

COMMUNITY SEWAGE TREATMENT PLANT

Project	Community Sewage Treatment Plant
Location	Pangnirtung, Nunavut, Canada
Service	Full A/E Services
Process	Design/Build
Value	\$2.74M
Status	Completed

The use of secondary and tertiary sewage treatment systems is becoming important in the Arctic. Until recently direct discharge into the oceans was common based on the low effluent loads and high tidal flushing rates. Recent analysis, however, has shown unpredicted environmental impact from this practice that requires upgrade in many locations throughout the North. The new sewage treatment plant is a Rotating Biological Contactor (RBC) process designed to bring secondary treatment to a small Baffin Island Inuit community.

As is typical in Canadian arctic communities, water and sewage trucks service all the buildings. The sewage treatment plant was a pilot project that could be used in the future for other communities.

Designed as a secondary treatment system it is possible to upgrade to a tertiary level treatment using a modification to the biological process. Since the system relies on partially submerged biological digesters for the treatment process the entire treatment system had to be protected from the severe climate of the Pangnirtung Fiord. To achieve this requirement a sewage treatment building that contained the geo-reactors, sludge and aerated equalization tanks along with the required ancillary equipment was provided. Since it would be necessary to heat the building it was mandated that the systems have a high level of system efficiency to reduce operating costs and ensure viability for the community. The energy efficiency could, not be achieved at the expense of safety so a variable volume ventilation system with heat recovery along with standby emergency ventilation in case of explosive gas build up were included in the system design.

FSC Contact

Terry Gray, Principal, Branch Manager (NU)
1.867.979.0555 | terry@fsc.ca

Client Contact

Rick Johnston, BCA Clearwater Group, Langley, BC
1.604.539.9399

