

PMC-EF2a

(2.04.02)

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



RECIPIENT: Oklahoma Municipal Power Authority

STATE: OK

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

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	EE00000133	GFO-000033-066	

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 \$15,090 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 proposed project is a vertical, closed-loop ground source heat pump (GSHP) that would be installed at the Laverne Convenience Store (915 South Broadway, Laverne, Oklahoma 73848). A total of 15 tons would be installed.

The state certified and licensed driller would follow IGSHA and NGWA regulations during installation. The system would use HDPE piping that is heat fused and all wells would be fully grouted with bentonite. The system would use a 15% solution of methanol. All loops would be pressure tested before and after installation. Land disturbance of less than 5,000 square feet would occur at the proposed site. All sod removed during drilling would be replaced.

The Laverne Convenience Store is located on the southeast side of Laverne, Oklahoma. The store is located in a lightly populated neighborhood. The town of Laverne is surrounded by agricultural fields and open space.

The proposed system would consist of three, 5-ton units. Each unit would be served by a loop of six boreholes (18 total boreholes). Each borehole would be situated at least twenty feet apart, be six-inches in diameter and 200 feet deep. Loops made of HDPE pipes would be inserted into the boreholes. Manifolds would connect the loops to the heat pumps. Approximately six yards of uncontaminated sandstone spoils would be created during the drilling of the boreholes. The spoils would be properly disposed of at a sanitary landfill.

The proposed system would not impact surface water. The nearest significant surface water include Spring creek located three miles southeast and Kiowa Creek located five miles north of the proposed project. The store is located above the Ogallala Aquifer. If a 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 both properties 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, DOE has determined there would be no adverse impacts to these resources as a result of the proposed GSHP project.

As required by the OK SEO, installation of ground source heat pumps cannot commence at any proposed OCP installation site until State Historical Preservation Office (SHPO) approval has been received. OMPA has submitted information for the proposed 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

