

Alaska Regional Response Team (ARRT)  
Dispersants Information Needs Work Group

September 30, 2004

From: Rick Janelle, Dispersant Information Needs Work Group

To: RRT

Subject: Work Group Report

1. Submitted for ARRT review and approval is the final report from the Dispersant Information Needs Workgroup. The report consists of a consolidated list of questions concerning dispersant use in Prince William Sound and recommendations for additional work on the issues.
2. Request all comments be submitted to [rjanelle@cgalaska.uscg.mil](mailto:rjanelle@cgalaska.uscg.mil) no later than October 22, 2004.
3. A Science and Technology Committee (STC) will be scheduled to discuss comments and develop work plan for the next phase of the project.

Enclosure: (1) Alaska Dispersants Information Needs Work Group - Summary Report

Alaska Dispersants Information Needs Work Group  
Summary Report

**Workgroup Mission:**

- Identify and consolidate a list of questions concerning dispersant use and effectiveness in Prince William Sound.
- Provide recommendations for potential methods to answer the questions.

**Deliverables:**

**A. Consolidated List of Dispersant Questions:**

1. What is the distribution and sensitivity of biological resources within Prince William Sound (PWS) relevant to determining the net environmental benefit from the use of dispersants?
2. What is the effectiveness and toxicity of National Contingency Plan approved dispersants when applied on Alaska North Slope crude oil in PWS conditions as an essential component of a net environmental benefit analysis?
  - a. Use the baffled swirling flask test for efficacy to screen dispersants.
  - b. Use a wave tank test, with PWS conditions, to further evaluate the top-ranked dispersants from the baffled swirling flask test.
  - c. Conduct toxicity tests using selected indigenous species from PWS.
3. What requirements are necessary to prepare for and implement a real time dispersant effectiveness and impact monitoring research project during a spill of opportunity in PWS?
4. What is the net environmental benefit of non-dispersed remnant ANS crude oils (e.g. resurfaced oil) verses untreated oil?
  - a. Quantify the beach persistence of non-dispersed remnant oil verses untreated oil.
  - b. Identify the impacts of remnant oil on mechanical recovery.
5. How long does a dispersant remain in ANS crude oil in various PWS conditions?
  - a. Attempt to correlate this persistence to sea state.
6. What is the proper storage method and useful shelf-life of dispersants?

Alaska Dispersants Information Needs Work Group  
Summary Report

**B. Recommendations for further investigation into dispersants use in Alaska:**

1. That the Science and Technology Committee (STC) seek Alaska Regional Response Team (ARRT) approval of the questions submitted to serve as their dispersants research agenda.
2. That the STC agrees on and oversees the path, assumptions, and outcomes at each step in the process to answer these dispersant questions.
3. That the ARRT request the Oil Spill Recovery Institute (OSRI) be the project manager to pursue a scientifically valid path to answer these dispersant questions.
4. Within 6 months of agreement to be project manager, OSRI (or other organization) submit to the STC for approval a scope of work that outlines their research proposals, and identifies the scientific credentials for principal investigators. To accomplish this mission, it is recommended that a work group of scientifically qualified individuals be appointed to approve test protocols as submitted by project managers, and to provide a professional interpretation of test results.
5. That OSRI (or other project manager) be encouraged to seek partners for joint funding of projects to answer these dispersant questions and that ARRT members be encouraged to seek funding from within their agencies.
6. As a secondary priority, the STC consider expanding the scope of these studies to include the effectiveness of dispersants on the more common types of persistent fuels used by ships in PWS, and to conduct similar studies for other areas of the state which may be affected by heavy oils (e.g., Cook Inlet).
7. Some of the above questions may be partially or completely answered in previous studies. Accordingly, a literature review should be part of each research project to identify if there are gaps in knowledge requiring additional investment.

**C. Specific Wave Tank Testing Recommendations:**

1. Wave tank tests may be the best way to answer questions regarding chemical dispersant effectiveness. The Alaska Regional Response Team should support and encourage this testing.
2. Wave tank tests should be specifically tailored to the physical regime of interest (e.g. Prince William Sound).

Alaska Dispersants Information Needs Work Group  
Summary Report

3. The most useful and repeatable tests appear to be most achievable using a modest-sized, long-duration wave tank, since many iterations of testing for various parameters is required.
4. It is desirable to have easy access to the testing facility over an extended period of time during tests. If possible, having such a facility available in Alaska is desirable.
5. It is recommended that a small wave tank be used to run numerous tests to truly evaluate various parameters. These tests should involve interested stakeholders.
6. Some of the parameters that require multiple test runs include:
  - a. Degree of oil weathering (6,12,24,and 48 hour duration - real time in tank)
  - b. Varying oil slick thickness in the tank
  - c. Varying oil/dispersant ratios
  - d. Mixing energies
  - e. Droplet size and application procedures
  - f. Sufficient time (e.g. 24-48 hours) to determine dispersant stripping
  - g. Evaluation of different dispersant types
7. Ideally, tests would include the expertise of known international chemical dispersant experts from Environment Canada, Exxon Mobile Corporation, S.L. Ross, MMS, NOAA, and researchers from Norway.