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(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY**  
**OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY**  
**NEPA DETERMINATION**



RECIPIENT:US Geothermal, Inc.

STATE: ID

**PROJECT TITLE :** Recovery Act: Finding Large Aperture Fractures in Geothermal Resource Areas using a Three-Component Long-Offset Surface Seismic Survey, PSInSAR And Kinematic Analysis

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-EE0002847	GFO-0002847-004	GO2847

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

**CX, EA, EIS APPENDIX AND NUMBER:**

Description:

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| <b>A9 Information gathering, analysis, and dissemination</b>   | Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)   |
| <b>B3.1 Site characterization and environmental monitoring</b> | Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7. |

Rationale for determination:

DOE and recipient cost share funds would be used by US Geothermal Inc. (USG) to demonstrate an exploration strategy that could lead to the commercial development of the San Emidio geothermal resource area located on public and private lands in Washoe County, Nevada.

The USG San Emidio Statement of Project Objectives (SOPO) originally consisted of preliminary fieldwork and the drilling and testing of two production-sized exploration wells on Bureau of Land Management (BLM) managed lands for which the BLM required an EA. The DOE NEPA Determination for the award on April 27, 2010 (GFO-10-254) allowed preliminary field work but required an EA for drilling activities. DOE was a cooperating agency with the BLM in the development of the EA. The EA (DOE/EA-1810; DOI-BLM-NV-W030-2010-0006-EA) was completed in late October 2010. Subsequent to the EA, USG determined that the drilling of temperature gradient (TG) wells would benefit the project and added a TG well drilling program to the SOPO which initiated an additional NEPA review of those TG wells. USG proposed 10 TG drill locations, OW-1 through OW-10. In the NEPA Determination from November 9, 2011 (GFO-0002847-002), DOE CX'ed OW 6, 7, 8, 9 (located on private lands) but conditioned OW 1 through 5 and OW 10 pending BLM review of permit applications for those wells because they were located on BLM managed lands. Subsequent to that NEPA Determination, USG moved the proposed location of OW 10 from public to private lands and added the deepening of Well 45-21 and two additional TG wells (OW 11 and OW 12) on BLM managed lands to the TG well drilling program. The last DOE NEPA Determination from June 19, 2012 (GFO-0002847-003) approved OW 1 through 5, OW 11, OW 12, and the deepening of Well 45-21 on BLM managed lands

and OW 10 on private land.

It had been anticipated that there would be 5 wells drilled in each of USG's northern and southern lease blocks. The SOPO has been revised to focus work in the south. Initially there would be a few new well locations in the southern lease block that would not require building new roads for access. Geothermal Drilling Permits (GDPs) were submitted to the BLM Winnemucca District Office for three new wells (OW-14, OW-15, and OW-18). Cultural and biological resources for the area were analyzed as part of the previously completed EA for the original project submittal. As part of USG's new GDP submissions to the BLM, cultural and biological surveys were updated for the new well locations. No extraordinary circumstances were found during the BLM review of the proposed project work and no cultural or biological resources are expected to be affected by project activities. All three GDPs were approved on April 29, 2014, by the BLM with applicable drilling Conditions of Approval for resource protection, human safety, and drilling best management practices.

Initially one well would be drilled (OW-14, OW-15, or OW-18). Data from the initial well would be analyzed and if promising, additional drilling could occur at one of the remaining permitted sites. Subsequent drilling would be proposed by the recipient and reviewed jointly by the DOE Technical Monitoring Team and the DOE Geothermal Technology Office. If DOE would be involved with any subsequent drilling other than wells already permitted by the BLM, additional NEPA review would be required prior to those activities moving forward.

Proposed project activities are composed of information gathering, analysis, and dissemination; and site characterization and environmental monitoring; therefore the DOE has categorized this proposal into Categorical Exclusions A9 and B3.1.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:


If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

This NEPA Determination does not require a tailored NEPA provision.

Casey Strickland 05/08/2014

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 5/13/2014

**FIELD OFFICE MANAGER DETERMINATION**

Field Office Manager review required

**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

**BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :**

Field Office Manager's Signature: \_\_\_\_\_  
Field Office Manager

Date: \_\_\_\_\_