CASE STUDY

Project Title	**NEUVILLE REST STOP**
Installation Date	2019
Country	Canada
Distributor	Infiltrations Septic Pro
Project	Installation of a wastewater treatment system at a highway rest stop with 2 restaurants and a gas station
Treatment Capacity	**12,250 L/day**
Soil Analysis	**Permeable to very permeable**
System Surface Area	**297 m²**
Particularities of the Site	The installation treats the wastewater coming from a gas station and 2 restaurants. Restaurants have extremely high organic loads and high amounts of fat that go into the septic system. Due to limited space, the system uses one cell instead of multiple. This is achieved by interlacing the Advanced Enviro))Septic rows. As opposed to having one supply pipe feed all of the rows, this system uses 3 different supply pipes, each feeding every third row. This allows part of the system to be put to rest without having to shut down the entire cell for a period of time.

Neuville Rest Stop – Preparing the site

Treatment results available upon request.

BACKGROUND

This is a rest stop off highway 40 heading west out of Quebec City. The site contains 2 restaurants as well as a gas station and uses an interlaced System O)) to treat the high organic and fat loads present in the wastewater coming from the building.

PRIMARY TREATMENT

The System O)) is preceded by a primary treatment. Raw wastewater is collected in a 30,650 L grease trap, where a large portion of the fats are removed. Leaving the grease trap the wastewater flows into a pumping station and is pumped into a 36,100 L septic tank equipped with a prefilter that allows the passage of air. Inside the septic tank, the wastewater separates into layers as the fats float to the top and the solids sink to the bottom of the tank.

DISTRIBUTION

The septic tank effluent flows into a pumping station where it is then pumped into the System O)). The proper function of the System O)) depends on a uniform distribution of wastewater between the Advanced Enviro))Septic pipe rows. This is achieved with a Low Pressure Repartition System. This pressurized system ensures that all of the rows of pipes are evenly supplied with wastewater with less than a 2% difference between the rows.

Placing the Advanced Enviro))Septic pipes

Connected Advanced Enviro))Septic pipes

ADVANCED SECONDARY TREATMENT

This interlaced System O)) uses 1 interlaced cell of 39 rows of 5 Advanced Enviro))Septic pipes for a total of 195 pipes. The wastewater flows along the length of the rows where it is treated by bacteria living in the pipes and by the filter sand during the infiltration process.

SYSTEM FEATURES AND BENEFITS

- All wastewater at the site is treated passively
- No maintenance is required
- No energy is spent on wastewater treatment
- No products are required for wastewater treatment
- Wastewater odours cannot develop
- The treated water is perfectly clear and free of pollution

ECONOMIC ADVANTAGES

By using a System O)), the client saves money in the long term. A System O)) costs roughly the same as a conventional system, but has a lifespan of over 30 years. Conventional installations can start to fail after 15 years even if they are treated well. Conventional systems are easily clogged due to the large amounts of organic matter and fat that enters the system from restaurants. The System O)) has no problem treating these substances.

ENVIRONMENTAL ADVANTAGES

On average, the treated water leaving the System O)) has:

- 10.5 times less CBOD5 (5-day Carbonaceous Biochemical Oxygen Demand),
- 7.3 times fewer total suspended solids (TSS), and
- 49.5 times fewer fecal coliform.

The treatment process of a conventional installation occurs in the native soil, while System O)) treats the wastewater within the system, protecting the native soil.

The injectors of the Low Pressure Repartition System

Interlaced system

Covered site

The ventilation