



Deck drains treatment offshore

The Phoenix System in short

The modular Alfa Laval Phoenix system enables owners or operators of virtually any type of drilling rig or offshore service vessel to boost the company's environmental profile as well as achieve significant reductions in operating costs for water treatment and disposal.

New solution to old problems

Offshore rigs and production platforms – as well as other installations and vessels used in the oil and gas industry – operate with complex mixtures of oil, water and solids, often in large volumes.

These drains have to be treated so the water rejected overboard complies with stringent environmental legislation, including International Maritime Organization (IMO) standards. A treatment onshore requires costly transport and storage tanks that take up precious space on the rigs.

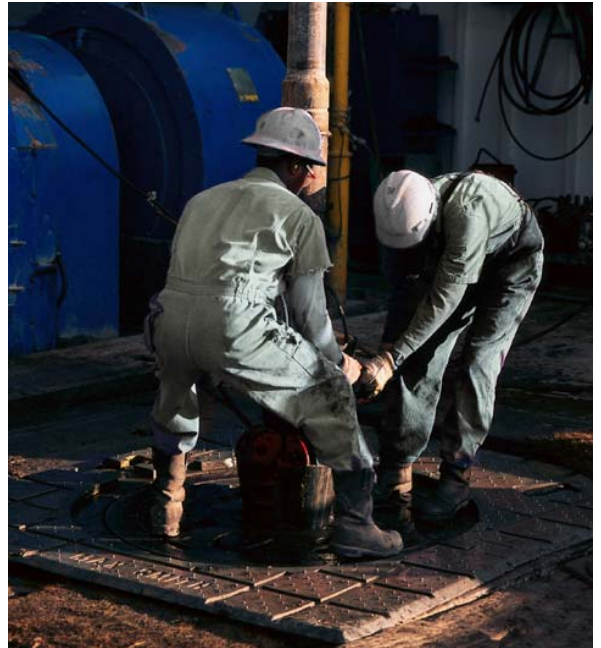
Variations in waste streams

These complex streams of contaminated water vary considerably in composition and physical properties. However, they almost always contain both hydrocarbon residues and solid particles – ranging from coarse to extremely fine. These mixtures are often in the form of complex emulsions that are difficult for traditional separation systems to tackle.

Treatment at source - the benefits

The Alfa Laval Phoenix system means

- One single system for treating all kinds of contaminated water.
- Ideal combination of mechanical and chemical separation technologies.
- Much less need for onboard storage, thus saving on space.



- Low overall processing costs.
- Reduced costs for transporting contaminated water to shore.
- Compliance with requirements in the IMO Res. MEPC.107(49), ensuring an improved environmental profile.

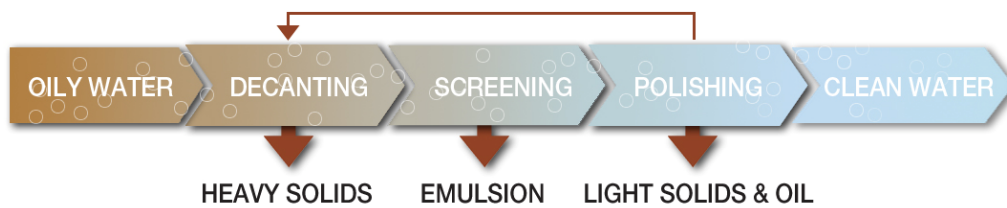
The result is an extremely versatile, modular process solution whose elements can be combined to meet many different needs. This ensures that you are able to efficiently treat all kinds of oily, contaminated water from your offshore oil and gas operations.

The modular advantage

The Alfa Laval Phoenix system features three blocks (including the oil-in-water monitor), each designed to remove specific contaminants from the water streams in order to tackle the different separation requirements.

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Each stage can be used to prepare these flows for subsequent treatment. They can also be combined as required to meet many different processing conditions, as well as space constraints and other practical considerations on board.

The Phoenix system tackles flows of contaminated water where as much as 20% of the volume consists of solids, even if these particles are coarse and abrasive.

Space availability

The three modules of the Phoenix system can be mounted together on one single skid or on separate skids to be installed in different rooms. The equipment can be placed in hazardous as well as in safe areas.

Sources for waste water

Offshore oil and gas installations normally require contaminated water treatment systems in conjunction with four main streams:

- Bilge water: it is the contaminated water collected in engine rooms and machinery spaces. This can contain some small amount of fuel oil or lube oil, some dust, some rust. This stream is relatively easy to separate.
- Open deck drain: the origin of this drain is coming from the melted snow or from the rain water collected on the helideck or on the main deck. This can also be the water used to wash the deck. It is easy to figure out the oil content and solids concentration would be small in this drain. So it is also relatively easy to separate.
- Tank wash drain: the tanks collecting the different drilling muds need sometimes to be cleaned completely. The washing water needs to be treated then. This

drain is much more difficult to separate than the first two ones because it usually contains a lot of solids and strong emulsions.

- Drill floor drain: oil spillage containing various types of solids in different concentrations, strong emulsions which make the separation very difficult.

Combined forces - maximum effect

Alfa Laval has several decades of experience with operating different kinds of treatment systems for contaminated water, often under the most demanding offshore conditions in the world – including the North Sea. This has all paved the way for the implementation of the Alfa Laval Phoenix system as the most efficient and cost-effective solution for the treatment of oily, contaminated water in offshore oil and gas facilities, as well as aboard vessels of all types.

Technical details

Empty weight of the Phoenix system: 10.8 tonnes (incl. tanks, skids, equipment, pumps, control panel, pipes)

Size of the Phoenix system (each system is designed to fit in the space available):

- Footprint: 20 m² (24 sq yards)
- Height: 3.5 m (around 11ft)

Contact details

In case of questions, please contact the responsible for the oily water application:

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