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*Quality Data With a
Freshwater Perspective*

The Great Waters Research Collaborative (GWRC) offers testing services to developers of novel technologies and tools for ballast water treatment, compliance, and monitoring.

GWRC's experienced and highly-trained team has been working together on ballast water treatment (BWT) testing and research for over ten years, and has expertise in quality assurance/quality control, engineering, sample collection, chemistry, toxicology, microbiology, and protist and zooplankton taxonomy. Since 2003, the GWRC research team has tested over 70 BWT and rapid assessment technologies, from prototype testing in a laboratory setting to large-scale, controlled testing of market-ready systems at the Montreal Pier Facility. In addition, GWRC is committed to research, including freshwater validation of alternative methods that may be used to analyze ballast water samples and commercial port monitoring to define Laurentian Great Lakes challenge conditions for BWT technology developers and regulators alike.



U.S. Department
of Transportation

**Maritime
Administration**



AMI
Consulting Engineers P.A.



GWRC works with each developer independently to create a testing plan that will best fit their needs and provide quality, impartial data.

Bench-Scale Testing Services

- Aquatic Degradation Studies
- Biological Efficacy Testing
 - Green algae
 - Fecal indicator bacteria
 - Zooplankton
- Chronic Residual Toxicity Testing



Testing with more than one taxonomic group and multiple water types provides developers the information they need about the efficacy of their treatment system in varying challenge conditions.

Land-Based Testing Services



- Independent verification of biological and operational efficacy under large-scale but controlled conditions
- Testing conducted using conditions representative of commercial ports within the Laurentian Great Lakes
- State certified to conduct chronic whole effluent toxicity testing

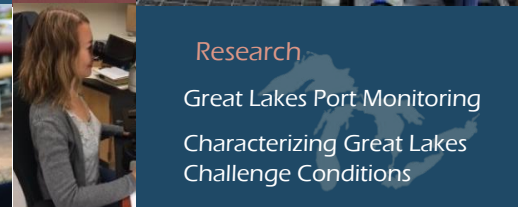
Ship-Scale Testing Services

- Independent efficacy or status testing of market ready BWT systems on ships
- Provide independent, unbiased data to developers of rapid assessment technology to verify manufacturer claims in freshwater



Water Types Tested at Bench-Scale

- Fresh water with high transmittance
- Fresh water with low transmittance
- Brackish water
- Salt water



Research

Great Lakes Port Monitoring
Characterizing Great Lakes
Challenge Conditions

For information about applying for testing services visit: uwsuper.edu/gwrc