

PMC-EF2a

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



(2010.02)

RECIPIENT: Oklahoma Municipal Power Authority

STATE: OK

PROJECT TITLE : OKLAHOMA SEP ARRA - OMPA Large Systems Request AG

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	DE-EE0000133	GFO-0000133-060	

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:

DOE is proposing to provide \$39,650 in SEP funding to the Oklahoma Department of Commerce, who is proposing to fund the Oklahoma Comfort Program through their sub-grantee the Oklahoma Municipal Power Authority (OMPA).

The following NEPA review is for the installation of one vertical, closed loop ground source heat pump (GSHP) at the Osage County Health Department located at 1115 East 15th Street, Pawhuska, Oklahoma 74056. The total tonnage of the GSHP system would be 39.65 tons.

The state certified and licensed driller would follow IGSHPA and NGWA regulations during installation. The system would use HDPE piping that is heat fused and all wells would be fully grouted with a thermally enhanced bentonite grout. All loops would be pressure tested before and after installation. The heat exchange fluid would be a 15% solution of propylene glycol in potable water.

The Osage County Health Department is located on the north end of Pawhuska, Oklahoma. There is a residential area to the south, high school to the west, elementary school to the east and open space to the north of the proposed site. The proposed system would consist of five, 2.2-ton units, two, 3.18-ton units, four, 4.22-ton units and one, 5.4-ton unit. Twenty-eight vertical boreholes, six inches in diameter and 325 feet deep would be drilled and grouted with bentonite to serve as a common loop for the heat pumps. The boreholes would be spaced no less than 10 feet apart and form three separate loops. Manifolds would connect the loops to the heat pumps. Minimal land disturbance of less than 10,000 square feet would occur at the project site. Approximately six yards of uncontaminated sandstone spoils would be created during the drilling of the boreholes. The spoils would be spread across the landscaping or disposed of at a sanitary landfill. The proposed project would not impact surface water, as the nearest surface water bodies are Lake Bluestem (1.25 miles northeast of the site) and Lake Pawhuska (0.75 mile east of the site).

The proposed system would not impact groundwater. The property is located over the Ada-Vamoosa aquifer. The aquifer is in sedimentary bedrock that covers over 800 square miles of northern Oklahoma. Based on a USGS study, the aquifer shows a signature at 100 feet below the surface. If the system were to reach the aquifer, the aquifer would be protected because the system would be installed using techniques that protect the groundwater and the loop fluids from contaminating one another. The formation underlying the property is 3 to 5 feet of clay above layers of sandstone. Areas containing karst topography and related federally listed species in Oklahoma have been identified, and the proposed project would not occur in proximity to those resources. Based on this information, DOE has determined the proposed GSHP project would not have adverse impacts on these resources.

As required by the OK SEO, installation of GSHP cannot commence at any proposed OCP installation site until State Historical Preservation Office (SHPO) approval has been received. OMPA must submit information about all

prospective GSHP installation sites to the Oklahoma State Energy Office (SEO) for review by SHPO. Under a Programmatic Agreement with SHPO, OK SEO can approve sites with buildings that are less than 45 years old. For buildings 45 years old or older, SEO must submit details to SHPO for review.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion B5.19 (installation of ground source heat pumps).

NEPA PROVISION

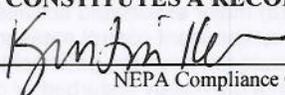
DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Cristina Tyler 3.12.2012

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: 
NEPA Compliance Officer

Date: 3/13/2012

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: _____