

## Process and Performance Analysis of the APT Ozone/Hydrogen Peroxide Reactor for Indirect Potable Reuse

### HIGHLIGHTS

Evaluate the process and performance of the HiPOx reactor.

Determine the relationship between disinfection and microcontaminant destruction.

California DHS regulatory approval.

Draft indirect potable reuse regulations in California require an advanced oxidation step following reverse osmosis, providing two critical public health barriers—high-level disinfection and oxidation of microcontaminants. Applied Process Technology’s (APT) HiPOx ozone/hydrogen peroxide reactor has documented performance for microcontaminant destruction, including TCE, PCE, and 1,4 dioxane. Further, the use of the hydroxyl radical is effective for the destruction of NDMA. What was not fully understood by the manufacturer, was the ability for the HiPOx reactor to disinfect and what dose would be needed, relative to conventional microcontaminant destruction doses.

Carollo was hired by APT to evaluate the process and performance of the HiPOx reactor and to determine the relationship between disinfection and microcontaminant destruction. This information will be combined with additional data from other California testing sites and submitted to the California DHS for technological acceptance of the reactor.



*Carollo researched the performance of this patented reactor. The data will be used for regulatory approval of the system for indirect potable reuse.*