

**CLOSED LOOP WATER SYSTEM CASE STUDY**



Reverse Osmosis



Potable Quality Water

**ALGOMA ORCHARDS**

**CLOSED LOOP WATER SYSTEM**

**CHALLENGE:** Algoma Orchards is one of Canada’s most innovative leaders in apple farming, packing, and juice bottling. Algoma’s growing demand and production capacity required an increased supply of water, but infrastructure and operational challenges coupled with high costs of water were impeding expansion plans.

**SOLUTION:** CharTech designed an integrated and compact membrane bioreactor (MBR) with bio-media in conjunction with highly effective Reverse Osmosis (RO) to convert high BOD wastewater into high-quality water that Algoma reuses for on-site processes.

**RESULT:** CharTech supplied a state-of-the-art, fully automated closed loop water treatment system sized to process up to 110,000 liters per day of process wastewater to be recycled for reuse. It is one of first closed loop systems in Canada combining innovative technologies to effectively convert wastewater into high quality potable water, simultaneously enabling Algoma to increase its production capacity, improve efficiencies and reduce its environmental footprint. The project received grant funding to offset 50% of the project expenses, and also saves Algoma approximately \$200,000 per year in operational costs.

“Our partnership with CharTech Solutions to design and install a fully automated closed loop water recycling system has been a big success. We save \$200,000/yr. by eliminating the need to truck in fresh water and dispose of wastewater for our apple and juice production processes. We’re proud to be an industry leader by implementing solutions that increases our capacity and reduces our environmental footprint.”

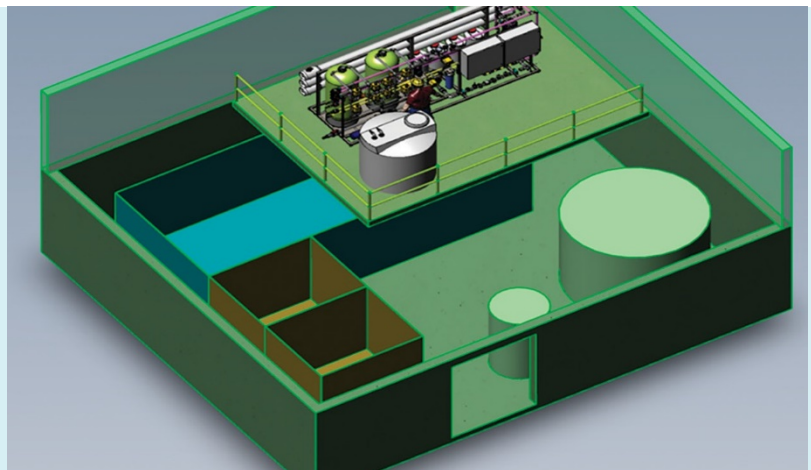
Kirk Kemp, President of Algoma Orchards



**CLOSED LOOP WATER SYSTEM**

**BENEFITS:**

- **Cost Savings:** Wastewater converted into potable water
- **Reduced Labour:** Automated operation & maintenance
- **Low GHG Emissions:** On-site treatment
- **Increased Capacity:** Innovative bio-media
- **High-Efficiency:** 50-75% RO Water Recovery



AN EXPERIENCED LEADER IN INDUSTRIAL CLEAN ENERGY, WASTE AND WATER TECHNOLOGY