

Drinking Water Flows Again

Homemade explosive renders drinking water unsafe for consumption

BY KAREN SCHMIDT



When the Lac La Croix First Nation Reserve in Northern Ontario had a homemade explosive thrown into its water treatment facility by vandals, it not only caused extensive fire damage, but created unsafe drinking water for the residents. Bottled water had to be trucked in from Fort Frances — 190 kilometers away.

Flames were drawn under the door and ignited flammables inside the building, causing extensive fire and smoke damage. The building's internal structure, finishes and the water treatment mechanicals were severely affected. Soot and smoke residue covered the interior of the facility and melted materials were hanging precariously over the water treatment beds. The drinking water supply was immediately shut down. Plant operators and Health Canada had further concerns about the contamination of the non-potable water supply. Keeping the water treatment facility operational for uses other than consumption was necessary. But, falling debris during the restoration process could further pollute the reservoir. A simultaneous remediation and restoration project would need to take place.

There were two main sections in the building. One area contained the two filter beds, with the second area housing the pump and supporting mechanical systems. Adjacent to the mechanical room was a combination control room, office and utility closet. The concrete floor, block walls, metal panel ceiling, insulated attic and a wood truss roof had all been damaged.

It was determined the most prudent course of remediation was to utilize a dry ice blasting system to remove soot from surfaces in the building, including electrical and pumping systems. There is virtually no fallout associated

with the use of this system, and it is the quickest and most efficient method to remove heavy soot. A supported temporary floor served a dual purpose: the protection of the non-potable water and as a platform to allow access to overhead space and to the far end of the filter beds. The floor restricted the maintenance of water production, depleting the community's water source by 50 per cent. All electrical components throughout the building were replaced, in addition to the damaged door, ceiling materials and insulation, along with smoke sealing and painting of all surfaces. Tasks were often conducted simultaneously for cost efficiencies and a speedy reconnection to the Reserve's drinking water. Several sub-contractors, including mechanics and electricians, were recruited to provide specialized services within their areas of expertise. It was vitally important to forecast and pro-actively plan for potential stumbling blocks that would impair the work schedule.

Located approximately 350km south west of Thunder Bay, the final 90 kilometers to the Reserve is unpaved logging roads. The remoteness of the location presented a number of unique challenges: accessible lodging and food, limited supplies, limited number of local sub-contractors, wildlife, sharing the road with logging trucks, communication (cell phone service was sporadic at best, and there were issues with reliable internet and email access), and no access to gas or diesel on the Reserve.

To ensure the safety of workers and protect time and cost efficiencies, all of these challenges needed to be addressed. Accommodation and food was arranged with a fishing camp located across the lake from the water treatment facility. A water taxi carried workers to and from the job site. Staff was scheduled on two-weeks-on and one-week-off shifts to allow for time to



rejuvenate and spend time with families. Wildlife safety concerns were addressed by providing information and tips on wildlife behaviour and what to do if confronted by an animal in the wild. The buddy system was utilized whenever possible. Local residents, with experience in navigating gravel-logging roads, were hired to transport workers. When cell phone and landlines failed, short wave radios provided two-way communication. Management of staff, including team-building exercises, kept workers engaged and motivated.

A team, consisting of a project manager, independent adjuster, insurance company, reserve band manager, Health Canada and sub-contractors, worked diligently together to ensure success by recognizing roadblocks and potential obstacles before they happened. The Lac La Croix claim presented an excellent opportunity to acquire new skills and best practices that may be utilized for future opportunities in isolated areas within Canada.

This unique and very rewarding project was successfully completed in only eight weeks and clean drinking water was once again flowing from the facility to the residents of the Reserve.



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