

Energy Efficient Expeditionary Small Unit Water Purifier (E3-SUWP)

PROJECT OVERVIEW

Water is required by every Warfighter to maintain both proper health and readiness. The logistics of transporting water for 30 persons varies between 945-1950 lbs. of water per day. Producing water at the point of need would represent a novel way to eliminate the need to haul water, reduce supply logistics, extend mission length, and create a more agile and effective force. The E3-SUWP is a fully functional reverse osmosis water purification system, can purify any water source, HMMWV transportable, and utilizes a high efficiency energy recovery pump to reduce power consumption.

BENEFITS

Stakeholder/Beneficiaries include U.S. Army Africa (USARAF), Sustainment Capabilities Development and Integration Directorate (CDID), and the US Marine Corps. All ground troops will benefit from a secure and readily available water supply. The successful outcome of this NDCEE project will result with the E3-SUWP which can produce 20-26 gal/hr. from any water source while using only an average of 275-485 W of energy. This will reduce the amount of water transported for a three day operation by 90-95%.

PATH FORWARD

The E3-SUWP will be technically evaluated at the 2020 Maneuver Support, Sustainment, and Protection Integration Experiments (MSSPIX) at Ft. Lee, VA, operationally demonstrated at African Lion 2021, and undergo extended testing with Joint Task Force Bravo in 2021. The E3-SUWP, technical data package, test data, and reports will be transitioned to the Sustainment CDID to inform future program of record decisions.



Salt &
Fresh Water

Water Purification Unit



24-28 VDC, 110-220
VAC, Battery or NATO

Power Conversion Unit

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/home>

U.S. Army Combat Capabilities Development Command (CCDC) -
Ground Vehicle Systems Center (GVSC)
<http://www.usarmygvsc.com/>

U.S. Army CCDC GVSC Water Equipment Branch
usarmy.detroit.ccdc-gvsc.mbx.water-lab@mail.mil