



Conestoga-Rovers & Associates Project Summary

KEY PROJECT ELEMENTS

- Preliminary Design
- Detailed Design
- Support During Construction
- Integrated Gas Blower Controls
- Integrated Gas Scrubber Controls
- Integrated Gas Chilling Controls
- HMI Interface
- Utility Interconnection

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WATERLOO LANDFILL GAS POWERPLANT

WATERLOO, ONTARIO



TOROMONT ENERGY LTD.

DURATION: 1998-1999

POWER: 3.7-MWe Prime

Toromont Energy acquired the rights to the waste gas from the Waterloo Landfill site in 1999. Prior to the completion of this project, the waste gas from the landfill was flared to the atmosphere. In an effort to improve environmental emissions and produce green energy, Toromont Energy Ltd. agreed to design, construct and operate a power plant operating on the landfill gas. The plant consists of four 925-kWe reciprocating engine-generator sets, control panels, gas handling systems, heat rejection radiators, utility interconnection, sub-station, motor control centre, building envelope and building systems and remote control and monitoring (SCADA). Electricity is generated as prime power and exported into the Ontario Hydro grid system.

CRA provided design services for the electrical, and instrumentation and control installation of the power generation equipment. In addition to the electrical engineering services, CRA staff, while with a previous firm, undertook the project management, design management and construction management for the project. Additionally, negotiation and coordination was conducted with the local hydro utility and Ontario Hydro.

For over 25 years CRA has been an engineering consultant to the Regional Municipality of Waterloo at this landfill site with respect to landfill permitting, landfill design, landfill operations, and monitoring activities.

This project was implemented utilizing a design-build approach, over a period of 11 months from the approval to proceed to the generation of power. This multi-million dollar project was delivered on schedule and under budget.