



CASE STUDY: WATER TREATMENT

Addressing PFAS in Tap Water Samples
in Saguenay, Canada

PROJECT DETAILS :: Addressing PFAS in Saguenay, Canada

Project Location	Saguenay, Canada
Project Type	Municipal Mobile PFAS Water Treatment
Project Time Frame	Operational in January 2024
End User/Customer	City of Saguenay, Canada
Engineering Firm/Consultant	Water Surplus and Mabarex
Product Name	Multi Media
Model Number	MM-5460-4AS
Targeted Contaminants	PFAS
Flow Rate	320-955 GPM
Pressure	100 PSI
ASME Code or Non-Code	Non-Code
Quantity Of Systems	1
Vessels Per System	4
Size	54" diameter, 60" side shell
Filtration Media Type	Proprietary client provided

CHALLENGES

In February 2023, the University of Montreal released a study that analyzed tap water samples for PFAS, also known as per- and polyfluoroalkyl substances, across a large number of urban and rural communities in Québec, Canada. The results showed that over 99% of the tap water samples were positive for at least one type of PFAS and that several cities in Quebec had perfluorinated levels above Health Canada's recommendations.

PFAS substances include thousands of manufactured chemicals that are fast becoming a major environmental and human health concern. Known as "forever chemicals" due to their extreme resistance to breaking down, PFAS are persistent everywhere in the environment and can be detected in fish, wildlife and humans. Research suggests that exposure to certain PFAS chemicals can cause a variety of adverse effects to humans including cancer. Due to these risks, the EPA has proposed that nine PFAS chemicals be categorized as hazardous to human health.

The City of Saguenay—one of the urban communities within the study area—acted quickly by requesting proposals to address the urgent need for treating PFAS in the city's drinking water supply. In response, Montreal-based engineering firm Mabarex, known for its agility in deploying integrated solutions, partnered with Illinois-based water treatment provider WaterSurplus to design a proposed solution that not only promised rapid deployment but also proven treatment technologies for PFAS removal.

After winning a \$10 million contract to operate over a four-year period, Mabarex delivered three temporary WaterSurplus PFAS removal trailer units to Saguenay, and in January 2024, the units began treating the city's drinking water for PFAS.

SOLUTIONS

Integrated PFAS Treatment

The mobile PFAS solution at Saguenay harnesses a PFAS removal anion exchange resin from WaterSurplus installed in a Yardney filtration system. The solution as a whole represents the first PFAS removal system in Quebec and one of the first in Canada.

continued > next page



ABOUT YARDNEY WATER FILTRATION SYSTEMS

Founded in 1965, Yardney Water Filtration Systems is a recognized leader in water filtration solutions for agriculture, golf, turf, landscape, industrial, commercial, and municipal markets worldwide. Featuring built-to-last fabrication and Made in USA quality, Yardney filters deliver reliable, long-term performance and extended product lifecycles. Yardney's offerings include filtration systems in either ASME code or non-code construction utilizing technologies such as manual and automatic screen filters, centrifugal sand separators, sand media, multimedia, granular activated carbon (GAC), and specialized media to address contaminants such as iron, manganese, arsenic, and PFAS. The company supports a sales network spanning the United States, Mexico, and Europe, bolstered by strategic dealer alliances that ensure a robust global presence.

"We like that Yardney filters are customizable, allowing us to deliver a solution that addressed a specific need," said WaterSurplus Executive Vice President Jim Ryan. "Yardney filtration systems are reliable, fairly priced, and suitable for a wide range of applications. Yardney and WaterSurplus provide engineering efficiencies that make it easier in terms of integration— it allows us to offer a system that is particularly easy for operators to use. When our service team supports municipal operators in getting things up and running, a user-friendly solution is a really great value add with our filtration solutions."

According to Ryan, the rapid-response units allow Saguenay to quickly implement a temporary solution in place while both Mabarex and WaterSurplus begin investigating the most optimal long-term approach for the client.

"The design and construction process for a new plant can take two years or more," Ryan said. "Plus, there is still a lot of uncertainty with PFAS treatment, particularly with regulatory standards. But instead of waiting, Saguenay wanted to be sure to act immediately and begin addressing the problem now. With potential harm accruing, it was critical that they move decisively to address the health risk."

About WaterSurplus

WaterSurplus delivers sustainable water treatment solutions across industries and around the world. Since its founding in 1989, innovation has been the hallmark of WaterSurplus. Today that is represented by high-efficiency Impact RO reverse osmosis systems, fouling resistant NanoStack membrane elements, rapid-response PFAS treatment, pre-engineered filtration systems, a proprietary line of catalytic media, a ready-to-run rental fleet, and the availability advantage provided by WaterSurplus's original surplus water treatment equipment marketplace.

About Mabarex

Mabarex is a 100% Quebec-based company founded in 1983, specializing in water engineering. It offers sustainable solutions to its industrial, municipal and government customers and partners. The Mabarex team is made up of engineers and scientists who do not hesitate to offer proprietary technologies and those from its extensive network. Mabarex is a pioneer in Quebec by having integrated several flagship and avant-garde treatment technologies.



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