ABSTRACT

A LORI Side Collector system was purchased for the Canadian Coast Guard (CCG) and tested as a potential heavy oil recovery device for use in Canadian waters.

The LORI skimmer was quantitatively tested in an indoor wave tank using diesel, crude oil, emulsified crude and Bunker "A". The skimmer (consisting of one Side Collector Unit comprised of one brush pack containing two brush chains) was tested in 4°C water at current velocities ranging from 0.15 to 0.65 m/s, in calm water conditions and in waves of 5 to 7 cm high. The brush speed was varied between 6 and 30 cm/s. The skimmer was evaluated in terms of fluid recovery rate and oil recovery rate. The maximum capacity of the skimmer may not have been reached due to current velocity limitations of the tank. The effect of brush speed and oil encounter rate were determined. Skimmer performance increased with increasing oil viscosity. Higher current speeds and waves also enhanced recovery.

Following the tank trials, the system was installed on a 8.5 m Coast Guard sea truck and trials of the LORI Side Collector system were conducted on the St. Lawrence River in the vicinity of the CCG base in Prescott. These tests assessed the stability, manoeuvrability, sea keeping and operation of the system. Oil was not used in this section of the testing program, however the system was evaluated as to its ability to deal with debris and to direct an oil-substitute towards and into the skimmer entrance. In general the skimmer did not adversely hamper the manoeuvrability of the sea truck. The oil-substitute was satisfactorily recovered at velocities of up to 1.5 to 2 m/s.

DISCLAIMER

The contents of this report reflect the views of the contractor and not necessarily the official views of the Canadian Coast Guard.