PMC-EF2a

(20402)

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

RECIPIENT: Terralog Technologies USA Inc **STATE:** CA

PROJECT TITLE : Advanced Horizontal Well Recirculation Systems for Geothermal Energy Recovery in Sedimentry and Crystalline Formations

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000336	DE-EE0005126	GFO-0005126-001	GO5126

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.

B3.6 Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

Rational for determination:

Terralog would utilize DOE and cost share funds to investigate and develop an innovative approach for geothermal resource development through a combined research effort of geologic resource analysis, engineering analysis and numerical simulation, small scale and large scale laboratory investigations, validation experiments, and detailed economic analyses. Laboratory work would take place at the Subsurface Processes Laboratory at the University of California, Irvine.

This project includes two Phases but this NEPA review is for Phase I only. Prior to initiating Phase II activities, there would be a go/no-go decision point after which DOE would determine whether or not to fund Phase II activities. Additional NEPA review will be required if this project is selected to continue with Phase II activities.

Phase I (see SOPO for additional details of each task)
1. Project Management and Planning
2. Geologic resource identification, characterization, and documentation
3. Engineering feasibility studies and numerical simulations
4. Preliminary design optimization for a range of formation and fluid properties
5. Energy balance calculations and first order economic analysis for a range of design configurations and formation properties
6. Laboratory investigations and validation experiments at the core scale (1 dimensional porous flow) and small block scale (2 dimensional porous flow), with comparison to numerical simulation models

Phase II – Tasks 7 through 10 will require additional NEPA review if the project is selected to continue with Phase II activities.

According to the R&D Laboratory Questionnaire, no permits for the laboratory work would be required, no air pollution, liquid effluent, or toxic wastes would be generated. Standard laboratory safety equipment (fume hoods, alarms, etc.) are integrated into the laboratory facility and all operations are in accordance with the University of California, Irvine's Laboratory Safety and Chemical Hygiene Plan.

Phase I Budget: $540,799 (DOE) $135,200 (cost share)

Phase I of this project is comprised of information gathering, data analysis, document preparation; and indoor bench-scale research projects and conventional laboratory operations; therefore the DOE has categorized this into Categorical Exclusions A9 and B3.6.

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 (all tasks)
Additional NEPA review will be required if this project is selected to continue with Phase II activities.

This restriction does not preclude you from:
Phase I (all tasks and subtasks)
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 :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 9/9/2011
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: _____
Field Office Manager