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ClearPhase mobile testing discharge treatment

Eliminates water storage and transport costs by deoiling completion fluids and produced water

Working pressure:
150 psi at 212 degF
[1,034 kPa at 100 degC]

Temperature:
–4 to 212 degF [–20 to 100 degC]

Maximum flow rate:
5,000 bbl/d [795 m³/d]

Applications

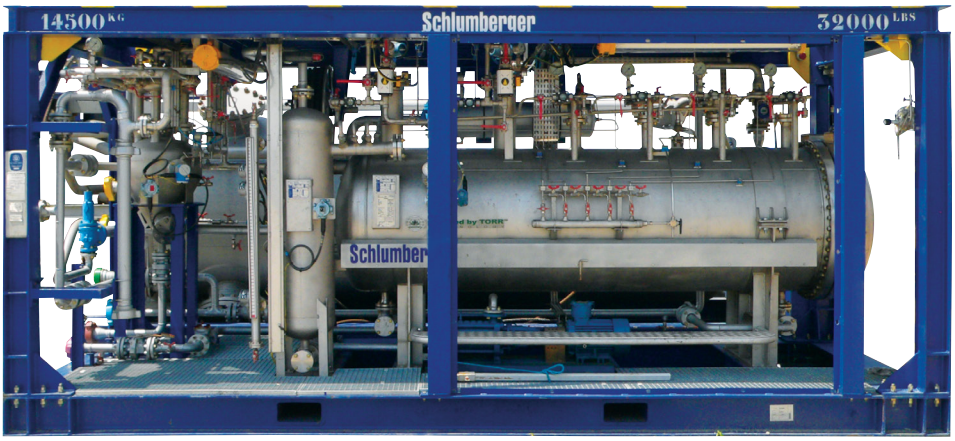
- Offshore and onshore exploration and development well testing and cleanup
- Deoiling completion fluids and produced water
- Operating in environmentally sensitive areas

How it improves wells

- Eliminates storage, transport, and processing costs with compliant discharge
- Reduces environmental impact with low oil-in-water content—from 20,000 ppm at inlet to 20 ppm at outlet
- Generates no waste or by-products due to reusable media
- Ensures output quality through continuous real-time monitoring
- Verifies compliance with record of document discharge

How it works

By separating dispersed oil from water using TORR™ technology licensed from ProSep Inc., ClearPhase* mobile testing discharge treatment meets strict environmental overboard discharge requirements that allow water disposal directly into the sea. During well testing operations, mud filtrate, completion fluid, or produced water can be treated in real time and discharged into the sea while the recovered oil-rich stream is gathered into an oil recovery chamber. A built-in pump is provided to export the recovered oil to either a storage tank or to the oil burner.



The ClearPhase treatment unit is skid mounted, which further reduces footprint and eases loading and offloading.

The ClearPhase treatment unit consists of a horizontal vessel containing five coalescing packs that are evenly distributed along the vessel length. It combines coalescing and gravity separation techniques to reduce the oil content in the water recovered in the well test separator. The oil-in-water concentration is reduced from 20,000 ppm in the feed to less than 20 ppm at the outlet, even with low-API oil. ClearPhase treatment is ideal for testing operations in environmentally sensitive areas.

The primary coalescing material contained in ClearPhase treatment packs is the RPA® reusable petroleum absorbent polymer from ProSep Inc. This material can be regenerated through centrifugation; thus, no waste or by-products are generated. ClearPhase treatment units are fitted with continuous solids interceptors located at the inlets to remove dispersed solids in the feedwater and avoid plugging the coalescing media.

What it replaces

ClearPhase treatment uses a mobile water deoiling unit designed for exploration and development well testing and cleanup. It is an efficient and cost-effective alternative to water storage, transport, and onshore disposal.

Additional information

The oil-in-water content at the ClearPhase treatment unit inlet and outlet can be measured either in real time through a continuous oil-in-water monitor or with a tabletop analyzer from samples.

ClearPhase

Specifications	
Model	LWTU-AB
Working pressure	150 psi at 212 degF [1,034 kPa at 100 degC]
Design temperature range	–4 to 212 degF [–20 to 100 degC]
Max. water flow rate	5,000 bbl/d [795 m^3/d]
Max. oil in water in the feed	2% (20,000 ppm)
Max. oil in water in outlet	<20 ppm (depending on fluid properties)
Number of stages	5
Hazardous area certification	Zone 2, gas, T4 (140-degF [60-degC] ambient temperature), EEXd[†], ATEX[‡] 94/9/CE compliant
Utilities	380- to 440-V AC, 50 or 60 Hz, compressed air, nitrogen
Overall dimensions (L × W × H)	19.7 ft × 8.1 ft × 8.9 ft [6.00 m × 2.46 m × 2.70 m]
Weight (empty)	27,000 lbm [12,200 kg]
Weight (full)	32,000 lbm [14,500 kg]
Connections	
Oily water inlet	3-in, Fig 602, female
Clean water outlet	3-in, Fig 602, male
Oil outlet	3-in, Fig 602, male
Pressure safety valve outlet	3-in, Fig 602, male
Recovery vessel vent	3-in, Fig 602, male
Solids drain	3-in, Fig 602, male
Codes and standards	ASME VIII Division 1, ANSI/ASME B31.3, PED[§] 97/23/CE, H_2S (NACE MR0175), DNV Certification Note 2.7-1–Offshore Container, Machinery 89/392/EC, electromagnetic compatibility (EMC) 2004/104/EC

[†] Induction motors certified for explosive areas

[‡] Complies with explosive atmospheres directive

[§] Complies with European Pressure Equipment Directive 97/23

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