

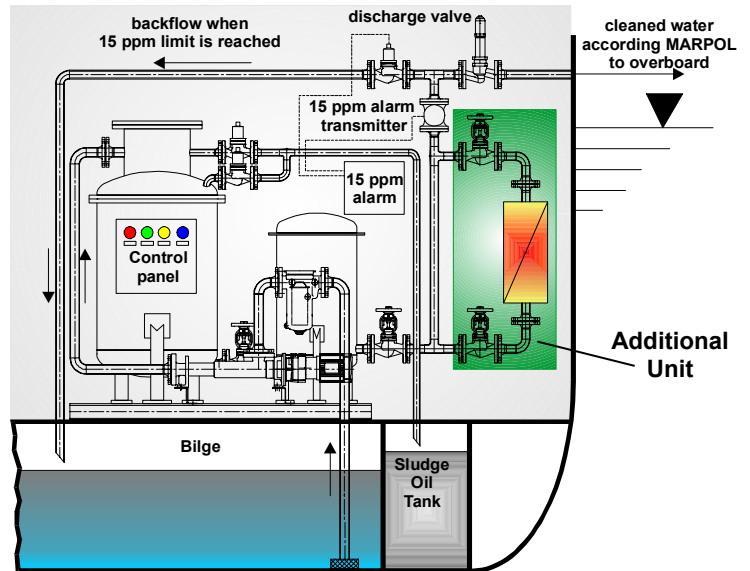
Environmental ES Systems

Environmental Systems Product - Info No. 5

ES-Membrane Technology for the integration into existing Bilge Water Cleaning Systems on board of ships

Environmental Systems has developed the cleaning system **“Unit Performer”** for all types of oily water on board of ships. This cleaning system can be easily adapted between the existing Oily Water Separator and the Oil-In-Water-Monitor. It ensures the operator on board a safe and reliable environmental compliance of the 5 ppm-rule.

The regulations of the IMO Resolution MEPC. 107 (49) U.S. Coast Guard CFR 162.050-35 and Canadian Standard for 5 ppm Bilge Alarm will be kept at any time.



The ES-Membrane Technology is especially designed for the integration into existing Bilge Water-Separators.

Ensured treatment also of emulsified water from the separators.

No use of any absorbing filter.

This integration ensures an absolute reliable operation to observe all regulations for the discharge of water back to the sea at any time.



Typical samples during operation of the ES-Membrane Unit on board at sea

- Bottle left: untreated bilge water
Oil content approx. 60 ppm
- Bottle middle: treated bilge water after 1st treatment stage
Oil content approx. 1,9 ppm
- Bottle right: treated bilge water after optional 2nd treatment stage
Oil content approx. 1,5 ppm

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Main Advantages of the ES-Membrane-System:

Technical

- Simple and easy integration into the existing Bilge Water-Treatment System
- Installation of the system on board where space is available
- Refit of the existing Bilge Water-Treatment System
- **No use of absorber filter cartridges**
- **Cleaning also of emulsified water coming from the separators**
- No use of flocculants or other chemicals for the separation process
- According to the requirements, a 1-stage or a 2-stage treatment system is possible
- Capacity of treatment system according to the requirements

Environmental

- drastic reduction of oil-discharge into the sea
- generally reduction of substances like metals or other molecules out of the water
- Reliable observation of the environmental rules
- Separates both mechanically and chemically emulsified oil/water-mixtures

Commercial

- No removal of the existing system
- The ES-Membrane Unit can be integrated to the bilge water cleaning system during operation
- High life time
- No filter cartridges as spare parts

Reference:

Ship

Treatment of Bilge Water
from RoRo-Ferry during trip



Average oil content in treated water: 1,3 ppm

Land Based

Treatment of collected Bilge Water from different
ships at discharge company



Average oil content in treated water: 1,6 ppm