

**WHITE PAPER IN RESPONSE TO SOLICITATION NO. 0106BA39801
IN SUPPORT OF THE TA&R PROGRAM**

AREA OF INTEREST:

**Innovative Mechanical Oil Spill Containment and Recovery Technologies for Cold
Water/Broken Ice Conditions, Item 2 in the White Paper Solicitation Posted on May 25,
2006**

PROJECT TITLE:

International Oil and Ice Workshop 2007

TO:

**Ms. Debra Bridge
U.S. Department of the Interior
Minerals Management Service
381 Elden Street
Herndon, VA 20170-4817**

Submitted by:

Mr. Ian Buist, P.Eng. and Ken Trudel, Ph.D.
SL Ross Environmental Research Limited
717 Belfast Road – Suite 200
Ottawa, Ontario K1G 0Z4
Tel.: 613 232-1564
Email: ken@slross.com

In association with:

David Dickins
DF Dickins Associates Ltd.
Email: info@dfdickins.com

June 30, 2006

Objective

The objective of this work is to organize and present an international workshop on recent advances in cleanup of oil spills in ice and cold climates. The proposed venue and timing for the workshop would be Anchorage, Alaska in May or June, 2007. The proposed workshop addresses several of the identified areas of interest specified in the BAA, including:

- Innovative Mechanical Oil Spill Containment and Recovery Technologies for Cold Water/Broken Ice Conditions (Item 2)
- Technology for the Separation of Oil and Ice (Item 3)
- Alternative Technologies for Oil Spill Response in Open Ocean or in Cold Water-Broken Ice Conditions (Item 4)
- Remote Sensing, Detection and Tracking of Spilled Oil In and Under Ice (Item 6)
- Oil Spill Chemical Dispersant Research (including in cold water/broken ice) (Item 9)

Background

Over the past five years, petroleum development activity in cold regions has expanded rapidly to include Alaska, the Canadian Beaufort Sea, Sakhalin Island, North Caspian Sea, Baltic, Norwegian Barents Sea, and the Russian Arctic. This five-year period has also seen numerous important advances in research on spill behavior and response in cold environments and ice, including remote sensing of oil in ice, dispersants, and herders in cold and ice. Minerals Management Service has been a leader in this work, funding numerous projects on remote sensing of oil in ice and dispersant use in cold environments and ice-affected waters. In April 2000, Alaska Clean Seas together with 16 other government and industry sponsors, organized a highly successful International Oil and Ice Workshop in Anchorage. That event attracted over 300 attendees from around the world and was highly regarded as an opportunity to share the latest information in the field. Given the continued expansion in drilling activity and leasing interest in deep water Arctic areas, as well as rapidly increasing levels of tanker traffic in ice covered areas, 2007 would be an opportune time to hold a second specialized conference similar in concept to the original 2000 event.

Proposed Approach

The combined team of SL Ross and DF Dickins propose to organize a conference in May or June 2007 in Anchorage. The overall theme will focus on the full range of international development and exploration programs in ice-affected waters, emphasizing common interests as well as distinct differences in spill response operating conditions between the different regions. Following the successful format of the 2000 conference, the organizers will develop a program that maps out suggested topics and invites recognized researchers and specialists to prepare invited papers.

General workshop goals include:

1. Providing an international forum for presentation and discussion of key research, operational and logistical issues associated with the response to accidental spills from exploration and development projects in ice-prone environments.

2. Delivering state of the art research findings on a variety of oil and ice related topics.
3. Guiding future research and development programs towards areas of common interest.

One of the primary objectives of the workshop is to present results and advancements from recent and ongoing research and development, for example:

1. Chemical herders in ice;
2. Cold-water dispersant effectiveness testing;
3. Remote sensing in and under ice;
4. Improvements in mechanical recovery concepts;
5. Plans for future experimental spills;
6. Experiences with meso-scale tank tests in ice at Ohmsett;
7. Recent Arctic field experiments, such as the 2006 Svalbard spill under ice

Location and Timing

The workshop is proposed to take place in Anchorage, Alaska in May or June 2007. Venue options could include government facilities, conference center, or a major hotel. The primary requirement would be space to accommodate several hundred delegates.

Assuming contract award in the fall of 2007, an aggressive schedule will be needed to launch the conference, establish a technical program, and invite speakers and book facilities. The team's past record in organizing events of this magnitude will help to establish a realistic level of effort and to identify critical path items needed to ensure a successful workshop.

Work Plan

It is proposed that the study be undertaken in three sequential tasks, as briefly described below:

Task 1 – Project Initiation

This task will involve preparing a detailed project plan and schedule. If necessary a small steering group will be assembled from among sponsors.

Task 2 – Organize Venue, Program and Speakers

This task will involve organizing the venue, program, speakers, publicity and registration of invitees.

Task 3 – Facilitate Workshop

This task will involve presenting the workshop itself, including producing the event, facilitating the sessions and, if needed documenting the presentations and discussions for purposes of preparing proceedings.

Task 4 – Prepare Report on Proceedings

This task would involve preparing proceedings to summarize the event, and distributing it to attendees and sponsors.

Task 5 (Optional) Field Trip to the North Slope

The 2000 workshop was followed by a field trip to Prudhoe Bay to observe a range of on-ice spill response tactics. (Note: the field trip was optional, and offered to a limited number of 80 participants.) The ability to offer a similar program in 2007 would depend on ACS cooperation, availability of charter flights, accommodations on the Slope, and the necessary level of additional funding support.

Anticipated Level of Effort and Funding

The basic program level of effort is estimated to be in the range of 0.3 person years equivalent.

Final cost estimates will depend on a number key expense items such as facilities rental, and the need for possible travel reimbursement for selected speakers. Financial contributions and support in kind from sponsors could significantly reduce the overall program cost in direct dollar terms and allow optional conference programs to be developed (see below).

Potential Funding Partners

Potential conference sponsors include: ACS, ADEC, Shell, BP, ConocoPhillips, Alyeska, ExxonMobil, CISPRI, PWS RCAC, Statoil, PWS OSRI, USCG and the United States Arctic Research Commission. The project team maintains working relationships with the international Arctic research community and oil industry partners, and is in an excellent position to secure a high level of support for the 2007 workshop.

Study Team and Experience

The study team combines decades of experience in Arctic oil spill research with demonstrated capabilities in organizing successful international conferences and workshops on Arctic exploration and development topics. SL Ross and DF Dickins have collaborated together on numerous spill research programs. In November 2005, the two companies jointly organized a “Workshop to Determine the Scope of an Experimental Oil Spill in Pack Ice” at the Bedford Institute of Oceanography in Nova Scotia (under MMS sponsorship)

Individual experiences of selected team members are summarized briefly below.

KEN TRUDEL, SL Ross Environmental Research Limited, Ottawa, Ontario

Ken Trudel has more than 25 years of experience in oil spill project management focusing on oil spill and dispersant research, risk communication and knowledge transfer. Trudel has lead or participated in a number of arctic and dispersant research projects, including developing the “Guide to Dispersant-Use Decision-Making for Oil Spills in the Canadian Southern Beaufort Sea” and the MMS project, “Correlating Results of OHMSETT Dispersant Tests with At-Sea Trials.” He lead a multi-year, Marine Industry Group (MIRG)-sponsored project to develop a computerized oil spill dispersant decision-assist system for the U.S. Gulf of Mexico. In recent years he has conducted or participated in a number of dispersant projects, including: research at Ohmsett into dispersant performance in calm seas and non-breaking waves; and technical

assessments of dispersants use in cold waters on the Newfoundland Grand Banks and Prince William Sound, Alaska and in warmer environments in the Gulf of Mexico and California.

Ken Trudel has organized and conducted more than 50 spill-related workshops and training programs in arctic and temperate areas in North America, as well as in the Caribbean, South America and Australia. He has produced three conferences on dispersant use (one in Anchorage):

International Conference on Dispersant Use in Alaska: A Technical Update (Anchorage, March 1998)

Sponsored by Alaska Department of Environmental Conservation, Alyeska/SERVS, Prince William Sound Regional Citizens' Advisory Council, United States Coast Guard, and Oil Spill Recovery Institute. This conference communicated recent developments in dispersants to Alaska stakeholders and communicated dispersant-related stakeholder issues to the Alaska oil industry and the international research community. Ken Trudel was contracted to work with the sponsors to develop a world-class program of technical presentations and panel discussions, engage a facilitator that was acceptable to all sponsors, produce the event and prepare and publish the proceedings. This international conference involved 300 participants.

Breaking Down Dispersants: A Practical Analysis of the Chemistry, Application and Environmental Trade-Offs of Using Modern Dispersants (Portland Maine, April 2003)

Sponsored by the Maine/New Hampshire Area Committee of the Regional Response Team. This conference communicated the state-of-knowledge in dispersants to the 100 invited participants, who would be involved in revising the regional dispersant use guidelines. Trudel was contracted to: develop a world-class program using internationally recognized experts, US industry leaders and spokespersons of regional stakeholder groups; and facilitate the technical presentations and panel discussions.

Workshop on The Use of Oil Spill Dispersants in Atlantic Canada (St. John's Newfoundland, February 2004)

Sponsored by the Environmental Studies Research Funds, an industry/government research group, this regional conference involved 100 invited representatives of the oil industry, government and internationally recognized technical experts on dispersants. The objective was to communicate and document government and industry positions on the state-of-technical-knowledge of dispersants, regulatory controls and planning. Trudel was contracted to: prepare a program of world-class technical presenters and key government regulators; organize panel discussions; engage mutually acceptable moderators; produce the event; and prepare a mutually acceptable proceedings.

IAN BUIST, SL Ross Environmental Research Ltd., Ottawa, Ontario

Ian Buist is a leading expert on Arctic oil spill behavior and countermeasures and an acknowledged authority on oil-in-ice behavior, spill modeling, and *in situ* burning. He has been closely involved in oil spill fate and countermeasures research for 25 years. He conducted several of the major Canadian experimental spills of oil in ice in the 1970s and 1980s. Mr. Buist is the principal investigator for MMS Alaska's ongoing Empirical Weathering study.

DAVID DICKINS, President DF Dickins Associates Ltd. La Jolla, California

David Dickins has over 30 years of environmental project management experience focusing on offshore oil exploration and development in Arctic regions. Since 1974, Mr. Dickins has played a key role in seven large-scale experimental oil spills in ice and cold water. He has a worldwide reputation, as an expert on arctic ice conditions and oil spills in cold climates. Over the past six years Mr. Dickins has managed a series of projects to develop new technologies in oil under ice detection. The latest project in this series carried out jointly with SINTEF and funded by MMS and industry partners culminated in a successful field spill under ice on Svalbard in 2006. In 2004, Dickins Associates developed an Arctic spill response R&D agenda that included a workshop held in Anchorage (published by the Prince William Sound OSRI and the US Arctic Research Commission).

David Dickins chaired and managed four international conferences on arctic environmental and transportation issues (three in Anchorage):

International Oil in Ice Workshop, Anchorage April 2000

Sponsors included the United States Coast Guard, US Minerals Management Service, Norwegian Clean Seas (NOFO), ARCO, BP, and the Alaska Department of Environmental Conservation. David Dickins was contracted to develop a world-class technical program of 20 speakers and to facilitate and chair the two-day event. There were 300 participants from eight countries. The overwhelming consensus of all those present was that the event was the most effective and focused workshop ever on this topic. The purpose was to bring together the best researchers in the world with experience in arctic oil spills. The proposed 2007 workshop (this White Paper) will be modeled after the 2000 event.

Conference on Oil Spill Response in Broken Ice, Anchorage March 1994

Sponsors included Cook Inlet Spill Prevention and Response (CISPRI) and the United States Coast Guard. Dickins Associates organized and facilitated this conference, which attracted 180 delegates from Canada, Norway, Denmark, USA, and Germany. David Dickins participated in all aspects of the conference including developing the technical program and inviting speakers.

In-Situ Burning Workshop, Anchorage November 1991

David Dickins acted as the facilitator of an international workshop sponsored by Alaska Clean Seas. Over 160 people from Canada, United States, and Norway assembled to discuss the technical, environmental, and social aspects of contained burning as a viable oil spill clean-up technique.

The International Polar Transportation Conference (IPTC 86)

This event was part of the 1986 World's Fair in Vancouver. Dickins Associates planned and carried out a highly successful conference that drew over 220 of the world's foremost experts on all aspects of transportation in Polar Regions. Delegates attended from Russia, UK, Japan, New Zealand, France, Norway, Denmark, Finland, Germany, Sweden, US and Canada.