

PROJECT:

# Water Treatment after Lac Mégantic Derailment



SANEXEN

## CHALLENGES

- The situation required a quick mobilization of equipment on the site of the disaster.
- Mobile units that operated 24/7 were needed to treat the water quickly and efficiently.
- An effluent monitoring program was implemented by the ministère du Développement durable, de l'Environnement, de la Faune et des Parcs (MDDEFP). The treatment objectives established by the MDDEFP were 1 mg/L for PH (C<sub>10-50</sub>), with specific criteria for individual MAHs and PAHs.

## BACKGROUND

One of the worst disasters in Canada's recent history occurred in July 2013. The derailment of a train transporting crude oil led to the spill and fire of 8 million liters of oil in downtown Lac-Mégantic, causing the death of 47 people.

Some of the spilled oil seeped into the sewer system and reached the municipal wastewater treatment tanks, which temporarily suspended treatment operations. SANEXEN was mandated to provide emergency mobile water treatment units to clean the tanks and allow municipal



## SITE RESTORATION

Project location: Lac Mégantic, Quebec

Quantity of water treated: 43,000,000 L

Project date: July to October 2013

water treatment to resume. All of the contaminated water from the disaster area was also treated as part of the project.

## SOLUTION DEVELOPED

SANEXEN mobilized its water treatment equipment within 48 hours following the accident and increased the treatment capacity of the units within the first week from 200 m<sup>3</sup>/day to 1,000 m<sup>3</sup>/day.

Toxicity tests (fathead minnows, Daphnia Magna and rainbow trout) were also conducted on the treated water to verify the quality prior to discharge into the Chaudière River.

The following processes were used:

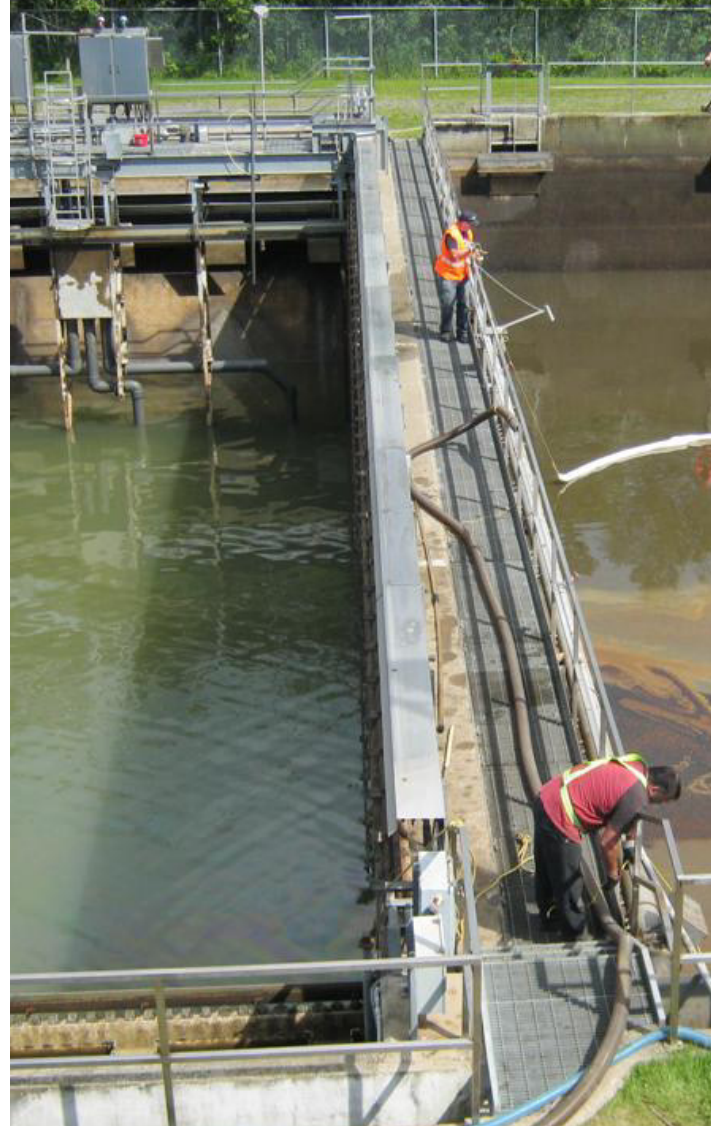
- Gravity separation (with or without coagulation/flocculation)
- Filtration
- Chemical oxidation
- ULTRASORPTION™
- Adsorption

The treatment had an average removal efficiency of 99%. Contaminated water from the site clean-up activities and from the contaminated sewer network was transported to the wastewater treatment plant.

From July 9 to October 25, 2013, **37 million litres** of water were treated. The treatment units were then relocated to the downtown area, alongside the derailment site, to further treat contaminated water.

Between November and December 2013, another **6 million litres** of water (rainwater and wash water from the derailment site) were treated.

The pretreatment separation process generated approximately **150,000 L** of oil and **1 million litres** of sludge, which were disposed of in authorized facilities.



## CONTACT



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