

MMS Technology Assessment and Research Program

Project Number: 450

February 27, 2004

Subject: Dispersant Effectiveness Testing in Cold Water

Vendor: S.L. Ross Environmental Research, Ltd.

Principal Investigator: Mr. Randy Belore

Completion: Completed

Description: During the past two years there has been an increased use of dispersants as a response technique to offshore marine oil spills. The US EPA has recently revised the National Project Schedule with regards to dispersants, and the cold water application and performance of these materials has come under critical review.

MMS sponsored two series of dispersant effectiveness (DE) experiments at Ohmsett, the National Oil Spill Response Test Facility, in Leonardo, NJ to evaluate the effectiveness of Corexit 9500 and Corexit 9527 dispersants on Alaskan and Canadian crude oils. These crude oils have a wide range of physical and chemical properties and were tested in fresh and in weathered conditions. During both series of DE experiments, MMS hosted groups of 40 observers from government, industry, academia and private sector participated in all aspects of the testing program.

This project was conducted in two separate test phases. Phase 1 was conducted between Feb. 25 to March 14, 2002 at Ohmsett.

Phase 2 was conducted in February 2003, at Ohmsett under Project 476, "Ohmsett 2003 Cold Water Dispersant Effectiveness Tests"

The identical crude oils used in Phase 2 DE experiments at Ohmsett were also used tested for their in-situ burning capabilities (Project 452). The in-situ Experiments were conducted October 21 to November 1, 2002, in the Alaska Clean Seas portable wave tank at the BP Fire Training Grounds, Prudhoe Bay, AK. Results and final reports can be found in Project 452.

When both sets of experiments are completed, we will have a direct documented comparison of how each crude oil responds to burning and to the use of dispersants.

Progress: In phase 1, The US Minerals Management Service and Exxon Mobil Research and Engineering Co. participated in a series of research experiments to evaluate the effectiveness of Corexit 9500 and Corexit 9527 dispersants on Hibernia and Alaska North Slope (ANS) crude oils in cold water/broken ice conditions. The experiments were successfully done between Feb. 25 and March 14, 2002 at Ohmsett facilities.

The Ohmsett experiments were significant because they demonstrate the Corexit 9500 and Corexit 9527 are effective in dispersing Hibernia and ANS crude oils in very cold water and verify the results collected from identical laboratory and small-scale wave tank tests.

Phase 1 of this project was successfully completed in March 2002, Project 450. The final report was accepted the distributed in August 2002. A CD ROM is available that contains the final report with 30 second video clips of all dispersant effectiveness experiments.

Phase 2 of this project was successfully completed in March 2003, Project 476. The final report was accepted and distributed in September 2003. A CD ROM is

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AA Dispersant Effectiveness Testing in Cold Water, S.L. Ross Environmental Research Ltd., Ottawa, Ontario, and Mar, Inc. Leonardo, NJ, August 2002.

Progress: Phase 1 of this project was successfully completed in March 2002. The final report was accepted and distributed in August, 2002. The final report is available electronically. A CD ROM is available that contains the final report with 30 second video clips of all dispersant effectiveness experiments. Phase 2 of this project was conducted in March 2003, as a separate project (Project 476).

AA Belore, Randy, Dispersant Effectiveness Testing in Cold Water, SL Ross Environmental Research, LTD. August 2002.

