

UV Pure® Case Study	
Application:	Municipal/Institutional Projects
Solution:	Hallett® 30 systems
Location:	Jasper National Park, Alberta



Pure, safe water.
Always.

Hallett® Wastewater System at Miette Hot Springs, Jasper National Park, Alberta

Miette Hot Springs is a Parks Canada property in Jasper National Park, Alberta. The 1970s wastewater treatment facility used a rotating biological contactor (RBC) and chlorination. In 2006, the facility was upgraded. Since older RBC systems don't address the full spectrum of disinfection challenges, the water systems specialists recommended the newer technology of a UV system to handle all possible concerns including giardia and crypto sporidium. By commissioning a Hallett® wastewater system instead of an open channel UV system, Miette Hot Springs (Parks Canada) avoided a ten month design/build period and saved over \$150,000 in capital costs.

Miette Hot Springs looked at three options for upgrading the wastewater treatment facility:

Option 1: Chlorination and dechlorination with sodium bisulphate:

This option would not address the possible presence of Cryptosporidium and Giardia oosysts in the effluent as well as the possible formation of organic by-products and the possibility of releasing chlorinated effluent to the river.

Option 2: A Conventional Open Channel System

An open channel UV system is the conventional solution for this kind of application. A \$200,000 quote was obtained from a leading manufacturer. While cost was certainly an issue, the larger issue was the ten month design and build lead time including civil works and electrical upgrades to get the system up and running.

Option 3: A Hallett® System at 25% of the cost and commissioned within a month

The site's small flow rate (100 M3/day; peak flow rate of 50 GPM) was a perfect scenario for designing a smaller, turn-key Hallett® waste-water system for this site. Sigma Environmental (www.sigmaenv.com), the engineering firm that installed the system, designed a system that far exceeded current flow requirements for less than 25% of the cost of the open channel system. More importantly, this system was designed and built in 2 weeks. It was installed in a portable small building and dropped off at the site. Effluent pumps and plug in floats were used to pump the effluent through the UV system with only a small modification to the existing treatment systems baffles. Within 2 hours of being dropped off, the wastewater system was up and running using temporary extension cords. Within a week the permanent wiring was in place and the system was fully commissioned.

The system (Option 3) was installed in June 2006 with four Hallett® 30s and one extra Hallett® 30 for redundancy. If one of the four systems needs to be taken offline for servicing, the extra unit is ready to go. On another note, the same Hallett® equipment is being used for the park's drinking water system. This is a huge benefit for the park in terms of operator knowledge of both sides of the water and wastewater infrastructure at the park.

"This was basically a "plug and play" solution. Since the minute we turned it on we have had no fecal or total coliform in our lab results, not to mention Giardia or Crypto. In less than a month and at a substantially reduced cost we had our new system. We've had no quartz fouling whatsoever so the maintenance has been straight forward. The electrical requirements to operate the system are much less than an open channel system. On all counts, this has been a total success." — Nathan Ward, Water Quality Technologist, Parks Canada

