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**APPLICATION FOR SURFACE SEISMIC EVALUATION**  
**under**  
**DEPARTMENT OF ENERGY**  
**RECOVERY ACT GRANT DE-FOA-0000109**

**U.S. DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
WINNEMUCCA DISTRICT OFFICE**

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Form 3200-9
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# **SECTION 2**

## **SEISMIC EXPLORATION PLAN**

## **I. GENERAL OPERATIONS**

U.S. Geothermal Inc. (USG) is proposing to prepare a geological profile of the San Emidio geothermal resource area utilizing surface seismic equipment. The geophysical data collection will require 11, 1.5 mile seismic transects along which 40 "seismic acceleration" points will be evaluated. The seismic data will be collected with a truck mounted tri-axial vibroseis machine. (See Section 4- Equipment Photos)

There will be no roads or excavation required and the truck will make one pass along each route.

Based on the geologic structure and known geologic features USG's exploration work will be located on both private and BLM administered lands. (See Section 3- Maps)

## **II. EQUIPMENT, MATERIALS AND PROCEDURES**

### **Contractors and Equipment – (Section 3261.13 b.1)**

Optim (Optim Seismic Data Solutions) from Reno Nevada has been contracted to collect and evaluate the seismic data. USG will have one or two staff on site during the testing and data collection.

The tri-axial vibroseis machine is a 64,000 pound, field truck designed for overland travel without the need for roads. See the enclosed photos in Section 4. The truck starts initiates the testing on one end of the seismic alignment and travels in a relatively straight path along the seismic route. The vibroseis unit, which is carried along the belly of the truck, will provide the seismic data at 200 foot intervals along the route. No excavation or road building is required. We anticipate a 15 minute period to complete each test and move to the next site. Each seismic alignment will be tested in approximately 7 hours and the complete operation will be completed in approximately 7 days.

## **III. EXPLORATION CRITERIA**

### **Road Specifications**

No roads are required and no roads will be constructed. Existing access routes will be utilized where possible.

### **Ancillary Facilities and Pipeline Specifications**

There are no ancillary facilities, structures, or equipment required for the work. No earthwork is proposed or anticipated for the seismic study. As a result of pipeline construction, vegetation and soil may be compacted but not excavated.

### **Design Criteria Common to all Construction**

All existing gates and fences will be maintained. Best Management Practices (BMPs) will be utilized throughout the project. All equipment from out of the area will be washed to reduce the potential for spread of noxious weeds. Upon completion of the seismic study, any disturbed soils will be stabilized. Water runoff and erosion will be evaluated on an ongoing basis. Noxious weeds will be controlled and weed spraying will be evaluated annually.

### **Water Supply**

No water is required for the work. Drinking water for consultants and support staff is available from USG's office.

### **Flagging & Staking**

No flagging or staking is required. Each seismic route and the associated seismic evaluation points will be loaded into the truck mounted GPS unit.

### **Clearing, Grading, Earthwork, Structures, & Stabilization**

There will be no clearing, grading or earthwork required for the proposed testing. There are no trees on the sites and no vegetation will be grubbed or removed.

## **IV. RESOURE PROTECTION**

There are no identified long term impacts to rangeland, wildlife, visual, soils, geological, hydrologic, or recreation resources. Short term impacts could result from displacement of wildlife or recreational users during the testing.

Archeological resources are not anticipated to be impacted because there is no earthmoving or excavation proposed under the operations. In the event that the BLM Authorized Officer determines that a cultural evaluation is required for the testing, USG will retain a qualified archeologist to accompany the testing equipment and ensure that each selected test location will not be located on an archeological occurrence.

## **V. TERMINATION AND REHABILITATION**

### **Surface Reclamation**

All equipment will be removed and each seismic acceleration point will be evaluated for erosion potential. Any disturbed site will be left scarified to enhance infiltration and reduce surface runoff. Seeding will be completed with a BLM approved mixture. Seed will be broadcast at a proposed rate of approximately 25 pounds per acre. No fertilizer is anticipated. Noxious weeds will be treated as necessary.

## **VI. MISCELLANEOUS INFORMATION**

### **Waste Disposal**

No trash, debris, solid waste, or hazardous waste will be disposed of on this Site. All such material will be removed and disposed at approved sites.

### **Traffic Control Plan**

A traffic control plan is not warranted for this operation.

### **Safety Plan**

A safety plan will be retained by the staff which provides information for emergency contacts and access routes.

### **Fire Prevention**

A fire prevention plan will be retained by the staff which provides information for emergency contacts and access routes. On site staff will be notified of weather related equipment restrictions.

### **Spill Prevention and Contingency Plan**

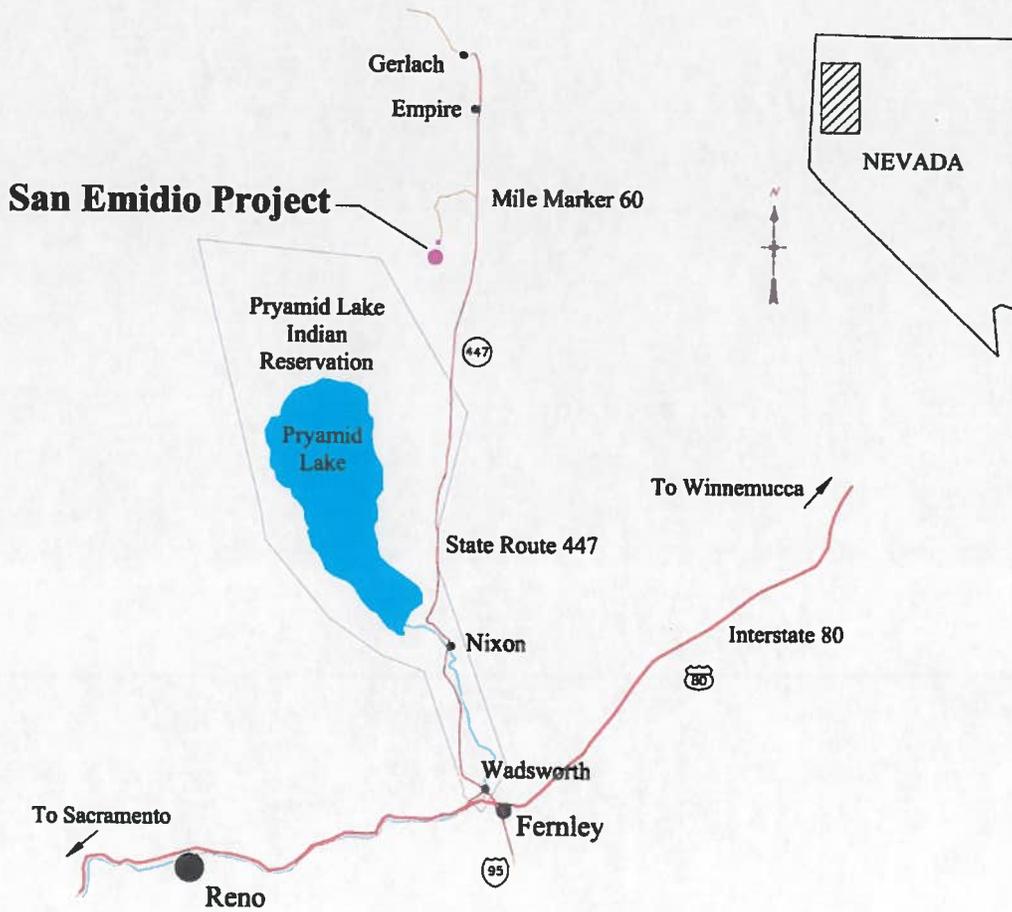
A spill control and prevention plan will be retained by staff for all applicable materials.

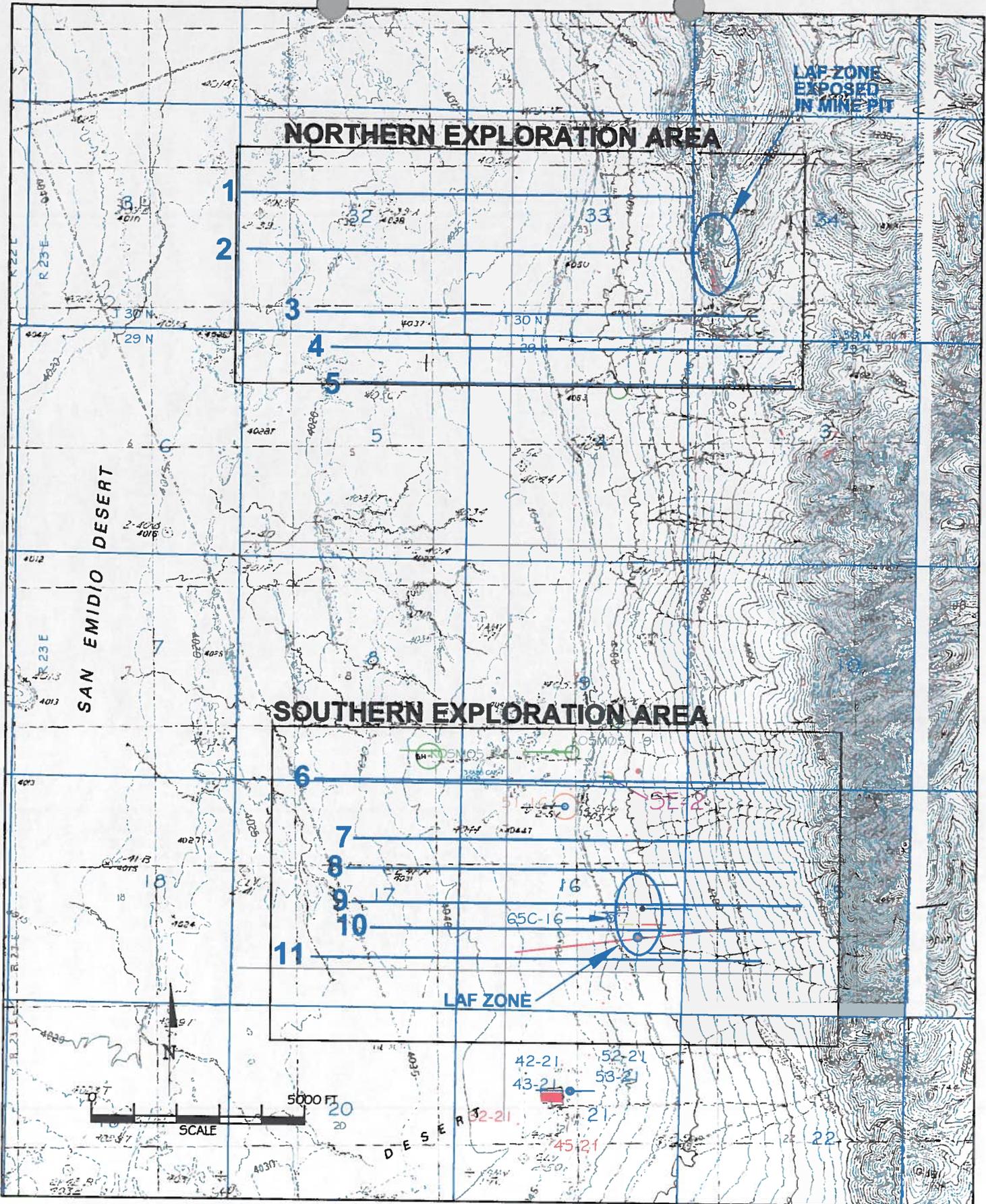
# **SECTION 3**

## **General and Site Location Map**

# U.S. GEOTHERMAL INC.

## GENERAL PROJECT LOCATION





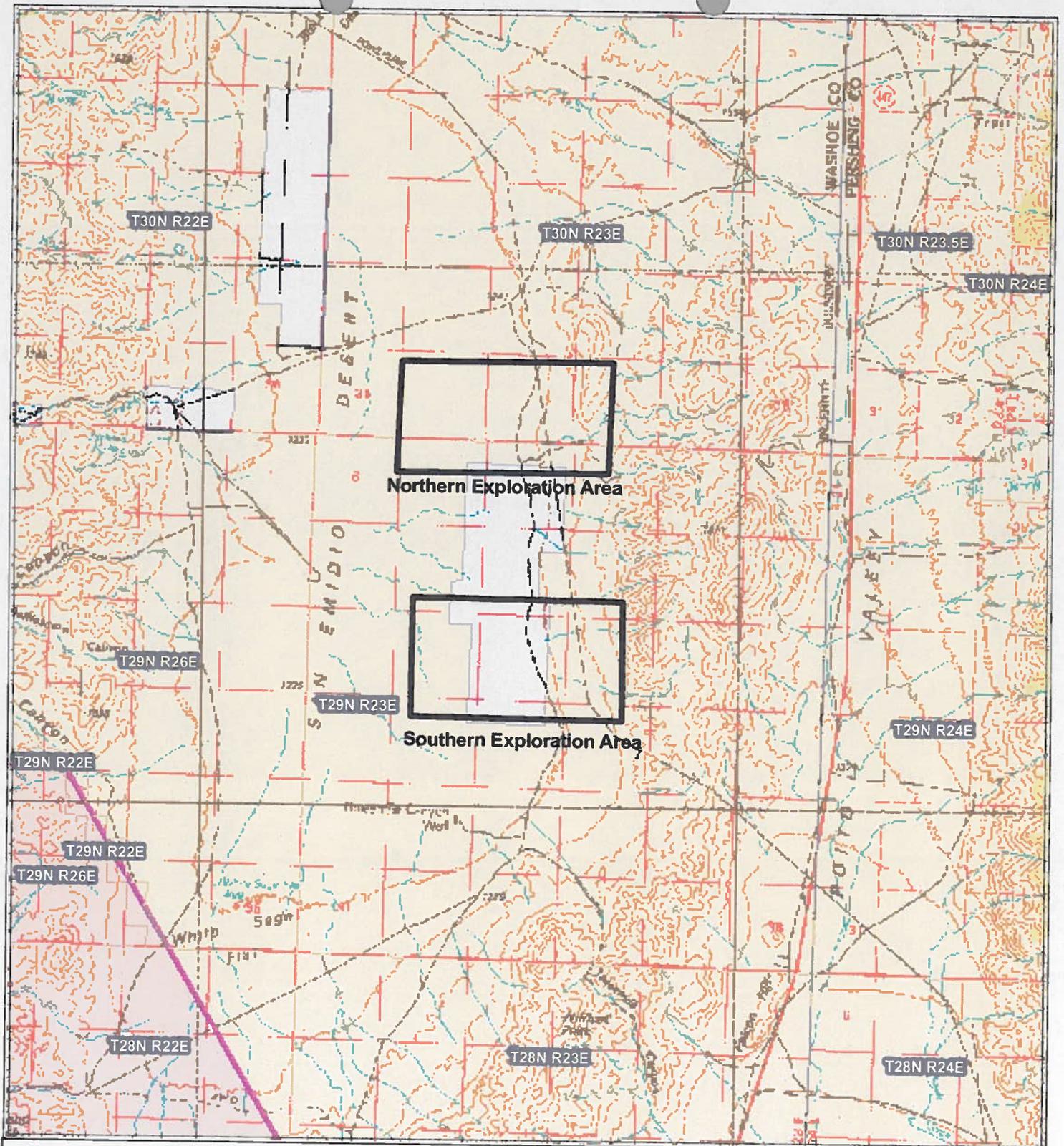
EXPLANATION	<b>USG NEVADA LLC</b>		BY: WM. TEFLOW
	SAN EMIDIO GEOTHERMAL PROJECT		DATE: 3/22/2010
	PROPOSED SEISMIC REFLECTION AND REFRACTION LINES		FIGURE 1

# **SECTION 4**

## **Equipment Photos**







# San Emidio Geophysical Survey Project

San Emidio Desert North, NV  
 USGS 7.5' Quadrangles

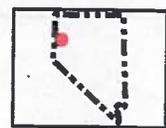
T. 29 N., R. 23 E., sec. 3, 8, 9, 10, 15, 16, 17;  
 T. 30 N., R. 23 E., sec. 32, 33, 34.

0 0.45 0.9 1.8 2.7 3.6



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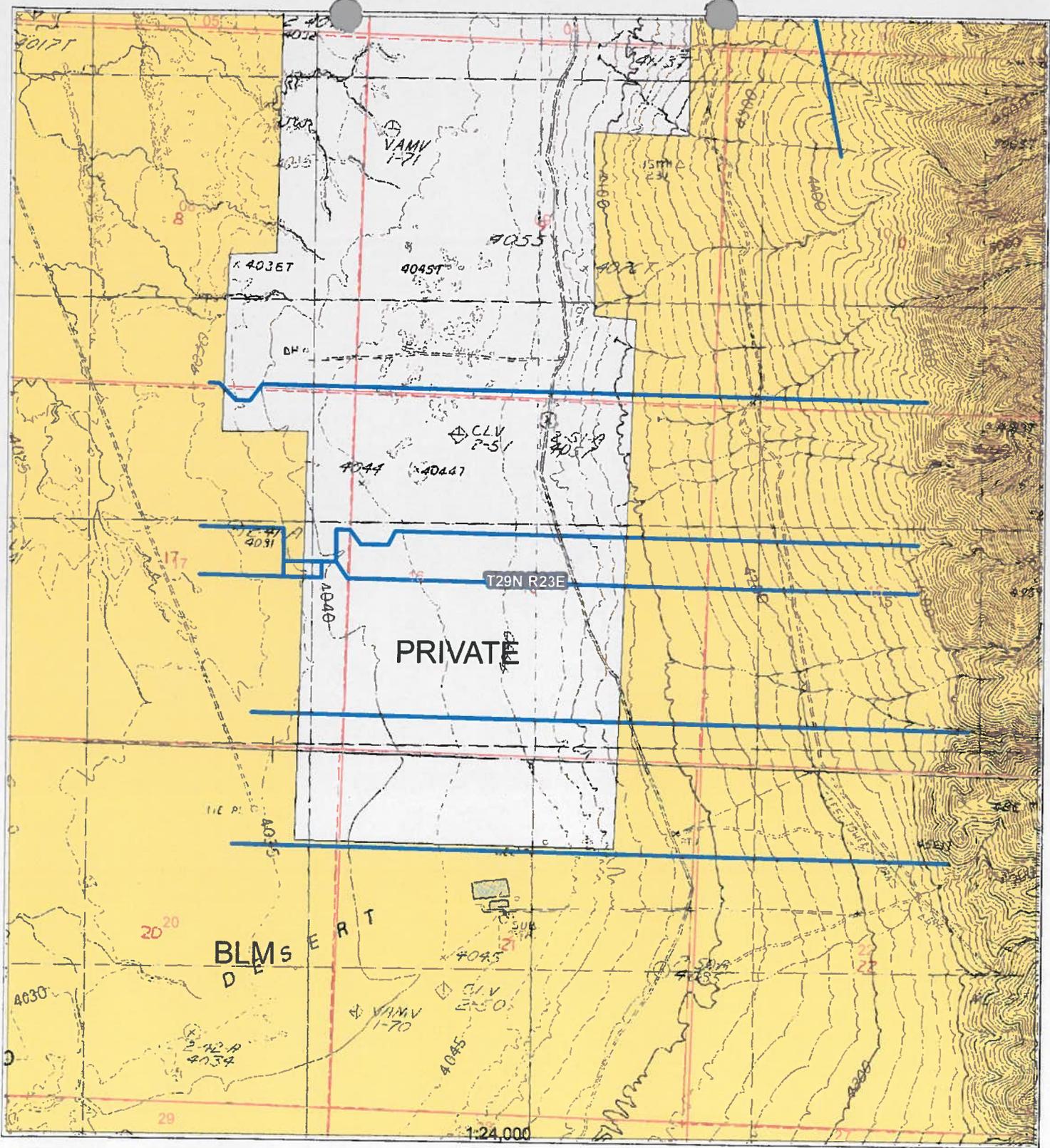


Winnemucca District Office  
 Humboldt River Field Office  
 5100 E. Winnemucca Blvd.  
 Winnemucca, NV 89445

6/2/2010

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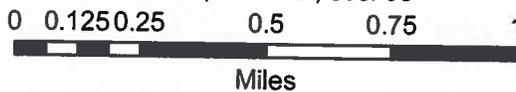


# SAN EMIDIO SOUTH EXPLORATION Final Seismic Route Location

## Legend

-  Final Seismic Route Location
-  Township
-  Section

San Emidio North, NV (1990)  
USGS 7.5' Quadrangles  
T. 30 N., R. 23 E., sec. 33



**Winemucca District Office**  
Hendall River Field Office  
5100 E. Winemucca Blvd.  
Winemucca, NV 89445  
7/27/2010

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