

Simulated Distribution System Testing

How to know if MIEX is the right solution for your treatment goals.

Disinfection by-product (DBP) formation is dependent on many factors including disinfectant dose levels, the amount and type of dissolved organic carbon, incubation time in the distribution system, water temperature and pH.

The two most common DBPs of concern for water systems are Total Trihalomethane (TTHM) and Haloacetic Acids (HAA5).

Simulated distribution system testing works to identify the prevalent water conditions of your distribution system and duplicate them in a controlled laboratory setting. As a result we are able to quantify the amount of DBPs that will be formed in your system under the identified conditions. The results of this testing will help determine if MIEX resin treatment will meet your DBP reduction goals.

The following information will help you better understand the associated costs and the steps needed to complete the testing regimen.

Associated Costs

The Customer will cover the costs of:

- initial sample container(s)
- shipment of samples to IXOM Watercare laboratory
- third-party laboratory TTHM/HAA5 analysis (\$350 per sample as of July 2021)

Ixom Watercare will cover the costs of:

- initial laboratory analysis
- chlorine dosing, incubation, and sample preservation
- delivery to third-party laboratory
- final reporting of results

Pre-Testing Consultation

- Initial pre-testing consultation with the Customer.
- Determine type and amount of testing required.
- Determine initial sample volume. Typical volumes are anywhere between 5 to 10 gallons.

Shipping Information & Instructions

Shipping information & instructions will be forwarded to the Customer after the pre-testing consultation.

Sample Collection

- Use a clean, appropriately sized plastic container(s) that can be shipped.
- Collect raw water sample at the plant before any treatment takes place.

IXOM Watercare Laboratory

- Spike samples with sodium hypochlorite to specified concentrations.
- Prepare samples for incubation in vacuum sealed bottles with zero headspace to ensure no contact with ambient air.
- Incubate samples at specified temperatures for the specified amount of time.
- Measure sample residual chlorine.
- Quench samples with sodium thiosulfate to neutralize residual chlorine. This stops any further reactions that form DBPs and preserves the samples.
- Re-seal samples in vacuum sealed bottles.
- Place samples on ice and hand delivered to a third-party laboratory (travel time is less than half an hour).

Third-Party Laboratory

Samples are kept in the dark in refrigerated storage until they can be analyzed using Gas Chromatography Mass Spectrometry. According to US EPA regulations, quenched samples that are properly stored will provide accurate results for 14 days.

Results & Reporting

TTHM and HAA5 formation results will be returned in a written lab report detailing speciation, chlorine demand, and system design implications.