



Water Treatment & Handling Laboratories

Water Research Laboratory (WRL) and Water Treatment Test Facility (WTF) in Southeast Michigan provide water and wastewater related products and technical services that capitalize on emerging technologies ensuring the best possible products are available to the soldier to perform their current and future missions. These facilities provide U.S. Army Combat Capabilities Development Command (CCDC) Ground Vehicle Systems Center's (GVSC) Water Treatment and Handling Equipment (WTHE) team with the ability to test and evaluate water and wastewater treatment, storage and distribution, and quality analysis technologies from bench-scale to full-scale and at the component to the integrated system levels.

Purpose: Provides research, development and engineering services for the Army's tactical equipment engaged in the treatment, storage, distribution and quality analysis of water on the battlefield.

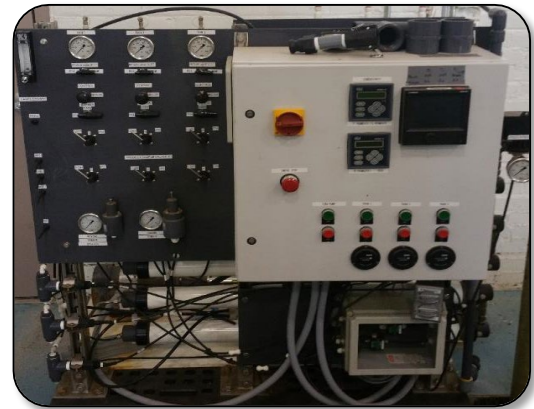
GVSC's WRL conducts military-specific water treatment testing which resolves field issues, evaluates new components and methods, in addition to researching emerging technologies. Additionally, the WTF provides an environment to test relevant water treatment and handling solutions in order to evaluate equipment, from small components to large integrated systems, and resolve field issues.

GVSC also has access to the Seawater Desalination Test Facility, located at and operated by the Naval Facilities Center (NAVFAC), Port Hueneme, CA. The Seawater Desalination Test Facility capabilities are comparable to the WTF facilities but use natural seawater as the test water.

Capabilities include:

- Water purification equipment testing from bench-scale and individual components to large, integrated systems
- Water packaging and handling equipment testing
- Water quality analysis equipment testing
- Membrane testing: Reverse Osmosis (RO), Nanofiltration, Ultrafiltration, Microfiltration
- Greywater re-use technology testing

DoD Lead Laboratory for Ground Water Supply & Wastewater Treatment per DOD 4705.01 and AR 700-136



RO Element Test Stand



Lightweight Water Purifier outside WTF



WTF Classroom

Water Treatment & Handling Laboratories

Benefits:

- Facility provides a year-round, relevant test environment
- Direct access to a large, natural fresh water source
- Ability to prepare large volumes of simulated source waters: NSF 350 greywater, seawater, etc.
- Staff experienced in water/wastewater treatment technologies and systems:
 - Design
 - Operation
 - Maintenance
 - Testing
 - Training



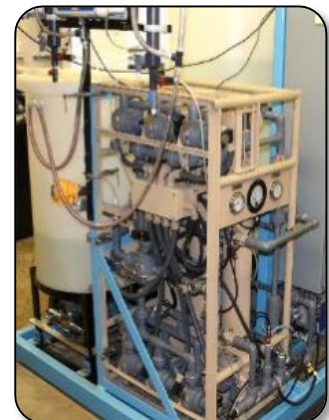
Total Organic Carbon Analyzer

Features and Equipment

- Heated indoor boat well allows year-round operation on a natural fresh water source
- National Pollutant Discharge Elimination System (NPDES) permit for discharge of up to 500,000 Gallons Per Day
- Military Water Purification Equipment includes:
 - Lightweight Water Purifier (LWP)
 - 600 GPH Reverse Osmosis Water Purification Unit (ROWPU)
 - 1500 GPH Tactical Water Purification System (TWPS)
 - 3000 GPH ROWPU
- Test skids for RO and Pretreatment evaluations
- Water Quality Analysis
 - Analytical Lab
 - Access to EPA certified, water quality analysis laboratory
 - Inline instrumentation, e.g., flow meters, pressure gauges, turbidity & conductivity meters
- Facilities for large systems
 - Material Handling equipment to include 4K and 10K fork lifts
 - Compressed Air: 140 psi, -65 °F dew point
 - Electrical
 - 125 kVA multi-tap transformers deliver 440/460/480V 3 phase power
 - Multiple 208V single and 3-phase power disconnects
 - Exterior concrete pad at water's edge
 - Conference room seating for up to 25



Pretreatment Test Stands



Water Quality Test Stand

The Water Treatment and Handling Laboratories maintain unique capabilities within the **U.S. Army CCDC GVSC's Force Projection Technology** team, whose mission is to provide equipment lifecycle engineering support for the missions of gap crossing, petroleum and water systems, combat engineering, material handling and fluid quality surveillance.

FOR FURTHER INFORMATION:

**U.S. ARMY COMBAT CAPABILITIES
DEVELOPMENT COMMAND — GROUND VEHICLE
SYSTEMS CENTER:**

<https://tardec.army.mil/>

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