

### Introduction

The MIEX® Technology is designed for the removal of dissolved organic carbon (DOC). Until recently, the commercial application of the MIEX® Technology has been limited to the treatment of potable water from surface or ground water sources.

The MIEX® Process is now being evaluated for application in municipal wastewater applications. An example of this is the use of the MIEX® Process for the treatment of municipal wastewater, specifically, the inclusion of the MIEX® Technology in the process stream of an existing water reclamation plant.

MIEX® Process laboratory scale testing using secondary treated municipal wastewater has demonstrated the potential benefits of the MIEX® Process for the removal of dissolved organic material in wastewater treatment. These jar tests demonstrate that the MIEX® Process, applied as a pre-treatment step in tertiary treatment will provide benefits that will cascade throughout the entire treatment train.

The laboratory tests simulating the use of the MIEX® Process for the treatment of secondary treated municipal wastewater indicate that the performance of subsequent treatment steps, specifically targeting DOC removal, are likely to be significantly improved. An increase in the efficiency and operability of the following unit processes is anticipated:

### Coagulation, Clarification, Filtration

- Significantly reduced chemical usage (coagulant, pH adjusters, polymer)
- Fewer, larger and faster settling flocs
- Significantly reduced sludge production
- Reduced load on filters (sand or membrane)
- Reduced filter backwash frequency and backwash water requirements

### Oxidation and/or Disinfection (Ozone, UV/Peroxide, Chlorine)

- Reduced ozone / power consumption
- Reduced chemical usage

### General Benefits

- Reduced operating cost
- Potential for increased treatment plant capacity
- Improved treatment plant operability and flexibility
- Improved safety and risk management achieved through reduced chemical handling