



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

FINDING OF NO SIGNIFICANT IMPACT

San Emidio Geothermal Exploration Project Environmental Assessment DOE/EA-1810; DOI-BLM-NV-W030-2010-0006-EA

AGENCY: U.S. Department of Energy, Golden Field Office (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The U.S. Department of Energy (DOE) proposed to authorize the expenditure of federal funding¹ to U.S. Geothermal Nevada, Inc. (USGN) to validate the use of innovative geothermal technologies to locate large aperture fractures (LAFs) and to drill two (2) production diameter geothermal wells on BLM-administered public lands in the San Emidio resource area. The innovative geothermal technologies would include using a three-component long-offset surface seismic survey, permanent scatter synthetic aperture radar interferometry (PSInSAR) and structural kinematic analysis to locate and map the LAFs.

The U.S. Department of Interior, Bureau of Land Management, Black Rock Field Office (BLM) is the lead federal agency with DOE as a cooperating agency on the *San Emidio Geothermal Exploration Project Environmental Assessment, Washoe County Nevada; DOI-BLM-NV-W030-2010-0006-EA; DOE/EA-1810*, which included an evaluation of the potential environmental impacts associated with DOE's proposed action and a no action alternative. DOE was invited by BLM to participate in the NEPA process as a cooperating agency (40 CFR 1501.6 and 1508.5). DOE accepted formal cooperating agency status (by a Memorandum of Understanding signed July 6, 2010) and retained review and comment responsibility pertaining to the EA. The EA was prepared in accordance with NEPA, as amended, the CEQ Regulations for Implementing of NEPA (40 CFR 1500 to 1508), the Federal Land Policy and Management Act (FLPMA) of 1976, and BLM's NEPA Handbook (H-1790-1; 2008).

DOE hereby adopts the above referenced EA: *San Emidio Geothermal Exploration Project Environmental Assessment, Washoe County Nevada; DOI-BLM-NV-W030-2010-0006-EA; DOE/EA-1810* and incorporates this EA by reference into this Finding of No Significant Impact (FONSI).

¹ Prior to the issuance of this FONSI, DOE authorized U.S. Geothermal Nevada, Inc. (USGN) to use a percentage of their federal funding for preliminary activities, which include preparation of the *San Emidio Geothermal Exploration Project Environmental Assessment (DOE-BLM-NV-W030-2010-0006-EA)* (EA), and scientific gathering. These activities are associated with the Proposed Project and do not significantly impact the environment nor represent an irreversible or irretrievable commitment by the Department of Energy in advance of the conclusion of the EA for the Proposed Project.



This FONSI was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, as amended, 40 CFR 1508.13; and DOE NEPA Regulations, 10 CFR 1021.322.

PROJECT DESCRIPTION:

DOE's proposed action is to authorize the expenditure of approximately \$3.7 million² of federal funds by USGN under the *American Recovery and Reinvestment Act of 2009* for the purpose of validating innovative exploration technologies. USGN is seeking to drill and test up to six (6) geothermal resource wells in the San Emidio resource area to acquire scientific data about the geothermal resource and the subsurface geologic structure over a portion of its federal geothermal leases on BLM-administered public lands. USGN anticipates drilling up to a total of 15 proposed geothermal wells, six (6) wells on BLM-administered land and nine (9) wells on private lands in the San Emidio resource area. As part of the DOE funded project, DOE proposed to fund the drilling and testing of two (2) of the six (6) wells on BLM-administered lands or two (2) of the nine (9) private geothermal wells (covered in the cumulative impacts section of the above referenced EA as Reasonably Foreseeable Actions). By providing financial assistance to support this project, DOE would further its mission to reduce dependency on fossil fuels, as well as support national energy needs and the development of alternative fuel sources.

The proposed project is located approximately 70 miles northeast of Reno, in Washoe County, Nevada, on three federal geothermal leases held by USGN within the existing San Emidio geothermal unit area. The proposed project and the associated federal leases are on the west flank of the Lake Range in areas identified as appropriate for future geothermal use. Data from the proposed project would be used to test the geothermal reservoir and evaluate geothermal power development potential of the resource.

The production diameter geothermal resource exploration wells would each be drilled to depths of approximately up to 3,500 feet. Drilling would be done with a large rotary drill rig that stands approximately 70 feet tall when erected, similar to those used for typical drilling activities. Individual drilling sites would be 300 x 350 feet for each site. Existing roads at the site would be used when appropriate to access the proposed drill sites. However, additional new roads (approximately 4,756 feet in total) would be required to access each of the proposed drill sites. The total estimated area of surface disturbance required for new access road construction, assuming a 20-foot wide area of disturbance would be about 2 acres. In addition, the drilling activities would require construction for the placement of approximately 22,160 feet of temporary water pipeline. The temporary pipeline would be laid "cross country" and on the surface of the disturbed shoulders of the access roads. No earthwork or removal of vegetation would be required to lay the pipeline cross country or along the driving surface of roads. However, each drill site would be shaped and graded to create a level pad for the drill rig and support equipment, requiring clearing, earth work, drainage and other improvements for efficient and safe operation, and for fire prevention. The total surface area for all six well pads would be approximately 15 acres. The combined total area disturbed for the six wells, including the land area associated with road building, surface piping placement, drill pads and test water pond would be approximately 21 acres.

² As noted earlier, DOE previously authorized USGN to expend a portion of these funds for preliminary activities.

USGN would install “blowout” prevention equipment approved by BLM and the Nevada Division of Minerals. Geothermal fluids would be flowed back into an existing reinjection well (to prevent mixing with surface and ground waters), and a hydrogen sulfide monitoring system would be in place to protect workers. USGN would conduct flow tests on the geothermal wells. After short-term flow test(s), one or more long-term flow test(s) would occur to determine long-term geothermal reservoir productivity.

USGN proposes to initiate activities in early 2011. The project would be implemented over the next one to four years. When a well is no longer required for testing and evaluation, it is plugged and abandoned and each site would be restored in conformance with BLM surface reclamation requirements.

PUBLIC INVOLVEMENT IN THE EA PROCESS: BLM initiated the scoping process to provide an early and open process to gather information from the public and interested agencies on the issues and alternatives to be evaluated in the EA. In October 2008, scoping letters were mailed to interested individuals, organizations, agencies, and tribes to provide notification of the proposed project and to solicit comments. The scoping letter was also posted on BLM’s web page and through advertisement in the local newspaper.

BLM continued consultations with the Susanville Indian Rancheria, Reno-Sparks Indian Colony, Pyramid Lake Paiute Tribe, and Summit Lake Paiute Tribe throughout the NEPA process. Additionally, the Fallon Paiute Shoshone Tribe and the Cedarville Rancheria have been invited to participate.

BLM received two letters as a result of the scoping effort from the Nevada Division of Water Resources and an interested party in favor of further developing the geothermal resource at the San Emidio site. These issues identified during this scoping were reviewed and used to help develop issues and guide the environmental analysis and preparation of the EA.

BLM and DOE prepared the Preliminary EA and made it available for public comment for 15 days beginning August 31, 2010. The Preliminary EA was available on BLM’s and DOE’s websites and BLM issued a news release.

BLM received a total of four comment letters including three comment letters from Nevada State agencies and one public comment letter from a nearby landowner during the 15-day comment period. The Nevada Division of Wildlife comment letter recommended mitigation to minimize wildlife collisions with new safety fences associated with drill sites. The Nevada Department of Administration requested that the comment period be extended to 30 days. The Nevada Division of Water Resources identified no water rights for drilling the exploration wells. The nearby landowner provided comments regarding access across private land to access some components of the project. All comments submitted during the public comment period were considered prior to finalizing the EA.

DOE’s process for carrying out its responsibilities for its NEPA review is consistent with its implementing regulations at 10 CFR 1021. DOE conducts a rigorous environmental analysis

through the NEPA process for all proposed funding actions to evaluate the potential environmental impact associated with the project and public comments are sought at various points in the process. As a cooperating agency with BLM, DOE was involved in the development and review of the EA. The Preliminary EA was available to the public and to Federal, state and local agencies for review and comment prior to a final decision on the Proposed Action.

DETERMINATION: Based on information presented in the EA, DOE determined that authorizing the expenditure of federal funds by USGN to validate the use of innovative geothermal technologies to locate large aperture fractures (LAFs) and to drill two (2) production diameter geothermal wells in the San Emidio resource area on BLM-administered public lands would not be a major federal action significantly affecting the quality of the human environment, as defined by NEPA. If USGN determines that it is necessary to drill the two geothermal wells identified for DOE funding on private land, DOE would undergo additional NEPA review for the change in location.³

The environmental protection measures committed to by the applicant and identified in the EA and BLM FONSI/DR shall be incorporated and enforceable through DOE's funding award documents. The measures include but are not limited to, incorporating mitigating features in the project design and during construction to minimize potential adverse effects such as flagging of fences to minimize wildlife collisions, water application to the ground during construction and utilization of the drill pads and access roads (as necessary) to control dust, the provision of portable chemical sanitary facilities for personnel during periods of well drilling and/or flow testing, solid waste transport to an offsite and appropriate landfill facility, and a Spill or Discharge Contingency Plan to be maintained on-site and followed.

Additionally, USGN would comply with all special lease stipulations attached to leases NVN-74196 and NVN-75233, which apply to the Proposed Action. USGN also would be required to comply with BLM's Other Conditions of Approval, which also have been adopted by DOE to ensure environmental compliance. BLM will be responsible for monitoring approved operations to ensure compliance with Conditions of Approval for the Operations Plan, Geothermal Drilling Permits (GDPs) and associated leases. DOE will share the responsibility of monitoring the implementation and effectiveness of the mitigation measures. The preparation of an Environmental Impact Statement is not required and DOE is issuing this Finding of No Significant Impact.

³ To be eligible for DOE funding, the two wells identified for DOE funding must meet certain technical requirements. After USGN defines the geothermal resource, it will be able to better identify which wells would meet the technical requirements for the DOE funding. Outside of the wells to be drilled on BLM-administered public lands, USGN intends to drill additional wells on its private leaseholds in the San Emidio resource area. After USGN completes the analysis of the geophysical work, there is a possibility that the two wells identified for DOE funding could be located on USGN's private leaseholds in the San Emidio resource area and not on BLM administered public lands.

Copies of the Final EA are available at http://www.eere.energy.gov/golden/Reading_Room.aspx or from:

Christopher Carusona
Physical Scientist
Department of Energy; Golden Field Office
1617 Cole Blvd
Golden, CO 80401
Phone (720) 356-1563

For further information on DOE NEPA process contact:

Office of NEPA Policy and Assistance
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington D.C. 20585
(202) 586-4600 or 1-800-472-2756

Issued in Golden, Colorado, the 17th day of December, 2010.



Derek G. Passarelli
Acting Executive Director for Field Operations