



Pall Corporation

# Mobile Water Purification Units

Operate Anywhere with Pall Integrated Membrane Systems



# Pall Mobile Water Purification Units

Industry leading technology from Pall Corporation enables mobile water purification from virtually any water source. Our Integrated Membrane Systems (IMS) can remove bacteria, protozoan cysts, viruses, dissolved components and other contaminants to provide pure, clean drinking water and/or all water utility purposes.

## Water Treatment System Unit

Pall has designed, manufactured and qualified a series of automated IMS water purification systems that are proven to perform with feedwater supplied from dams, rivers, bores or the open sea. The feedwater could have extremely high-suspended solids (500 NTU) and salt concentrations, which often prevent encampments from making water in these areas for safety and practical reasons.



**Feedwater Quality:** One of the most critical requirements of these systems is to cope with feedwater having turbidity in excess of 500 NTU.



## Pall Aria™ Modules

Suspended solids and organisms in the feedwater are removed by a 0.1 micron hollow fiber membrane filtration system. The pore size of the membrane controls the fraction of the particulate matter that is removed. These robust PVDF microfiltration (MF) membranes retain particulate matter, while the water and its soluble components pass through the membrane as filtrate, or filtered water. The retained solids, in concentrated form, are discharged from the membrane system as a waste stream periodically during a reverse filtration flush. This technology allows the system to cope with feedwater, which has a high level of and wide range of suspended solids, without the need to use replaceable cartridge filters.

Numerous water sources available to ground based encampments are low salinity and are suitable for drinking other than dangerous levels of organisms. Under these conditions the Pall Aria modules alone will provide sterile treatment levels.



## Reverse Osmosis System

Where dissolved components prevent the direct use of the water for drinking, reverse osmosis (RO) membranes are used to remove them. This would be the case where the feed source is either sea or brackish water. The membrane technology enables the reduction of dissolved salts in excess of 98.5 %. These membranes can be configured in two ways. The Pall Disc Tube™ (DT) with short open channel feed flow paths impart turbulent flow to minimize concentration polarization and hence reduce membrane scaling and fouling. The compact and flexible construction gives long membrane life, easy access and lower replacement costs.



Spiral wound RO modules perform the same function as DT but are typically applied in larger applications where higher flow rates are in excess of 20 m<sup>3</sup>/day. The modules feature an extremely high membrane area to hold-up volume ratio. With feedwater optimally pre-treated when combined with Pall Aria in an IMS, spiral wound modules provide excellent reliability with greatest output of potable water and smallest footprint together with minimal energy use.





## Pall Water Purification Systems

A range of MF and IMS water purification systems producing up to 1000 m<sup>3</sup>/day of potable water



### WTS T02

Self contained road trailer based Aria membrane treatment system with a capacity of 50 m<sup>3</sup>/day. Designed for use on freshwater sources, the unit comprises 0.1 um PVDF hollow fiber membrane and on board 10 KVA generator. Activated carbon and post treatment disinfection is also included.



### WTS40

Fully containerised system with a desalination capacity of 40 m<sup>3</sup>/day or 120 m<sup>3</sup>/day from freshwater sources. Designed to military standards, NATO Def Stan 00-35, the system is incorporated into two 10' ISO containers, a water treatment unit with Pall Aria/DT RO IMS and an equipment storage unit housing ancillary equipment, generator and chemical storage. Each container has a loaded weight of less than 4 tons. The WTS40 is shock and vibration qualified for transportation by road, sea or air.



### WTS100

An upscale self-contained potable water generator with a capacity of 100 m<sup>3</sup>/day from seawater or 400 m<sup>3</sup>/day from freshwater sources. The fully automated, low maintenance IMS incorporates Pall Aria membrane prefiltration and spiral RO into two 10' ISO footprint skids with a further skid providing equipment storage facility. Each skid has a loaded weight of less than 4.6 tons and is shock and vibration qualified for transportation by road, sea or air.

For greater design flexibility, the WTS series is enhanced by a series of IMS sub-skid water purification units, the AT25, 32 and 40. These units have a capacity of up to 60 m<sup>3</sup>/day desalination and 180 m<sup>3</sup>/day freshwater. All of which can be self sustainable and containerised.

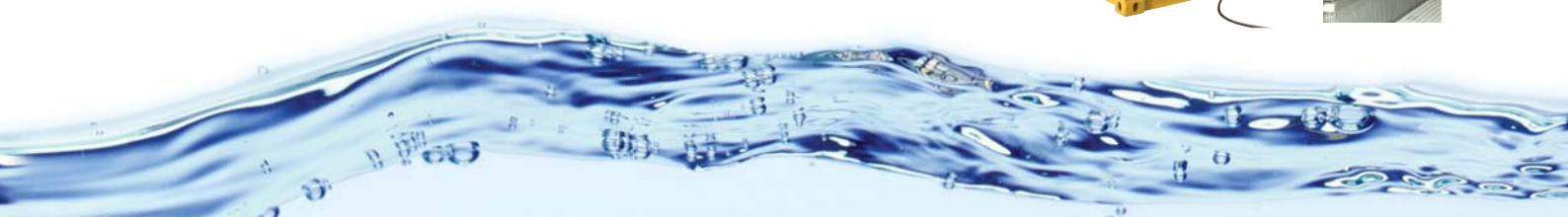
## ILS and Operator Training

Pall Corporation has a broad installation base of over 2000 mobile water treatment units operating in military and commercial applications and a worldwide service structure providing a complete Integrated Logistics Support.

Fully documented training packages can be tailored to individual customer needs.

## System Customization

The system has a flexible configuration in addition to housing the system components, the unit holds equipment to monitor system operation and ensure that the water meets the required quality specifications.



# Pall Mobile Water Purification Units

## Specifications -

Product Ref	Treatment Technology	Product Flow Range/ Water Source (TDS at 25 °C)			Nominal Dimensions	Weight (' 000 Kg)	Power Requirements (connected power)
		<1 g/l*	2 - 25 g/l*	35-48 g/l*			
WTS T02	Pall Aria Membrane	20-50	~	~	1.7 x 1.7 x 3.0 (m)	<2	10 KVA Integrated Genset
WTS40	IMS Pall Aria / DT / SWRO	120	100 - 50	40	2 x 10' ISO	<4 (x 2)	15 KVA Integrated Genset
WTS100	IMS Pall Aria / SWRO	400	300 - 150	100	3 x 10' ISO	<4.6 (x 3)	50 KVA Integrated Genset
WTS400	IMS Pall Aria / SWRO	1000	800 - 500	400	2 x 20' ISO	<4.6 (x 2)	60 KVA Integrated Genset
AT25	IMS Pall Aria / SWRO	60	~	10 - 18	2.5 x 1 x 1.6 (m)	0.5	15 KVA
AT32	IMS Pall Aria / SWRO	120	~	20 - 40	1.8 x 1.0 x 2.1 (m)	1.4	19 KVA
AT40	IMS Pall Aria / SWRO	180	~	35 - 60	~	~	~

\* 1 g/l approx equivalent to 1000 ppm (freshwater), 2-25 g/l (Brackish Water) 35-48 g/l (Seawater). tpd = tons/day approx. equivalent to m<sup>3</sup>/day



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