Laboratory Study to Compare the Effectiveness of Chemical Dispersants When Applied Dilute versus Neat

Randy Belore
S.L. Ross Environmental Research Limited
Ottawa, Ontario, Canada
E-mail: randy@slross.com

Abstract
The objective of the study was to determine if the application of chemical dispersants in a dilute form is likely to reduce significantly their effectiveness when compared with neat application. A series of large-scale laboratory tests were completed to evaluate the effectiveness of two dispersants, Corexit 9527 and 9500, on Alaska North Slope crude oil when applied neat and diluted with salt water.

The test results indicate that the performance of Corexit 9527, when used on Alaska North Slope (ANS) crude oil, is not affected when diluted with water at a ratio of 1:10. However, the performance of Corexit 9500 on ANS crude, was severely reduced when applied diluted with water at both 1:10 and 3:10 ratios.

It is recommended that these preliminary results be considered before using 9500 in application systems where dilution of dispersant with water is used, such as in high capacity “fire-monitor” systems. Single-nozzle application systems should be considered for the efficient delivery of Corexit 9500 in neat form to eliminate the possibility of reduced effectiveness.

Additional testing should be completed to determine if the reduced efficiency of Corexit 9500, when applied dilute, is due to factors such as the type of oil, the method of mixing or delivery of the dispersant into the water stream or the contact time between the dispersant and the water carrier.