

Pilgrim Hot Springs

Grantees	University of Alaska Fairbanks (Non Profit Entity)
Technology Type	GEOTHERMAL
Region	Bering Straits
AEDG Project Code	10158

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	466	Pilgrim Hot Springs Geothermal Resource Assessment	7030037	406013	Feasibility	7/1/10	6/30/14	Closed
4	654	Pilgrim Hot Springs Geothermal Resource Assessment 2	7040007	406013	Feasibility	7/1/11	6/30/14	Closed

Grant 7030037: Pilgrim Hot Springs Geothermal Resource Assessment

Project Scope: The Pilgrim Hot Springs geothermal resource assessment is being conducted with two Renewable Energy Fund (REF) awards. The full project scope is described under grant #7040007.

Project Status: The project status for the two awards is described under grant #7040007.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	\$613,167.47	\$613,167.47
Other State Funding	\$0.00	\$0.00
Total State	\$613,167.47	\$613,167.47
Required Local Match	\$313,093.00	\$313,093.00
Federal Grant Funding	\$0.00	\$0.00
Total Project Costs	\$926,260.47	\$926,260.47

Grant 7040007: Pilgrim Hot Springs Geothermal Resource Assessment 2

Project Scope: The University of Alaska Fairbanks will continue work exploring the geothermal potential of the Pilgrim Hot Springs site begun under a Round III Renewable Energy Fund Grant (REF). In 2010, the University of Alaska Fairbanks began Phase I of an exploration program of the Pilgrim Hot Springs resource. The program is funded mainly through a Department of Energy grant with cost share provided through a \$613,174 award under Round III of the REF.

This first phase involved the use of geophysical remote sensing techniques (including forward looking infrared radiometry, or FLIR) intended to map the spatial extent and total heat flow to the surface to make a preliminary estimation of the developable extent of the reservoir. These remote sensing techniques are being coupled with ground-based exploration techniques to pinpoint the location of the upflow zone, map the spatial extent and total heat flow to the surface, and estimate the temperature and depth of the reservoir.

This grant addresses Phase II and III of this project. Phase II involves drilling and testing two 500 ft. temperature gradient holes and two 2500 ft. confirmation holes into the resource to confirm the results from Phase I.

Phase III will involve developing a more complete understanding of the reservoir through flow testing and water sampling of the holes, and development of a numerical reservoir model. The numerical model will be used to predict future performance, including possible megawatts produced, of the reservoir under various production/reinjection scenarios. The end result of this project will be an economic and geothermal resource model of the Pilgrim Hot Springs site and surrounding area to determine if it can be economically developed, and to what extent.

Project Status: During 2011, the Alaska Center for Energy and Power (ACEP) completed lab and field work related to Tasks 1 and 2, including imaging surveys and analysis, preliminary field work and heat flow modeling, and water sampling. Two 500 ft. temperature gradient holes were also drilled. During the 2012 field season, 29 additional temperature gradient holes were drilled

and 3 confirmation holes were drilled to a depth of nearly 2,000 ft. The well holes remained open during the 2013 field season for monitoring as another separately funded production well was drilled.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	\$1,330,243.25	\$1,330,243.25
Other State Funding	\$0.00	\$0.00
Total State	\$1,330,243.25	\$1,330,243.25
Required Local Match	\$2,000,000.00	\$2,000,000.00
Federal Grant Funding	\$0.00	\$0.00
Total Project Costs	\$3,330,243.25	\$3,330,243.25