

EVALUATION OF ARCTIC *IN-SITU* OIL SPILL RESPONSE COUNTERMEASURES

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Abstract* With an anticipated increase in marine transport in the Arctic associated with global climate change and the expansion of Arctic offshore oil and gas exploration activities, the need for research on oil spill response technologies for use in ice covered waters has been identified as a priority. Two oil spill countermeasures based on the acceleration of natural recovery rates have been proposed for study in field trials within Arctic Canadian waters. These are: (1) the promotion of Oil Mineral Aggregate (OMA) formation; and (2) the use of chemical oil dispersants. Both techniques are based on the dispersion of oil from the surface into the water column; the premise being that resultant concentrations will be below the threshold limits that cause detrimental biological effects. Furthermore, oil disassociated in the form of micron-sized droplets or in association with mineral fines has an expanded oil-to-water surface area that results in enhanced microbial degradation. Hence, oil is effectively removed from the environment. In terms of use in the Arctic, both of these *in-situ* methodologies may offer a major operational advantage as there is no need for the physical removal and treatment of contaminated waste materials for treatment. This international project will provide fundamental scientific knowledge, field validation of response technologies, training to Arctic based oil spill responders; and build confidence and trust among stakeholders (public, industry and government).

Keywords: arctic, oil spill response, oil droplets, OMA

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* Full presentation available in PDF format on CD insert.