
Underwater Seabed Cleanup Assessment Technique (uSCAT) Manual

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When the density of spilled oil exceeds that of the receiving water, the oil is at risk of sinking. Once sunk, detection, delineation and remediation become increasingly complex and expensive. However, not all oils pose the same risk of sinking, and as a result, each spill requires its own careful assessment.

The "uSCAT Technical Reference Manual" provides a comprehensive framework for assessing, detecting and documenting sunken oil. It serves as an essential resource for both field personnel and scientists, offering working definitions, decision-making tools, and case studies drawn from real-world incidents. Developed through a combination of field experience, laboratory experiments, and case studies, the manual equips users with methodologies to assess the risk of sunken oil formation and guides them through cascading detection techniques to optimize operational efficiency.

Borrowing concepts from the well-established Shoreline Cleanup and Assessment Technique (SCAT), uSCAT is organized into distinct mission types, helping users align their objectives with the appropriate tools and methodologies. For instance, a uSCAT "Reconnaissance Surveys" may require broader data collection, while a "Sign-off Survey" provides a detailed assessments to determine and document if Treatment Targets have been achieved. Like SCAT, uSCAT also supports both the operational and planning components of a response, with defined roles for Team Leads, Data Managers and Advisory Groups to name a few.

Two core risk assessment tools are featured in the manual. The first assesses the potential for sunken oil formation based on oil type and environmental conditions, classifying the risk into low, moderate, high as well as occurring. The second tool allows for ongoing evaluation as the situation evolves, ensuring that the risk of oil submersion is continually assessed based on changing conditions. Together, these tools provide both an initial risk assessment and a dynamic, responsive evaluation framework for field operations.

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InterSpill 2025

2024-09-09

In cases where the risk of sinking is high, the manual outlines a range of commonly accepted detection and delineation tools, detailing their operational effectiveness and providing clear guidance on how to collect and use accurate field data. These tools help teams locate and map sunken oil, ensuring that response efforts are targeted and efficient.

Additionally, the manual emphasizes the importance of assembling and utilizing environmental data to identify potential oil deposition zones. By streamlining the identification of these zones, teams can more effectively locate and address sunken oil, minimizing environmental impact and improving response times.

The manual incorporates case studies to illustrate the complexities of sunken oil scenarios and the effectiveness of various detection and response techniques. These real-world examples highlight best practices and lessons learned, providing valuable insights for future operations.

Funded by industry partners such as Western Canada Marine Response Corporation (WCRMC), Eastern Canada Response Corporation (ECRC), and Trans Mountain Pipeline, along with government agencies including the Canadian Coast Guard, Environment and Climate Change Canada, Fisheries and Oceans Canada, and Natural Resources Canada, this manual represents a collaborative effort guided by a multidisciplinary steering committee.

<http://www.uscat.ca/>