

Deployable Potable Water Production from Contaminated Surface and Ground Waters

PROJECT OVERVIEW

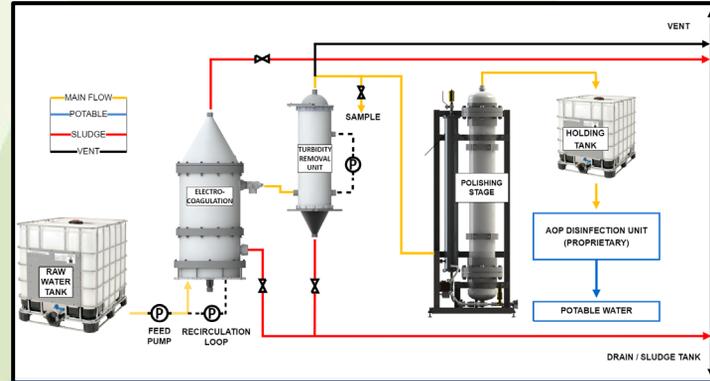
Providing high quality potable water from fresh water sources contaminated with Natural Organic Material (NOM) and heavy metals in expeditionary environments requires logistically intensive technologies such as reverse osmosis (RO), potable water shipment, or construction of permanent infrastructure. The TAMAQUA system developed by Terragon Environmental Technologies Inc. provides an automated, scalable, and decentralized approach to producing potable water by utilizing a three-step treatment process involving electrocoagulation (EC), granular activated carbon (GAC), and electro-oxidation (EO). The GAC may be bypassed for the onboard RO to enable saltwater desalination. The system is fully integrated into a single 20-ft ISO container. The objective is to demonstrate and evaluate the system at a representative DOD test site.

BENEFITS

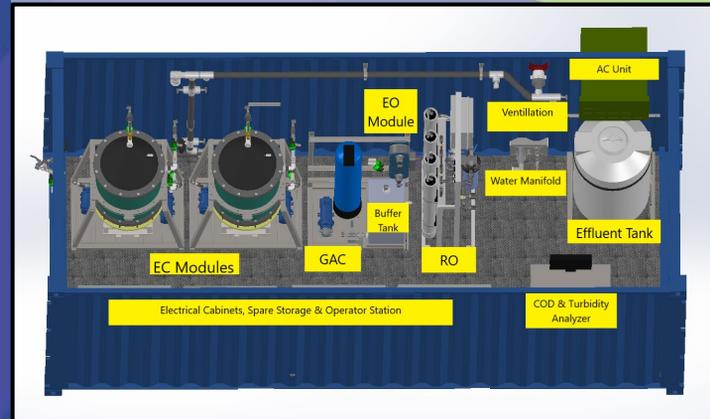
The system fits with USMC requirements to provide potable water in contingency basing, humanitarian assistance, and disaster relief scenarios. These requirements are also mirrored by US Navy, Army, Air Force, and Coast Guard. The system is targeted to address the increased potable water issues experienced by contingency environments and remote communities as climate change induced disruptions to fresh water supply become more frequent. Applications will benefit from an energy-efficient, deployable system which enables onsite production of potable water, reducing transportation requirement to meet water demands.

PATH FORWARD

Completion of this project will increase the TRL of the system to a level for DoD acquisition and in-field use and promotes DoD advancements of potable water systems to adapt to anticipated future needs. The primary freshwater treatment process avoids RO which builds upon current research and development efforts to increase the efficiency of expeditionary water purification systems.



TAMAQUA Process Diagram



TAMAQUA System Schematic

DoD Executive Agent

Office of the Assistant Secretary of the Army for Installations, Energy, and Environment

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FOR FURTHER INFORMATION

National Defense Center for Energy and Environment
<http://www.denix.osd.mil/ndcee/>

Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC)
<https://exwc.navfac.navy.mil/>