

Sainte Agathe Combined Sewer-Stormwater HDPE Detention System



Project Overview & Background

The historic town of Ville de Sainte-Agathe-des-Monts (Sainte Agathe), Québec, was facing environmental challenges with its outdated sewer system, which was not designed to handle peak flows during wet weather events; as a result, untreated combined sewer discharges to local streams and rivers became common.

To protect the town's environment and fulfill the aims of the Strategy for the Management of Municipal Wastewater Effluent regulations adopted by the Canadian Council of Ministers of the Environment (CCME), Sainte Agathe commissioned a large-scale combined sewer detention facility adjacent to its municipal plant, along the Rivière du Nord. The detention facility is designed to store 260,000 gallons (984 m³) of stormwater discharge during peak flow events. This additional storage capacity effectively eliminates CSO events during all but the largest storms, protecting the town's pristine streams and rivers.

The detention system was fabricated from a Weholite® RSC250 profile wall polyethylene pipe manufactured in accordance with ASTM F894. Its barrel geometry included 5'/1.5m, 6'/1.8m, and 7'/2.1m diameter barrels connected by a continuous 36"/910mm header system with 36"/910mm manhole access risers. Bulkheads were manufactured from a Wehopanel P120H profile wall panel and reinforced with HDPE encapsulated steel beams.

While the province of Québec is known for using concrete almost exclusively in municipal and industrial projects, the use of high-density polyethylene (HDPE) as an alternative showcases its superior benefits. Weholite®'s projected 100+ year service life makes it resistant to H₂S, pH, and corrosion. This characteristic allowed the town to realize significant savings in both capital and operational costs. Additionally, Weholite's lightweight nature delivers savings in project costs, as minimal machinery and labour were required for installation.

The successful use of HDPE in this combined sewer-stormwater design enabled Infra Pipes to challenge the status quo of concrete designs. Upon successful completion of this project, Alexandre Foisy, the president of Inter Chantiers, who was the general contractor on this project, commented, "Inter Chantiers is proud to have successfully achieved this project on schedule and on budget. Our team truly believes that we not only "built another infrastructure project" but we did so in a durable and sustainable manner."

System, Partners & Timeline

Owner	Engineer	Contractor	Sub-Contractor	Distributor	Installation Timeline
Sainte-Agathe-des-Monts, Québec, Canada	Artelia	Inter-Chantiers	ProFusion Inc.	ISCO Industries	2016

STORAGE SYSTEM REQUIREMENTS

- 260,000 US Gal/984,207L
- 17 Prefabricated Barrel Sections - 480 ft/146m of 5'/1.5m Diameter, 433 ft/132m of 6'/1.8m Diameter, 360 ft/110m of 7'/2.1m Diameter
- 3 prefabricated Manifold with Access Risers

