

## Region of Waterloo Mannheim WTP Gas Chemical System Upgrades

Delivering Value Through the Water Cycle: Source to Tap, Tap to Source™

Gas chemical system safety reviews completed by C3W in 2014 for the ozone, liquid oxygen, chlorine gas and ammonia gas systems at the Mannheim WTP. This led to the creation of a capital project to affect the recommended upgrades. C3W won a competitive bid in 2017 to provide design and construction support services to implement the capital project.

Early in 2018, under the possibility of a work refusal, the C3W team worked with the Region's team and contractors to implement several short-term changes to address staff concerns regarding ambient ozone. The contract scope was adjusted appropriately, tendered, and the project saw implementation of instrumentation, HVAC and control changes to enhance the safety of system operation.

Three control systems were modified; SCADA, building automation and public address. New standard operating procedures were developed and staff were trained in their use to respond to gas chemical releases at the plant.

