



WHALE COVE WTP CASE STUDY

Komine Pure Water

Background

Six-Module Water Treatment Plant
Commissioned for the Hamlet of Whale Cove ,
operated by Komline Pure Water since 2022

OVERVIEW

Komline Pure Water Canada was contracted to provide a custom Water Treatment Plant for the Hamlet of Whale Cove, a small Inuit community based in the Kivalliq Region of Nunavut in Canada's Arctic. Situated on the western coast of Hudson Bay, the remote village consists of approximately 450 people, who had been living under Boil-Water Advisory for over a decade. Like most arctic communities, Whale Cove has been subjected to extreme changes in weather, permafrost thaw, raw water quality degradation, a need for trained staff, rapidly rising costs and increased energy requirements.



Map Of Nunavut, Canada

Client

Government of Nunavut

Location

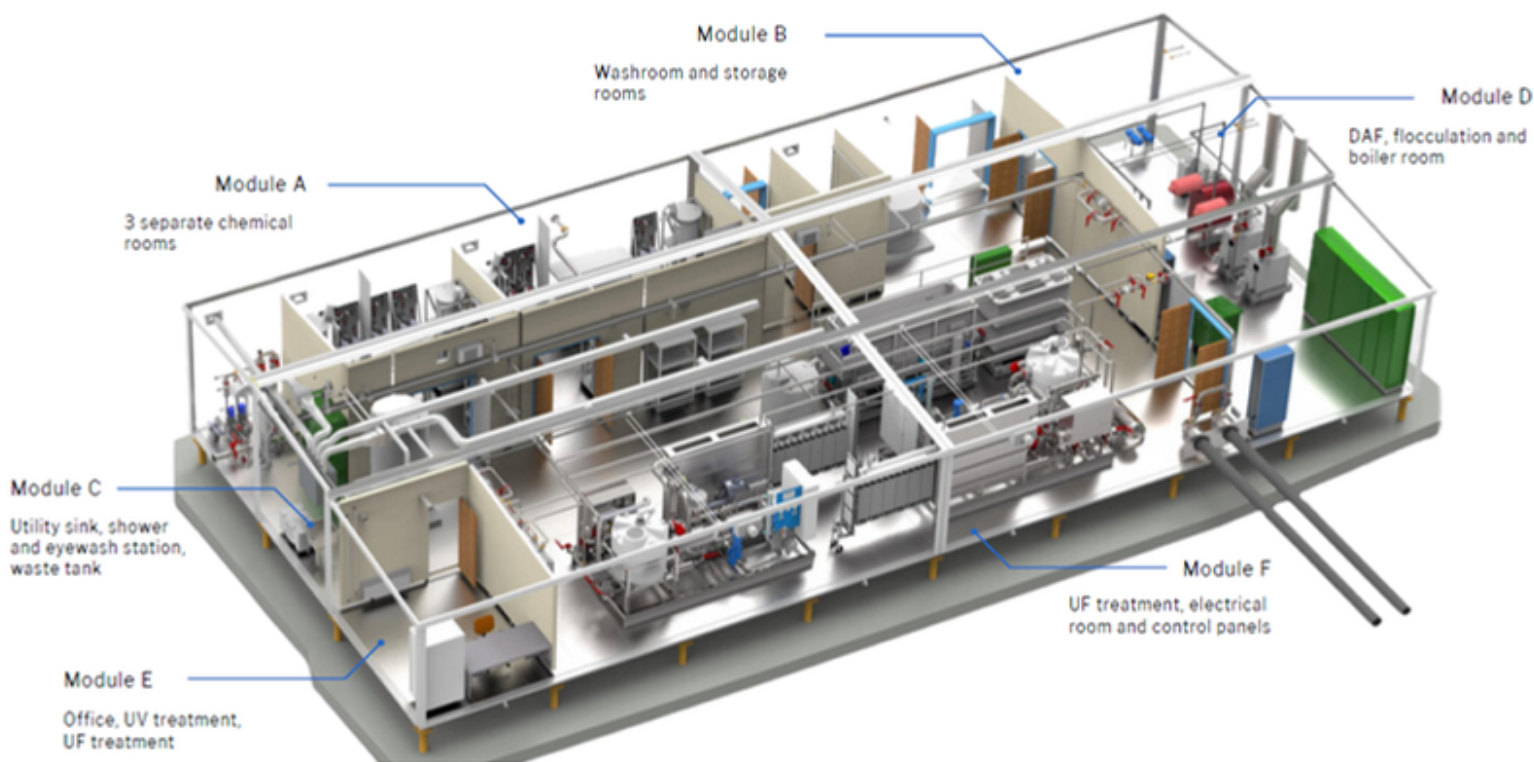
Whale Cove, Nunavut, Canada

Technologies

Pre-Screening,
Coagulation, Flocculation,
DAF, DuPont Memcort™
Ultrafiltration, UV
Disinfection, and
Chlorination

Scope

Awarded by bid/tender
to provide Building
Design, Fabrication,
FAT, commissioning and
Operator Training
Services



PROCESS

Each building is heated, insulated and ventilated to meet the demands of the harsh Arctic environment. Weighing between 10,000kg - 20,000kg per module, the units are individually shrink-wrapped and transported to site by truck, rail and barge from our manufacturing facility in Surrey, BC.

The permanent, year-round water treatment system includes a combination of technologies to comply with the Guidelines for Canadian Drinking Water Quality (GCDWQ). The raw water feed, from Fish Lake, enters the system for pre-screening through a 0.5mm mesh screen, removing large solids and debris.

Next, the water enters a DAF (dissolved air flotation) unit, supplied by Evoqua (Xylem) Water Technologies (EWT). A chemical coagulant is injected into the water inside a rapid mixing chamber, and after flash mixing, is passed through a mechanical flocculator. Float removal and skimmer systems separate the collected float (or surface material) from the effluent, which passes through adjustable weirs for recirculation. The water is then processed by a DuPont Memcor™ Ultrafiltration System before ultraviolet disinfection and chlorination. A fully integrated, automated HMI control system provides superior plant management utilities and a user-friendly operating experience.



Inside of the Water Treatment Plant



FABRICATION

Our in-house fabrication capabilities are supported by **CSAA660** certification by the Canadian Welding Bureau (CWB), and our electrical and control panels are certified by ETL. All welding, plumbing, electrical and Factory Acceptance Testing is done prior to the plant shipping to site, significantly reducing installation and start-up time and cost. Once all testing procedures are complete, the plant is disassembled into modules and individually sealed and shrinkwrapped for safe transportation to Whale Cove (2,300km away).



fabrication of the first steel-frame



A safety walkway is installed between flocculation tanks



Inside of the Water Treatment Plant



Modular Building Wrapped and Ready for Shipping



Chemical Room - As Delivered



Water Tank and UV - As Delivered

KOMLINE PURE WATER

Komline Pure Water has been designing, fabricating and installing custom water and wastewater treatment plants & systems for over 30 years. Our Head office and manufacturing facility is based in Surrey, British Columbia. Our pre-assembled treatment plants are renowned for their cost-effective and reliable performance in wide-ranging applications. Our quality and safety plans, environmental considerations, building and system designs and CAD drawings meet the unique requirements and standards for major corporations and utilities. This includes "Design for Resilience", taking into account seismic forces, flooding, extreme storms, security, remote operation and other factors.



Water Tank and UV - As Delivered