

PMC-EF2a

(2.0 (02)

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

**RECIPIENT:** Potter Drilling Inc**STATE:** CA

**PROJECT TITLE :** Development and Demonstration of a Commercial Hole Opening System for Geothermal Well Enhancement

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000522	DE-EE0005507	GFO-0005507-001	0

**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, analysis, and dissemination**

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.)

**B3.6 Small-scale research and development, laboratory operations, and pilot projects**

Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

**B3.11 Outdoor tests and experiments on materials and equipment components**

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. Covered actions 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. Covered actions would not involve source, special nuclear, or byproduct materials, except encapsulated sources manufactured to applicable standards that contain source, special nuclear, or byproduct materials may be used for nondestructive actions such as detector/sensor development and testing and first responder field training.

**Rational for determination:**

Potter Drilling Inc. (PDI) would utilize DOE and cost share funds to develop a hole-opening tool that would use superheated steam to increase the diameter of a wellbore to enhance hydraulic connections to fracture and wellbore flow area. Laboratory work would be conducted at PDI's facility located at 599 Seaport Boulevard, Redwood City, CA 94063 and Precision Combustion's facility located at 410 Sackett Point Road, North Haven, CT 06473.

1. Design and Fabricate Commercial Steam Generator
2. Design and Fabricate Bottom Hole Assembly
3. Design, Fabrication, and Procure Surface Equipment System (SES) – field testing would occur at an existing non-operable Ormat injection well in the Steamboat Springs geothermal field in Nevada
4. Reporting

According to the R&D laboratory questionnaire, all safety protocols, equipment, and emergency response plans for storage, use, disposal and handling of chemicals are in place. A review of test plans and operational and safety procedures would be performed prior to performing tests both at the laboratory and field site. Permits required for laboratory and field work or either in place or will be obtained prior to beginning project activities. There would be no liquid effluents (closed-loop system), air pollutants, or toxic wastes produced from this work during project activities.

Project Budget: \$1,500,000 (DOE) \$1,476,060 (cost share)

This project is comprised of information gathering, analysis, and dissemination; laboratory operations; and outdoor tests and experiments on materials and equipment components; therefore the DOE has categorized this into Categorical Exclusions A9, B3.6, and B3.11.

**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.

Insert the following language in the award:

You are required to:

PDI must provide DOE with copies of any permits/approvals required for the equipment testing at the project partner's Nevada test site prior to commencement of those activities.

Note to Specialist :

EF2a prepared by Casey Strickland

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

NEPA Compliance Officer Signature: *Justin Kee* Date: 1/4/2012  
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