



A lethal cocktail

World Port Development takes a closer look at a simple, fully automated turnkey biological solution that claims to clean bilge water on-site, allowing vessels to discharge bilge water in port.

Before international regulations were introduced to prevent oil pollution coming from ship ballast tanks, the standard practice for vessels was to wash out the content of their ballast tanks and release the content directly into the sea without any considerations for the environment. With new international regulations in place, responsibility for cleaning or purifying this water has fallen squarely on the shoulders of both the captain of the ship and the port authority. One company attempting to solve the bilge water issue is US-based BioPetroClean. They have manufactured a bilge purification-system solution that delivers a totally reliable operation while reducing costs dramatically. The company claims that their new Automatic Chemostat Treatment (ACT) technology for ports and harbours is fully-automated for hassle-free, non-technical operations, and fits perfectly into the pace and resources of a busy port. "Bilge water is both a financial strain and an operational hassle. Problematic disposal of waste storage complicates a port administrator's tasks and can become an uninvited financial burden," explains David Amir, CEO of BioPetroClean. "By acquiring a total BPC turnkey solution, ports have an in-house solution for on-going treatment." With only a one-time investment ports gain full control without the requirement of additional work force. The skid-mounted, easy to integrate

system installation is hassle free and fits even into the most limited spaces say BPC. The automated system provides operators with an automatic and upon-request report at any desired time and effectively monitors and balances the system to ensure clean water is discharged.

ACT system

Amir also claims that the ACT system treats all categories, quantities and levels of contaminates. By reducing bio sludge and chemical usage, as well as reducing black sludge creation, it produces an output that can be directly returned to the sea – making it the ultimate 'green solution'. "The ACT system has been explicitly designed to perform at optimal levels when treating salt water, in direct contrast to other solutions whose performance degrades in the same conditions," Amir added. The BPC ACT system is a plug & play system, which can handle 5-50 cubic meters of water an hour with an in-residence time of only 10 hours. It can also treat much higher capacities with custom-made solutions. ACT's flexibility and modularity enables the handling of low and high capacities and contamination. The process does away with shipping of drainage water and left-over sludge.

What is bilge?

The bilge is the lowest compartment on a ship where the two sides meet. The word is sometimes also used to describe the water that collects in this compartment. Water that does not drain off the side of the deck drains down through the ship into the bilge. This water may be from rough seas, rain, or minor leaks in the hull or stuffing box. The water that collects in the bilge must be pumped out if it becomes too full and threatens to sink the ship. Bilge water can be found aboard every vessel. Depending on the ship's design and function, bilge water may contain water, oil, urine, detergents, solvents, chemicals, pitch, particles, etc. By housing water in a compartment, it keeps it beneath the decks, making it safer for the crew to operate the vessel and for people to move around in strong weather.

What is inside?

The key to ACT is assimilating the appropriate bacteria cocktail for each individual type of polluted water. By using the principle of chemostat, the process maintains a homeostatic state of bacterial growth and organic compound degradation. As a result, the output can be deposited directly into the sea, meeting even the strictest environmental standards. BPC's patented technology delivers a beginning-to-end solution. Water processed by gravitational separation is put into the bioreactor, where it is quickly and efficiently purified. When a change in parameters (organic levels, pH, etc.) occurs, the bioreactor's sensors communicate to the controller, automatically stabilising the flow so that the balanced state is continuously maintained. The controller also issues on-line alerts to any chosen control centre and/or designated supervisor. An extensive range of reports supports a clear picture of operations at all times. The supervisor can at any point in time, via various interaction channels, from a control centre, a laptop or a cellular phone, see the real-time status picture, receive real-time sound and SMS alerts, and take appropriate action. They can also receive automatic reports, update environmental offices on-line, and most importantly, effectively avoid catastrophes. 

