

PMC-EF2a

(20102)

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



RECIPIENT:WA Dept. of Commerce

STATE: WA

PROJECT TITLE : SIRTI - Great Northern Spokane, LLC

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	DE-EE0000139	GFO-0000139-034	EE139

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:

The Washington Department of Commerce, through the SIRTI Foundation, will provide \$200,000 to Great Northern Spokane, LLC to install a 35-ton Ground Source Heat Pump (GSHP) on a vertical closed-loop system at 800 E. Front Avenue, Spokane, WA.

The GSHP system will supply the heating and cooling to the Taylor Edwards Building with a total floor area of approximately 70,000 square feet. The loop field will be installed in an asphalt parking lot north of the building. The GSHP system will serve 33,200 square feet of occupied office area and 11,000 square feet of the semi-heated basement within this building. The system will be configured as a vertical loop system consisting of 22 boreholes/wells, each installed at a depth of 185 feet below the surface and spaced approximately 20 feet apart. A gas boiler will be utilized for supplemental heating of the ground source loop during times when more than 60% of the heating capacity is required. The cooling load will be 100% satisfied by the bore field with no supplemental cooling required. A fluid cooler will be provided as a redundant heat rejection system and only utilized if a component of the borefield fails or is shut down for maintenance. The recipient expects annual natural gas savings of 11,400 Therms and annual electrical savings of 26.69MWh.

The property is underlain by the Spokane Valley/Rathdrum Prairie (SVRP) Aquifer, an unconsolidated sand and gravel aquifer of relatively high permeability. The SVRP Aquifer is in hydraulic connection with a losing reach of the Spokane River along the south property boundary. Based on test borehole drilling, and groundwater monitoring wells at the site, the SVRP Aquifer surface is located at a depth of about 10 feet below ground surface and extends to a depth of at least 186 feet below the site. The SVRP Aquifer is the drinking water supply for the City of Spokane; however, no known drinking water wells are situated within a quarter mile of the site. The recipient confirmed that the system installation will be installed by IGSHHP-certified installers and will follow IGSHHPA and National Ground Water Association recommendations. A state licensed certified driller will be used for installation of boreholes. The proposed system will employ a non-toxic environmentally approved mixture of potable water and propylene glycol. All boreholes will be grouted in a thermally enhanced bentonite grout that is designed to withstand cracking from the changes in temperature between the ground and the heat exchange pipe. This ensures that the area around the borehole is sealed to keep any surface runoff from contaminating ground water. Through the application of these measures and the nature of the closed loop system, there are not expected to be adverse effects to groundwater.

Previous land disturbance: The GSHP borefield will be located north of the brick building. Proposed excavation will consist of 22 vertical wells, spaced 20 feet apart and installed to a depth of 185 feet; as well as limited trenching to connect the boreholes and route piping back to the mechanical room in the building. The total area of the borefield will be 6,400 square feet. All construction activity will take place on previously disturbed land – the current site is a parking lot.

The property was developed in the early 1900's as a railcar repair facility. Repair primarily occurred within the existing brick building. A small foundry and coke building were located south of the brick building and were removed during the 1950's. Fill material, comprised of metal waste and slag, and suspected to have been generated at the foundry, was placed south of the brick building. Previous sampling results indicate soil and groundwater beneath the site was impacted with arsenic and lead at concentrations exceeding the Model Toxics Control Act (MTCA) Method A cleanup levels. A remedial action was implemented during 2010 and the property is currently administered within Washington State's Voluntary Cleanup Program (VCP). However, due to the setting location of the GSHP and borefield located north of the brick building, there will be no adverse impact to soil or groundwater on the immediate site or south of the brick building. Due to the setting of the project location in an area that has been previously disturbed there will be no adverse impacts to threatened and endangered species.

The south portion of the property falls within the shoreline of the Spokane River and lays with-in FEMA 100-year and 500-year flood Zones; however as indicated above, the site of installation for the GSHP will be located on the north side of the building. Therefore; the project will have no adverse impacts to the floodplain. A Shoreline Conditional Use Permit was obtained as part of the larger renovation of the historic 103-year old Taylor Edwards Building to which the GSHP system will be connected. In addition, a general building permit was applied for and obtained for overall construction and installation. A Washington SEPA Mitigation Determination of Non-Significance under which the recipient is required to replace any lost habitat functions that result from the building renovation. The installation of the GSHP system will have no adverse impact on the shoreline or riparian habitat due to the northern site location of the borefield.

The recipient submitted and completed a Historic Preservation Certification Application to the U.S. Department of Interior's National Park Service (NPS) as part of the rehabilitation of the historic building which is listed on the National Register of Historic Places. The installation of the GSHP system will have no adverse impact to the historical conditions of the building and all HVAC work will comply with the NPS conditions of rehabilitation of the building. On February 2, 2011, the NPS determined that the renovation activity meets the Secretary of the Interior's Standards for Rehabilitation.

Waste Stream Plan – Per the recipient; Non-Hazardous Municipal Waste will be disposed of at an appropriate facility, and will be the responsibility of the driller. All waste generated by the proposed project will be handled and disposed of in accordance with all applicable Federal, State and Local regulations and requirements.

Erosion Control Plan and Stormwater Management – Per the recipient; an erosion control plan will be implemented and monitored by Certified Erosion and Sediment Control Lead (CESCL). The plan would implement best management practices and erosion control measures which include silt fencing, loading pads, etc. Infiltration swales and stormwater gardens will be installed to mitigate any stormwater runoff. The borefield will be partially repaved and partially curbed and landscaped per approved design plans to restore the site upon installation completion.

After a thorough review of the information submitted for the proposed project, it has been concluded that the proposed project will not have a significant impact to human health and /or the environment. Therefore the proposed project is hereby Categorically Excluded under 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 :

EF2a completed by Lizelle Espinosa

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:


NEPA Compliance Officer

Date:

3/17/11

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required