

## Monitoring Full-Scale Biofiltration Drinking Water Treatment Plants

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### Collaborators:

Regional Municipality of Halton (ON)

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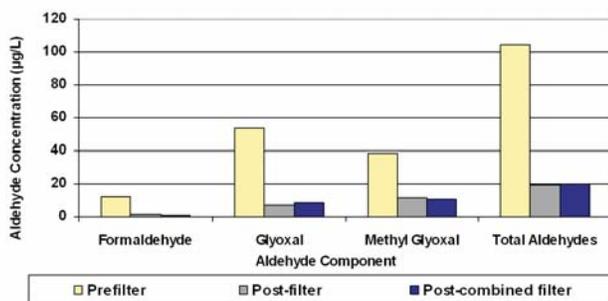
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Interest in ozonation for drinking water treatment has been increasing due to its enhanced disinfection capability, and taste & odour removal. As plants face increasingly strict regulations, municipalities are looking towards technologies that will help them maintain and improve the quality of their finished water.

Using ozone as a primary disinfectant may reduce the potential formation of chlorinated disinfection by-products (DBPs) within the treatment system, and in the distribution system. Ozonation is often paired with biological activated filtration (BAF), where ozonation precedes biofiltration. This coupling of processes has been gaining more attention because it can effectively remove particles, and treat undesirable biodegradable organics found in waters produced by oxidation. As such, ozone-enhanced biofiltration appears to have the potential to meet multiple water quality objectives.

The purpose of this research is to examine the performance of biological activated filters at water treatment plants employing ozone. A custom biological filtration monitoring and sampling program is used to create a historical database of filter performance. Parameters of interest include those that may be used to gauge biological activity across the filters. Results of this type of monitoring are aimed at providing plant operational staff with a better understanding of their biological filter performance, and how it impacts water quality. Water sampling and monitoring is conducted over an extended period of time in order to identify any trends between seasons.

Although past research has been conducted in the areas of ozone-enhanced biofiltration, it is still a relatively new and emerging area of study. This ongoing work will expand on past research to gain new insight.



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