

PMC-EF2a

(200402)

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



RECIPIENT: VA Dept of Mines, Minerals and Energy

STATE: VA

PROJECT TITLE : Northampton County Geothermal Upgrade

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|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0000013 | DE-EE0000864 | | 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.
- 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:

The County of Northampton in Virginia is proposing to install a 90 ton closed looped ground source heat pump. The system will be comprised of a hybrid 4 by 12 borehole design. The hybrid system will be used to provide dedicated cooling and heating for 4 distinct climate zones within the building. The systems can then be switched over so that all 4 GSHP systems can service all 4 climate zones, this allows the system to be extremely dynamic in using and dispersing heat/cooling to and from the ground. The system will utilize food-grade Propylene Glycol at a ratio to water of 30% as a heat exchanging fluid. All boreholes will be entirely encased with thermally enhanced bentonite grout from top to bottom. These measures taken will mitigate the risk of sub-surface contamination, from the system itself or from surface to sub-surface run-off.

The grantee has stated that there are no known wetlands, floodplains, or coastal zones located on or near the proposed location for the system's installation. Investigation conducted using the FWS's Wetlands Inventory and FEMA's Mapping Information Platform confirmed this. The system will be installed on an existing parking lot adjacent to the building it will service. Therefore the impacts to cultural/archeological and T&E species are not expected giving the level of disturbance from the previous construction activities related to the paved parking lot. The grantee has stated within the GSHP Questionnaire that, "The project specifications require the installing contractor to comply with the requirements of the IGHP and the NGWA." The borefield installer is required by Virginia law and in the grantees bid document to be certified a Class A contractor with water well drilling specialty. The GSHP system is required and the grantee has committed to adhering to the Virginia Department of Health regulations and guidelines related to system installation. For erosion control the contractor is required by the applicant to construct and maintain a silt fence around the entire construction site, as well as protect all inlet drains. The surface will be restored to previous grade and re-paved. All waste materials are specified to be properly disposed of in accordance with Virginia Dept. of Transportation and the Department of Environmental Quality.

DOE has determined that this project does not have a significant impact to the human health and/or environment. This project is hereby Categoricaly Excluded under A9 "Information Gathering" and B5.1 "Actions to Conserve Energy".

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Steve Blazek Date: 5/19/2010
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