

Northern Niche

How to handle environmental opportunities in remote locations



"Companies who tailor their products and services to address the unique challenges posed in the North could find a niche in this market."

The unique climatic and geographic conditions of the North pose significant challenges to environmental technology companies willing to take the risk of working there. But they would be wise to do so, as the opportunities are plenty.

Although the Northwest Territories and Nunavut are home to just over 64,000 residents, they comprise over a quarter of Canada's landmass and an abundance of natural resources. The Northwest Territories, already host to a number of major mining projects, most notably in the diamond sector, continues to show strong potential for further development. Oil and gas exploration and the planned Mackenzie Delta pipeline project are all signs that construction in the north is just beginning. In Nunavut, there are new infrastructure projects in almost every community and new housing developments can't keep up with demand.

However, there remain unique challenges associated with working in northern Canada that are not present in southern Canada. Development in the North is expensive and requires more careful planning. Many challenges stem from isolation, lack of road access, a sensitive ecosystem and permafrost.

Companies who tailor their products and services to address these challenges will find a niche in this market. Following is an example of how one Canadian company did just that.

Polaris mine project

Creating sustainable solutions to address waste management problems is a more recent focus in the North. For example, mining companies, in exchange for mineral rights, often make agreements to return the site to its original condition.

One such example of this ecologically sound practice can be found at Teck-Cominco's Polaris Mine. The mine is located on Little Cornwallis Island near Resolute, Nunavut. Now in the decommissioning stage, it was the world's most northern base-metal mine. After 22 years of active mining, there were several waste streams that needed to be dealt with, including: numerous barges and tanks containing a variety of liquid wastes such as spent fuels and glycols. Storing these materials onsite and shipping them off by barge can create liability and expense.

Enter Eco Waste Solutions (EWS), a Burlington, Ontario-based environmental technology company that recognized the market opportunity and took on the waste management challenge at the Polaris mine. EWS sup-

plied its liquid waste oxidizer system to operate onsite to dispose of the various materials in a safe and environmentally responsible manner.

EWS' liquid waste oxidizer is essentially a thermal treatment system that manipulates liquids in a heated mixing tank. The materials are pumped to the combustion nozzle where compressed air is utilized to atomize the liquid. The liquids form a fine spray pattern that readily combust when introduced to the high temperature, oxygen-rich environment of its oxidation chamber. The oxidizer operates at 1,000°C and is fired using a diesel burner. The automated system features a programmable logic controller (PLC) that monitors system parameters and optimizes accordingly.

The use of the EWS liquid waste oxidizer allows an otherwise difficult problem to be solved at the source, as the liquid wastes are completely destroyed in the system without the creation of smoke and/or odour. Sounds straightforward, you say.

However, in accepting the Polaris contract, EWS confronted some challenges.

One of the requirements imposed was that the system had to be capable of operation in an unheated building and operate for 20 hour per day cycles. The short timeline for the decommissioning

left no margin for equipment breakdown or frequent maintenance.

In Polaris, as it is in other areas of the North, maintenance is a key issue. Skilled workers are in short supply so the use of machinery that requires a high level of expertise to operate is less than desirable. Equipment that is dependent on "factory" technician visits for regular servicing is out of the question. Also, the large distances and expensive transportation channels mean that parts take longer to acquire and cost many times more than in the southern Canada.

So, while EWS' liquid waste oxidizer is generally designed with minimal moving parts, in order to meet the special needs of the Polaris project, components that would need regular attention were supplied as spares and were designed for fast and easy servicing or replacement **HMM**

John Nicholson is vice president of Environmental Business Consultants based in Toronto, Ontario. For further information, e-mail john.nicholson@ebccanada.com