



Membrane Bioreactor



Membrane Wastewater Treatment Technology Brings Adventure Park Facilities up to Standard

Client: Parc-Aventure Mont-Citadelle, QC, Canada

In the heart of the Lake Témiscouata region, Parc-Aventure Mont-Citadelle offers unique and memorable outdoor activities year-round in a stunning yet accessible location. Within the next five years, Parc-Aventure Mont-Citadelle plans to become a major attraction and choice four-season destination renown throughout Quebec and eastern Canada for exciting and innovative outdoor experiences. The park also wants to become a leader in the use and development of renewable energy.

Context

As a green tourist facility committed to meeting the highest sustainable development criteria, Parc-Aventure Mont-Citadelle had to upgrade its existing wastewater treatment system to meet very strict phosphorous removal criteria despite seasonal fluctuations in its activities. Other constraints also added to the demanding environmental standards, including:

- The park is located close to a protected lake (environmentally sensitive area)
- Ground infiltration of wastewater was not an option
- Tree cutting had to be kept to a minimum

Effluent quality requirements

P _{tot}	<0.1 mg/L
Fecal coliforms	<200 CFU/100 mL



Solution

Membrane technology is at today's cutting edge in terms of phosphorus removal efficiency. Because the biomass is retained by a membrane, the footprint of the installation is very compact and it offers high treatment performances with a bacteria-free effluent. For a tourist destination, the EcoprocesTM MBR offers all these benefits and much more:

- Easy integration into the environment
- Simple to operate and maintain
- Modular design ideal for future expansion

The new treatment plant was designed by the Pohénégamook firm Actuel Conseil in cooperation with Premier Tech Aqua's process engineering team. Built by Lan-Ro Équipements, the plant is half the size of other systems considered. In addition, the building blends perfectly with the environment, so there is no negative visual impact.

The treated water flows through a one-kilometre pipe and empties into the Têtu River, the main affluent of Lake Morin, located on the park's site.

Looking ahead

EcoprocesTM MBR offers outstanding performances and biochemical oxygen demand and suspended solids are maintained below the 10 mg/L level.

As such, in the near future, Parc-Aventure Mont-Citadelle hopes to create a pond at the treated wastewater outlet... and stock it with fish!

The new EcoprocesTM MBR system of Parc-Aventure Mont-Citadelle, which can treat up to 47 m³/d, was commissioned in June 2011.

"Parc-Aventure Mont-Citadelle selected the EcoprocesTM MBR because it meets and even exceeds the very stringent effluent criteria we must satisfy. Its small footprint, coupled with its availability from a local supplier offering follow-up and after-sale service as well as a team of researchers and designers, confirmed our decision."

Monique Bérubé

Market Development

Parc-Aventure Mont-Citadelle, Témiscouata



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