

CHAPTER 1

INTRODUCTION/PURPOSE AND NEED

1.1 INTRODUCTION

Geothermal resources are underground reservoirs of hot water or steam created by heat from the earth. Geothermal steam and hot water can reach the surface of the earth in the form of hot springs, geysers, mud pots, or steam vents. These resources also can be accessed by wells, and the heat energy can be used for generating electricity or for other direct uses, such as heating greenhouses and aquaculture operations or for dehydrating vegetables.

It is the policy of the Department of the Interior, consistent with Section 2 of the Mining and Mineral Policy Act (MMPA) of 1970 and sections 102(a)(7), (8), and (12) of the Federal Land Policy and Management Act (FLPMA) of 1976, to encourage the development of mineral resources, including geothermal resources, on federal lands. The Geothermal Steam Act of 1970 (30 USC §1001 et seq.) and its implementing regulations (43 CFR Part 3200) provide regulatory guidance for geothermal leasing by the Bureau of Land Management (BLM).

There are four stages of geothermal resource development within a lease: (1) exploration, (2) development, (3) production, and (4) closeout. Each of the four stages under the lease requires separate BLM authorization and compliance with the National Environmental Policy Act of 1969 (NEPA) when ground-disturbing activities are proposed. As described in Chapter 2, this environmental assessment (EA) addresses the proposed exploration of geothermal resources in the Carson Lake Basin Project LLC (Vulcan Power) Salt Wells lease area (project area), near Fallon, Nevada.

A geothermal lease typically grants the lessee access to geothermal resources in the lease area for a period of 10 years. The terms of the lease require the lessee to show a certain level of diligence toward developing the geothermal resources within the lease area or the lease may be terminated. Once an area is developed for productive use of geothermal energy, the lease allows the lessee use of the resource for 40 years, with a right of renewal for another 40 years. Geothermal exploration and production on federal land conducted through leases is subject to terms and stipulations to comply with all applicable federal and state laws

pertaining to sanitation, water quality, wildlife, safety, and reclamation. Lease stipulations may be site-specific and are derived from the environmental analysis process.

In July 2002, the BLM Carson City Field Office completed an environmental assessment (EA) for leasing of geothermal resources (BLM 2002). The Finding of No Significant Impacts (FONSI) for the geothermal leasing EA was signed on September 6, 2002. An addendum to the FONSI was signed on March 6, 2003 following tribal consultation on the Salt Wells Geothermal leasing area. After the amended FONSI was signed, the BLM issued geothermal resource leases to Vulcan Power for seven parcels in the Salt Wells geothermal leasing area located five miles south of US Highway 50 and 10 miles east of Fallon, Nevada. The project area encompasses 15,354 acres of BLM and US Bureau of Reclamation (Reclamation) land (Figure 1-1). Vulcan Power is now seeking to perform exploratory drilling of ten wells in the project area (Table 1-1), which requires an analysis of potential environmental impacts before the BLM can issue a permit.

Table 1-1 Proposed Lease Parcels and Well Numbers

Lease Parcel ID	Proposed Well Number
NV079666	33-11
NV079665	51-16
NV079665	31-14
NV079665	67-14
NV079665	27-16
NV079310	89-15
NV079310	52-15
NV079663	31-20
NV079663	23-21
NV079664	33-33

Source: Vulcan Power 2006

Because the proposed action considered in this EA, exploratory drilling in the project area, requires BLM authorization, it is considered a federal action; therefore, NEPA analysis is required. This EA has been prepared in accordance with the NEPA, the Council on Environmental Quality regulations implementing NEPA, and the FLPMA.

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to perform exploratory drilling in order to assess the potential for geothermal resource development within the project area.

1-1 Vulcan Power Geothermal Lease Area



On May 18, 2001, President Bush issued Executive Order (EO) 13212, Actions to Expedite Energy-Related Projects, which states “the increased production and transmission of energy in a safe and environmentally sound manner is essential.” Executive departments and agencies are directed to “take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy.” EO 13212 further states that “(f)or energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation, and where appropriate.”

In response to the EO 13212, BLM issued a National Energy Policy Implementation Plan in June 2001, which directs the BLM to process geothermal leases in a timely manner in order to help support efforts to increase energy production from federal minerals, while preserving the health of the public lands. Demand for energy in the United States has increased dramatically in a relatively short time; therefore, an increase in the level of exploration, development, and production of geothermal resources is needed.

The need for the proposed action is to identify and assess the potential of this area for geothermal development in order to meet the requirements of EO 13212, and the National Energy Policy Implementation Plan (June 2001) described above. As noted, development of domestic energy resources, particularly renewable resources, has become a national priority.

However geothermal resources must be located and assessed for viability prior to full development, in order to make the most efficient use of these valuable resources. Exploration is an essential step in identifying and assessing the viability of geothermal resources for commercial production. Exploration of the project area would enable the BLM to focus development efforts on sites which would return the most value for the effort expended, and prevent damage to wildlife habitat and other natural and cultural resources in areas where low-value geothermal sites are located.

1.3 CONFORMANCE STATEMENT

The proposed action is consistent with the Carson City Field Office (CCFO) Consolidated Resource Management Plan (CRMP) and with other federal, state, and local laws, regulations, and plans to the maximum extent possible. The CRMP states that the desired outcome for minerals and energy management is to “encourage development of energy and mineral resources in a timely manner to meet national, regional, and local needs consistent with the objectives for other public land uses.” (BLM 2001a).

The CRMP further states that “public lands in the Field Office area of jurisdiction are open to mineral and energy development activity with the following exceptions...” The project area is not included in the excluded areas and is therefore open for geothermal development.

1.4 AUTHORIZING ACTIONS

Specific approvals, permits, and regulatory requirements would be required for constructing, operating, and maintaining the proposed geothermal exploratory wells. Table 1-2 lists federal, state, and local permits, policies, and actions that may be required as part of the Proposed Action. In addition, some actions may be required that are not listed in the table.

Table 1-2 Potential Regulatory Responsibilities

Regulatory Agency	Authorizing Action
BLM	Temporary use permits for construction related activities
BLM	Geothermal Drilling Permit
BLM, Nevada Division of Historic Preservation & Archaeology	Section 106 compliance with the National Historic Preservation Act
US Fish and Wildlife Service (USFWS)	Endangered Species Act
Department of Conservation and Natural Resources, Nevada Division of Water Resources	Temporary Consumptive water use permit
State of Nevada, Commission on Mineral Resources, Division of Minerals	Temperature Gradient well permit

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