PMC-EF2a

(2.04.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: US Geothermal, Inc. **STATE:** NV

PROJECT TITLE: Recovery Act: Finding Large Aperture Fractures in Geothermal Resource Areas using a 3-Component Long-Offset Surface Seismic Survey, PSInSAR & Kinematic Structural Analysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000109	DE-EE00002847	GFO-10-254	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:

A9 Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

B3.1 Onsite and offsite site characterization and environmental monitoring, including siting, construction (or modification), operation, and dismantlement or closing (abandonment) 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. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:

C12 Siting, construction, and operation of energy system prototypes including, but not limited to, wind resource, hydropower, geothermal, fossil fuel, biomass, and solar energy pilot projects.

Rational for determination:

DOE and recipient cost share funds would be used by US Geothermal Incorporated (US Geothermal) to demonstrate an exploration strategy that may lead to the commercial development of the San Emidio geothermal resource area on Bureau of Land Management, Winnemucca District, Black Rock Field Office in Washoe County, Nevada. US Geothermal plans to drill up to two geothermal wells to develop the San Emidio geothermal resource with DOE funds. In Phase I (exploration), US Geothermal would complete a series of geophysical surveys and geologic mapping to target two future geothermal well locations (Phase II). Currently, the Bureau of Land Management (BLM) is the lead agency conducting an Environmental Analysis (EA) with DOE as cooperating agency, including Phase II and III. Once the wells are drilled, flow tests would occur (Phase III). The project would be divided into three phases.

The following tasks are Categorical Excludable since the tasks include obtaining permits, and research the geothermal resource.

PHASE 1 (Exploration)

Task 1.0) Detailed Kinematic Structural Analysis of the San Emidio Fault System

Subtask 1.1: Geologic Mapping

Subtask 1.2: Integration of Geologic Mapping with Existing Detailed Gravity and Ground Magnetic Surveys

Subtask 1.3: Finite Element Kinematic Structural 3-D Model

Task 2.0) PSInSAR: Permanent Scatter Synthetic Aperture Radar Satellite Surveys

Task 3.0) Seismic Survey- US Geothermal would execute a three-componenet long-offset active source seismic survey in two separate areas of interest within the San Emidio geothermal resource. US Geothermal submitted a Notice of Intent to the BLM on April 23, 2010 for this task.

Go/No Go Decision: Drilling would proceed in Task 4.0 if Tasks 1-3 provide a clear target and clearly differentiate between the SE-2 dry hole structural environment and the structural environment containing large aperture fractures (LAF's) in the operating well-field.

The following tasks are not Categorical Excludable, but require an EA (C12), since the geothermal well locations and associated roads have not been identified, therefore these tasks cannot be analyzed at this time. BLM is the lead for this EA.

PHASE 2: DRILLING

Task 4.0) Drill Step-Out Well for Increased Production from Existing Well-field

Go/No Go Decision: Drilling would proceed in Task 5.0 if Tasks 1-4 provide a clear target for the exploration well.

Task 5.0: Drill Exploration Well in Northern San Emidio Lease Block

PHASE 3: WELL AND RESERVOIR TESTING

Task 6.0) Well Testing

Perform 30-day reservoir test utilizing the newly drilled production well. Reservoir pressure would be observed in

nearby idle wells for comparison.
Task 7.0) Project Management and Reporting

According to US Geothermal, safety protocols are in place for the proposed work by a Health and Safety officer that meet or exceed state and federal requirements.

At this time, the locations of the two future geothermal wells have not been identified and therefore cannot be analyzed. Therefore, Phase II and III (except Task 7) are not authorized. Phase II and III would be analyzed in the BLM lead EA. Condition of Approval: Allowable: Phase I and Task 7. Prohibited: Phase II and III (except Task 7). Phase I comprises research, data analysis, and onsite characterization actions to promote the research and development of geothermal resources; therefore this project is categorized as CX A9, and B3.1. Additionally, beyond Phase I, this proposed project has the potential to impact surface and subsurface resources and therefore an Environmental Assessment is required (C12). DOE must analyze the construction and installation of up to two geothermal wells and associated roads in funding the drilling for the Finding Large Aperture Fractures in Geothermal Resource Areas using a 3-Component Long-Offset Surface Seismic Survey, PSInSAR & Kinematic Structural Analysis for US Geothermal according to the National Environmental Policy Act (NEPA). Existing and potential impacts are unknown at this time. Per the DOE NEPA implementing regulations (Appendix C to Subpart D to 10 CFR Part 1021 - C12, as noted above), preparation of an Environmental Assessment is required prior to allowing federal funds for this proposed project.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:
Phase II and III (except Task 7)
This restriction does not preclude you from:
Phase I and Task 7
If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/27/10
NEPA Compliance Officer

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: _____ Date: 4-28-10
Field Office Manager