

PMC-EF2a

(20102)

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

**RECIPIENT:** Magma Energy (U.S.) Corp.**STATE:** NV

**PROJECT TITLE :** Application of a New Structural Model and Exploration Technologies to Define a Blind Geothermal System

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
0000109	DE-EE0002831	GFO-0002831-004	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 (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:
- B5.1** Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

## Rational for determination:

Magma Energy (U.S.) Corporation (Magma) would demonstrate the potential geothermal resource at the McCoy geothermal area in Churchill County, Nevada. This project was previously approved with GFO-10-202 on March 29, 2010 with a CX A9 and B3.1. An additional task (1.2 soil tests) was added to the project, therefore another NEPA review was needed and the additional task was approved by GFO-10-202-001 on April 16, 2010. This NEPA determination is specific to Phase II and Phase III.

## Phase II – Drilling

2.0 Slim Wells – Up to four slim wells would be drilled to a depth of up to 750 meters. Sub-tasks include two slim wells that would initially be drilled with results evaluated and integrated into a 3D GIS. A Go/No-Go Decision Point would occur prior to the drilling of the next two slim wells. If the third and fourth slim wells are drilled, results would be evaluated and integrated into the 3D GIS. Another Go/No-Go Decision Point would occur prior to Task 3.0.

3.0 Production-Capable Reservoir Test Well Drilling – Based on the results from Task 2.0, two drill locations would be selected for the production-sized exploration test wells. If these wells are drilled in series (instead of parallel), a Go/No-Go Decision Point would occur prior to the drilling of the second well. Drilling results would be evaluated and integrated into the 3D GIS.

## Phase III – Well Testing and Assessment

4.0 Well Testing and Assessment, Production-Capable Reservoir Test Wells – The assessment would include injection and/or flow tests, a Pressure, Temperature and Spinner Test (static and flowing), productivity testing, and aqueous geochemistry. A drilling and testing report would be compiled and test results would be evaluated and integrated into the 3D GIS.

5.0 Phase I-III Technology Transfer Plan – As data become available, the technology transfer would be provided to the public and industry through a variety of venues.

6.0 Project Management and Reporting

The Bureau of Land Management (BLM) has jurisdiction as the surface management agency for the project. Project work would occur on four different BLM administered geothermal leases. Each individual geothermal lease has

specific lease stipulations that the lessee must comply with regardless of specific project work planned to occur within the lease boundaries.

The BLM completed an EA (DOI-BLM-C010-2011-0514-EA) to analyze the specific project work that was proposed to occur within the geothermal lease boundaries in September 2011 and a Decision Record/FONSI was signed on October 18, 2011. BLM's decision is contingent on Magma meeting all stipulations and conditions of the geothermal leases/drilling permits. Conditions of Approval (COAs) were attached to the Decision Record. Magma has obtained both the federal and state permits that are needed for project work.

Tasks identified in the Statement of Project Objectives (SOPO) submitted to the DOE were compared to what was analyzed in the EA completed by the BLM to determine if those tasks were adequately addressed in the EA. Potential surface disturbing activities identified in the SOPO (slim wells, production-capable reservoir testing wells, and well testing and assessment work) were specifically analyzed in the EA as part of the Proposed Action, therefore the DOE is in agreement with BLM's FONSI.

Funding  
Phase II: \$4,170,121 DOE, \$5,109,187 MEC = \$9,279,308 Total  
Phase III: \$121,696 DOE, \$149,101 MEC = \$270,797 Total  
Total DOE Phase II and III funding approved/released by this action = \$4,291,817

This project is comprised of information gathering, data analysis, document preparation, site and underground reservoir characterization, and actions to conserve energy through small-scale renewable energy research and development, therefore this project is categorized into CX A9, B3.1, and B5.1.

**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.

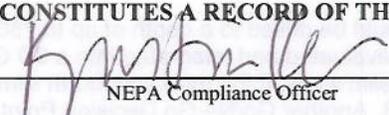
Insert the following language in the award:

You are required to:  
Magma must comply with all geothermal lease stipulations and COAs as required by the BLM.

Note to Specialist :

EF2a prepared by Casey Strickland

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

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 11/9/2011

**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: \_\_\_\_\_