

**HIGHLIGHTS:**

- **Challenge:** Old, abandoned dump site leaching toxic chemicals to the groundwater
- Government of Canada manages site – engaged Golder to rehabilitate the site
- ECOTHOR®-EC electrocoagulation with magnesium and aluminum alloy anodes selected by Golder after onsite piloting
- Commissioned Fall 2019
- **Design Capacity**
  - 205 m³/day, operating 24/7
- Successful start-up in compliance with project objectives
- Follow-on requirements for anodes over 30 years with the Government of Canada



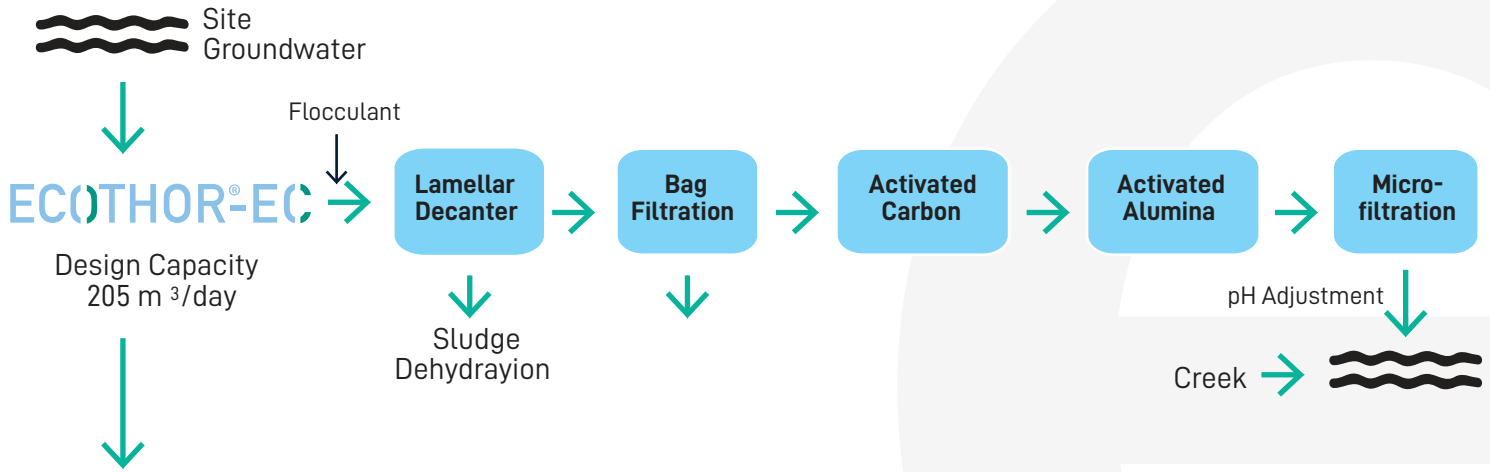
In 2010, the Government of Canada took over the management of the old, abandoned Sambault dump site, in Quebec's Montérégie region. After numerous studies, Golder & Associates was engaged to rehabilitate the site, which included the treatment of groundwater contaminated from the dump waste.

Golder considered numerous treatment approaches to deal with all of the noxious chemicals leaching to the environment. To address specifically ammonia nitrogen, heavy metals, C<sub>10</sub>-C<sub>50</sub> and polycyclic aromatic hydrocarbons, BOD and TSS, Golder asked E2metrix to pilot our ECOTHOR®-EC system on site in 2018 to consider it for its treatment train.

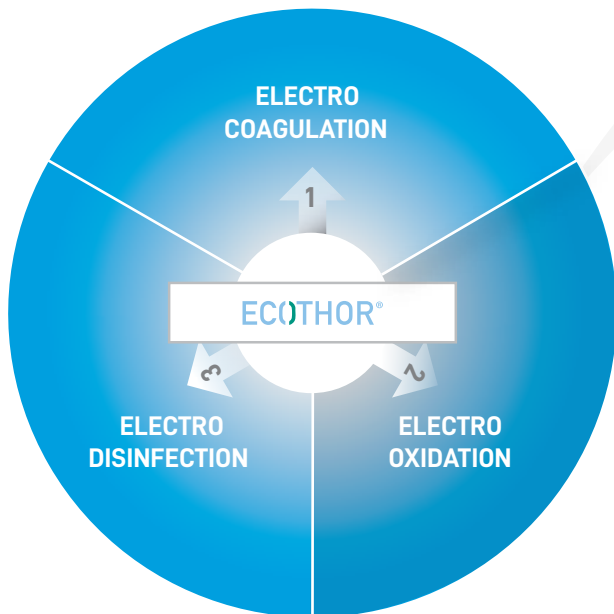
After extensive piloting, Golder selected ECOTHOR® for incorporation into its treatment train. The system was delivered and started up in the fall of 2019 with success.

Contaminant	% Removal
NH <sub>3</sub> -N (mg/L range)	72% < 0.49 mg/L at all times
TSS	> 90%
Phenolic Compounds	80-90%
C <sub>10</sub> -C <sub>50</sub> Hydrocarbons	> 95%
PAH	60-80%
BOD <sub>5</sub> - Particulate	> 80%
F	83%
Heavy Metals Examples include	> 95%
Mn	99,5%
As	73%
Ba	91%

**OPEX (Anodes) - \$0.88/m<sup>3</sup>**



18 ECOTHOR<sup>®</sup>-16R Reactors configured to operate in electrocoagulation mode with ANO1M (Al Alloy) & ANO2M (Mg alloy) anodes.



E2metrix is a Sherbrooke, Quebec-based water and wastewater treatment systems company, with a focus on ECOTHOR<sup>®</sup>, a “plug & play”, proprietary electrochemical process for treating process water along with industrial and municipal wastewater, either at a greenfield or an existing site. The modular ECOTHOR<sup>®</sup> reactor can be operated alone or in a bank of multiple reactors to treat wastewater discharge flows from as low as a few m<sup>3</sup> to thousands of m<sup>3</sup> per day to target removal of contaminants including, ammonia nitrogen, phosphorus, suspended solids, metals (ex. Zn, Cu, Ni, As, Se, Mn, Fe, etc.), C<sub>10</sub>-C<sub>50</sub> hydrocarbons, cyanides/thiocyanates, fats/oils & greases, pathogens/bacteria, emerging contaminant (including hormones, pharmaceuticals, PFAS), fluorides, and others.

Low Cost of Ownership	Multiple Contaminant Removal
Fully Automated with Remote Operation	Compact – Small Footprint & Modular
On/Off Capabilities	No moving parts



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