

HEAT-LINE CORPORATION

# Baie St. Paul avoids blasting with freeze-protected pipe

Where frost lines are deep and rocky terrain nears the earth's surface from below, the cost of extending a municipal water service pipe from the water main or curb stop becomes an expensive and chilling proposition.

Baie St. Paul is a small town near Charlevoix, Quebec where a new water main was required to supply potable water to a number of existing residences. A problem common in rural Canada was encountered, as the terrain between this water main and the homes was solid rock and the distance for the branch piping averaged 500 feet. In order to prevent these pipes from freezing in winter, the traditional method of blasting the rock to get below the frost line was impossible as costs were prohibitive and the risk of collateral damage to surrounding properties seemed inevitable.



Installation of CARAPACE system.

The solution to this problem was the installation of more than 3,500 feet of CARAPACE®, a freeze protected municipal water pipe by Heat-Line Corporation. The fully-certified CARAPACE pipe was neatly and quickly installed in a shallow trench above the frost line where the option of blasting would have exceeded \$200,000 in total cost. With CARAPACE the cost savings were one-sixth that of blasting.

**Pipe Specifications**

CTS and ID Controlled HDPE  
1 inch and 1 1/4 inch

**Canadian Standards Association cCSAus**

Designations 3A, 3B, 3C, 3D in Canada  
Type A in USA

**NSF Std. 14 for Potable Water**

Rural - NSF ASTM D2239-IPS-ID controlled 160 PSI  
Municipal - NSF ASTM D2737-CTS-OD controlled 200 PSI  
Meets the criteria of AWWA C-901-96

**Controls and Power Supply**

Ground Fault Protection: Nema 3R 30 milliamp / 20 amp 2 Pole cCSAus  
Thermostat: 240 Volt Nema 4X with 30 amp contacts cCSAus

**How CARAPACE® works:**

The CARAPACE pipe is gently heated with a low watt density conductive polymer lineal heater, which increases and decreases its applied heat microscopically along the pipe in response to temperature variables. It is extruded tightly along the pipe length under a high density polyethylene shell which accentuates remarkable heat transfer while providing protection from mechanical injury in rugged conditions. The CARAPACE pipe can be fully insulated.

Amazingly, CARAPACE can be electrically terminated and mechanically tailored to length in the field up to a maximum of 540 feet. This entire length is powered with a simple 240 volt, 20 amp electrical circuit owing to its incredible energy efficiency.

When combined with high quality, digital thermostatic controls and insulations of various types, CARAPACE installs quickly and can also be used for sewage forced mains.

Heat-Line has been manufacturing high performance freeze protection systems for more than 18 years and CARAPACE is the most recent in the product family.

*Article provided by Heat-Line Corporation, Haliburton, Ontario, Tel. 705 754 4545 / 1 800 584 4944; www.heatline.com. Contact: Lorne Heise President. CARAPACE is a registered trademark of Heat-Line Corporation.*