

Produced Water Treatment

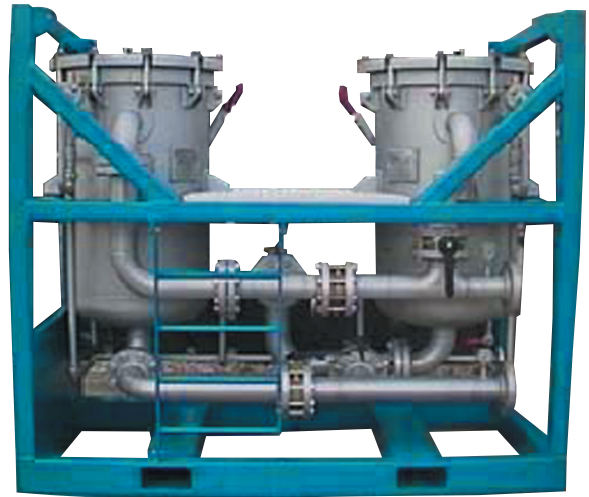
Expro's produced water treatment systems remove oil from produced water during development well testing and clean-up.

Water produced during well testing and clean-up will often contain oily emulsions, requiring further treatment before it can be safely discharged. Expro treats these difficult to separate emulsions using compact vessels containing oil adsorption filter cartridges. These can be configured to handle a range of process contaminants.



The vessels are mounted in a self-contained compact skid. Each skid has two vessels for either parallel or series operation, depending on the required clean-up duty. Each vessel can remove up to 72kg of oil at 90-95% separation efficiency, achieving oil-in-water levels as low as 5 mg/l.

Expro's compact system reduces the environmental impact of well testing and clean-up operations, the impact on operators' existing process systems, chemicals usage and overall water clean-up & reclamation costs. The flexible arrangement and system characteristics provide a reliable solution to operators' produced water clean-up.



Applications:

Onshore and offshore oil and gas well testing and clean up operations

Features & Benefits:

Reliable oily water emulsion treatment	Removes risk of oil discharge during well testing and treatment clean-up operations
Small footprint size	Suitable for mobile drilling rigs or production platforms
No moving parts	High safety and operability, with a minimum supervision and maintenance requirement
Proven technology	Reliable filter system using proven filter elements
Removable filter elements	Filter elements can be selected for the required duty. Oil adsorption cartridges can be used to provide oil emulsion treatment down to very low ppm levels. Spiral wound wedge wire cartridges can be used for solids removal
0-100% turndown	Filter elements can be operated at any point in their Flow range
Operation in parallel or	The skid can be operated in parallel as 2 x 100% duty/standby vessels or in series for solids removal followed oil removal, if required
Low cost solution	More cost effective than shipping and onshore clean-up

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Technical Specifications:

Service	Sour Service
Design Pressure	100 psi (6.9 bar)
Temperature Rating	-4°F to 212°F (-20°C to 100°C) (The cartridges are rated to 80°C)
Connections Inlet	4" Fig 206 Weco female, threaded half
Outlet	4" Fig 206 Weco male, wing half
Drain	1" NPT Port
Materials	316 SS vessels and piping
Water Rate	Capacity/operational duration per vessel: <ul style="list-style-type: none"> • 4770 bbl/day for 24 hours @ 100 mg/l oil-in-feed • 477 bbl/day for 24 hours @ 1000 mg/l oil-in-feed • 238 bbl/day for 24 hours @ 2000 mg/l oil-in-feed Piping designed for maximum 13,400 bbl/day @ 3 m/s Cartridges maximum 28,800 bbl/day per vessel (based on flux rate)
Operating Range	0 to 100% of flow range
Oil Capacity	72 kg per vessel
Inlet Concentration	300 to 400 mg/l (recommended maximum 500 mg/l)
Efficiency	90 to 95% (single stage operation)
Outlet Concentration	5 to 30 mg/l
Filter Cartridges	50 oil adsorption cartridges per vessel
Design Code	ASME VIII Div 1, ANSI B31.3, NACE MR-01-75 SI 289, SI 913, EN 12079, BS449

Dimensions:

Footprint	2.2 m x 1.15 m
Height	2.1 m
Weight	1,700 kg gross 2,550 kg operating

Certification:

Certified by Det Norske Veritas

NOTE: For any additional information please consult your local Expro representative.