

# Standing Column Geothermal Well

## Design and Installation Support Services

Londonderry, New Hampshire



### Client

*New England Army Corps of Engineers*

### Status

*Completed Spring 2009*

### Highlights

*The 94<sup>th</sup> Army Readiness Command contracted the New England Army Corps of Engineers to supervise the installation of a standing column “pathfinder” geothermal well. The procedures developed to install this well will be used for future geothermal wells. Alares was retained as a subcontractor to provide design support and installation services.*

The 94<sup>th</sup> Army Readiness Command recently completed an energy survey of all facilities within their jurisdiction. The energy survey concluded that the facility at Londonderry, New Hampshire was the highest consumer of fossil fuels. To reduce this energy consumption, the installation of a geothermal system is being considered for the office areas of the facility.

In order to evaluate the geothermal alternative, Alares was retained to provide design and installation support services. A “pathfinder” well will be installed to determine whether the standing column geothermal well is feasible. Alares, as a subcontractor, will oversee the installation of the well and provide design support services to the U.S. Army Corps of Engineers.

The standing column well is an open loop design where groundwater is pumped from the well into the heat pump, where heat is either extracted or added. The water is then pumped back into the same well. Open loop systems using groundwater are usually much more efficient than closed systems because they will be heat exchanging with water always at ground temperature. Closed loop systems, in comparison, have inefficient heat-transfer between the water flowing through the tubing and the ground temperature.