applicable, to develop appropriate protection measures for the active nest sites, which may include avoidance, construction constraints, and/or the establishment of buffers.

Following the implementation of this mitigation measure, the potential impacts to migratory birds should be reduced.

3.5.2.2 Alternative 1

The construction, operation and maintenance of Alternative 1 would differ from the Proposed Action only by the small increase (0.25 acre) in the total permanent surface disturbance. The potential impacts to bats would be less given that the majority of the surface disturbance is located further away from the adits. Conversely, the positive benefit to bats (lights associated with project activities potentially attracting moths and other insects on which the bats may feed) is reduced as the Project components are further from the adits.

The mitigation measures recommended for the Proposed Action also would be equally applicable to Alternative 1.

3.6 INVASIVE, NONNATIVE SPECIES

3.6.1 Affected Environment

Noxious weeds and invasive species are typically nonnative plants that infest and/or invade areas of fresh soil/ground disturbance. Generally, on disturbed sites where noxious weed species have invaded the plant has the attributes to rapidly out-compete native vegetation for vital natural resources. Noxious weeds, invasive and nonnative species impact native ecosystems by reducing overall biodiversity, by altering local hydrologic and soil characteristics and can immediately increase fire intensity. On a smaller scale, noxious weeds interfere with native plant successional pathways by competing for pollinators, being prolific seed producers and inundating the surrounding soil with weed seed, displacing rare plant species, serving as reservoirs of plant pathogens and converting complex plant communities into simple plant communities.

Noxious weed, invasive and nonnative species seed or vegetative plant parts are carried, transported or deposited into and infest weed-free areas by people, equipment, livestock/wildlife or by abiotic means (wind, water).

As of 2009, the State of Nevada under Nevada Administrative Code 555.010 listed 47 species on the Nevada Noxious Weed List.

A noxious weed, invasive and nonnative species inventory was conducted during the biological survey within the Jersey Valley Unit Area and the transmission line corridor. The biological

survey conducted in 2008 (see Section 3.5) also included an inventory for noxious weeds, invasive and non-native species.

Two State of Nevada noxious weed species were observed within the Jersey Valley Unit Area. Hoary cress (*Cardaria draba*) was observed associated with the spring in Section 28. The patch was discontinuous and linear, infesting the wetted perimeter of the spring outflow. The entire area of infestation was less than one-half acre (GBE 2008). Saltcedar (*Tamarix ramosissima*) was observed in two locations in Section 28. There was a large single tree near the spring in Section 28. The spring outflow enters into an incised channel with scattered patches of young salt cedar saplings (GBE 2008). This channel extends outside of the survey boundary.

Along the transmission line corridor, no State of Nevada noxious weeds were observed however 3 species considered to be invasive or nonnative were observed; cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola iberica*) and halogeton (*Halogeton glomeratus*) (GBE 2008).

Personnel from the Battle Mountain District-Mount Lewis Field Office (MLFO) have conducted noxious weed inventories throughout the Jersey Valley Unit Area and along the roadsides associated with the transmission line corridor. A search of the GIS (Graphic Information System) database indicates that within the Jersey Valley Unit Area tamarisk, a State of Nevada noxious weed, is present through many of the ephemeral washes draining Jersey Canyon, consistent with the GBE 2008 findings. In the past 2 years the MLFO has made an effort to control the tamarisk in these washes through chemical and mechanical control methods. Continued treatment of these infested washes is planned for subsequent years. The other State of Nevada noxious weed found within the Jersey Valley Unit Area is hoary cress. Hoary cress can be found growing along roadsides where disturbance is constant and wetted areas within the Jersey Valley Unit Area. In addition to the invasive plants identified by GBE 2008 there are documented records of bull thistle and curly dock within the Jersey Valley Unit Area.

It should be noted that hoary cress and Russian knapweed (*Acroptilon repens*), another State of Nevada noxious weed, has been identified on private property where spring water may be obtained for the project, see Section 2.1.7. Any proposed mitigation measures should also be followed when exiting these areas.

Along sections of the transmission line corridor there are documented infestations of tamarisk, hoary cress, musk thistle and Russian knapweed have been identified.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

The proposed Project could contribute to the spread of noxious weeds, invasive and nonnative species within the Jersey Valley Unit Area and the transmission line corridor through the proposed surface disturbing activities and the number of construction and drilling vehicles involved.

Ormat has committed to follow the mitigation measures (see Section 2.1.11), “To prevent the spread of invasive, nonnative species, vehicles and equipment would be power washed, including body and undercarriage, prior to entering public lands managed by the BLM” and geothermal resources special lease stipulations found in Appendix A of this document (WFO & BMFO NVN-77483, NVN-77482, NVN-77481, WFO N-74883 & N-74881). Following the implementation of these environmental protection measures, there would remain the potential for the spread of noxious weeds, invasive and nonnative species (seed and vegetative plant parts) within the Jersey Valley Unit Area and along the transmission line corridor, which would be a residual impact. Ormat has also committed to re-vegetate disturbed areas using BLM approved weed-free seed mixes.

3.6.2.2 Alternative 1

Alternative 1 would differ from the Proposed Action in that there would be an increase (0.25 acres) in the total amount of permanent surface disturbance due to construction, operation and maintenance. The impacts of Alternative 1 from invasive, nonnative species would not be substantially different from that of the Proposed Action.

3.7 SOILS

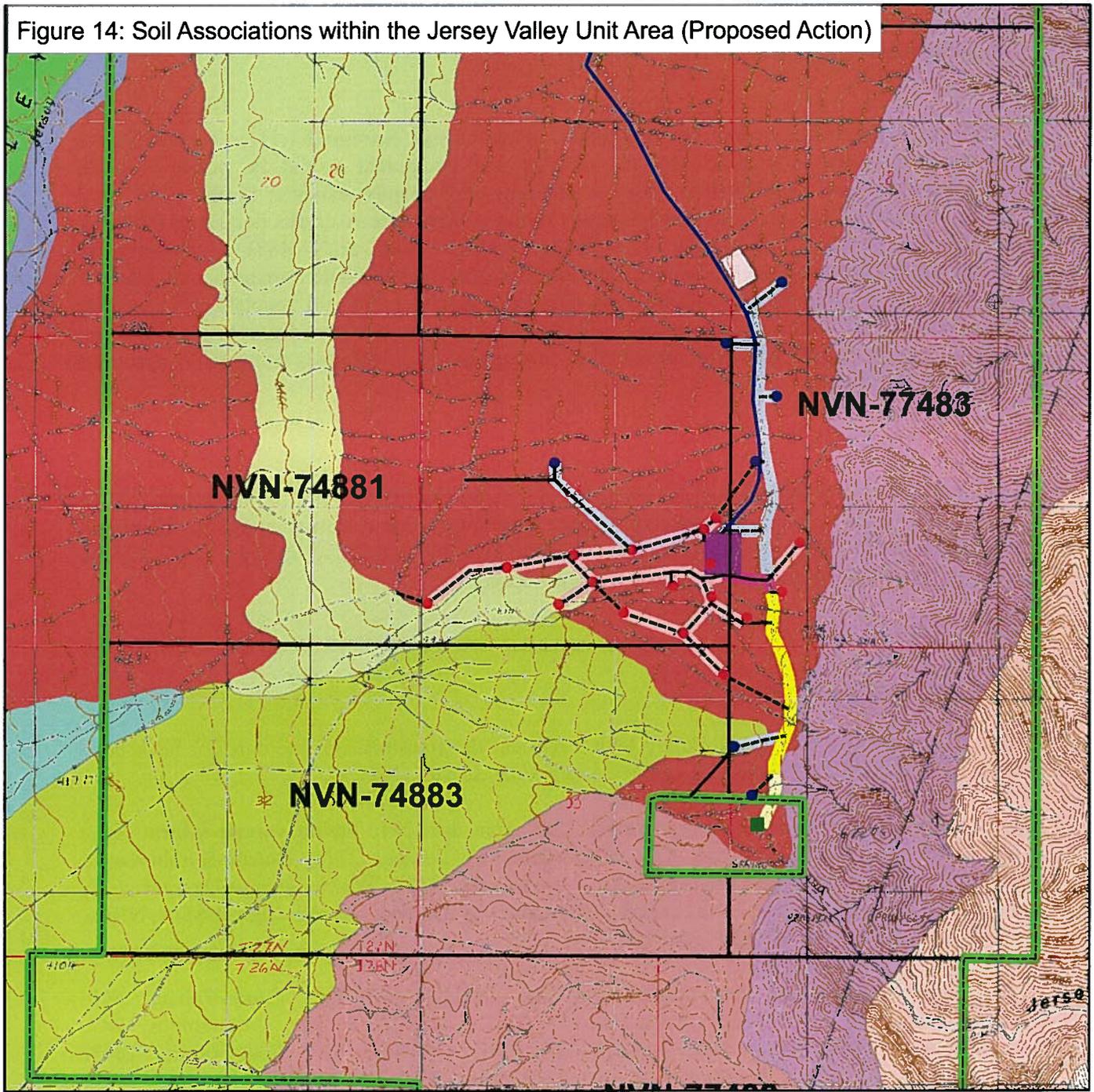
3.7.1 Affected Environment

Soil associations in the Jersey Valley Unit Area and the transmission line corridor have been mapped by the USDA, Natural Resource Conservation Service (NRCS).

Soil associations within the Jersey Valley Unit Area are: 211, Preble variant-Whirlo; 662, Oxcorel-Whirlo-Trocken variant; 673, Misad-Golconda-Tenabo; 2711, Burrirta-Burnborough; 2721, Burnborough-Sumine-Burrirta; 2555, Laped-Colbar; 251, Whirlo-Beoska-Oxcorel; 652, Burrirta-Hoot-Rock outcrop; 1340, Laped-Colbar; and 653, Burrirta-Burnborough (USDA, NRCS 2008a and 2008b) (see 14 and Figure 15).

Soil associations within the transmission line corridor are: 596, Trunk-Burrirta; 661, Oxcorel-Orovada; 670, Misap-Snapp-Oxcorel (USDA, NRCS 2008b); 240, Bubus; 245, Bubus-Needle Peak-Yipor; 247, Bubus-Isolde; 701, Orovada; 835, Reese-Ocala; 1169, Whirlo-Broyles; 1292, Kingingham-Golconda-Whirlo; 2062, Oxcorel-Orovada; and 2066, Oxcorel-Broyles-Dun Glen; (USDA, NRCS 2008a). Soil associations 652 and 662 (USDA, NRCS 2008b) are within the transmission line corridor and have been stated above.

Figure 14: Soil Associations within the Jersey Valley Unit Area (Proposed Action)



LEGEND

Soil Association Symbol

- 1340
- 211
- 251
- 482
- 653
- 662
- 673
- 911
- Geothermal Lease Boundary
- Jersey Valley Geothermal Unit Area (NVN-83483X)

- Construction Water Source
- Existing Access Road
- Proposed Access Road
- 120 kV Power ROW - Proposed Action
- Proposed Power Plant Location
- Construction Water Pipeline
- Construction Water and Injection Pipelines
- Water, Injection, and Production Pipelines
- Injection Pipeline
- Injection and Production Pipelines
- Production Pipeline
- Currently Approved Gravel Source

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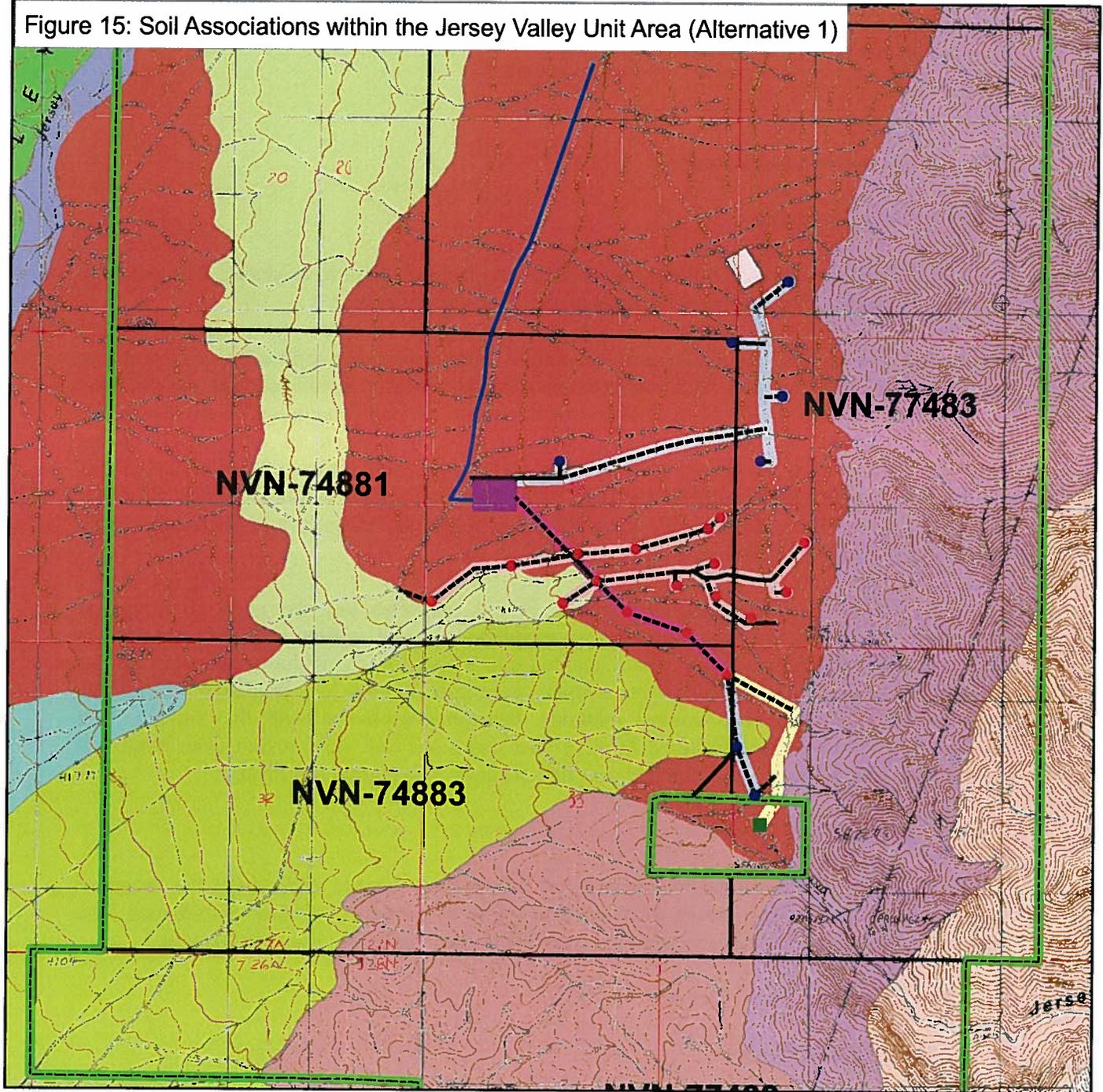
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The data shown on the map uses the Universal Transmercator (Zone 11N) Coordinate system and uses the NAD83 projection.

Map Date: March 16, 2010



Figure 15: Soil Associations within the Jersey Valley Unit Area (Alternative 1)



LEGEND

Soil Association Symbol

- 1340
- 211
- 251
- 482
- 653
- 662
- 673
- 911

- Construction Water Source
- Existing Access Road
- Proposed Access Road
- 120 kV Power ROW - Alternative
- Proposed Power Plant Location
- Construction Water Pipelines
- Injection, Production, and Construction Water Pipelines
- Injection Pipeline
- Production Pipeline
- Currently Approved Gravel Source
- Geothermal Lease Boundary
- Jersey Valley Geothermal Unit Area (NVN-83483X)

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3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

The potential for erosion within the Jersey Valley Unit Area is slight to moderate. The potential for erosion within the the transmission line corridor is moderate to high.

Surface disturbance and vegetation removal during construction of proposed project facilities within the Jersey Valley Unit Area and transmission line corridor would increase the potential for erosion through exposure of denuded surfaces. Based on implementation of environmental protection measures specified by Ormat, water would be applied to the ground during construction as necessary to control dust (see Section 2.1.11). Each of the well pads, access roads and the power plant site would be surfaced with aggregate which would minimize dust and stabilize erosive soils. Additionally, disturbed areas would be reclaimed in accordance with applicable BLM requirements (see Section 2.1.10).

An NDEP-BAPC Surface Area Disturbance Permit, documenting the areas of proposed disturbance and the best practical dust control methods to be use, will be required for activities conducted within the Jersey Valley Unit Area and transmission line corridor because the surface disturbed within each area would be greater than 5 acres (see Section 3.2). Implementation of the applicable best practical dust control methods, through compliance with the Surface Area Disturbance Permit, would minimize fugitive dust emissions and soil erosion from wind and water during construction, operation and decommissioning of the proposed Project.

3.7.2.2 Alternative 1

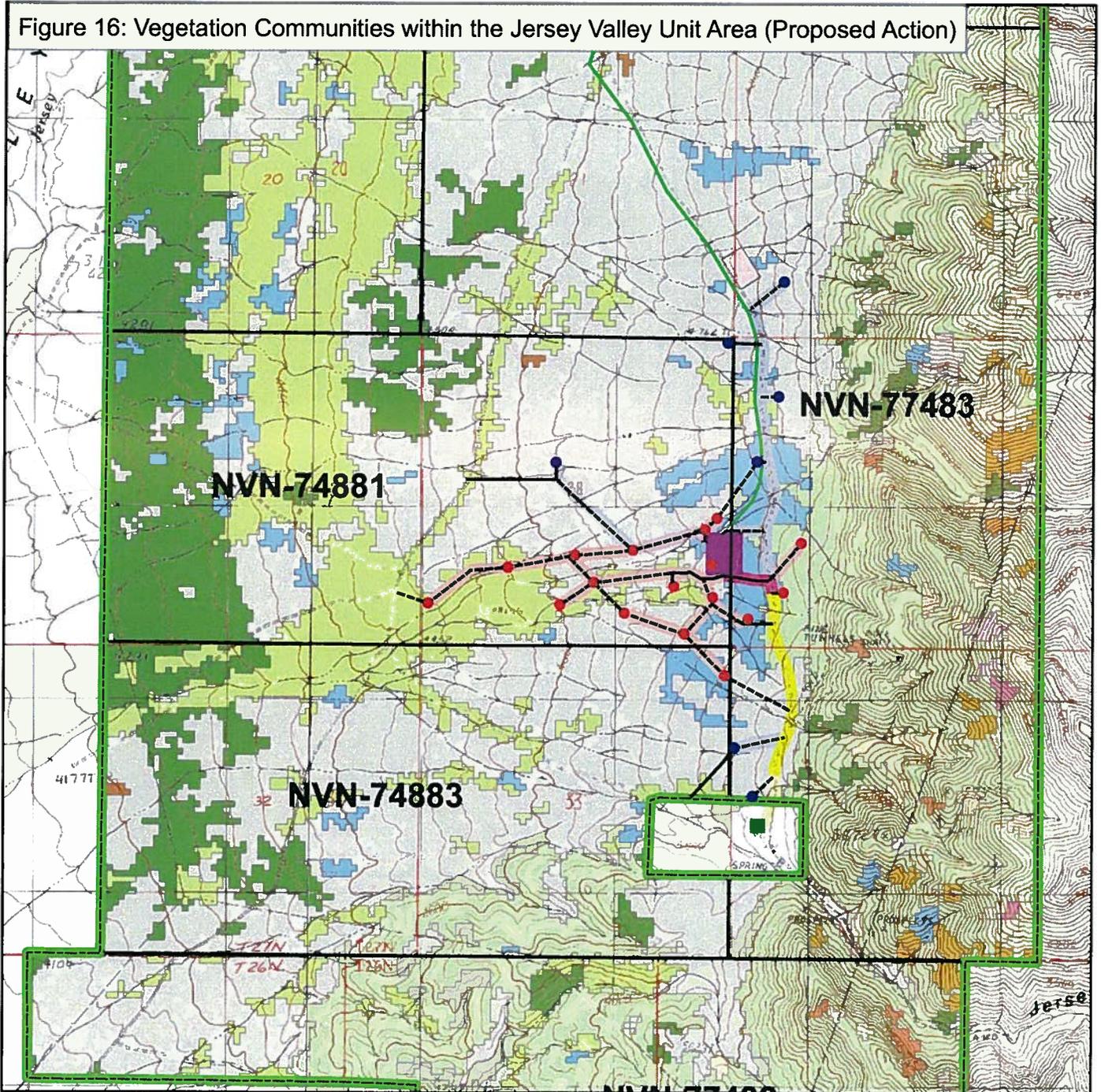
The construction, operation and maintenance of Alternative 1 would differ from the Proposed Action only by the small increase (0.25 acre) in the total permanent surface disturbance. The impacts of Alternative 1 to soils would not be different from that of the Proposed Action.

3.8 VEGETATION

3.8.1 Affected Environment

Differences in the kind of vegetation are closely related to the kind of soil. Soils within the Jersey Valley Unit Area and the transmission line corridor were mapped by the USDA, Natural Resource Conservation Service (NRCS) in the Lander County, North Part, soil survey and the Pershing County, East Part, soils survey (see Section 3.7.1). Vegetation communities mapped within the Jersey Valley Unit can be found in Figure 16 and Figure 17).

Figure 16: Vegetation Communities within the Jersey Valley Unit Area (Proposed Action)



LEGEND

Vegetation Community

- Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland
- Great Basin Pinyon-Juniper Woodland
- Great Basin Xeric Mixed Sagebrush Shrubland
- Inter-Mountain Basins Big Sagebrush Shrubland
- Inter-Mountain Basins Big Sagebrush Steppe
- Inter-Mountain Basins Cliff and Canyon
- Inter-Mountain Basins Greasewood Flat
- Inter-Mountain Basins Mixed Salt Desert Scrub
- Inter-Mountain Basins Montane Sagebrush Steppe
- Inter-Mountain Basins Semi-Desert Grassland
- Invasive Annual Grassland
- Invasive Annual and Biennial Forbland

- Construction Water Source
- Existing Access Road
- Proposed Access Road
- 120 kV Power ROW - Proposed Action
- Jersey Valley Geothermal Unit Area (NVN-83483X)
- Geothermal Lease Boundary
- Proposed Power Plant Location
- Construction Water Pipeline
- Construction Water and Injection Pipelines
- Water, Injection, and Production Pipelines
- Injection Pipeline
- Injection and Production Pipelines
- Production Pipeline
- Currently Approved Gravel Source

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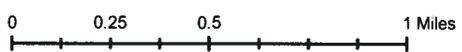
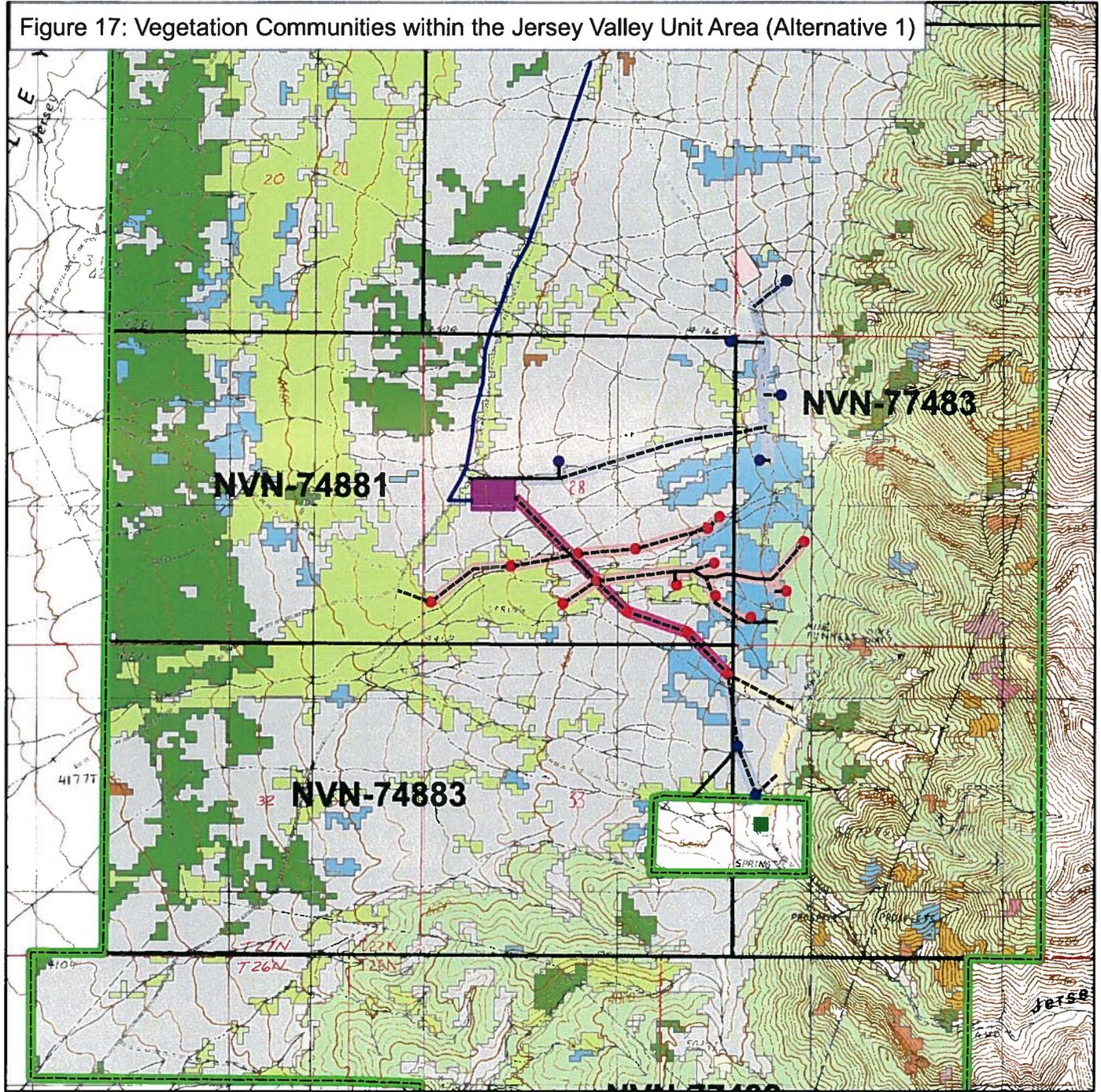


Figure 17: Vegetation Communities within the Jersey Valley Unit Area (Alternative 1)



LEGEND

Vegetation Community

- Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland
- Great Basin Pinyon-Juniper Woodland
- Great Basin Xeric Mixed Sagebrush Shrubland
- Inter-Mountain Basins Big Sagebrush Shrubland
- Inter-Mountain Basins Big Sagebrush Steppe
- Inter-Mountain Basins Cliff and Canyon
- Inter-Mountain Basins Greasewood Flat
- Inter-Mountain Basins Mixed Salt Desert Scrub
- Inter-Mountain Basins Montane Sagebrush Steppe
- Inter-Mountain Basins Semi-Desert Grassland
- Invasive Annual Grassland
- Invasive Annual and Biennial Forbland

- Construction Water Source
- Existing Access Road
- Proposed Access Road
- 120 kV Power ROW - Alternative
- Jersey Valley Geothermal Unit Area (NVN-83483X)
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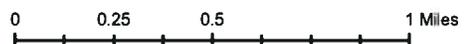
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The only recorded fire within the Jersey Valley Unit Area and proposed transmission line corridor was the Gooseberry Fire which burned within the very southwest corner of the Jersey Valley Unit Area in 2001.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

Surface disturbance associated with the proposed Project activities within the Jersey Valley Unit Area and transmission line corridor would result in the loss of vegetation.

Approximately 86.67 acres of the proposed disturbance within the Jersey Valley Unit Area and transmission line corridor is “temporary” (see Table 5) and vegetation can be allowed to recover after construction is completed.

Approximately 80.66 acres of proposed disturbance within the Jersey Valley Unit Area and transmission line corridor is “permanent” (see Table 5) and would be “lost” over the life of the proposed Project, but would be recovered without residual impact after site reclamation commences.

Disturbed areas could have an increase in cheatgrass compared to non-disturbed areas (see Section 3.6).

As part of the Project, disturbed areas would be reclaimed in accordance with applicable BLM requirements. The following mitigation measure is recommended to seed disturbed areas with seed mixtures and minimize the spread of invasive, nonnative species.

Mitigation Measures:

Seeding of disturbed areas associated with soil association 211 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3.40
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.70
Needle and Thread	<i>Stipa Comata</i>	3.78
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.78

Seeding of disturbed areas associated with soil associations 662, 673, 2711, 2721, 2555, 251, 652 and 1340 would be completed using the following BLM-approved native seed mixture and application rate:

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Common Name	Scientific Name	Pounds/acre (bulk)
Basin Wildrye	<i>Leymus cinereus</i>	4.65
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	1.70
Alkali sacaton	<i>Sporobolus airoides</i>	0.12
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.52

Seeding of disturbed areas associated with soil association 653 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	6.22
Basin Wildrye	<i>Leymus cinereus</i>	2.61
Thurbers Needlegrass	<i>Stipa thurberiana</i>	5.23

Seeding of disturbed areas associated with soil association 2066 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3.40
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.58
Needle and Thread	<i>Stipa Comata</i>	3.78
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.78

Seeding of disturbed areas associated with soil association 1169 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Basin Wildrye	<i>Leymus cinereus</i>	4.65
Alkali sacaton	<i>Sporobolus airoides</i>	0.45
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.70

Seeding of disturbed areas associated with soil association 247 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	4.16
Basin Wildrye	<i>Leymus cinereus</i>	2.61
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	2.34

Seeding of disturbed areas associated with soil associations 596, 661, 670, 701, 835 and 2062 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3.40
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.58
Needle and Thread	<i>Stipa Comata</i>	3.78
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.78
Basin Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0.31

Seeding of disturbed areas associated with soil association 1292 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	4.16
Basin Wildrye	<i>Leymus cinereus</i>	2.61
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	2.34
Basin Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0.31

Seeding of disturbed areas associated with soil association 240 and 245 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Basin Wildrye	<i>Leymus cinereus</i>	4.65
Alkali sacaton	<i>Sporobolus airoides</i>	0.45
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.70
Basin Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0.31

Following the implementation of these mitigation measures, there should be no residual impacts to vegetation.

Implementation of the proposed action would increase the potential for human caused fires during construction and operation of the proposed Project. Accidental discharge during transportation and storage of flammable materials or chemicals (such as pentane or fuel) could accelerate the ignition of fires along the County Road or at the power plant site. Impacts from these fires would vary based on fire size and could result in the destruction of structures, livestock forage, and wildlife habitat.

A hazardous material handling, storage and transportation plan has been produced and would reduce the potential for fires (see Section 3.11). Ormat has also proposed environmental protection measures to further reduce the potential for human caused fires (see Section 2.1.11).

Power transmission lines have been known to start fires either from arcing or electrocution of birds. Installation of anti electrocution perching sites on power poles and maintenance of roads and/or constructing fuel breaks along the Rights of Way would also reduce potential impacts.

3.8.2.2 Alternative 1

The construction, operation and maintenance of Alternative 1 would differ from the Proposed Action only by the small increase (0.25 acre) in the total permanent surface disturbance. The impacts of Alternative 1 to vegetation would not be different from that of the Proposed Action. The mitigation measures recommended for the Proposed Action would be equally applicable to Alternative 1.

3.9 WATER QUALITY AND QUANTITY

3.9.1 Affected Environment

The Nevada State Engineer of the Division of Water Resources, Department of Conservation and Natural Resources (NDCNR-DWR) places the Jersey Valley Unit Area within the 142 square mile Jersey Valley Hydrographic Area (Number 132 of 232 in the State of Nevada) (NDCNR-DWR 2009a). The Jersey Valley Hydrographic Area is located within the Central Hydrographic Region (Number 10 of 14 in the State of Nevada), which covers nearly 30 million acres. The Jersey Valley Hydrographic Area makes up approximately 0.3 percent (about 91,000 acres) of the Central Hydrographic Region.

The Jersey Valley Hydrographic Area is one of seven ground water basins that are connected with the Dixie Valley ground water basin (Hydrographic Area Number 128), which together form a closed hydrologic unit referred to as the Dixie-Fairview Valley Area (Cohen and Everett 1963). All seven of these ground water basins were “designated” by the State Engineer in 1978 in order to better manage the ground water in Dixie Valley (NDCNR-DWR 2005; NDCNR-DWR 1978). “Designating” a basin gives the Nevada State Engineer additional authority in the administration of the water resources within that basin. Basins are typically “designated” by the State Engineer when permitted ground water rights approach or exceed the estimated average recharge. The Dixie Valley ground water basin has committed ground water rights of approximately 30,700 acre-feet per year (AFY), and an estimated perennial yield (the amount of water that can be drawn indefinitely without depleting the resource) of 15,000 AFY (NDCNR-DWR 2010b).

The Jersey Valley Hydrographic Area ground water basin is recharged by precipitation, primarily spring snowmelt resulting in seasonal stream flows. Near-surface ground water is primarily stored in unconsolidated sedimentary deposits that range from a few hundred feet thick in Jersey Valley to over 1,000 feet thick in Dixie Valley (Cohen and Everett 1963). Ground

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water movement is transmitted mostly through unconsolidated sediments in the valley floor and, to a lesser extent, through localized areas of highly fractured consolidated rocks. Ground water from the Jersey Valley basin eventually flows to the southwest and contributes to the Dixie Valley Hydrographic Area ground water basin recharge.

The Jersey Valley Hydrographic Area has committed ground water rights of 27.25 AFY and an estimated perennial yield of 250 AFY. The manner of use for all of the committed ground water rights is reported as industrial (NDCNR-DWR 2009a). The point of diversion for this ground water use is located within the privately owned land block within the JV Unit Area in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 34, T27N, R40E (see Figure 6). The application for this ground water right was filed on March 25, 2009 (NDCNR-DWR 2009b). As of January 2010, the NDCNR-DWR had no well drill log records available for this ground water diversion point (NDCNR-DWR 2010c).

There is one recorded ground water well located within five miles of the Jersey Valley hot springs. This well, currently owned by the BLM, is located in the Jersey Valley Hydrographic Area, approximately 4 miles southwest of the Jersey Valley unit area, in the SE $\frac{1}{4}$, SW $\frac{1}{4}$ of Section 11, T26N, R39E (see Figure 6). The well was constructed in 1957 to a total depth of 200 feet with a reported depth to ground water of 138 feet (NDCNR-DWR 2010c). Subsequent measurements of the depth to ground water in this well, taken during 1981 and 1982, show a consistent depth to ground water of 136 feet (USGS 2009b). The USGS has no available ground water quality data from this well (USGS 2009c).

Between 1981 and 1982, fourteen geothermal exploration (temperature gradient) "wells" were drilled within five miles of the Jersey Valley unit area. Of these, nine are located within the Jersey Valley unit area (NDCNR-DWR 2010c). All of these geothermal exploration "wells" were drilled to relatively shallow depths (ranging from 340 feet to 500 feet). The NDWR does not list these wells as plugged and abandoned, although the drilling logs on file indicate that they were sealed with cement upon completion. No depth-to-ground water measurements or water quality data are available for any of these geothermal exploration "wells" (NDNR-DWR 2010c).

Surface water within the Jersey Valley unit area is limited to a few springs and associated ponds and a few west-flowing stream channels. Figure 6 shows streams flowing out of Jersey Canyon, Butcher Canyon and several unnamed canyons within the unit area. These streams are either ephemeral (flowing only during or immediately after rain events) or intermittent (flowing part of the year, principally due to rain events and spring snowmelt, but dry the rest of the year). No stream flow or water quality data are available for these streams.

Figure 6 also shows five springs within the Jersey Valley unit area. The easternmost spring is a cold water spring located at the mouth of Jersey Canyon on private land within the Jersey Valley unit area in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 34. The northernmost spring, located in Section 15, and the westernmost spring, located in the center of Section 29, are both small hot springs/seeps with little flow.

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The other two springs, located in the center of the unit area in the SW¹/₄, SW¹/₄ of Section 28 and the SE¹/₄, SE¹/₄ of Section 29, respectively, have been singly and collectively referred to as the Jersey Hot Springs. The spring located in Section 28 consists of a number of seeps which provide little flow. Due to the condition of the springs/seeps, the area cannot be accurately monitored. The spring located in Section 29 maintains a flow that supports a small pool and is commonly known as the main Jersey Hot Spring. These springs have temperatures reported at 29°C to 57°C (84°F to 135°F) (NBMG, 2004). Samples from the Jersey Hot Springs pool have shown it to principally be a sodium chloride/calcium sulfate water with a total dissolved solids (TDS) concentration of about 700 parts per million (ppm) and a temperature of 123°F (Ormat 2008). Boron concentrations (a chemical element generally diagnostic for geothermal waters) averaged about 1.75 ppm (see Table 8).

Table 8: Chemical Species Information for the Jersey Valley Hot Springs

Chemical Species Concentrations (ppm)		
Species	Jersey Valley Hot Springs	Jersey Valley Wells
Ammonia (NH ₄)	0.80 - 1.30	0.00 - 0.54
Potential of Hydrogen (pH)	7.00 - 7.52	7.28 - 9.34
Bicarbonate (HCO ₃)	82.00 - 350.00	153.70 - 386.20
Carbonate (CO ₃)	9.60 - 9.60	0.00 - 73.67
Total Alkalinity	28.00 - 290.00	0.00 - 320.00
Orthophosphate, as P	0.01 - 0.01	0.00 - 0.34
Chloride (Cl)	58.00 - 286.00	136.80 - 2398.00
Fluoride (F)	0.81 - 8.00	6.96 - 18.00
Sulfate (SO ₄)	110.00 - 352.00	104.67 - 431.00
Nitrate Nitrogen (NO ₃)	0.29 - 0.35	0.00 - 0.76
Total Dissolved Solids (TDS)	670.00 - 700.00	1100.00 - 4972.00
Electrical Conductivity	890.00 - 990.00	1400.00 - 8220.00
Aluminum (Al)	0.00 - 0.00	0.00 - 1.89
Barium (Ba)	0.10 - 0.14	0.19 - 3.18
Beryllium (Be)	0.00 - 0.00	0.00 - 0.003
Boron (B)	1.40 - 2.74	2.00 - 2.38
Calcium (Ca)	25.00 - 43.84	9.20 - 1185.00
Chromium (Cr)	0.08 - 0.10	0.00 - 0.34
Copper (Cu)	0.00 - 0.00	0.00 - 0.00
Iron (Fe)	0.04 - 0.07	0.07 - 6.36
Lead (Pb)	0.00 - 0.00	0.00 - 0.012
Lithium (Li)	1.10 - 1.61	0.49 - 5.99
Magnesium (Mg)	3.30 - 6.19	1.40 - 8.66
Manganese (Mn)	0.13 - 0.18	0.08 - 0.98
Potassium (K)	19.00 - 32.17	28.67 - 136.23
Silicon Dioxide (SiO ₂)	120.00 - 199.56	115.11 - 315.00
Sodium (Na)	160.00 - 293.30	223.48 - 593.78
Strontium (Sr)	0.64 - 0.81	0.35 - 20.64
Zinc (Zn)	0.00 - 0.00	0.00 - 0.24
Mercury (Hg)	0.00 - 0.006	0.00 - 0.0088
Antimony (Sb)	0.00 - 0.00	0.00 - 0.18
Arsenic (As)	0.02 - 0.03	0.00 - 0.12
Thallium (Tl)	0.00 - 0.00	0.00 - 0.001

The NDWR lists eight points of diversion for surface water rights located within the Jersey Valley unit area. One of these is a certified irrigation right of 44.16 AFY from a stream source located on private land in Section 34. The remaining seven are vested stock water rights totaling 237.72 AFY from springs located in Sections 28 and 29 which are associated with the Jersey Hot Springs (NDCNR-DWR 2009b).

Ormat has collected and analyzed samples of geothermal fluid from several of the geothermal wells drilled and flow-tested by Ormat as part of its exploration of the Jersey Valley unit area. These produced geothermal fluids are, like the Jersey Hot Springs, a sodium chloride/calcium sulfate water, but with a substantially higher TDS concentration (approximately 2,600 ppm) (Ormat 2008) (see Table 8). Boron concentrations averaged about 2.21 ppm.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

The geothermal wells would be drilled using non-toxic drilling mud to prevent the loss of drilling fluids into the rock and the risk of contamination to any aquifers from the drilling fluid. Reserve pits would be constructed at each well site for the containment and temporary storage of drilling mud, drill cuttings, geothermal fluid and storm water runoff from each constructed well pad. Because non-toxic drilling mud would be used, the reserve pits are not proposed to be lined. Additionally, the bentonite drilling muds discharged into the reserve pits would tend to act as a liner, in the same way they prevent the loss of drilling fluids in the well bore into the rock. Therefore, contamination of the local ground water aquifers as a result of the temporary discharges into the reserve pits is unlikely.

Over the operational life of the project, accidental discharges of geothermal fluids could contaminate surface or ground waters. However, these are unlikely because of the frequent inspections and ultrasonic testing of the geothermal pipelines, the pipeline flow and pressure monitoring and the well pump and pipeline valve shutdown features. Contamination of surface or ground waters from spills of petroleum products (such as diesel fuel or lubricants) is also unlikely because the well pads and power plant sites, where most petroleum products would be used and stored, would be bermed to contain and control any spills. The project includes the development of a spill and disposal contingency plan which would describe the methods for cleanup and abatement of any petroleum hydrocarbon or other hazardous material spill.

During construction, the Jersey Valley Project would consume about 105 acre-feet of ground water over the anticipated 12-month construction period, principally for geothermal well drilling and dust control. This one-time quantity of construction water, obtained from existing private water well source, is substantially less than the perennial yield estimated for the basin. Thus, there is little potential for creating any adverse effects on the quantity of either surface waters or ground waters in or adjacent to the geothermal operations area. The following monitoring measure is proposed for the Jersey Valley project to verify the absence of adverse effects on the quantity and quality of ground waters.

Monitoring Requirement

The unit operator shall monitor the fresh water spring located on private land at the mouth of Jersey Canyon in the SE/4NW/4SW/4 of Section 34, T27N, R40E, MDB&M unless access to the spring for monitoring purposes is denied by the private landowners and the unit operator provides to BLM documentation from the private landowners that access for monitoring has been denied. The unit operator shall annually collect and analyze samples from this springs for basic water chemistry, and monitor representative flow, stage or equivalent from this spring on the following schedule, unless otherwise modified by the BLM authorized officer:

- **Once immediately prior to the commencement of drilling, and once immediately following the completion of drilling, of each new or redrilled geothermal well in the geothermal unit area;**
- **Each year until the commencement of construction of the utilization facility;**
- **Once each quarter from the commencement of construction of utilization facility until the cessation of all geothermal fluid production and injection operations from the geothermal unit area for the utilization facility; and**
- **Once each year from the cessation of all geothermal fluid production and injection operations from the geothermal unit area for the utilization facility until all geothermal wells within the geothermal unit area have been abandoned.**

Collected data shall be reported to the BLM in written form by the unit operator annually within 30 days of the end of each calendar year, together with an interpretation of the monitoring data collected during the preceding calendar year.

Due to the potential of some unknown impacts of this geothermal project on perennial cold springs, seeps or other surface waters, the BLM will require additional monitoring of such features by the unit operator. If any such features exist within one mile of the production or injection well field of the Jersey Valley project, the unit operator will monitor on a quarterly basis all such features for a period of three years upon start-up of each well field and power plant. The unit operator will work with the BLM to establish monitoring points at each such feature; and establish a written protocol to measure surface flow for each feature. It is understood that such flows are influenced by meteoric events such as spring run-off; high intensity storm events, etc.

Measures would also be taken by the proposed Project to minimize the effects of construction and unit operations on the quality of surface and ground waters. To minimize erosion and stream channel sedimentation, storm water runoff from undisturbed areas around the constructed well pads, power plant sites and switching station would be directed into ditches surrounding the disturbed areas and back onto undisturbed ground consistent with best management practices for storm water. Access roads would also be constructed and maintained consistent with the best management practices for road construction applicable to the intended use (temporary or permanent) of the road. To minimize erosion and stream channel sedimentation, grading or clearing of the surface for construction of the transmission line would occur only when

absolutely necessary for safe access or installing the conductors and would only occur within the proposed ROW.

The geothermal wells would be cased with steel to a depth well below the shallow ground water reservoirs. The casing would be cemented into the ground to prevent the loss of any geothermal resource into, and prevent the contamination or mixing of, any shallow ground waters by the geothermal production or injection fluid. The Underground Injection Control Permit required for the project's injection program from the Nevada Department of Environmental Protection-Bureau of Water Pollution Control (NDEP-BWPC) would require that the injection program be designed and monitored to prevent degradation of underground sources of drinking water due to the geothermal fluid injection practices.

By their very nature, geothermal fluid production and injection operations change the distribution of pressures in the developed geothermal reservoirs. The sources of the thermal waters which discharge from the Jersey Valley Hot Springs could be substantially connected to the geothermal reservoirs to be developed by these proposed Project. If this were the case, it is possible that the geothermal production and injection operations could alter the pressures in the hot spring thermal reservoirs sufficiently to cause the flow of the hot springs to increase, diminish or even cease. It is also possible that the hot springs discharge from reservoirs which are isolated from the geothermal reservoirs to be developed by the Project. In this case, these geothermal reservoirs could be developed for the Project without risk of altering the flows of the Jersey Valley hot springs.

Insufficient information is currently available to know the nature of, and relationship between, the geothermal reservoirs to be produced for the proposed Project and the thermal reservoirs from which the hot springs flow. The geothermal leases on which this proposed Project would be developed contain stipulations which require the monitoring of the quality, quantity and temperature of the adjacent hot springs; and prohibit adverse impacts to these hot springs from lease activities (see Appendix A). To determine if adverse changes to the hot springs may be occurring, and to comply with federal geothermal lease stipulations applicable to these proposed Project, a progressive geothermal resource monitoring program could be implemented. Should this monitoring program indicate that adverse impacts to the hot springs may be occurring, the unit operator would be required to retain a competent consultant, acceptable to the BLM, to evaluate the collected data and recommend appropriate, reasonable mitigation measures. A group consisting of the applicable stakeholders would be convened to review the recommended measures. Such mitigation measures may include providing compensation to the current water rights holder, if any; providing supplemental geothermal fluids to the affected hot springs; and/or the implementation of geothermal reservoir management techniques (such as altering geothermal production and injection well pressures, locations and depths), which are often employed to change the pressure distribution in geothermal reservoirs to modify or reverse adverse pressure changes. The effectiveness of any implemented mitigation measures and/or reservoir management techniques could be evaluated by the ongoing information collected by the geothermal reservoir monitoring program, and adjusted as necessary.

The following monitoring and mitigation measures are proposed for Jersey Valley Project.

Mitigation Measures

The unit operator shall monitor and collect representative temperature; flow, stage or equivalent; and basic thermal water chemistry from each of the two springs known as the Jersey Valley Hot Springs, which are located in the SW¼, SW¼ of Section 28 and the SE¼, SE¼ of Section 29, respectively.

The unit operator shall monitor and collect representative temperature; flow, stage or equivalent; and basic thermal water chemistry from these hot springs on the following schedule, unless otherwise modified by the BLM authorized officer:

- **Once immediately prior to the commencement of drilling, and once immediately following the completion of drilling, of each new or redrilled geothermal well in the geothermal unit area;**
- **Each year until one year before the commencement of geothermal fluid production and injection operations from the geothermal unit area for the utilization facility;**
- **Once each quarter from one year before the commencement of geothermal fluid production and injection operations from the geothermal unit area for the utilization facility until the cessation of all geothermal fluid production and injection operations from the geothermal unit area for the utilization facility; and**
- **Once each year from the cessation of all geothermal fluid production and injection operations from the geothermal unit area for the utilization facility until all geothermal wells within the geothermal unit area have been abandoned.**

Collected data shall be reported to the BLM in written form by the unit operator within 30 days of its receipt. The unit operator shall also submit an annual report to the BLM within 30 days of the end of each calendar year summarizing and interpreting the monitoring data collected during the preceding calendar year.

If the BLM authorized officer determines that the available monitoring information indicates the need for further monitoring information to determine if unit operations are creating adverse impacts to the hot springs, then the BLM authorized officer may require that the unit operator conduct additional monitoring of the hot springs, including:

- **Collection of monitoring data at increased monitoring frequencies;**
- **Collection of additional monitoring parameters from current monitoring locations; and/or**
- **Collection of monitoring data from additional monitoring locations.**

Should this monitoring program demonstrate that adverse impacts to the hot springs may be occurring, the unit operator shall, as required by the BLM authorized officer, immediately retain a qualified third-party consultant, acceptable to the BLM authorized officer, to review the collected data and to evaluate the collected data and recommend reasonable mitigation measures. A group consisting of the applicable stakeholders,

including the current holder of water rights from the hot springs, if any, would be convened to review the recommended measures. Such measures may include:

- **Providing compensation to the current water rights holder for the loss of any water rights from the hot springs;**
- **Providing geothermal fluids to the affected hot springs of a quality and quantity sufficient to restore the pre-production temperature; flow, stage or equivalent; and basic thermal water chemistry of the hot springs; and/or**
- **Implementing appropriate geothermal reservoir management techniques to adjust the geothermal reservoir pressure regime and reduce and/or reverse these adverse affects to the hot springs. Such geothermal reservoir management techniques may include:**
 - **Modifying the volume (and/or pressure) of geothermal fluids produced from one or more production wells within the geothermal unit area field and monitor the reservoir and hot spring response;**
 - **Modifying the volume (and/or pressure) of geothermal fluids injected into one or more injection wells within the geothermal unit area field and monitor the reservoir and hot spring response; and/or**
 - **Discontinuing the use of one or more geothermal unit area production or injection well(s);**
 - **Changing the depth of geothermal fluid injection in one or more geothermal unit area injection wells;**
 - **Relocating one or more production or injection well(s) within the geothermal unit area; and/or**
 - **Any other measure as directed by the BLM authorized officer which, pursuant to the lease stipulations, may include shutting down the operation.**

3.9.2.2 Alternative 1

The impacts to water quality and quantity from the alternative power plant location and modified pipeline system and road network within the Jersey Valley Unit Area would be the same as those described for the Proposed Action. The location of the Jersey Valley power plant site closer to the central part of Jersey Valley may result in a very small reduction in the potential for conflicts between the mineral claimant and the power plant in the Jersey Valley Unit Area.

3.10 WETLANDS AND RIPARIAN

3.10.1 Affected Environment

The Jersey Valley Unit Area contains two spring areas. Both springs appeared to be perennial based on the vegetation at each site (GBE 2008).

The spring in the SW1/4 Section 28, at one time, had a meadow area associated with the spring area. However, this area has received heavy use by livestock and the meadow grasses have been largely replaced by annual weeds. Salt grass was still present in some patches. Rushes (*Juncus*

sp.) were present in an area immediately adjacent to the spring source. The spring source was primarily vegetated with cattail (*Typhus* sp.). The spring brook extended approximately 150 feet from the spring source on May 13, 2008 (GBE 2008).

The second spring in the SE1/4 Section 29 was directed to a reservoir. However, the flow to the reservoir was very limited and the reservoir had silted in over the years. Based on the amount of riparian vegetation, the flow from the spring apparently reaches the reservoir area as subsurface flow. The area had an outer “ring” of rushes and central area of cattails and sedges (*Carex* sp.) (GBE 2008).

No perennial streams were observed in the Jersey Valley Unit Area. Total riparian vegetation within the Jersey Valley Unit Area is approximately 9 acres.

Within the transmission line corridor, there were no springs, riparian areas or wetlands. The corridor crossed several ephemeral drainages, but none were conveying any surface flow during the survey referenced in Section 3.5 (GBE 2008).

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

As there are no surface disturbing activities proposed within any riparian area, there will be no direct impacts to riparian vegetation. Additionally, geothermal lease stipulations (see Appendix A), direct that adverse impacts to springs are not allowed, therefore indirect impacts to the associated riparian vegetation are not anticipated. Mitigation requiring hydrologic monitoring has been recommended (see Section 3.9.2).

3.10.2.2 Alternative 1

The impacts of Alternative 1 to Wetlands and Riparian Resources would not be different from that of the Proposed Action.

3.11 WASTES (HAZARDOUS AND SOLID)

3.11.1 Affected Environment

There are no hazardous material storage facilities in the Jersey Valley Unit Area or transmission line corridor, nor are hazardous materials known to be routinely used. The transport and handling of hazardous materials in Nevada are subject to numerous federal and state laws and regulations.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Diesel fuel, lubricants, hydraulic fluids and drilling chemicals (drilling mud, caustic soda, barite, etc.), would be transported to, stored on and used by the project at the proposed drill sites (see Table 9). The project must conform to both federal and state requirements for handling these hazardous/regulated wastes materials. Typical of most construction projects, the storage and use of these materials may result in minor, incidental spills of diesel fuel or oil to the ground during fueling of equipment, filling of fuel storage tanks, and handling lubricants. Other incidental spills could be associated with equipment failures such as ruptured hoses. The project includes the development of a hazardous material spill and disposal contingency plan, as identified in the Utilization Plan, which would describe the methods for cleanup and abatement of any petroleum hydrocarbon (including petroleum contaminated soils) or other hazardous material spill.

Table 9: Materials and Chemicals Commonly Used During Well Drilling

Product	Quantity Used	Quantity Stored	Hazardous Material? ¹
Drilling Mud Gel (Bentonite Clay)	200,000 lbs	100 lb sacks on pallets	No
Salt (NaCl)	80,000 lbs	50 lb sacks on pallets	No
Barite (BaSO ₄)	12,000 lbs	50 lb sacks on pallets	No
Tannathin (Lignite)	2,500 lbs	50 lb sacks on pallets	No
Lime (Calcium Hydroxide)	2,000 lbs	50 lb sacks on pallets	Yes ²
Caustic Soda (Sodium Hydroxide)	1,000 lbs	50 lb sacks on pallets	Yes ²
Diesel Fuel	30,000 gals	6,000 gal tank	Yes ³
Lubricants (Motor Oil, Compressor Oil)	1,000 gals	55 gal drums	Yes ³
Hydraulic fluid	200 gals	55 gal drums	No
Anti-Freeze (Ethylene Glycol)	100 gals	55 gal drums	No ⁴
Liquid Polymer Emulsion (partially hydrolyzed polyacrylamide / polyacrylate (PHPA) copolymer)	100 gals	5 gal buckets	No
1. Hazardous materials are defined and regulated in the United States primarily by laws and regulations administered by the U.S. Environmental Protection Agency (EPA), the U.S. Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation (DOT), and the U.S. Nuclear Regulatory Commission (NRC). Each has its own definition of a "hazardous material." 2. The material is characteristically hazardous due to its corrosivity 3. The material is characteristically hazardous due to its flammability 4. This material is considered orally toxic following ingestion.			

Well workover operations may involve placing a dilute mixture of hydrochloric (muriatic) and hydrofluoric acids down the well, and would only transpire when and if needed. The amount of dilute acid placed in the well bore (which can vary from 10,000 gallons to 50,000 gallons or more) is determined by calculating the amount of each type of mineral to be dissolved.

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Concentrated (35%) hydrochloric acid and 40% ammonium fluoride solution (to make the hydrofluoric acid) would be delivered via truck to the site on use (i.e. would not be stored onsite during well drilling and testing). The acids are mixed on site with water by experienced contractors. The dilute acid mixture is placed in the cased well bore, followed by water to push the mixture into the geothermal reservoir. After dissolving the minerals in the geothermal reservoir, the water and now spent acids are flowed back through the well to the surface where they are tested, neutralized if necessary (using sodium hydroxide or crushed limestone or marble), and discharged to the reserve pit, which will be sampled prior to reclamation of the pit (see Section 2.1.2).

The project must comply with BLM requirements to ensure that any geothermal fluid encountered during the drilling does not flow uncontrolled to the surface. These include the use of “blow-out” prevention equipment during drilling and the installation of well casing cemented into the ground.

After drilling operations are completed, the liquids from the reserve pits would either naturally evaporate, or be removed as may be necessary to reclaim the reserve pits. The non-hazardous, non-toxic residual solid contents of the pits would be mixed with the excavated rock and soil and buried by backfilling the reserve pit.

The small quantities of solid wastes (paper trash and garbage) generated by the project would be transported offsite to an appropriate landfill facility. Portable chemical toilet wastes would be removed by a local contractor. Given Ormat’s compliance with the associated lease stipulations, no effects would result from solid wastes generated by the project (see also Section 2.1.11). The disposal of these wastes would be a residual impact of the project.

Small quantities of hazardous waste would be generated by construction operations. Typically these wastes would be in the form of empty drums or spent lead acid batteries used for construction equipment. Construction activities typically generate waste oils, oily rags, and oil impregnated absorbent materials used to clean up minor spills from construction equipment. However, most waste generated from the construction activities would be solid (non-hazardous) waste.

Hazardous materials stored on site during normal power plant operations include diesel fuel for the fire pump and standby generator, lubricating oils, and small quantities of paint, antifreeze, cleaning solvents, battery acid, transformer insulating fluid, and laboratory reagent chemicals. Air pollution abatement chemicals and geothermal fluid handling chemicals will also be stored on site. These materials will typically be stored within secondary containment and there will be little potential for adverse effects from spills or releases of these materials.

Substantial quantities of the binary working fluid, pentane, would be stored and used (though not consumed or intentionally released). Pentane is a flammable but non-toxic hydrocarbon similar to, but less volatile than propane. During major maintenance activities on the pentane side of the binary power plant units, the liquid pentane would first be transferred to the pentane storage tank. However, not all of the pentane can be removed in this manner, and the residual pentane

would be discharged to the atmosphere when the binary power plant unit is opened. These releases are estimated to average about 12 tons per year.

Small quantities of typical office and industrial trash will be generated during power plant operations. Similar to construction wastes, the operations waste will be removed from the site by a local waste contractor and deposited in an offsite disposal facility authorized to accept the wastes. Sanitary wastes will be handled by a septic system constructed as part of the power plant facilities.

Proper handling, storage and disposal of these hazardous materials, hazardous/regulated wastes and solid wastes in conformance with federal and state regulations would ensure that no soil, ground water, or surface water contamination would occur with any adverse effects on the environment or worker health and safety.

The following mitigation measures are provided to help prevent contamination of soils and reduce the potential for contamination of the reserve pit.

Mitigation Measure:

Absorbent pads or sheets would be placed under likely spill sources.

3.11.2.2 Alternative 1

The impacts of Alternative 1 to Wastes (Hazardous and Solid) would not be different from that of the Proposed Action.

3.12 RANGELAND

3.12.1 Affected Environment

The following is applicable within the Jersey Valley Unit Area (see Table 10):

Table 10: Jersey Valley Unit Area Allotment Information

Allotment	Operator	Season of Use	Use Area	Kind ¹	AUMs	Land Status (acres)
Buffalo Valley	Goemmer L&L Buffalo Ranch, LLC	7/16-9/15	Jersey Valley LO	C	159	Public: 137,150 Private: 2,730
		4/15-5/15	Jersey Valley LO	C	20	
		5/1-7/15	Jersey Valley HI	C	222	
South Buffalo	Goemmer L&L Buffalo Ranch, LLC	7/16-9/15	Jersey Valley LO	C	903	Public: 233,654 Private: 12,039
		4/15-5/15	Jersey Valley LO	C	116	
Jersey Valley	Jersey Valley Cattle Co., LLC	5/1-7/31 ²	N/A	C	932	Public: 66,711 Private: 1,612
		8/1-11/30 ²	N/A	C	914	

1. Cattle = C
 2. Jersey Valley Allotment alternates use every other year. (i.e. Year 1 allotment is used 5/1-7/31; Year 2 allotment is used 8/1-11/30)

The following is applicable within the transmission line corridor (see Table 11).

Table 11: Transmission Line Corridor Allotment Information

Allotment	Operator	Season of Use	Use Area	Kind ¹	AUMs	Land Status (acres)
Copper Canyon	Gary Snow Livestock and Grain	11/1-3/31	N/A	S	1,002	Public: 61,607 Private: 45,465
	Chiara Ranch	11/1-2/28	N/A	C	50	
	Ellison Ranching Co.	11/1-4/30	N/A	S	384	
	Badger Ranch	3/1-2/28	N/A	C	3,587	
1. Cattle = C; Sheep = S						

The Buffalo Valley Allotment, South Buffalo Valley Allotment and Jersey Valley Allotment are also within the transmission line corridor (see Table 10).

The Buffalo Valley and South Buffalo Allotments combined comprised 388,639 acres and support 13,135 animal unit months (AUMs) during the year (approximately 30 acres per AUM) (Darrington 2010). An AUM is the amount of forage needed to sustain one cow, five sheep or five goats for a month.

There have been several range improvements within and adjacent to the proposed Project area, primarily, a number of fences exist, as does the Cow Creek Pipeline.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

This project could disturb up to 166.28 acres. It would also reduce the 13,135 AUMs within the allotment by 10 AUMs, or less than one percent of the AUMs within the combined allotments. (see Table 12).

Table 12: AUM Reductions in the Buffalo Valley and South Buffalo Allotments

AUM Reductions Buffalo Valley and South Buffalo Allotments				
Allotment	Operator	% of Total AUMs	Current AUMs	AUM Reduction *
Buffalo Valley	Goemmer L & L Buffalo Ranch LLC	28%	3,624	2.45 AUMs
	Ellison Ranching Co.	4%	595	0.35 AUMs
South Buffalo	Goemmer L & L Buffalo Ranch LLC	68%	8,916	5.94 AUMs

*** AUMs will be rounded to the appropriate whole number**

All Project activities are located away from sources of water in the vicinity and will not prevent livestock access to the available sources of water in the area.

To prevent access by cattle to areas which might be harmful to them, Ormat has committed to fence reserve pits and the power plant site in conformance with the Gold Book, and has not proposed any Project activities which would substantially limit livestock's access to the undisturbed portions of the Jersey Valley Unit Area.

Due to the small percentage of the allotment's acres lost to direct disturbance, Ormat's fencing of those Project facilities potentially harmful to livestock, and the fact that Project facilities and practices would not prevent continued access by livestock to the undisturbed lands within the Jersey Valley Unit Area and along the transmission line corridor, no impacts to range resources are expected.

Ormat's proposed activities are generally located away from the range improvement projects. The transmission line is proposed to cross the Cow Creek Pipeline. Ormat has committed to "span" this pipeline and not place transmission line poles in such a way as to damage the existing pipeline, therefore no impacts to the Cow Creek Pipeline are anticipated.

3.12.2.2 Alternative 1

The construction, operation and maintenance of Alternative 1 would differ from the Proposed Action only by the small increase (0.25 acre) in the total permanent surface disturbance. The impacts of Alternative 1 to Rangeland would not be different from that of the Proposed Action.

3.13 RECREATION

3.13.1 Affected Environment

Known dispersed recreational use within the Jersey Valley Unit Area is evidenced in the soaking facility constructed downstream of the hot springs located in the SW1/4 Section 29, T27N, R40E (see Section 3.9.1). Within the transmission line corridor, recreation use is low and mainly associated with dispersed driving for pleasure, hunting, wildlife viewing and OHV use.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

The closest project activity within the Jersey Valley Unit Area is well site 17-28 and the associated production pipeline. As these proposed Project components are over 0.25 miles from the soaking facility, no impacts are anticipated.

Project operations should not adversely affect the ability of recreational users to either access or

utilize the hot springs within the Jersey Valley Unit Area as there would be no affect on the quality or quantity of the surface or ground waters in the Unit Area (see Section 3.9.2) or the surrounding environment.

The Project does not propose any activity which would prevent continued access by recreational users to the public lands within the Jersey Valley Unit Area and proposed transmission line corridor. Project operations should also not impact the ability of hunters to access previous hunting grounds, or impact the abundance of game animals.

Air quality impacts to recreation users could include dust from vehicle traffic on unpaved roads and exhaust from construction vehicles. As discussed in Section 3.2.2, these would be short-term and temporary. Ormat has also stated that water would be applied to the disturbed ground during the construction activities as necessary to control dust (see Section 2.1.11).

Project-generated noise and traffic could cause some recreational users within the Jersey Valley Unit Area and proposed transmission line corridor to stay away during the Project construction and drilling activities. These indirect effects would be temporary and short-term. The Project should have no residual impacts on recreation.

3.13.2.2 Alternative 1

The impacts of Alternative I to Recreation would not be different from that of the Proposed Action.

3.14 VISUAL RESOURCES

3.14.1 Affected Environment

The BLM initiated the visual resource management (VRM) process to manage the quality of landscapes on public land and to evaluate the potential impacts to visual resources resulting from development activities. VRM class designations are determined by assessing the scenic value of the landscape, viewer sensitivity to the scenery, and the distance of the viewer to the subject landscape. These management classes identify various permissible levels of landscape alteration, while protecting the overall visual quality of the region. They are divided into four levels (Classes I, II, III, and IV). Class I is the most restrictive and Class IV is the least restrictive (BLM 1986).

The entire Jersey Valley Unit Area and proposed transmission line corridor are located in a VRM Class IV area (BLM, MLFO 2006b). The objective of Class IV is to provide for management activities that require major modification of the existing landscape character. The level of change to the characteristic landscape can be high. Management activities may dominate the view and be the major focus of viewer attention. Every attempt, however, should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic landscape elements (BLM 1986).

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

During the 45-day drilling operations the drill rig may extend up to about 175 feet above ground level. These operations will be 24-hour per day, 7 days per week. During drilling operations, the rig will be visible at distances of greater than one mile from the respective drill sites, and lights used when drilling at night would increase rig visibility. Impacts to visual resources from drilling operations would primarily affect the elements of line and color. Drilling operations will be temporary and short-term. The following mitigation measure is recommended to reduce visual impacts during drilling operations.

Mitigation Measure

All drill rig and well test facility lights would be limited to those required to safely conduct the operations, and would be shielded and/or directed in a manner which focuses direct light to the immediate work area.

Most power plant facilities will be single story and will not be visible at a distance from the power plant site(s). The tallest permanent structure on each power plant site will be the air-cooled condensers estimated to be about 35± feet tall.

Within the transmission line corridor the single poles would be up to 70 feet tall and would be spaced about 300-400 feet apart.

The proposed transmission line generally parallels an existing distribution line or the existing County Road. The transmission line will be visually apparent in the foreground to travelers along the County Road. The transmission line will add an extended linear feature to the landscape.

Project activities would be consistent with the Class IV classification of the area.

The following mitigation measures are recommended to reduce the visual impacts to permanent project related facilities within the Jersey Valley Unit Area.

Mitigation Measure

Permanent project facilities within the Jersey Valley Unit Area would be painted a color, subject to approval by the authorized officer, which would blend with the landscape (likely covert green). Prior to painting, Ormat would contact the Mount Lewis Field Office project lead.

Permanent project facilities within the Jersey Valley Unit Area would be limited to those required to safely conduct the operations, and would be shielded and/or directed in a manner which focuses direct light to the immediate work area.

The following mitigation measure is recommended to reduce the visual impacts from the permanent facilities at the north end of the transmission line corridor.

Mitigation Measure

The substation at the north end of the transmission line corridor would be painted a color, subject to approval by the authorized officer, which would blend with the landscape. Prior to painting, Ormat would contact the Mount Lewis Field Office project lead.

3.14.2.2 Alternative 1

The impacts of Alternative 1 to Visual Resources would not be different from that of the Proposed Action. The mitigation measures proposed under the Proposed Action would be equally applicable for Alternative 1.

3.15 SOCIO-ECONOMIC VALUES

3.15.1 Affected Environment

The closest population center to the project area is Battle Mountain, in Lander County. Adjacent population centers/counties are Lovelock, in Pershing County and Winnemucca, in Humboldt County. Pertinent economic values are provided in Table 13.

Table 13: Economic Values Data

	Total Population	Housing			Labor	
		Units	Occupied (%)	Median Value (\$) of owner-occupied	Labor Force	Leading Employers
Pershing County (U.S. Census Bureau 2009a)	6,693	2,389	82.1	82,200	2,478	<ul style="list-style-type: none"> • Management, professional and related industries (22.7%) • Service occupation (19.9%) • Sales and office industry (18.9%)
Lovelock (U.S. Census Bureau 2009b)	2,003	957	81.8	81,700	917	<ul style="list-style-type: none"> • Service occupation (25.9%) • Management, professional and related industries (23.2%) • Production, transportation, and material moving occupations (19.9%)
Lander County (U.S. Census Bureau 2009c)	5,794	2,780	75.3	82,400	2,741	<ul style="list-style-type: none"> • Management, professional and related industries (24.4%) • Construction, extraction, and maintenance occupations (21.7%) • Production, transportation, and material moving occupations (19.1%)

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	Total Population	Housing			Labor	
		Units	Occupied (%)	Median Value (\$) of owner-occupied	Labor Force	Leading Employers
Battle Mountain CDP (U.S. Census Bureau 2009d)	2,871	1,411	74.6	79,600	1,473	<ul style="list-style-type: none"> • Management, professional and related industries (22.1%) • Construction, extraction, and maintenance occupations (20.1%) • Production, transportation, and material moving occupations (19.9%)
Humboldt County (U.S. Census Bureau 2009e)	16,106	6,594	83	117,400	7,653	<ul style="list-style-type: none"> • Management, professional and related industries (25.7%) • Sales and office industry (21.7%) • Construction, extraction, and maintenance occupations (20.5%)
Winnemucca (U.S. Census Bureau 2009f)	7,174	3,319	85	124,000	4,586	<ul style="list-style-type: none"> • Management, professional and related industries (30.4%) • Sales and office industry (25.0%) • Construction, extraction, and maintenance occupations (14.9%)

3.15.2 Environmental Consequences

3.15.2.1 Proposed Action

Construction of the well field, pipelines and power plant(s) within the Jersey Valley Unit Area is expected to require 50 workers and is anticipated to last approximately 12 months. Construction of the transmission line, switching station, and laydown areas is expected to consist of 25-30 workers and is anticipated to last approximately 6 months. Some of these workers would be recruited locally, though most would be specialized workers from outside of the local area. Typically, non-local skilled workers do not bring families with them on these construction assignments. Therefore, most are expected to stay in local hotels or rental housing units.

Non-local construction workers typically are paid a *per diem* rate for daily housing and meal costs. Workers normally spend the *per diem* on motel accommodations or RV campground space rent, restaurants, groceries, gasoline, and entertainment. In addition, Ormat likely would purchase or rent some portion of the equipment and supplies required to drill and complete the construction activities (such as grading equipment, fuel and tools) from local suppliers. This spending activity associated with the construction of the Project would have a small but positive effect on local businesses in Pershing and Lander Counties.

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Operation of the project is expected to require 20 workers, and would not induce population growth in an area. Neither does the proposed Project create or provide any infrastructure which would indirectly induce substantial population growth.

3.15.2.2 Alternative 1

The impacts to Socio-economic values of Alternative 1 would be the same as those described for the Proposed Action.

3.16 LAND USE AUTHORIZATIONS

3.16.1 Affected Environment

Several rights-of-way (ROWs) have been granted by the BLM on the public lands within the Jersey Valley Unit Area and transmission line corridor (see Table 14), and generally consist of ROWs for power lines, telephone lines, access roads, and pipelines (BLM 2008c). Additionally, a public water reserve (PWR 107) and several authorizations for fences and a pipeline are located within the Jersey Valley Unit Area.

Table 14: Land Use Authorizations within the Jersey Valley Unit Area and Transmission Line Corridor

Holder	ROW/Activity	Case File No.	Location
Nevada Bell	Telephone ROW/ Fiber Optic Line	NVCC-0021089	27N 40E, sec 3, 16, & 20 28N 40E, sec 13, 23, 24, 26, & 35 28N 41E, sec. 2, 3, 8, 9, 17, & 18 29N 41E, sec. 24, 25, 26, 34, & 35 29N 42E, sec. 3, 4, 8, 9, 17, 18, & 19 30N 42E, sec. 24, 26, 27, & 34 30N 43E, sec. 10, 16, & 20
AT&T	Telephone ROW	NVN-46266	27N 40E, sec 3 & 20 28N 40E, sec. 13, 23, 24, & 26 28N 41E, sec. 2, 3, 8, 9, 17, & 18 29N 41E, sec. 24, 25, 26, & 35 29N 42E, sec. 4, 8, 9, 17, 18, & 19 30N 42E, sec. 24, 26, 27, & 34 30N 43E, sec. 10, 11, 16, & 17
Ormat Nevada Inc.	Road ROW	NVN-82304	27N 40E, sec. 21, 22, & 27
Barbara and Mike Stremler	Temporary Water Pipeline ROW	NVN-85141	27N 40E, sec. 29
Deborah & Jerry Kelly	FLPMA sec 302 Permit	NVN-44630	28N 41E, sec. 9 30N 43E, sec. 16
Sierra Pacific Power	Power Line ROW	NVN-57376	28N 41E, sec. 3 & 9 29N 41E, sec 24, 25, 26, 34 & 35 29N 42E, sec. 3, 4, 8, 9, 17, 18, & 19 30N 42E, sec. 24, 26, 27, & 34 30N 43E, sec. 10, 16, & 20

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Holder	ROW/Activity	Case File No.	Location
Sierra Pacific Power	Power Line ROW	NVN-0056560	28N 41E, sec 9
Nevada Bell	Telephone ROW	NVN-1608	30N 42E, sec. 24, 25, & 26 30N 43E, sec.16, 17, & 20
Sierra Pacific Power	Power Line ROW	NVN-00051984	30N 42E, sec. 26
Nevada Bell	Telephone ROW	NVN-0005640	30N 42E, sec. 26
American Tower Corp	Communication Site ROW	NVN-0057070	30N 42E, sec. 24
Lander County	Road ROW	NVN-48143	30N 43E, sec. 16
Sierra Pacific Power	Power Line ROW	NVN-48871	30N 43E, sec. 20
Newmont Expl. Ltd.	Power Line ROW	NVN-78954	30N 43E, sec. 16, 17, & 20
Newmont USA Ltd. Dbn NMC	Road ROW	NVN-80925	30N 43E, sec. 10
Southwest Gas Corp.	Oil & Gas Pipeline ROW	NVN-0065084	30N 43E, sec. 10 & 11
Nevada Bell	Telephone ROW	NVN-0066582	30N 43E, sec. 10

3.16.2 Environmental Consequences

3.16.2.1 Proposed Action

All project activities within the Jersey Valley Unit Area are located away from the authorized ROWs, so there would be no impacts to lands and realty within the geothermal operations area.

Transmission line poles would not be located within any existing ROWs and no impacts are expected. The transmission line wires would pass over several land use authorizations, but would not interfere with any existing ROWs. No impacts are anticipated.

3.16.3.2 Alternative 1

The impacts to lands and realty from Alternative 1 would be identical to those described for the Proposed Action.

4 CUMULATIVE EFFECTS

The CEQ regulations for implementing NEPA (40 CFR 1508.7) define cumulative impacts as:

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

4.1 CUMULATIVE EFFECTS STUDY AREA

The cumulative effects study area (CESA) is the approximately 407,360 acre area which was determined on a hydrologic and topographical basis (see Figure 23).

4.2. PAST AND PRESENT ACTIONS

Past and present actions consist primarily of livestock grazing, recreational activities, transportation and access, wildfires, wild horse and burro use (including wild horse gathers), mineral exploration and geothermal exploration activities.

Livestock grazing – Portions of seven BLM-managed grazing allotments are within the CESA: North Buffalo, South Buffalo, Jersey Valley, Home Station Gap, Pumpernickel, Copper Canyon, Cottonwood and Carico Lake (BLM, NV 2005). In order to support the management of these allotments, a variety of range improvement projects have been implemented through the years, including fences, cattleguards and wells.

Recreational activities – Dispersed recreation occurs within the CESA and includes off-highway vehicle (OHV) use, wildlife viewing and hunting.

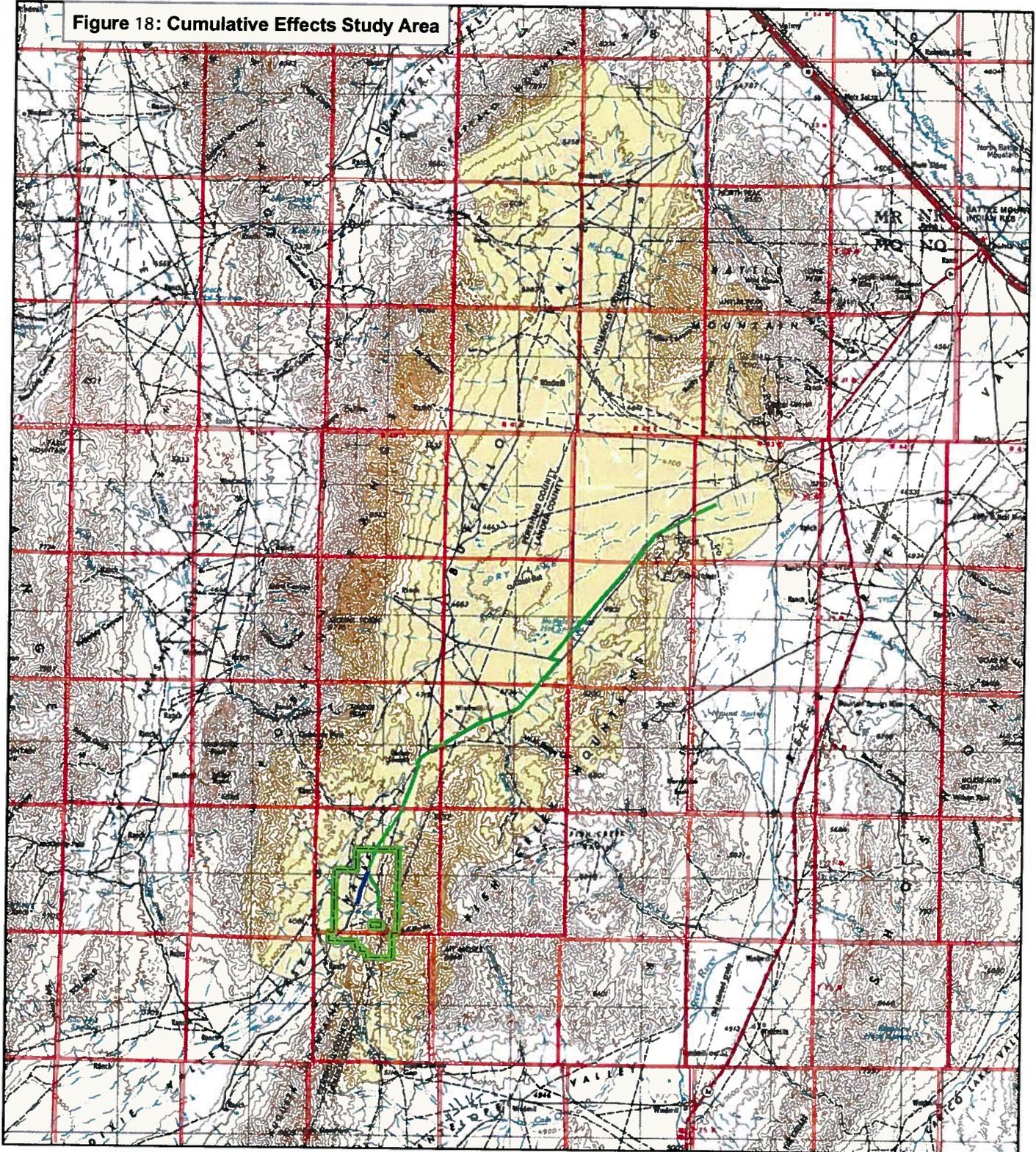
Transportation and access – Past and present actions within the CESA are supported by a transportation system which includes gravel County Roads, BLM Roads, and dirt roads or “two-tracks” on public lands. Few are regularly maintained.

Wildfires – Within the past decade there have been seven wildfires within the CESA: two unnamed fires (1999 and 2000), the Gooseberry Fire (2001), Smelser Pass Fire (2006), Cottonwood Fire (2006), the Buffalo Ranch Fire (2006) and the Horse Fire (2007) (BLM, MLFO 2006a).

Wild Horse and Burro Use – Portions of two BLM-managed Herd Management Areas (HMAs) are within the CESA: Tobin Range HMA and the Augusta Mountains HMA (BLM, NV 2007).

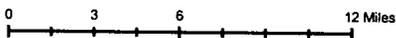
Mineral exploration – Hundreds of active mining claims exist within the CESA.

Figure 18: Cumulative Effects Study Area



LEGEND

-  120 kV Power ROW - Proposed
-  120 kV Power ROW - Alternative
-  Jersey Valley Geothermal Unit Area (NVN-83483X)
-  Cumulative Effects Study Area



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*No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

The data shown on the map uses the Universal Transmercator (Zone 11N) Coordinate system and uses the NAD83 projection.

Map Date: November 3, 2009



Geothermal exploration – Ormat has conducted geothermal temperature gradient hole and geothermal observation well drill activities within the Jersey Valley Geothermal Unit Area (see Section 1.1).

4.3 REASONABLY FORESEEABLE FUTURE ACTIONS

The past and present actions identified above are expected to persist in the same manner and to the same degree as they have been conducted in the present and recent past.

Other reasonably foreseeable future actions (RFFAs) include a pending FLPMA land sale (NVN-78534), pending access road ROW (NVN-84251) and a pending Plan of Operations (NVN-81365).

Land Sale – a FLPMA land sale (NVN-78534) is pending. The proponent of the land sale is Buffalo Valley Farms. The sale involves approximately 7,370.09 acres located within Sections 1-3, T.30N. R.40E. and Sections 11, 14, 15, 22, 23, 25-27, 34, and 35, T.31N. R.41E. This land sale has been pending since April 2004.

Access Road ROW – an access road ROW (NVN-84251) is pending. The proponent is the Lander County Public Works Department. The ROW is approximately 4.470 acres and would be located at Sections 6 and 18, T.30N. R.43E.; and Section 32, T.31E. R.43E. This access road ROW has been pending since October 2007.

Plan of Operations – a mining Plan of Operations (NVN-81365) is pending. The proponent is Independence Gold. The Plan of Operations involves 50 acres of surface disturbance and is located at Section 33, T.31N. R.43E. This Plan of Operations has been pending since December 2005.

Mining – the BLM has been apprised of a potential hard rock mine development located in the CESA. This mine is anticipated to be approximately 900 acres in size (all facilities); currently is not planned for dewatering of the pit; and has a potential mine life of ten (10) plus years.

4.4 CUMULATIVE EFFECTS FOR THE PROPOSED ACTION

4.4.1 Air Quality

Past and present actions have generated fugitive dust, principally from surface disturbing activities and travel on unpaved roads. Reasonably foreseeable future actions are expected to add to these fugitive dust emissions, although the increases could vary depending on a variety of factors.

Fugitive dust would be generated by the proposed action but mitigated by implementation of environmental protection measures specified by Ormat and the best practical dust control measures specified in the NDEP-BAPC Surface Area Disturbance Permit. As a result, the potential for cumulative impacts from the proposed action are minimal.

4.4.3 Cultural Resources

Impacts to the integrity of setting of any subsequently identified National Register listed/eligible sites where integrity of setting is critical to their listing/eligibility could occur from mineral exploration, a wind farm and geothermal development activities. Construction activities could increase the likelihood of vandalism of cultural sites.

Effects to cultural resources could be prevented by site avoidance and by prosecuting offenses under the Archaeological Resources Protection Act. In some cases archaeological monitors (archaeologists permitted by Nevada BLM) may be required by the BLM to ensure that sites are avoided by the project activities. If all sites that are determined eligible for inclusion on the NRHP are avoided, and sites whose NRHP status is unevaluated are also avoided, then this project will have no effect to historic properties and the cumulative effect will be negligible.

4.4.3 Native American Religious Concerns

Over the last 15 to 20 years, BLM and the tribes have witnessed an increase in the use of lands administered by BLM, by various groups, organizations, and individuals. New ways to utilize the public lands are also on the rise. Livestock grazing, pursuit of recreation opportunities, hunting/fishing, Oil, Gas, Geothermal, and Mining leasing, exploration and development, along with relatively “newer” uses such as OHV use, interpretive trails, and mountain biking are among many increasing activities within the BLM MLFO administrative boundary. In addition to all the existing, growing, and developing uses of the public lands, fluid mineral leasing, exploration and development would continue to contribute to the general decline in sites and associated activities of a cultural, traditional, and spiritual nature.

It is believed that cultural resources, including tribal resources and sites of cultural, traditional, spiritual use and associated activities are increasingly in danger of losing their physical and spiritual integrity. At one time central and northern Nevada contained some of the more remote and undeveloped locations in the Great Basin. However, as populations grow, public interest in utilizing lands administered by the BLM increases and thus the potential for the decline of culturally sensitive areas also increases. Diverse world views, social and spiritual practices, economic and employment pursuits, resource utilization, and traditions and beliefs often conflict with each other. Because traditional lands encompass the majority of the State of Nevada including the BLM Mount Lewis administrative area, it is imperative that BLM and affected Tribes remain flexible and open to productive and proactive communication in order to assist each other in making decisions that will significantly reduce or eliminate any adverse affects to all party’s interests, resources, and/or activities.

4.4.4 Wildlife (Including Threatened and Endangered Species, Special Status Species and Migratory Birds)

Additional wildlife habitat could be disturbed by the additional mineral exploration activities and activities proposed under the Plan of Operations and through the creation of roads and other surface disturbing activities associated with the RFFAs. Wildlife habitat directly disturbed by

these activities would be “lost” until reclaimed. General human activity and generated noise could also keep some animals away from habitat not directly affected by surface disturbance. The amount of this direct and indirect surface disturbance expected from the cumulative projects is a small portion of the CESA. There is comparable wildlife habitat in the vicinity and region, and wildlife should be able to move away from small areas of direct disturbance and into adjacent suitable habitat. Reclamation of disturbed areas, as proposed by the Project, could reestablish habitat for wildlife.

Threatened and Endangered Species

As the proposed Project would have no effect on threatened and endangered species, there would be no cumulative impacts.

Special Status Species

The activities associated with the RFFAs would not be allowed in areas where there would be a negative impact on special status species. Implementation of mitigation measures, as identified for the proposed Project, could help to reduce the potential for adverse effects if also implemented for the other actions.

Migratory Birds

The amount of surface disturbance which may be created within the CESA by the RFFAs would be a very small portion of the CESA. Mitigation measure(s) requiring inventories for migratory bird nests and limiting ground disturbing activities, if conducted during the migratory bird nesting season, would help to reduce the potential adverse effects if also implemented for the other actions.

4.4.5 Invasive, Nonnative Species

Past and present actions may and have the potential to introduce and contribute to the spread of noxious weeds, invasive and nonnative species (seed and vegetative plant parts) within the CESA, and the same may be expected from the RFFAs. Ongoing mineral exploration activities would cause the most extensive surface disturbance and would present the greatest opportunity for noxious weed, invasive and nonnative species introduction and proliferation. The number and size of construction vehicles and construction activities could lend themselves to transporting noxious weeds, invasive and nonnative species (seed and vegetative plant parts) to areas where they had not previously existed.

Mitigation measures include the inventory and treatment of newly disturbed areas and the washing of construction vehicles and workers’ boots to help reduce the potential effects. Additionally, impacts would be reduced when reclamation (reseeding/re-vegetation) activities commence.

4.4.6 Soils

Additional impacts to soils could be expected to occur from additional mineral exploration and other activities within the CESA. Additional roads could be constructed and mineral exploration holes drilled. Each of these activities would disturb the soils in the affected areas, which would be “lost” until reclaimed following completion of the Project. Mitigation measure(s) requiring the salvaging of topsoil could help reduce the potential effects if implemented for the other actions.

4.4.7 Vegetation

Each of the cumulative activities would disturb and/or remove vegetation in the CESA. Mitigation measure(s) requiring timely reclamation and re-seeding of disturbed areas, as proposed by the Project, would reduce impacts to vegetation. The contribution of the proposed Project to these cumulative effects on vegetation would be minimal.

4.4.8 Water Quality and Quantity

Impacts to water quality could be expected to occur from additional mineral exploration and other activities within the CESA. Additional roads could be constructed and mineral exploration holes drilled. Each of these activities would have the potential to degrade surface water quality in the affected areas, although measures requiring the implementation of best management practices for erosion and sedimentation could help reduce the potential effects if implemented for the other actions. None of the past, present or reasonably foreseeable future actions would add any potential for impacts to the hot springs identified for the Proposed Action.

4.4.9 Wastes (Hazardous and Solid)

The transportation, use, storage and disposal of hazardous materials and wastes are subject to numerous federal, state and local laws and regulations which are intended to protect the public and the environment, and which are applicable to all of these past, present and RFFAs.

Hazardous materials are expected to be used by both the mineral exploration and activities proposed under the Plan of Operations project, including petroleum fuels (principally diesel fuel), hydraulic fluid, lubricants and drilling chemicals and materials. Additional non-hazardous solid waste and liquids would also be generated by the reasonably foreseeable future projects.

Proper handling, storage and disposal of the proposed action hazardous materials, hazardous wastes and solid wastes in conformance with federal and state regulations would ensure that no soil, ground water or surface water contamination would occur from the proposed action. Thus, the potential for cumulative impacts from the hazardous or solid wastes produced by the proposed action would be minimal.

4.4.10 Rangeland

Primary impacts that could occur from the RFFAs would be cumulative increases in vegetation and soil disturbances, which could result in incremental losses in the availability of grazing used for livestock. Some of this reduction in forage would be temporary, until reclaimed, though some could be longer term. No cumulative activities are expected to prevent livestock access to available sources of water in the area.

The amount of surface disturbance which could impact livestock habitat constitutes a small percentage of the grazing allotments. Effects of potential proposed actions on livestock populations would be analyzed and mitigation measures developed to reduce impacts, or restrictions developed to protect livestock. The contribution of the proposed Project to these cumulative effects on grazing management would be minimal. Additionally, impacts would be reduced when reclamation activities commence.

4.4.11 Recreation

The mineral exploration and activities conducted under the Plan of Operations would prevent continued access by recreational users to some of the public lands within the CESA.

Fugitive dust from vehicle traffic on unpaved roads, as well as noise and traffic from cumulative activities, could cause some recreational users to avoid those active portions of the area during the cumulative project construction and operational activities. The contribution of the proposed Project to these indirect cumulative effects on recreation would be minimal.

4.4.12 Visual Resources

The CESA is rated as VRM Class IV (modification). Construction activities associated with the mineral exploration and other RFFAs would result in long-term modifications to the line, form, color, and texture of the characteristic landscape. The creation of roads create strong horizontal linear contrasts. Vegetation and soil removal create color, textural, and linear contrasts with adjacent areas that could be visible long after all the facilities were removed. Constructed structures would have strong geometric and linear shapes, and solid colors, all contrasting with the natural landscapes and continuing throughout the life of the project.

All of these contrasts could be mitigated on a case-by-case basis in order to maintain the area consistent with VRM Class IV. Project components could be sited and/or colored to blend in with the natural and existing horizontal features of the landscape. Disturbed areas could be revegetated to minimize the contrasts. Larger structures could be painted with colors that would blend in with the surrounding landscape.

The contribution of the proposed Project to these cumulative effects on visual resources would be minimal.

4.4.13 Socio-Economic Values

Past and present activities have had a generally positive economic impact. Generally positive economic impacts would also be expected from the RFFAs, as some of the construction and operation activities would be contracted out to local contractors and builders, and some of the required supplies and construction materials could also be purchased from local merchants. Some positive economic impacts could also be realized from the rental of hotel rooms and purchase of meals and entertainment by construction workers.

The contribution of the proposed action to these cumulative effects on socioeconomic values would be minimal to moderate.

4.4.14 Land use Authorizations

Granting of new rights-of-way for non-geothermal development would need to take into consideration existing geothermal leases and mineral claims. No other impacts to land use or realty are expected to occur.

5 COORDINATION AND CONSULTATION

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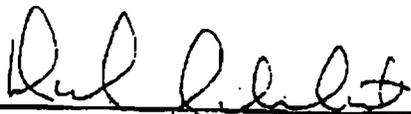
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Appendix A: Geothermal Lease Stipulations

NVN-77483

BLM WINNEMUCCA FIELD OFFICE
GEOHERMAL LEASE STIPULATION
FOR SPECIAL STATUS SPECIES

Penstemon palmerii var. *macranthus*, and Lahontan beardstongue, both special status plant species (T&E/Sensitive) have been identified in the vicinity lands contained in this lease. The lease lands contain similar habitat and associated plant species. Prior to approval of ground disturbing activities, the lessee shall contact the BLM to coordinate the need for a field inventory to determine the presence of this species. If these plant species are identified in the area of proposed surface disturbing activities, then the Winnemucca Field Office Geothermal Lease Stipulations for Threatened, Endangered or Sensitive Species will apply.



Signature of Lessee
DANIEL SCHOCHET
VICE PRESIDENT

July 30, 2005

Date

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RENO, NEVADA

NYN-77483

BLM WINNEMUCCA FIELD OFFICE
GEOHERMAL LEASE STIPULATION
FOR BATS

Two species of bats, the Pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) use adits located within secs. 27 and 34, T. 27 N., R. 40 E., MDM, Nevada. The lease will be subject to the following protection measures:

- a) The No Surface Occupancy restriction will apply to a 0.25-mile radius around the openings of adits occupied by these bats.
- b) Caution should be used to avoid coming in contact with any of the adits during drilling.
- c) Personnel should be cautioned to avoid entering the 0.25-mile radius around the openings of adits occupied by these bats.



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BLM WINNEMUCCA FIELD OFFICE
GEOHERMAL LEASE STIPULATIONS

Noncompetitive areas and all Known Geothermal Resource Areas (KGRA) will be open to geothermal leasing with the following restrictions:

Sage grouse: The following stipulations apply to protect sage grouse and their habitat. Known habitat is defined as those areas where sage grouse have been observed. Potential habitat is an areas where sage grouse may occur. **Known Breeding habitat and Leks:** February through June, but may vary on site specific basis. Avoid all activity within 3.3 km. (2 miles) of known leks during the mating season - March through May, or as determined by Field Office and Wildlife Personnel. No surface occupancy within 3.3 km (2 miles) of known leks at all times. **Nesting Habitat and Brood-rearing habitats:** (April through August per Interim NV Guidelines) and Winter Habitats: (October through March). **Known Habitat:** Avoid all development or exploration activities within 3.3 km (2 miles) or other appropriate distance based on site-specific conditions, of leks, or within 1 km. (0.6 mi.) of known nesting, brood-rearing and winter habitat. **Potential Habitat:** Avoid permanent occupancy of potential habitat.

General Sage Grouse Stipulations: Prior to entry on any lease areas which include known or potential habitat, the lessee (operator) shall contact the appropriate BLM Field Office to discuss any proposed activities.

Controlled Or Limited Surface Use: (avoidance and/or required mitigation measures to be developed) - Are applicable for all leases proposed in areas of crucial deer, antelope, and big horn sheep habitat during migration and critical fawning and kidding areas.

Other Blots: Prior to site development, a survey for invertebrates will be conducted on areas where geothermal surface expressions occur.

Threatened, Endangered or Sensitive Species:

No surface occupancy: No surface occupancy within 1 mile of occupied or identified potential Lahontan Cutthroat Trout (LCT) habitat.

Controlled Or Limited Surface Use: (avoidance and/or mitigation measures to be developed) 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 modifications 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, 16 U.S.C. 1531, as amended, including completion of any required procedure for conference or consultation.

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Wild Horse and Burros:

Controlled or Limited Surface Use: (avoidance and/or mitigation measures to be developed.)

If wild horse or burro populations are located on sites proposed for development, it may be necessary to avoid or develop mitigation measures to reduce adverse impacts to horses. These measures may include providing alternative water sources for horses of equal quality and quantity.

Migratory Birds: Surface disturbing activities during the migratory bird nesting season (March to July) may be restricted in order to avoid potential violation of the Migratory Bird Act.

Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites which may include avoidance or restricting or excluding development during certain areas to times when nests and nesting birds will not be disturbed. During development and production phases, if artificial ponds potentially detrimental to migratory birds are created, these shall be fitted with exclusion devices such as netting or floating balls.

Vegetation

Controlled Or Limited Surface Use: (avoidance and/or mitigation measures to be developed).

All areas of exploration and or development disturbance will be reclaimed including re-contouring disturbed areas to blend with the surrounding topography and using appropriate methods to seed with a diverse perennial seed mix. The seed mix used to reclaim disturbed areas would be "certified" weed free.

Riparian Areas: No surface occupancy within 650 feet (horizontal measurement) of any surface water bodies, riparian areas, wetlands, playas or 100-year floodplains to protect the integrity of these resources (as indicated by the presence of riparian vegetation and not actual water). Exceptions to this restriction may be considered on a case-by-case basis if the BLM determines at least one of the following conditions apply: 1) additional development is proposed in an area where current development has shown no adverse impacts, 2) suitable off-site mitigation will be provided if habitat loss is expected, or 3) BLM determines development proposed under any plan of operations ensures adequate protection of the resources.

Noxious Weeds: During all phases of exploration and development, the lessee shall maintain a noxious weed control program consisting of monitoring and eradication for species listed on the Nevada Designated Noxious Weed List (NRS 555.010).

Cultural Resources

No surface occupancy: No surface occupancy within the setting of National Register eligible sites where integrity of setting is critical to their eligibility.

Controlled Or Limited Surface Use: (avoidance and/or mitigation measures to be developed).

All surface disturbing activities proposed after issuance of the lease are subject to compliance with Section 106 of the National Historic Protection Act (NHPA) and it's implementation through the protocol between the BLM Nevada State Director and the Nevada State Historic Preservation Officer.

Native American

No surface occupancy: No surface occupancy within the setting of National Register eligible Traditional Cultural Properties (TCPs) where integrity of the setting is critical to their eligibility.

For development and production phases, surface occupancy may be limited to a specific disturbed

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or precluded at hot springs, pending conclusion of the Native American consultation process. All development activities proposed under the authority of this lease are subject to the requirement for Native American consultation prior to BLM authorizing the activity. Depending on the nature of the lease developments being proposed and the resources of concerns to tribes potentially effected, Native American consultation and resulting mitigation measures to avoid significant impacts may extend time frames for processing authorizations for development activities, as well as, change in the ways in which developments are implemented.

Paleontological Resources

Where significant paleontological resources are identified, mitigating measures such as data recovery, restrictions on development, and deletion of some areas from development may be required on a case by case basis.

Water Resources

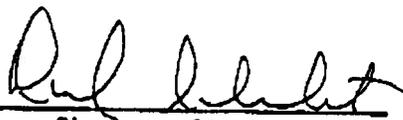
As exploration and development activities commence, the operator shall institute a hydrologic monitoring program. The details of the monitoring programs will be site specific and the intensity shall be commensurate with the level of exploration. For example, if the proponent will be conducting seismic studies the monitoring would be limited to the identification of water resources to be monitored as activities continue; if a drilling program were to be undertaken the number of aquifers encountered, their properties, their quality, and their saturated thickness would be documented. The information collected will be submitted to the Bureau of Land Management and will be used to support future NEPA documentation as development progresses. Adverse impacts to surface expressions of the geothermal reservoir (hot springs), and Threatened and Endangered Species habitat are not acceptable. The lessee will monitor the quality, quantity, and temperature of any hot springs or other water resource within the project area whenever they are conducting activities which have the potential to impact those resources. If adverse impacts do occur, BLM will require the lessee to take corrective action to mitigate the impact. Corrective action may include shutting down the operation. These are in addition to the other stipulations. These are LEASE stipulations, not operational, the information gathered under the monitoring stipulation will be used to identify future impacts at the operational stage.

Lands & Realty

No drilling, including exploration or development activities within linear Rights-of-Way

Hazardous Materials

Prior to exploration and development, an emergency response plan will be developed to include contingencies for hazardous material spills and disposal.



Signature of Lessee
DANIEL SCHOCHET
VICE PRESIDENT

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NVN-77483

Stipulations to be applied to the portion of Geothermal Lease Application NVN-77483 located in the Shoshone-Eureka Planning Area of the Battle Mountain Field Office.

	<p>The operator would be required to implement at the direction of the Assistant Field Manager testing of emissions for H2S and other noxious / deadly gases where there is indication that these gases may occur.</p>
	<p>Cultural resources would be avoided and mitigation measures would be developed on a case-by-case basis as required by regulations, lease terms and attached stipulations developed during site specific NEPA analysis.</p>
	<p>As surface disturbing activities occur, the BLM would require that the operator monitor the water temperature and outflow of water from local hot springs and existing wells as directed by the Assistant Field Manager. If the temperature and outflow of the water from the spring or well were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM would require the operator to take corrective actions. Failure of the operator to take the corrective measures as directed could result in BLM's terminating the operation.</p>
	<p>The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The special status species list is reviewed and / or updated annually and as species are added, new mitigations / stipulations may add further restrictions. 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 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.</p> <p>Exploratory endeavors on the public lands would require a Special Status Species review, and may require a field survey for the presence of Special Status Species. Potential impacts to Special Status Species would be analyzed on a case-by-case basis. Mitigation measures would be developed on an individual project basis depending upon the results of the survey.</p> <p>Springs within 1/2 mile of exploration activities would be inventoried.</p>

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by BLM approved and supervised personnel for the presence of invertebrates. If a rare genus, such as *Pyrgulopsis*, is found, identification to species and monitoring of effects of the proposed action would be required and site-specific mitigation may be developed by the BLM.

BLM could require measures listed below for activities in sage grouse and ferruginous hawk habitat.

Sage grouse:

Operations would avoid active leks (strutting grounds) by 2 miles during strutting season (see Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada, October 2000). Approximate dates: March 1 - May 15

Operations would avoid nesting and brood rearing habitat (especially riparian habitat where broods concentrate beginning usually in June) by ½ mile during the time such areas are in use. Approximate dates: April 1 - August 15

Operations would avoid sage grouse wintering habitat by ½ mile while occupied. Most known wintering grounds in the Shoshone-Eureka Resource Area occur at high elevations and are not likely to be affected. Avoidance dates would vary with severity of the winter.

BLM would limit the disturbance to and fragmentation of all known sage grouse habitat.

Ferruginous hawks:

Operations would avoid active nests by ½ mile. Approximate dates: March 15 - July 1

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All applicants for exploration permits would be required to submit a surface water inventory to the Assistant Field Manager before authorization would be granted. The inventory would include a map of appropriate scale (such as 1:24,000) indicating the location of all surface water on public land within 1/2 mile radius from the surface-disturbing activity.

At the commencement of surface disturbing activities for the drilling of exploration wells, the BLM would require that the drilling company monitor the water temperature and / or outflow of water from local springs and existing wells as directed by the Assistant Field Manager. If the temperature and outflow of the water from the spring or well were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM would require the operator to take corrective actions. Failure of the operator to take the corrective measures as directed could result in BLM's terminating the operation.

Results would be reported to Federal and State agencies on the status of these hydrologic systems during drilling.

Impacts include, but are not limited to, the following:

- Change in water temperature
- Change in discharge rate
- Substantial decrease in water table level
- Surface subsidence

In the event of impacts to surface or subsurface waters, determined by the Assistant Field Manager to be more than negligible, or if a violation of Federal or State water quality standards occurs, the Assistant Field Manager would assess the situation, and may require the operator to amend, relocate or discontinue operations. If operations were terminated, the BLM would develop and the operator would implement remediation measures.

Typical measures include:

- No use of the surface water;
- Limitations on the type of equipment that may be used; and
- Restrictions of activities during certain times of the year.

Surface waters, wetlands and riparian areas would be avoided as much as possible. No exploration activities should occur within 100 feet of riparian areas.

The NOTICE OF INTENT TO CONDUCT GEOTHERMAL RESOURCE EXPLORATION OPERATIONS (Form 3200-9), terms and conditions, number 10 states that "Vegetation shall not be disturbed within 300 feet of waters designated by the Authorized Officer, except at approved stream crossing."

Where surface waters, wetlands and riparian areas cannot be avoided (100 feet for non-surface disturbing exploration activities and 300 feet for surface disturbing exploration activities), mitigation would be developed on a case-by-case basis.

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	<p>Typical measures include: No use of the surface water; Limitations on the type of equipment that may be used; and Restrictions of activities during certain times of the year.</p> <p>The BLM would require that the drilling company monitor the temperature and outflow of water from local hot springs. If the temperature and / or outflow of water from a spring were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM would require the operator to take corrective action. Failure of the operator to take the corrective measures as directed could result in BLM's terminating the operation.</p>
	<p>Areas to be involved in surface disturbing activities would be inventoried for the presence of invasive, nonnative species and treated if present.</p> <p>The exterior of all vehicles and heavy equipment would be cleaned by water before entering public lands to do work. To minimize the possibility for contamination, a designated wash area would be designated by the BLM and would be established and monitored by the operator in high use areas.</p> <p>The boots of operators and other persons working in the areas would be cleaned of seed before coming onto BLM lands.</p> <p>The BLM would develop and the operator would implement a weed treatment program from the time operation commences until the site is abandoned. Seed and mulch used to reclaim disturbed areas would be free of invasive nonnative species.</p> <p>Operator and workers would driving through or parking in areas where invasive nonnative species occur.</p> <p>When sites are abandoned, they would be inventoried for the presence of invasive nonnative species and treated if present.</p>
	<p>Avoid existing rights-of-way where possible. Proposed leases would not be allowed to overlap existing land use authorizations if they would adversely affect the valid existing authorization.</p>
	<p>If operations cause a water source to become unavailable to livestock, the Authorized Officer may require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for livestock.</p> <p>If the lease area is within a grazing allotment, the Assistant Field Manager may require additional measures, including seasonal restrictions or no surface occupancy.</p>
	<p>None identified.</p>

RECEIVED
 Bur. of Land Management
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 RENO, NEVADA

	<p>Disturbed areas would be reseeded with native or introduced plant species, depending on the site conditions. Disturbed areas would be reseeded with pure live seed (certified weed free) with the mixes in Appendix F.</p> <p>Native vegetation would be used wherever possible.</p> <p>However, to compete with invasive nonnative species, introduced species, as suggested in the seed list in Appendix F, would be used.</p>
	<p>None identified.</p>
	<p>The BLM would limit the amount of ground clearing or other disturbance (such as the creation of cross-country access to drill sites) that an operator may do during the migratory bird nesting season.</p> <p>Areas to be disturbed would be surveyed, by personnel approved and supervised by the BLM to determine the existence and location of any nests. If any nests were located, the nest would be avoided by 1/4 mile.</p> <p>If the nest area cannot be avoided, mitigation would be developed on a case-by-case basis.</p>
	<p>If operations cause a water source to become unavailable to wildlife, the Authorized Officer may require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for wildlife.</p>
	<p>If the lease area is within a wildlife management area, the Assistant Field Manager may require additional measures, including seasonal restrictions or no surface occupancy.</p>
	<p>If operations cause a water source to become unavailable to wild horses, the Authorized Officer may require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for the wild horses.</p>
	<p>If the lease area is within a HMA, the Assistant Field Manager may require additional measures for the protection of wild horses and burros, such as seasonal restrictions.</p>
	<p>Operators would adhere to all Standard Operating Procedures as outlined in this EA, unless specifically waived by the Assistant Field Manager.</p>
	<p>Because playas are important recreational places, apt to have cultural sites nearby and provide critical habitat for some migratory waterbirds and shorebirds, including Special Status Species such as the Snowy Plover, mitigation measures would be developed on a case-by-case basis. Mitigation may include no surface occupancy and seasonal restrictions.</p>

Signature of Lessee
DANIEL SCHOCHET
VICE PRESIDENT

July 30, 2005
Date

RECEIVED
Bur. of Land Management

9:00 A.M. JUL 01 2005

NEVADA STATE OFFICE
RENO, NEVADA

Serial Number N-74883

RECEIVED NSO BLM
General Stipulations for Leasing Geothermal Resources
Managed by the Winnemucca Field Office (Winn Stip)

General Sage Grouse Stipulation

Prior to entry on any lease areas which include known or potential habitat, the lessee (operator) shall contact the appropriate BLM Field Office to discuss any proposed activities.

Other Biota

Prior to site development, a survey for invertebrates will be conducted on areas where geothermal surface expressions occur.

Controlled Or Limited Surface Use (Avoidance and/or Mitigation Measures To Be Developed)

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 modifications 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, 16 U.S.C. 1531, as amended, including completion of any required procedure for conference or consultation.

Wild Horse and Burros

If wild horse or burro populations are located on sites proposed for development, it may be necessary to avoid or develop mitigation measures to reduce adverse impacts to horses. These measures may include providing alternative water sources for horses of equal quality and quantity.

Migratory Birds

Surface disturbing activities during the migratory bird nesting season (March to July) may be restricted in order to avoid potential violation of the Migratory Bird Act. Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites which may include avoidance or restricting or excluding development during certain areas to times when nests and nesting birds will not be disturbed. During development and production phases, if artificial ponds potentially detrimental to migratory birds are created, these shall be fitted with exclusion devices such as netting or floating balls.

Vegetation

All areas of exploration and or development disturbance will be reclaimed including re-contouring disturbed areas to blend with the surrounding topography and using appropriate methods to seed with a diverse perennial seed mix. The seed mix used to reclaim disturbed areas would be "certified" weed free.

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Riparian Areas

No surface occupancy within 650 feet (horizontal measurement) of any surface water bodies, riparian areas, wetlands, playas or 100-year floodplains to protect the integrity of these resources (as indicated by the presence of riparian vegetation and not actual water). Exceptions to this restriction may be considered on a case-by-case basis if the BLM determines at least one of the following conditions apply: 1) additional development is proposed in an area where current development has shown no adverse impacts, 2) suitable off-site mitigation will be provided if habitat loss is expected, or 3) BLM determines development proposed under any plan of operations ensures adequate protection of the resources.

Noxious Weeds

During all phases of exploration and development, the lessee shall maintain a noxious weed control program consisting of monitoring and eradication for species listed on the Nevada Designated Noxious Weed List (NRS 555.010).

Cultural Resources**Controlled Or Limited Surface Use (Avoidance and/or Mitigation Measures To Be Developed).**

All surface disturbing activities proposed after issuance of the lease are subject to compliance with Section 106 of the National Historic Protection Act (NHPA) and its implementation through the protocol between the BLM Nevada State Director and the Nevada State Historic Preservation Officer.

Native American**No Surface Occupancy**

No surface occupancy within the setting of National Register eligible Traditional Cultural Properties (TCPs) where integrity of the setting is critical to their eligibility. For development and production phases, surface occupancy may be limited to a specific distance or precluded at hot springs, pending conclusion of the Native American consultation process. All development activities proposed under the authority of this lease are subject to the requirement for Native American consultation prior to BLM authorizing the activity. Depending on the nature of the lease developments being proposed and the resources of concerns to tribes potentially effected, Native American consultation and resulting mitigation measures to avoid significant impacts may extend time frames for processing authorizations for development activities, as well as, change in the ways in which developments are implemented.

Paleontological Resources

Where significant paleontological resources are identified, mitigating measures such as data recovery, restrictions on development, and deletion of some areas from development may be required on a case by case basis.

Water Resources

As exploration and development activities commence, the operator shall institute a hydrologic monitoring program. The details of the monitoring programs will be site specific and the intensity shall be commensurate with the level of exploration. For example, if the proponent will be conducting seismic studies the monitoring would be limited to the identification of water resources to be monitored as activities continue; if a drilling program were to be undertaken the number of aquifers encountered, their properties, their quality, and their saturated thickness would be documented.

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The information collected will be submitted to the Bureau of Land Management and will be used to support future NEPA documentation as development progresses. Adverse impacts to surface expressions of the geothermal reservoir (hot springs), and Threatened and Endangered Species habitat are not acceptable. The leasee will monitor the quality, quantity, and temperature of any hot springs or other water resource within the project area whenever they are conducting activities which have the potential to impact those resources. If adverse impacts do occur, BLM will require the lessee to take corrective action to mitigate the impact. Corrective action may include shutting down the operation.

These are in addition to the other stipulations. These are LEASE stipulations, not operational, the information gathered under the monitoring stipulation will be used to identify future impacts at the operational stage.

Lands & Realty

No drilling, including exploration or development activities within linear Rights-of-Way.

Hazardous Materials

Prior to exploration and development, an emergency response plan will developed that include contingencies for hazardous material spills and disposal.

Signature of Lessee Agent, or Attorney in Fact

10 Sept 2007

Date

Serial Number N-74881

RECEIVED NSO BLM
General Stipulations for Leasing Geothermal Resources
Managed by the Winnemucca Field Office (Winn Stip)

General Sage Grouse Stipulation

Prior to entry on any lease areas which include known or potential habitat, the lessee (operator) shall contact the appropriate BLM Field Office to discuss any proposed activities.

Other Biota

Prior to site development, a survey for invertebrates will be conducted on areas where geothermal surface expressions occur.

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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 modifications 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, 16 U.S.C. 1531, as amended, including completion of any required procedure for conference or consultation.

Wild Horse and Burros

If wild horse or burro populations are located on sites proposed for development, it may be necessary to avoid or develop mitigation measures to reduce adverse impacts to horses. These measures may include providing alternative water sources for horses of equal quality and quantity.

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Surface disturbing activities during the migratory bird nesting season (March to July) may be restricted in order to avoid potential violation of the Migratory Bird Act. Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites which may include avoidance or restricting or excluding development during certain areas to times when nests and nesting birds will not be disturbed. During development and production phases, if artificial ponds potentially detrimental to migratory birds are created, these shall be fitted with exclusion devices such as netting or floating balls.

Vegetation

All areas of exploration and or development disturbance will be reclaimed including re-contouring disturbed areas to blend with the surrounding topography and using appropriate methods to seed with a diverse perennial seed mix. The seed mix used to reclaim disturbed areas would be "certified" weed free.

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2007 SEP 18 AM 9:18

Riparian Areas

No surface occupancy within 650 feet (horizontal measurement) of any surface water bodies, riparian areas, wetlands, playas or 100-year floodplains to protect the integrity of these resources (as indicated by the presence of riparian vegetation and not actual water). Exceptions to this restriction may be considered on a case-by-case basis if the BLM determines at least one of the following conditions apply: 1) additional development is proposed in an area where current development has shown no adverse impacts, 2) suitable off-site mitigation will be provided if habitat loss is expected, or 3) BLM determines development proposed under any plan of operations ensures adequate protection of the resources.

Noxious Weeds

During all phases of exploration and development, the lessee shall maintain a noxious weed control program consisting of monitoring and eradication for species listed on the Nevada Designated Noxious Weed List (NRS 555.010).

Cultural Resources**Controlled Or Limited Surface Use (Avoidance and/or Mitigation Measures To Be Developed).**

All surface disturbing activities proposed after issuance of the lease are subject to compliance with Section 106 of the National Historic Protection Act (NHPA) and its implementation through the protocol between the BLM Nevada State Director and the Nevada State Historic Preservation Officer.

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No surface occupancy within the setting of National Register eligible Traditional Cultural Properties (TCPs) where integrity of the setting is critical to their eligibility. For development and production phases, surface occupancy may be limited to a specific distance or precluded at hot springs, pending conclusion of the Native American consultation process. All development activities proposed under the authority of this lease are subject to the requirement for Native American consultation prior to BLM authorizing the activity. Depending on the nature of the lease developments being proposed and the resources of concerns to tribes potentially effected, Native American consultation and resulting mitigation measures to avoid significant impacts may extend time frames for processing authorizations for development activities, as well as, change in the ways in which developments are implemented.

Paleontological Resources

Where significant paleontological resources are identified, mitigating measures such as data recovery, restrictions on development, and deletion of some areas from development may be required on a case by case basis.

Water Resources

As exploration and development activities commence, the operator shall institute a hydrologic monitoring program. The details of the monitoring programs will be site specific and the intensity shall be commensurate with the level of exploration. For example, if the proponent will be conducting seismic studies the monitoring would be limited to the identification of water resources to be monitored as activities continue; if a drilling program were to be undertaken the number of aquifers encountered, their properties, their quality, and their saturated thickness would be documented.

RECEIVED NSO BLM

2007 SEP 18 AM 9:18

The information collected will be submitted to the Bureau of Land Management and will be used to support future NEPA documentation as development progresses. Adverse impacts to surface expressions of the geothermal reservoir (hot springs), and Threatened and Endangered Species habitat are not acceptable. The lessee will monitor the quality, quantity, and temperature of any hot springs or other water resource within the project area whenever they are conducting activities which have the potential to impact those resources. If adverse impacts do occur, BLM will require the lessee to take corrective action to mitigate the impact. Corrective action may include shutting down the operation.

These are in addition to the other stipulations. These are LEASE stipulations, not operational, the information gathered under the monitoring stipulation will be used to identify future impacts at the operational stage.

Lands & Realty

No drilling, including exploration or development activities within linear Rights-of-Way.

Hazardous Materials

Prior to exploration and development, an emergency response plan will developed that include contingencies for hazardous material spills and disposal.



Signature of Lessee, Agent, or Attorney in Fact

18 Sept 2007

Date

ATTACHMENT C
FINDING OF NO SIGNIFICANT IMPACT

Finding of No Significant Impact For Jersey Valley Geothermal Development Project

DOI-BLM-NV-063-EA08-091

Environmental Assessment (EA), DOI-BLM-NV-063-EA08-091, dated April, 2010, has been reviewed through the interdisciplinary team process; as well as being sent to the Nevada State Clearinghouse and the public for a 15 day comment period. The EA was sent to 99 individuals, groups and companies, including the County Commissioners for Lander and Pershing Counties; and the Lander County Public Land Use Advisory Committee (PLUAC) that had stated an interest in the project. After consideration of the environmental effects of the Bureau of Land Management's (BLM's) preferred alternative (proposed action) described in the EA and supporting documentation, it has been determined that the proposed action identified in the EA is not a major Federal action and will not significantly affect the quality of the human environment; individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as described in 40 CFR 1508.27. Therefore, preparation of an Environmental Impact Statement (EIS) is not required as per section 102(2) (c) of the National Environmental Policy Act (NEPA).

Land Use Plan Conformance

It has been determined that the proposed action is in conformance with the Winnemucca District's Sonoma-Gerlach Management Framework Plan dated July, 1982.

The Jersey Valley area is subject to the BLM Winnemucca District Office's Sonoma-Gerlach Management Framework Plan (MFP), dated July 9, 1982. Objective M-5 of the MFP states "Make energy resources available on all public lands and other lands containing federally owned minerals." The MFP provides for the development of geothermal resources in noncompetitive areas and all Known Geothermal Resource Areas (KGRAs) except those which are areas of significant environmental conflict or have historical and/or cultural significance.

It has been determined that the proposed action is in conformance with the approved Shoshone-Eureka Resource Management Plan of March, 1986.

The northern half of the proposed transmission line is administered by the BLM through the Mount Lewis Field Office (MLFO). The transmission line area is subject to the BLM Shoshone-Eureka Resource Management Plan (RMP), which was approved in 1986.

Part II, Section E, "Management Actions Not Expressly Addressed by the Resource Management Plan," of the RMP includes the section "Minerals Objectives and Management Decisions," brought forward unaltered from the earlier BLM "Management Framework Plan" (Record of Decision, page 29). Minerals Objectives 1, 2 and 3 lead to Management Decision #2 (Leaseable Minerals - Geothermal Steam). The three objectives are:

- Objective 1: Make available and encourage development of mineral resources to meet national, regional and local needs consistent with national objectives for an adequate supply of minerals.
- Objective 2: Assure that mineral exploration, development and extraction are carried out in such a way as to minimize environmental and other resource damage and to provide, where legally possible, for the rehabilitation of lands.
- Objective 3: Develop detailed mineral resource data in areas where different resources conflict so that informed decisions may be made that result in optimum use of the lands.

Management Decision #2 (Leasable Minerals – Geothermal Steam), states that: “All areas designated by the BLM as prospectively valuable for geothermal steam will be open for exploration and development unless withdrawn or restricted from mineral entry. All public lands disposed of in these areas will have the geothermal resources reserved to the federal government.” (BLM 1987).

The proposal is consistent with the plans and policies of neighboring local, county, state, tribal and federal agencies and governments.

This finding and conclusion is based on the consideration of the Council on Environmental Quality’s (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA.

Context:

In April, 2009 the Mount Lewis Field Office (MLFO), of the Bureau of Land Management (BLM), received an application from Ormat Nevada Incorporated (Ormat) which filed an Operating Plan (OP), Utilization Plan (UP) and Plan of Development (POD) for both the Jersey Valley and Buffalo Valley Geothermal Power Plants and associated infrastructure. On May 17th, 2010, the Nevada State Office of the Bureau of Land Management was advised by Ormat of the Company’s intention to relinquish all of its Buffalo Valley geothermal leases. This FONSI and associated documents now reflect this change by addressing *only* the Jersey Valley power plant development, the plant’s related infrastructure, and the transmission power line and Bannock Substation.

The infrastructure included a 27.59 mile power line, injection and production wells for the plants’ geothermal injection and production well fields; pipelines to transport geothermal fluids from the well fields and return pipelines to the injection well fields; construction a new Bannock Substation that will connect the produced electricity to the existing Nevada power grid; storm water diversion dikes/ditches; and roads to access and maintain this infrastructure.

Total permanent surface disturbance is expected to be approximately 85 acres. The life of the project, as currently projected, is 50 years, at which time the entire project will be decommissioned and reclaimed. A total of 30 Megawatts of electrical energy per year is projected to be generated by the project.

The application for the ROW amendment is made under the authority of Section 504 of the Federal Land Policy and Management Act of 1976, as amended, (FLPMA).

Intensity:

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

The EA considered both beneficial and adverse impacts of the applications and resulting project construction. The proposal would result in a reliable renewable energy power supply to both Nevada and National power grids. It is likely that the direct jobs for the construction and permanent work force will increase both Pershing and Lander County payroll base. The indirect jobs created to support the new construction and permanent jobs will also add to the Counties' payrolls. Building assessments, depending on each Counties assessment process, should also add the County coffers. Adverse impacts of the proposed Project and appurtenant facilities are minimal or minimized through mitigation and geothermal lease stipulations, as described in the EA, POD, and OP and UP.

None of the environmental impacts discussed in detail in Chapters Three and Four of the EA are considered significant.

2) *The degree to which the proposed action affects public health or safety.*

The effects of the proposed action on public health and safety are considered to be positive. Ormat's compliance with the EA's mitigation and the lease stipulation requirements ensure the public's and Ormat's work forces' safety.

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

The proposed project area has been extensively surveyed for cultural resources (Cultural Reports BLM-6-2763, BLM-6-2763-1, BLM-6-2763-2, and BLM-6-2720). All surface disturbing activities associated with the proposed Project will avoid the National Register of Historic Places (NHRP) eligible sites, and those sites whose NHRP eligibility remains unevaluated. A buffer of approximately 30 to 50 meters will be established around eligible and unevaluated cultural sites that lie very close to project activities. When initial construction is close to the buffered areas, an archaeological monitor shall be present to ensure that NHRP eligible sites and unevaluated cultural sites are not disturbed. The archaeological monitor will be an archaeologist who is currently permitted by the Nevada BLM to work on the Winnemucca and Battle Mountain Districts that comprise the project areas. As such, the proposed Project would have no impact on any archaeological sites that are either unevaluated or recommended eligible for nomination to the National Register of Historic Places (NHRP). As a result, there would be no direct, indirect or cumulative impacts to cultural resources from the proposed action, as described in Chapters Three and Four of the EA.

The “wetlands” potentially impacted by the Project is the Jersey Valley Hot Springs. Currently, there are no direct impacts projected to occur to the Hot Springs that may result by implementing the project. The lease stipulations for all of the geothermal leases provide for no impacts to the Jersey Valley Hot Springs as a result of Ormat’s project. If Ormat is unable to mitigate any impacts to the Hot Springs that may occur, operations by Ormat are required to cease. The EA provides specific mitigation should monitoring of the Hot Springs indicate any changes in flow or temperature to the Hot Springs.

There are no park lands, prime or unique farm lands, wild and scenic rivers, ecological critical areas, or Areas of Critical Environmental Concern that will be impacted by the project.

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

The proposed action is not expected to be controversial. Renewable energy projects such as the Jersey Valley Geothermal Power Plants are important aspects of the Nation’s goal of reducing dependence on foreign oil imports. This project will also help meet Nevada’s renewable energy goals.

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

Insufficient information is currently available to know the nature of and relationship between the geothermal reservoirs to be produced for the proposed Project and the thermal reservoirs from which the Hot Springs flow. The geothermal leases on which this proposed project would be developed contain stipulations which require the monitoring of the quality, quantity and temperature of the adjacent Hot Springs; and prohibit adverse impacts to these Hot Springs from lease activities (see Appendix A of the EA for these lease stipulations). To determine if adverse changes to the Hot Springs may be occurring, and to comply with federal geothermal lease stipulations applicable to this proposed Project, a progressive geothermal resource monitoring program will be implemented. Should this monitoring program indicate that adverse impacts to the Hot Springs may be occurring; the unit operator would be required to retain a competent consultant, acceptable to the BLM, to evaluate the collected data and recommend appropriate, reasonable mitigation measures. A group consisting of the applicable stakeholders would be convened to review the recommended measures. Such mitigation measures may include providing compensation to the current water rights holder, if any; providing supplemental geothermal fluids to the affected Hot Springs; and/or the implementation of geothermal reservoir management techniques (such as altering geothermal production and injection well pressures, locations and depths), which are often employed to change the pressure distribution in geothermal reservoirs to modify or reverse adverse pressure changes. The effectiveness of any implemented mitigation measures and/or reservoir management techniques could be evaluated by the ongoing information collected by the geothermal reservoir monitoring program, and adjusted as necessary.

Ultimately, if impacts to the Jersey Valley Hot Springs cannot be mitigated, the lease stipulations require Ormat to cease operations.

Based on the monitoring and proposed mitigation, as well as the lease stipulation that would require Ormat to cease operations if their project impacts the Jersey Valley Hot Springs, this unknown effect does not meet the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA.

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

The proposed action is in concert with National direction to develop renewable energy resources, including generation of electricity using geothermal resources. The proposed action has been found to cause no significant effects to the environment and does not represent a decision in principle.

There are other geothermal lease holders adjacent to the current Ormat leases. There are no drilling exploration programs on these leases; and currently no applications for developing any additional geothermal leases for power generation on these adjacent leases.

Any future actions on public lands within the surrounding area would be analyzed on their own merits and carried out, or not, independently of the action currently proposed.

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

As currently proposed, the project located in the Jersey Valley is a "stand alone" action. The BLM is unaware of any similar geothermal power plants planned for development in Jersey Valley.

Past, present and reasonably foreseeable future actions have been considered in the cumulative impacts analysis in the EA (Chapter 4). The cumulative impacts analysis examined all of the other appropriate actions and determined that the proposed action would not have significant cumulative impacts or incrementally contribute to significant cumulative impacts. In addition, for any actions that might be proposed in the future, further environmental analysis, including assessment of cumulative impacts, would be required prior to authorizing surface disturbing activities.

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

The site of the proposed action, including the power plant, ancillary facilities such as the production and injection well fields, and the power line and associated roads have been extensively surveyed. There would be no loss or destruction of NRHP eligible historic properties (cultural resources) or unevaluated cultural resource sites. Nor would there be loss or destruction of significant scientific, cultural, or historic resources.

The EA's mitigation and permit approvals specifically require Ormat to avoid both identified NRHP eligible sites as well as unevaluated sites. Further, an archaeological monitor approved by the Nevada BLM to work on the Winnemucca and Battle Mountain Districts must be present for each earth disturbing activity that may be proximate to an eligible or unevaluated archaeological site.

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 the ESA of 1973.*

The U.S. Fish and Wildlife Service (FWS) and the Nevada Natural Heritage Program (NNHP) were contacted for information concerning special status species. The FWS (letter of September 12, 2008) and NNHP, in February 2008 provided a Sensitive Taxa Record Search for endangered, threatened, candidate and/or at risk plant and animal taxa recorded within or near the Jersey Valley Unit Area and the proposed transmission line corridor.

No threatened or endangered species were identified in the project area or power line corridor. Both agencies did indicate that some candidate species may occur in the area. The FWS identified concerns that the proposed project activities could potentially impact the greater sage grouse and pygmy rabbit. The NNHP identified (either within the proposed Project areas or a 5 km buffer around the subject lands): Lahontan beardtongue (*Penstemon palmeri* var. *macranthus*), windloving buckwheat (*Eriogonum anemophilum*) and Reese River phacelia (*Phacelia glaberrima*). Habitat may also be available for the Sadas pyrg (*Pyrgulopsis sadai*) and the Dixie Valley pyrg (*Pyrgulopsis dixensis*).

The proposed action is not expected to adversely affect any threatened or endangered species because their habitats do not occur in the project area. Impacts to wildlife species (including threatened, endangered and other sensitive status species) were analyzed in Chapter 3 of the EA.

In order for Ormat to protect or mitigate impacts to all wildlife, including sensitive species and migratory birds, Ormat's Adopted Environmental Protection Measures and the mitigation provided in the EA will require Ormat to:

- The proposed transmission line would also provide raptor protection in compliance with the standards described in the "Suggested Practices for Raptor Protection on Power Lines, The State of the Art in 2006."
- An anti-perching device, (a cone, Kaddas Enterprises type KE1058 or equal) would be installed on the top of each transmission line pole along the entirety of the transmission line (see Figure 15 and Figure 16).
- All power poles will utilize BLM-approved raptor deterrents.
- Bird flight diverters will be attached to the transmission line conductors located

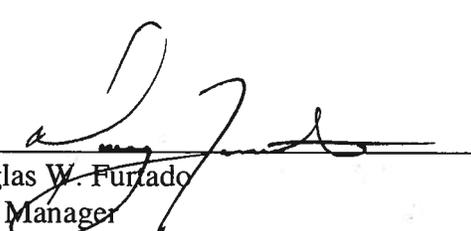
immediately over the open water areas of the Jersey Valley Hot Springs, and out to approximately 100 feet on each side of the Hot Springs. The spacing of the diverters will be approximately 15 feet between each device.

- Should construction be planned within the greater sage-grouse wintering season, prior to the commencement of construction, areas proposed for disturbance will be surveyed by a qualified biologist to determine if wintering concentrations of sage-grouse exist. Any wintering concentrations of birds will be avoided by 0.6 miles.

- Initial ground disturbing activities would not be conducted during the migratory bird nesting season (April 1-August 15) unless necessary, and then only after inventories for migratory birds and nests were conducted by a qualified biologist acceptable to the BLM. This survey would be conducted to identify either breeding adult birds or nest sites within the specific areas to be disturbed. If active nests are present within the areas to be disturbed, Ormat would coordinate with the BLM or appropriate state officials, as applicable, to develop appropriate protection measures for the active nest sites, which may include avoidance, construction constraints, and/or the establishment of buffers.

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

The proposed action will not violate or threaten to violate any Federal, State, or local law or requirement imposed for the protection of the environment.



Douglas W. Furtado
Field Manager
Mount Lewis Field Office

5/25/10

Date

**ATTACHMENT D
RIGHT-OF-WAY GRANT FORMS 2800-14**

Form 2800-
14 (August
1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Issuing Office

Tonopah Field Office

Serial Number

N-88391- Short-term

RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

1. A (right-of-way) is hereby granted pursuant to:
 - a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).
 - b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
 - c. Other (describe)
2. Nature of Interest:
 - a. By this instrument, the holder(s) **Ormat Nevada, Inc.** receives a right to, construct, maintain, and terminate a(n) **access road and 120 kV Transmission Line Corridor** on public lands (or Federal land for MLA Rights-of-Way) described as follows:

Mount Diablo Meridian, Nevada

See attached legal descriptions

Commonly known as the 120 kV Transmission Line
Temporary access road and transmission line corridor for construction purposes only.
 - b. The right-of-way granted herein is 110-feet wide, 115,051.20 feet long or 21.79 miles in length. The right-of-way contains 289.7 acres, more or less.
 - c. This instrument shall terminate on **December 31, 2012**, 3 years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
 - d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.
 - e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental: 43 CFR 2806.11; 43 CFR 2806.12; 43 CFR 2806.20; 43 CFR 2806.23

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 120 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibit(s) A – **Maps** and **B- Stipulations**, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

Connie Hochman
(Signature of Holder)

Assistant Secretary
(Title)

June 2, 2010
(Date)

Douglas W. Furrado
Field Manager, Mt. Lewis Field Office
(Title)

6/4/10
(Effective Date of Grant)

Table 1: Legal Description of Transmission Line Corridor

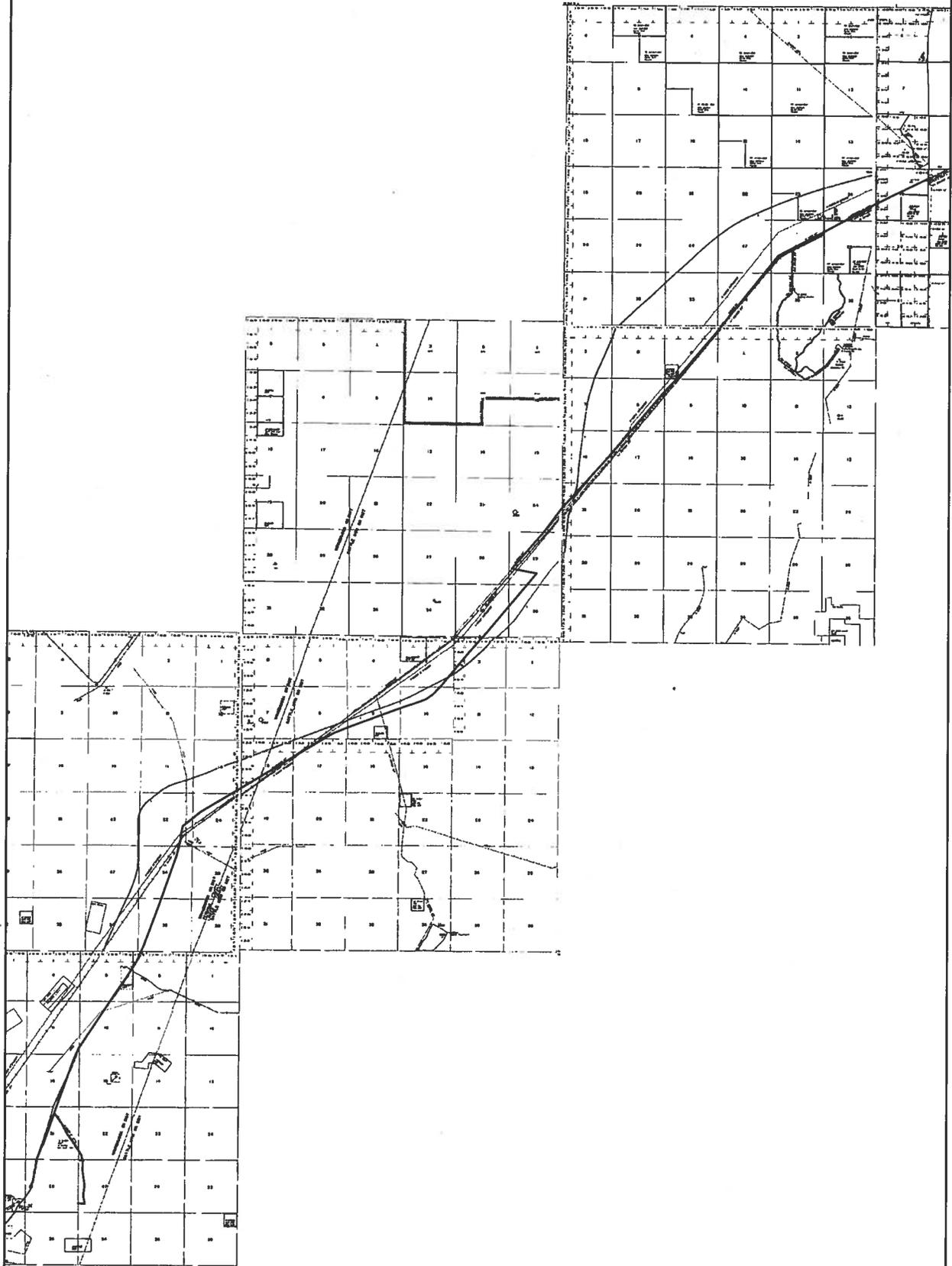
Township/ Range	Section Number	Aliquot Part
<i>On lease: Within Jersey Valley Unit Area</i>		
T27NR40E	27	SW1/4SW1/4, NW1/4SW1/4, SW1/4NW1/4, NW1/4NW1/4
	22	SW1/4SW1/4
	16	E1/2
<i>Off lease: North of Jersey Valley Unit Area to new Switching Station (includes former Buffalo Valley Unit Area)</i>		
T27NR40E	10	NW1/4SW1/4, SW1/4NW1/4, NE1/4NW1/4
	3	SW1/4SE1/4, NW1/4SE1/4, NE1/4SE1/4, SE1/4NE1/4
	2	NW1/4NW1/4
T28NR40E	35	SW1/4SW1/4, NW1/4SW1/4, SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4
	26	SE1/4SW1/4, SW1/4SE1/4, NW1/4SE1/4, SW1/4NE1/4, NW1/4NE1/4
	23	SE1/4SE1/4, NE1/4SE1/4
	24	SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4, NW1/4NE1/4
	13	SE1/4SE1/4
T28NR41E	18	SW1/4SW1/4, SE1/4SW1/4, NE1/4SW1/4, NW1/4SE1/4, SE1/4NE1/4
	17	SW1/4NW1/4, NW1/4NW1/4, NE1/4NW1/4
	8	SW1/4SE1/4, SE1/4SE1/4
	9	NW1/4SW1/4, NE1/4SW1/4, NW1/4SE1/4, SW1/4NE1/4, SE1/4NE1/4
	10	SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4, NW1/4NE1/4
	3	SE1/4SE1/4, NE1/4SE1/4
	2	NW1/4SW1/4, SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4
T29NR41E	35	SW1/4SE1/4, NE1/4SE1/4, SE1/4NE1/4
	36	SW1/4NW1/4, NW1/4NW1/4, NE1/4NW1/4
	25	SE1/4SW1/4, SW1/4SE1/4, NE1/4SW1/4, NW1/4SE1/4, SE1/4NW1/4, NE1/4NW1/4, NW1/4NE1/4
	24	SW1/4SE1/4, SE1/4SE1/4
T29NR42E	19	SW1/4NW1/4, NW1/4NW1/4, NE1/4NW1/4
	18	SE1/4SW1/4, SW1/4SE1/4, NW1/4SE1/4, NE1/4SE1/4, SE1/4NE1/4
	17	SW1/4NW1/4, NW1/4NW, 1/4 NE1/4NW1/4
	8	SE1/4SW1/4, SW1/4SE1/4, NW1/4SE1/4, SE1/4NE1/4

Township/ Range	Section Number	Aliquot Part
	9	NW1/4NW1/4
	4	SE1/4SW1/4, NW1/4SE1/4, SW1/4NE1/4, SE1/4NE1/4, NE1/4NE1/4
	3	NW1/4NW1/4
T30NR42E	34	SW1/4SW1/4, SE1/4SW1/4, NE1/4SW1/4, SE1/4NE1/4, NW1/4NE1/4, NE1/4NE1/4
	27	SE1/4SE1/4
	26	SW1/4SW1/4, NW1/4SW1/4, NE1/4SW1/4, SW1/4NE1/4, SE1/4NE1/4, NE1/4NE1/4
	25	NW1/4NW1/4, NE1/4NW1/4
	24	SW1/4SE1/4, SE1/4SE1/4
T30NR43E	19	NW1/4SW1/4, NE1/4SW1/4, SE1/4NW1/4, SW1/4NE1/4, SE1/4NE1/4

Table 2: Acres of Rights-of-Way

Location	County	Right-of- Way Length	Right-of-Way Width (ft)	Total Right- of-Way Acres
Within JV Unit Area (on lease)	Pershing	3.11 mi.	110 ft (temp)	41.5 (temp)
			90 feet (perm)	33.9 (perm)
Between JV Unit Area and New Switching Station (off lease)	Pershing	6.93 mi.	110 ft (temp)	92.4 (temp)
	Lander	17.55 mi.	90 feet (perm)	75.6 (perm)
			110 ft (temp)	233.2 (temp)
			90 feet (perm)	191.4 (perm)

Jersey Valley Master Title Plat and Transmission Line Map



LEGEND

- 120 kV Power ROW - Alternative
- 120 kV Power ROW - Proposed Action



Map Date: 08/10/09

Buffalo Valley (NVN-83484X)
 Jersey Valley (NVN-83483X)
 ORMAT Technologies

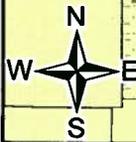
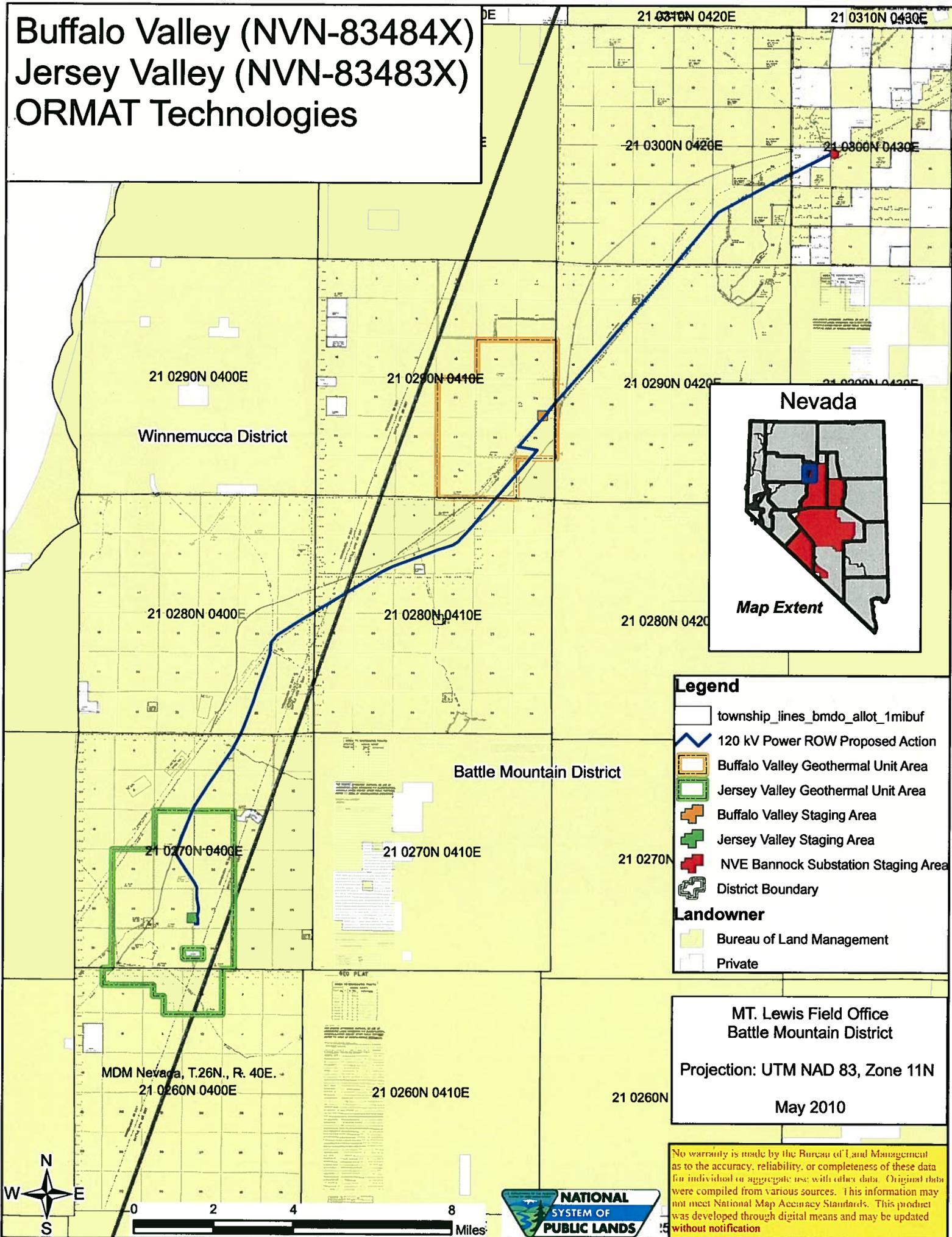
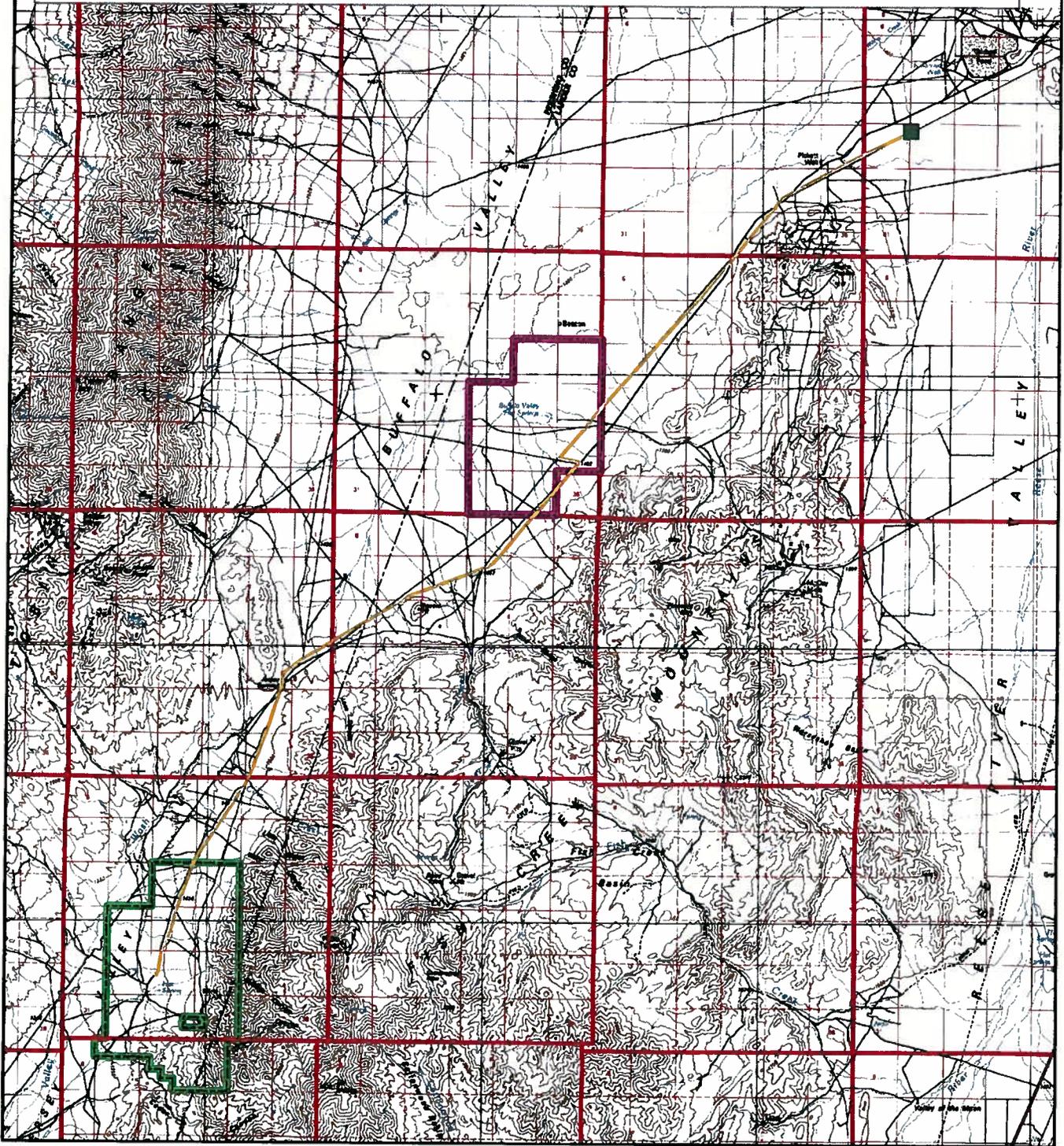
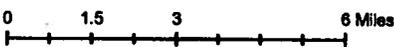


Figure 12: Jersey Valley Unit Area, Buffalo Valley Unit Area and Transmission Line Corridor - Alternative 1



LEGEND

- Bannock Substation - Proposed
- Proposed Power ROW 120kV - Alternative 1
- Buffalo Valley Geothermal Unit Area (NVN-838484X)
- Jersey Valley Geothermal Unit Area (NVN-83483X)



United States Department of the Interior

Bureau of Land Management
 Mount Lewis Field Office
 50 Bastian Road
 Balfie Mountain, NV 89820



*No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

The data shown on the map uses the Universal Transverse Mercator (Zone 11N) Coordinate system and uses the NAD83 projection.

Map Date: November 22, 2008



EXHIBIT B
STIPULATIONS

1.0 General Stipulations:

1. In case of change of address, the Holder shall immediately notify the BLM Authorized Officer.
2. In the event that the public land underlying the right-of-way (N-88391) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the Holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.
3. This grant is subject to all valid rights existing on the effective date of this grant.
4. Holder shall maintain a copy of this Grant and stipulations and Plan of Development on the construction site at all times.
5. All reports, notices or advisories required under the terms, conditions and stipulations of this Right-of-Way Grant are to be made to the BLM's Authorized Officer as follows:

Douglas W. Furtado, Field Manager
Mount Lewis Field Office, Bureau of Land Management
Battle Mountain District Office
50 Bastian Rd.
Battle Mountain, NV 89820
(775) 635-4000
6. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
7. The Holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.
8. Roads and Construction sites shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to: human waste, trash, garbage, vegetation, refuse, oil drums, petroleum products, ashes, and equipment.

9. The Holder shall comply with all applicable Federal, State, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous material, as defined in this paragraph, that will be used, produced, transported or stored on or within the R/W or any of the R/W facilities, or used in the construction, operation, maintenance or termination of the R/W or any of its facilities. "Hazardous material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 43 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101 (14), 42 U.S.C. 9601 (14), nor does the term include natural gas.
10. The Holder of Right-of-Way N-88391 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way Holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the Holder, its agent, or unrelated third parties.
11. The Holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the Plan of Development that accompanied the Application and was approved and made part of the grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the Authorized Officer. A copy of the complete right-of-way grant, including all stipulations and approved plan of development, shall be made available on the right-of-way during construction, operation, and termination to the Authorized Officer. Noncompliance with the above will be grounds for immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
12. The Holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the Holder shall immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the Holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The Holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the Holder shall be responsible for the survey cost.
13. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas on public lands must be approved in writing by the Authorized Officer in advance of excavation. All waste material resulting from construction or use of the site by Holder shall be removed from the site. All waste disposal sites on public land must be

approved in writing by the Authorized Officer in advance of use.

14. The Holder shall mark the exterior boundaries of the right-of-way with a stake and/or lath at 50-foot intervals. The intervals may be varied at the time of staking at the discretion of the Authorized Officer. The tops of the stakes and/or laths will be painted and the laths flagged in a distinctive color as determined by the Holder. The survey station numbers will be marked on the boundary stakes and/or laths at the entrance to and the exit from public land. Holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed and approved by the Authorized Officer. The stakes and/or laths will then be removed at the direction of the Authorized Officer.
15. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the Holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. Emergency use of pesticides shall be approved in writing by the Authorized Officer prior to such use.
16. During the period of May 1 through October 1 of each year, Holder should consider using spark arresters on vehicles and equipment in the project area, due to the potential for fire ignition from project related activities. This includes emission of hot carbon particles from diesel powered equipment, improperly equipped or poorly operating exhaust systems on gas powered vehicles and direct contact of wildland fuels with catalytic converters. Individuals, groups, businesses or corporations found responsible for the ignition of a wild fire may be held liable for the costs associated with the suppression of that fire.
17. The Holder shall permit free and unrestricted public access to and upon the R/W for all lawful purposes, except for those specific areas designated as restricted by the Authorized Officer to protect the public, wildlife, livestock, or facilities constructed within the R/W.
18. Within 90 days of construction completion, the Holder shall provide the Authorized Officer with data in a format compatible with the Bureau's Arc-Info Geographic Information System to accurately locate and identify the right-of-way:

Acceptable data formats are:

 - Corrected Global Positioning System files with sub-meter accuracy or better, in UTM NAD 83; Zone 11;
 - ARCGIS export files on a CD ROM, shapefile, geodatabase.

Data may be submitted in any of the following formats:

 - ARCGIS interchange, shapefile or geodatabase format.
 - CD ROM in compressed or uncompressed format.
19. The Holder shall comply with all applicable Federal, State, and local laws and regulations existing or thereafter enacted or promulgated.
20. In accordance with Federal regulations in 43 CFR 2807.21 any proposed transfer of any right or interest in the right-of-way grant shall be filed with the BLM Authorized Officer. An application for assignment shall be accompanied by a showing of qualifications of the Assignee. The assignment

shall be supported by a stipulation that the Assignee agrees to comply with and to bound by the terms and conditions of the grant to be assigned. No assignment shall be recognized unless and until it is approved in writing by the Authorized Officer.

2.0 Construction Stipulations:

21. The Authorized Officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
22. The Holder shall not initiate any construction or other surface disturbing activities on the right-of-way without the prior written authorization of the Authorized Officer. Such authorization shall be a written notice to proceed issued by the Authorized Officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.
23. The Holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the Authorized Officer. The Holder's representative shall be available for communication with the Authorized Officer within a reasonable time when construction or other surface disturbing activities are underway.
24. Holder will hire an independent third-party Compliance Inspection Contractor, approved by the Authorized Officer, to insure compliance with the terms, conditions and stipulations of this Grant, N-88391. All questions or concerns regarding compliance with the terms, conditions, and stipulations of this Grant shall be directed to the BLM Authorized Officer or Project Manager.
25. Overnight parking and storage of equipment and materials, including staging or stockpiling of same, shall be within 1) previously disturbed areas, 2) areas cleared by biologist and 3) areas inventoried and cleared for cultural resources.
26. Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Where possible and if needed, topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.
27. The Holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The Holder is responsible for consultation with the Authorized Officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).
28. Future modifications, construction of improvements, or major maintenance operations involving disturbance of the land, shall not occur until plans for such actions have been submitted and approved in writing by the Authorized Officer. Any proposals involving new surface disturbance shall require a cultural inventory and may require completion of an environmental assessment.
29. The Holder shall prevent any activities which may cause erosion. Where erosion has resulted, the Holder shall re-vegetate and re-habilitate the location. The Holder is responsible for consultation with the Authorized Officer for an acceptable proposal.
30. Ninety days prior to termination of the right-of-way, the Holder shall contact the Authorized Officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding.

The Authorized Officer must approve the plan in writing prior to the Holder's commencement of any termination activities.

3.0 Wildlife Stipulations:

31. Prior to any planned disturbance in potential migratory bird nesting habitat from April 1 to August 15 (the approximate nesting season), a field survey for migratory birds, their nests, eggs, or young should be performed, in order to prevent violation of the Migratory Bird Treaty Act (MBTA). If any nests, eggs, or young are found either the project should be delayed until the birds have completed their nesting and brood rearing activities, or the project should be re-designed as to not harm the migratory birds, their nests, eggs, or young. A migratory bird is any species of bird **except** upland game species, feral pigeons, European starlings, and English house sparrows. Potential migratory bird nesting habitat is any habitat that may provide nesting opportunity for any species of migratory bird. Any violation of the MBTA can incur penalties up to \$15,000 or 6 months imprisonment, or both per individual offense. Any questions about the Migratory Bird Treaty Act should be referred to the Reno Office of the U.S. Fish and Wildlife Service at (775) 861-6300, or e-mail at "asknevada@fws.gov".

4.0 Cultural Stipulations:

32. Any cultural or paleontological resource (historic or prehistoric site or object) or Native American human remains, funerary item, sacred object, or objects of cultural patrimony discovered by the permit Holder, or any person working on their behalf, during the course of activities on Federal land, shall be immediately reported to the Authorized Officer by telephone, with written confirmation. The permit Holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery will be made by the Authorized Officer.

For cultural resources other than Native American human remains, funerary item, sacred object, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow activities to proceed. The Holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the Authorized Officer after consulting with the permit Holder. Operations may resume only upon written authorization to proceed from the Authorized Officer.

5.0 Bonding Stipulations:

33. The holder shall provide a bond in the amount of \$100,000.00 to be maintained until restoration of disturbed areas and other requirements relative to the construction phase of the project have been accepted by the Authorized Officer. Upon completion, or partial completion of these construction related requirements, the Authorized Officer may terminate or reduce the amount of the bond.
34. Should the bond delivered under this grant become unsatisfactory to the authorized officer, the holder, shall, within 30 days of demand, furnish a new bond.

Form 2800-
14 (August
1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Issuing Office

Tonopah Field Office

Serial Number

N-87409

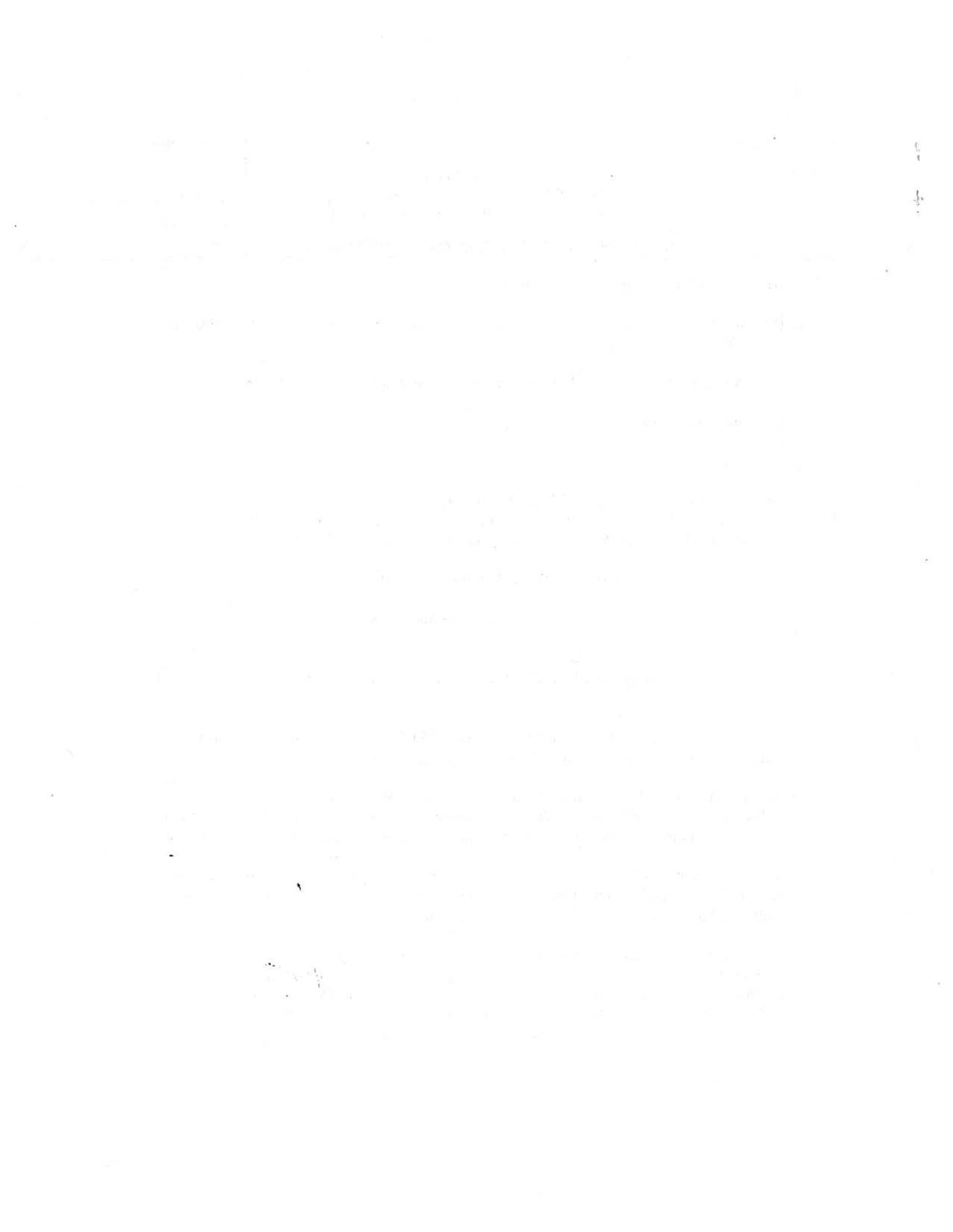
RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

1. A (right-of-way) is hereby granted pursuant to:
 - a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).
 - b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
 - c. Other (describe)
2. Nature of Interest:
 - a. By this instrument, the holder(s) **Ormat Nevada, Inc.** receives a right to, construct, maintain, and terminate a(n) **access road and 120 kV transmission line** on public lands (or Federal land for MLA Rights-of-Way) described as follows:

Mount Diablo Meridian, Nevada

See attached legal descriptions

Commonly known as the 120 kV Transmission Line
 - b. The right-of-way granted herein is 90-foot wide, 115,051.20 feet long or 21.79 miles in length. The right-of-way contains 237.6 acres, more or less.
 - c. This instrument shall terminate on **December 31, 2039, 30** years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
 - d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.
 - e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.



3. Rental: 43 CFR 2806.11; 43 CFR 2806.12; 43 CFR 2806.20; 43 CFR 2806.23

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 120 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibit(s) A – **Maps** and **B- Stipulations**, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

Connie Flechman
(Signature of Holder)

Assistant Secretary
(Title)

June 2, 2010
(Date)

Douglas W. Pardo
Field Manager, Mt. Lewis Field Office
(Title)

6/4/10
(Effective Date of Grant)

Table 1: Legal Description of Transmission Line Corridor

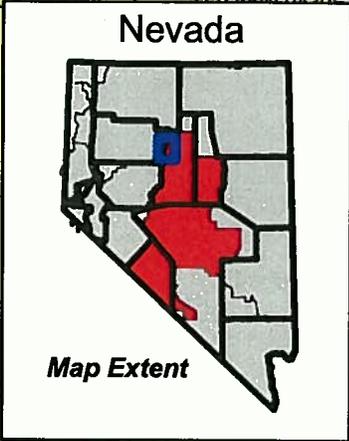
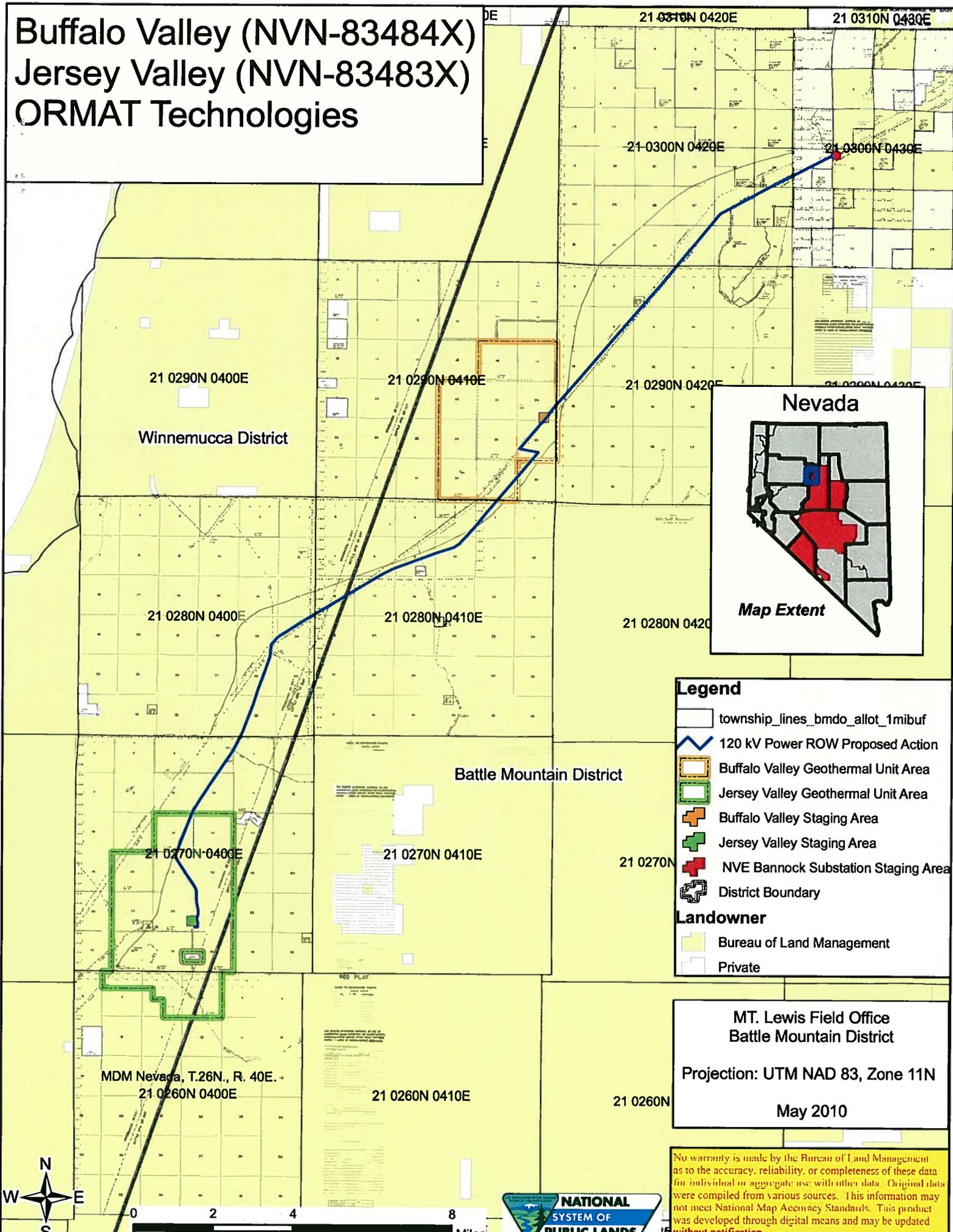
Township/ Range	Section Number	Aliquot Part
<i>On lease: Within Jersey Valley Unit Area</i>		
T27NR40E	27	SW1/4SW1/4, NW1/4SW1/4, SW1/4NW1/4, NW1/4NW1/4
	22	SW1/4SW1/4
	16	E1/2
<i>Off lease: North of Jersey Valley Unit Area to new Switching Station (includes former Buffalo Valley Unit Area)</i>		
T27NR40E	10	NW1/4SW1/4, SW1/4NW1/4, NE1/4NW1/4
	3	SW1/4SE1/4, NW1/4SE1/4, NE1/4SE1/4, SE1/4NE1/4
	2	NW1/4NW1/4
T28NR40E	35	SW1/4SW1/4, NW1/4SW1/4, SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4
	26	SE1/4SW1/4, SW1/4SE1/4, NW1/4SE1/4, SW1/4NE1/4, NW1/4NE1/4
	23	SE1/4SE1/4, NE1/4SE1/4
	24	SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4, NW1/4NE1/4
	13	SE1/4SE1/4
T28NR41E	18	SW1/4SW1/4, SE1/4SW1/4, NE1/4SW1/4, NW1/4SE1/4, SE1/4NE1/4
	17	SW1/4NW1/4, NW1/4NW1/4, NE1/4NW1/4
	8	SW1/4SE1/4, SE1/4SE1/4
	9	NW1/4SW1/4, NE1/4SW1/4, NW1/4SE1/4, SW1/4NE1/4, SE1/4NE1/4
	10	SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4, NW1/4NE1/4
	3	SE1/4SE1/4, NE1/4SE1/4
	2	NW1/4SW1/4, SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4
T29NR41E	35	SW1/4SE1/4, NE1/4SE1/4, SE1/4NE1/4
	36	SW1/4NW1/4, NW1/4NW1/4, NE1/4NW1/4
	25	SE1/4SW1/4, SW1/4SE1/4, NE1/4SW1/4, NW1/4SE1/4, SE1/4NW1/4, NE1/4NW1/4, NW1/4NE1/4
	24	SW1/4SE1/4, SE1/4SE1/4
T29NR42E	19	SW1/4NW1/4, NW1/4NW1/4, NE1/4NW1/4
	18	SE1/4SW1/4, SW1/4SE1/4, NW1/4SE1/4, NE1/4SE1/4, SE1/4NE1/4
	17	SW1/4NW1/4, NW1/4NW, 1/4 NE1/4NW1/4
	8	SE1/4SW1/4, SW1/4SE1/4, NW1/4SE1/4, SE1/4NE1/4

Township/ Range	Section Number	Aliquot Part
	9	NW1/4NW1/4
	4	SE1/4SW1/4, NW1/4SE1/4, SW1/4NE1/4, SE1/4NE1/4, NE1/4NE1/4
	3	NW1/4NW1/4
T30NR42E	34	SW1/4SW1/4, SE1/4SW1/4, NE1/4SW1/4, SE1/4NE1/4, NW1/4NE1/4, NE1/4NE1/4
	27	SE1/4SE1/4
	26	SW1/4SW1/4, NW1/4SW1/4, NE1/4SW1/4, SW1/4NE1/4, SE1/4NE1/4, NE1/4NE1/4
	25	NW1/4NW1/4, NE1/4NW1/4
	24	SW1/4SE1/4, SE1/4SE1/4
T30NR43E	19	NW1/4SW1/4, NE1/4SW1/4, SE1/4NW1/4, SW1/4NE1/4, SE1/4NE1/4

Table 2: Acres of Rights-of-Way

Location	County	Right-of- Way Length	Right-of-Way Width (ft)	Total Right- of-Way Acres
Within JV Unit Area (on lease)	Pershing	3.11 mi.	110 ft (temp)	41.5 (temp)
			90 feet (perm)	33.9 (perm)
Between JV Unit Area and New Switching Station (off lease)	Pershing	6.93 mi.	110 ft (temp)	92.4 (temp)
	Lander	17.55 mi.	110 ft (temp)	233.2 (temp)
			90 feet (perm)	191.4 (perm)

**Buffalo Valley (NVN-83484X)
 Jersey Valley (NVN-83483X)
 ORMAT Technologies**



Legend

- township_lines_bmdo_allot_1mibuf
- 120 kV Power ROW Proposed Action
- Buffalo Valley Geothermal Unit Area
- Jersey Valley Geothermal Unit Area
- Buffalo Valley Staging Area
- Jersey Valley Staging Area
- NVE Bannock Substation Staging Area
- District Boundary

Landowner

- Bureau of Land Management
- Private

**MT. Lewis Field Office
 Battle Mountain District**

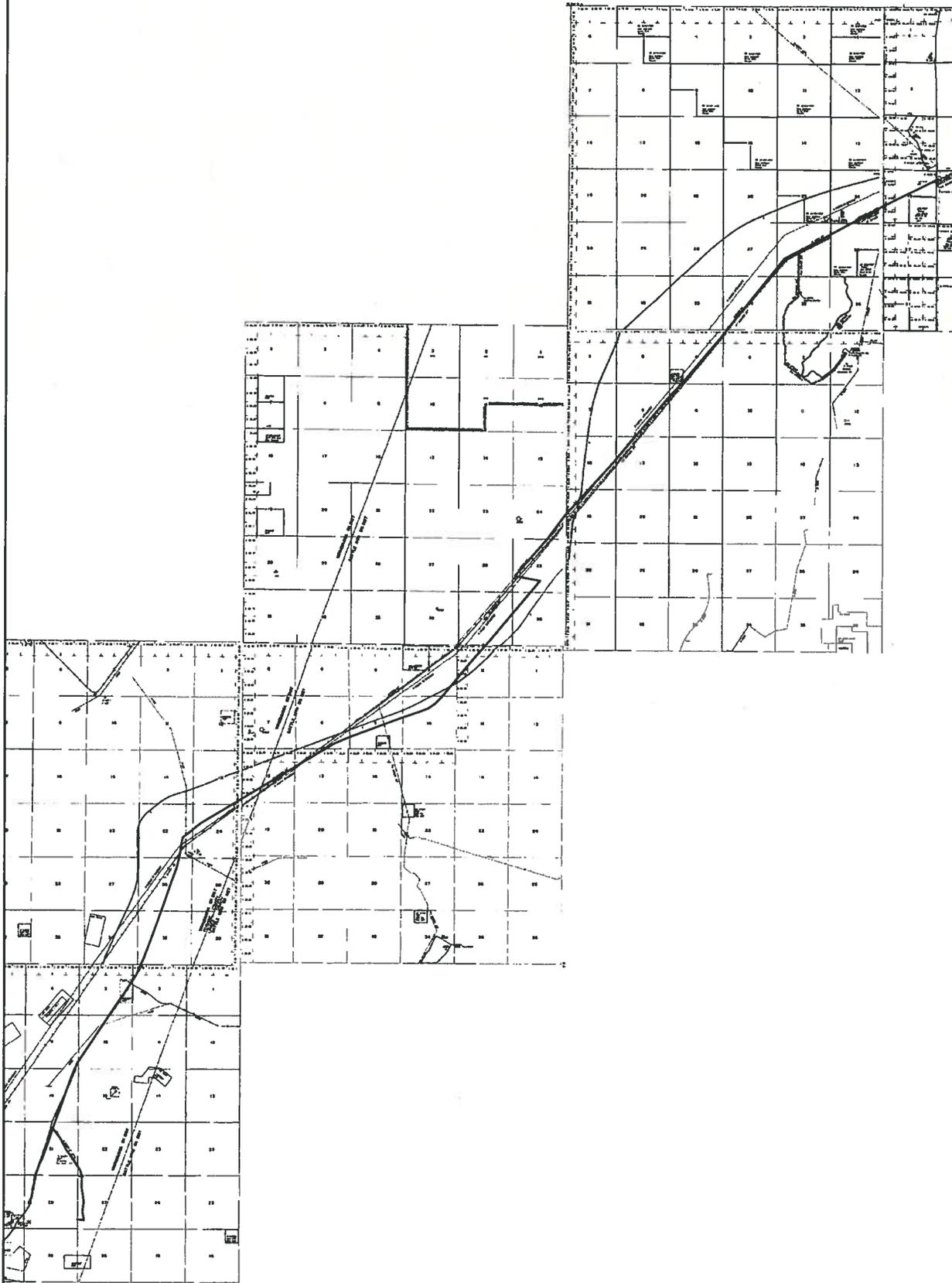
Projection: UTM NAD 83, Zone 11N

May 2010

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



Jersey Valley Master Title Plat and Transmission Line Map



LEGEND

- 120 kV Power ROW - Alternative
- 120 kV Power ROW - Proposed Action



Map Date: 08/10/09

EXHIBIT B

STIPULATIONS

1.0 General Stipulations:

1. In case of change of address, the Holder shall immediately notify the BLM Authorized Officer.
2. In the event that the public land underlying the right-of-way (N-87409) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the Holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.
3. This grant is subject to all valid rights existing on the effective date of this grant.
4. Holder shall maintain a copy of this Grant and stipulations and Plan of Development on the construction site at all times.
5. All reports, notices or advisories required under the terms, conditions and stipulations of this Right-of-Way Grant are to be made to the BLM's Authorized Officer as follows:

Douglas W. Furtado, Field Manager
Mount Lewis Field Office, Bureau of Land Management
Battle Mountain District Office
50 Bastian Rd.
Battle Mountain, NV 89820
(775) 635-4000
6. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
7. The Holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.
8. Roads and Construction sites shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to: human waste, trash, garbage, vegetation, refuse, oil drums, petroleum products, ashes, and equipment.

9. The Holder shall comply with all applicable Federal, State, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous material, as defined in this paragraph, that will be used, produced, transported or stored on or within the R/W or any of the R/W facilities, or used in the construction, operation, maintenance or termination of the R/W or any of its facilities. "Hazardous material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 43 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101 (14), 42 U.S.C. 9601 (14), nor does the term include natural gas.
10. The Holder of Right-of-Way N-87409 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way Holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the Holder, its agent, or unrelated third parties.
11. The Holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the Plan of Development that accompanied the Application and was approved and made part of the grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the Authorized Officer. A copy of the complete right-of-way grant, including all stipulations and approved plan of development, shall be made available on the right-of-way during construction, operation, and termination to the Authorized Officer. Noncompliance with the above will be grounds for immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
12. The Holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the Holder shall immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the Holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The Holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the Holder shall be responsible for the survey cost.
13. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas on public lands must be approved in writing by the Authorized Officer in advance of excavation. All waste material resulting from construction or use of the site by Holder shall be removed from the site. All waste disposal sites on public land must be

approved in writing by the Authorized Officer in advance of use.

14. The Holder shall mark the exterior boundaries of the right-of-way with a stake and/or lath at 50-foot intervals. The intervals may be varied at the time of staking at the discretion of the Authorized Officer. The tops of the stakes and/or laths will be painted and the laths flagged in a distinctive color as determined by the Holder. The survey station numbers will be marked on the boundary stakes and/or laths at the entrance to and the exit from public land. Holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed and approved by the Authorized Officer. The stakes and/or laths will then be removed at the direction of the Authorized Officer.
15. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the Holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. Emergency use of pesticides shall be approved in writing by the Authorized Officer prior to such use.
16. During the period of May 1 through October 1 of each year, Holder should consider using spark arresters on vehicles and equipment in the project area, due to the potential for fire ignition from project related activities. This includes emission of hot carbon particles from diesel powered equipment, improperly equipped or poorly operating exhaust systems on gas powered vehicles and direct contact of wildland fuels with catalytic converters. Individuals, groups, businesses or corporations found responsible for the ignition of a wild fire may be held liable for the costs associated with the suppression of that fire.
17. The Holder shall permit free and unrestricted public access to and upon the R/W for all lawful purposes, except for those specific areas designated as restricted by the Authorized Officer to protect the public, wildlife, livestock, or facilities constructed within the R/W.
18. Within 90 days of construction completion, the Holder shall provide the Authorized Officer with data in a format compatible with the Bureau's Arc-Info Geographic Information System to accurately locate and identify the right-of-way:

Acceptable data formats are:

- Corrected Global Positioning System files with sub-meter accuracy or better, in UTM NAD 83; Zone 11;
- ARCGIS export files on a CD ROM, shapefile, geodatabase.
Data may be submitted in any of the following formats:
 - ARCGIS interchange, shapefile or geodatabase format.
 - CD ROM in compressed or uncompressed format.

19. The Holder shall comply with all applicable Federal, State, and local laws and regulations existing or thereafter enacted or promulgated.
20. In accordance with Federal regulations in 43 CFR 2807.21 any proposed transfer of any right or interest in the right-of-way grant shall be filed with the BLM Authorized Officer. An application for assignment shall be accompanied by a showing of qualifications of the Assignee. The assignment

shall be supported by a stipulation that the Assignee agrees to comply with and to bound by the terms and conditions of the grant to be assigned. No assignment shall be recognized unless and until it is approved in writing by the Authorized Officer.

2.0 Construction Stipulations:

21. The Authorized Officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
22. The Holder shall not initiate any construction or other surface disturbing activities on the right-of-way without the prior written authorization of the Authorized Officer. Such authorization shall be a written notice to proceed issued by the Authorized Officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.
23. The Holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the Authorized Officer. The Holder's representative shall be available for communication with the Authorized Officer within a reasonable time when construction or other surface disturbing activities are underway.
24. Holder will hire an independent third-party Compliance Inspection Contractor, approved by the Authorized Officer, to insure compliance with the terms, conditions and stipulations of this Grant, N-87409. All questions or concerns regarding compliance with the terms, conditions, and stipulations of this Grant shall be directed to the BLM Authorized Officer or Project Manager.
25. Overnight parking and storage of equipment and materials, including staging or stockpiling of same, shall be within 1) previously disturbed areas, 2) areas cleared by biologist and 3) areas inventoried and cleared for cultural resources.
26. Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Where possible and if needed, topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.
27. The Holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The Holder is responsible for consultation with the Authorized Officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).
28. Future modifications, construction of improvements, or major maintenance operations involving disturbance of the land, shall not occur until plans for such actions have been submitted and approved in writing by the Authorized Officer. Any proposals involving new surface disturbance shall require a cultural inventory and may require completion of an environmental assessment.
29. The Holder shall prevent any activities which may cause erosion. Where erosion has resulted, the Holder shall re-vegetate and re-habilitate the location. The Holder is responsible for consultation with the Authorized Officer for an acceptable proposal.
30. Ninety days prior to termination of the right-of-way, the Holder shall contact the Authorized Officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding.

The Authorized Officer must approve the plan in writing prior to the Holder's commencement of any termination activities.

3.0 Wildlife Stipulations:

31. Prior to any planned disturbance in potential migratory bird nesting habitat from April 1 to August 15 (the approximate nesting season), a field survey for migratory birds, their nests, eggs, or young should be performed, in order to prevent violation of the Migratory Bird Treaty Act (MBTA). If any nests, eggs, or young are found either the project should be delayed until the birds have completed their nesting and brood rearing activities, or the project should be re-designed as to not harm the migratory birds, their nests, eggs, or young. A migratory bird is any species of bird **except** upland game species, feral pigeons, European starlings, and English house sparrows. Potential migratory bird nesting habitat is any habitat that may provide nesting opportunity for any species of migratory bird. Any violation of the MBTA can incur penalties up to \$15,000 or 6 months imprisonment, or both per individual offense. Any questions about the Migratory Bird Treaty Act should be referred to the Reno Office of the U.S. Fish and Wildlife Service at (775) 861-6300, or e-mail at "asknevada@fws.gov".

4.0 Cultural Stipulations:

32. Any cultural or paleontological resource (historic or prehistoric site or object) or Native American human remains, funerary item, sacred object, or objects of cultural patrimony discovered by the permit Holder, or any person working on their behalf, during the course of activities on Federal land, shall be immediately reported to the Authorized Officer by telephone, with written confirmation. The permit Holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery will be made by the Authorized Officer.

For cultural resources other than Native American human remains, funerary item, sacred object, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow activities to proceed. The Holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the Authorized Officer after consulting with the permit Holder. Operations may resume only upon written authorization to proceed from the Authorized Officer.

5.0 Bonding Stipulations:

33. The holder shall provide a bond in the amount of \$1,000,000.00 to be maintained until restoration of disturbed areas and other requirements relative to the construction phase of the project have been accepted by the Authorized Officer. Upon completion, or partial completion of these construction related requirements, the Authorized Officer may terminate or reduce the amount of the bond.
34. Should the bond delivered under this grant become unsatisfactory to the authorized officer, the holder, shall, within 30 days of demand, furnish a new bond.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Issuing Office

Tonopah Field Office

Serial Number

N-88390 – Short-term

RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

1. A (right-of-way) is hereby granted pursuant to:
 - a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).
 - b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
 - c. Other (describe)
2. Nature of Interest:
 - a. By this instrument, the holder(s) **Ormat Nevada, Inc.** receives a right to, construct, maintain, and terminate a(n) **short-term access road** on public lands (or Federal land for MLA Rights-of-Way) described as follows:

Mount Diablo Meridian, Nevada

T. 30 N., R. 43 E.,
Sec. 20, W $\frac{1}{2}$ NW $\frac{1}{4}$.

Commonly known as the Bannock Switching Station Access Road
Temporary access road for construction purposes only.
 - b. The right-of-way granted herein is 35-foot wide, 1,310 feet long or 0.248 miles in length
The right-of-way contains 1.05 acres, more or less.
 - c. This instrument shall terminate on **December 31, 2012, 3 years** from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
 - d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.
 - e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental: 43 CFR 2806.11; 43 CFR 2806.12; 43 CFR 2806.20; 43 CFR 2806.23

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 120 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibit(s) **A – Maps** and **B- Stipulations**, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

Connie Hechman
(Signature of Holder)

Assistant Secretary
(Title)

June 2, 2010
(Date)

Douglas W. Furtado
Field Manager, Mt. Lewis Field Office
(Title)

6/4/10
(Effective Date of Grant)

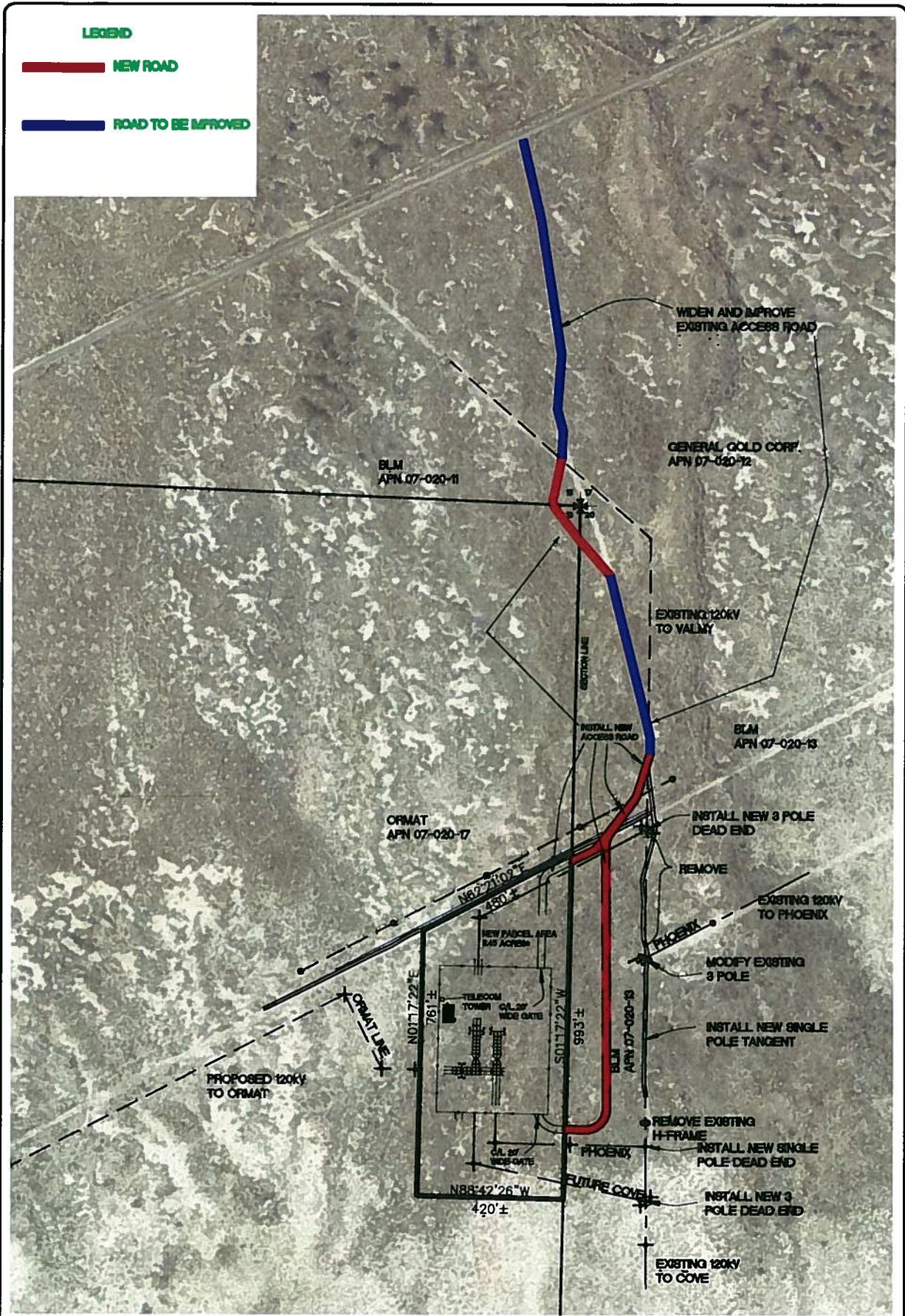


Figure 14: Proposed Substation Layout and Access



1" = 250'

SURVEYOR:	LDL
PHONE NUMBER:	775-834-5391
PROJECT NUMBER:	LR45402LR2
PROJECTOR:	NVSPC 83 US FY

Buffalo Valley Jersey Valley TOWNSHIP 30 NORTH RANGE 43 EAST OF THE MOUNT DIABLO MERIDIAN, NEVADA ORMAT Technologies

LANDER COUNTY
BATTLE MTN SR DIST

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT

TRACT NO.	SECTION	SUBDIVISION
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
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36	1	



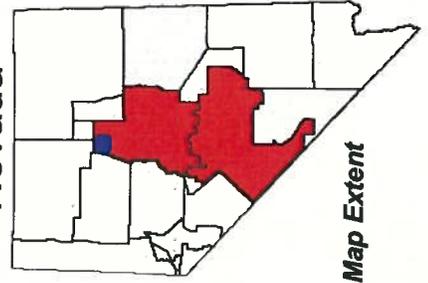
MT-Lewis Field Office
Battle Mountain District

Projection: UTM-NAD 83, Zone 11N

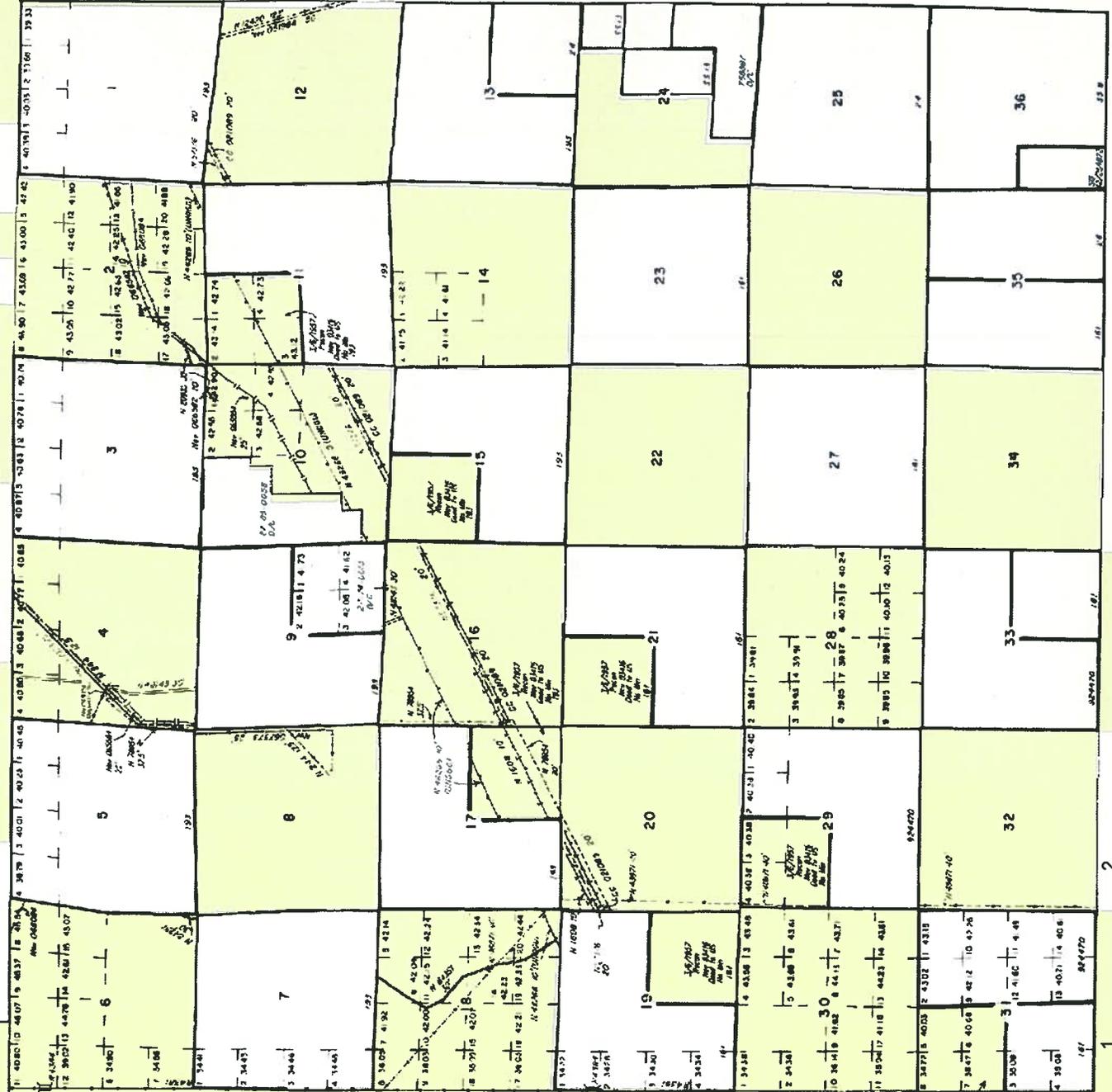
4/22/2010

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Nevada



Map Extent



141 40'38.163" N
100 11' 04.40 0" E

MOVING STATION

SCALE

2 Miles

1

0.5

EXHIBIT B

STIPULATIONS

1.0 General Stipulations:

1. In case of change of address, the Holder shall immediately notify the BLM Authorized Officer.
2. In the event that the public land underlying the right-of-way (N-88390) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the Holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.
3. This grant is subject to all valid rights existing on the effective date of this grant.
4. Holder shall maintain a copy of this Grant and stipulations and Plan of Development on the construction site at all times.
5. All reports, notices or advisories required under the terms, conditions and stipulations of this Right-of-Way Grant are to be made to the BLM's Authorized Officer as follows:

Douglas W. Furtado, Field Manager
Mount Lewis Field Office, Bureau of Land Management
Battle Mountain District Office
50 Bastian Rd.
Battle Mountain, NV 89820
(775) 635-4000
6. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
7. The Holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.
8. Roads and Construction sites shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to: human waste, trash, garbage, vegetation, refuse, oil drums, petroleum products, ashes, and equipment.

9. The Holder shall comply with all applicable Federal, State, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous material, as defined in this paragraph, that will be used, produced, transported or stored on or within the R/W or any of the R/W facilities, or used in the construction, operation, maintenance or termination of the R/W or any of its facilities. "Hazardous material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 43 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101 (14), 42 U.S.C. 9601 (14), nor does the term include natural gas.
10. The Holder of Right-of-Way N-88390 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way Holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the Holder, its agent, or unrelated third parties.
11. The Holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the Plan of Development that accompanied the Application and was approved and made part of the grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the Authorized Officer. A copy of the complete right-of-way grant, including all stipulations and approved plan of development, shall be made available on the right-of-way during construction, operation, and termination to the Authorized Officer. Noncompliance with the above will be grounds for immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
12. The Holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the Holder shall immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the Holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The Holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the Holder shall be responsible for the survey cost.
13. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas on public lands must be approved in writing by the Authorized Officer in advance of excavation. All waste material resulting from construction or use of the site by Holder shall be removed from the site. All waste disposal sites on public land must be

approved in writing by the Authorized Officer in advance of use.

14. The Holder shall mark the exterior boundaries of the right-of-way with a stake and/or lath at 50-foot intervals. The intervals may be varied at the time of staking at the discretion of the Authorized Officer. The tops of the stakes and/or laths will be painted and the laths flagged in a distinctive color as determined by the Holder. The survey station numbers will be marked on the boundary stakes and/or laths at the entrance to and the exit from public land. Holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed and approved by the Authorized Officer. The stakes and/or laths will then be removed at the direction of the Authorized Officer.
15. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the Holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. Emergency use of pesticides shall be approved in writing by the Authorized Officer prior to such use.
16. During the period of May 1 through October 1 of each year, Holder should consider using spark arresters on vehicles and equipment in the project area, due to the potential for fire ignition from project related activities. This includes emission of hot carbon particles from diesel powered equipment, improperly equipped or poorly operating exhaust systems on gas powered vehicles and direct contact of wildland fuels with catalytic converters. Individuals, groups, businesses or corporations found responsible for the ignition of a wild fire may be held liable for the costs associated with the suppression of that fire.
17. The Holder shall permit free and unrestricted public access to and upon the R/W for all lawful purposes, except for those specific areas designated as restricted by the Authorized Officer to protect the public, wildlife, livestock, or facilities constructed within the R/W.
18. Within 90 days of construction completion, the Holder shall provide the Authorized Officer with data in a format compatible with the Bureau's Arc-Info Geographic Information System to accurately locate and identify the right-of-way:

Acceptable data formats are:

 - Corrected Global Positioning System files with sub-meter accuracy or better, in UTM NAD 83; Zone 11;
 - ARCGIS export files on a CD ROM, shapefile, geodatabase.

Data may be submitted in any of the following formats:

 - ARCGIS interchange, shapefile or geodatabase format.
 - CD ROM in compressed or uncompressed format.
19. The Holder shall comply with all applicable Federal, State, and local laws and regulations existing or thereafter enacted or promulgated.
20. In accordance with Federal regulations in 43 CFR 2807.21 any proposed transfer of any right or interest in the right-of-way grant shall be filed with the BLM Authorized Officer. An application for assignment shall be accompanied by a showing of qualifications of the Assignee. The assignment

shall be supported by a stipulation that the Assignee agrees to comply with and to bound by the terms and conditions of the grant to be assigned. No assignment shall be recognized unless and until it is approved in writing by the Authorized Officer.

2.0 Construction Stipulations:

21. The Authorized Officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
22. The Holder shall not initiate any construction or other surface disturbing activities on the right-of-way without the prior written authorization of the Authorized Officer. Such authorization shall be a written notice to proceed issued by the Authorized Officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.
23. The Holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the Authorized Officer. The Holder's representative shall be available for communication with the Authorized Officer within a reasonable time when construction or other surface disturbing activities are underway.
24. Holder will hire an independent third-party Compliance Inspection Contractor, approved by the Authorized Officer, to insure compliance with the terms, conditions and stipulations of this Grant, N-88390. All questions or concerns regarding compliance with the terms, conditions, and stipulations of this Grant shall be directed to the BLM Authorized Officer or Project Manager.
25. Overnight parking and storage of equipment and materials, including staging or stockpiling of same, shall be within 1) previously disturbed areas, 2) areas cleared by biologist and 3) areas inventoried and cleared for cultural resources.
26. Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Where possible and if needed, topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.
27. The Holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The Holder is responsible for consultation with the Authorized Officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).
28. Future modifications, construction of improvements, or major maintenance operations involving disturbance of the land, shall not occur until plans for such actions have been submitted and approved in writing by the Authorized Officer. Any proposals involving new surface disturbance shall require a cultural inventory and may require completion of an environmental assessment.
29. The Holder shall prevent any activities which may cause erosion. Where erosion has resulted, the Holder shall re-vegetate and re-habilitate the location. The Holder is responsible for consultation with the Authorized Officer for an acceptable proposal.
30. Ninety days prior to termination of the right-of-way, the Holder shall contact the Authorized Officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding.

The Authorized Officer must approve the plan in writing prior to the Holder's commencement of any termination activities.

3.0 Wildlife Stipulations:

31. Prior to any planned disturbance in potential migratory bird nesting habitat from April 1 to August 15 (the approximate nesting season), a field survey for migratory birds, their nests, eggs, or young should be performed, in order to prevent violation of the Migratory Bird Treaty Act (MBTA). If any nests, eggs, or young are found either the project should be delayed until the birds have completed their nesting and brood rearing activities, or the project should be re-designed as to not harm the migratory birds, their nests, eggs, or young. A migratory bird is any species of bird **except** upland game species, feral pigeons, European starlings, and English house sparrows. Potential migratory bird nesting habitat is any habitat that may provide nesting opportunity for any species of migratory bird. Any violation of the MBTA can incur penalties up to \$15,000 or 6 months imprisonment, or both per individual offense. Any questions about the Migratory Bird Treaty Act should be referred to the Reno Office of the U.S. Fish and Wildlife Service at (775) 861-6300, or e-mail at "asknevada@fws.gov".

4.0 Cultural Stipulations:

32. Any cultural or paleontological resource (historic or prehistoric site or object) or Native American human remains, funerary item, sacred object, or objects of cultural patrimony discovered by the permit Holder, or any person working on their behalf, during the course of activities on Federal land, shall be immediately reported to the Authorized Officer by telephone, with written confirmation. The permit Holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery will be made by the Authorized Officer.

For cultural resources other than Native American human remains, funerary item, sacred object, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow activities to proceed. The Holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the Authorized Officer after consulting with the permit Holder. Operations may resume only upon written authorization to proceed from the Authorized Officer.

5.0 Bonding Stipulations:

33. The holder shall provide a bond in the amount of \$25,000.00 to be maintained until restoration of disturbed areas and other requirements relative to the construction phase of the project have been accepted by the Authorized Officer. Upon completion, or partial completion of these construction related requirements, the Authorized Officer may terminate or reduce the amount of the bond.
34. Should the bond delivered under this grant become unsatisfactory to the authorized officer, the holder, shall, within 30 days of demand, furnish a new bond.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Issuing Office

Tonopah Field Office

Serial Number
N-88368

RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

1. A (right-of-way) is hereby granted pursuant to:

- a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).
- b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
- c. Other (describe)

2. Nature of Interest:

- a. By this instrument, the holder(s) **Ormat Nevada, Inc.** receives a right to, construct, maintain, and terminate a(n) **access road** on public lands (or Federal land for MLA Rights-of-Way) described as follows:

Mount Diablo Meridian, Nevada

T. 30 N., R. 43 E.,
Sec. 18, Lot 20;
Sec. 20, W $\frac{1}{2}$ NW $\frac{1}{4}$.

Commonly known as the Bannock Switching Station Access Road

- b. The right-of-way granted herein is 25-feet wide, 1,785 feet long or 0.338 miles in length
The right-of-way contains 1.02 acres, more or less.
- c. This instrument shall terminate on **December 31, 2039, 30** years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
- d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.
- e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental: 43 CFR 2806.11; 43 CFR 2806.12; 43 CFR 2806.20; 43 CFR 2806.23

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 120 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibit(s) A – Maps and B- Stipulations, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

Connie Stechman
(Signature of Holder)

Assistant Secretary
(Title)

June 2, 2010
(Date)

Douglas W. Furtado
Field Manager, Mt. Lewis Field Office
(Title)

6/4/10
(Effective Date of Grant)

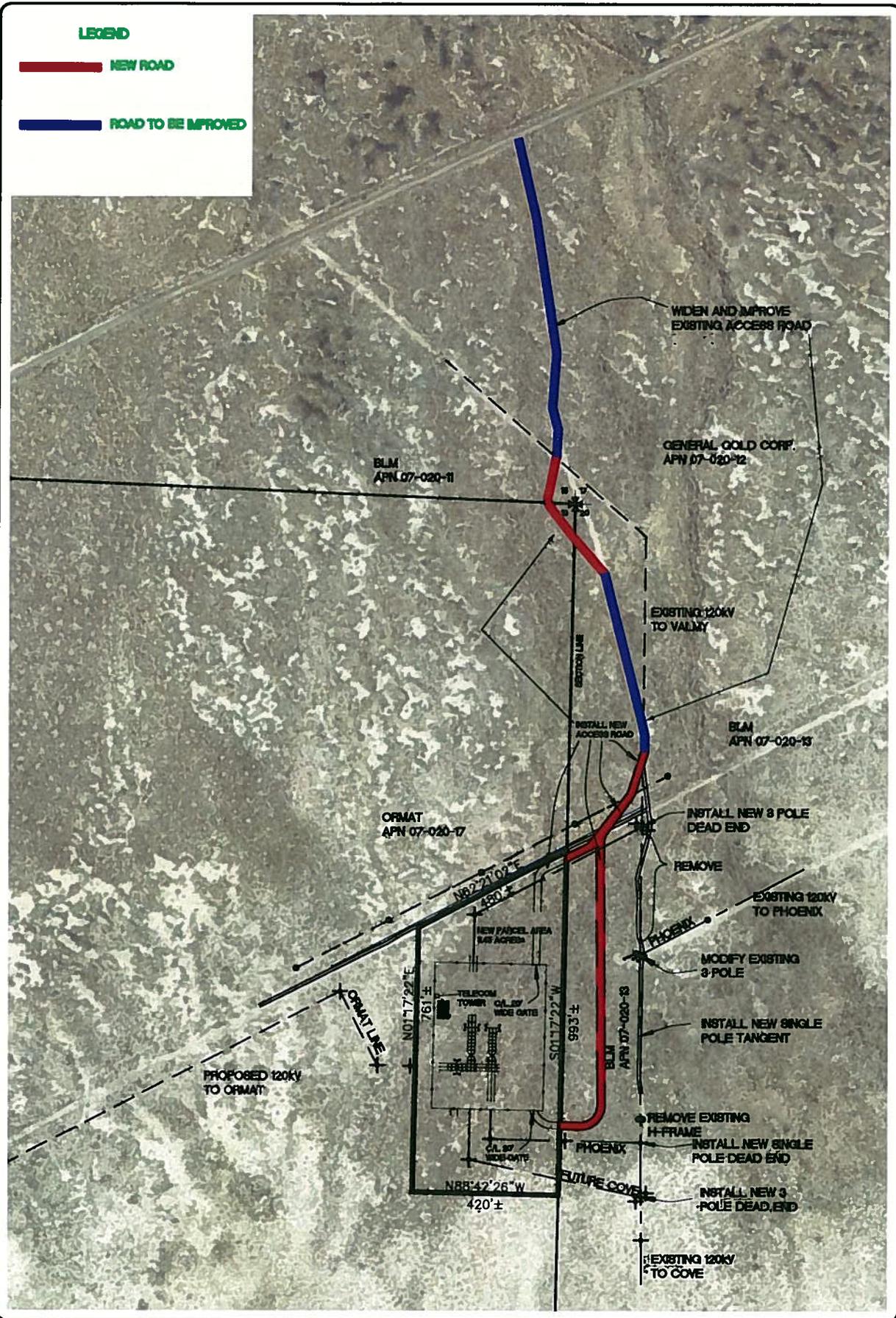
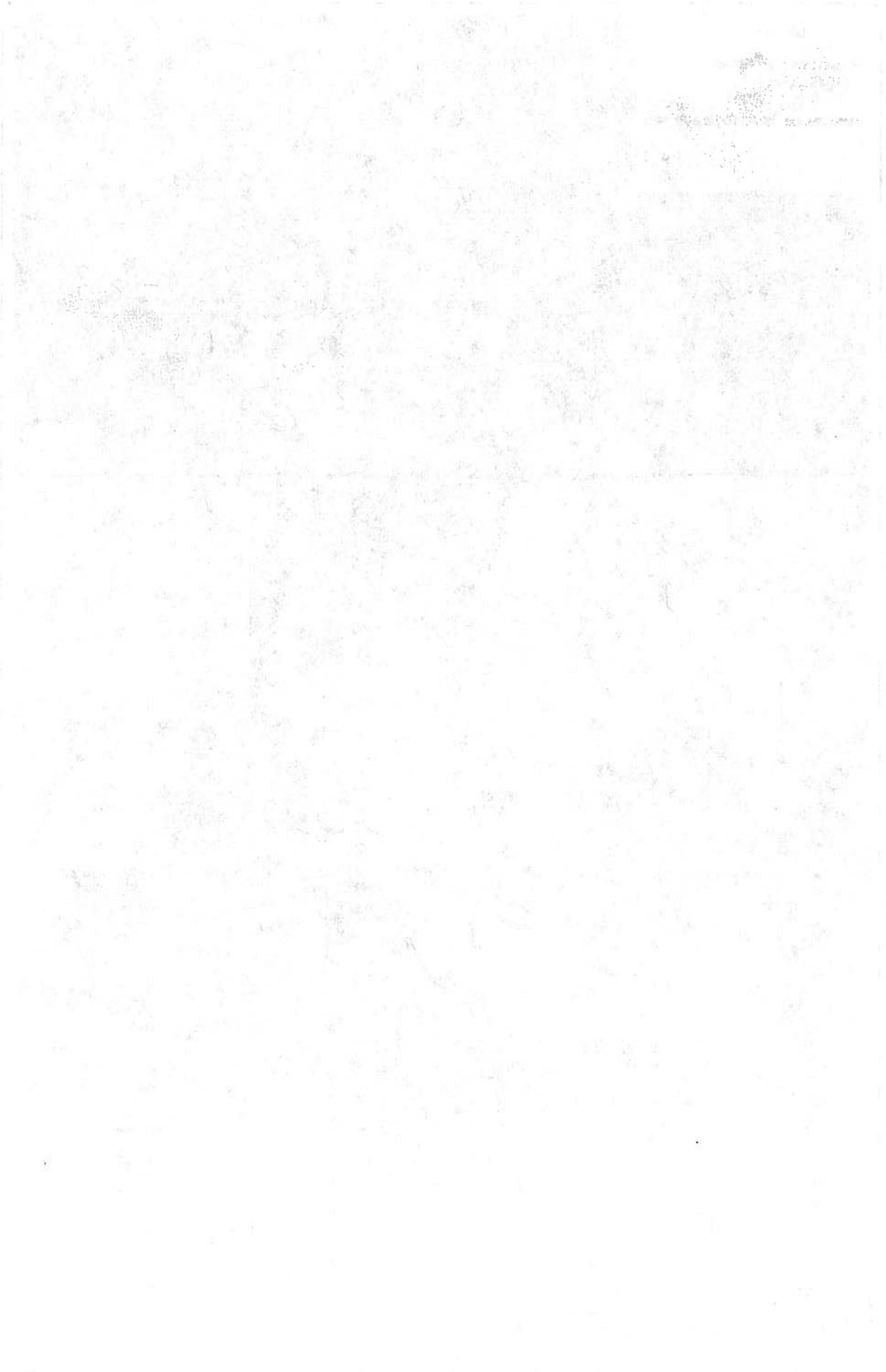


Figure 14: Proposed Substation Layout and Access



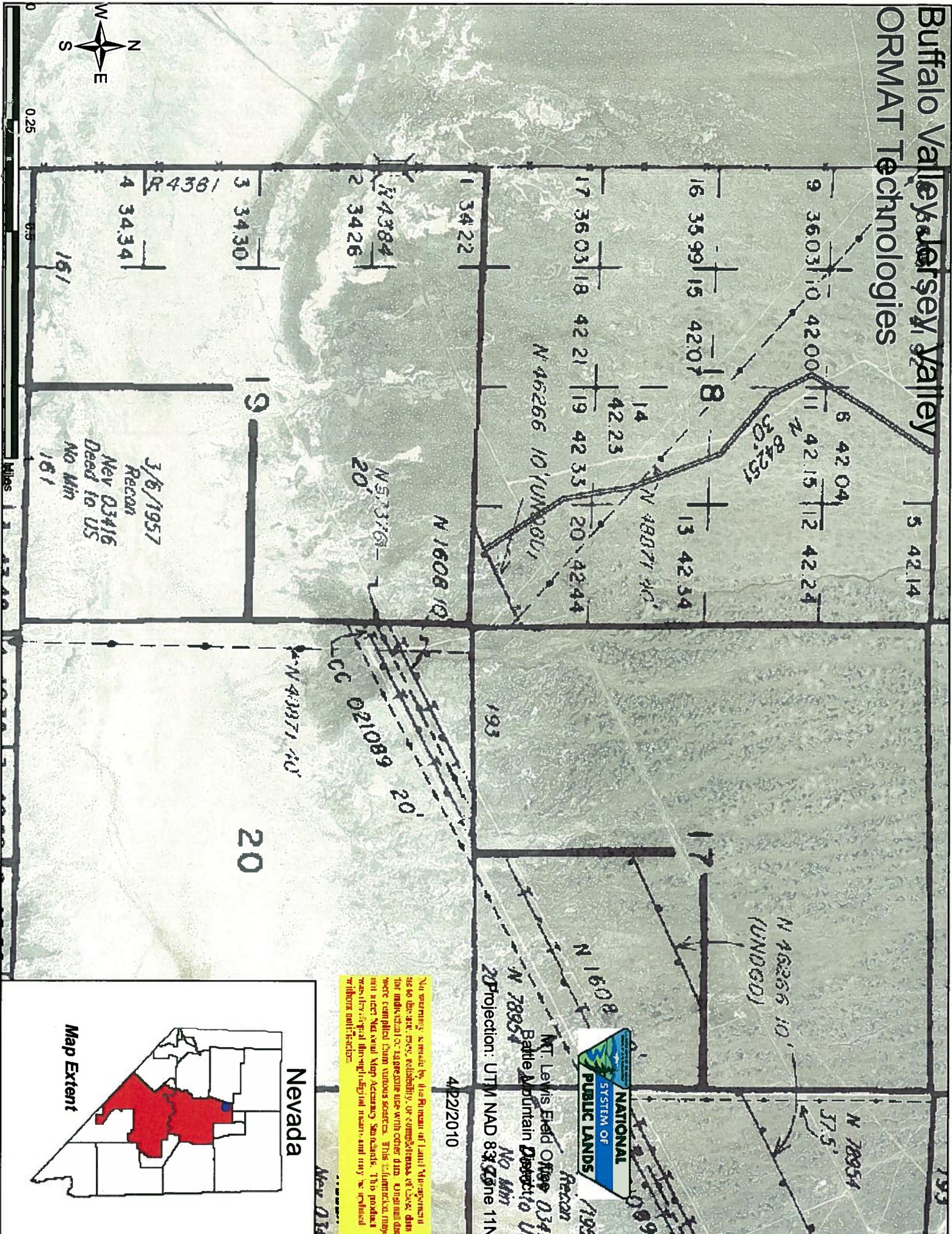
1" = 250'

SURVEYOR:	LDL
PHONE NUMBER:	775-834-5391
PROJECT NUMBER:	UR4540ZLR2
PROJECTION:	NVSPC 83 US FT



Handwritten mark or signature in the top right corner.

Buffalo Valley, Jersey Valley ORMAT Technologies



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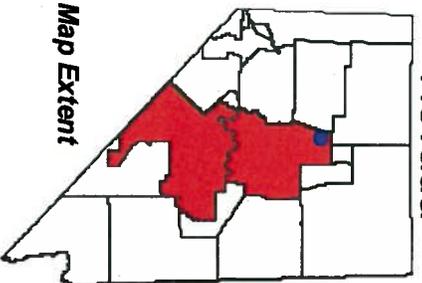
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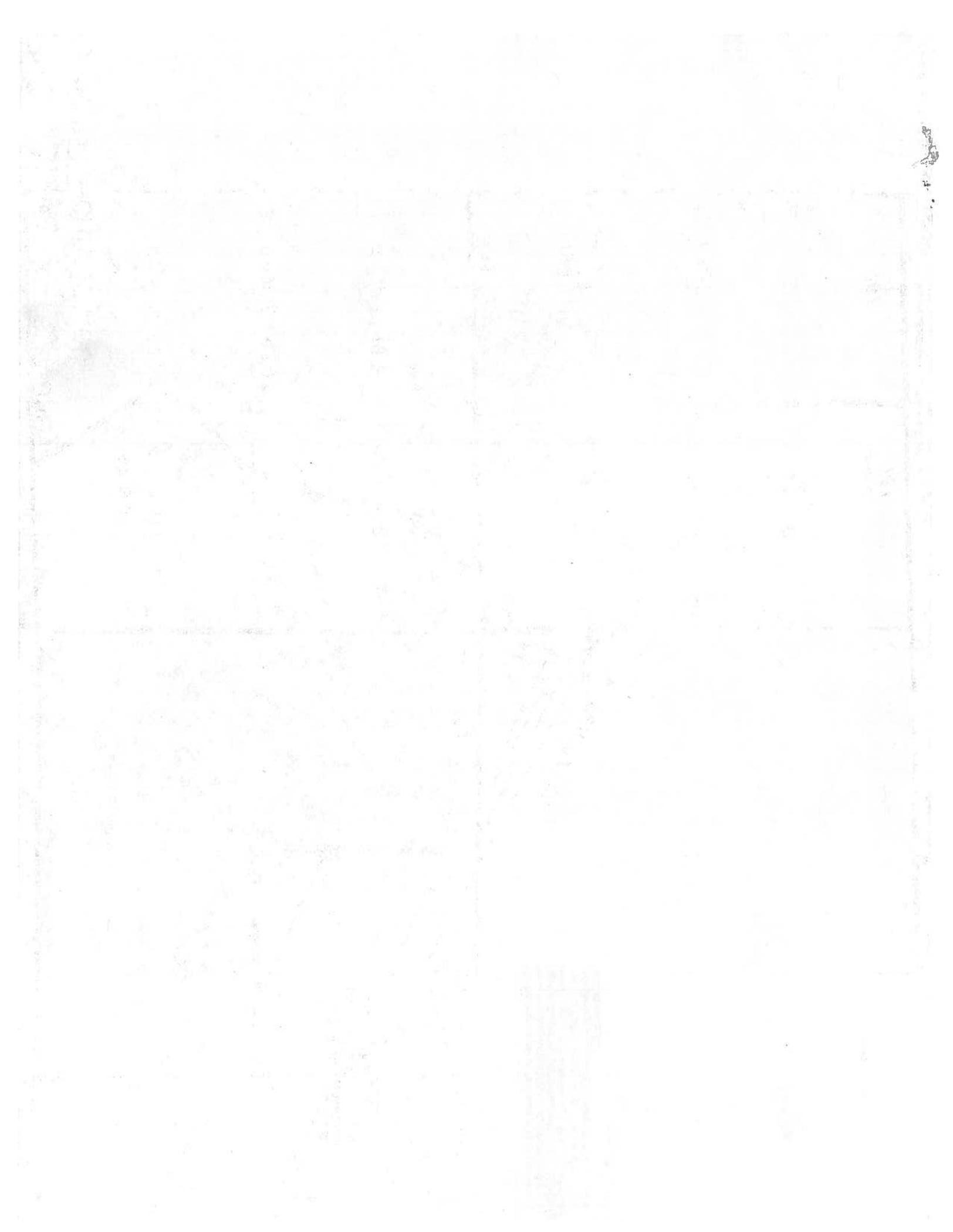
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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet the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



Map Extent

Nevada



Buffalo Valley Jersey Valley ORMAT Technologies

TOWNSHIP 30 NORTH RANGE 43 EAST OF THE MOUNT DIABLO MERIDIAN, NEVADA

LANDER COUNTY
BATTLE Mtn GR DIST

STATUS OF PUBLIC DOMAIN
LAND AND MINERAL TITLES

MT PLAT

INDEX TO SEGREGATED TRACTS	
TRACT NO.	ORIGINAL SURVEY
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ANNUALS, AND
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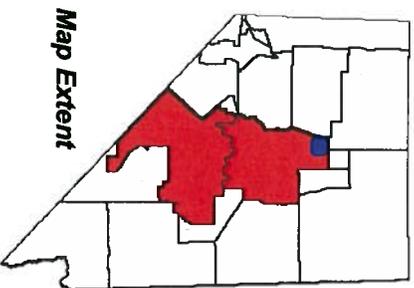
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Battle Mountain-District

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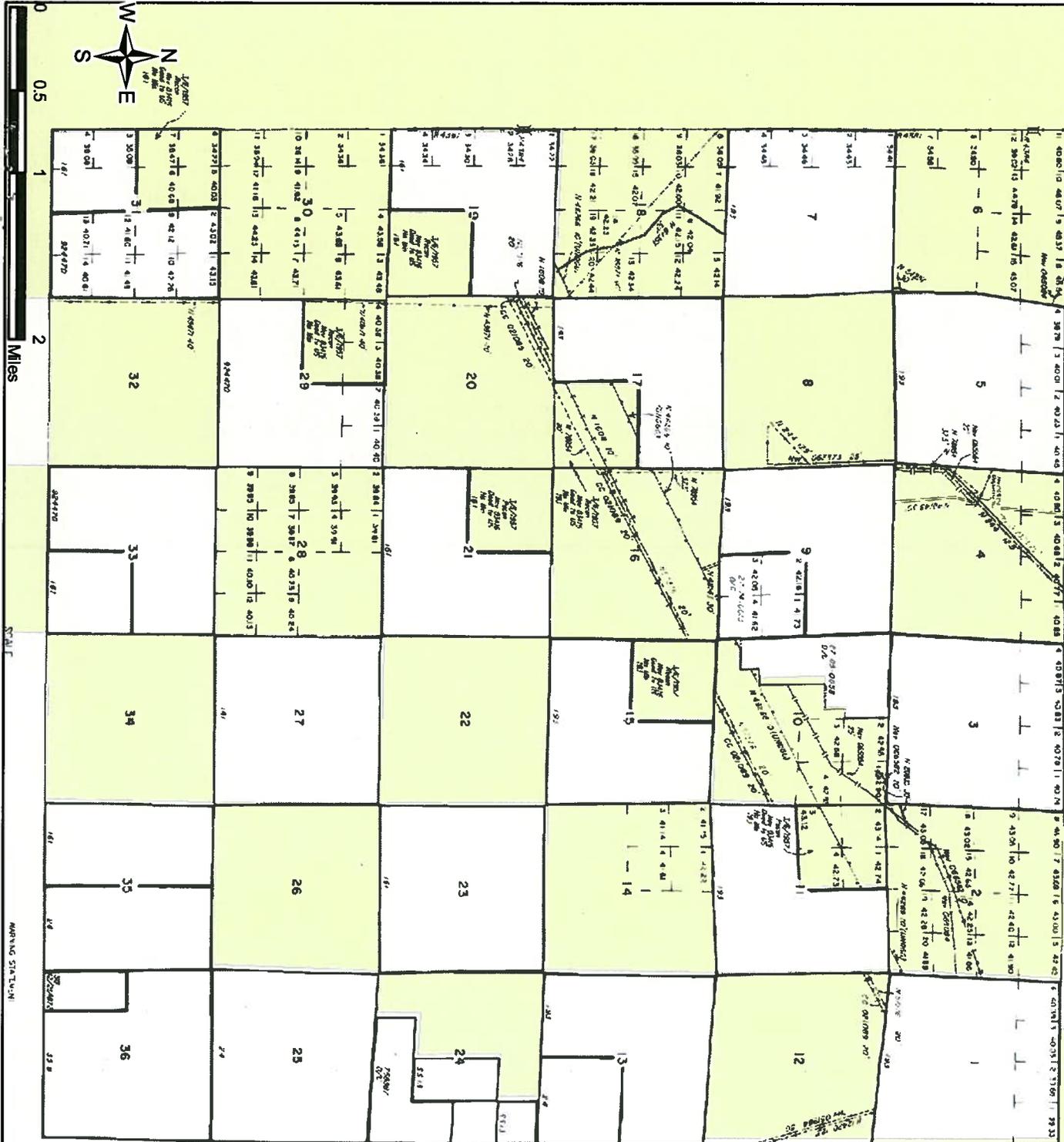
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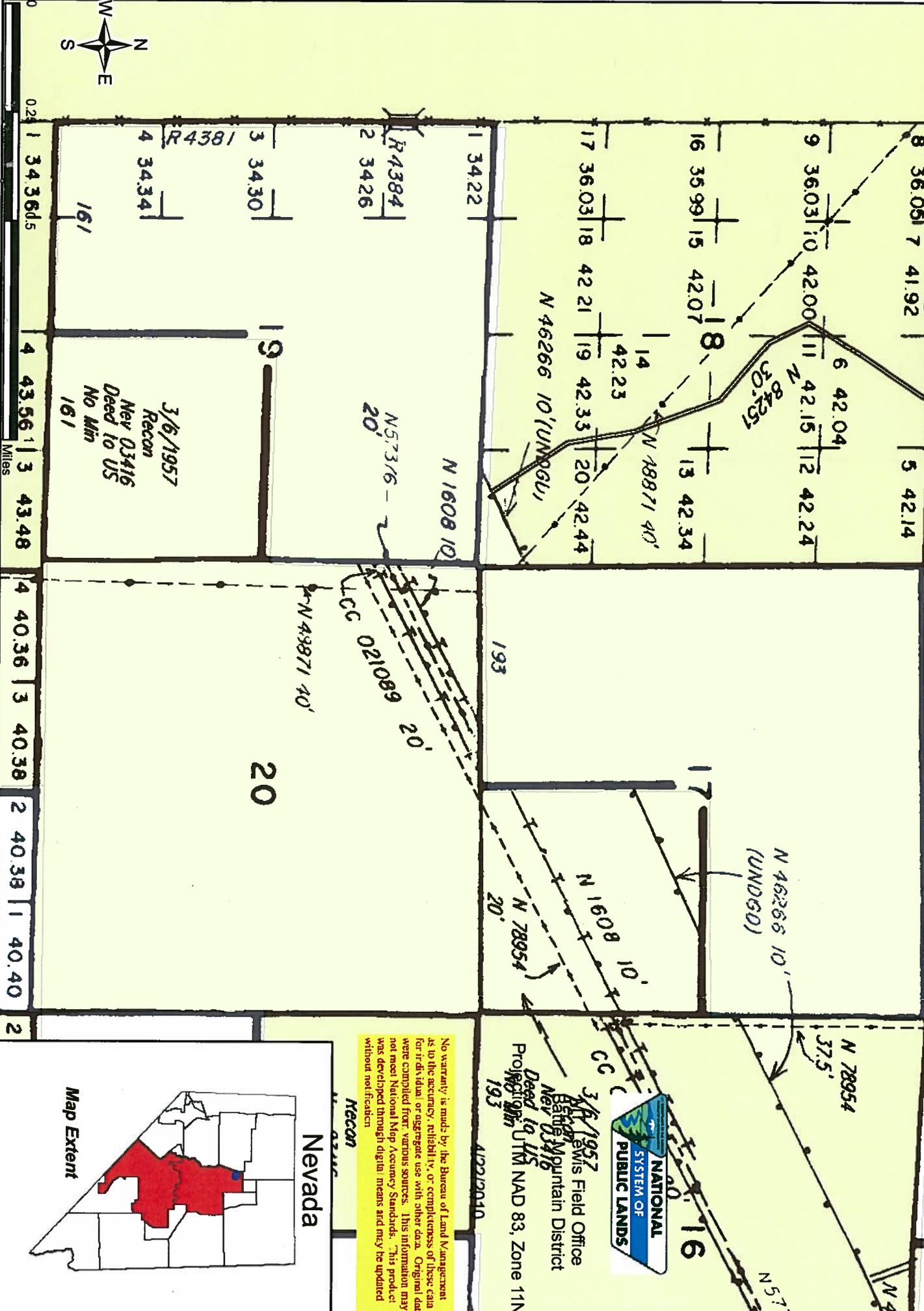
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Buffalo Valley Jersey Valley ORMAT Technologies

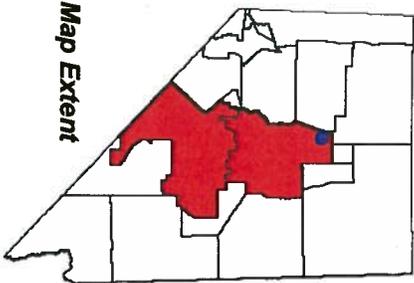


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Nevada



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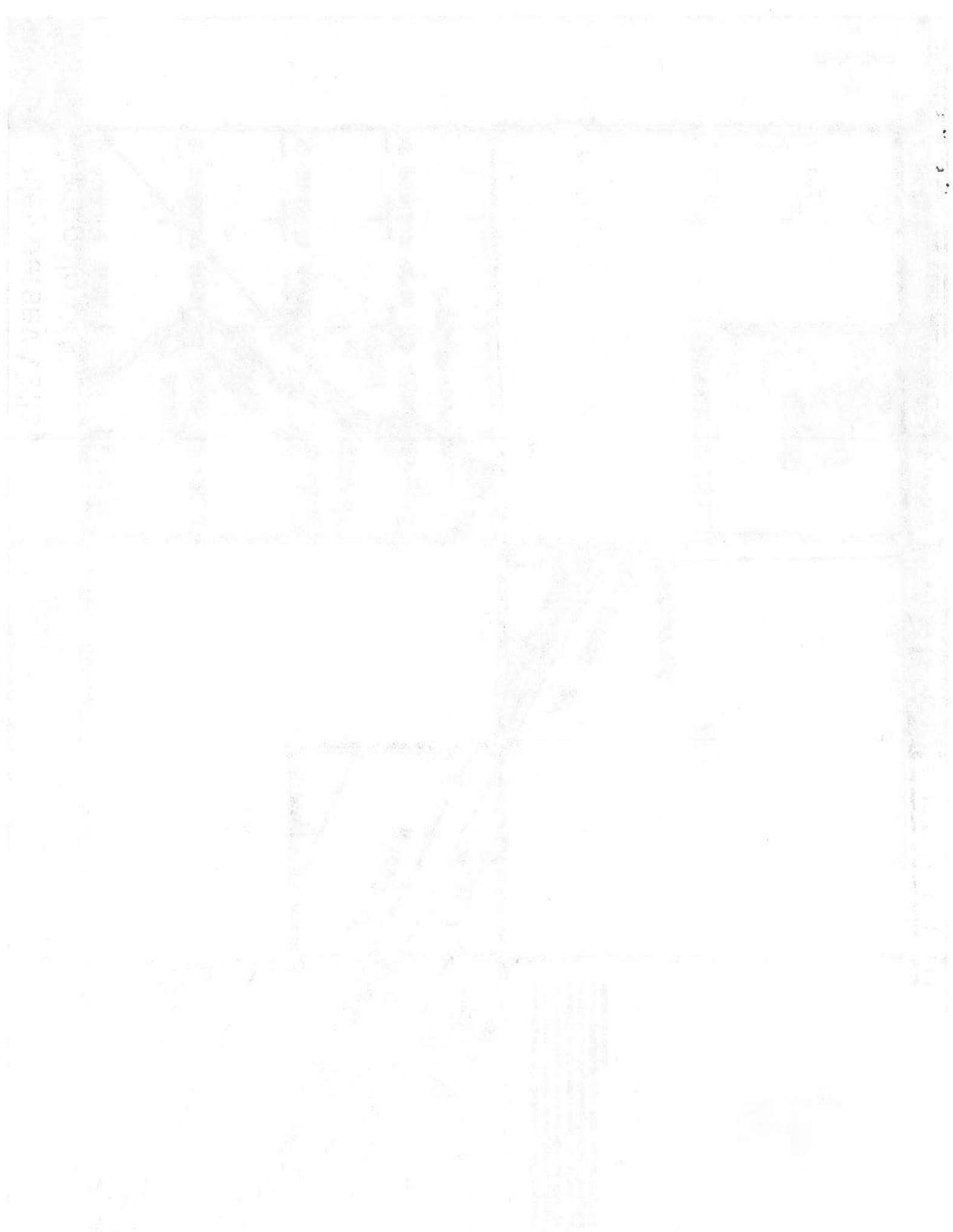


EXHIBIT B

STIPULATIONS

1.0 General Stipulations:

1. In case of change of address, the Holder shall immediately notify the BLM Authorized Officer.
2. In the event that the public land underlying the right-of-way (N-88368) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the Holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.
3. This grant is subject to all valid rights existing on the effective date of this grant.
4. Holder shall maintain a copy of this Grant and stipulations and Plan of Development on the construction site at all times.
5. All reports, notices or advisories required under the terms, conditions and stipulations of this Right-of-Way Grant are to be made to the BLM's Authorized Officer as follows:

Douglas W. Furtado, Field Manager
Mount Lewis Field Office, Bureau of Land Management
Battle Mountain District Office
50 Bastian Rd.
Battle Mountain, NV 89820
(775) 635-4000
6. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
7. The Holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.
8. Roads and Construction sites shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to: human waste, trash, garbage, vegetation, refuse, oil drums, petroleum products, ashes, and equipment.

9. The Holder shall comply with all applicable Federal, State, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous material, as defined in this paragraph, that will be used, produced, transported or stored on or within the R/W or any of the R/W facilities, or used in the construction, operation, maintenance or termination of the R/W or any of its facilities. "Hazardous material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 43 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101 (14), 42 U.S.C. 9601 (14), nor does the term include natural gas.
10. The Holder of Right-of-Way N-88368 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way Holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the Holder, its agent, or unrelated third parties.
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approved in writing by the Authorized Officer in advance of use.

14. The Holder shall mark the exterior boundaries of the right-of-way with a stake and/or lath at 50-foot intervals. The intervals may be varied at the time of staking at the discretion of the Authorized Officer. The tops of the stakes and/or laths will be painted and the laths flagged in a distinctive color as determined by the Holder. The survey station numbers will be marked on the boundary stakes and/or laths at the entrance to and the exit from public land. Holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed and approved by the Authorized Officer. The stakes and/or laths will then be removed at the direction of the Authorized Officer.
15. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the Holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. Emergency use of pesticides shall be approved in writing by the Authorized Officer prior to such use.
16. During the period of May 1 through October 1 of each year, Holder should consider using spark arresters on vehicles and equipment in the project area, due to the potential for fire ignition from project related activities. This includes emission of hot carbon particles from diesel powered equipment, improperly equipped or poorly operating exhaust systems on gas powered vehicles and direct contact of wildland fuels with catalytic converters. Individuals, groups, businesses or corporations found responsible for the ignition of a wild fire may be held liable for the costs associated with the suppression of that fire.
17. The Holder shall permit free and unrestricted public access to and upon the R/W for all lawful purposes, except for those specific areas designated as restricted by the Authorized Officer to protect the public, wildlife, livestock, or facilities constructed within the R/W.
18. Within 90 days of construction completion, the Holder shall provide the Authorized Officer with data in a format compatible with the Bureau's Arc-Info Geographic Information System to accurately locate and identify the right-of-way:

Acceptable data formats are:

 - Corrected Global Positioning System files with sub-meter accuracy or better, in UTM NAD 83; Zone 11;
 - ARCGIS export files on a CD ROM, shapefile, geodatabase.

Data may be submitted in any of the following formats:

 - ARCGIS interchange, shapefile or geodatabase format.
 - CD ROM in compressed or uncompressed format.
19. The Holder shall comply with all applicable Federal, State, and local laws and regulations existing or thereafter enacted or promulgated.
20. In accordance with Federal regulations in 43 CFR 2807.21 any proposed transfer of any right or interest in the right-of-way grant shall be filed with the BLM Authorized Officer. An application for assignment shall be accompanied by a showing of qualifications of the Assignee. The assignment

shall be supported by a stipulation that the Assignee agrees to comply with and to bound by the terms and conditions of the grant to be assigned. No assignment shall be recognized unless and until it is approved in writing by the Authorized Officer.

2.0 Construction Stipulations:

21. The Authorized Officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
22. The Holder shall not initiate any construction or other surface disturbing activities on the right-of-way without the prior written authorization of the Authorized Officer. Such authorization shall be a written notice to proceed issued by the Authorized Officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.
23. The Holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the Authorized Officer. The Holder's representative shall be available for communication with the Authorized Officer within a reasonable time when construction or other surface disturbing activities are underway.
24. Holder will hire an independent third-party Compliance Inspection Contractor, approved by the Authorized Officer, to insure compliance with the terms, conditions and stipulations of this Grant, N-88368. All questions or concerns regarding compliance with the terms, conditions, and stipulations of this Grant shall be directed to the BLM Authorized Officer or Project Manager.
25. Overnight parking and storage of equipment and materials, including staging or stockpiling of same, shall be within 1) previously disturbed areas, 2) areas cleared by biologist and 3) areas inventoried and cleared for cultural resources.
26. Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Where possible and if needed, topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.
27. The Holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The Holder is responsible for consultation with the Authorized Officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).
28. Future modifications, construction of improvements, or major maintenance operations involving disturbance of the land, shall not occur until plans for such actions have been submitted and approved in writing by the Authorized Officer. Any proposals involving new surface disturbance shall require a cultural inventory and may require completion of an environmental assessment.
29. The Holder shall prevent any activities which may cause erosion. Where erosion has resulted, the Holder shall re-vegetate and re-habilitate the location. The Holder is responsible for consultation with the Authorized Officer for an acceptable proposal.
30. Ninety days prior to termination of the right-of-way, the Holder shall contact the Authorized Officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding.

The Authorized Officer must approve the plan in writing prior to the Holder's commencement of any termination activities.

3.0 Wildlife Stipulations:

31. Prior to any planned disturbance in potential migratory bird nesting habitat from April 1 to August 15 (the approximate nesting season), a field survey for migratory birds, their nests, eggs, or young should be performed, in order to prevent violation of the Migratory Bird Treaty Act (MBTA). If any nests, eggs, or young are found either the project should be delayed until the birds have completed their nesting and brood rearing activities, or the project should be re-designed as to not harm the migratory birds, their nests, eggs, or young. A migratory bird is any species of bird **except** upland game species, feral pigeons, European starlings, and English house sparrows. Potential migratory bird nesting habitat is any habitat that may provide nesting opportunity for any species of migratory bird. Any violation of the MBTA can incur penalties up to \$15,000 or 6 months imprisonment, or both per individual offense. Any questions about the Migratory Bird Treaty Act should be referred to the Reno Office of the U.S. Fish and Wildlife Service at (775) 861-6300, or e-mail at "asknevada@fws.gov".

4.0 Cultural Stipulations:

32. Any cultural or paleontological resource (historic or prehistoric site or object) or Native American human remains, funerary item, sacred object, or objects of cultural patrimony discovered by the permit Holder, or any person working on their behalf, during the course of activities on Federal land, shall be immediately reported to the Authorized Officer by telephone, with written confirmation. The permit Holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery will be made by the Authorized Officer.

For cultural resources other than Native American human remains, funerary item, sacred object, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow activities to proceed. The Holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the Authorized Officer after consulting with the permit Holder. Operations may resume only upon written authorization to proceed from the Authorized Officer.

5.0 Bonding Stipulations:

33. The holder shall provide a bond in the amount of \$50,000.00 to be maintained until restoration of disturbed areas and other requirements relative to the construction phase of the project have been accepted by the Authorized Officer. Upon completion, or partial completion of these construction related requirements, the Authorized Officer may terminate or reduce the amount of the bond.
34. Should the bond delivered under this grant become unsatisfactory to the authorized officer, the holder, shall, within 30 days of demand, furnish a new bond.

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CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Ormat's Adopted Environmental Protection Measures:

- Ormat would comply with all special lease stipulations which are applicable to the proposed operations on these leases (Appendix A of the Environmental Assessment). In addition, Ormat would implement the following additional environmental protection measures:
- Water would be applied to the ground during the construction and utilization of the drill pads, access roads, and other disturbed areas as necessary to control dust;
- Portable chemical sanitary facilities would be available and used by all personnel during periods of well drilling and/or flow testing, and construction. These facilities would be maintained by a local contractor;
- To prevent the spread of invasive, nonnative species, all contractors will be required to power wash their vehicles and equipment, including body and undercarriage, prior to entering public lands managed by the BLM;
- All construction and operating equipment would be equipped with applicable exhaust spark arresters. Fire extinguishers would be available on the active sites. Water that is used for construction and dust control would be available for fire fighting. Personnel would be allowed to smoke only in designated areas, and they would be required to follow applicable BLM regulations regarding smoking;
- Cut and fill activities have been minimized through the selection of the power plant site and pipeline routes. Off-site storm water would be intercepted in ditches and channeled to energy dissipaters as necessary to minimize erosion around the power plant. To minimize erosion from storm water runoff, access roads would be maintained consistent with the best management practices applicable to development roads. BLM best management practices for storm water would be followed, as applicable, on public lands;
- Geothermal fluids would not be discharged to the ground under normal operating conditions. Accidental discharges of geothermal fluids are unlikely because of frequent inspections, ultrasonic testing of the pipeline, flow and pressure monitoring and well pump and pipeline valve shutdown features;
- Following construction, areas of disturbed land no longer required for operations would be reclaimed to promote the reestablishment of native plant and wildlife habitat;
- Any areas containing cultural resources of significance would be avoided, or the potential for impacts mitigated in a manner acceptable to the BLM. Ormat employees, contractors, and suppliers would be reminded that all cultural resources are protected and if uncovered shall be left in place and reported to the Ormat representative and/or their supervisor;

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CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

- A buffer of approximately 30 to 50 meters would be established around eligible and unevaluated cultural sites that lie very close to activities. When initial construction is close to the buffered areas, an archaeological monitor would be present to insure that eligible and unevaluated cultural sites are not disturbed;
- The power plant, pipelines, wellheads, pump motors and motor control buildings would each be painted an appropriate color to blend with the area and minimize visibility. BLM will approve the appropriate color;
- The proposed transmission line would also provide raptor protection in compliance with the standards described in the “Suggested Practices for Raptor Protection on Power Lines, The State of the Art in 2006.”;
- An anti-perching device, (a cone, Kaddas Enterprises type KE1058 or equal) would be installed on the top of each transmission line pole along the entirety of the transmission line (see Figure 15 and Figure 16 of the EA);
- All power poles will utilize BLM-approved raptor deterrents;
- Bird flight diverters will be attached to the transmission line conductors located immediately over the open water areas of the Jersey Valley Hot Springs, and out to approximately 100 feet on each side of the hot springs. The spacing of the diverters will be approximately 15 feet between each device;
- Should construction be planned within the greater sage-grouse wintering season, prior to the commencement of construction, areas proposed for disturbance will be surveyed by a qualified biologist to determine if wintering concentrations of sage-grouse exist. Any wintering concentrations of birds will be avoided by 0.6 miles;
- Construction noise would be minimized through practices which avoid or minimize actions which may typically generate greater noise levels, or generate distinctive impact noise;
- Ormat will obtain and comply with an Underground Injection Control (UIC) permit, as appropriate.

BLM Conditions of Approval and Stipulations for Geothermal Utilization

- **Air Quality:**

An NDEP-BAPC Surface Area Disturbance Permit, documenting the areas of proposed disturbance and the best practical dust control methods to be used, will be required for because the surface disturbed would be greater than 5 acres. Best practical dust control

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

methods applicable to the activities include use of water trucks to spray water on disturbed areas on a regular basis; pre-watering of areas to be disturbed; graveling of roadways, storage areas and staging areas; posting and limiting vehicle speeds to 10 to 15 miles per hour, and use of wind fences to reduce wind impacts. Implementation of the applicable best practical dust control methods, through compliance with the Surface Area Disturbance Permit, would minimize fugitive dust emissions during construction, operation and decommissioning.

- **Cultural Resources:**

Any unplanned discovery of cultural resources, human remains, items of cultural patrimony, sacred objects, or funerary items, requires that all activity in the vicinity of the find ceases, and notification be made to, Field Manager, Mt. Lewis Field Office, 50 Bastian Way, Battle Mountain, NV, 89820 (775-635-4000), by telephone, with written confirmation to follow, immediately upon such discovery. The location of the find should not be publicly disclosed and any human remains must be secured and preserved in place until a Notice to Proceed is issued by the authorized officer.

- **Native American Religious Concerns:**

Adopted environmental protection measures and mitigations proposed to address these concerns include avoidance of all eligible and unevaluated cultural resource sites and implementation of a hydrologic monitoring plan which would (see EA Sections 2.1.11, 3.9.2, and 3.3.2). Additionally, geothermal lease stipulations (see Attachment E), direct that adverse impacts to springs are not allowed.

During the activities, if any cultural properties, items, or artifacts (stone tools, ile points, etc...) are encountered, it must be stressed to those involved in the proposed activities that such items are not to be collected. Cultural and Archaeological resources are protected under the Archaeological Resources Protection Act (16 U.S.C 470ii) and the Federal Land Management Policy Act (43 U.S.C. 1701). The above language is applicable to previously identified artifacts and site locations, surface artifacts possibly missed during the original survey, and any subsurface artifacts (below ground).

Though the possibility of disturbing Native American gravesites within most areas is extremely low, inadvertent discovery procedures must be noted. Under the Native American Graves Protection and Repatriation Act, section (3)(d)(1), it states that the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity, which caused the discovery, is to cease and the materials are to be protected until the land manager can respond to the situation.

If any traditional cultural properties or artifacts are identified before or during development activities, a protective "buffer zone" may be acceptable, where physical avoidance is an issue, and if doing so satisfies the needs of the BLM, the proponent, and affected Tribe. The size of any "buffer zone" would be determined through coordination and communication

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between all participating entities. All NRHP-eligible and unevaluated cultural sites that were identified during the cultural resources inventory would be avoided.

- **WILDLIFE (INCLUDING THREATENED AND ENDANGERED SPECIES, SPECIAL STATUS SPECIES AND MIGRATORY BIRDS)**

Mitigation Measure:

Initial ground disturbing activities would not be conducted during the migratory bird nesting season (April 1-August 15) unless necessary, and then only after inventories for migratory birds and nests were conducted by a qualified biologist acceptable to the BLM. This survey would be conducted to identify either breeding adult birds or nest sites within the specific areas to be disturbed. If active nests are present within the areas to be disturbed, Ormat would coordinate with the BLM or appropriate state officials, as applicable, to develop appropriate protection measures for the active nest sites, which may include avoidance, construction constraints, and/or the establishment of buffers. Following the implementation of this mitigation measure, the potential impacts to migratory birds should be reduced.

- **INVASIVE, NONNATIVE SPECIES:**

Ormat has committed to follow the mitigation measures (see Section 2.1.11), “To prevent the spread of invasive, nonnative species, vehicles and equipment would be power washed, including body and undercarriage, prior to entering public lands managed by the BLM” and geothermal resources special lease stipulations.

- **VEGETATION:**

Mitigation Measures:

Seeding of disturbed areas associated with soil association 211 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3.40
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.70
Needle and Thread	<i>Stipa Comata</i>	3.78
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.78

Seeding of disturbed areas associated with soil associations 662, 673, 2711, 2721, 2555, 251, 652 and 1340 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre
Basin Wildrye	<i>Leymus cinereus</i>	4.65
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	1.70

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Alkali sacaton	<i>Sporobolus airoides</i>	0.12
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.52

Seeding of disturbed areas associated with soil association 653 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	6.22
Basin Wildrye	<i>Leymus cinereus</i>	2.61
Thurbers Needlegrass	<i>Stipa thurberiana</i>	5.23

Seeding of disturbed areas associated with soil association 2066 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3.40
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.58
Needle and Thread	<i>Stipa Comata</i>	3.78
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.78

Seeding of disturbed areas associated with soil association 1140, 740, 1169, 1570 and 1145 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Basin Wildrye	<i>Leymus cinereus</i>	4.65
Alkali sacaton	<i>Sporobolus airoides</i>	0.45
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.70

Seeding of disturbed areas associated with soil association 247 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre (bulk)
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	4.16
Basin Wildrye	<i>Leymus cinereus</i>	2.61
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	2.34

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Seeding of disturbed areas associated with soil associations 596, 661, 670, 701, 835 and 2062 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	3.40
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.58
Needle and Thread	<i>Stipa Comata</i>	3.78
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.78
Basin Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0.31

Seeding of disturbed areas associated with soil association 1292 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	4.16
Basin Wildrye	<i>Leymus cinereus</i>	2.61
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	2.34
Basin Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0.31

Seeding of disturbed areas associated with soil association 240 and 245 would be completed using the following BLM-approved native seed mixture and application rate:

Common Name	Scientific Name	Pounds/acre
Basin Wildrye	<i>Leymus cinereus</i>	4.65
Alkali sacaton	<i>Sporobolus airoides</i>	0.45
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	1.70
Basin Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0.31

• **WATER QUALITY AND QUANTITY:**

The unit operator shall monitor the fresh water spring located on private land at the mouth of Jersey Canyon in the SE/4NW/4SW/4 of Section 34, T27N, R40E, MDB&M unless access to the spring for monitoring purposes is denied by the private landowners and the unit operator provides to BLM documentation from the private landowners that access for monitoring has

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been denied. The unit operator shall annually collect and analyze samples from the springs for basic water chemistry, and monitor representative flow, stage or equivalent from this spring on the following schedule, unless otherwise modified by the BLM authorized officer:

Once immediately prior to the commencement of drilling, and once immediately following the completion of drilling, of each new or redrilled geothermal well in the geothermal unit area;

Each year until the commencement of construction of the utilization facility;

Once each quarter from the commencement of construction of utilization facility until the cessation of all geothermal fluid production and injection operations from the geothermal unit area for the utilization facility; and

Once each year from the cessation of all geothermal fluid production and injection operations from the geothermal unit area for the utilization facility until all geothermal wells within the geothermal unit area have been abandoned.

Collected data shall be reported to the BLM in written form by the unit operator annually within 30 days of the end of each calendar year, together with an interpretation of the monitoring data collected during the preceding calendar year.

Due to the potential of some unknown impacts of the geothermal on perennial cold springs, seeps or other surface waters, the BLM will require additional monitoring of such features by the unit operator. If any such features exist within one mile of the production or injection well field of the Jersey Valley, the unit operator will monitor on a quarterly basis all such features for a period of three years upon start-up of each well field and power plant. The unit operator will work with the BLM to establish monitoring points at each such feature; and establish a written protocol to measure surface flow for each feature. It is understood that such flows are influenced by meteoric events such as spring run-off; high intensity storm events, etc.

Measures would also be taken to minimize the effects of construction and unit operations on the quality of surface and ground waters. To minimize erosion and stream channel sedimentation, storm water runoff from undisturbed areas around the constructed well pads, power plant sites and switching station would be directed into ditches surrounding the disturbed areas and back onto undisturbed ground consistent with best management practices for storm water. Access roads would also be constructed and maintained consistent with the best management practices for road construction applicable to the intended use (temporary or permanent) of the road. To minimize erosion and stream channel sedimentation, grading or clearing of the surface for construction of the transmission line would occur only when absolutely necessary for safe access or installing the conductors and would only occur within the proposed ROW.

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

The geothermal wells would be cased with steel to a depth well below the shallow ground water reservoirs. The casing would be cemented into the ground to prevent the loss of any geothermal resource into, and prevent the contamination or mixing of, any shallow ground waters by the geothermal production or injection fluid. The Underground Injection Control Permit required for injection program from the Nevada Department of Environmental Protection-Bureau of Water Pollution Control (NDEP-BWPC) would require that the injection program be designed and monitored to prevent degradation of underground sources of drinking water due to the geothermal fluid injection practices.

Should this monitoring program demonstrate that adverse impacts to the hot springs may be occurring, the unit operator shall, as required by the BLM authorized officer, immediately retain a qualified third-party consultant, acceptable to the BLM authorized officer, to review the collected data and to evaluate the collected data and recommend reasonable mitigation measures. A group consisting of the applicable stakeholders, including the current holder of water rights from the hot springs, if any, would be convened to review the recommended measures.

- **WASTES (HAZARDOUS AND SOLID)**

Mitigation Measure:

Absorbent pads or sheets would be placed under likely spill sources.

- **VISUAL RESOURCES:**

Mitigation Measure:

All drill rig and well test facility lights would be limited to those required to safely conduct the operations, and would be shielded and/or directed in a manner which focuses direct light to the immediate work area.

Permanent facilities within the Jersey Valley Unit Area would be painted a color, subject to approval by the authorized officer, which would blend with the landscape (likely covert green). Prior to painting, Ormat would contact the Mount Lewis Field Office lead.

Permanent facilities within the Jersey Valley Unit Area and will have lighting limited to those required to safely conduct the operations, and would be shielded and/or directed in a manner which focuses direct light to the immediate work area.

The substation at the north end of the transmission line corridor would be painted a color, subject to approval by the authorized officer, which would blend with the landscape. Prior to painting, Ormat would contact the Mount Lewis Field Office lead.

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Stipulations Unique to Lease NVN-77483

BLM WINNEMUCCA FIELD OFFICE GEOTHERMAL LEASE STIPULATION FOR BATS

Two species of bats, the Pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) use adits located within secs. 27 and 34, T. 27 N., R. 40 E., MOM, Nevada. The lease will be subject to the following protection measures:

- a) The No Surface Occupancy restriction will apply to a 0.25-mile radius around the openings of adits occupied by these bats.
- b) Caution should be used to avoid coming in contact with any of the adits during drilling.
- c) Personnel should be cautioned to avoid entering the 0.25-mile radius around the openings of adits occupied by these bats.

BLM WINNEMUCCA FIELD OFFICE GEOTHERMAL LEASE STIPULATIONS

Noncompetitive areas and all Known Geothermal Resource Areas (KGRA) will be open to geothermal leasing with the following restrictions:

Sage grouse: The following stipulations apply to protect sage grouse and their habitat. Known habitat is defined as those areas where sage grouse have been observed. Potential habitat is an area where sage grouse may occur. Known Breeding habitat and Leks: February through June, but may vary on site specific basis. Avoid all activity within 3.3 km. (2 miles) of known leks during the mating season - March through May, or as determined by Field Office and Wildlife Personnel. No surface occupancy within 3.3 km (2 miles) of known leks at all times. Nesting Habitat and Brood-rearing habitats: (April through August per Interim NY Guidelines) and Winter Habitats: (October through March). Known Habitat: Avoid all development or exploration activities within 3.3 km (2 miles) or other appropriate distance based on site-specific conditions, of leks or within 1 km (0.6 mi.) of known nesting brood-rearing and winter habitat. Potential Habitat: Avoid permanent occupancy of potential habitat.

General Sage Grouse Stipulations:

Prior to entry on any lease areas which include known or potential habitat, the lessee (operator) shall contact the appropriate BLM Field Office to discuss any proposed activities. Controlled Or Limited Surface Use: (avoidance and/or required mitigation measures to be developed) - Are applicable for all leases proposed in areas of crucial deer, antelope, and big horn sheep habitat during migration and critical fawning and kidding areas.

Other Biota: Prior to site development, a survey for invertebrates will be conducted on areas where geothermal surface expressions occur.

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Threatened, Endangered or Sensitive Species:

No surface occupancy: No surface occupancy within 1 mile of occupied or identified potential Lahontan Cutthroat Trout (LCT) habitat.

Controlled Or Limited Surface Use: (avoidance and/or mitigation measures to be developed) 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 modifications 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, 16 U.S.C. 1531, as amended, including completion of any required procedure for conference or consultation.

Wild Horse and Burros:

Controlled or Limited Surface Use: (avoidance and/or mitigation measures to be developed.) If wild horse or burro populations are located on sites proposed for development, it may be necessary to avoid or develop mitigation measures to reduce adverse impacts to horses. These measures may include providing alternative water sources for horses of equal quality and quantity.

Migratory Birds: Surface disturbing activities during the migratory bird nesting season (March to July) may be restricted in order to avoid potential violation of the Migratory Bird Act. Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites which may include avoidance or restricting or excluding development during certain areas to times when nests and nesting birds will not be disturbed. During development and production phases, if artificial ponds potentially detrimental to migratory birds are created, these shall be fitted with exclusion devices such as netting or floating balls.

Vegetation

Controlled Or Limited Surface Use: (avoidance and/or mitigation measures to be developed). All areas of exploration and or development disturbance will be reclaimed including recontouring disturbed areas to blend with the surrounding topography and using appropriate methods to seed with a diverse perennial seed mix. The seed mix used to reclaim disturbed areas would be "certified" weed free.

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Riparian Areas: No surface occupancy within 650 feet (horizontal measurement) of any surface water bodies, riparian areas, wetlands, playas or 100-year floodplains to protect the integrity of these resources (as indicated by the presence of riparian vegetation and not actual water). Exceptions to this restriction may be considered on a case-by-case basis if the BLM determines at least one of the following conditions apply: 1) additional development is proposed in an area where current development has shown no adverse impacts, 2) suitable off-site mitigation will be provided if habitat loss is expected, or 3) BLM determines development proposed under any plan of operations ensures adequate protection of the resources.

Noxious Weeds: During all phases of exploration and development, the lessee shall maintain a noxious weed control program consisting of monitoring and eradication for species listed on the Nevada Designated Noxious Weed List (NRS 555.010).

Cultural Resources

No surface occupancy: No surface occupancy within the setting of National Register eligible sites where integrity of setting is critical to their eligibility. Controlled Or Limited Surface Use: (avoidance and/or mitigation measures to be developed). All surface disturbing activities proposed after issuance of the lease are subject to compliance with Section 106 of the National Historic Protection Act (NHPA) and its implementation through the protocol between the BLM Nevada State Director and the Nevada State Historic Preservation Officer.

Native American

No surface occupancy: No surface occupancy within the setting of National Register eligible Traditional Cultural Properties (TCPs) where integrity of the setting is critical to their eligibility. For development and production phases, surface occupancy may be limited to a specific distance or precluded at hot springs, pending conclusion of the Native American consultation process. All development activities proposed under the authority of this lease are subject to the requirement for Native American consultation prior to BLM authorizing the activity. Depending on the nature of the lease developments being proposed and the resources of concerns to tribes potentially affected, Native American consultation and resulting mitigation measures to avoid significant impacts may extend time frames for processing authorizations for development activities, as well as, change in the ways in which developments are implemented.

Paleontological Resources

Where significant paleontological resources are identified, mitigating measures such as data recovery, restrictions on development, and deletion of some areas from development may be required on a case by case basis.

Water Resources

Attachment E

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

As exploration and development activities commence, the operator shall institute a hydrologic monitoring program. The details of the monitoring programs will be site specific and the intensity shall be commensurate with the level of exploration. For example, if the proponent will be conducting seismic studies the monitoring would be limited to the identification of water resources to be monitored as activities continue; if a drilling program were to be undertaken the number of aquifers encountered, their properties, their quality, and their saturated thickness would be documented. The information collected will be submitted to the Bureau of Land Management and will be used to support future NEPA documentation as development progresses. Adverse impacts to surface expressions of the geothermal reservoir (hot springs), and

Threatened and Endangered Species habitat are not acceptable. The lessee will monitor the quality, quantity, and temperature of any hot springs or other water resource within the area whenever they are conducting activities which have the potential to impact those resources. If adverse impacts do occur, BLM will require the lessee to take corrective action to mitigate the impact. Corrective action may include shutting down the operation. These are in addition to the other stipulations. These are LEASE stipulations, not operational, the information gathered under the monitoring stipulation will be used to identify future impacts at the operational stage.

Lands & Realty

No drilling, including exploration or development activities within linear Rights-of-Way.

Hazardous Materials

Prior to exploration and development, an emergency response plan will be developed to include contingencies for hazardous material spills and disposal.

STIPULATIONS TO BE APPLIED TO THE PORTION OF THE GEOTHERMAL LEASE APPLICATION NVN-77483 LOCATED IN THE SHOSHONE-EUREKA PLANNING AREA OF THE BATTLE MOUNTAIN FIELD OFFICE

Air Quality

The operator would be required to implement at the direction of the Assistant Field Manager testing of emissions for H₂S and other noxious/ deadly gases where there is indication that these gases may occur.

Cultural-Historical Resources

Cultural resources would be avoided and mitigation measures would be developed on a case-by case basis as required by regulations, lease terms and attached stipulations developed during site specific NEPA analysis.

Native American Religious Concerns

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

As surface disturbing activities occur, the BLM will require the operator to monitor the water temperature and outflow or water from local hot springs and existing wells as directed by the Assistant Field Manager. If the temperature and outflow from the spring or well were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM shall require the operator to take corrective actions. Failure of the operator to take the corrective measures as directed will result in BLM terminating the operation.

Special Status Species

The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The special status species list is reviewed and/ or updated annually and as species are added, new mitigations/stipulations may add further restrictions. 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 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Exploratory endeavors on the public lands will require a Special Status Species review, and may require a field survey for the presence of Special Status Species. Potential impacts to Special Status Species will be analyzed on a case-by-case basis. Mitigation measures shall be developed on an individual basis depending upon the results of the survey.

Springs within ½ mile of exploration activities shall be inventoried by BLM approved and supervised personnel for the presence of invertebrates. If a rare genus, such as *Pyrgulopsis*, is found, identification to species and monitoring of effects of the proposed action shall be required and site-specific mitigation may be developed by the BLM.

Sage grouse: BLM will require operations to avoid active leks (strutting grounds) by 2 miles during strutting season (see Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada, October 2000). Approximate dates: March 1 - May 15

Operations would avoid nesting and brood rearing habitat (especially riparian habitat where broods concentrate beginning usually in June) by ½ mile during the time such areas are in use. Approximate dates: April I August 15

Operations would avoid sage grouse wintering habitat by ½ mile, while occupied. Most known wintering grounds in the Shoshone-Eureka Resource Area occur at high elevations and are not likely to be affected. Avoidance dates will vary with severity of the winter.

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

BLM will limit the disturbance to and fragmentation of all known sage grouse habitat.

Ferruginous hawks: Operations shall avoid active nests by ½ mile. Approximate dates: March 15 - July 1

Hydrology and Water Quality and Quantity

All applicants for exploration permits will be required to submit a surface water inventory to the Assistant Field Manager before authorization may be granted. The inventory will include a map of appropriate scale (such as 1:24,000) indicating the location of all surface water on public land within ½ mile radius from the surface disturbing activity.

At the commencement of surface disturbing activities for the drilling of exploration wells, the BLM will require that the drilling company monitor the water temperature and outflow of water from local springs and existing wells as directed by the Assistant Field Manager. If the temperature and/or outflow of the water from the spring or well were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM will require the operator to take corrective actions. Failure of the operator to take the corrective measures as directed will result in BLM terminating the operation.

Results will be reported to Federal and State agencies on the status of these hydrologic systems during drilling.

Impacts include, but are not limited to, the following:

Change in water temperature

Change in discharge rate

Substantial decrease in water table level

Surface subsidence

In the event of impacts to surface or subsurface waters, determined by the Assistant Field Manager to be more than negligible, or if a violation of Federal or State water quality standards occurs, the Assistant Field Manager will assess the situation, and may require the operator to amend, relocate or discontinue operations. If operations are terminated, the BLM will develop and the operator shall implement remediation measures.

Additional stipulations may include:

No use of the surface water;

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Limitations on the type of equipment that may be used; and Restrictions of activities during certain times of the year.

Surface waters, wetlands and riparian areas would be avoided as much as possible. No exploration activities should occur within 100 feet of riparian areas.

Wetlands / Riparian Zones

The NOTICE OF INTENT TO CONDUCT GEOTHERMAL RESOURCE EXPLORATION OPERATIONS (form 3200-9), terms and conditions, number 10 states that “Vegetation shall not be disturbed within 300 feet of waters designated by the Authorized Officer, except at approved stream crossing.”

Where surface waters, wetlands and riparian areas cannot be avoided (100 feet for non-surface disturbing exploration activities and 300 feet for surface disturbing exploration activities), mitigation would be developed on a case-by-case basis.

Typical Measures include:

No use of the surface water;

Limitations on the type of equipment that may be used; and

Restrictions of activities during certain times of the year

The BLM will require that the drilling company monitor the temperature and outflow of water from local hot springs. If the temperature and/or outflow of water from a spring were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM will require the operator to take corrective action. Failure of the operator to take the corrective measures as directed will result in BLM terminating the operation.

Invasive Nonnative Species

Areas to be involved in surface disturbing activities will be inventoried for the presence of invasive, nonnative species and treated if present.

The exterior of all vehicles and heavy equipment shall be cleaned by water before entering public lands to do work. To minimize the possibility for contamination, a designated wash area will be designated by the BLM and shall be established and monitored by the operator in high use areas.

The boots of operators and other person working in the areas shall be cleaned of seed before coming onto BLM lands.

Attachment E

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

The BLM will develop and the operator shall implement a weed treatment program from the time operation commences until the site is abandoned.

Seed and mulch used to reclaim disturbed areas shall be free of invasive nonnative species.

Operators and workers shall avoid driving through or parking in areas where invasive nonnative species occur.

When sites are abandoned, they will be inventoried for the presence of invasive nonnative species and treated if present.

Land Use Authorizations

Avoid existing rights-of-way where possible. Proposed leases shall not overlap existing land use authorizations if they would adversely affect the valid existing authorization.

Allotment Management

If operations cause a water source to become unavailable to livestock, the Authorized Officer will require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for livestock.

If the lease area is within an allotment, the Assistant Field Manager may require additional measures, including seasonal restrictions or no surface occupancy.

Recreation

None identified.

Soils

None identified.

Vegetation

Disturbed areas will be reseeded with native or introduced plant species, depending on the site conditions. Disturbed areas will be reseeded with pure live seed (certified weed free) with the mixes in Appendix F. Native vegetation will be used wherever possible. However, to compete with invasive nonnative species, introduced species, as suggested in the seed list in Appendix F, will be used.

Visual Resources

None identified.

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Migratory Birds

The BLM will limit the amount of ground clearing or other disturbance (such as the creation of cross-country access to drill sites) that an operator may do during the migratory bird nesting season. Areas to be disturbed shall be surveyed by personnel approved and supervised by BLM to determine the existence and location of any nests. If any nests are located, the nest will be avoided by 1/4 mile. If the nest area cannot be avoided, mitigation would be developed on a case-by-case basis.

Wildlife

If operations cause a water source to become unavailable to wildlife, the Authorized Officer will require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for wildlife.

If the lease area is within a wildlife management area, the Assistant Field Manager may require additional measures, including seasonal restrictions or no surface occupancy.

Wild Horses and Burros

If operations cause a water source to become unavailable to wild horses, the Authorized Officer may require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for the wild horses.

If the lease area is within a HMA, the Assistant Field Manager may require additional stipulations for the protection of wild horses and burros, including seasonal restrictions or no surface occupancy.

All Resources

Operators shall adhere to all Standard Operating Procedures as outlined in this EA, unless specifically waived by the Assistant Field Manager.

Playa

Because playas are important recreational places apt to have cultural sites nearby and provide critical habitat for some migratory waterbirds and shorebirds, including Special Status Species such as the Snowy Plover, mitigation measures will be developed on a case-by-case basis. Mitigation may include, but is not limited to, no surface occupancy and seasonal restrictions.

Leases NVN-77481, NVN-77482, NVN-77483

BLM WINNEMUCCA FIELD OFFICE GEOTHERMAL LEASE STIPULATION FOR SPECIAL STATUS SPECIES

Attachment E

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Penstemon palmerii var. *macranthus*, and Lahontan beardstongue, both special status plant species (T&E/Sensitive) have been identified in the vicinity lands contained in this lease. The lease lands contain similar habitat and associated plant species. Prior to approval of ground disturbing activities, the lessee shall contact the BLM to coordinate the need for a field inventory to determine the presence of this species. If these plant species are identified in the area of proposed surface disturbing activities, then the Winnemucca Field Office Geothermal Lease Stipulations for Threatened, Endangered or Sensitive Species will apply.

LEASE STIPULATIONS COMMON TO NVN-74881 & NVN-74883

GENERAL STIPULATIONS FOR LEASING GEOTHERMAL RESOURCES MANAGED BY THE WINNEMUCCA FIELD OFFICE (WINN STIP)

General Sage Grouse Stipulation

Prior to entry on any lease areas which include known or potential habitat, the lessee (operator) shall contact the appropriate BLM Field Office to discuss any proposed activities.

Other Biota

Prior to site development, a survey for invertebrates will be conducted on areas where geothermal surface expressions occur.

Controlled or Limited Surface Use (Avoidance and/or Mitigation Measures to Be Developed)

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 modifications 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, 16 U.S.C. 1531, as amended including completion of any required procedure for conference or consultation.

Wild Horse and Burros

If wild horse or burro populations are located on sites proposed for development, it may be necessary to avoid or develop mitigation measures to reduce adverse impacts to horses. These measures may include providing alternative water sources for horses of equal quality and quantity.

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Migratory Birds

Surface disturbing activities during the migratory bird nesting season (March to July) may be restricted in order to avoid potential violation of the Migratory Bird Act. Appropriate inventories of migratory birds shall be conducted during analysis of actual site development. If active nests are located, the proponent shall coordinate with BLM to establish appropriate protection measures for the nesting sites which may include avoidance or restricting or excluding development during certain areas to times when nests and nesting birds will not be disturbed. During development and production phases, if artificial ponds potentially detrimental to migratory birds are created, these shall be fitted with exclusion devices such as netting or floating balls.

Vegetation

All areas of exploration and or development disturbance will be reclaimed including re-contouring disturbed areas to blend with the surrounding topography and using appropriate methods to seed with a diverse perennial seed mix: The seed mix used to reclaim disturbed areas would be "certified" weed free.

Riparian Areas

No surface occupancy within 650 feet (horizontal measurement) of any surface water bodies, riparian areas, wetlands, playas or 100-year floodplains to protect the integrity of these resources (as indicated by the presence of riparian vegetation and not actual water). Exceptions to this restriction may be considered on a case-by-case basis if the BLM determines at least one of the following conditions apply: 1) additional development is proposed in an area where current development has shown no adverse impacts, 2) suitable off-site mitigation will be provided if habitat loss is expected, or 3) BLM determines development proposed under any plan of operations ensures adequate protection of the resources, Noxious Weeds. During all phases of exploration and development, the lessee shall maintain a noxious weed control program consisting of monitoring and eradication for species listed on the Nevada Designated Noxious Weed List (NRS 555.010).

Cultural Resources

Controlled or Limited Surface Use (Avoidance and/or Mitigation Measures to Be Developed)

All surface disturbing activities proposed after issuance of the lease are subject to compliance with Section 106 of the National Historic Protection Act (NHPA) and its implementation through the protocol between the BLM Nevada State Director and the Nevada State Historic Preservation Officer.

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Native American

No Surface Occupancy

No surface occupancy within the setting of National Register eligible Traditional Cultural Properties (TCPs) where integrity of the setting is critical to their eligibility. For development and production phases, surface occupancy may be limited to a specific distance or precluded at hot springs, pending conclusion of the Native American consultation process. All development activities proposed under the authority of this lease are subject to the requirement for Native American consultation prior to BLM authorizing the activity. Depending on the nature of the lease developments being proposed and the resources of concerns to tribes potentially effected, Native American consultation and resulting mitigation measures to avoid significant impacts may extend time frames for processing authorizations for development activities, as well as, change in the ways in which developments axe implemented.

Paleontological Resources

Where significant paleontological resources are Identified, mitigating measures such as data recovery, restrictions on development, and deletion of some areas from development may be required on a case by case.

Water Resources

As exploration and development activities commence, the operator shall institute hydrologic monitoring program. The details of the monitoring programs will be site specific and the intensity shall be commensurate with the level of exploration. For example, if the proponent will be conducting seismic studies the monitoring would be limited to the identification of water resources to be monitored as activities continue; if a drilling program were to be undertaken the number of aquifers encountered, their properties, their quality, and their saturated thickness would be documented.

The information collected will be submitted to the Bureau of Land Management and will be used to support future NEPA documentation as development progresses. Adverse impacts to surface expressions of the geothermal reservoir (hot springs), and Threatened and Endangered Species habitat are not acceptable. The lessee will monitor the quality, quantity, and temperature of any hot springs or other water resource within the area whenever they are conducting activities which have the potential to impact those resources. If adverse impacts do occur, BLM will require the lessee to take corrective action to mitigate the impact Corrective action may include shutting down the operation. These are in addition to the other stipulations. These are LEASE stipulations, not operational, the information gathered under the monitoring stipulation will be used to identify future impacts at the operational stage.

Attachment E

CONDITIONS OF APPROVAL FOR GEOTHERMAL UTILIZATION

Lands & Realty

No drilling, including exploration or development activities within linear Rights-of-Way.

Hazardous Materials

Prior to exploration and development, an emergency response plan will developed that includes contingencies for hazardous material spills and disposal.

**ATTACHMENT F
EA COMMENT RESPONSES**

ATTACHMENT F

EA COMMENT RESPONSES

The following are comment responses from the BLM related to input received from various groups related to the Mt. Lewis field office's preliminary environmental assessment (EA): "Jersey Valley and Buffalo Valley Geothermal Development Projects Pershing and Lander Counties, Nevada, DOI-BLM-NV-063-EA08-091".

Copies of these comments are attached for your perusal.

On May 17th, 2010 Ormat Nevada, Incorporated (Ormat) informed the Nevada State Office of the Bureau of Land Management (BLM) that the Company had decided to relinquish its geothermal leases for the Buffalo Valley Geothermal Leases. These responses to comments have been modified to reflect these changes.

BLM Public Comment Responses to Jersey Valley/Buffalo Valley Geothermal Development Project EA

Nevada Department of Wildlife

Comment 1: Stamm citation: The citations in the EA refer to conversations between the EA preparer, EMA, and Mike Stamm, Wildlife Biologist (retired). The citations have been changed to reflect these conversations.

Comment 2: Wildlife Affected Environment: BLM has requested the site specific location of the guzzler so the BLM may provide that information to Ormat; in order to prevent any conflicts between Ormat's project and this particular NDOW guzzler. The guzzler is located on lease, but a considerable distance from all of the Jersey Valley Project activities; and will not be impacted by the project.

Comment 3: Citation of sage grouse telemetry data: The BLM has cited the source of this data in the EA.

Comment 4: Townsend Big Eared and Pallid Bats: The comment is noted. In addition, the NDOW has informed the BLM that NDOW will place data logger monitoring devices in this particular adit so as to ascertain any changes that may result to the adit's stable temperature as a result of the pumping of the Jersey Valley geothermal well field.

Comment 5: Weeds: Appendix A of the EA contains the five (5) sets of lease stipulations that comprise Ormat's geothermal leases. Of these five sets of stipulations (some are stipulations common to more than one lease) and the relinquishment of Ormat's Buffalo Valley geothermal leases, only the following lease stipulations apply: NVN-74881, NVN-74883, NVN-77883, NVN-77481, NVN-77482, and NVN-77483.

Each set of stipulations provides positive and effective measures/requirements for control of weeds, invasive and non-invasive species that Ormat must adhere to throughout all aspects of their projects; from construction through site closure and reclamation. These stipulations include, but are not limited to: weed inventory and monitoring throughout the project area and over the life of the project; re-seeding of all disturbed areas with certified weed free seed; monitoring of the reclamation/re-seeding to ensure weeds do not invade the reclamation; a weed treatment program from project initiation through site reclamation, to name a few.

Please refer to the five (5) sets of lease stipulations in Appendix A of the EA for the complete requirements related to weeds, invasive and non-invasive species Ormat must adhere to as part of the projects' approval.

Mr. and Mrs. Mike Stremler

As noted by Mr. and Mrs. Stremler's comments, the Nevada Division of Water Resources (NDWR) is responsible for regulating water use within Nevada.

The BLM, in approving the Jersey Valley Geothermal Project must ensure the BLM approvals and Ormat's use of water are in concert with Nevada Water Law and all NDWR regulations and requirements. In addition, geothermal waters are leasable minerals under the Minerals Leasing Act of 1920 as amended as well as the Geothermal Lease Act of 1970; and as such are subject to BLM oversight and regulation.

Lease stipulations for all geothermal leases held by Ormat in the Jersey Valley specifically require that the Jersey Valley Hot Springs will not be affected by Ormat's operations.

With respect to certain specific comments from the Stremlers:

While the statement is true that the Stemlers have a RS 2339 right-of-way (ROW), the current diversion and associated pipeline have been constructed outside the boundaries of that approved RS 2339 ROW and must be brought into compliance with current BLM regulations;

The BLM does have law enforcement authority on the Public Lands of Nevada. Since the Jersey Hot Springs are located on BLM Public Lands, BLM law enforcement authority extends to those hot springs.

The comment from Page 45, Section 3.4.2.1 is taken out of context. During consultation with various Native American groups and Tribes, hot springs have been noted numerous times by these groups as having important cultural, spiritual and traditional values. The concern, as presented, is the likelihood of increased visitation to both the Jersey Valley and Buffalo Hot Springs sights by construction workers and plant personnel (and additional publics as the primary roads are maintained and improved). Increased visitation and use, with respect to Native American concerns, indicate a likelihood of increased disturbance, trash and in general, a lowering of the values the Native Americans groups and Tribes state are important. During consultation with the Native American groups and tribes, various comments included a request

for increased patrols to the Jersey/Buffalo Valley hot springs by BLM law enforcement; with the intent of addressing the Native American groups and Tribes' concerns noted above.

The description of the eight points of water diversions for surface water rights on page 75 was taken directly from the NDWR's web site; which provides the most up-to-date information on NDWR permits. The BLM stands by the statement.

The page 89, recreational use comment: historically, hot springs across the state have been used, either legally or illegally, by citizens travelling in Nevada's open spaces. Both Jersey and Buffalo Hot Springs have had recreational use. The Stremmer's comments even note the presence at one time of a "soak tub"; since removed. The BLM does not sanction or approve the use of hot springs on Public Lands. Many such sites are too hot for use by humans.

Comment from Page 94: The Public Water Reserve: This is also taken out of context. The Jersey Valley Geothermal Lease contains 8,470 acres of Public Lands and sub-surface leasable mineral rights, i.e geothermal fluids. The public water reserve (PWR) referenced on page 94 of the EA refers to a PWR located on those 8,470 acres; and does not imply or state any PWR tied to the Jersey Hot Springs.

Department of Administration, Nevada State Clearinghouse

Division of State Lands

Page 91 and 92, under "Mitigation" for Visual Resource Management impacts of the EA, along with the required Best Management Practices (BMPs) (Appendix D) from the "Final Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States" requires the BLM and Ormat to address the Department of Administration's concern with respect Nevada's "Dark Skies" initiative; and other visual resource impacts, such as painting permanent structures so they blend into their surrounding environment.

The mitigation in the EA and the required BMPs from the Programmatic EIS meet or exceed the comments provided by the Division of State Lands.

Division of Water Resources

The approvals for all aspects of Ormat's Jersey Valley Geothermal Project require that Ormat must comply with all local, State and Federal regulations. This includes compliance with Nevada Division of Water Resource regulations and requirements.

State Historic Preservation Officer

Comment noting project support as is written is noted by the BLM.

**ATTACHEMNT G
MAILING LIST**

AECOM	Valerie	Randall	1601 Prospect Parkway	Fort Collins	CO	80525
Badger/Chiara Ranches	Dan	Filippini	HC 61 Box 65	Battle Mountain	NV	89820
BIA-Eastern Nevada Agency	Superintendent	Thomas, Ely District Office	1555 Shoshone Circle	Elko	NV	89801
Bureau of Land Management	Rosemary		HC 33 Box 33500	Ely	NV	89301-9408
Bureau of Land Management	Stillwater Field Manager		5665 Morgan Mill	Carson City	NV	89701
Bureau of Reclamation	Elko District P&E		3900 E. Idaho Street	Elko	NV	89801
C Ranches Inc	Kenneth	Parr	705 N Plaza Street, Ste 320	Carson City	NV	89701
Center for Biological Diversity	Rob	Mrowka	Carlito Valley No 1 HC66 - 46	Beowawe	NV	89821
Center for Biological Diversity			4261 Lily Glen Ct	North Las Vegas	NV	89032-3099
Commission for the Preservation of Wild Horses			P. O. Box 710	Tucson	AZ	85702-0710
Department of Administration			885 East Lake Blvd.	Carson City	NV	89704
Doby George, LLC	Bernard	Carter	209 East Musser Street, Room 200	Carson City	NV	89701
Duckwater Shoshone Tribe	Virginia	Sanchez	165 West Liberty Street Suite 100	Reno	NV	89501
Ellison Ranching Co.	Reed	Clark	511 Duckwater Falls Road	Duckwater	NV	89314
Ellison Ranching Co.	Bill	Hall	HC 61 Box 191	Battle Mountain	NV	89820
EMPSI	Holly	Prohaska	HC 32 Box 240	Tuscarora	NV	89834
Eureka County Dept. of Natural Resources	Jim	Baumann	182 Howard Street, Ste 110	San Francisco	CA	94105
Eureka County Dept. of Natural Resources	Chad	Bliss	P.O. Box 308	Eureka	NV	89316
Eureka County Dept. of Natural Resources	Ken	Conley	P.O. Box 585	Eureka	NV	89316
Eureka County Dept. of Natural Resources	Carrie	Dubray	P.O. Box 11	Eureka	NV	89316
Eureka County Dept. of Natural Resources	Jake	Tibbitts	P.O. Box 966	Eureka	NV	89816
Eureka County Dept. of Natural Resources	Jerry	Todd	P.O. Box 682	Eureka	NV	89316
Eureka County Dept. of Natural Resources	Jim	Wise	P.O. Box 73	Eureka	NV	89316
Eureka Moly LLC	Kevin	Kinsella	P.O. Box 864	Eureka	NV	89816
Filippini Ranching Co.	Henry	Filippini Jr.	2215 North 5th Street	Elko	NV	89801
Friends of Nevada Wilderness			HC 61 Box 70	Battle Mountain	NV	89820
Goemmer L&L Buffalo Ranches, LLC	Shawn & Mindy	Goemmer	P.O. Box 9754	Reno	NV	89507
JBR Environmental Consultants, Inc.	Kristi	McKinnon	P.O. Box 517	Battle Mountain	NV	89820
Jersey Valley Cattle Company LLC			1165 East Jennings Way, Suite 101	Elko	NV	89801
Julian Tomera Ranches Inc	Pete	Tomera	P.O. Box 1098	Winnemucca	NV	89446
Lander Co PLUAC	Joy	Brandt	PO Box 276	Battle Mountain	NV	89820
Lander Co PLUAC	Frank	Whitman	P.O. Box 10	Austin	NV	89310
Lander Co PLUAC	Philip	Williams, Vice Chairman	P.O. Box 239	Austin	NV	89310-0239
Lander Co. Wildlife, PLUAC, Planning, HRBWA	Louis	Lani	P.O. Box 7	Austin	NV	89310
Lander County Commissioners			P.O. Box 125	Austin	NV	89310
Lander County Executive Director	Gene	Etcheverry	315 South Humbolt Street	Battle Mountain	NV	89820
LAS Acting President	Alan	Gubalich	315 South Humbolt Street	Battle Mountain	NV	89820
Lovelock Palute Tribal Council Secretary	Stephanie	Coordinater	P.O. Box 2304	Reno	NV	89505
Manhattan Advisory Board			P.O. Box 878	Lovelock	NV	89419
McLeod Ranch & Fishery	Ted	Melshelmer	P.O. Box 69	Manhattan	NV	89022-0069
NDOW	D. Bradford	Biologist	3200 Ponderosa Drive	Carson City	NV	89701
Nevada Cattlemen's Association			4747 Vegas Drive	Las Vegas	NV	89108
Nevada Department of Wildlife	Steve	Foree	P.O. Box 310	Elko	NV	89803-0310
Nevada Department of Wildlife	Tracy	Kipla	60 Youth Center Road	Elko	NV	89801
Nevada Department of Wildlife	Katie Erh	Miller	4747 Vegas Drive	Las Vegas	NV	89108
Nevada Department of Wildlife	Dave	Pulliam	60 Youth Center Road	Elko	NV	89801
Nevada Department of Wildlife			1100 valley Road	Reno	NV	89512
Nevada Department of Wildlife			380 West B Street	Fallon	NV	89406
Nevada Fish and Wildlife Office	Robert	Williams	815 E. 4th Street	Winnemucca	NV	89445
Nevada Land and Resource Company	David	Buhlig	1340 Financial Blvd., Ste 234	Reno	NV	89502
Nevada Woolgrowers Association	Pete	Paris	3480 GS Richards Blvd., Ste. 101	Carson City	NV	89703
Newmont Mining Corporation	Jeff	White, Director	HC30 Box 320	Spring Creek	NV	89815
NV Energy	Lee	Simpkins	1655 Mountain City Highway	Elko	NV	89801
NV Energy	Land Operations		6100 Neil Road	Reno	NV	89511
Nye County Air Quality Compliance Officer	George	Bernath	6100 Neil Road	Reno	NV	89511
Nye County Public Works	David	Fanning	250 N. Hwy 160 Ste. 1	Pahrump	NV	89060
Pershing County			250 N. Hwy 160 Ste. 2	Pahrump	NV	89060
Resource Concepts, Inc.	John	McLain	P.O. Box E	Lovelock	NV	89419
			340 N. Minnesota Street	Carson City	NV	89703-4152

Rodeo Creek Gold Inc.	Dan	Anderson	P.O. Box 2610	Winnemucca	NV	89446
Round Mountain JR/SR High School			P.O. Box 1427	Round Mountain	NV	89045
Silver Creek Ranch Inc.	Paul	Inchauspe	HC 61 Box 61230	Austin	NV	89310
Sustainable Grazing Coalition	Richard	Ort	P.O. Box 145	Callente	NV	89008-0145
SW PEER	Daniel	Petterson, Director	738 N. 5th Ave. #210	Tucson	AZ	85702
Synergy Resource Solutions, Inc.	Jack	Alexander	5393 Hamm Road	Belgrade	MT	59714
Town of Tonopah	James	Eason	P.O. Box 151	Tonopah	NV	89049
US Fish & Wildlife Office			1340 Financial Blvd, Suite 234	Reno	NV	89502
Western Lands Project	Christopher	Krupp	P.O. Box 95545	Seattle	WA	98145-2545
Western Watersheds Project	Katie	Pite, WWP Biodiversity Director	P.O. Box 2863	Boise	ID	83701
	Seth	Anderson	HC 60 Box 62206	Round Mountain	NV	89045
	Mark	Bennett	680 E. 4th Street	Battle Mountain	NV	89820
	Denise	Boibol	P.O. Box 5656	Redwood City	CA	94063
	Bob	Bottom	P.O. Box 89	Manhattan	NV	89022-0089
	Steven	Carter	P.O. Box 27	Lund	NV	89317
	Alan	Coyner	400 W. King Street #106	Carson City	NV	89703
	Leo	Damele	HC 62 Box 62310	Eureka	NV	89316
	Norma	Darrough	P.O. Box 2981	Carson City	NV	89702
	Craig	Downer	P.O. Box 456	Minden	NV	89423-0456
	Stanley	Hooper	4730 Alcorn Road	Fallon	NV	89406
	James	Ithurralde	P.O. Box 26	Eureka	NV	89316
	Jessica	Johnston	3021 Bertis Drive	Sacramento	CA	95821
	Brent	Jones	2651 Sirl Lane	Pahrump	NV	89060
	James	Kulpers	P.O. Box 601	Butte	MT	59703
	Paul	Mattinen	1484 Carson Court	Reno	NV	89503
	Bertrand and Jill	Paris	674 Wilson Ave.	Battle Mountain	NV	89820
	Marjorie	Sill	720 Brookfield Drive	Reno	NV	89503
	David	Spicer	P.O. Box 897	Beatty	NV	89003
	Mike & Barb	Stremier	P.O. Box 1098	Winnemucca	NV	89446
	Jane	Trigero	1999 Harrison Street, Suite 1620	Oakland	CA	94672
	Kyle	Walton	250 N Hwy 160 Ste 1	Pahrump	NV	89060
	Lorinda	Wichman, Commissioner	HC 60Box 61250	Round Mountain	NV	89045
	Kimberly	Wolf	P.O. Box 2134	Eiko	NV	89803
	Brian	Wood	37 Verano Loop	Santa Fe	NM	87508
	Ed	Yist	P.O. Box 60	Tonopah	NV	89049
Fallon Naval Air Base	Building 350		4755 Pature Rd.	Fallon NAS	NV	89496
Yomba Shoshone Tribe	James	Birchim, Chair	HC 61 Box 6275	Austin	NV	89310
Battle Mountain Band Council	Mike	Price, Chair	37 Mountain View Drive	Battle Mountain	NV	89820