



SpillAway International Ltd

Case Study

Ballast Water Contamination – Maersk Line Ltd

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Trading Address: Unit 21 Barn Way, Lodge Farm Industrial Estate, Northampton, NN5 7UW

Registered Address: 27 St Cuthberts Street, Bedford, MK40 3JG

Registered in England No: 4846291

V.A.T Number: 832118946

Tel: 01604 588660

Fax: 01923 674022

Web: <http://www.spillaway.net>



Overview

The following is an internal document from Maersk highlighting the use of SpillAway's NavalKleen II™ product for the bioremediation of No.6 heavy fuel oil that had leaked into the ballast tank of SL Atlantic. At the point that SpillAway were asked to help, the contaminated ballast water had been removed and the tank physically cleaned, however, residues left in the tank were still contaminating the tank itself and the fresh ballast water taken onboard.

NavalKleen II was introduced to the ballast tanks and left to bioremediate the residual hydrocarbons, with the natural roll and pitch of the ship whilst at sea helping to agitate the bacteria as well as ensure that residues on the tank walls were also reached and treated. It is worth noting that had SL Atlantic been aware of the product sooner, it would have been possible to treat the entire spill without the need to go through the costly operation of removing the original contaminated water as hazardous waste.

Case Study

1. On 22 July 06, M/V SL Atlantic suffered a crack in the steel deck between a NO.6 heavy fuel oil tank and a 600 metric ton capacity double bottom ballast water tank, resulting in large-scale contamination of the ballast water.
2. The crack was repaired, the contaminated water was offloaded by a waste disposal firm and the ballast tank mechanically cleaned as much as possible. However, even with laborious cleaning we were not comfortable that all residual oil had been removed
3. During repair and recovery operations, we investigated various marine tank cleaning products. We found several claimed effectiveness; however, most resulted in a tank full of cleaning slops, and we wanted to avoid the cost of disposing these slops.
4. A colleague at the office remembered using environmentally-friendly bioremediation products on a similar ballast tank contamination involving the SeaLand Motivator. We arranged for a sufficient quantity of "NavalKleen II™" to be delivered to SL Atlantic.
5. In August 2006 the ballast tank was refilled with seawater, the NavalKleen added and the tank allowed to "cook" through several trans-Atlantic voyages. As the lab test results below show, the NavalKleen II™ was very effective in removing residual hydrocarbon contamination from the ballast tank water:

Date of Sample	Date of Test	Results in mg per Litre (mg/L)
18 Aug06	22 Aug 06	13.0 and 8.79 (twos samples)
15 Sept 06	20 Sept 06	3.7 and 3.72 (two samples)
19Oct06	23 Oct 06	2.4 mg/L (single sample)

6. The internal tank members have not yet been inspected, but from the rapidly declining hydrocarbon content in the ballast water, it is expected that they will be found free of oil.
7. In our experience, NavalKleen II™ has proven to be a highly effective product, and if sufficient time is available for the organisms to metabolise the oil, the preferred product for mitigating oil contamination of ballast tanks