

# ECLIPS clears downstream **problem** for ADF

**Australian integrated logistics** and project management company, ECLIPS Logistics, is proposing an innovative field deployable wastewater treatment system to the Australian Army.

As a result of Army Innovation Day 2021 and under a Phase 2 Technology Demonstration contract with the (then) Defence Innovation Hub and in collaboration with Tristar Water Solutions (TWS), ECLIPS Logistics has developed a customised wastewater treatment system (WWTS) that is designed to withstand the challenges of Australian Defence Force (ADF) operational deployments to austere and remote environments.

Working with Defence, ECLIPS Logistics developed the requirements to design, build and test the WWTS technology demonstrator. The project has so far successfully developed the WWTS to Technology Readiness Level 6 (technology demonstrated in a relevant environment) and carried out a capability demonstration of the WWTS to ADF personnel on 22 August.

The WWTS meets an identified capability gap in Land 8140 Tranche 1 Deployable Force Infrastructure, as well as informing the future requirements of Tranche 2 of that project and expeditionary basing needs.

“No other country in the world has solved the problem of treating wastewater on operations outside of the usual long drops, burn barrels and contracted logistics support,” an ECLIPS spokesperson told *DTR*. “This innovation allows for ADF self-sufficiency, deployment via in-service military assets and management of a military wastewater treatment system.”

Utilising the TWS commercial sequencing batch reactor tank processing and control philosophy as the basis of the design, the modular WWTS provides environmentally responsible operations that meet military standards for transportation, mechanical handling and operation in austere environments.

The major sub-systems of the WWTS are:

- Modular sewage pump station to interface with ADF deployable force infrastructure waste sources, such as Force Provider;
- Wastewater treatment plant containerised for transport by a HX77 truck with Integrated Load Handling System;
- Modular spray field to dispose of Class C wastewater effluent; and
- Remote Monitoring and Automation System to send alerts to the command post to enable ‘sense and respond logistics’.

According to ECLIPS Logistics, the WWTS will connect to the ADF waste source, screen inorganic material and treat black/grey wastewater using the sequencing batch reaction method, where micro-organisms consume pollutants and enable particle separation. Sludge is collected in the sludge tank and the liquid passed into the irrigation tank for sterilisation prior to distribution to the irrigation system.

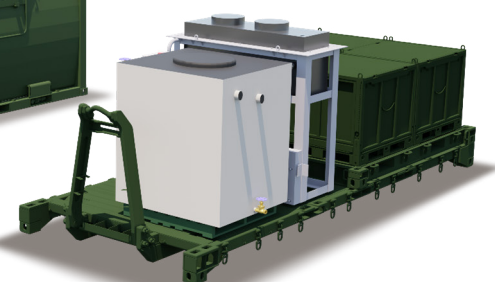
The WWTS is scaleable in 30 to 50-person capability bricks compatible with Land 8140 Tranche 1 and Force Provider, with an installed capacity to surge from 50 to 75 persons. Adding an additional balance tank and unit allows for a 150-person camp to be supported.

By enabling independence from third party contractor-provided services the ECLIPS Logistics WWTS attracts a reduced cost burden for transportation and wastewater treatment services whilst reducing security risks and improving accelerated preparedness and logistics.

The Army will deploy the WWTS to the field on exercise in 2024 to allow soldiers to provide feedback on the system in order to inform the final specification and build standard.

The WWTS can be manufactured quickly in Australia and is now production-ready.

**- Ian Bostock**



**BELOW:** The WWTS depicted mobilised on a HX77 truck and flat-rack (left) and a Container Roll Out Platform. Images: ECLIPS Logistics