PMC-EF2a
(2.04.02)

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

RECIPIENT: Missouri Department of Natural Resources, Division of Energy **STATE:** MO

PROJECT TITLE : Energize Missouri HUG Teter

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FO-000052	EE0000131	GFO-0000131-038	

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:

B5.19 Ground source heat pumps The installation, modification, operation, and removal of commercially available smallscale ground source heat pumps to support operations in single facilities (such as a school or community center) or contiguous facilities (such as an office complex) (1) only where (a) major associated activities (such as drilling and discharge) are regulated, and (b) appropriate leakage and contaminant control measures would be in place (including for cross-contamination between aquifers); (2) that would not have the potential to cause significant changes in subsurface temperature; and (3) would be located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rational for determination:

The U.S. Department of Energy (DOE) provided funding to the Missouri Department of Natural Resources - Division of Energy (MDNR) under the DOE's American Recovery and Reinvestment Act of 2009 State Energy Program (SEP). MDNR selected the Teter household (Teter) to receive $10,500 in SEP funding (total project cost - $23,494).

This NEPA Review is for an individual project that was originally proposed under MDNR's signed Template for Expedited NEPA Review. However, Teter installed a 6-ton Ground Source Heat Pump System (GSHP) prior to receiving an individual NEPA review (the Template's size limitation is 5.5 tons).

MDNR is requesting it be allowed to issue a rebate to Teter for installation of the 6-ton GSHP system, which is located at 33883 State Hwy FF, Bevier, MO 63532 (project).

The project is 6-ton vertical closed-loop GSHP system to service the Teter's 4,000 sq. ft. single-family residence. The residence was built in 1960. Teter's 6-ton GSHP is two independent closed–loop systems – one 4-ton system and one 2-ton system, serving different areas of the residence. The GSHP system was installed using directional boring. 6 loops ~250 ft long x 10 to 15 ft deep were bored north of the home from a 5 foot wide by 15 foot long by 4.5 foot deep bore pit just east of the home. The bore holes were spaced ~ 25 ft apart. The bore/well field is ~ 24,000 sq ft; however the actual ground disturbance was ~ 500 sq ft. A trench, ~ 25 feet long by 4.5 ft deep was used to connect the boreholes and the borefield to the residence. The GSHP exchange fluid used was an anti-freeze mix of 79% potable water and 21% Methanol. All piping (SDR11) was pressure tested and the boreholes were grouted with a bentonite solution. The water table on the property was not penetrated during installation and all drinking water is supplied by the municipal water system. The GSHP installation followed all National Ground Water Association and IGSHPA rules and guidelines for geothermal well installation. (See "1.Teter_GSHP Questionaire.docx" and "1.Teter_Supporting Information on GSHP.docx")

Based on a review of the file and the above analysis, DOE has determined the increase in size is negligible. Therefore, DOE has determined the project did not significantly impact the human environment and it is categorically excluded from further NEPA review under CX B5.19 (ground source heat pumps).

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

DOE funding - $10,500
EF2a prepared by Melissa Rossiter

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 5/15/2012
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