

PMC-EF2a

(2.04.02)

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



RECIPIENT: Greenfield Community College

STATE: MA

PROJECT TITLE : Geothermal Project

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
CDP	DE-EE0003221	GFO-0003221-002	3221

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:

**B5.1** 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:

Greenfield Community College (GCC) would plan and install a multi-well geothermal heating/cooling system in the core section of the main college campus building to reduce fossil fuel use and reduce expenses of the heating and cooling load of the institution.

Phase 1 (Task 1.0 including all sub-tasks) of this project was previously approved by GFO-10-614 on September 15, 2010 with a CX A9. Phase 1 consisted of project design work necessary prior to installation of the multi-well system.

This NEPA determination applies to Phase 2 only. Phase 2 would consist of all work associated with furnishing and installing the geothermal wells and associated materials as outlined in the construction documents that were prepared in the previous phase.

The geothermal system would be a vertical open-loop system consisting of six wells located along a straight path on the west side of the campus, running North/South approximately 350 ft with each well spaced 70 ft apart drilled to a depth of approximately 1500 ft. The system would use only potable water (i.e. no anti-freeze solution). The geothermal system would provide 120 tons of heat rejection for an existing 600 ton water-cooled chiller plant that serves 226,000 square feet of space on GCC's college campus. Supply and return piping would be placed in trenches running from the wells to the plant. Project work would also include a heat exchanger, a thermal storage system, and an equipment enclosure at the existing chiller plant; the existing control system would be upgraded; and electrical power would be run to the new system components.

Project work would occur on previously disturbed ground along an access road assessed by the National Land Cover data as developed, medium density, so no impacts to cultural resources are expected. GCC was founded in 1962, with buildings in the project area having been built around 1970, so no effects to historic properties are expected. No threatened and/or endangered species are known to occur in the project area, therefore no impacts are expected. According to the National Wetlands Inventory, there are no wetlands or floodplains within the project area.

Drilling would be done by a state licensed driller. The project would comply with Underground Injection Control (UIC) regulations (MA Department of Environmental Protection Control Registration # MAS11A114204-5C3 - Underground Injection). Since the wells are designed as Standing Column Wells (SCW), a National Pollutant Discharge Elimination System (NPDES) permit is in place (US Environmental Protection Agency NPDES General Permit MA G070358) for when the well bleeder valves are utilized to regulate well temperatures. System bleed discharge overflow would be routed to the existing stormwater drainage system, therefore a Stormwater Management Plan report and specifications are in place.



Based upon the information provided, Phase 2 (Task 2.0 including all sub-tasks) is categorically excluded under CX B5.1 "Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency."

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

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:

10/18/10

**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:

\_\_\_\_\_