

TWEED LAGOON WASTEWATER MANAGEMENT, ONTARIO, CANADA

Increasing wastewater treatment capacity to serve a growing town



Industry: Water and Sanitation
Application: Wastewater Ponds
Location: Ontario, Canada
Product: **MIRAFI®** N-Series + Liner System

wastewater treatment system was nearing its rated capacity. To ensure adequate capacity for future demands and growth in the community, the Municipality needed to expand the wastewater system, which included construction of a third lagoon cell. The project received both federal and provincial funding, including an investment through the Green Infrastructure Stream of the Investing in Canada plan.

Overview

The Municipality of Tweed is located in central-eastern Ontario. In 2019, the Municipality identified that the existing

Approximately 32,000 m² (344,440 f²) of a hybrid HDPE and LLDPE geomembrane manufactured by Solmax was selected to provide excellent UV and chemical resistance.

Challenge

Site preparation began in Spring 2021, and approximately 60,000 m³ (f³) of soil was moved to construct the third cell and prepare for the liner system. The liner system was installed as a “sandwich” consisting of a heavy weight nonwoven geotextile on the top and bottom, and 40-mil polyethylene geomembrane in the middle. rates, excellent long-term exposed weathering performance and chemical resistance.

Its outstanding mechanical performance also makes it an excellent candidate for wastewater barrier and biogas (methane) cover system.

CASE STUDY

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Solution

Approximately 32,000 m² (344,440 f²) of a hybrid HDPE and LLPE geomembrane manufactured by Solmax was selected to provide excellent UV and chemical resistance, in addition to enhanced endurance properties. To provide a protection barrier for the geomembrane, 62,000 m² (667,360 f²) of **MIRAFI 1160N** nonwoven were installed.

To minimize handling and increase installation efficiency, the nonwoven geotextile rolls were factory-sewn with double stitched prayer seams to double-width rolls prior to installation. This also helped to minimize waste. The polyethylene geomembrane liner panels were welded together using a wedge welder, and pipe penetrations were sealed using an extrusion-welding process.

It is estimated that the sewage system's capacity was expanded by around 50%, which will serve approximately 400 new homes.



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