



Conestoga-Rovers & Associates Project Summary

KEY PROJECT ELEMENTS

- Feasibility Study of Geothermal Powered Generation
- Identification and Mitigation of Potential Risks
- Assessment of Optimal Conditions to Integrate Geothermal System with Conventional HVAC System
- Provision of Conceptual Design
- Detailed Capital Cost Estimates and Payback Period

GEOHERMAL FEASIBILITY STUDY USING MINE WATER

CAPE BRETON ISLAND, NOVA SCOTIA



CLIENT: CAPE BRETON DISTRICT HEALTH AUTHORITY
DURATION: NOVEMBER 2008 – MARCH 2009
COST: \$40,000



CRA was retained by the Cape Breton District Health Authority (CBDHA) to conduct a feasibility study of geothermal powered generation using mine water for the Glace Bay Health Care Facility. Over 350 million tonnes of coal have been extracted from more than 100 mines over the last 300 years, leaving kilometers of abandoned coal mines that have since filled with water. One of the benefits of these abandoned coal mines is the potential to utilize geothermal energy from the mine water to supplement conventional facility heating and cooling systems.

CRA assessed the health care facility's HVAC system and the feasibility of using and integrating a supplemental geothermal system. The feasibility study included an assessment of the geothermal resource, and the identification and mitigation of potential risks associated with extracting heat from the mine water. In addition, CRA assessed the optimal operating conditions under which the geothermal system could be used to supplement the conventional HVAC system. The feasibility study included a conceptual design, a detailed capital cost estimate, and an estimated payback period of the geothermal system.

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