PMC-EF2a

(2.04.02)

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

RECIPIENT: Power Environmental Energy Research Institute **STATE:** CO

PROJECT TITLE : Novel Multidimensional Tracers for Geothermal Inter-Well Diagnostics

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-PS36-09GO99018	DE-EE0003032	GFO-10-345	GO3032

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:

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:

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).

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.

B3.11 Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components), under controlled conditions that would not involve source, special nuclear, or byproduct materials. Covered activities may include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests

Rational for determination:

Power Environmental Energy Reseach Institute (PEER) would develop a matrix of geothermal tracer and tracer interpretation tools to accurately detect reservoir characteristics including fluid pathways, dynamics, residence time, etc. which could lead to information beyond well-to-well connectivity under geothermal conditions. Laboratory work would be done at PEER Institute's laboratory at 738 Arrow Grand Circle, Covina CA. Computer simulations would be done at the Material & process Simulation Center (MSC) at Caltech and Mt. Princeton Geothermal LLC (MPG) would assist on the field test.

The project is divided into two phases with multiple tasks and sub-tasks:

Phase 1 – Proof of Concept for Tracer Arrays from Advanced Laboratory Simulation

Tasks 1 through 3 and associated sub-tasks would consist of establishing laboratory protocols for screening and testing tracers, development of tracer detection and analysis tools, evaluating tracer performance, model development and design from computer simulations, development of smart tracers, and evaluation of proposed tracers.

Phase 2 – Field Trial Testing & Evaluation, Development of Tracer Interpretation System

Tasks 4 through 6 would consist of field trial testing at an established geothermal site, development of a multidimensional tracer interpretation system, and project management and reporting. The field site has yet to be determined but would be an existing geothermal site. Regardless of the site location selected, there would be no additional environmental consequences beyond those associated with the existing geothermal site attributable to the Phase 2 activities.

According to the R&D Laboratory Questionnaire, no permits would be needed for the project. The PEER Institute follows the Injury and Illness Prevention Program (IIPP) under California Law. The lab is equipped with fume hoods, ventilation equipment, eye wash stations, and a shower. There is a laboratory manager and two safety engineers who regularly check and monitor safety issues. Liquid effluent and toxic wastes would be labeled and temporarily stored in specially assigned areas before being discharged by outside disposal specialists.

This project is comprised of information gathering, data analysis, document preparation, onsite site characterization activities, conventional laboratory operations, and outdoor tests for the development, quality assurance, or reliability of materials; therefore the DOE has categorized this proposal into Categorical Exclusions A9, B3.1, B3.6, and B3.11.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/19/10

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: _____

Field Office Manager