BEAUFORT REGIONAL ENVIRONMENTAL ASSESSMENT

BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region

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BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gap Identification

Final Report

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Executive Summary

This report describes the results of the Beaufort Regional Environmental Assessment (BREA) study on Inuvialuit community spill response training in the Beaufort Sea region, including current capacity, projected need, realistic roles and gap identification. The study included consultations with Inuvialuit community organizations and residents from five of the six Inuvialuit communities, regulators, the National Energy Board, and oil and gas licence holders. A workshop was held in Inuvik, October 23 to 25, 2012 and included Inuvialuit community representatives from all six communities as well as representatives from the oil and gas industry, regulators, National Energy Board and spill response experts.

As there is no offshore drilling in the Beaufort Sea, there is little need for a significant offshore spill response capacity. As a result, the present level of preparedness to respond to oil spills is limited. There is an initial nearshore spill response capacity for land-based oil-handling facilities during community fuel resupply operations. The Canadian Coast Guard (CCG) has placed community packs of spill equipment in communities; however, because of the low frequency of spills, it is difficult to maintain peoples' training levels. There is no spill response organization or company for the Beaufort Sea offshore to maintain paid full-time or part-time spill response employees.

It is anticipated that a drilling program might not occur in the Canadian Beaufort Sea until at least 2018. When a drilling program is approved, a spill response capacity will be required. This spill response capacity will likely be through a private oil spill response company or cooperative. There was a preference identified by industry representatives interviewed and present at the workshop that a private oil spill response company be wholly or partially owned by Inuvialuit. As oil spill response capacity is limited in the region, capacity in terms of equipment and trained personnel will be required before drilling begins. There was a strong interest by those Inuvialuit interviewed and who participated at the workshop that the Inuvialuit play a role in all facets of oil spill preparedness and response.

Roles for Inuvialuit in oil spill preparedness and response, as identified by representatives of regulators and oil and gas operators, closely mirrored those identified by communities. These include advisory roles, including in incident command structures, spill response activities (especially in nearshore areas), and monitoring. Supporting roles to spill response were also identified and included roles as cooks in camps, and transportation support of responders and equipment to and from coastal spill areas.

The October 23 to 25 workshop resulted in 14 recommendations of which 10 could be initiated in the next one to two years. The remaining four recommendations could be deferred until one or more drilling programs are authorized in the Beaufort Sea. Recommendations ranged from training needs and funding to Inuvialuit advisory roles, youth education, knowledge sharing and the establishment of a spill response entity, such as a co-op or Inuvialuit-owned company or joint venture.

Based on discussions at the workshop, a curriculum was designed with training requirements and learning objectives for the Inuvialuit oil spill response roles identified.

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Abbreviations

ATV ..... all-terrain vehicle
ARI ..... Aurora Research Institute
BREA ..... Beaufort Regional Environmental Assessment
BOSRC ..... basics of oil spill response course
CC ..... Community Corporation
CCG ..... Canadian Coast Guard
DFO ..... Fisheries and Oceans Canada
EC ..... Environment Canada
ECRC ..... Eastern Canada Response Corporation
FEMA ..... U.S. Federal Environmental Management Agency
HAZWOPER ..... hazardous waste operations and emergency response
HTC ..... Hunter and Trappers Committee
ICS ..... incident command system
IDC ..... Inuvialuit Development Corporation
IGC ..... Inuvialuit Game Council
IORVL ..... Imperial Oil Resources Venture Limited
IRC ..... Inuvialuit Regional Committee
ISR ..... Inuvialuit Settlement Region
MED ..... marine emergency duties
MSROC ..... marine spills response operations course
NEB ..... National Energy Board
NEBA ..... net environmental benefits analysis
NTCL ..... Northern Transportation Company Limited
PAL ..... possession and acquisition licence
REET ..... regional environmental emergencies team
SCAT ..... shoreline clean-up assessment technique
SMART ..... spill management and response training
WCMRC ..... Western Canada Marine Response Corporation

1 INTRODUCTION

There has been a renewed interest in exploration for hydrocarbons in the Beaufort Sea. The last period of Beaufort Sea hydrocarbon exploration activities occurred from the 1970s to early 1990s, at which time a Beaufort Sea Oil Spill Cooperative was formed to respond to potential small and large spills. With cessation of hydrocarbon exploration in the early 1990s, the Beaufort Sea Oil Spill Cooperative was no longer required and was disbanded. There is no spill cooperative or spill-response company operating in the Canadian Beaufort Sea region today. With exploration drilling and production of hydrocarbons in the Canadian Beaufort Sea now being considered, there is a renewed interest in assessing oil spill preparedness and response capabilities.

To aid government, industry and the Inuvialuit to prepare for renewed oil and gas activities in the Beaufort Sea, a four-year multi-stakeholder program—the Beaufort Sea Regional Environmental Assessment (BREA)—was initiated. A series of working groups were formed under BREA to guide the implementation of the assessment, including an oil spill preparedness and response working group. One of the working group's objectives is to complete a study to identify Inuvialuit oil spill response capacity, projected need, realistic roles, gaps and training requirements. KAVIK-STANTEC, in association with S.L. Ross Environmental Research Ltd., were contracted to conduct this study. This report provides the results of this study. The study does not address oil spills resulting from activities unrelated to oil and gas development in the Beaufort Sea (e.g., non-oil industry activities such as community fuel resupply operations and cruise ship traffic).

2 METHODS

2.1 Inuvialuit Communities and Organizations Consultations

Inuvialuit communities and organizations (e.g., Hunters and Trappers Committees [HTC] were consulted to determine capacity, needs, gaps and roles the Inuvialuit might play in responding to oil spills in the Beaufort Sea. It was important to consult with all Inuvialuit communities as they all share resources and interest in the Beaufort Sea. An evening public presentation and open discussion period was held in all six communities in the Inuvialuit Settlement Region (ISR); however, no one came to the scheduled Inuvik meeting. In addition to public meetings, attempts were made to meet with community organizations or companies who might have an interest in oil spill response, including:

- town office (e.g., mayor or town manager)
- HTC and community corporation (CC) coordinators and committee members, if available
- business that might have a potential role or interest in a spill response
- individuals in the community who work for Northern Transportation Company Limited (NTCL) or who handle fuel supplies in town
- others identified by community members

Community organizations were consulted in five of the six ISR communities. Attempts were made to meet with Inuvik community organizations but these attempts were unsuccessful.

A presentation was made to meeting participants, which described the oil spill response activities and roles associated with potential spill scenarios (e.g., far offshore, short and long, nearshore). Background information provided in the presentation facilitated obtaining feedback on Inuvialuit interests in the role(s) they might wish to be engaged, as well as information on existing capacity, gaps and training requirements.

Examples of questions posed to community members included:

- What is the capacity within the community to respond to a spill now and what type of spill, (e.g., small spill during fuel transfer)?
- Who in the community has spill training, from where, what, when and for whom, e.g., NTCL or Canadian Coast Guard (CCG)?
- Is there interest in spill response training by individuals or companies?
- Based on the information provided, what types of training do you see as a best fit for your community to undertake so as to fill response roles of interest?
- What do community members think about the best way to provide training for individuals within their community, e.g., attending specialized training facilities in the south or training provided locally, or both?

- Is there spill response equipment in the community and if so what does it include?
- How do you define first responder?
- Do you see opportunities for existing local businesses to play a role in a spill response? What are the expectations for participating in a spill response?
- Do you see potential for new businesses to develop related to spill response?
- How do you see your role in monitoring the effects of a spill?

Feedback was obtained on Inuvialuit organizations' knowledge or perceptions of oil spill preparedness, capacity, needs and gaps for the Beaufort Sea through consultations. The consultations also gathered feedback on the potential roles Inuvialuit people or businesses could participate in related to oil spill response in the Beaufort Sea.

2.2 Regulator and Industry Consultations

Representatives from government regulators, the National Energy Board and oil and gas active operators in the Beaufort Sea were interviewed to obtain their perspective on oil spill preparedness and capacity, training requirements and Inuvialuit roles when responding to oil spills. Interviews were conducted in person or by phone. A background document that identified the study objectives and purpose, and the interview questions, was given to interviewees before they were interviewed.

Information obtained from these interviews is incorporated into the analyses, conclusions and recommendations, which follow from the rest of this study.

2.3 Spill Response Activities and Timing Considerations

Potential response activities that could involve local manpower support are outlined. These response activities consider the three facets of oil development:

- offshore drilling or production
- nearshore drilling or production
- shipping in support of drilling and production operations (includes low probability but significant events, and operational-type discharges)

The response operations that could be employed and require training include:

- human safety – ensuring a safe work environment and training for responders
- initial spill assessment – first assessment of the nature and size of the spill to determine the initial spill response
- containment and recovery techniques – mechanical techniques such as booms and skimmers to contain oil and remove the oil from the water
- in-situ burning – controlled burning of spilled oil at the spill location
- dispersant use – application of chemical dispersants to enhance biodegradation

- shoreline protection and clean-up – techniques to protect important coastal areas from approaching oil, and techniques to remove oil from shorelines that are affected
- shoreline assessment and monitoring – assessing a shoreline spill and the monitoring of the spill response and recovery
- habitat and wildlife assessment and monitoring – methods to assess the effects of a spill on the environment and wildlife and techniques to monitor rate and level of recovery

The training matrix developed by S.L. Ross and L.C. Oddy (1987) for a generic spill response team was used as a starting point and updated to meet oil and gas operational scenarios. Each potential response activity was analyzed and job functions described (e.g., small boat operator, boom deployment technician, pump operator).

Timing considerations included:

- when a project is likely to be approved in the Canadian Beaufort Sea
- the time it would take to train Inuvialuit community members in the potential roles they could play in oil spill preparedness and response

2.4 Training and Certificate Requirements

Training requirements and certifications are identified for the roles and responsibilities determined through consultations and analysis of spill response activities and timing considerations. This includes general job requirements, such as job-safety specific to oil and hazardous materials and incident command system training, as well as training requirements related to a particular role in the response team. A modular approach, as described in S.L. Ross and L.C. Oddy (1987), is used for courses that can be used to address general spill response requirements. Training and certification requirements for courses tailored to specific roles in the response team are also identified.

2.5 Sources of Oil Spill Training

Sources of oil spill response training available to northerners was identified through our knowledge of oil spill response training facilities and programs as well as Internet searches. Identification of oil spill training sources was limited to those sources located in Canada and the United States. For each source of training, the programs or courses offered by these sources are identified, as well as the format of the training (classroom, field or remote delivery).

2.6 Role of Community Members in Oil Spill Response

Training requirements are identified based on the roles identified in Section 2.3 and results of the community consultations with regards to expectations for oil spill response roles for the Beaufort Sea.

2.7 Workshop

A facilitated workshop was held in Inuvik, Northwest Territories from October 23 to 25, 2012. Workshop participants included representatives from Inuvialuit communities and organizations, active oil and gas operators, government agencies and oil spill response companies. The objectives of the workshop were:

- confirm assumptions of this study
- validate conclusions formed from the study
- refine and ensure clarity on the communities perspective
- further develop other components of the study (e.g., training)

A series of presentations were made, including:

- results from consultations with communities, industry and regulators
- training experience of the Mackenzie Delta Spill Response Corporation
- historical perspective of the Beaufort sea Oil Spill Cooperative
- delivery of the summer 2012 Tuktoyaktuk oil spill training courses
- stages of spill response and roles
- types of available spill response training courses or programs

There was a roundhouse discussion after each presentation and questions were also allowed during the presentations. Workshop presentations are included in Appendix E.

On Day 2 of the workshop, participants were divided into three groups. Each group had at least one representative from an oil and gas operating company, a regulatory organization and Inuvialuit community members and organizations. Each group discussed potential roles for Inuvialuit community members in oil spill response, the types of training and delivery of that training to take on these roles, potential knowledge gaps and recommendations.

A panel of three individuals—one representing an active oil and gas operating company in the Beaufort Sea and the other two panel members representing oil spill response companies—discussed the pros and cons of the different oil spill response entities that are used in different jurisdictions and what might fit best for the Beaufort Sea. The panel responded to questions from the floor. A summary of the panel discussions is included in Appendix D.

At the end of the workshop a discussion on recommendations identified during the workshop were reviewed.

3 RESULTS

3.1 Inuvialuit Communities and Organizations Consultations

Consultations were held with five of the six Inuvialuit communities. Attempts were made to meet with Inuvik community organizations. A public open house was held in Inuvik, but was not attended by Inuvialuit community members. Complete community consultation notes are located in Appendix A. Community organizations and public meetings held in the different communities included:

- Aklavik – Hunters and Trappers Committee, and public
- Tuktoyaktuk - Hunters and Trappers Committee, Hamlet office and public
- Paulatuk - Hunters and Trappers Committee, Community Corporation, and public
- Ulukhaktok - Hunters and Trappers Committee, Community Corporation, Hamlet office and public
- Sachs Harbour - Hunters and Trappers Committee, Community Corporation, Hamlet office and public

Participants in the consultations expressed a lack of oil spill response capacity in their communities. This lack of capacity includes a limited number of trained people and limited availability of oil spill response equipment, as communities only have equipment to deal with small spills. Local residents suggested they could rent out boats and all-terrain vehicles (ATVs) to transport responders or small equipment to and from coastal spill locations.

All communities expressed an interest in being active participants in all phases of oil spill response and were interested in receiving the training necessary to participate. Training could include public community members, youth through educational programs in schools, elders so that they can better apply traditional knowledge in the development of response plans, and local organizations such as community fire departments. General training programs of interest were in:

- effects on wildlife, habitat and people
- oil spill response techniques
- monitoring techniques
- fate and effects of oil, dispersants and in-situ burning
- safety

Community residents stated that they preferred that training be offered locally. It was suggested that local training allows for training of more individuals in the community, reduces drop-out rates, is cost effective and allows programs to be taught under local conditions. Training could be conducted in local schools or learning centers, and in the field. Training videos that could be kept in the community was suggested. Videos would allow individuals to review the material on their own time, create public awareness and be used for educational purposes in local schools.

Involving youth is important, and could be achieved by distributing information packages for inclusion in school curricula and science fairs. Such programs would inform and foster interest in potential careers in oil spill response.

Communities identified the importance of maintaining skill levels through regular spill exercises and review of materials. It was noted that, in the past, training would occur with no follow-up training or practice, whereby skill levels deteriorate. Practice exercises could also be conducted with local barge or cruise ship traffic. If a spill response company or cooperative was established in the ISR, trained responders might be able to work on spill responses in other areas of the Arctic or other regions. It was also suggested that a local organization such as a fire department or Hamlet office could take the lead in an oil spill response in their community.

Specific oil spill response roles were discussed; a summary follows.

INCIDENT COMMAND

Communities saw themselves as playing an advisory role in incident command. Advice could be provided on local weather, ocean currents and ice conditions, which might affect spill behaviour or oil spill response technique selection. Advice could also be provided on the effectiveness of oil spill response techniques.

Suggested training to participate in an advisory role to incident command includes:

- oil spill behaviour
- selection of response techniques
- environmental effects of spills and countermeasures
- net environmental benefit analysis

This training should be supplemented with participation in workshops and conferences to ensure that these advisors are kept abreast of new developments.

INITIAL SPILL ASSESSMENT

Activation of the spill response plan, notification of key members of the response team and reporting of the incident details all occur during the initial spill assessment. This is often done initially by personnel involved in a company's normal day-to-day drilling operations and later, by personnel at the scene of the spill. Initial assessment of a spill is a key step in a response in terms of determining the nature and severity of the incident, the extent of response required, and activating the appropriate level of the response team. Communities also want to be part of an initial assessment team, whether through a committee or board. A concern was expressed that government and industry might select response techniques that require the least effort. Local harvesters and other community people with local knowledge can provide important information on local conditions, which might be useful when assessing a spill.

Training might include knowledge of spill behaviour and how to conduct a spill assessment.

OFFSHORE CONTAINMENT AND RECOVERY TECHNIQUES

Offshore oil containment and recovery uses large marine vessels and often requires limited manpower beyond the vessels crew. Communities identified several roles in offshore oil spill containment and recovery. Inuvialuit could be trained to be part of a vessel crew. It was also suggested that monitors could be placed on the vessels similar to Inuvialuit Land Administration environmental monitors or wildlife observers to determine the potential effect on wildlife.

Various types of environmental and wildlife monitoring and reporting training would be required as well as training to ensure familiarity with oil spill behaviour, the effect of weather and sea conditions on the spill, and familiarity with containment and recovery techniques.

DISPERSANT USE

Dispersants may be used in offshore spills and deployed by aircraft and large vessels. Limited manpower is required beyond the aircraft or vessel crew. Similar to containment and recovery techniques, Inuvialuit could be trained to work as seamen on vessels. Communities also saw their role in dispersant use as monitors. Monitors could perform several tasks, including assessing the effectiveness of dispersant use, effects on wildlife and water sampling and recording data.

Training required could include wildlife monitoring techniques, understanding dispersants and how to assess their effectiveness offshore. Also training in collecting and analyzing water samples was identified as being critical to monitoring water quality when using dispersants.

IN-SITU BURNING

In-situ burning of oil may be performed offshore from vessels or from ice. Manpower and equipment delivery can be by helicopter or vessel depending on the situation. Community roles included personnel who conducted the burning exercises as well as monitoring. Monitoring activities include monitoring contaminants in the air and monitoring effects on wildlife. A community liaison, who would provide information to the community on the spill and response, was also identified as a possible role.

Training for these roles could include how to conduct in-situ burning, collecting and documenting air samples and monitoring techniques for wildlife. Communications training would be required for the community liaison role.

SHORELINE PROTECTION AND CLEAN-UP

Shoreline protection and clean-up activities are more labour intensive than other oil-spill response techniques and can use a variety of techniques, including small-scale use of cleaning agents, in-situ burning, use of booms and oil recovery equipment and other mechanical means. Numerous roles were identified, and suggestions included:

- developing original project emergency response plan
- providing local knowledge and advice through an advisory team

- using a local coordinator to direct operations
- using community owned vessels and boats
- providing personnel for clean-up activities
- transporting clean-up crew to and from oiled shorelines
- providing camp and other support services
- monitoring the effectiveness of the clean-up
- conducting environmental and effects monitoring

Training requirements identified during consultations include:

- small vessel operation
- boom and skimmer deployment and operation
- pumping and fluid handling
- in-situ burning techniques
- dispersant application
- shoreline clean-up techniques
- standardized assessment techniques and terminology
- safety training
- coordination and administration
- monitoring techniques in data collection and recording

A detailed list of comments for each community consulted can be found in Appendix A.

3.2 Regulator and Industry Consultations

Regulators and industry representatives often referred to spills as Tier 1, Tier 2 or Tier 3:

- Tier1: Small spills, generally mechanical clean-up using absorbent pads, small booms and skimmers. Spill can be handled from ships by ship crew or by local response team if equipment is available in harbour. No additional support required.
- Tier 2: Larger spill requiring more capacity than Tier 1. Might require use of regionally (e.g., Western Arctic, including Alaska) available equipment.
- Tier 3: Major spill requiring broader range of responses. Dispersants or in-situ burning maybe required. Require regional and sometimes larger response to spill.

REGULATORS

Interviews were held with representatives of government agencies, including Fisheries and Oceans Canada (DFO), Canadian Coast Guard (CCG) and Environment Canada. Representatives from the National Energy Board—an independent regulating agency—were also interviewed. In some cases written responses were provided in place of an interview. Comments are summarized below.

1. General level of preparedness and capacity to respond to an oil spill

Currently, as there is no nearshore or deeper offshore drilling activity in the Beaufort Sea, the need and the level of preparedness and capacity to respond to spills is limited. An initial spill response capacity is required on site of a land-based oil handling facility under the *Canada Shipping Act, 2001* during loading or offloading operations which support community resupply operations[1] . CCG has placed community packs of spill equipment in communities however there have not been enough spills to keep people trained. There is no organization or company to maintain paid full time or part-time spill response employees. If a spill occurred during a key harvesting time it was suggested there might be a shortage of individuals to respond to an oil spill as many would be on land.

When new drilling is proposed, an applicant will have to supply the NEB with contingency plans that meet the requirements of Section 6(j) of the *Canada Oil and Gas Drilling and Production Regulations* which state:

> ***6.*** *The application for authorization shall be accompanied by*
>
> *(j) contingency plans, including emergency response procedures, to mitigate the effects of any reasonably foreseeable event that might compromise safety or environmental protection, which shall*
>
> *(i) provide for coordination measures with any relevant municipal, provincial, territorial or federal emergency response plan, and*
>
> *(ii) in an offshore area where oil is reasonably expected to be encountered, identify the scope and frequency of the field practice exercise of oil spill countermeasures;*

Each project proposal includes the requirement of the applicant to demonstrate to the NEB that the company can respond effectively when things go wrong. When a drilling application is received, the NEB and government agencies evaluate the company's response capacity during the review of the application.

Other comments provided on nearshore and offshore oil spill preparedness and capacity included:

- a current severe lack of community infrastructure to support a spill response
- information (e.g., environmental sensitivities) is not adequately compiled and easily accessible to make quick decisions if a spill occurred

[1] Spill response preparedness activities in support of community resupply operations, although outside of the scope of this study, could provide a building block for spill preparedness activities in association with offshore oil and gas projects.

- there is a larger body of environmental knowledge for nearshore areas than there is for offshore areas
- primary responsibilities for spill response are understood but secondary responsibilities such as monitoring are not as well understood

2. Oil spill response requirements to meet future oil and gas projects

Oil spill response requirements are based on project design when an application is submitted. Because each project is evaluated on its own merits and issues, it is presumed by design that the response capabilities remain in lock step with development. Increases in development require commensurate response capabilities.

One respondent remarked that, in general, each project contributes to the response capacity as a function of the project. Consequently, there is no overlap, residual or region-wide level of preparedness applicable to the Beaufort Sea. In some cases, there is a desire to add up the individual capacities and call it region-wide capability, but the execution of such a cumulative activity is speculative.

It was noted that improved tools for assessing oil spill risks for use in response priority setting are required. Tools could include updated sensitivity mapping and spill trajectory information. It was suggested that a project be initiated or a workshop held, to address sensitivity mapping and spill trajectories. Another comment was that an improved understanding of ecological sensitivities in offshore areas is required.

3. Inuvialuit preparedness and capacity for oil spill response

There is limited preparedness and capacity for nearshore spills, which is generally related to community fuel resupply. As mentioned in Comment 1 (General level of preparedness and capacity to respond to an oil spill), CCG has placed community packs of spill equipment in communities. However, there have not been enough spills to keep people trained. There is no organization or company to maintain paid full time or part-time spill response employees within communities. If a spill occurred during a key harvesting time, it was suggested there might be a shortage of individuals to respond to a spill as many would be out on the land. There is no offshore spill preparedness or capacity in Inuvialuit communities.

There might be only one to two people trained in oil spill response in any given community. This training is often at a relatively basic level and with little opportunity for practice or maintaining the skills learned. There is no formal lead organization to manage a spill response in the communities.

4. Potential Inuvialuit roles in oil spill response

Comments were provided on Inuvialuit roles in oil spill response as well as support roles to a spill response. Trained and qualified community responders could be involved in offshore, nearshore or onshore spill responses. A number of potential roles in an incident command system were suggested, including administrative support and advisory roles.

Shoreline clean-up assessment teams might include local community members who bring local and traditional knowledge to the team. In many cases, it is the needs of the operator or the contracted oil spill response organization that will determine who participates on the shoreline clean-up assessment teams. The technical and safety qualifications of individuals are also important.

Spill response support roles include a variety of logistical support components (e.g., boats and other equipment), monitoring of spill clean-up, longer-term environmental monitoring and managing communications in a community.

Inuvialuit could participate in advisory roles, whereby individuals would provide significant and detailed technical information on shorelines, including type and availability for access, wildlife and seasonal information on weather, potential ice movement, trajectory and potential survival issues (i.e. safety and security). Individuals could also assist in identifying and mapping sensitive areas, harvest areas, and archeological sites.

Communities and individuals can also significantly influence the development of impact assessments, assist in developing science and technology requirements, and further the process of establishing end points. This function is also preparatory and involves coordination with Environment Canada via the regional environmental emergencies team (REET) concept.

5. Potential limitations to Inuvialuit oil spill response capabilities

Potential limitations to Inuvialuit oil spill response capabilities identified by respondents ranged from community population size, traditional practices such as wildlife harvesting, training and local infrastructure. It was also identified that there is a lack of understanding by individuals in communities on the steps in oil spill planning, preparedness, response and monitoring.

Small community populations mean that there are limited human resources to draw upon in each community. Individuals expect to be compensated for services rendered and advice provided. The compensation or built-in availability (people already employed to contribute to such work) is insufficient. Existing spill response capacity is often limited to one or two people and if they leave a community so does this capacity. It was noted that individuals who are working for an oil spill response company or organization may find it disrupting to their traditional way of life, such as hunting and wildlife harvesting. During the hunting season, people are out on land; if a spill occurred at this time, many trained individuals might not be immediately available.

The ability to sustain training and preparedness can depend on the level of oil and gas activities occurring in the region. When spills or training do not occur regularly, it is difficult to maintain skill levels and test preparedness plans. Government agencies have limited resources, making it difficult to provide funding for regular training. There is also uncertainty by some regulators to the willingness of proponents to train individuals to a professional level.

The limitations to Inuvialuit oil spill response capabilities are imbedded in the process by which projects are authorized. While each project requires a demonstration of a response capacity, the available community competency or infrastructure is insufficient to create a scenario whereby project and community interests are easily addressed or balanced. Consequently, there is little return on effort

invested (for community and proponent) and the consultation process could become highly complicated, confrontational and unbalanced or unstable.

From an investment perspective, the willingness to invest in community preparedness must produce a return on investment. Communities need to convey a willingness to contribute to the return, by accepting some of the risk and by maintaining or otherwise encouraging an available workforce.

From a community perspective, project proponents must establish benefits to the community (similar to a return on investment), share the risks and develop a sense of long term commitment to that community.

6. Means by which government or industry can support or engage Inuvialuit to improve oil spill response preparedness and capacity

Government or industry approaches to support or engage Inuvialuit to improve oil spill response preparedness and capacity should consider the Inuvialuit perspective. For example, Inuvialuit may feel a lack of control or ability to protect their land and home. They may also have concern that they will not be kept informed of a spill or the response, which can create increased anxiety or fear of what might be occurring.

Government should work as a team when communicating with communities. To accomplish this, government must ensure good communication within government(s) and take advantage of related programs. Existing community processes and organizations (e.g., HTCs) can be used to communicate more effectively with communities. When communicating with communities it would also be beneficial for regulators and industry to be aware of the content within individual *Community Conservation Plans* and of local initiatives so that environmental considerations of importance to Inuvialuit communities related to a potential oil spill are well understood.

Encouraging a formal mechanism such as a spill co-operative or private entity that would manage training and spill response would be beneficial. To further this model, the applicability of spill response models in similar environments (e.g., Alaska) can be examined for use in the Canadian Beaufort Sea.

Individuals need a way to acquire the knowledge and skills needed and valued by the industry. This can be accomplished through basic education, and eventual specialization through training via all levels of government and, potentially, through industry. Individuals trained need to commit to the availability and mobility required to remain employable.

The basis for community involvement requires a clear competency profile, and a manner in which to encourage individuals' commitment to maintaining that profile.

Whether there exists critical mass to sustain the need and necessary rates of return for both parties is a larger question.

BEAUFORT SEA OIL AND GAS OPERATORS

There are three active oil and gas operators in the Beaufort Sea: Imperial Oil Resources Venture Limited, Chevron and ConocoPhillips. BP Canada has exploration licenses in the Beaufort Sea but is not an active operator—BP Canada has an agreement with Imperial Oil Resources Venture Limited for it to be the operator of their exploration licence. Representatives from all four companies were interviewed. Franklin Petroleum Limited acquired six exploration licenses but had not yet acquired these licenses at the time of the industry interviews and therefore was not interviewed. Exploration and Significant Discovery Licences in the Canadian Beaufort Sea are shown in Figure 3-1.

Imperial Oil Resources Venture Limited and Chevron hold deep water offshore exploration licenses. ConocoPhillips has two exploration licenses and an interest in its Amauligak discovery located about 50 km offshore in relatively shallow water. Chevron also owns a percentage of the Amauligak property.

1. General Level of preparedness and capacity to respond to an oil spill

The level of preparedness and capacity to respond to an oil spill was discussed during the NEB Arctic Offshore Drilling Review. Until such time as there is an application for exploration drilling or a development project there is less of a pressing need to get prepared for oil and gas operation related spill preparedness or response. Once there is an application for drilling, a company will put together a spill response plan, dispersion model and contingency plan for approval by regulators:

- Nearshore:

  There is a limited level of preparedness and capacity to handle small oil spills in nearshore areas. The CCG has small packs containing basic spill control equipment for nearshore vessel spills located in communities. The Mackenzie Delta Oil Spill Corporation operates out of Inuvik. It is best equipped to handle spills in the channels of the Mackenzie River delta and on land. Some of the Corporation's equipment could be used in coastal areas.

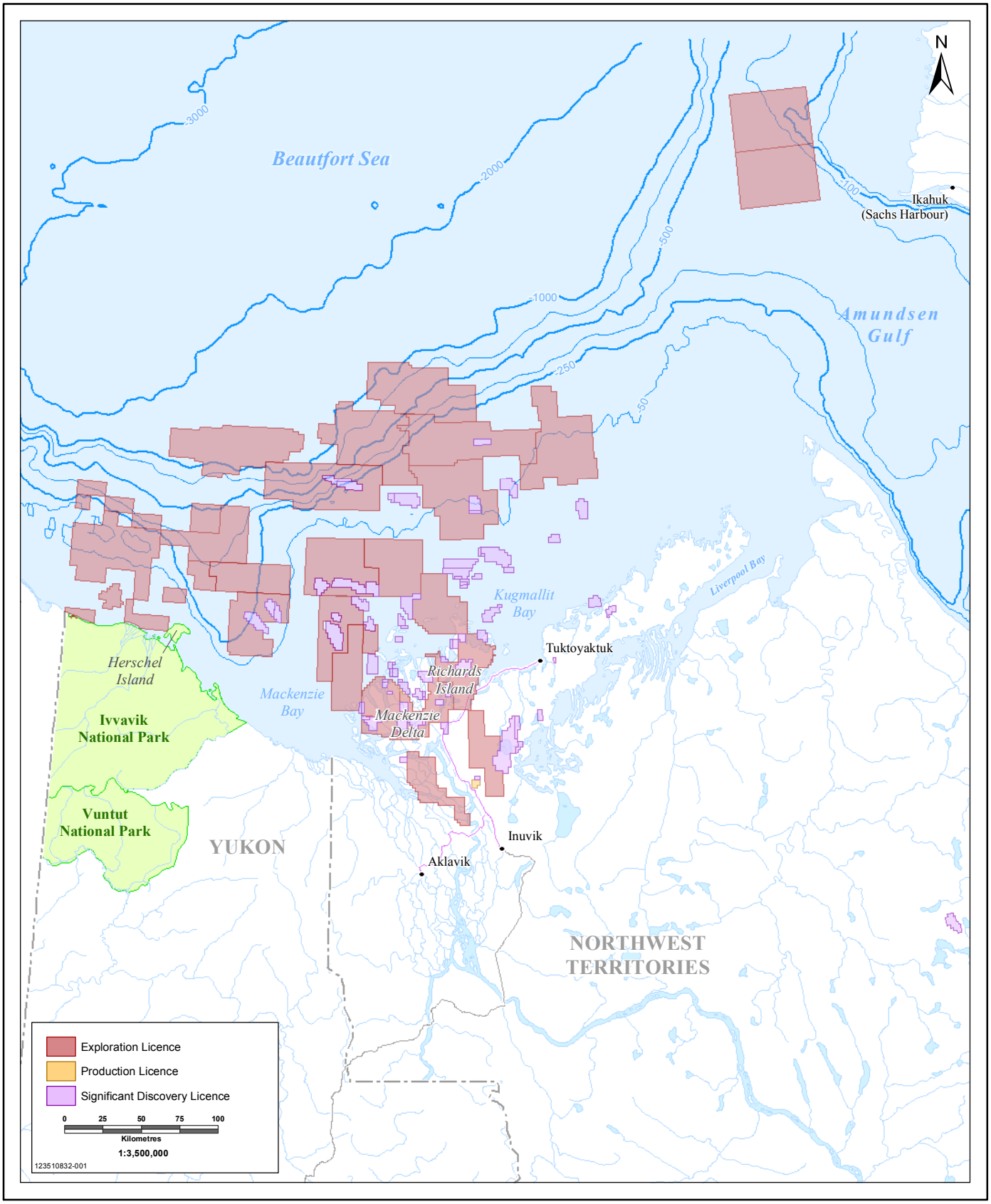
  In the 1970s and 1980s, the Beaufort Sea Oil Spill Cooperative was established to conduct training operations and spill response activities. The Cooperative was disbanded in the1990s.

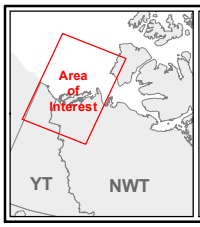
- Offshore:

  As there is no nearshore or deeper offshore drilling activity in the Beaufort Sea, the need and the level of preparedness and capacity to respond to spills is limited. Once one or more projects are proposed, spill response and contingency plans will be developed.

2. Oil spill response requirements to meet future oil and gas projects

A respondent recommended that an incident management plan be developed that identifies roles of government, operator and local roles in spill response. The plan should be internationally recognized, using international standards and terminology. The Federal Emergency Management Agency (FEMA) approach used in the United States was identified as a potential model.





Beaufort Regional Environmental Assessment

Exploration Licenses and Significant Discovery Licences in the Beaufort Sea in 2012

Data Provided By: Government of Canada, AADNC and Kavik Stantec

PREPARED BY
KAVIK-STANTEC

PREPARED FOR
BREA

FIGURE NO.
3-1

Last Modified: January 23, 2013 By: jpelfro

The level of response for type and area of an oil spill also takes into consideration where spill response equipment is located, how would the response be accomplished and who would respond to a spill:

- Nearshore:

  Spill response in nearshore areas would likely use mechanical means such as booms and skimmers. Response scenarios for a potential nearshore spill and skills to manage these responses would be identified based on the engineering design of a project. There should be a focus on first preventing oil from entering the environment and having contingencies in place.

- Offshore:

  As with nearshore spill response scenarios, potential offshore spill response scenarios and the skills to manage these responses would be identified based on the design of a project. Larger offshore spills would likely be dealt with through in-situ burning, dispersants, or both. These types of responses are more specialized than mechanical type responses and require less man-power. For example, dispersants might be spread from specially adapted aircraft or through subsea dispersal at the source of the spill. Mechanical responses as skimmers and booms might not be practical for offshore spills except for small Tier 1 level spills.

  As with nearshore areas, there should be a focus of first preventing oil from entering the environment and having contingencies in place

3. Inuvialuit preparedness and capacity for oil spill response

- Nearshore:

  There is limited preparedness and capacity with some individuals trained for small Tier 1 level spills. This training would likely have been through the CCG or NTCL related to community fuel resupply. Others have been trained through the Mackenzie Delta Oil Spill Response Corporation.

  There are small amounts of spill response equipment in some communities.

- Offshore:

  There is no community preparedness or capacity at this time for responding to offshore spills.

4. Potential Inuvialuit roles in oil spill response:

- Nearshore:

  Respondents indicated Inuvialuit roles should be conducted through:

  - an existing oil spill response company
  - creation of an Inuvialuit oil spill response company or joint venture
  - existing Inuvialuit company, which could add oil spill response to their set of services

  In any case, individuals employed would be required to meet industry safety and technical training requirements for the roles performed.

Roles for nearshore spill response would be primarily related to mechanical responses where there are higher manpower requirements. For example, trained Inuvialuit could provide shoreline clean-up assessment techniques (SCAT) services. SCAT uses a systematic approach to collect data on shoreline conditions after a spill and supports the decision making process on how a shoreline should be cleaned-up.

There is the potential for Inuvialuit to participate in an advisory role within an incident command structure. This would be a component of the spill response plan that is agreed upon and accepted by the NEB before the start of a project.

Other related roles would be in monitoring such as environmental monitoring.

- Offshore:

Inuvialuit roles should be conducted through an existing oil spill response company, creation of an Inuvialuit oil spill response company or a joint venture. Individuals would be required to meet safety and technical training for the roles performed. The highly specialized type of response for offshore oil spills might limit the number of potential roles unless the spill moves near or onshore. Preferred methods for offshore response include the use of dispersants and in-situ burning. There is little to no mechanical response used for offshore spills.

There is potential for Inuvialuit to be part of an incident command structure to provide advice. This would be a component of the spill response plan agreed to before the start of a project. Other roles include monitoring such as environmental monitoring.

5. Potential Limitations to Inuvialuit oil spill response capabilities

- Nearshore and offshore:

A number of potential limitations to Inuvialuit oil spill response capabilities were identified during interviews. Limitations included understanding the level of industry activity that might occur and understanding what the needs and requirements are for different types of spill responses. Training needs to match the type of response required.

The lack of an Inuvialuit oil spill response company or joint venture is a limitation. A company that is fully or partially owned by the Inuvialuit would allow communities to participate in various spill response functions without requiring that they spend a lot of time away from home, as could be the case if community members worked for an international oil spill response company.

During large incidents, there might not be enough local people to respond to the spill and individuals from outside the region might be required.

It was noted that there is no federal requirement for Inuvialuit to be part of the communication between industry and regulators in preparing for a potential spill; however, communication would likely occur with Inuvialuit organizations and communities as part of a normal consultation process to help with preparedness planning and to allow people to understand the potential roles available to community members.

Finally, it was stated that although spill preparedness and capacity are required if oil and gas drilling operations resume, if companies operate with due diligence there should not be a spill and therefore no need for a spill response.

6. **Means by which government or industry can support or engage Inuvialuit to improve oil spill response preparedness and capacity**

   - Nearshore and offshore:

     The amount of support or engagement of Inuvialuit to improve oil spill response preparedness and capacity is dependent on the involvement and roles community members wish to play in spill response activities. There is a preference by industry to use Inuvialuit where possible, if they meet safety and training requirements.

     The Inuvialuit should be encouraged to form a commercial spill response enterprise or joint venture. To assist with this, industry could provide business planning advice. Preference would be given to contracting an Inuvialuit oil spill response company. This includes the potential for upfront contracts to a company to assist them in the cost of start-up operations and training to build spill response capacity.

     An improved understanding between Inuvialuit and company perspectives on oil and gas operations and spill response would be mutually beneficial.

     Government support could be provided in terms of training and ensuring incident commandment is well defined. Clarity and understanding of roles and responsibilities in oil spill response, as well as the necessary education and training to fulfill those roles, is required.

3.3 Spill Response Activities and Timing Considerations

A summary of the potential spill response activities that could involve local manpower support follows. The emphasis of the work is on significant spill scenarios that could result from offshore and nearshore drilling or production activities, and vessel support related to these activities.

The following description of potential role is based on our understanding of the likely response scenarios for Beaufort Sea spills, as provided in the various industry submissions to the National Energy Board Arctic Offshore Drilling Review conducted in 2011. The intention of these descriptions was to provide a starting point for discussions with various community groups regarding their perceptions of the potential roles in spill response.

The main techniques or areas of response operations considered include:

- initial spill assessment
- containment and recovery techniques
- in-situ burning
- dispersant use
- shoreline protection and clean-up

- shoreline assessment and monitoring
- habitat and wildlife assessment and monitoring

These are described in terms of the general approach to a spill response in the Beaufort Sea and the likely manpower requirements per unit operation.

INITIAL SPILL ASSESSMENT

This would generally be a role for a first responder, i.e., personnel at the scene of the spill who are likely involved in normal drilling or production operations. Their responsibilities would include activating the response plan, notifying key members of the response team and reporting incident details. In a protracted incident with multiple clean-up locations, others involved in the response operation would be expected to provide updated information on local spill conditions, so awareness level training of spill behaviour and spill assessment issues would be required.

CONTAINMENT AND RECOVERY TECHNIQUES

Offshore containment and recovery could be used in open-water seasons and potentially during breakup in light ice conditions. In general, such operations would be conducted from large marine vessels (i.e., offshore supply vessels and the like) with a limited manpower requirement beyond the vessel's crew. Nearshore containment and recovery is addressed below under shoreline protection and clean-up.

IN-SITU BURNING

Offshore in-situ burning could be used in all seasons depending on the spill circumstances and ice conditions. In general, in open water and light to moderate ice conditions, such operations would be conducted from large marine vessels (i.e., offshore supply vessels and the like) with a limited manpower requirement beyond the vessel's crew. In solid ice cover, in-situ burning could be conducted from ice-breaking vessels or from the ice, with manpower and equipment delivery provided by helicopter or ice-breaking vessels, depending on the specifics of the spill. Nearshore in-situ burning is addressed under shoreline protection and clean-up. Monitoring of in-situ burning could involve personnel on land taking air samples and monitoring wildlife effects.

DISPERSANT USE

Dispersants could be used in all seasons, depending on the specific spill circumstances and ice conditions. In general, in open water and light to moderate ice conditions, such operations would be conducted from large aircraft and from large marine vessels (i.e., offshore supply vessels and the like) with a limited manpower requirement beyond the aircraft or vessel's crew. In solid ice cover, dispersants could be applied from ice-breaking vessels, which would also be used to apply artificial mixing energy, again with a limited manpower requirement beyond the vessel's crew. Monitoring of dispersant use and effects would be marine-based and could involve personnel taking water samples under the direction of the command team.

Shoreline Protection and Clean-up

Depending on the size and duration of the spill response, a large response effort could be used for nearshore protection of important coastal entities using one or more of containment or diversion booms, in-situ burning and small scale use of cleaning agents. In this area of response, equipment would be mobilized, deployed and operated from small to medium size vessels, and would benefit greatly from local knowledge.

Shoreline clean-up operations could also involve a large response effort depending on the extent of the spill. Crews would require marine-based access to nearshore and shoreline areas using medium and small vessels supported by larger craft and floating accommodations.

Shoreline Assessment and Monitoring

Standardized assessment techniques have been developed through experience with various significant spills by industry and regulators and would be used to provide a common base for collecting shoreline oiling information and for setting clean-up priorities. This would require a significant manpower effort, and would benefit greatly from local knowledge.

Habitat and Wildlife Assessment and Monitoring

Depending on the size and duration of the spill response, this could include land- and marine-based monitoring of spill effects. This would require significant manpower effort, and would benefit greatly from local knowledge.

Incident Command

Local community representatives could play an important role in advising the incident planning section and the command team on local conditions that might affect spill behaviour and countermeasures effectiveness, and might be able to provide resource information that will be useful in countermeasures selection. In addition, they might be able to play an advisory role in dispersant-use and in-situ burning decision-making.

Support Services

In any large-scale or protracted response effort, an important function will be the various services required for equipment and material handling to support the response effort. This could include various logistics functions, air and marine services, and administrative functions.

An idealized response team organization is illustrated (see Figure 3-2), with shaded areas in the chart indicating areas that might have a significant external manpower requirement.

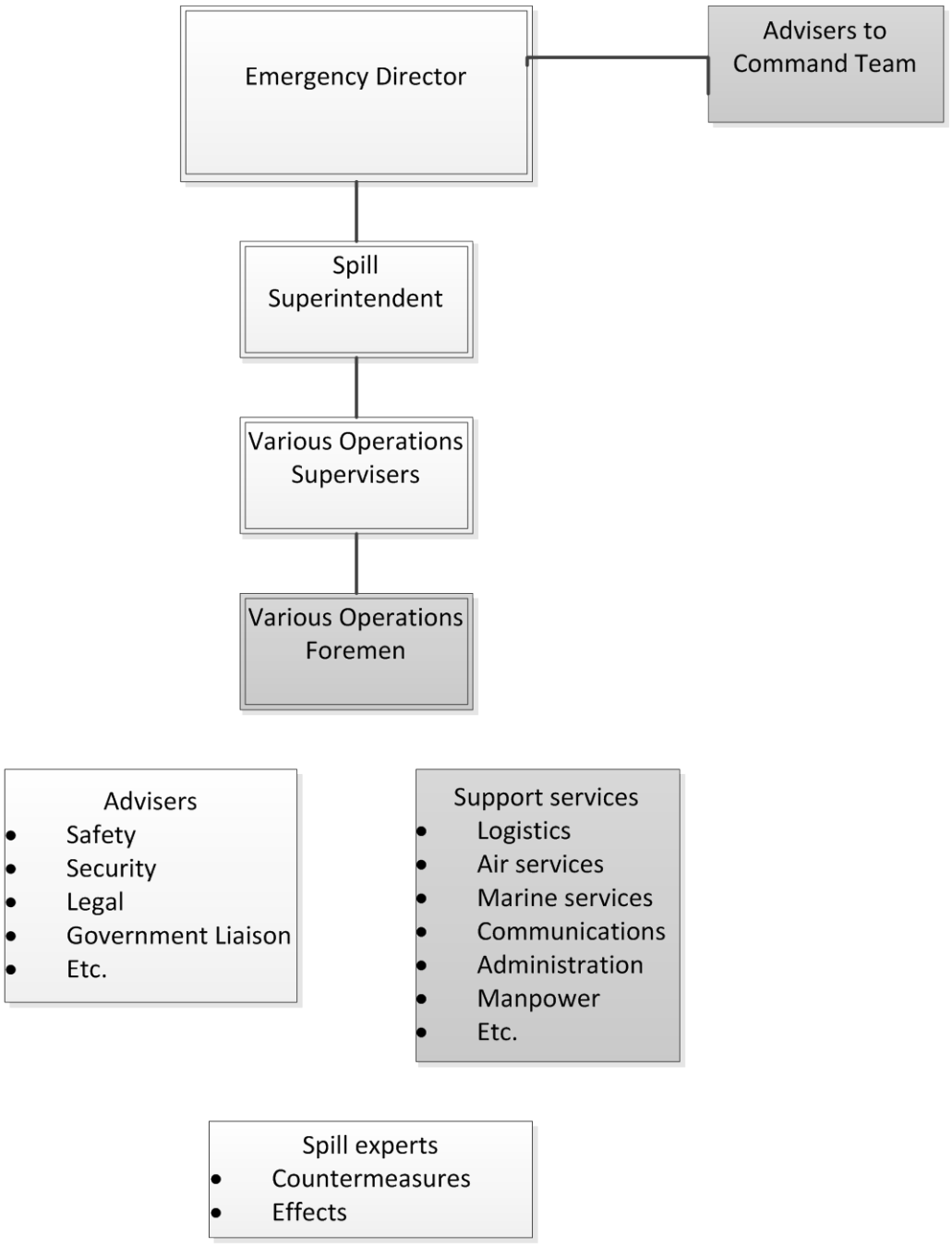


Figure 3-2 Idealized Response Team

Shaded areas indicate key external manpower requirement and where community involvement might occur *(adapted from SL Ross and LC Oddy (1987).*

3.4 Community Members in Oil Spill Response and Training Requirements

Members of local communities can play significant roles in a response in three areas:

- advice to the command team based on their local knowledge
- hands-on response role in selected countermeasures activities
- monitoring and assessment of spill effects and of clean-up effectiveness

ADVISORY AND CONSULTATIVE ROLE

Local communities have a desire to be part of decision-making on countermeasures selection, particularly when dispersants or in-situ burning might be considered. At the same time, they can offer the command team their experience and knowledge on local conditions regarding weather and sea conditions, and wildlife and habitat issues. To fulfill this role, they will require training in:

- spill behaviour, with in-depth coverage on weathering and transport processes
- countermeasures techniques, with sufficient depth to understand the limitations of some techniques in certain situations and the trade-offs between the main offshore techniques of recovery, in-situ burning and dispersant use
- principles involved in net environmental benefit analysis, which will be involved in technique selection

HANDS-ON RESPONSE ROLE

Large-scale offshore spill response will have limited opportunities for local input, but there is a role for community members in nearshore activities, particularly shoreline protection using booms and skimmers, and shoreline clean-up operations. Training for these roles might include:

- oil spill behaviour, introductory level
- principles of shoreline protection
- small boat operations
- safe operation and maintenance of powered spill equipment and watercraft
- boom deployment and operation, including selection of important booming locations
- skimmer deployment and operation
- pumping and fluid handling
- shoreline response techniques
- standardized shoreline assessment techniques and terminology

MONITORING AND ASSESSMENT

Local communities have a desire to help with monitoring and assessing clean-up activities for their effectiveness, as well as potential spill effects on the environment. Both of these areas would benefit from community members with experience and local knowledge on local conditions regarding weather and sea conditions, and wildlife and habitat issues. This local knowledge would be augmented with training in:

- oil spill behaviour, introductory level
- overview of potential countermeasures techniques, including trade-offs of dispersant use and in-situ burning
- principles involved in net environmental benefit analysis, which will be involved in technique selection
- data and sample collection for water, air, wildlife and habitat monitoring
- standardized shoreline assessment techniques and terminology
- first-aid training for all field responders

OVERALL COMMUNITY TRAINING

The communities expressed a clear and obvious need for broadly delivered information on a range of spill behaviour and spill response issues. While not training in a strict sense, there is a strong demand for basic-level training on overall oil spill issues and a clear benefit to be derived from having well-informed stakeholders. Specific introductory topics that should be covered in such information sessions include:

- oil spill behaviour
- overview of main offshore response techniques (containment, recovery, in-situ burning, dispersant use)
- shoreline response techniques
- advantages, disadvantages, and limitations of each technique
- net environmental benefit analysis
- first-aid training for all potential field responders

The most effective and efficient way to develop the required training package would be to develop a series of course modules that can be delivered in different combinations, depending on the training need. The specified training roles follow, along with a matrix (see Table 3-1) showing how these roles would be addressed by various course modules:

A. Command advisers
B. Nearshore protection responders
C. Shoreline cleanup responders
D. Shoreline assessment teams

E. Environment and wildlife monitors

F. Overall community training

Table 3-1 Training Course Modules for Training Roles

Training Role	Training Course Modules						
	Spill Behaviour 1	Spill Behaviour 2	Counter-Measures Overview	Nearshore Protection	Shoreline Cleanup	SCAT	ICS
Command advisers		✓	✓			✓	✓
Nearshore protection responders	✓		✓	✓			✓
Shoreline cleanup responders	✓		✓		✓	✓	✓
Shoreline assessment teams	✓		✓			✓	✓
Environment and wildlife monitors	✓		✓				✓
Overall community training	✓		✓				✓

The total time commitment for training would range from:

- one day for environment and wildlife monitors and overall community training
- two days for Nearshore protection responders
- four days for the other three categories, mainly because of the inclusion of the three-day SCAT course

Two areas of the proposed training—SCAT and ICS—have been standardized and can be addressed by existing courses. Typical course content for these two areas as well as for other course modules are listed in Appendix B and include detailed course outlines in the form of learning objectives or expected course outcomes.

3.5 Sources of Oil Spill Training

There are a number of oil spill response training facilities in the United States and Canada (see Table 3-2). A number of these facilities will customize courses to specific needs as well as provide offsite training.

Table 3-2 Oil Spill Response Training – Sources

Training Facility	Location	Types of Training	Onsite	Offsite
Polaris Applied Sciences Inc.	Washington State	ICS, Physical, SMRT, SCAT	In-house	
Interactive Oil Spill Training Centre	West Vancouver, BC, Associated with Capilano University	ICS, Physical, SCAT, oil response course for cold and ice conditions	In-house and e-training	Will customize
Canadian Coast Guard	Sarnia, Hay River	BSROC, MSROC		Will conduct offsite training
Enform (Western Canadian Spill Services)	Nisku, Alberta	ICS, MED, Physical	In-house	Custom design and offsite delivery
Environment Canada	Ottawa, Canada	SCAT		Offsite delivery
Lambton College	Sarnia, Ontario	Fire and safety	In-house	Will do offsite training
Ohmsett National Oil Spill Response Research Facility	Leonardo, New Jersey	HAZWOPER, dispersant, physical	In-house	
Prince William Sound Community College	Valdez, Alaska	HAZWOPER, spill response management, marine safety	In-house	
Texas A&M National Spill Control School	Corpus Christi, Texas	HAZWOPER, SCAT, physical, spill response management	In-house	
HN Consultants Ltd	West Vancouver, BC	Physical. Response management	In-house	
Canadyne	Vancouver, BC	Physical, management	In-house	
SL Ross Environmental Research	Ottawa, Ontario	SMART (dispersants, in-situ burning)	In-house	Will customize
ECRC, WCMRC	Various on-site	These RO's use a variety of contractors to provide customized on-site training (e.g. Triox Environmental, Counterspil Research)		

NOTES:
BOSRC – basics of oil spill response course
ECRC – Eastern Canada Response Corporation
ICS – incident command systems
HAZWOPER – hazardous waste operations and emergency response
MED – marine emergency duties
MSROC – marine spills response operations course
Physical – use and maintenance of booms, skimmers
SCAT – shoreline clean-up assessment training
SMART – spill management and response training
WCMRC – Western Canada Marine Response Corporation

There are no certifying bodies for marine spill response courses.

Training companies or organizations often provide a course completion certificate. These course completion certificates still might be required by individual companies before allowing an individual to perform certain tasks.

4 WORKSHOP RECOMMENDATIONS

A workshop was held in Inuvik from October 23 to 25, 2012 to verify the preliminary findings of consultations with communities, regulators and industry and identify recommendations .The workshop agenda and a list of participants that attended the workshop is provided in Appendix C, with the proceeding in Appendix D. Presentations delivered at the workshop are in Appendix E.

A number of recommendations were identified in the workshop. Recommendations ranged from training needs and the need for funding, to Inuvialuit advisory roles, youth education, knowledge sharing and the establishment of a spill response entity such as a co-op or Inuvialuit-owned company or joint venture. These are recommendations only and would require the approval of the potential leads before initiation. Action on many of the recommendations could be initiated immediately (next one to two years); however, not all recommendations, if accepted, would require immediate action. Some recommendations can wait until one or more drilling projects have been authorized (five to eight years). Recommendations such as the set-up of an Inuvialuit oil spill response company or co-op should be initiated immediately to set-up the background work to fulfill the recommendation.

All recommendations that are acted on should involve consultation and involvement of community members and organizations. A list of recommendations, time frame for potential initiation and potential leads are listed in Table 4-1. A detailed description follows.

Table 4-1 Recommendations, Potential Leads and Time Frame for Acting

Recommendation	Potential Lead	Comment
Immediate (1–2 years)		
Develop an action plan on who is responsible for responding to a spill depending where and when the spill occurs.	AANDC with EC and NEB	
Develop a list of trained individuals in each community and type and timing of that training.	Local Hamlet offices or HTCs	
Update sensitivity maps – use CCPs, local and traditional knowledge	EC and AANDC	This activity has already been initiated by EC
Provide information and training to students in schools on oil spills and oil and gas industry in general	Active oil and gas operators and regulators	Collaboration with schools, Beaufort Delta School Board and Aurora college
Develop a means for Inuvialuit to be part of decision making process on how to respond to a spill and follow-up monitoring required	IRC and IGC	Collaboration with active oil and gas operators

Table 4-1 Recommendations, Potential Leads and Time Frame for Acting on Recommendation (cont'd)

Recommendation	Potential Lead	Comment
Immediate (1–2 years) (cont'd)		
Develop an Inuvialuit or advisory board to advise industry and interface with communities during spill response efforts?	IRC and IGC	Initiated immediately but not completed until later
Establish Inuvialuit owned or joint venture company or co-op to conduct spill response training and activities	IRC and IDC	Initiated immediately but not completed until later
Share knowledge with communities regarding industry and oil spills, e.g., what factors does industry consider when developing a spill response plan and what is contained in the plan, all aspects of oil spills including fate and effects and response methods	Active oil and gas operators	
Put together a collection of existing traditional knowledge and information on coastal and offshore areas of the ISR	IRC and Inuvialuit Cultural Resource Centre	
Hold additional workshops on different facets of oil spills and responses	AANDC, EC and DFO	Types of workshops to be determined at a later date
Later – after approval of one or more drilling applications (5–8 years)		
Have one or more trained communications people in communities	IRC and IGC	Collaboration with active oil and gas operators
Prepare to have Inuvialuit experience and expertise ready – capacity building	Spill response company or coop	
Identify potential funding sources for training	Spill response company or coop	
Use local facilities for training whenever possible	Spill response company or coop	Aurora College

RECOMMENDATION DESCRIPTIONS

Develop an action plan on who is responsible for responding to a spill depending where and when a spill might occur

A preliminary action plan would be general in nature if prepared at this time, but could be updated as oil companies develop and submit contingency plans as part of the drilling approval process. The action plan would be useful to communities as an education and communication piece that would improve understanding of how spills could be responded to at different times of years and locations. This plan could be led by AANDC, with support from EC and NEB.

Develop a list of trained individuals in each community and identify the type and timing of that training

A list of trained spill response individuals could be developed by community organizations such as a Hamlet office or HTC. The list should include the types of training received, when this training occurred and who delivered the training. To remain current and useful, the list should be updated annually. The compilation and maintaining of the list could be led by local Hamlet offices or HTCs.

Update sensitivity maps – use CCPs, local and traditional knowledge

Oil spill sensitivity maps can provide important information on how to respond to different kinds and sizes of spills by improving the understanding of the potential risks of a spill and its response to it based on location and timing. Sensitivity maps for the Beaufort Sea and coastal areas have been developed as part of previous exploration activity, and these should be updated to reflect current information. In addition, the sensitivity maps should include information from the community conservation plans and traditional knowledge. Work is underway related to this recommendation by EC and includes the eSPACE project – Arctic coastal initiative, using data from satellites to collect information on coastal habitats. Oil spill sensitivity mapping is also being enhanced using Net Environmental Benefit Analysis (NEBA) techniques. This recommendation could be led by EC and AANDC, with input from other government departments and Inuvialuit organizations and communities.

Provide knowledge sharing and training for students in schools on the oil and gas industry operations, the potential for spills and spill response

It is important for youth to understand oil and gas operations in the Beaufort Sea. Informing youth might help them better understand the potential benefits and negative effects related to oil and gas activities in the Beaufort and their community. Knowledge sharing could include:

- how oil and gas companies decide on where they choose to apply to operate
- how seismic activity and drilling and production of oil and gas occurs
- information on the potential for spills
- how spills are responded to and their effects
- employment opportunities related to oil and gas activity in the region

This knowledge sharing does not only benefit the youth but youth may pass on some of this information to their families or friends, and can build outreach opportunities for industry and government agencies. This knowledge sharing could take several forms, such as adding information into school curricula, classroom workshops, science fairs and career days. Potential leads would be active oil and gas operators and regulators in conjunction with schools, Beaufort Delta Board of Education and Aurora College.

Develop a means for Inuvialuit to be part of the decision making process on how to respond to a spill and follow-up monitoring required

There was a strong interest by Inuvialuit—as described by workshop participants and those individuals who participated in the community consultations for this project—to play a role in decision making related to spill response. This decision making role could be an advisory role. To facilitate effective participation

in spill preparedness and response decision making processes, potential Inuvialuit candidates for this role may require first to establish a sound knowledge base on industry oil and gas offshore operations, spills and spill responses. To establish this knowledge base this recommendation should be initiated in the near term. Potential leads include the Inuvialuit Regional Corporation and Inuvialuit Game Council in collaboration with active oil and gas operators.

Develop an Inuvialuit or advisory board to interface and advise industry and interface with communities

This recommendation was brought forward a number of times during roundhouse discussions and with all three working groups. A format for this advisory body was suggested: that it be similar to the Inuvialuit Game Council with a chair and then one or two representatives from each community. Community representatives did not have to belong to a committee such as is with the Inuvialuit Game Council, but representatives could be chosen from the Inuvialuit community. Another option would to also include industry and government representatives to the core Inuvialuit representatives. Although an advisory body need not be organized immediately, a number of questions can be examined in the near-term:

- Is there support in the larger Inuvialuit community for such an advisory board?
- Is the suggested make-up of the advisory body the best approach?
- How would representatives for the advisory body be selected?
- What would be the role of the advisory body?
- How would the advisory body interface with communities, Inuvialuit organizations, government and the oil and gas industry?
- How would the advisory body be funded?
- What organization if any would the advisory body report to?

The initial lead for this recommendation may be the Inuvialuit Regional Corporation and Inuvialuit Game Council. Members of the advisory board would receive, at least, introductory spill response training to give them the base knowledge required to fulfill their role, and a small number of them would be designated to eventually receive more in-depth training to fill the command advisory role.

Establish Inuvialuit owned or joint venture company or coop to conduct spill response training and activities

The oil and gas industry often requires that they work with a formal entity such as a private or joint venture company, or co-op to provide oil spill response capacity in terms of trained and certified (if required) personnel and equipment. Whatever the entity, it should have a strong Inuvialuit presence in terms of ownership and personnel. Oil and gas industry companies may provide contracts to this spill response entity to fund it. Industry may also be willing to provide advice on its set-up. The spill response entity might also be able to obtain contracts from shipping companies, cruise ship companies, and possibly government. A spill response entity might also be able to contract outside the region to assist with spills, which could occur outside the ISR, such as Alaska or other regions. Spill response training would be conducted through this entity. Although the establishment of a private company or co-op would

not likely be feasible in the near term, discussions and assessments on the feasibility of a spill response entity could be initiated immediately. Potential leads for this recommendation would be Inuvialuit Regional Corporation and the Inuvialuit Development Corporation.

Share knowledge with communities regarding industry and oil spills, e.g., what factors does industry consider when developing a spill response plan and what is contained in the plan, all aspects of oil spills including fate and effects and response methods

To provide good advice and participate meaningfully with the environmental and regulatory processes, communities and community organizations need to be informed on how oil and gas operations are conducted, how spills are responded to and potential effects from a spill. It was felt by the Inuvialuit members at the workshop that more information and sharing of knowledge from the oil and gas industry would improve their understanding of:

- operations
- risks of spills, fate and effects
- responses to spills
- what a spill response plan looks like and how they are developed
- the decision process on how a spill is responded to

Potential leads for this recommendation would be active oil and gas operators in the Beaufort Sea.

Put together a collection of existing Traditional Knowledge and information

Traditional knowledge is an important knowledge base to assist in assessing the risk of potential spills for various areas and seasons in the Beaufort Sea region and assist with spill response decision making. Although there have been numerous traditional knowledge studies conducted in the Beaufort Sea region, the reports from these studies have not been compiled into one easily assessable compendium. This recommendation is to compile information from previously conducted traditional knowledge studies and have this information organized into a single compendium. Potential leads for this recommendation are the Inuvialuit Regional Corporation and Inuvialuit Cultural Resource Centre.

Have additional workshops on different facets of oil spills and responses

Workshop participants found that workshops were a good format for relaying and sharing information. Potential workshop themes were not discussed. Future workshops could include a follow-up to the BREA spill response roles and training needs workshop or workshops on other aspects of oil spill responses, monitoring of spills, or post clean-up monitoring. Potential leads for this recommendation include government agencies such as AANDC, EC and CCG.

Have one or more trained communications person in communities

Community representatives at the workshop felt it was important to have one or more trained communications person in the community to pass on oil and gas information back into the community especially if a spill occurred. A spill could raise potentially unnecessarily fears within the community about the effects of a spill on the sea and animals. This communications person could provide the community

with information on the size and location of a spill, its trajectory, how it is being responded to and its potential effects. These individuals would require training in communications techniques and technology. Potential leads may be Inuvialuit Regional Corporation, Inuvialuit Game Council and in cooperation with active oil and gas operators in the Beaufort Sea.

Prepare to have Inuvialuit experience and expertise ready to participate in oil spill response

This recommendation pertains to training of Inuvialuit community individuals in oil spill response techniques, including participating in spill response exercises. Currently, a small group of individuals have received some training in oil spill response, e.g., the training in Tuktoyaktuk in summer 2012. As the potential approval for a drilling project in the Beaufort Sea is probably five to eight years away, there is no requirement to develop large spill response capacity to deal with a potential spill from oil and gas activities at this time. Individuals trained at this early stage may leave the community or not maintain their level of expertise for the next five to eight years. Most training could be done within months of an approved project. There is also the potential that a drilling program may not be authorized and therefore it would not be cost effective to build a larger capacity at this time. The lead for this recommendation would likely be a spill response company or co-op.

Identify potential funding sources for training

This recommendation to identify potential sources for funding for training would not be required until one or more oil and gas drilling projects are authorized in the Beaufort Sea and a spill response company or co-op is identified. Sources of funding may depend on the type of spill response entity is identified or established for the region. The oil spill response entity would potentially take the lead on this recommendation.

Use local facilities for training whenever possible

Identified in this report were training facilities in and outside the ISR. Some of these facilities or their availability might change over the next five to eight years. The type of facility will depend on the training requirements at the time that a training program is initiated. It was acknowledged in this report and at the workshop that local facilities such as Aurora College, public schools and swimming pools in Aklavik and Inuvik, are likely suitable for much of the training. The chosen training facility will be up to the training organization, which will likely be an oil spill response entity.

5 SUMMARY

Consultations were held in five of the six Inuvialuit communities with community organizations and the general public. These communities included Aklavik, Tuktoyaktuk, Paulatuk, Ulukhaktok and Sachs Harbor. Attempts were made to conduct consultations in Inuvik, but these attempts were unsuccessful.

Community participants identified a low level of preparedness and capacity for their communities to respond to a marine oil spill. Generally, there might be only one or two individuals who have been trained and often this training has not been maintained. There is also limited spill response equipment available for community use.

Community participants expressed a strong interest and expectation to participate in all phases of oil spill response activities. Phases include: planning, assessment, direct oil spill response activities and monitoring. Training for these roles was discussed and included training for the different oil spill response techniques, oil spill assessments, monitoring and sampling techniques. There was also interest to train individuals in oil spill behaviour, fate and effects, coordination and communication skills, as well as other ancillary training such as safety training. Local training would be preferred whenever possible. Specific spill response activities where roles were discussed included:

- acting as advisor to incident command
- participating in initial spill assessment
- participating in offshore containment and recovery
- participating and advising on dispersant use
- participating in conducting in-situ burning
- participating in the assessment and conducting of shoreline protection and clean-up
- monitoring roles such as monitoring spill response effectiveness, environmental or wildlife monitoring

Other roles identified by communities as part of an overall spill response included roles in community communications, leadership roles in clean-up activities, seamen aboard vessels, and various support roles such as working in support roles in camps (e.g., cooks, maintenance workers) and transportation of people to and from spill areas.

Representatives from key regulators and Beaufort Sea oil and gas industry operators were interviewed to obtain their perception or understanding on a number of questions related to oil spill preparedness and capacity, roles of Inuvialuit in oil spill response, potential limitations to these roles and how government and industry can engage or support Inuvialuit to improve their preparedness and capacity.

A lack of preparedness and capacity in oil spill response were cited by regulator and industry representatives for nearshore and offshore areas. Some capacity for small spills in nearshore areas was acknowledged. However, it was noted that, given that there are no oil and gas projects in the Canadian Beaufort Sea, the need for greater preparedness and capacity is limited. It was also noted by regulatory

and industry representatives that an increase in oil and gas activity in the Beaufort Sea would create the need for oil spill response planning and dispersion modeling, as well as related activities.

Regulators identified the need for improved tools for assessing spill risks, improved understanding of ecological sensitivities and updated sensitivity and spill trajectory mapping, to meet future oil spill response requirements. Spill response requirements will be based on project design although response capabilities should remain in step with development so that response capabilities increase as development activities increase.

Industry representatives note that response scenarios and skills required to manage spill responses would be identified based on engineering design of a project and that the focus should be on preventing oil from entering the environment, including having contingencies in place, to address oil spill requirements of future projects. The roles of government, operators and local communities in a spill response should be identified in an incident management plan. There should also be a determination of the appropriate level of response for a specific type and location of a spill, including information on the location of spill response equipment and trained personnel that could assist in a response. Representatives from regulatory agencies and industry identified many of the same potential roles for Inuvialuit participation as those that were identified during community consultations. They also identified potential roles for Inuvialuit in all phases of spill response.

Regulators and industry representatives noted that the current lack of an Inuvialuit oil spill response company or joint venture that can manage training and response activities is a limitation to Inuvialuit participation in spill response. Respondents also noted that the small populations within communities limit the available human resources to respond to spills. Given the small population, when trained people leave the community, this can severely reduce the capacity of that community to respond to a spill. It was also identified that understanding the needs and requirements for spill response is important for Inuvialuit to better understand the most appropriate roles for themselves. Although presentations were made on oil response roles within the communities, additional information or discussion may be required as a reminder for those who saw the presentation and to ensure a full understanding of the potential roles available. Industry representatives would prefer to hire Inuvialuit and Inuvialuit businesses, including in spill response. Government and industry could support preparedness and capacity building by encouraging and assisting the Inuvialuit in forming a private company or joint venture to provide spill response training and support. This could be done by providing advice and assistance with business planning. Providing the necessary education and training for Inuvialuit to participate in all facets of oil spill response was also identified. This training would likely be provided by an oil spill response company or cooperative. It was suggested by a government regulator that it would be beneficial to understand spill preparedness and response from an Inuvialuit perspective. This could improve communication between government, industry and the Inuvialuit as well as help define roles and responsibilities of Inuvialuit in oil spill response.

Spill response activities and timing considerations were considered based on results from community, regulators and industry consultations, and described with an emphasis on significant spill scenarios that could result from offshore or nearshore drilling or production activities, and vessel support related to these activities.

The main techniques or areas of response operations considered for the above scenarios include:

- initial spill assessment
- containment and recovery techniques
- in-situ burning
- dispersant use
- shoreline protection and clean-up
- shoreline assessment and monitoring
- water, wildlife and habitat assessment and monitoring

Based on the results of the community consultations and the main techniques or areas of response operations referred to, it is concluded that local communities can play a significant role in in oil spill response in three areas:

- advice to the command team based on their local knowledge
- hands-on response role in selected countermeasure activities
- monitoring and assessment of spill effects and of clean-up effectiveness

In all three areas, training would be required to increase the beneficial involvement of Inuvialuit. Although communities expressed a preference to have training conducted locally, in some cases training might have to be conducted at specialized training centers. However, many training courses can be provided locally and include SCAT, BSROC, MSROC, incident command systems, environmental and wildlife monitoring and many of the safety courses required such as first aid.

A workshop was held in Inuvik from October 23 to 25, 2012 to validate these findings and to develop recommendations. The objectives of the workshop were to confirm study objectives, validate conclusions formed by the study, refine and ensure clarity on the communities perspective and to further develop other components of the study (e.g., training).

The workshop was attended by representatives of Inuvialuit communities and organizations, active oil and gas industry operators, government agencies and spill response companies. A series of 14 recommendations were identified at the workshop. Recommendations included:

- training needs and funding
- Inuvialuit advisory roles
- youth education
- knowledge sharing
- establishing a spill response entity such as a co-op or Inuvialuit-owned company or joint venture

Of the 14 recommendations, 10 could be initiated within the next one to two years, while the remaining four may be better served by deferring initiation until one or more offshore drilling projects are authorized. For each recommendation, a potential lead or leads were identified. There were two key recommendations from the workshop, based on the number of times that they were raised: (1) Inuvialuit need to be part of the decision making process on spill response and follow-up monitoring; (2) An Inuvialuit advisory board should be established to provide advice to industry and liaise with communities.

Based on the training roles identified during community consultations and the workshop, a series of modules—that can be delivered in different combinations depending on the training—must be developed. The roles for which training can be provided by the various course modules include:

- command advisers
- nearshore protection responders
- shoreline cleanup responders
- shoreline assessment teams
- environment and wildlife monitors
- overall community training

Learning objectives for each module were developed as well as an approximate time length for delivery and expected depth of coverage.

Based on the results of the consultations and the workshop, there is a strong interest by Inuvialuit organizations and community members, industry and regulators for members of Inuvialuit communities to play a significant role in oil spill preparedness and response. Inuvialuit participation is most likely to occur through a privately owned Inuvialuit oil spill response company or cooperative. As an offshore drilling or production project is not likely to occur until at least 2018, there is sufficient lead time for Inuvialuit to determine how they would like to proceed in oil spill response and preparedness. A private Inuvialuit spill response company is unlikely to be established in the immediate future, but discussions on how such a company may be formed could begin right away. As most spill response training can be conducted over a short time, generally, in terms of days or weeks, most training could be deferred until a drilling or production project is likely to proceed. Other roles in support of oil spill response could also occur and include roles in areas such as cooking, transporting responders to spill areas or monitoring.

6 REFERENCES

SL Ross and LC Oddy. 1987. The development of a Canadian oil spill countermeasures training program. SL Ross Environmental Research and LC Oddy Training Design. Environmental Studies Research Funds Report 079. Ottawa, Ontario.

APPENDIX A Community Consultation Notes

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**April 17, 2012**
Time:	**1400**
Location:	**Aklavik, Sittichinili**
Person(s) Involved:	**Aklavik Hunters and Trappers Committee** • **Billy Storr** • **Colin Gordon** • **Joe Arey** • **Michelle Gruben** • **Annie B. Gordon** • **Jordon McLeod** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern /Comment	Response
1. If there was and oil spill we don't want all the jobs just for labour.	
2. Last year Aug-Sep ILA wanted to put on an oil spill course like the one they had a few years back in Inuvik. Nobody wanted to participate because oil companies are not here. That was their excuse. 3. Tuk Development Corporation is planning a training program for this summer so ILA monitors can get their tickets. 4. ILA tickets include first Aid, HUET, confined space, MED, WHIMIS, worker fall protection, H2S. The tickets expire every few years. Think that people would need these for the offshore. Should also have Wilderness first aid, dangerous goods. 5. There is an oil spill training program in Tuk this summer.	Tickets for offshore: first Aid, HUET, dangerous goods, confined space, MED, WHIMIS, worker fall protection, H2S, wilderness first aid.

Question/ Concern /Comment	Response
6. Noted the IOL had workshops for their offshore drilling program.	
7. Feel that industries favourite choice would be dispersants but this is not the communities' first choice. Collection of the oil is the community's first choice. If everything else fails then use dispersants. Every effort should be made to collect the oil.	
INITIAL SPILL ASSESSMENT	
8. We want training for a community advisor for the initial spill assessment. We want people trained for involvement at the beginning. Concerned that government and industry will just take the easy way out. 9. Have a board or a committee 10. We want training for local people to participate in initial assessment. Include harvesters and people with local knowledge. Use people with knowledge of local conditions.	
11. If there was an oil spill at Prudhoe Bay the spill would move east as the ice flows west to east from Prudhoe Bay. This has been studied for years. When I worked at Herschel Island used to find little yellow discs. Had doctors name and address. Send it out and got back an American dollar and information on where the disc had been dropped off in Alaska.	
12. Nearshore and offshore current movements are different.	
13. Bottles thrown offshore at Tuk by the coast guard were found at Herschel and one found in Alaska.	
14. Want people from community as part of initial assessment team. Could be ILA monitors. Include harvesters and HTCs. 15. All spills should be looked at regionally. Everybody is affected. Should involve all six communities. 16. Want people that are familiar with the offshore to be part of the assessment team. 17. Local knowledge. People here know what happens in this area. Maybe different than the scientists view of what goes on. 18. Conditions are changing in the each community's area. So should have people from each community involved in the assessment.	- People in communities should be involved in the assessment. Have local knowledge to provide

Question/ Concern /Comment	Response
19. Communities should be involved in developing the ERP so we can put in local knowledge for their region. Want to bring TK and local knowledge to the Plan 20. Communities want to know how the Plan is going to work.	
21. Have people in communities that have some training such as NRTP program graduates from Aurora College.	- How would you select people to work on ERP assessment?
22. Training should be in Region for assessment training. Cost affective. Cheapest way. 23. Aklavik has a pool in the summer that goes from 3-5feet. Could be used for training. 24. Would like to see some of the training right in the communities and some could be done regionally in Inuvik. Would be key people from each community. 25. Class room training can be done in communities as this would include more people. 26. Could produce training DVDs. More people could use and look at the DVDs on their own time. Could hand out DVDs before the training program. For example could use before assessment training. Give people time to think about things and ask more questions.	
CONTAINMENT AND RECOVERY TECHNIQUES	
27. Monitors to sign off and say that you did the best you could and that it was done completely. Or they say you could do more. - Have a monitor like an ILA monitor on board. - Need training so that local people can make this assessment.	
IN-SITU BURNING	
28. Add Local monitor at site to assess effectiveness of burning. - Need training so this person could make this assessment. - Example: Shell did clean-up at west channel. Can still smell fuel after clean-up but it has been signed off. Does not feel that with the type of ground there the technique was not the right method for clean-up. - Get information from other monitoring programs as they may see things that were missed.	- Integrate relevant information from other programs.

Question/ Concern /Comment	Response
- Have somebody from community sign off to say this has been done to the satisfaction of the community. At DEW line stations- still finding drums after clean-up because people wanted to leave. At Stokes point community was involved as part of steering committee. Got awards.	
29. Monitoring - Start monitoring before the program for two to three years. Get baseline that you can compare to. - Monitor air samples, monitor fish and wildlife, vegetation, water. - Need training to conduct monitoring programs - Community wants to be involved in design of the monitoring programs. What gets monitored and how. - Community to be involved designing, setting up and monitoring spill clean-up and monitoring program. Local members understand local conditions - Need training to understand plus and minus of monitoring methods, how to do them and how to assess - Need training to understand how in-situ burning works and the plus and minuses of using this method. - Could teach in community. Could do at the college for people that are out of school.	- Get baseline information
DISPERSANT USE	
30. Individuals could be trained as seaman for vessels	
31. Should have monitors on vessels, aircraft when dispersing dispersants. 32. Monitors to assess work effectiveness and effectiveness of the dispersant. See if they are hitting targets.	
33. Need training to understand dispersants and their use so that can participate in assessing their effectiveness in the field.	
34. Have offshore and nearshore monitoring in advance of activity, during use of dispersant, and after.	
35. Could do some lab work locally – at ARI. Could be more cost effective for some of the easier lab tests.	- Local opportunity

Question/ Concern /Comment	Response
36. Develop local lab package for in field assessments.	
37. Agree with other community involvement points.	
SHORE LINE PROTECTION AND CLEAN-UP	
38. Have a local assessment team that knows local conditions such as weather. Local knowledge on travel conditions to assist with where you can and not go to with boats. Where effective base camps could be. May need floating camps. 39. Part of this would be accomplished by involvement in developing original project emergency response plan.	
40. Collect baseline data. 41. Have a local coordinator for program. Keeps track of who is where and what they are doing.	
42. Training - On baseline monitoring methods, shoreline protection and clean-up methods - Safety - GPS, Spot - Small boat ticket - Coordinator training - Safety training such as first aid	
SHORELINE ASSESSMENT AND MONITORING	
43. Agree with community involvement list presented 44. Training for and involvement in monitoring programs 45. Add long term monitoring and training for. 46. Small boat tickets 47. Need safety training 48. Need training so they can make assessments	
HABITAT AND WILDLIFE ASSESSMENT AND MONITORING	
49. Need to be involved in assessment 50. Monitoring fish, air, water, air, wildlife and habitat 51. Have local community coordinator. 52. Baseline monitoring will give people skills so they know what to do if there is an event. Advantage to doing work and learning outside of a crisis situation.	
INCIDENT COMMAND	
53. Want to be involved in assessment at the outset not maybe as in presentation	

Question/ Concern /Comment	Response
54. Agree with training list provided in presentation.	
SUPPORT SERVICES	
55. Need to list equipment community has and the availability of this equipment to respond to a spill.	
56. Training for techniques and equipment use	
57. Aklavik would have its own plan for responding to a spill - Would include first point of contact in community - Steps to respond - Resource needs - Resource availability - People trained to know what equipment is needed and how to deploy it.	
58. Would like to have some response equipment readily available in community - SEACAN of equipment so we can respond to a medium spill	
59. Develop local spill response plan as one of the ERPs that the Hamlet has.	
SITE SAFETY	
60. Require appropriate safety training as mentioned before.	
FEEDBACK	
61. Local capacity – nothing. 62. Barges have their own equipment when they do fuel transfers. Have booms and oil spill kits. 63. There are a few people in community that have spill training, but not many. Three in town that went on course with ILA. All the training is out of date. 64. What types of training is good for community - Monitoring training - Safety - Repeat of programs previously mentioned 65. Best way to provide training is to do it locally. 66. Spill response equipment – not in Aklavik - Only small kits like for Arctic Dove – small fuel spills. Have absorbent pads - Small spill kits in 45 gallon drum size plastic containers - RCMP has 4 ft by 4ft yellow hut. Arctic Dove has the same.	

	Question/ Concern /Comment	Response
	67. Local business opportunities - Buy equipment to rent out – racks, shovels, absorbent pads etc. 68. K&D has heavy equipment- local company. They have backhoe, cats, dump trucks, racks, shovels, contaminant bags 69. Role in monitoring effects of spill – as above - Trained to monitor and conduct and coordinate monitoring 70. Role in monitoring effectiveness of spill response - Want to be on team - Have people on site that are doing monitoring and have them trained to do these assessments 71. Don McWatt – had local people working on clean-ups - Beaufort Environmental Support Services	
	72. Need a staging area for spill waste and then haul the waste out of the area on barges.	
Summary		
Commitments for Follow-up:		
Recorded By:	Michael Fabijan	

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**April 17, 2012**
Time:	**1800**
Location:	**Aklavik, Sittichinili**
Person(s) Involved:	**Aklavik Public** • Hugh Papik • Glen Gordon • Abraham Stewart • Jimmy Meyook • Elizabeth Semple • Colin Gordon • Billy Archie • Sally Ann Kasook • Wilson Malegana • Gil Kogiak • Mildred Edwards • Walter Bennett • James Joe • Curtis Illasiak • Cindy Gordon • Norman Kendi • Clarence Kowana **Project Team** • Michael Fabijan (KAVIK-STANTEC)
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern /Comment	Notes	Category
73. In-situ burning – - Was on Molikpaq flare burning was not complete. There was a lot of soot left behind - What do you do with soot and oil that is not burned?	Applying past experience to current situations.	
74. Do you have records of blowouts in the Arctic. - Think there was one in the high Arctic in late 1960s, 70s. - Blowouts do happen so it is a risk	There have not been any in the Beaufort offshore.	
75. Have dispersants ever been used before.	Yes. Used a Macondo	To learn
76. What is the impact on fish?	Don't know. Disperses quite quickly.	Concerns
77. How is the Gulf of Mexico making out? 78. All that oil sunk to the bottom.		Effects from other spills
79. Personnel support - 3 people here that have training and used equipment that the coop had. Boat handling and boom deployment etc.		
80. Concern that jobs will not come to communities	Project is to determine what capacity the communities have and what they want to participate in.	
81. Suggest split work up between communities. - Have crew at shingle point to protect Aklavik areas - Have crew at Kendall to protect area for Inuvik - Then you have Tuk area - Concern that a company will come in to do work and the communities will not get any of the work.		
82. Building capacity – Who is funding this capacity building and for how long?	- project is to determine the capacity you want - how you want to do training: when, where, who.	questions
83. Concern that the bigger companies in IDC will come in and do work and that small local companies will not be able to compete or start up.		

Question/ Concern /Comment	Notes	Category
84. Would like training to be in Aklavik.		
85. Concern that with an oil spill in the offshore it will hit the North Slope first so Aklavik will be the most impacted.		
86. Who is going to be funding all of this training?		questions
87. How soon can the training start?		questions
88. For each settlement in the ISR is there going to be a contact person for this capacity building?		
89. Aklavik – Hamlet – is too far away from the areas impacted to be part of the ERP. Would like to have organizations under the land claim IGC, HTC, CC, Herschel Territorial Park. 90. Hamlet is only responsible for municipal lands. HTC and CC would be primary organizations as this is their area for hunting. HTC would be the more relevant of the two as they look after the wildlife and environment.		
91. Should be two EMO coordinators [Emergency Measures Coordinators] – one for Aklavik, Inuvik, Tuktoyaktuk and one for Sachs Harbour, Ulukhaktok and Paulatuk. One coordinator for 3 communities. There would also be a contact person in each community. This person would essentially be a local coordinator.		
92. From Co-op in Tuk it will take a few days to get equipment to Shingle point. Would like to have capacity and equipment at Shingle point. You have families that stay there a good part of the summer. Pick a handful of them to train and they could up keep the equipment. They would be trained and qualified so if it does happen they are there. 93. Could also have responses from Herschel Island. That is where all the flow is west to east from Alaska.		
94. Should have equipment at Shingle perhaps not at Herschel because it is supposed to pristine and is for the tourists.		

Question/ Concern /Comment	Notes	Category
95. Stage shoreline clean-up equipment at Shingle. Could also store equipment at the DEW Line site. The HTC has a storage shack there.		
INITIAL SPILL ASSESSMENT		
96. Want community to be part of the response team.		
97. After training would you be on standby or just a volunteer on standby? 98. Would response team on standby be paid?	Don't know	questions
CONTAINMENT AND RECOVERY - offshore		
99. Community to have observers on site to what the impact was to wildlife. Would need training to do job.		
INSITU BURNING		
100. Concerned about impacts to beluga,/bowheads/birds in leads if the oil came up there. Has there been research done on this? Need to know about this. 101. Suggest that research be conducted to see what leads the beluga,/bowheads,/birds travel in. suggest that if there is a major lead they travel in then oil could have a large impact. 102. Concern about in-situ burning in these leads where the whales go. Also concerned about the impact on birds.	MFnote: This could also be an area to concentrate efforts.	
103. Need to have equipment to be first responders.		
104. Should have equipment on the drill rig.		
105. Should monitor effects on delivery personnel. 106. Should communicate with community on what is going on. Should communicate with HTC. Community residents would want to know what is going on.		
107. Should be open and transparent dialogue between proponent and communities. Would want a communication person in the community that passed information to the community from the proponent. Needs to be trained to do this work.		

Question/ Concern /Comment	Notes	Category
DISPERSANT USE		
108. Where would samples be sent?	To a lab for analysis	
109. Would want to see more work done on dispersant use on the North Slope. - Concerned that there are two stocks of Char that are really unstable. Want to know impacts of dispersants on Char. - Before using the dispersant we want to know more about the impact of dispersants on fish. - Want to know impacts of dispersants on fish because we eat them. - Want to know impacts on wildlife so can decide on using dispersants.		Information need
110. Monitoring- Would want to have multiple monitoring locations on the North Slope. Would want to have input on where the monitoring stations should be.	MF – want to be involved in monitoring design.	
111. Want to see if dispersants can be deployed from small vessels nearshore. - If can then would need training on how to handle and deploy the dispersants	MF – local business opportunity using small vessels	training
112. Want local authority for responding. - Plan in advance on how authority would work for deployment of people and equipment		
113. Want to be part of ERP development. Use local knowledge to contribute to development of plan.		
SHORELINE PROTECTION AND CLEAN-UP		
114. Shingle point has 42 cabins. Could have some accommodation at Shingle point. Rather than just bringing in a barge. This could be part of the response.		Capacity
115. Aklavik has local cooks		Capacity
116. Need training for shoreline response techniques		Training

Question/ Concern /Comment	Notes	Category
SHORELINE ASSESSMENT AND MONITORING		
117. Need administrative support for services and rentals supplied locally. Need training for or person that has accounting skills.		Training
HABITAT AND WILDLIFE ASSESSMENT AND MONITORING		
118. Need to have baseline information for habitat and wildlife. Need appropriate training. Would have monitoring plan that would be used for baseline, during incident and long-term. 119. Need to determine what should be monitored – local knowledge could assist. 120. Would like to have a University to help in monitoring. Have students that want to do research and help assess impacts. Don't have local capacity to do this. Would like to have ongoing research after a spill to see what the impacts are on wildlife such as Char 121. Can train people locally to collect information and do sampling.		Training
INCIDENT COMMAND		
SUPPORT SERVICES		
122. Use IRC human resources to see what qualifications people in communities have. 123. IRC has a human resources data base. They have some information but it is incomplete.		
COMMUNITY FEED BACK QUESTIONS		
124. Current Capacity – At least 3 people in community that worked for the COOP in Tuktoyaktuk and have spill training.		
125. There is interest in getting spill response training. Includes safety training.		
126. Training should include maintenance and working with small engines, pumps, outboard motors, skimming equipment. Most or recovery equipment is hydraulic. 127. Could have local maintenance mechanic during an incident.		

	Question/ Concern /Comment	Notes	Category
	128. Have Coast guard auxiliary in Aklavik. 129. Need to have people trained in small boat operations.		
	130. Spill response equipment – Arctic Dove has some. Not sure if tank farm has spill response equipment.		
	131. Local business opportunities. K&D has some equipment –backhoes, loaders, cats, end dumps [dump trucks]		
	132. Incident - Would want somebody from community to participate in the incident investigation. This person should be a third party.		
	133. Important that training includes the appropriate safety training.		
Summary			
Commitments for Follow-up:			
Recorded By:	Michael Fabijan		

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**April 20, 2012**
Time:	**1800**
Location:	**Tuktoyaktuk, CC office**
Person(s) Involved:	**Tuktoyaktuk Hunters and Trappers Committee** • **Darrel Nasogaluak** **Tuktoyaktuk Hamlet** • **Billy Emaghok** • **Dennis Raddi** • **Julia Cockney** • **Jim Stevens** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern /Comment	Notes	Category
134. Dennis Raddie was involved in an oil spill under ice exercise 5 miles outside McKinley Bay in early 1980s when he worked with Don McWatt. Dennis worked as foreman on project. - The oil in leads and ice in late May would gel and they found that that the most effective way to clean it up was to rake it up into rolls. And then put it into 45 gallon drums. Did some burning. It worked well but you do not burn everything so still had to go and collect the oil. - Of 100 barrels of oil put under the ice they may have recovered 75%. Rest was lost through the currents. - Used Prudhoe Bay oil.	Get report on study	Some local knowledge on seals

Question/ Concern /Comment	Notes	Category
- Oil came up through the channels in the ice. Had to go every day and collect oil. Did this for three weeks. The oil naturally gelled - Ringed and bearded seals came near but generally stayed away. Did not appear oiled. - There was a biologist on site. - Bearded seals are really curious. They will come a long ways to investigate a noise. - Gelled oil would still float. - There were a number of scientist working on site - Some oil was still trapped in the ice. - Ended after 3 weeks because could not travel on ice with skidoos.		
135. Dennis Raddi did practices for dispersant deployment in the summer. Used ships Supplier 5 and 6. Went on every boat that Canmar had and did practices. 136. Team members included: Dennis Raddi, Wayne Archie, Abraham Nasogaluak, Wayne Cockney, Peter Elanik, Gill Gogiak, Freddie Greenland, Calvin Pokiak 137. Training: - Went to Nfld and did training with the coast guard. Did training at Cowichin Bay on Vancouver Island. Mostly safety training and boat handling. - NFld – captain Strong was trainer - Safety training – cold water immersion from a boat. - No helicopter immersion training - Boat handling - Did do some training on oil-spill recovery – skimmers, boomers, pads, oil boom socks that absorb oil. - Did not use dispersants because the ones up here were not legal anymore. Trained on ship dispersants - Biggest hindrance to collecting oil is wave action.		Local knowledge

Question/ Concern /Comment	Notes	Category
138. Collecting the oil with a rake was a lot more effective than burning. A lot of manpower but it worked. Amazing what a rake can do. It could work in the winter to. 139. Scientists put air under the ice. Then they drilled a hole right in the dome and it dropped and they broke through. Very little oil came through. We don't know why they did this and then we pleaded with them not to drill a hole in the dome.		
140. Is there microbial action on oil in the arctic?		Question
141. Over last few years I am concerned and have the impression that dispersants are what will be used first. Have not heard talk of have any of the types of equipment to do recovery with.. 142. See dispersants as cheapest way, less manpower, for the proponent but not necessarily the best way. 143. If a spill is far enough off shore and does not look like it is going to come onshore then we should do everything one can to recover the oil. 144. Should have booms ready to go out		Comments
145. Concern that have baleen whales out there. If have dispersed oil on the baleen and the whale cannot filter feed then it will die. The bowhead population is just starting to come back after 150 years.		concern
146. Has any work been done using raw baleen to see what happens with dispersed oil. Have whale aggregation areas offshore here where they feed.	MF – could test baleen	Concern/ question
147. Would be good to talk to some of our elders about their knowledge [of the land]		Local knowledge
148. Need to have people that know the environment, know what they are getting into, and know what to expect. Need to be from here not from the south. - Pick the hunters because they know the conditions and know what to expect. - Need to have traditional knowledge environmental advisors		participation

Question/ Concern /Comment	Notes	Category
- Even if don't know specific area they know what to expect. - Are people in the community that can predict the weather better than Environment Canada? - Middle age people that travel are adaptable and are better able to predict conditions. Some of the elders were used to the same conditions year to year and have not traveled in years. Their information is valuable but some is dated.		
149. Community had never been told about BIOS in the information that has been provided to them. Are interested because it is in the Canadian Arctic.		
INITIAL SPILL ASSESSMENT		
150. Need someone on site to provide local knowledge of area and conditions. This person would likely be the most valuable person on the team.		
151. Do not have any confidence in company or government ability to respond to any kind of oil spill of any magnitude anywhere.		Comment
152. Training - There has to be training at the local level so you have a local work force that is ready to respond at a moment's notice. How you do that is that you do training here where people are comfortable with their surroundings. They know their environment and the people. - Bring the proper equipment here and lots of it. - Dennis Raddi – when I worked with Don McWatt they had a barge dedicated to responding to oil spills. That was a good start. - Need a barge here, local personnel and a boat or two (30ft or less) to tow the booms.		Training
153. Training - Some you can do here		
154. Training – should have somebody trained for communication.		

Question/ Concern /Comment	Notes	Category
155. Local roles - Communications person for communicating with the community - TK person on site to advise - Building emergency response plans and setting criteria for selection of response methods.		
156. Currently working with DFO to produce a sensitivity map for various seasons. So you know sensitivity of different animals and areas at particular times of the year. This was on IGC's agenda this spring.		
157. Dispersant use: - Do not agree with using an ice breaker. Could do a better job by picking up the oil. You just need the manpower. - How well would dispersant work on solid ice cover?		
158. Expect there to be a community specific response plan as part of the overall ERP		
SHORELINE PROTECTION AND CLEAN-UP		
159. Need lots of booms to protect the shoreline		
160. With Don McWatt we had lots of equipment at the Canmar base. Had a dedicated area just for us. 161. This has to happen again. Have to be prepared for the worst case scenario.		
SHORELINE ASSESSMENT AND MONITORING		
162. Need local advisor on site that: - knows local conditions - Particularly important areas: wildlife and wildlife harvesting areas, fish and fishing areas, whale and whaling areas - Have people that are particularly knowledgeable about an area. Would be different people for different areas in the Region. Areas that they use and know well.		
163. Need a communication person trained on radios		

Question/ Concern /Comment	Notes	Category
164. Any training that could reasonably be delivered in the communities should be delivered in the communities. In part this is because you can apply this to local conditions.		
165. Basic scientific knowledge is poor here. While there is great traditional knowledge the matching of the two is sometimes an issue.		comment
166. Need some basic science and chemistry that needs to be taught. People are coming out of schools without very much science background.		
HABITAT AND WILDLIFE ASSESSMENT AND MONITORING		
167. Need to consult communities on what should be monitored.		
168. Should be monitoring before, during and after an incident.		
169. Should also monitor inshore, rivers and lakes.		
170. Need some basic science and chemistry that needs to be taught. People are coming out of schools without very much science background.		
INCIDENT COMMAND		
171. Want someone on site to monitor the effectiveness of whatever clean-up method is being used. 172. Want some to be part of team that is making assessment		
173. Community representative should be called upon to be part of command to advise on countermeasure selection.		
174. Need some basic science and chemistry that needs to be taught. People are coming out of schools without very much science background.		

Question/ Concern /Comment	Notes	Category
SUPPORT SERVICES		
175. Groups in town that could be called upon to support a spill: - Grubens Transport – only one that has logistics, operations, equipment, camp, ware houses and materials - NTCL – in the summer time. Only open for about 4 months at most. Could be open year round because they have warehouses and equipment.		
SITE SAFETY		
176. Dennis Raddi – there were about 6 people going for training at a time.		
177. Training. Could train more people if training was conducted locally		
178. Training – Could use Grubens camp – good for Tuk Development Corporation because they are the owners of the camp.	Local opportunity	
COMMUNITY FEEDBACK QUESTIONS		
179. There is interest in spill response training. The Hamlet has been enquiring about it. TCC – definitely on people minds and is being discussed.		
180. Nobody in the community current with spill response training. There are people that are trained for whatever NTCL needs.		
181. Training best fit for in community training: - Oil spill response - Advisor - Communicator - Need to know where to put booms and why to put them there - How the oil behaves in a certain type of water - Methods of recovery - Person to act as liaison		
182. Need community person as part of response team. This person would be the first one notified till the team got here and started working together.		

Question/ Concern /Comment	Notes	Category
183. Need a community contact person – could be someone like Dennis that already has training and experience.		
184. Local team in community would be made up of members from the proponent and someone from Tuktoyaktuk for the response team.		
185. Don't see that any existing local organization, such as the hamlet, would take charge. This would be some team with that function.		
186. Hamlet could have oil spill ERP as part of their ERPs for their own shorelines. Would have to talk with HTC and CC about the shorelines. Could be holders of plan for area.		
187. Would be best to have one person in community that is the first contact. This person would contact all of the team members and get them together and get things moving. Local person could do faster than someone down south.		
188. Don't think there is much equipment left at the Coop.		
189. NTCL only has ~18 inch booms		
190. Local business opportunities: - Yes see an opportunity - Tuktoyaktuk Development Corporation – set up to develop local business opportunities for Inuvialuit beneficiaries. TDC could set up company to spill response - Horizon North has Canmars old facilities. Do not have equipment.		
191. Local involvement in monitoring spill - Long term monitoring – have partnership with scientists and reporting back to HTCs and CCs. - Local knowledge on habitat and advise on what is normal - Can train people to do data collection (sampling) to work with someone that has scientific knowledge		

	Question/ Concern /Comment	Notes	Category
	192. There is talk of developing a Tuktoyaktuk Harbour authority. - Could change plans and partnerships - Would want harbour authority integrated into plan. - Uncertain at this point.		
	193. Can use the new all-weather road - Can get equipment in all year round - Gives industry excuse not to station equipment when they can bring it in. - Would stage equipment in Tuktoyaktuk		
	194. If done correctly this could lead to permanent jobs while activity is in the area.		
Summary			
Commitments for Follow-up:			
Recorded By:	Michael Fabijan		

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**April 20, 2012**
Time:	**1800**
Location:	**Tuktoyaktuk, Hamlet chambers**
Person(s) Involved:	**Tuktoyaktuk Public** • **James Pokiak** • **Angun Gruben** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern /Comment	Notes	Category
195. Have someone from community involved in: - developing ERP, - advising when there is a spill in spill response selection		
196. Someone in community has to take responsibility – HTC, CC, Hamlet		
197. Need local person to advise on what will work in this area and what will not work in this environment. Should advise when building the response plan. 198. Should be local people involved in developing ERP, in selection of response method and ensure proper delivery of the response. 199. Have to prove that response methods work in this area.		

Question/ Concern /Comment	Notes	Category
200. Concern that Tier 2 gear is a long way away from the site. - Could be long delays in getting equipment to the site from Tuktoyaktuk – could be weather delays - Should have gear on site for something larger than a small spill. Should be for a medium spill which needs to be defined.		
201. Have to have someone neutral on site to decide on response methods and to ensure that they are applied correctly. - Not going to take industry or communities side - Seen were people keep their mouths shut to keep their jobs. Do not want to see this again.		
202. Get list of companies that supply oil spill equipment. Could have one here that someone could partner with and have all of the equipment here. Industry should assist company in finding the funding so that all the equipment is in the community, if not on site.		
203. Should have a large (double hauled) barge anchored on site with spill response equipment ready to be used.		
204. Local knowledge - There are different currents in this area - When there is a west wind ice comes in - With an east wind the ice goes out. - Know how ice moves		
205. Should have as many Committee directors come to these meetings as possible and have people come to these meetings and say something.		
206. For conditions we have out there I prefer in-situ burning to booms. Waste product from burn would probable breakdown quickly.		

Question/ Concern /Comment	Notes	Category
207. We have people that have specialty training to take samples. There are people in ENR and DFO that are mandated to protect the environment and wildlife.		
208. We have a lot of interested people in getting training. When they get the training they have a hard time finding a job. What happens if the person decides they don't want to do the job after getting the training? You need trained people to be there when they are needed. If they are trained they should make a commitment to be there. Getting the training and doing the job you were trained for are two different things.		
209. Develop a database of skills in each community.		
210. If this goes ahead I have no doubt that there will be no choice but to bring southern people to do the work.		
211. Our communities have to learn to put up with bringing southern people up. There are not enough skilled people here to do the work.		
COMMUNITY FEEDBACK		
212. Some people were trained but a lot are too old to do the work now.		
213. Training – There is an interest. Need to make sure that people that take the training are committed.		
214. Training should be local.		
215. Things should be set up locally because of the different conditions we face.		
216. Local businesses should be developed to respond to a spill.		
217. Monitoring - there should be community based monitoring with people from community.		

Summary	
Commitments for Follow-up:	
Recorded By:	Michael Fabijan

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name:**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**30-April-12**
Time:	**1800**
Location:	**Sachs Harbour, Community centre**
Person(s) Involved:	**Sachs Harbour Hunters and Trappers Committee** • **Larry Carpentar** • **Sharon Green** **Sachs Harbour Community Corporation** • **Samantha Lucas – Also HTC** **Sachs Harbour Hamlet** • **Betty Haogak** • **Lucy Kudlak** • **Priscilla Haogak – Mayor** • **Sherene Raddi - Recreation** **Sachs HarbourPublic** • **Vijay Chandra – CARS** • **Norman Anikina** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Training	Want training delivered locally	
Training	Would there be the same amount of training for each of the communities.	
Training	- Train firefighters to be able to do in-situ burning of oil. - Local volunteer fire department is just being formed in Sachs. - Have a container of supplies with the firefighters - Suggested that they conduct regular exercises to use in-situ burning equipment	

	Training	- Would be good for people to go to areas where an oil spill has occurred to see what happens in an oil spill	

	Training	- Take local people that have been trained as responders to an oil spill and have them go and work on an oil spill.
		  - They would get practical experience and they could apply this experience to their community.
		  - They would see how each of the response techniques was actually used in responding to a spill.
		  - Employment opportunity would be incentive to be trained and stay trained	

	Training	- Suggest that all Arctic communities have a similar response plan.	
	Training	- Suggested that communities share spill response experiences to see what worked and what did not work	
	Training	Trained communications person in each community - Liaison between response command team and community(s) - Would need to understand all components of response activities, response techniques, monitoring, effects oil and dispersants - Would keep communities current on activities	

	Training	- Video(s)
		  - on all aspects of responding, effects, etc
		  - could be mailed to all members of the communities to create a well-informed public.
		  - Could have training videos for people to watch.
		  - Videos could be used to update people	

	Training	- Once you get a team that is trained you do not want them to disappear. - There should be a way for them to conduct regular (ex-monthly) review materials	
	Training	- Make response information part of high school curriculum or component in a course. - May get students interested. Will enhance public knowledge. - Make part of dimani (?) course which looks at history. Could be added as what is happening now and what could happen. - Course could include how the development happens and what the responses are in case of an event - Could be a couple day workshop either for the public and/or schools	

	Training	- Have a school competition/science fair for students to come up with creative ideas on how to respond to an oil spill.	
	Training	- Feel that the best way to learn is hands on	
	SHORELINE PROTECTION AND CLEAN-UP		
	Local Capacity	- People have quads and wagons	

	Emergency Response Plan	- Hamlet
		  - Would like hamlet to be holder of response plan and be first point of contact.
		  - Coordinate local activities	

	Training	Have firefighters trained to respond to spill – local consistent response team	
	Training	Hamlet staff would require response training: - small vessel operation, - boom deployment and operation, - skimmer deployment and operation, - pumping and fluid handling - in-situ burning techniques, - dispersant application, and - shoreline clean-up techniques - standardized assessment techniques and terminology	
	Training	Local delivery - could train more people - less expensive to bring a few people in than take a number of people out - can work with local conditions - could also do with students	
	SHORELINE ASSESSMENT AND MONITORING		
	ERP	- Use local knowledge to assist in development of response plan - Determine local priority areas - Document local conditions at various times of the year. - Would need to have priority areas already selected. Would use local knowledge in conjunction with knowledge of oil, dispersant, and response measure effects - Priority areas for response to be selected in advance of an event	
	Training	- Train individual that can travel coastline and make an assessment of oil spill conditions	

	Training	- Training to understand oil spills, effects of response measures so that an assessment can be made in conjunction with local knowledge - Need for prioritizing responses to areas for a future incident	
	Monitoring	- Need baseline studies to see where various wildlife is so can select priority areas and get baseline data - Need baseline data for assessment	
	Training	- Need training to collect base line data for monitoring (pre, during and after spill event). - Work with FJMC community based monitoring program to collect information. - Work with industry to ensure data required for spill monitoring is being collected and collected in the proper manner. - Work with CWS, WMAC to ensure correct data is being collected	
	Monitoring	Concerned that baseline data be collected on species of interest to the Inuvialuit ie: on species they harvest not just those of scientific interest	
	Monitoring	Need baseline data collected	
	Monitoring	Need to capture changes in local conditions that people have seen. Example – changing ice and weather conditions.	
	Local Capacity	- Should be some response equipment in the communities - Equipment would be stored in communities - Could be used for local exercises and training - Example a couple of skidoos, ATVs, boats etc - Have some fuel as well – currently community has fuel restrictions for aircraft and community.	
	Concern	The community has fuel restrictions so there would have to be a way to bring fuel to the region for response activities	
	INCIDENT COMMAND TEAM		
	Training	- Want community member on command team - Need training to participate - Extensive training of a small group, three to five persons may be required on: - oil spill behaviour - selection of response techniques - environmental effects of spills and countermeasures - net environmental benefit analysis - supplemented with participation in workshops and conferences to ensure that the team is abreast of new developments	

Training	- would like some training locally so that can train more people	
Capacity	- community member would provide advice to command team on local conditions and concerns	
Training	- Have someone with extensive training that is local who will then move around between communities. This person could also debrief communities on incident.	
Training	- Each community should have a trained command team for local response	
Training	- Need to have practical training	
SUPPORT SERVICES		
Local Capacity	Accommodation – lack facilities. There is no hotel in community.	
QUESTIONS		
Local Capacity	Businesses possibilities - B&B Accommodation, Co-op - Limited local equipment	
Local Capacity	Some equipment locally that could be rented – boats,	
Local Capacity - equipment	What equipment does the community need? Can get a list from the Hamlet.	
Local Capacity - equipment	For fuel spills at the fuel tank they have absorbent pads. Locally just have spill kits for Hamlet	
Local Capacity-equipment	~10 small [16ft Lund type boats in Community] – used to be more but now there are fewer days of good weather for people to travel so fewer people are getting boats. Used to go out all the time but now being able to use your boat in the ocean for 10 days is a big year now. Used to be a lot of ice in the summer which calmed the waters. Now there is very little ice.	
Local Capacity - equipment	Every family has a four wheeler	
Local Capacity - equipment	Hamlet has some heavy equipment	
Local Capacity	Can't see every having a large amount of equipment in the communities	
Local Capacity-people	Have Marine Mammal Observers	
Local Capacity - response	Supply barges that come to the community have their own spill response equipment	
Local Capacity - response	Little or no capacity than what is required to respond to small local fuel spills.	
Local Capacity – incident example	Had fuel spill from a fuel barrel at the airport last week. Contaminated snow was removed with shovels. Thinks they melted the snow and burned the fuel.	

	Local Capacity – incident example	Years ago there was a leak by the garage for the community's power. There was a berm around the tank. Used the sewage truck to suck up the fuel and then put it in containers.	
	Local Capacity – incident example	Supply barge had a spill a couple of years ago. They had booms put out.	
	Initial Assessment	Want to be part of assessment team because of their knowledge of local conditions – weather, currents, wildlife and movements.	
	Initial Assessment	Want to be part of communication plan	
	Emergency Response plan	Want to be part of the team that develops the ERP	
	Emergency Response plan	Hamlet to be holder of local response plan. - Would need assistance to develop plan. - Contact in community would be the hamlet - Plan would be built under an infrastructure that will continue - Hamlet would initiate and coordinate local plan - Have a container of supplies with the firefighters	
	Local Capacity		
	CONTAINMENT AND RECOVERY – IN OFFSHORE		
	Response team	Want to have observers on site: - to record information on wildlife - to assess that response techniques are being applied properly and effectively. - Have someone with local knowledge to provide advice on site - People will know what to expect for: wildlife and from the wildlife; weather; ice movements etc. - Observer on site could represent the region. Having one person from each community may over load the facilities and hinder the response by taking space away from people that are conducting the response.	
	Training	Need people trained to be observers to make and record information	
	Training	Need people trained to assess effectiveness of spill responses	
	Training	Training to understand each response technique both on how it is applied and how to assess its effectiveness.	
	Response team	Observers – in the event of a spill have trained observers put on all vessels traveling in the region. This would include local vessels, tour boats and other ship traffic. Concerned that may not be able to insist that a ship take on an observer.	

Training	Need trained observers that would be placed on ships to record wildlife, impacts, and spilled oil.	
IN-SITU BURNING – IN THE OFFSHORE		
Response team	Want to have observers on site: - to record information on wildlife - to assess that response techniques are being applied properly and effectively. - Have someone with local knowledge to provide advice on site - People will know what to expect for: wildlife and from the wildlife; weather; ice movements etc. Observer on site could represent the region. Having one person from each community may over load the facilities and hinder the response by taking space away from people that are conducting the response.	
Response team	Person on site to collect samples	
Response team	Person on site to record wildlife, habitat observations	
Response team	Person in community to collect monitoring samples – wildlife, habitat and from people. Need to monitor people's health as well – on site and in community.	
Response team	Person in community to record wildlife, habitat observations	
Training	Need people trained to be observers to make and record information	
Training	Need people trained to assess effectiveness of spill responses	
Training	Training to understand each response technique both on how it is applied and how to assess its effectiveness.	
Concerns	Concern about the effect of soot from burning on wildlife, habitat and people	
Concerns	Would like to know toxicity of smoke from burning oil	
Concerns	Would like to know toxicity of dispersants and effect on wildlife	
Concerns	Have these countermeasures been used and tested in the Arctic	
Concerns	How does oil behave under the ice – how does it move	
Concerns	Is there a way to respond to oil that is under the ice	
Concerns	What life is there on the underside of the ice - plankton	
Concerns	Where is the plankton – on the underside of the ice and/or in the water column	
Concerns	What happens to the oil in cold water and cold temperature? Does it get thick?	
Concerns	What is the process for same season relief well?	
Concerns	What happened in Gulf of Mexico	

	Concerns	When is it easier to clean up a spill – in open water or in the winter	
	Concerns	Effects of oil on birds and how to clean-up birds.	
	Concerns	Concern about wildlife compensation and long term effect on wildlife, habitat, lifestyle and culture	
	Concerns	Want to see how the response methods have been applied elsewhere in the world.	
	Concerns	Want to see how other areas have recovered from an oil spill.	
	Concerns	How long will monitoring programs go on.	
	Concerns		
Summary			
Commitments for Follow-up:	1. Could have FJMC Community Based Monitoring Program develop the capacity for the monitors / data collectors and thus build the capacity for a future oil spill response. CBM start long term monitoring for the same parameters that would be required for monitoring in response to a spill. This would create the local capacity and have people doing something useful.		
Recorded By:	Michael Fabijan		

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**May 8, 2012**
Time:	**1800**
Location:	**Paulatuk, Youth Centre**
Person(s) Involved:	**Tuktoyaktuk Public** • **John M. Kudlak - HTC** • **Fred Kuptana – PCC** • **Bill Kudlak – Public Housing** • **Logan Ruben - public** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern /Comment	Notes	Category
218. Had spill response training session in Paulatuk through NTCL for oil spill response - ~2004 - ~12 people were trained. - Training was for about a week - Swells would go over the booms - Had a container for barge spills - 25hp boat , booms, ~500ft of boom - After a couple of years they took the container. Now only have 1-800 number to call. That is what we have for infrastructure - After this there was no more training for oil spill response		

Question/ Concern /Comment	Notes	Category
219. Training - Could have training sessions here in town 220. Suggest that we have storage for equipment at McKinley, Wise Bay and Summers Harbour. A place with deep water access where ships can over winter.		
221. Sometimes get two NTCL barge trips per year - Do not put booms out when off loading fuel		
222. Do not know of a spill in Paulatuk		
223. Want oil to be dealt with before it gets to the shore.		
224. How do dispersants work?		questions
225. In-situ burning. You give and you take. You burn and it comes down in another form. Can smell fires from down south.	- have monitoring programs for this - have standard methods	
226. Do NTCL have wildlife or environmental monitors?	No	
227. Are there regulations in other places for the use of dispersants?		
228. Concerned about how long a response would take compared to Macondo. They had lots of equipment close to there.		
229. Who would pay for the training?		question
INITIAL SPILL ASSESSMENT		
230. Good to have an elder that is knowledgeable of currents, winds and behaviour in different seasons. - It would be useful for this person to understand oil characteristics. Need training for.		Local knowledge and training
231. 5 years ago – Joint secretariat took training on the oil and gas industry – Pembina.		
232. In the offshore they are limited in what they can hold in these vessels. Have overwintering areas like McKinley Bay, Wise and Summers Harbours. These are areas that could be used to store response equipment. Can also use Tuk for offshore response equipment		

Question/ Concern /Comment	Notes	Category
233. Not sure how community should be involved?		
234. Community should be informed, probably through the TCC and HTC. - They would coordinate community activities. If one is busy the other one would. - They would get manpower to respond. If they had training. They would have an updated list of who was trained. Would need to keep an updated list of who was trained.	Who would communication come through?	
IN-SITU BURNING		
235. Should have wildlife monitor on the ice for polar bears. To reduce conflict between humans and animals. Person would keep animals away from oil.		
236. Could use noise to deter whales from area of a spill		
237. When they are migrating they may have one way so who knows how they will react.		
238. Agree with presentation listing of		
239. Get baseline information now so can see change and effects of oil spill. - Sample lakes, land, air, water, fish and wildlife		
240. Community should be involved with designing monitoring programs. - They know what the important areas are and when they are important. - Apply local knowledge of environment and wildlife such as areas of FW and Salt water mixing, species movements.		
DISPERSANT USE		
241. If there was a spill would want world experts to come to this region.		
242. Are there new technologies and other response methods? 243. What are changes in delivery methods? 244. What has been done in other countries to deal with oil spills and response? Is this available to us.		questions

Question/ Concern /Comment	Notes	Category
245. Monitoring - With animals could use eider ducks, loons, oldsquaws, mergansers etc. They are the ones that are going to get the hardest because they dive into the water - Mergansers when moulting in June and July are on the water diving and not flying		Local knowledge
SHORELINE PROTECTION AND CLEAN-UP		
246. Have equipment on site in the community		
247. How much do we need should we have to use them?		
248. Have regular exercises with people who are trained.		
249. May have to ship to areas where there is the first contact with the land.		
250. Community is getting less boats and more four wheelers. The water is getting rougher with less ice. Still have lots of boats but getting more four wheelers. - In August-Sep get northwest wind 20/month. That will be your indication of where the oil is going to hit land. Would bring everything to Sachs and Ulukhaktok.		Local knowledge
251. People will be ideal to talk to about weather conditions at different times of the year under various conditions. Can provide advice on oil spill trajectory.		
SHORELINE ASSESSMENT		
252. Agree with training requirements		
253. Add safety training to list and monitoring		
WILDLIFE AND HABITAT ASSESSMENT AND MONITORING		
254. Local knowledge – Cape Parry have small bird sanctuary and it would have to be monitored as well as bays and Summers Harbour. Should have baseline information on these areas before something happens.		Local knowledge
255. Monitoring - Like community based monitoring the community selects the sites		

Question/ Concern /Comment	Notes	Category
INCIDENT COMMAND		
256. Agree with presentation participation notes		
257. Need to learn some of the scientific terms to understand		
258. Use ILA in Tuk to train environmental monitors. If they decide to rather than Arctic College		
259. Would like local training. If local you have a smaller dropout rate and can apply training to local conditions.		
SUPPORT SERVICES		
260. Paulatuk still missing a lot of infrastructure but over time we will hopefully catch up to the other communities. Don' t see us in that support role right now. Need time to grow.		
SITE SAFETY		
261. Would coast guard be training people to with regards to becoming a seaman? If had that people could move on to carriers in the shipping industry.		question
262. Is there training for ships crews?		question
COMMUNITY FEED BACK QUESTIONS		
263. Current Capacity in Paulatuk - No spill kit that was used for NTCL - No capacity - Have about 15 people that went through oil spill training with coast guard. Was done locally.		
264. Should have spill response equipment locally for training and to do exercises so as to maintain skills. Could have instructor for some exercises and then should have someone locally that was familiar enough to conduct exercises.		
265. Training should be done locally or at a central place like Inuvik. For example could have five people from each community. 266. Spill response training should be done locally.		

	Question/ Concern /Comment	Notes	Category
	267. More technical training would be more regional training and not local. Would be good to have locally. Have had ILA environmental monitoring training in town with an instructor that stayed for a month. He had three graduates. Parks donated board room space for the classes.		
	268. POL – Paulatuk petroleum products fuel contract has spill response equipment for small spills. Hamlet has something for small spills on land. It is a spill kit in big yellow tote in the Hamlet garage.		
	269. Local business opportunities - Expediting and coordinating things - Potential for existing and new business - Could use Darnley bay camp - Local liaison person- have one from each community that knows what community can do and coordinate local activities.		
	270. Monitors – train locally		
	271. What would age groups for training? - Would like to get younger than adult <19 years old involved.		question
	272. Want maps with local names on it to work from. Important for local liaison to have this and to have this knowledge when talking to the community.		
Summary			
Commitments for Follow-up:			
Recorded By:	Michael Fabijan		

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**March 28, 2012**
Time:	**1700**
Location:	**Ulukhaktok, Hamlet office boardroom**
Person(s) Involved:	**Ulukhaktok Hunters and Trappers Committee** • **Sadie Joss** • **Joseph Haluksit** • **Bradley Carpenter** • **Mary Jane Nigiyuk** **Ulukhaktok Community Corporation** • **Richard Notaina** • **John Alikamik** • **Laverna Klengenberg** • **Lillian Kanayok – also RP for UHTC** **Ulukhaktok Hamlet** • **Margaret Kanayok** • **Marden Martin** • **Jean Ekpakohak** • **Tyler Inuktalik** • **Agnus Kuptana** • **Connie Alanak** • **Mary Kudlak** • **Janet Kanayok** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern /Comment	Response
273. What is a dispersant	- Put on oil slick and it turns into small drops - Small drops have larger surface area allowing bacteria that breaks down oil quicker. There are natural bacteria that consume the oil. - small drops can go into the water column and spread out – disperse into a larger area. So you get a little impact over a large area instead of a large impact over a small area. The oil disappears a lot quicker.
274. Does the dispersant effect the animals? 275. What does it have that affects the animals? 276. Concern about eating the fish that have been affected by the dispersant and the oil. 277. Think that there will be a lot of oil inside the skin of the fish. 278. What is the toxicity of the dispersant and the oil? 279. Has the dispersant been tested on the fish?	- don't know what the toxicity of the dispersant and oil is.
280. Noted that for Macondo they used hay and straw on the beaches to collect oil and used large amounts of oil consuming bacteria.	
281. Involvement: We want a say in how oil is cleaned up.	
282. Animals are the biggest concern.	
283. "What we see on TV. How the oil spill affects the birds and the fish. That's what we're scared of. That's our livelihood out there. The birds when they migrate and the fish." 284. "What are you going to exchange it with?" We can't grow vegetables up here.	
285. Want to be involved in making the decisions as to what [spill response] methods are used.	
286. Be educated on the methods that are being used to have an understanding on how it is working and why it is working. What works and what does not work.	

Question/ Concern /Comment	Response
COMMENTS ON DISPERSANTS	
287. Noted that there are draw backs to using dispersants. In BP spill [Macondo] were saying dispersants were not cleaning up the oil, they were hiding the oil. 288. Want to know what the draw backs are to dispersants.	
289. Something that we could monitor to see how far it will go [dispersant]. In the Beaufort how would we be able to put in something to test how far the dispersant has traveled.	
290. [dispersants] Will travel with the currents and effect the whole sea.	
291. There are also lots of ice flows that come around the Beaufort.	
292. We see the animals travel through. How are we going to know which ones are affected?	- How do we tell what is effected and what is not.
293. What kind of effect is it going to have on our sea animals like the fish and seals?	
RESPONDERS	
294. Will need a command centre. 295. Will need an Emergency Response Plan. 296. Need a committee that is set up to meet people that you are going to be calling. Who gets the first phone call, who then distributes the phone call to everybody else 297. Who comes on board 298. Who controls it. 299. Who makes call to Ottawa to say we have a problem 300. These kind of things need to be worked out. 301. Needs to be something tangible in our hands here at the office [hamlet] saying this is what we do as soon as we find out there is a spill in **"our ocean"** 302. Want Community to be part of ERP plan and have a plan in community that gives directions on what to do. When we get the phone this is what we do.	- Industry will have an emergency response plan. - Hearing that Community want to be part of ERP plan and have a plan in community that gives directions on what to do. When we get the phone call this is what we do. - Want local emergency response plan.
EFFECTS 303. Want to be educated more on what the possible damages are from an oil spill.	

Question/ Concern /Comment	Response
304. More people like you coming to talk. Would like to get information on what is going to happen to the animals, (marine mammals), from a third party not from industry. 305. Using other spills as examples is a good way to learn example spill in Gulf of Mexico. Lessons learned there could be applied here. 306. If something were to happen up here. What can our people do if something happened up here. - A lot of people are going to want to do something – what can we do. - How to clean up animals and shores - What kind of training is required. 307. List jobs required and what training is required for each. - Training would be for our people 308. "When it comes to something like oil spills it doesn't just come down to a job. It is a responsibility. We have got a responsibility to our wildlife trying to protect them". People aren't going to be expected to get paid they are just going to do it. 309. Community based training is what we are more interested in. How do you effectively assist as a community? 310. If we had an oil spill on our shores here. What can we do? We need rubber gloves, we need boots? How do we clean it? that kind of thing.	- What would you like to see to educate you more? MF- need to understand the process of cleaning up and what has to be done and how.
311. Seasons - We have different seasons to so don't know how clean-up would be [in each season]. How would you clean up a spill in the different seasons. What would happen with a spill in the different seasons. - Think that some people would probably panic. - Different seasons- duck season, caribou season, fish season, seal – different kind of animals. - Would have different kinds of methods for clean-up in different seasons. - We have extreme weather and the weather changes.	- MF- - different seasons with different kind of animals - how would the communities react in the different seasons - What happens to the oil in each season

Question/ Concern /Comment	Response
312. When we talk about different seasons how many are you looking at? We have more than four seasons.	- They are different in each community. - There are seasons where you are trapped when there is no ice.
313. Want to know the effects on us after there has been an oil spill. Do we continue eating the fish or do we need to stop for 20 years.	- MF – what is the effect on my food in the short term and the long term.
314. Need studies to monitor effects. 315. People locally can be trained to take samples. Do not need somebody from outside the community. We can take the samples and send it to them [Referred to the seal work John has been doing for DFO]	
316. Want to know how the oil moves under the ice. If oil is under the ice all winter, how far is it going to spread under the ice and with the currents.	- Need to understand the fate of oil under the ice – how far will it spread over the winter.
317. We get logs coming from the Mackenzie River. Could prove it, you could sign logs and see that it drifts here. Would take how many years. 318. Could put radio collars on logs.	- With the currents offshore oil is unlikely to come to Ulukhaktok - MF –could mark logs to see where they go. - Suggest that it may take some time for logs to travel to Holman. Suggests that oil may take some time to get to Holman. - There are currents that move materials to Holman - Could put plastic ducks in the water and see where they travel.
319. The ice doesn't get thick anymore because the currents are getting stronger underneath 320. Between the islands the flow picks up quicker. The currents are getting stronger every year. 321. Some parts the current is pretty fast. 322. The currents are getting stronger and eating the ice.	- MF – local knowledge of local conditions

Question/ Concern /Comment	Response
	- Discussion of community based monitoring program. Could use program to start now or later long term monitoring. Have to design a study to monitor the effects of a spill. - Have to know what you are going to monitor and then teach people how to do that.
323. Are there current maps? For ocean currents? We would like copies of that.	
324. Even the currents change. They are not the same as it was before. Direction changes.	- MF note: need to get updated current data and compare with historical information. - Someone should come in and talk to people about what changes they have seen.
325. The currents are changing so fast our landscape on our shoreline is changing. They are forming in different ways that they weren't formed before. 326. You can tell by the rivers that go out to the ocean. Sometimes the opening changes. 327. When we get a big south wind now the water comes way up. Sometimes it is just about reaching the road line.	- MF note – local knowledge could tell you if there is a change this year and people may be able to extrapolate a certain change they see to other changes that may result from this.
328. Monitoring - Want monitoring on animals – seals - Have done for ducks, seals and fish. - The longest we have done is for seals	
329. There should be a lot more studies on fish because we are starting to get so many different kinds of salmons that we usually don't get before in the past that we are getting now. Don't know if they are contaminated from Mexico or whatever. We get them in the summer and fall in Prince Albert Sound.	- Need someone to come and understand how people here have noticed things have changed.

Question/ Concern /Comment	Response
330. If there was an oil spill would there be oil between the ceiling and the bottom of the ocean[MF-would there be oil in the water column]. Would it stay there because of the current. With the currents moving around would some of the oil stay moving around with the current between the ceiling and the bottom.	- MF note – oil behaviour question
331. Five years from now [for drilling] it is not far away.	
332. Whatever we could handle. 333. Whatever we can prepare for, train for. 334. We can be used to clean up shores	- What would you want in Ulukhaktok? What would you want to do here?
335. In past Tank farm spill - Community was cleaning up spill	
336. Biggest problem in remote location - is logistics. Response time is key to any oil spill. How quickly you can get equipment to the location. 337. In ERP will need to know locations of equipment, assembled and brought up. Depending on season – winter, spring, summer, how do you get it to location?	
338. Nothing. 339. There is spill kit from community and coast guard. Is sea cans near the docking. Were dropped of but there was no training provided.	Barges and boats[cruise ships] come in now. Potential for fuel leaks there. What do you have in community now?
340. There is no plan. 341. Need a community lead to lead response	What is plan if something happens [in community]
342. Concern if crew ship leaks some oil. - What is the policy? - Who comes to clean it up? - Nobody monitors them - If they damage our fish, seal, whales are they responsible for compensation - Have not had problems with cruise ships but are concern because of what happened the one in Nunavut that hit the rock.	
343. Yes.	Do Barges put their own booms around themselves when they refuel/
344. They do it themselves. 345. There is some equipment in sea cans but we do not know how to use it.	Who does booming around the boats and barges that come up here?

Question/ Concern /Comment	Response
346. We need a community ERP 347. Need to educate community on spill response 348. Need an ongoing committee 349. Need an oil spill committee [local] - Seen as a big responsibility 350. Each local committee or board would have some responsibility for the ERP [HTC, CC, Hamlet]	
351. Noted that waves and wind is getting stronger	
352. Crew ships and barges come in the fall time. 353. None of our people are trained to respond to a spill 354. Do not know what we need to do to respond.	
355. Hamlet does not have anything to do with the ocean 356. Will have to be HTC, ENR, DFO 357. Has to be the community. Some one from each committee or board to become part of committee [oil spill committee]. Each board or committee would have a different responsibility for the overall plan. 358. Has to be one organization/person to be the contact for the community. 359. Could be under the emergency plan that the hamlet has but each organization would have a responsibility that they would take on. 360. The hamlet has emergency plan for power outages, plane crashes, search and rescue. 361. Each community should have a responsibility to participate and to work together under the emergency plan.	How do you want to participate and be involved?
362. Suggest that oil spill ERP would be one of the emergency plans that the hamlet has.	
363. The people that are being trained have to be able to work on an oil spill. We can sit on a committee but not be trained to work on an oil spill. Two different things. Would be nice if young people that are being trained would also sit on the committee. They would know what to do and know what to expect. 364. The committee would also know everyone in town that was trained.	

Question/ Concern /Comment	Response
365. Where would the training be? - Get information from what Tuk had and was doing [with oil spill coop] - Should review what Tuk had and see how we could adapt for here. - Should review an emergency response plan and see what the roles could be. The plan could provide guidance.	
366. Initial spill assessment - Community wants to know what spill will be doing. How it will move and how it will work with dispersants.	
OFFSHORE CONTAINMENT AND RECOVERY	
367. Want to be notified as current may bring oil to community	
368. Is there an offshore response that keeps animals away from the spill – deterrent - Could have wildlife monitors to assist in deterring the animals from the spill. This could be a local business opportunity. Could have one boat that is keeping birds from landing. Have another boat that goes around the perimeter that keeps seals form coming in. Would need a plan to deploy these people to the offshore.	
369. Noted that char go down to the deepest part of the ocean for winter	MF – people know animal behaviour under different circumstances.
370. Crews during clean-up - Need to eat – could provide camps in the offshore. - Could provide cooks - Could provide food 371. Security - Keep uninvited boats or undesirable elements away from site/community	MF – business opportunity
372. Monitoring - Would want fish tested to ensure they were edible and not contaminated - Need to get results back quickly - Need sampling and sampling plan. Would need to know what would be sampled in advance.	Business and training

Question/ Concern /Comment	Response
373. Suggest having Inuvialuit monitors on board monitoring activities. Should be independent from company, not employed by company. Monitors that are no hired by the oil companies. - Would have to some training to make sure things are being done correctly - Would have to have experience working on a rig - ILA monitors are employed by ILA Industry pays ILA to put the monitor on site	
IN-SITU BURNING	
374. Would want to do air quality monitoring on site and in community 375. Concerned about how far sot would travel and still be toxic. Noted that can sometimes smell smoke from forest fires in Alberta. 376. Should be a plan on what to do if there is bad air quality 377. Monitor water quality – both saltwater and fresh water. Concern is with drinking water quality. 378. Want to have monitoring of all drinking water sources 379. Want to monitor water in lakes because there are fish being harvested. 380. Test snow which is also used for water – used in spring and summer 381. Test people – could use local clinics – have community health representative, have nurses. 382. Test wildlife	- Have people in communities do the testing – need to be trained on collection, preservation, and transport of samples.
DISPERSANTS – added	
383. Test water at site and near communities 384. Test wildlife to see if they have picked up dispersant and/or oil. Monitor wildlife at site and near communities.	Agreed with what was in presentation
SHORELINE PROTECTION - added	
385. Want training for deployment, in-situ burning and dispersant use 386. Need vessel training.	Agreed with what was in presentation

Question/ Concern /Comment	Response
SHORELINE ASSESSMENT AND MONITORING	Agreed with what was in presentation
387. Need training for all the equipment and assessment methods 388. Need first aid 389. WHMIS	
HABITAT ASSESSMENT AND MONITORING	Agreed with what was in presentation
390. also test fish in lakes and rivers not just ocean	
INCIDENT COMMAND	
391. Community that was closest to drilling could be used as a staging community when bringing in large spill equipment. Would be staged in community for quick accessibility. - Community would provide security for equipment.	
SUPPORT SERVICES	
392.	
SITE SAFETY	
393.	
COMMUNITY FEEDBACK QUESTIONS	
394. Nothing 395. Only SEACANS near dock 396. Not sure what COOP has for any fuel spills 397. Talk to Brian Madore – Coop manager 398. Talk to Gary Bristow – fuel truck operator, first air agent. 396-3191, 3062, 3571. 399. Hamlet has: 2 cats, 1 Back hoe, 2 loader, 2 graders, 2 sewage trucks	Current capacity to respond to oilspill
400. Would like training in community. Easier to bring one person in.	Specialized training
401. Ask Lena – SAO – see above list	Community spill response equipment
402. Hotel 403. Catering 404. B&B to house people 405. Could start a business training people. 406. Equipment – hamlet has some equipment 407. Camp – there are areas in town that could accommodate camp buildings 408. Rental of ATVs, boats, skidoos. 409. Bus rental to move people around	See opportunities for existing businesses – what businesses could provide assistance

Summary	
Commitments for Follow-up:	
Recorded By:	Michael Fabijan

DRAFT RECORD OF CONSULTATION OR CONTACT

Meeting: X **Telephone: ☐**

Project #: **Client Name: INAC**

Title/ Topic:	**BREA Study on Inuvialuit Community Spill Response Training in the Beaufort Region: Current Capacity, Projected Need, Realistic Roles and Gaps Identification**
Date:	**March 29, 2012**
Time:	**1800**
Location:	**Ulukhaktok, Community Youth Centre**
Person(s) Involved:	**Ulukhaktok Public** • **Victoria Akhiatak** • **Louise Nigiyok** • **Margaret Notaina** • **Mabel Nigiyok** • **Annie Goose** • **Mary T Okheena** • **Connie Alanak** • **George Alanak** • **David Kuptana** • **Robert Kuptana – Also Interpreter for meeting** • **Agnus Kuptana – Also Catering for meeting** **Project Team** • **Michael Fabijan (KAVIK-STANTEC)**
Meeting Notes:	**NOTE:** **Notes are not verbatim transcripts of the meeting, the questions and answers are summaries of what was said at the meeting and are intended to capture the intent of what was said.** **Q: Question/comment from meeting participants** **A: Answer/ response from proponent project team**

Question/ Concern	Response
410. No one in community has spill training.	
411. Town Spill in the 1970s – from tank farm. The town just responded – there was no direction. Trying to keep fuel from reaching the beach. Not aware of any report documenting. 412. Hamlet or Gary Bristow may know about. 413. Coop has contract for fuel. 414. Every summer still see on water. Don't think it has been cleaned up. Maybe do some sampling.	

Question/ Concern	Response
415. For barges and cruise ships there is no monitoring. No one from community is participating on fuel transfer monitoring. Would like community involvement. Community should be monitoring and trained for monitoring.	- Good way to start training and monitoring on a small scale.
416. Get lots of cruise ships in the summer. See ships go by and don't know who they are.	
417. People do not know where to report spills.	
418. Coast guard escorts boats and barges in if there is too much ice.	
419. **Spill response Training** – interested in having training local as it is cheaper. Have someone come in to community to train people.	
420. Cruise ships - concerned that they are dumping waste into water - would like to have them report on how they dispose of their waste - would like to have monitors	
421. Training – train Inuvialuit environmental monitors to be at drill site. A person from the communities.	
422. Responding and monitoring cruise ships and fuel barge spills – would be useful training on a small scale.	- Also a way to maintain and use skills ongoing.
423. Training - on the process for reporting. Where people can go with a concern. Who to go to that can react to a concern.	
424. Have seen dirty black water near Naryuk, ~15 miles from here. Looked like sewage.	
425. Found seal last summer with no fur and gave to ENR.	- People see things on the land because they regularly travel on it. If were aware of what need to be collected then you would have more eyes during an incident.
426. Would help to put information on video/CD so people could watch on their own time. Would be useful to explain process to use various methods, fate and effects of oil, in-situ burning, and dispersant. 427. "Concerned about our wildlife and our waters and our land for our children and our grandchildren". People would watch videos.	

	Question/ Concern	Response
	428. The next generation are the ones that are going to be affected.	
	429. Want to have a local response committee that is ready	
	430. Would like to have long term monitoring that happens locally. Start monitoring before that activity. Monitoring would include land, water, wildlife both coastal and inland. Include air monitoring.	
	431. Responding - If they need extra help they know who to contact - Have a local committee put together from different organizations and trained to know what to do. - Do practices so that trained people are alert.	- Industry would know who to contact in the community to start a response - Have local practices
	432. In summer the dump is too close to town. Unhealthy – smells and attracts bears. 433. Starting to see huge insects in the dump	- Need to understand toxicity of oil on the beaches - smell
	434. There is local knowledge that knows there are logs here from the delta. 435. Can see huge logs on shores coming from the delta. Because of strong currents and a big south wind that we get now. It is more and more south wind. Sometimes the water comes way up. People have to put their boats way up. It starts to reach the road line. To almost the road. Get big white caps and really strong south wind that we used to never get. Can imagine what would happen with an oil spill.	- Local knowledge can tell what is going to happen under certain weather conditions. - Local knowledge can tell you what to expect for local weather conditions.
	436. Should monitor up rivers as things go up river	- Have fish going up the rivers.
	437. Concerned how this will affect our children and grandchildren.	
Summary		
Commitments for Follow-up:		
Recorded By:	Michael Fabijan	

APPENDIX B

Specific Training Requirements

SPECIFIC TRAINING REQUIREMENTS: LEARNING OBJECTIVES

Spill Behaviour 1 (1 hour)

In this introductory-level course, trainees should receive a basic understanding of the main spill processes related to various spill types and oil types, and their implications for spill fate and countermeasures effectiveness.

- Describe in general terms the chemical composition and physical characteristics of crude oils, condensates, diesel, bunker, and gasoline. Note the key properties of density, viscosity, and flash point. (0.1 h)
- Describe the main features of the oil spill processes of advection (lateral movement), evaporation, spreading, emulsification, dispersion, dissolution, and biodegradation. (0.1)
- Explain the effects of winds and currents on the movement of oil spills, and the major limitations of predictions of spill fate. (0.1)
- Explain the importance of spill evaporation with respect to the behaviour and control of marine spills; compare the importance of evaporation for crude oil, gasoline, diesel, and Bunker C. (0.1)
- Describe the spill process of spreading, and describe its importance, comparing the spreading of crude oil, gasoline, diesel, and Bunker C.. (0.1)
- Explain the process of water-in-oil emulsification and describe its importance, comparing the emulsification of crude oil, gasoline, diesel, and Bunker C (0.1)
- Explain the process of natural dispersion of an oil spill, and compare the importance of natural dispersion for crude oil, gasoline, diesel, and Bunker C. (0.1)
- Describe the behaviour of oil spills on ice, under ice, and amongst ice, in terms of advection, spreading, evaporation and dispersion. Compare in general terms the spreading behaviour of a spill in broken ice of varying concentrations (i.e., 3/10ths, 6/10ths, and 9/10ths) with a spill in open water. (0.2)

Spill Behaviour 2 (2 hours)

Trainees should understand the basic spill processes related to batch, pipeline, and blowout spills and their implications for spill fate and countermeasures effectiveness.

- Describe in general terms the chemical composition and physical characteristics of crude oils, condensates, diesel, bunker and gasoline. Note the key properties of density, viscosity, surface tension, solubility, and flash point. (0.1 h)
- Describe the main features of the oil spill processes of advection (lateral movement), evaporation, spreading, emulsification, dispersion, dissolution, and biodegradation. (0.1)
- Explain the effects of winds and currents on the movement of oil spills, and the major limitations of real-time predictions of spill fate. (0.2)
- Explain the importance of spill evaporation with respect to the behaviour and control of offshore spills; describe the major factors controlling spill evaporation; and describe, using curves provided for typical scenarios, the importance of evaporation for crude oil, gasoline, diesel, and Bunker C. (0.2)
- Describe the spill process of spreading, the effect of spill size or thickness, the thick/thin phenomenon of spreading, the effects of windrowing and surface fragmentation and diffusion, and the spreading behaviour of waxy and emulsified crude oils. Describe in general terms, using curves provided, the area of an oil slick as a function of spill size. (0.2)
- Estimate, using graphical techniques, the distance travelled by an oil slick given the water current and wind velocities for 12-hour periods, with at least one change in direction and speed. (0.2)
- Explain the importance of water-in-oil emulsification with respect to spill behaviour and countermeasures, and describe how the process is affected by the chemical composition of the oil, the density and viscosity of the oil, evaporation, spill thickness, temperature and sea state. Compare how some oils tend to emulsify quickly and others do not. (0.2)
- Name the key parameters that influence the rate of natural dispersion of an oil spill; describe how evaporation and emulsification affect natural dispersion; and compare the importance of natural dispersion for crude oil, gasoline, diesel, and Bunker C. (0.2)
- Describe the behaviour of oil spills on ice, under ice and amongst ice, in terms of advection, spreading, evaporation and dispersion. Compare the spreading behaviour of a spill in broken ice of varying concentrations (i.e., 3/10ths, 6/10ths, and 9/10ths) with a spill in open water. (0.4)

Countermeasures Techniques Overview (3 hours)

The five basic response steps for oil spills are covered briefly: surveillance and monitoring, containment and recovery, dispersion, shoreline protection and cleanup, and disposal. Trainees should receive a basic understanding of the advantages and limitations of the main response techniques for marine spills.

- List and briefly describe the five basic steps that may be involved in responding to offshore oil spills. (0.2 h)
- State the three main objectives of an oil spill surveillance and tracking program; list the four most commonly used systems for surveillance; and state three environmental situations in which oil spill surveillance is nearly impossible. (0.2)
- Describe the physical features of commercially available containment booms; describe briefly three types of boom failure; state the upper limits for effective containment re: sea state and water current. (0.2)
- Explain the importance of timely response for the successful booming of an offshore batch oil spill. (0.1)
- Compare the general booming configuration for a) an offshore blowout, and b) a large tanker accident. (0.2)
- List the five generic types of oil skimmers; state the maximum capability of commercially available skimmers; and describe limitations of offshore skimmers with respect to sea state, oil properties including viscosity and thickness, difficulties of use, logistics, and general equipment availability. (0.3)
- State the main limitations for the effective use of a containment and recovery operation for oil spills from blowouts in winter and summer. (0.1)
- List the two main requirements for the successful in-situ burning of fresh crude oil. Compare the overall equipment requirements for an in-situ burning operation with those for a containment and recovery operation of similar capacity. (0.2)
- Explain how dispersants work on oil spills, and how dispersant effectiveness is affected by oil type, oil weathering, oil viscosity, slick thickness, sea state and temperature. (0.2)
- Describe the environmental trade-offs associated with the use of chemical dispersants, and how these trade-offs would be considered in making a decision to use dispersants. (0.2)
- State in general terms, for a large offshore spill, the key equipment and material requirements for an aerial dispersant operation. (0.2)
- Describe the general role of government agencies in the in-situ burning or dispersant-use decision-making process. (0.1).
- Describe briefly the conventional methods for protecting shorelines from oil spill impact, and state their limitations in terms of amount of equipment, vessels and manpower required. (0.1)
- Describe briefly the two main techniques for cleaning up oiled shorelines, and describe their limitations with respect to shoreline type, access and seasonal conditions. (0.1)

- List the major environmental, socio-economic, political and aesthetic factors that influence the establishment of shoreline cleanup priorities. (0.1)
- List the major problems associated with the disposal of oil-contaminated material from a shoreline cleanup program. (0.1)
- Describe the use of Net Environmental Benefit Analysis (NEBA) is selecting the use of one countermeasure over another and in defining cleanup endpoints; state the importance of seasonality in estimating potential effects; describe situations in which incomplete cleanup may be recommended. (0.3)

Nearshore Protection Techniques (7 hours)

Detailed coverage is given on containment and protection operations, including: selection of booms, application strategies and methods, effectiveness, and practical operations.

i) Selection of Containment Booms (0.5 hours)

- Describe two key objectives of booming operations. (0.1 h)
- Describe the main characteristics of any containment boom. State the main differences between booms for offshore and nearshore use (with respect to freeboard, draft, and tensile strength). List and describe the common types of boom connectors. Describe the characteristics and application of: sorbent boom, fire-resistant boom, and shore-seal boom. (0.2)
- Describe the effects of current, waves, tide, and wind on containment booms. (0.1)
- List examples of boom that might be used in a nearshore protection operation. (0.1)

ii. Application Strategies and Methods (2 h)

- Describe the vessel requirements and configuration of containment booms for the purpose of:
  - diverting a nearshore slick to an onshore collection point
  - protecting an environmentally sensitive bay
  - overcoming the effects of a strong current. (0.3)
- For a nearshore containment operation:
  - state the type of boom required;
  - estimate the length of boom required;
  - list the manpower and vessel requirements; and
  - list the ancillary equipment required. (0.2)
- For inshore containment, describe the use of cascading booms. (0.1)
- Explain the importance of paravanes for towing or anchoring a boom. (0.1)
- Describe the various types of anchors used at sea and for shore connections; select an appropriate anchor for a given situation. Define the scope of an anchor line. State a typical value of scope. (0.2)
- Describe the sequence of deployment for the example in a nearshore location. (0.2)
- Define and state the purpose of exclusion booming. (0.1)
- Define diversion booming and state the reasons for employing it rather than exclusion or containment booming. Describe the use of cascading diversion booms. (0.1)
- Describe the general characteristics of booms used for nearshore countermeasures. State the water current limitations which apply to any booming operation. (0.1)

- Describe the need for monitoring deployed boom. (0.1)
- Define a sacrificial beach, and state reasons for designating such an area. (0.1)
- Describe the major safety considerations in a containment operation. (0.1)

iii. Effectiveness (0.2 h)

- State the cause and corrective action for:
  - oil droplets surfacing 5 to 10 m downcurrent of a boom
  - oil droplets splashing over the top of the boom
  - submerged boom ends
  - boom planing (i.e., not remaining vertical in the water)
  - oil leaking at shore connection points. (0.2)

iv. Practical Demonstration (4 h)

- Participate in a hands-on practical demonstration of boom deployment using nearshore diversion boom and shore-seal boom. (4)

Shoreline Cleanup Techniques (3 hours)

Trainees should receive a basic understanding of the principles and key techniques used in shoreline cleanup.

- State the six general methods of shoreline cleanup. (0.1)
- State the type of shoreline on which oiled sediment removal is applicable. (0.2)
- Compare, in general terms, the use of various types of earthmoving machinery the following equipment for oiled sediment removal. Compare the removal rates using earthmoving machinery with those using manual labour. (0.2)
- State, the shoreline features for which high-pressure flushing is applicable. State why only low pressure flushing should be used for certain shoreline types, and name those types. Describe a beach flushing operation, including techniques for "flushed" oil recovery. (0.3)
- Describe situations in which steam cleaning would be advantageous compared with high- or low-pressure flushing. (0.2)
- Describe situations in which direct pumping or skimming techniques may be employed. (0.1)
- Describe situations in which simply tilling the upper oiled layer into the substrate would be used as a method of enhancing natural biodegradation. (0.2)
- State the maximum height to which oiled sand should be piled. (0.1)
- Describe why it is essential that one must not remove more sand or substrate from a beach than is necessary. Describe why imbedded rocks and boulders should not be displaced from a beach. (0.2)
- Describe the importance of accepting slight oiling of some areas rather than unnecessarily removing beach material and vegetation. (0.1)
- State two techniques for removing liquid oil from tidal pools and depressions. (0.1)
- Describe the technique to be used when flushing, wave action and/or tidal variations removes oil from the beach face to the adjoining water surface. Describe the use of flushing and subsequent skimming for removing oil from shorelines containing boulders, scattered rocks and tidal pools. (0.3)
- State why rocky cliffs may not require cleanup action. (0.1)
- For oiled marshes describe the importance of only cleaning as is necessary. For muddy areas and tidal flats, describe the importance of not forcing the oil into the substrate by machinery or people trampling the area. (0.2)

Shoreline Assessment Techniques (3 days)

Training for shoreline assessment is available from various training organizations and consultants, based on standardized techniques developed in conjunction with Environment Canada. A typical course outline is listed below.

- Behaviour of Spilled Oil in the Coastal Zone
  - oil movement on water
  - weathering and fate of spilled oil
- Spill Management - Response Decision Process
  - management by objectives
  - Minimum Regret strategy
  - environmental sensitivity, response priorities, and Net Environmental Benefit
  - shoreline treatment end points
- Shoreline Cleanup Assessment Technique (SCAT)
  - objectives
  - SCAT forms and terminology
  - SCAT team roles and responsibilities, team composition and agency participation
  - field survey design and remote area surveys
  - data management
  - shoreline treatment recommendation forms and SCAT interface with the ICS process
  - cleanup inspection surveys, the sign off process and sign off forms
  - how to create Shoreline Treatment and SCAT Plans
- Resource and Shore Protection
  - on-water containment and recovery
  - protection priorities
  - submerged and sunken oil
- Shoreline Treatment Techniques
  - treatment objectives and strategies
  - decision process - management issues
  - treatment techniques
  - remote area response operations

- Response Operations
  - waste minimization and waste management
  - field operations

Incident Command System (ICS) 100 (4 hours)

Training for the Incident Command System at the introductory level (ICS 100) is available from various training organizations and consultants, based on standardized techniques used worldwide. ICS 100 describes the history, features and principles, and organizational structure of the Incident Command System and provides the foundation for higher level ICS training. A typical course outline is listed below.

Overview

- CS 100
- Introduction to the Incident Command System
- ICS Organization

Overall Structure

- Incident Commander
- Command Staff
- The General Staff
- Operations Section
- Organizing the Operations Section
- Planning Section
- Logistics Section
- Finance/Administrative Section

ICS Components

- Organizing Terminology
- Incident Facilities
- Incident Action Plan
- Span of Control
- Common Responsibilities
- Conclusion

APPENDIX C Workshop Participants

BREA-Oil Spill Training Needs Workshop - October 23-25 Participants List

Name	Association
Conrad Baetz	AANDC
George McCormick	AANDC
Eugene Pascal	Aklavik - Hamlet
Glen Gordon	Aklavik Community Corporation
Wilson Melegana	Aklavik Hunters and Trappers Committee
Doug Robertson	Aurora College
Joel McAlister	Aurora College
Joanne Munroe	Canadian Coast Guard
Ian Denness	ConocoPhillips
Scott Gedak	ConocoPhillips
Amanda Joint	Department of Fisheries and Oceans
Paul Voudrach	Environment and Natural Resources
Steven Charlie	Environment and Natural Resources
Todd M. Paget	Environment and Natural Resources
Mathieu Dossault	Environment Canada
Evan Birchard	Imperial Oil Limited
Neil Darlow	Imperial Oil Limited
Wendy Smith	Imperial Oil Limited
Frank Pokiak	Inuvialuit Game Council
Hans Lennie	Inuvialuit Game Council
Jen Lam	Inuvialuit Game Council
John Alikamik	Inuvialuit Game Council
Steve Baryluk	Inuvialuit Game Council
William "Billy" Storr	Inuvialuit Game Council
Richard Gordon	Inuvik - Hunters and Trappers Committee
Jerry Lennie Inglangasuk	Inuvik Community Corporation

Name	Association
Norm Snow	Joint Secretariat
Doug Chiperzak	KAVIK-STANTEC Inc.
Michael Fabijan	KAVIK-STANTEC Inc.
Tim Taylor	MDSRC
John Korec	NEB / BREA
Millie Trasher	Paulatuk - Hamlet
Marlene Wolki	Paulatuk - Hunters and Trappers Committee
Andy Trasher	Paulatuk Community Corporation
Bridget Wolki	Sachs Harbour - Hamlet
Lucy Kudlak	Sachs Harbour - Hamlet
Ryan Lucas	Sachs Harbour Community Corporation
Steve Potter	SLRoss
Jean Gruben	Tuktoyaktuk - Hamlet
Charles "Chucky" Gruben	Tuktoyaktuk Community Corporation
Noella Cockney	Tuktoyaktuk Community Corporation
Darrel Nasogaluak	Tuktoyaktuk Hunters and Trappers Committee
Agnus Kuptana	Ulukhaktok - Hamlet
Laverna Klengenberg	Ulukhaktok - Olokhatomiut Hunters and Trappers Committee
Lillian Kanayok	Ulukhaktok Community Corporation
Ernest Taylor Pokiak	WMAC-NS

APPENDIX D Workshop Proceedings

BREA Oil Spill Response Training Needs Workshop Proceedings Inuvik, NT October 23-25, 2012

Tuesday, October 23:

1. **Frank Pokiak: Opening Remarks**

   Welcome. It is important for the Inuvialuit to get ready and be trained in oil spill response. Inuvialuit community members are often the first to respond to a spill but how can they respond properly if not trained. As a beginning to becoming prepared, it is important to discuss our desired roles and training needs here at this workshop.

2. **John Korec on BREA Oil Spill Response and Preparedness Working Group:**

   BREA consists of a number of working groups, each targeting a broad subject area to prepare for the potential increase of oil and gas exploration and possible production. One of these working Groups is the Oil Spill Response and Preparedness Working Group. This workshop and study is one of a number of studies being undertaken by this working group. An example of another study underway is looking at northern focused organizations and what their roles and mandates are for a tier 3 Beaufort Sea oil spill. Forty-five (45) northern or northern-focused organizations were approached to respond to a survey questionnaire on this topic. Of these 21 organizations responded to the survey. Their mandates and roles cover a broad range, related and non-related, to the Tier 3 offshore spill scenario described in the survey questionnaire. Their roles include taking a lead role within their jurisdiction and providing assistance and support to other Lead Agencies in the form of environmental protection advice, equipment and personnel, if available. A number of organizations have some of their roles documented in various Agreements, policy directives, plans and statements

3. **Presentation by Steve Potter: Potential Spill Scenarios**

   Overview of main potential spill sources, noting that contingency plans must prepare for small spills as well as “worst-case” events, and oil types can include crude oil, fuels, and lubricants. Most contingency plans use a tiered approach, with equipment held locally for small spills (Tier 1) with equipment brought in from regional sources Tier2) and national or international sources (Tier3) for very large or long-running events. Strategies for spill response will depend on the conditions of the spill, and dispersants and in-situ burning will have to be considered for large spills due to the inherent limitations with containment and recovery.

Discussion Open Forum:

Was the Gulf of Mexico spill a Tier 3 spill? **Reply:** Yes, and they brought in equipment from around the world to respond to the spill.

Have there been similar spills in the Arctic? **Reply:** No, there have been no comparable large spills. There have been some small ship spills.

In-situ Burning:

How does cold water affect in-situ burning? The Gulf of Mexico has warm water. **Reply:** It should not make much difference. Cold water can help reduce the spread of oil under some conditions.

Do you have to use chemicals to help burn the oil? **Reply:** No. We spilled oil under the ice in an experiment and it came up to the surface where it could be burnt.

Is there a problem with the smoke produced by in-situ burning? **Reply:** There can be. There is a lot of soot in the smoke but it is localized and one can predict where the smoke will go. A risk assessment is conducted before deciding to burn. It is best not to burn oil too close to a town.

What are the residuals left after a burn? **Reply:** A tarry substance is left. Some burns are 90% or more efficient. The remaining 10% can be picked-up by other means such as absorbent pads. It is all part of a net environmental benefit analysis.

There is a lot of preplanning needed. It is not always a clear-cut decision whether to burn or not.

What are some of the long-term benefits or risks to in-situ burning? **Reply:** That all depends on what was found in the risk assessment.

Oil in Ice:

How far does oil migrate underneath the ice? **Reply:** Oil becomes encapsulated into the ice and traps the oil in pockets within the ice. We know this from experiments.

How long was the experiment? **Reply:** I am not sure. They did burn off about 90% of the oil and then picked up most of the rest.

Dispersants:

What are dispersants made from are they pollution free? **Reply:** The dispersants are government evaluated and not necessarily toxic, while the oil is toxic. A net environmental benefits analysis is conducted to determine the best oil spill response option.

Can the people who apply the dispersants be from here or are they from the south? **Reply:** The use of dispersants is still far off in the future. For big spills bring in specially trained people from other places and often use specialized planes.

Are dispersants safe and effective for the Beaufort Sea? **Reply:** If dispersants are to be used they are checked by Environment Canada for their toxicity and effectiveness. Use dispersants which are less toxic. There is no list of approved dispersants in Canada; however it is still a viable option. The type of dispersant used is dependent on the type of crude oil.

Do you use dispersants around wildlife? **Reply:** No and that is why we do a net benefit environmental assessment.

EXXON Valdez:

How long did it take to clean-up from the EXXON Valdez spill? **Reply:** Most of it was cleaned up in 10 years but they there are still cleaning-up a few areas.

Recovered Oil:

In oil containment and recovery is there any economic value to the recovered oil? **Reply:** Theoretically yes, but it is not often done.

When the oil onshore is put into garbage bags what do they do with it? **Reply:** They burn most of it.

4. **Presentation by Michael Fabijan: Results of community Consultations.**

Community consultations were held in Aklavik, Paulatuk, Ulukhaktok, Sachs Harbour and Tuktoyaktuk. Attempts were made to meeting with organizations in Inuvik and the general public but these attempts were not successful. The presentation provided the results of these consultations, and the roles and training requirements communities and community organizations expressed an interest in.

Discussion Open Forum:

How do we encourage our kids? **Reply:** There can be oil spill training or discussions about oil spills in schools.

A recommendation was made that a list of who has been trained in each community be developed.

Did you try and consult with Inuvik? **Reply:** Yes, I tried several times to set-up meetings and held a public forum but no one showed.

5. **Presentation by Doug Chiperzak of the results from consultations held with industry and regulators representatives.**

Interviews using a questionnaire were conducted with active oil and gas operators in the Beaufort Sea and with federal government regulators. The questionnaire asked interviewees their perception of oil spill response preparedness in the Beaufort Sea, what is required to be prepared for future activity as it related to potential oil spill response, what roles community members might play in oil spill response, the level of community preparedness, potential limitations to building preparedness and and how to best engage Inuvialuit communities on oil spill response preparedness and capacity. The results of these interviews were presented.

Discussion Open Forum:

Concern:

Concern that [cleanup] will be done in most economical way rather than most beneficial way

Roles:

Want to Stress that Inuvialuit expect to have decision making in cleanup methods.

Training:

Can trained people go to work somewhere else and build experience? **Reply:** Yes, they could especially if they are working for a company that may respond to spills in other locations.

There could be two types of training. One type of training would be for those individuals who have already have some spill response training and could advance to the next level of training. The second type of training is for those individuals who have never before received spill response training.

It was recommended that local facilities be used for training whenever possible.

Spill Response Plans:

Tuktoyaktuk has no spill response plan. Operators have to have equipment and plan to respond to a spill although it does have a plan for a tank spill. **Reply:** Each community has to have a response plan, have trained individuals and hold training exercises. It was also mentioned that oil and gas operators has to have a response plan before any activities can occur.

If Hamlets do have a plan there are no resources to respond. If NTCL has a spill they have to respond. The Hamlet does not have the resources to respond. **Reply:** Operators such as NTCL have regulated responsibility to have equipment on site to respond to a spill.

I am frustrated as to whom to call when there is a spill. Who do you call? **Reply:** There is a 24 hour spill line to call to report a spill and they will address the situation.

Members of HTCs interact with the land, animals and habitat. They are trained through their culture. This is how we can assist spill response by informing them of the land, animals and important habitat. There is a need to develop an action plan identifying who is responsible for spill response, and how to respond to a spill for different locations and seasons.

Preparedness:

A local regulator mentioned that the identification and coordination of people who have been trained is an element of preparedness that is missing. Most of the training that has been given has been for spills on land or spills in nearshore areas and most of this training was delivered some time ago.

It was stated that the GNWT Department of Environment and Natural Resources (ENR) provided training to staff in 2009 and are available to be called to respond. ENR also comes to communities once a year or every two years to discuss spill response matters with communities.

How much involvement is there for Inuvialuit participation in spill response in the offshore, nearshore and onshore? **Reply:** This workshop should identify this.

Youth:

How young do we start training or teaching our youth? **Reply:** Some aspects on oil spills and spill response as well as oil and gas activities in general could be taught in the schools at different age groups.

6. Beaufort Sea Oil Spill Cooperative – Historical Perspective – Steve Potter

The Beaufort Sea Co-op was jointly funded by the three Beaufort operators in the 1970's/80's/90's with the goal of maintain an inventory of equipment and a core group of personnel for spills beyond Tier 1 capability. Each of the three companies maintained a base level of Tier 1 equipment at Tuktoyaktuk, various drilling locations, and other operating areas such as McKinley Bay. In addition to stockpiling a range of equipment for offshore spills, the Co-op developed a group of trained and committed workers available for routine spill responses, field experiments, and support for other environmental projects. The Co-op also provided a visible presence for spill response and attention to "clean" operations at Canmar's base.

Discussion Open Forum:

Training:

How long did you take to train people so that they could respond to an oil spill? **Reply:** Not long. People who live here had boat knowledge, net handling experience. They were readily trained to deploy booms. We had a core group of individuals that worked together for about five years.

Could you deliver a training program now on short notice? **Reply:** Yes, we could as people already have on the land knowledge and experience with boats and nets.

How long would it take to get training into place and how long would the training take to complete? **Reply:** It would not take long to get training into place.

Is there a minimum education requirement? **Reply:** Not sure about minimum education requirement and would depend on the type of training conducted.

We had no formal training back then. All the training was hands-on.

Contingency and Response Plans:

Is it possible for communities to get industry contingency plans? **Reply:** There are currently no projects so they have not been developed yet.

Could we use ship response plans? **Reply:** Not for large spills. Ship response plans are generally not very detailed and focus mainly on small spills.

7. Tuktoyaktuk 2012 Oil spill Training – Joanne Munroe / Mathieu Dossault

An overview of Canadian Coast Guard oil spill response training in the Arctic was presented. Delivery and results of a first responder course and SCAT training held in the summer of 2012 was also presented.

Discussion Open Forum:

Training:

What age can training start? **Reply:** A person has to be 18 years and older due to liability issues.

How long were the courses that were taught in Tuktoyaktuk? **Reply:** Each course was one day.

There was initially no funding to train the people this last summer. IRC stepped up to pay people to participate. Those involved with oil and gas activities should seek out funding for training programs. People should be paid to participate in these training programs. Contractors should build this into their budgets. We can't expect people to participate in these programs for free.

Spill Reporting:

It was commented on that there needs to be someone that is the first called to administer a spill. It was noted that re-supply operators are supposed to report any spills. Local authorities can be used as the eyes and ears in the community.

Response Plans

Hamlet [Tuk] has a response plan and Hamlet personnel are supposed to practice once a year. The plan includes contracts, equipment and contact numbers. The plan is only for areas within their community boundary and does not include the offshore which is out of their jurisdiction. An operator could contact Hamlet if a spill occurred within their boundary. **Reply:** The NWT Spill Line is the appropriate authority to contact.

How does a plan work for foreign vessels? I am concerned about spills from cruise vessels. **Reply:** Any vessel has to report a spill. Vessels in the Arctic do not have contractors listed that they would bring on to address a spill.

Spill Incident:

Incident – NTCL had a year's supply of lubricants dropped off the dock. Spill response was nothing because the containers were not leaking even though they are still in the harbour. Why are they not made to clean up it up? **Reply:** This issue has also been brought forward at the August, 2012, HTC meeting and that I would look into the matter further. There was conflicting feedback from the community, other regulators and NTCL. There could be recovery issues if the ice at the dock froze to the bottom (meaning that the containers could already have been compromised and/or moved by the ice).

Wednesday, October 24

8. Tim Taylor – Presentation MDSRC

The Mackenzie Delta Spill Response Corporation was set-up in Inuvik to prepare for potential spills which might occur due to oil and gas activities in the Mackenzie River delta area. The presentation included the types of spills that could be responded to, the types of equipment held by the Corporation, training of community members and lessons learned through the operation of the Corporation.

Discussion Open Forum:

Co-op and Spill Response Company:

What does Alberta have for spill response companies or co-ops? **Reply:** Alberta has regulation that oil companies have to belong to a co-op.

In Alberta belonging to a co-op demonstrates that you have spill response capability. For an exploration company it is a large expense to have spill response capability. It is less expensive to be part of a group.

Is the offshore going to have spill response? **Reply:** Yes, however companies do not have to be a member of a co-op.

Not as much activity in the north now as there was before. Companies will have to show how they can respond to a tier 2 and 3 spills. If there is only one company it will have to have access to equipment to any spill they may cause. They can bring in another company to respond. It is not required for companies to belong to a coop. Companies have to show they can respond or they will not get authorization to drill. Companies will have to prove to the NEB/EISC/EIRB. This is in the regulations. They can hire a company or they can be part of a co-op.

For offshore drilling it is not voluntary to have spill response capability it is not defined how you do it.

NEB requires companies to develop spill response plans and communities would have the opportunity to input into the plans.

Why do we not have one [co-op] in the offshore? **Reply:** It was not part of our scope when we were set up as the MDSRC.

If you go off shore you will get an offshore boat? **Reply:** We will be told what the scope is and we will define the equipment needs and costs then.

Nuisance Kits:

How big a spill can nuisance kit handle? **Reply:** Nuisance kits can usually handle spills between 1000 to 2000 liters.

What is the cost of a nuisance spill kit? **Reply:** Depends on the location and what is put in the kit. The cost also depends on where you get the Sea Can. Coast can range from approximately $20,000 to $50,000.

Who bears the cost of the nuisance kit? **Reply:** The owner.

Selection of Trainees:

How are spill response training class participants selected? **Reply:** The classes are open to the owners and then the public. We never had to turn people away.

Use of Oil and Spill Exercises:

Will you ever train using oil? **Reply:** Don't think the regulators will allow us to use oil. The Norwegians do practice with real oil on ice.

For training purposes [using oil] is feasible. Regulations allow spillage for scientific research. Could do training as an experiment.

AANDC would see using oil as introducing deleterious materials.

Oil was used all the time for spill training or research. Ken Lee used oil in the St. Lawrence with dispersants. There is a vehicle under Canadian law to do this.

Would like to see if they know how oil responds under ice?

Incident Command:

Each company will have an Incident Command. If each HTC came up with an Incident Command system they could say how they would like to have companies respond in their area, would the NEB and companies accept this? **Reply:** The incident command system is used by many groups. If you are trained in the Incident command system then you know what your role will be in an incident. Oil companies essentially have the same system.

ENR has Incident Command system.

HTCs do not today have an incident command system. HTCs should have our own command system.

MDSCR is a vehicle for training. Operators would get communities to go through incident command system training and modify if needed. Communities need to better understand the incident command system.

Companies have to have a contingency plan which has to be coordinated with Federal, Territorial and appropriate municipal plans.

In the end nothing will go ahead unless everybody agrees on and knows what their role is.

Training:

Is all training conducted with an exercise? **Reply:** Yes.

Will only the companies doing the drilling get training? **Reply:** Will people in our communities get training? Yes, people in the communities will get training. The goal of the workshop is to see how you want to participate and contribute and then determine the training required.

Each community wants to be prepared and trained. Need people trained for communication. People can be trained for communication positions.

Want people in communities to be trained to respond to an incident. I am concerned that if an event like Macondo occurred here we would have no animals.

Are people being directly trained for their jobs? **Reply:** Members can send people for training so that they can be first responders

Tier 3:

Is their training for Tier 3? **Reply:** Yes, but the MDSRC does not provide this training.

What is the closest tier 3 response organization to the Beaufort Sea? **Reply:** Tier 3has many source areas in Canada, US, and the World. This includes OSR in England and Southeast Asia

What is response time for tier 3? **Reply:** Time standard for spill dispersants, OSR says they can respond within 24hrs anywhere in the world. This is part of the planning process.

9. **Presentation by Steve Potter – Stages of spill response and potential response roles:**

There are three main “phases” of overall response: planning: prior to spill and an ongoing activity; response: hands-on cleanup activities; and monitoring during response and potentially for some time after. Potential roles in planning would include consultation during plan development, inclusion of local knowledge in selecting response techniques and comparison of alternatives, participation in exercises of the contingency plan, consultation on cleanup and protection priorities, and consultation on cleanup endpoints. Potential roles in hands-on cleanup would include nearshore protection of important coastal areas and shoreline clean-up operations. Monitoring would include: field sampling of water, air, shorelines; observation of cleanup activities; and wildlife and habitat monitoring. All of these would benefit greatly from local knowledge.

Discussion Open Forum:

Clean-up Agents:

Will cleanup agents have an effect on marine animals we eat? **Reply:** The agent would have to be assessed through the regulatory process. The agent would have to go through a net environmental analysis. If toxic, the agent used would have to be monitored.

Steve, can you speak to monitoring toxins in country foods? **Reply:** Sampling programs could be set-up to see if wildlife is safe for human consumption. For the Macondo spill, fisheries were closed, then sampled, until it was felt catches were safe. Not everything is monitored. It is based

on exposure. If effects continued then sampling and monitoring would be conducted until it was safe.

Responsibility:

Are there places where industry refused to accept responsibility? **Reply:** Don't know of any it is a requirement of the job to have a contingency plan.

Concerned that there will be pressure put on Inuvialuit and regulators. Companies will take on many things to work in area. If they don't want to do it then they won't come in. **Reply:** If they acquire a licence then they are committed.

10. **Presentation by Steve Potter – Types of Training:**

There are three main areas identified by the project team and in the community consultations for potential roles for local assistance in a spill response: advisory and consultative role, hands-on response role, and monitoring and assessment. As well, there is a need for broad-based community training on a range of spill and spill response topics.

The advisory role would include participation in pre-spill planning and in decision-making on countermeasures selection, in particular when dispersants or in-situ burning might be considered. The command team would benefit from experience and knowledge on local conditions regarding weather and sea conditions, and wildlife and habitat issues. The training needs for this role would include spill behaviour, countermeasures techniques including a comparison of the trade-offs involved, and on net environmental benefit analysis (NEBA).

In terms of hands-on response role, large-scale offshore spill response will have limited opportunities for local input and the main role for community members would be in nearshore activities, shoreline protection using booms and skimmers and shoreline clean-up operations. The required training would include introduction to spill behaviour and detailed knowledge and practical training in specific techniques.

The monitoring and assessment roles would assess clean-up activities for their effectiveness and assess potential spill effects on the environment, and the response team would benefit from local knowledge on regarding weather and sea conditions, and wildlife and habitat issues. The training needs would include the basics of spill behaviour, an overview of countermeasures techniques, the principles of NEBA, and standardized shoreline assessment techniques and terminology.

Discussion Open Forum:

Selection of Trainees:

No Inuvialuit in the room has experience responding to an oil spill. It will be up to HTC, IGC to select persons to represent them. **Reply:** It should be remembered that we cannot train everyone.

We have new people on each board each year so would need training each year.

There is a need for consistency. The person being trained does not necessarily have to be an HTC director. The person could be someone the HTC is comfortable with.

REET – There is an expert in each discipline on the team. Each person contributes on their speciality.

From Aklavik we want involvement and a person that is interested. They do not have to be on the HTC board. It could be one or two individuals than can put effort into training.

From the communities perspective it is important to have continuity.

If we had 20 people in each community with skill you would be able to cover off capability. For example, firefighters and coastguard could be trained. Not necessarily one key individual but could have a number of people available.

I am concerned about the cost. We can't wait until an oil spill to start training.

Communication role:

The community could have one person or a small group that can report back to the community. The person being trained will understand the process. **Reply:** We would not expect them to be an expert.

Communities could be prepared to nominate a person from the community to be a point of contact as they are going through the planning phase. This person would report back to the community.

Advisory roles:

An advisory board with membership from each community could be created. It could have expertise within the group.

Want person to be part of decision making process not just advisory.

Past spills in the ISR:

Have you had to respond to spills in the Beaufort? **Reply:** We have responded to small spills. Example in McKinley Bay – related to spills 20 years ago.

We had a spill on the land in Sachs Harbour and it took a while to detect. This may seem small but to us it is big. **Reply:** 1st step is detection. There was no detection mechanism so problem got bigger.

11. Steve Potter – Training and Certification:

The original intent was to review existing courses for their potential applicability, and a number of options were listed. However, it was thought that, given the proposed roles and training requirements, customization would likely be necessary. Many of the available courses are highly portable, and could easily be given at northern locations. Some of the more specialized courses

would require travel, but this would be the case only for a small number of personnel. Finally, no certification program exists for spill response training.

Discussion Open Forum:

Do you train teachers to be culturally sensitive? **Reply:** Cultural awareness could be provided to trainers, some companies provide cultural awareness training for their staff.

12. Break-out Groups

Three breakout groups were formed to discuss potential roles for all phases of oil spill response activities including pre-planning and post monitoring. Breakout groups were also asked for what types of training was required, the identification of knowledge gaps, preferences for training locations and provide recommendations on how to proceed with building spill response capacity and input into spill response related activities.

Break-out Group 1:

1- Incident Command

   a. Would like to have Inuvialuit position in the incident command. This person would report back to and consult with an Inuvialuit advisory board.

      i. Want greater involvement in onshore response

      ii. Want Inuvialuit involvement in real time as part of the response.

   b. Incident Command representative would be decided by IGC. Need funding for.

   c. Inuvialuit could have regional representative

2- Inuvialuit oil response committee

   a. One representative from each community

   b. One person from ICS

3- Report from this workshop should go back to communities for approval.

4- Training should be at community level

5- Need to educate communities on oil spills – all facets including fate and effects and response methods

6- Could get ARI to put on course

7- Response training

   a. Have training in communities. This is the area people know and will be responding in.

8- Funding

   a. Has to be funding for training – who pays?

   b. sources for training – possibly IRC, IGC, Government and Industry

9- How many people do you want to train?

10- Tier one response – use local people.

11- Industry will be involved in training.

12- Important to differentiate between education and technical training.

   a. Technical training

      i. for people working on the program. Oil spill response is one type of job

      ii. industry tends to contract out

      iii. ARI has oil and gas coordinator that has funds for training

   b. Knowledge training

      i. Industry would do themselves

13- Education

   a. Need to educate people on oil spills – tiered responses, command systems, consequences, processes

   b. Need to understand an oil spill before can determine how Inuvialuit should be involved

   c. IGC should select an oil spill person and they should go out and get educated. This should be a job. Sources for funding possibly IRC, IGC, Government and Industry

14- Drilling Rig

   a. Want to have Wildlife/environmental monitor on the drill ship

Break-out Group 2:

What Possible Roles?

1. Pre-planning

   a. pre-assessments of critical resources

   b. CCP critical areas

   c. Who? IRC, IGC, HTC's, Hamlet , local resource person ERP contact person in each community

2. During Spill
    a. Regional Co-op
    b. Oil and Gas committee set-up like IGC – main person (e.g., chair) and one at least one person from each community.
        i. Provides advice on spill response
        ii. Share information with schools on oil and gas activities and spills etc.
    c. Where does money come from industry, government to provide training etc?
    d. SWAT response team
    e. Environmental Unit
    f. Who? Hamlet/Co-op / 6 communities; Hamlet ERP, - contact persons
3. Response Strategies
    a. Monitor companies spill response
    b. Provide advice and input on spill response options
    c. Basic assessments
    d. Committee with a main person who would and representatives from each of the 6 communities
4. Post monitoring
    a. Long-term post spill monitoring
    b. Monitor fish, wildlife, shorelines
    c. Monitor harvesting – information required before and after spill
5. Where should training take place
    a. In communities where possible
    b. Specialized training where training facilities are
    c. Training for core groups in communities
    d. Community resource spill libraries be set-up which have training videos and manuals etc.
6. Advisory group and training
    a. Similar structure as IGC
    b. Pick 2-3 people from each community – need consistency of those involved
    c. Community liaison to assist in information sharing such as with mayors
    d. Career day in schools

7. Knowledge gap between what industry knows is required for a plan and what communities understand. Communities lack knowledge of what is contained in a plan. Industry should inform communities on what they consider when developing a plan and what the contents of a spill response plan are.
8. Other:
    a. Where do we go for funding?
    b. Need to find cost-effective ways to train people
    c. Companies fund training through who?
9. Recommendations:
    a. Inuvialuit or advisory board to interface with communities
        i. Structure similar to IGC and IRC with communities representatives but also government and industry
        ii. Report to IGC and IRC
    b. Inuvialuit company or co-op to conduct spill response etc.
    c. Prepare to have Inuvialuit experience and expertise ready – capacity building
        i. Could work on other spills

Break-out Group 3:

1. Community Planning
    a. Have an oil spill planning workshop (like Imperial Oil workshop)
    b. What type of oil?
    c. HTC participation – elders and other beneficiaries
    d. Hamlet, Community Corporation and interagency participation
    e. Funding needed to support community participation
    f. Community representatives advisory board
    g. Build capacity for community reps on advisory board
    h. Prioritize needs by season
    i. Use traditional Knowledge to identify sensitive areas by season
    j. Will industry provide capacity
    k. Joint Secretariat possibly provide administrative support to bring together community representatives

l. Community Conservation Plans should be used

2. Hands-on Response:
    a. Require ongoing training.
    b. Need advanced first aid
    c. There are few skilled workers but a lot of hard workers
    d. Equipment – learn about new technologies
    e. Equipment operators
    f. Boat operators
    g. Shore line clean-up
    h. Have an oil spill co-op or private company
    i. Should be Inuvialuit owned
    j. Industry should provide start-up dollars
3. Communications:
    a. A communication officer in each community
    b. Lessons learned?
    c. Communicate with local leaders
4. Monitoring and Assessment
    a. Put together a collection of already existing Traditional Knowledge and information
    b. Shipping
    c. Elder and youth involvement
    d. Have an advisory board
    e. Community monitors
    f. Community individuals for data collection
    g. ILA involved where private lands are involved
5. Training
    a. Tier 1 and Tier 3 training
    b. Advanced first aid
    c. HazMat, safety training
    d. General community awareness
    e. Training on command system – from start to finish

f. Have a table top workshop

g. Simulation exercises

h. NRTP and collaboration with NRTP

i. Environmental monitoring course

j. Boat operators certificate

k. Possession and Acquisition Licence (P.A.L) for firearms..

l. Coordination with already existing programs

m. Personal protection equipment and issues

6. Delivery of Training

   a. Selection of individuals from HTCs, CCs and Hamlets. Like recent SCAT training in Tuktoyaktuk this summer.

   b. High school career day

7. Management and Coordination

   a. Inuvialuit or IDC owned company or co-op

   b. Need long-term commitment from industry

   c. Part of submission to NEB

   d. Need up to date list of trained members

Thursday, October 25

13. BREA – Panel discussion: Evan Birchard, Tim Taylor, Steve Potter

The Panel discussed the various forms of spill response delivery; such as corporation or coop. The advantages and disadvantages in terms of the Beaufort Sea and how exploration and development may unfold in the upcoming years. The Panel answered questions from the workshop participants.

Spill Response Companies:

Who is responsible if something happens? Six communities want to set guidelines to how things happen looking at worst case scenarios and the scenarios presented here raise concerns. We expect IOL to have response companies in place for response. I am concerned that you have to bring in contract companies from other areas that may not recognize areas of importance when conducting their response. Want it all in place before there is a development. Need to educate our people as to what is an oil spill in order for us to decide what to do Proponent is responsible.
Reply: If we proceed with drilling we will have T1, T2, T3 capability in place. The question is what does it look like?

How soon would you hire the contractor as part of the regulatory conditions? **Reply:** In 8 years the lease expires. Half this time is for regulatory process and approval. Assuming approvals and that IOL is able to meet conditions then IOL will make a decision on proceeding. Then IOL will see what it needs. May have to build a new drill ship and ice breakers which would take 2-3 years or may contract vessels. One requirement is to put together oil spill response capability. This includes training, exercises, equipment, contractor and people. Would take do 2-3years before spudding the well.

Would contractor be responsible to train local people? **Reply:** The contractor is hired to do a job as defined by the proponent. They have to have the capability to do the job and have experience. Part of the contract may be to do an assessment as have not done one in a while because such an event is rare.

Would they be trained to Tier 1, 2, and 3? **Reply:** Yes.

Would the proponent cover the cost of training? **Reply:** Yes. Training is part of the cost for the contractor.

Think that a joint venture company is a good idea. Need a solution for oil under ice cleanup. Have to setup base manual for cleanup before drilling. Each community is different. Each community has different critical areas for different reasons. After this workshop we have to go back to the HTCs. **Reply:** Good. There are some responsibilities that the communities have to take.

Now I have a little understanding of the process. Have to still deal with our people to start a training entity in our communities that introduces oil spills to our communities. We have people in the region that have local knowledge we need to determine a training entity.

View of Spills:

T1, T2, T3 – your view is different than ours. It is all important to us.

Capacity:

Need to see what capability we have in the communities. Need to look at from the ground up.

NEB Requirements:

- can you do work safely
- can you respond to a spill
- regulations require exercises

Training General:

For under ice spills we have information and knowledge can do overview training for a large number of people. Training can go through Tim Taylors group. He can adapt and add to his capabilities training could be run in conjunction with Inuvik Petroleum show or IGC meetings. This may be able to be added on as a knowledge exchange. Could get started soon and maintain momentum.

Could training be provided as an add on to other events. **Reply:** Yes it could. Could start with introductory level of training and get into more detail as approached well spudding. Suggest introductory training over the next few years. Need funding for the training need to give lots of advance notice for training

Can you work with ARI and communities to have you come up for training courses? **Reply:** Yes. I (Tim Taylor) did put together a self-study book in the past. ARI has oil and gas training.

Where is the funding for the training going to come from? **Reply:** It will come from the companies if their programs progress. If training is directly related to a project funding will come from the proponent Funding is not the issue the issue is moving forward. Tell us what you need.

Oil spill awareness training formats and venues are flexible. Can do oil spill awareness training and knowledge transfer sooner? **Reply:** Oil spill response training is further down the road.

Can use Aurora College and incorporate training into college program. It is tough for people to leave the region for training. **Reply:** Training venue is flexible. Environment Canada is a support agency. If needed, training solutions will be found.

In the 80s the training with Esso was in Swan Hills. Why can't we bring it back? **Reply:** It has not been here since 1989 but it can be brought back.

Start with general training and work up to more specialized training. There is an opportunity to be service providers.

Funding for Training:

Don't know funding sources. Where do we get the funds? Industry won't kick in until have NEB approvals for the project need to find funds now. Who do we approach? Training is needed now. Do we ask BREA to put money aside for training and educating people on oil spills. We want to be involved but need money to be involved. Reply: This workshop is to find out what is needed. BREA does not know what happens next if keep pushing funding will come.

Local Knowledge and Sensitivity Mapping:

HTCs have categorized areas on the coast. HTCs have limited budgets and do not have the money for extra meetings. We do not have the resources.

It is important to have knowledge in advance there is an atlas in place. Funding projects could be between industry and government

The existing atlas should be updated.

ESBASE project for shoreline characteristics. Sensitivity mapping is part of system.

Organizing Recommendations:

There needs to be a plan and schedule for putting recommendations in place. **Reply:** We can break down the list of recommendations to immediate or later.

Approvals:

When do you expect approvals? When would you start training? We do not just want labour jobs. We should start training people now. **Reply:** We expect spudding 2019-20. It would be expected that training would start in approximately 2016. Now till 2016 we work on regulatory approvals. Need to see if we can meet conditions. That is when service contracts and training start.

Community Contacts:

I like idea of single point of contact in communities. I see some short and long term training delivery methods.

Planning:

Will this report be used for planning development? **Reply:** It could be. It is up to others on how they want to use the results.

Now we go back to our communities to develop plans. Yes, now is a good time to start the discussion.

There are spill plans available now for on land spills.

Additional Workshops:

Can you plan any workshops on spills? **Reply:** Looking to see what we can do for next year. We want to see report for this project first. Yes there could be a workshop on spills.

Other Funding Needs:

In the report for communities we need to know channels for funding, need oil spill strategy for each community and then bring together everyone. **Reply:** We will consider and see what advice we can provide.

Who pays for advisory committee? **Reply:** I don't know. You have to decide if you want an advisory committee and then determine how it would work.

Workshop Results:

We would like to get the workshop summary. **Reply:** We will have workshop proceedings which will include the presentations. We will also have final report which will have more on training. This will be sent out to participants, agencies, etc.

What is the final product? **Reply:** The final product is a final report which will include the proceedings from this workshop and analysis of training and recommendations.

APPENDIX E

Workshop Presentation

Overview Of Oil Spill Countermeasures For Spills Related to Beaufort Sea Exploration and Production

KAVIK-STANTEC

SL ROSS

Overview of Presentation

- Overview of main potential spill sources, oil types, spill types
- Tiered approach to spill response
- Main strategies for spill response
- Key features and limitations for each tactic

Potential spill sources

- Potential spills may include small spills as well as "worst-case" blowout
- Fuels and lubricants used to operate vessels and drilling platforms
- Depending on type and location of drilling operation, there may be vessel traffic to and from supply base

Potential spill sources – oil type

- Oil type very important to persistence of spill and type of response
- Diesel fuel, jet fuel, light crude oils are very dispersible under natural sea conditions
- Cleanup response for very small spills may not be practical in many cases

Potential spill sources – location

- Spill location very important to type of response
- Some countermeasures options have limitations based on:
  - Distance offshore
  - Weather and sea conditions
  - Presence of ice
  - Shallow water
  - Closeness of populated areas

Tiered Approach to Spill Response

- Contingency planning to prepare for a range of spill types and sizes and locations
- General approach is:
  - Tier 1: Equipment on site for small spills
  - Tier 2: Equipment available from regional sources for larger spills (but this may be difficult in the Beaufort)
  - Tier 3: National/International effort for very large and long-running incidents

Main Spill Strategies - Offshore

- Containment and recovery (booms and skimmers)
- In-situ burning
- Dispersant application
- Monitoring requirements
  - Cleanup effectiveness
  - Effects of burning and dispersants
  - Wildlife and habitat effects

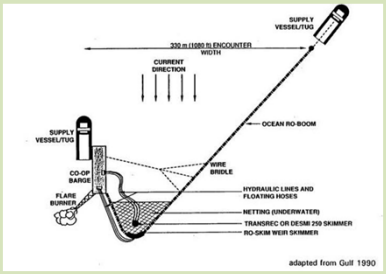
Key Concerns in Strategy Selection

- Cold temperatures
- Presence of ice
- Darkness for winter months
- Availability of logistics and personnel
- Support for operations in remote locations

Containment and Recovery

- Generally regarded as the preferred response strategy, when applicable
- Limitations for large spills, in Arctic and temperate locations
- Could be used in open-water season and shoulder seasons when more ice present

C&R circa 1990



Barge-based containment/recovery/disposal

In-Situ Burning

- Primary countermeasure in open water and in various concentrations of ice
- Relatively high effectiveness in some situations
- Relatively low equipment and manpower requirements

Dispersant application

- Primary countermeasure in open water and in various concentrations of ice
- Relatively high effectiveness depending on oil properties
- Relatively low equipment and manpower requirements

Dispersants

- How well do they work?
- Is an operation feasible?
- Will they do any environmental good?
- Regulatory controls

Dispersants

Will Dispersants Work?

- Effectiveness in Cold Water
- Presence of Ice

Dispersants

Will they do any environmental good?

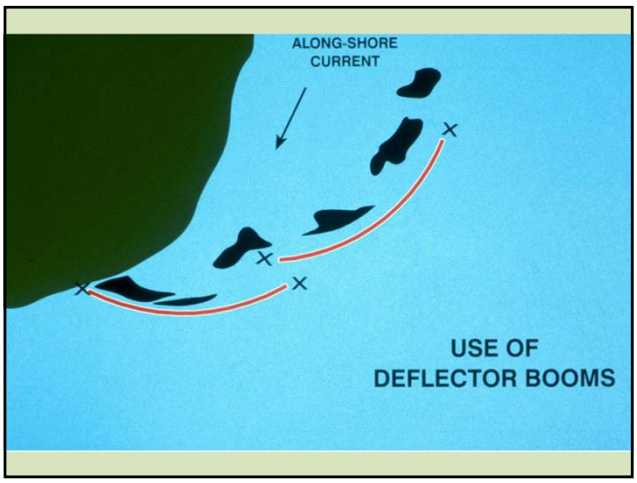
- Trade-off between surface resources (e.g., birds) at a potential cost to sub-surface resources (e.g., fish)
- Make decision using a Net Environmental Benefit Analysis (NEBA)
  - Compare impacts of spill using different countermeasures
  - Dispersant use will have less overall effect in many situations
  - There is adequate toxicity and resource data for the southern Beaufort to make an informed decision
- The first NEBA system was developed for SBS 1988

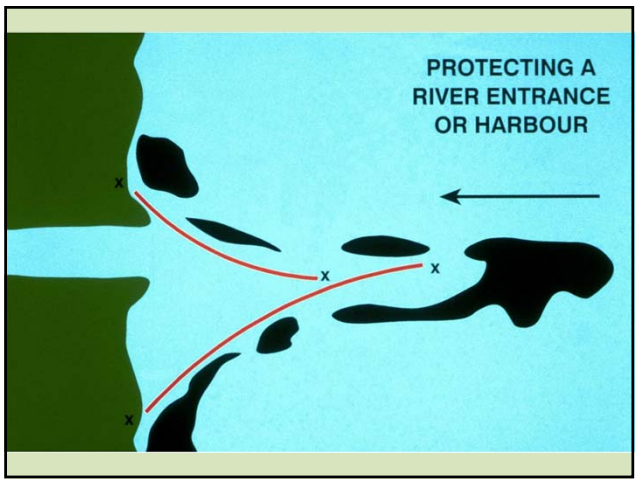
Countermeasures Applicability: Various Ice Conditions

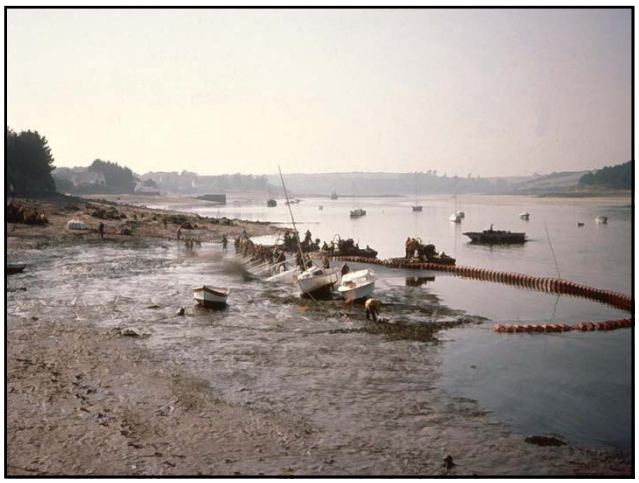
- 0 to 3 tenths
  - Oil spread and movement not affected much by ice
  - Use open-water techniques (C&R, fire-resistant booms, dispersants)
- 3 to 6-7 tenths
  - Oil spread slowed by ice pieces
  - Difficult to maneuver booms
  - Herders to aid burning of thick slicks
  - Dispersants
- 6-7 to 9+ tenths
  - Floes touching, oil contained, thick slicks easy to burn
  - Dispersants with added mixing

Main Spill Strategies - Nearshore

- Containment and recovery (booms and skimmers)
- In-situ burning
- Dispersant application
- Nearshore protection techniques
- Shoreline cleanup techniques







Key Contingency Planning Issues

- Lack of infrastructure
- Equipment delivery
- Personnel support
- Waste handling
- Offshore locations remote from other responders: limited pooling of resources
- Arctic environment limits response options

Summary

- Tiered approach to spill response
- Main strategies for spill
- Key features and limitations for each tactic
- Challenges specific to the Arctic

Questions?
Steve@slross.com

Spill Response Training in the Beaufort Region: Community Consultations

KAVIK-STANTEC

SL ROSS

Objectives

Identify Inuvialuit preparedness and response capabilities to potential offshore oil spills during exploration or production:

Identify:

- How Inuvialuit can realistically participate in responding to spills from:
  - Offshore drilling and production
  - Nearshore drilling and production
  - Shipping activities
- Current capacity
  - training, equipment, infrastructure, personnel
- Projected needs
  - Identify projected training
- Realistic roles for communities
- Identify gaps so that communities can fill these roles

Community Meetings

- Meetings were scheduled in each ISR Community
- Invited – HTC, CC, Hamlet, Public
  - Aklavik – HTC, Public
  - Tuktoyaktuk – HTC, Hamlet, Public
  - Paulatuk – HTC, CC, Public
  - Ulukhaktok – HTC, CC, Hamlet, Public
  - Sachs Harbour – HTC, CC, Hamlet, Public

Overview Oil Spill Countermeasures

- Tiered approach to spill response
  - Tier 1 – equipment on site,
  - Tier 2 – equipment available regionally
  - Tier 3 –nationally or international effort for large and long running
- Main strategies for response – features and limitations
  - Containment and recovery booms
  - In – Situ burning
  - Dispersant use and application

Spill Response Roles & Training Requirement

- The main techniques or areas of response operations considered here include:
  - Initial spill assessment
  - Containment and recovery techniques
  - In-situ burning
  - Dispersant use
  - Shoreline protection and cleanup
  - Shoreline assessment and monitoring
  - Habitat and wildlife assessment and monitoring

Initial spill assessment

Where: Personnel at the scene of the spill and likely involved in normal operations.

Responsibilities would include:
- activation of the response plan, notification, reporting

Community role
- Training - awareness level training of spill behaviour and spill assessment issues would be required.
- Want community to be part of the response team
- Spill assessment
  - Want community people as part of initial assessment team
  - Have a board or a committee
- Use harvesters and people with knowledge of local conditions.
  - People here know what happens in this area. Maybe different than the scientists view of what goes on.
  - Conditions are changing in the each communities area.

Training
- Want training for a community advisor for the initial spill assessment.
- Want people trained for involvement at the beginning.
- Concerned that government and industry will just take the easy way out when selecting response technique.

Offshore Containment and recovery techniques

Where:
- from large marine vessels (offshore supply vessels and the like)
- limited manpower requirement beyond the vessel's crew.

Community role
- Train local people to do work
- Add monitoring involvement to sign off and say that you did the best you could and that it was done completely. Or they say you could do more.
  - Have a monitor like an ILA monitor on board.
  - Need training so that local people can make this assessment.
- Community to have observer on site to see what the impact was on wildlife. Would need training to do.

Offshore - In-situ burning

- From vessels or from the ice, manpower and equipment delivery by helicopter or ice-breaking vessels

Community Role

- Personnel for:
  - Carry out burning – need training for
  - monitoring of in-situ burning – air samples and monitoring effects on wildlife
  - training would be required on gathering and documenting air samples from land locations.
- Add Local monitor at site to assess effectiveness of burning. Need training for.
  - Get information from other monitoring programs as they may see things that were missed.
  - Have somebody from community sign off to say this has been done to the satisfaction of the community.
    - At dewlines- still finding drums after cleanup because people wanted to leave.
    - At Stokes point community was involved as part of steering committee. Got awards.
  - Should monitor effects on delivery personnel
- Have community communication person
  - Need training for

Offshore Dispersant use

Potentially be used in all seasons

- depending on specific spill circumstances and ice conditions.
- conducted from large aircraft and from large marine vessels (i.e., offshore supply vessels and the like)
- limited manpower requirement beyond the aircraft or vessel's crew.

Community Role

- Should have monitors on vessels, aircraft when applying dispersants.
  - Assess work effectiveness and effectiveness of the dispersant. See if they are hitting targets.
- taking water samples and recording data
- Monitor effects of dispersants
  - in advance of activity, during use of dispersant, and after
  - Could do some lab work locally – at ARI
  - Set up multiple monitoring locations in ISR – ex – several along North Slop
- Training
  - training would be required on gathering and documenting water samples.
  - Could be seaman training for vessels
  - Need training to understand dispersants and their use so that can participate in assessing their effectiveness in the field.

Shoreline protection and cleanup

Response effort for nearshore protection of important coastal entities

- one or more of containment booms,
- in-situ burning,
- dispersant use.

Community Role

- mobilized, deployed, and operated from small to medium size vessels
- Provide local knowledge.
- Clean up could involve a large response effort depending on the extent of the spill.
- using medium and small vessels
- Participate in delivery of cleanup techniques
- Provide camp and support personnel

Shoreline assessment and monitoring

Standardized assessment techniques

- used to provide a common base for collecting shoreline oiling information
- used to set cleanup priorities.
- require a significant manpower effort
- benefit greatly from local knowledge

Community

- Personnel for nearshore protection and cleanup operations use containment booms, in-situ burning, and dispersants
- Have local coordinator – directs operations and keeps track of activities
- Have a local assessment team that knows local conditions, weather.
  - travel conditions such as where you can and not get to with boats.
  - Where effective base camps could be.
  - Particularly important sites for wildlife and habitat – seasonal sensitivity
  - Part of this would be accomplished by involvement in developing original project emergency response plan.
- Collect baseline data.
- Part of this would be accomplished by involvement in developing original project emergency response plan.

Shoreline protection, cleanup, assessment and monitoring

Training required on:

- small vessel operation,
- boom deployment and operation,
- skimmer deployment and operation,
- pumping and fluid handling
- in-situ burning techniques,
- dispersant application, and
- shoreline cleanup techniques
- standardized assessment techniques and terminology
- Safety training
- Coordinator and administrative
- Monitoring techniques – data collection and recording

Habitat and wildlife assessment and monitoring

Include both land and marine-based monitoring of spill effects.

Community role

- Want to be involved in assessment
- Require a significant manpower effort
- Benefit from local knowledge.
- Personnel required for land- and marine-based monitoring of spill effects
- Need to be involved in assessment
- Monitoring fish, air, water, air, wildlife and habitat
- Baseline monitoring will give people skills so they know what to do if there is an event. Advantage to doing work and learning outside of a crisis situation.
- Have local community coordinator.

Training

- Coordinator
- Monitoring and documentation procedures.

Incident command

Community Role

Community representative to advise command team:

- on local conditions that may affect spill behaviour
- countermeasures effectiveness,
- provide resource information that will be useful in countermeasures selection.
- may be able to play an advisory role in dispersant-use and in-situ burning decision-making.

Training

Extensive training on:

- oil spill behaviour
- selection of response techniques
- environmental effects of spills and countermeasures
- net environmental benefit analysis
- supplemented with participation in workshops and conferences to ensure that the team is abreast of new developments.

Community Capacity

- Do not have oil spill response capacity
- Equipment
  - Lack proper response equipment
    - Some Local equipment for small fuel spills
  - Local equipment committed to other work
  - Limited local equipment
    - Could rent some boats and ATVs from residents
- Lack trained personnel
  - Some local training – limited, dated, no followup
- No local organization

Training - What

- Communities all interested in receiving
- Programs
  - Effects on wildlife, habitat and people
  - Response techniques
  - Monitoring techniques
  - Fate and effects of oil, dispersants, and in situ burning
    - Including behaviour under ice and seasonally
  - Safety

Training – where and how

- Deliver locally in each community
  - Cost effective
  - Train more people
  - Lower drop out rates
  - Hands on under local conditions
- Delivery methods
  - Class rooms and in the field
  - Videos on all aspects of drilling and oil spill response
    - people can view and review on own time
    - Create and educated public
    - "people would watch the videos"
  - Local schools
    - Information packages for inclusion in curriculum
    - Educate and foster interest in training and associated careers
    - Have science fair contest on creative ideas on oil spill response
  - Local workshops
    - Drilling
    - Oil spills and response techniques
    - Fate and effects of oil

Training - Who

- Public that are interested and committed to act as responders
- Youth
  - Both in schools and as part of programs
- Elders
  - So they can then apply traditional knowledge to developing response plans
- Local organizations
  - Fire department as already experienced with fire

Training – maintaining skills

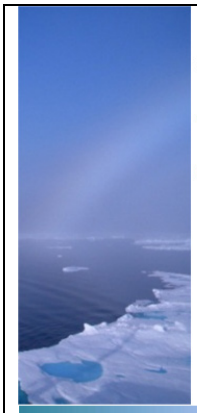
- Need to maintain skills
  - No follow up from previous training programs
- Need local organization to lead
  - Possibly fire department or hamlet
- Regular exercises and review of materials
- Trained personnel could be used as responders for other spills world wide
- Practice with barge and cruise ship traffic

Monitoring programs

- Start programs soon
- Monitor – according to potential fate of oil, dispersants and in situ burning
  - air
  - Water - sea, lakes, rivers
  - Land – beaches and inland
  - Wildlife – marine, fresh water, terrestrial
- Collect baseline
    - Use standard oil spill monitoring techniques
  - Develop skills under non crisis conditions
  - Can train community individuals
    - Communities have some experience already
- Could be part of FJMC Community based monitoring program

Local Knowledge

- The communities noted that they have a lot of local knowledge that could be applied to all phases of a drilling program and responding to an oil spill.
- Some of the local knowledge points that were shared during the meetings include:
- Ulukhaktok people are seeing logs coming from the MacKenzie delta in their region. The logs get there with the strong currents and big south winds that they get now that they never used to get. There seems to be more and more south winds. This also causes the water to come up furtherer on the beach and almost to the road. People now. People now have to pull their boats further up the beach with the south winds.
- Ulukhaktok- We have extreme weather and weather changes.
- Ulukhaktok- We have more than four seasons. People were commenting on weather seasons and different harvesting seasons such as duck season, caribou season, fish season, seal season etc. They noted that these are different in each community.
- Ulukhaktok- The ice doesn't get thick anymore because the currents are getting stronger underneath
- Ulukhaktok- Between the islands the flow picks up quicker. The currents are getting stronger every year.
- Ulukhaktok- The currents are getting stronger and eating the ice.
- Ulukhaktok- Even the currents change. They are not the same direction as they were before. The currents are changing so fast our landscape on our shoreline is changing.
- Ulukhaktok- When we get a big south wind now the water comes way up. Sometimes it is just about reaching the road line.
- Ulukhaktok - There should be a lot more studies on fish because we are starting to get so many different kinds of salmons that we didn't get before.
- Ulukhaktok – Waves and winds are getting stronger.
- Ulukhaktok – Charr go down to the deepest part of the ocean for winter.
- Paulatuk – could use noise to deter whales from and the area of a spill.
- Paulatuk – monitoring could use eider ducks, loons, oldsquaws, mergansers and others. These are the ones that will be the hardest hit because they are diving into the water. There are molting birds in June and July. These birds are on the water and not flying.
- Paulatuk – The water is getting rougher with less ice.
- Paulatuk – In August and September there is now a northwest wind about 20 days per month. That will be your indication of where the oil is going to hit land.
- Tuktoyaktuk – There are different currents in this area
- Tuktoyaktuk – Local people know how the ice moves under different conditions. For example when there is a west wind the ice comes in and with an east wind the ice goes out.
- Nearshore and offshore current movements are different



Who?

- Regulators (NEB, CCG, DFO and EC)
- Oil and Gas Industry Current Operators(Imperial, Chevron, ConocoPhillips, BP)

Questions

1. What is the general level of preparedness and capacity to respond to a oil spill?
2. What is the level of Inuvialuit preparedness and capacity to respond to an oil spill?
3. What are the oil spill response requirements to meet future oil and gas projects?
4. What are some potential Inuvialuit roles in oil spill response?
5. Are there any potential limitations for Inuvialuit oil spill response capabilities?
6. By which means can government or industry support or engage Inuvialuit to improve oil spill response preparedness and capacity?

General level of Preparedness

Regulators

- Limited level of preparedness for nearshore spills and none for offshore spills
- No offshore capabilities because there are currently no offshore drilling applications
- Lack of community infrastructure to respond to a spill

Oil and Gas Industry

- Small level of preparedness for nearshore spills and little to none for offshore spills.
- MDOSC has some equipment mainly for use in the delta, and some equipment in communities.
- Lack of offshore drilling preparedness and capacity due to no offshore drilling applications

Inuvialuit Preparedness

Regulators

- Nearshore - limited capacity and mainly related to community fuel re-supply.
- Some equipment in communities and a few people trained
- Offshore - none

Oil and Gas Industry

- Nearshore - limited capacity, some equipment and some individuals trained through CCG, EC or NTCL.
- Offshore - none.

Spill Response Requirements for Future Oil and Gas Projects

Regulators

- Oil spill response requirements based on project design
- Improved tools for assessing oil spill risks and response priorities.
- Update sensitivity and spill trajectory mapping

Oil and Gas Industry

- Oil spill response requirements based on project design
- Nearshore spills mainly mechanical response (e.g., booms, skimmers etc.)
- Offshore initially dealt with those on board at the site
- Larger offshore spills likely dealt with through in-situ burning and dispersants
- Focus on preventing oil from entering the environment in the first place and having contingencies in place

Potential Inuvialuit Roles

Regulators

- Advisory and administrative support roles in Incident Command
- Shoreline clean-up assessment teams who bring local and TK knowledge to the team
- Many roles would depend on the operator or contracted oil spill organization and the meeting of technical and safety qualifications.
- Support roles, in logistics (boats, camps), monitoring activities and managing communications within a community
- Communities can influence the development of impact assessments and assist in developing science and technology requirements

Oil and Gas Industry

- Inuvialuit roles should be conducted through a private or joint venture oil spill response company or entity. Meet industry safety and technical requirements
- Nearshore spill response would primarily be mechanical response with higher manpower requirements (e.g., SCAT)
- Advisory roles in Incident Command
- Offshore spills may limit the number of roles to participate in unless spill moves into nearshore
- Monitoring such as environmental monitoring

Potential Limitations to Inuvialuit Response Capabilities

Regulators

- Small community populations limiting human resources to draw on
- Lack of understanding in communities of steps in oil spill response planning, preparedness, response and monitoring
- Working for an oil spill response company may be disruptive for some due to travel away
- Maintaining training

Oil and Gas Industry

- Understanding the level of industry activity that might occur and understanding the needs and requirements for the level of activity
- Not having an Inuvialuit oil spill response company or joint venture
- For large incidents there may not be enough local people for the response.

Means by which Government and Industry can Support to Improve Inuvialuit Oil Spill Response Capabilities

Regulators

- Take an Inuvialuit perspective – may feel lack of control
- Government should work as a team when communicating with communities
- Encourage a formal mechanism such as a private company to conduct training and response through
- Need way to acquire necessary training and skills
- Inuvialuit trained need to commit to the type of availability and mobility required to remain employable

Oil and Gas Industry

- Preference to use Inuvialuit whenever possible
- Dependent on level of involvement and roles community members want to have in spill response.
- Encourage to form a commercial spill response enterprise or joint venture (could be used for other spills)
- Provide business planning advice
- Preference given to contracting Inuvialuit companies
- Government can support through training and clearly defining everyone's roles and responsibilities

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Commonalities of Suggested Roles

- Advisory roles within Incident Command
- Nearshore and shoreline spill response
- Environmental monitors
- Other support e.g., logistics

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Oil and Gas
Scenarios
Next 10 – 30 Years

BREA Spill Training Needs Workshop
Inuvik, Oct 23-25, 2012

KAVIK•STANTEC

Brief History

- First well drilled from artificial island in 1972
- Last well drilled in winter 2005/2006 by Devon
- 93 wells have been drilled in the Beaufort Sea
- Water depths ranged from 1.4 m to 60.3m

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Drilling Platforms

- Artificial islands
- Spray ice islands
- Caissons (SDC, tarsiut, Molipaq)
- Floating drilll ships
- Conical drillships (Kulluk)

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Other Oil and Gas Activities

- Seismic
- Support Vessels
- Icebreakers (ice management)
- Fuel re-supply
- Coastal infrastructure

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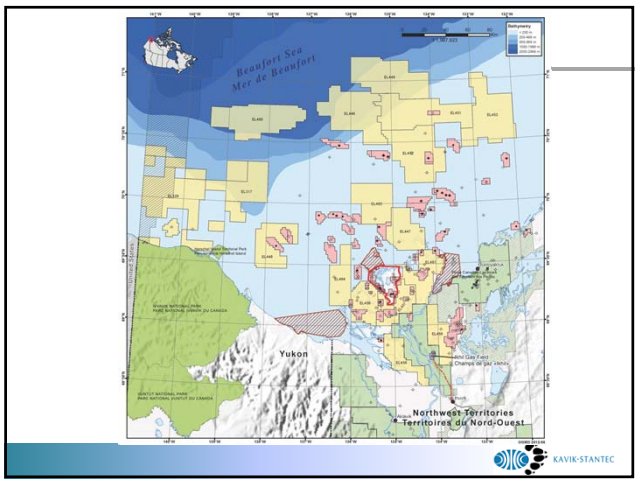
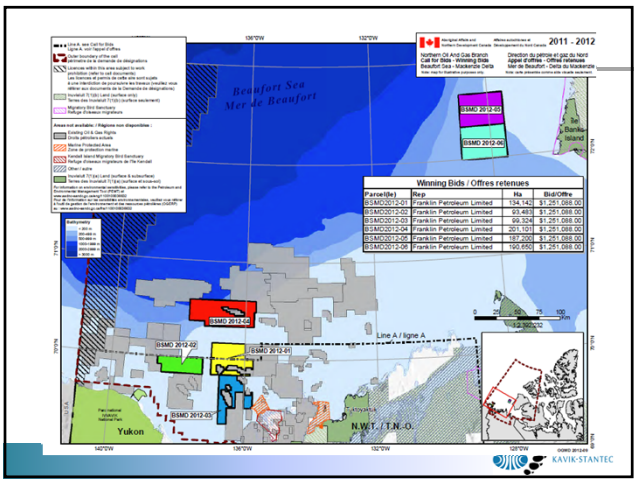

Beaufort Sea
Mer de Beaufort
Yukon
Northwest Territories
Territoires du Nord-Ouest
KAVIK-STANTEC


2011 - 2012
Northern Oil And Gas Branch
Call for Bids - Winning Bids
Beaufort Sea - Mackenzie Delta
Direction du pétrole et gaz du Nord
Appel d'offres - Offres retenues
Mer de Beaufort - Delta du Mackenzie
Winning Bids / Offres retenues
Parcel(le) | Rep | Ha | Bid/Offre
BSMD2012-01 | Franklin Petroleum Limited | 134,142 | $1,251,088.00
BSMD2012-02 | Franklin Petroleum Limited | 93,482 | $1,251,088.00
BSMD2012-03 | Franklin Petroleum Limited | 99,324 | $1,251,088.00
BSMD2012-04 | Franklin Petroleum Limited | 201,101 | $1,251,088.00
BSMD2012-05 | Franklin Petroleum Limited | 187,206 | $1,251,088.00
BSMD2012-06 | Franklin Petroleum Limited | 190,650 | $1,251,088.00
Beaufort Sea
Mer de Beaufort
BSMD 2012-05
BSMD 2012-06
BSMD 2012-04
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N.W.T. / T.N.-O.
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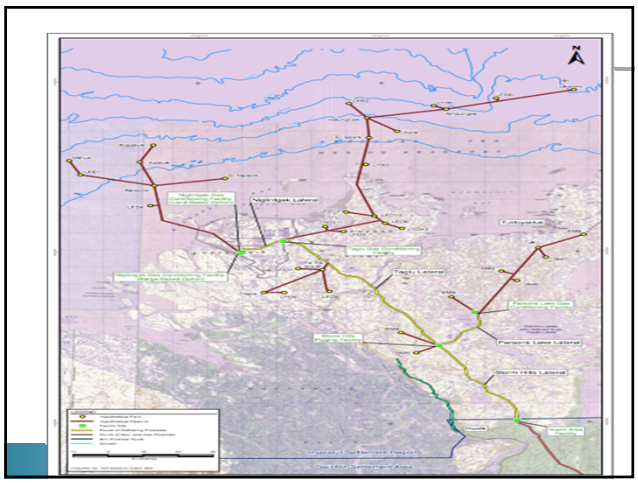

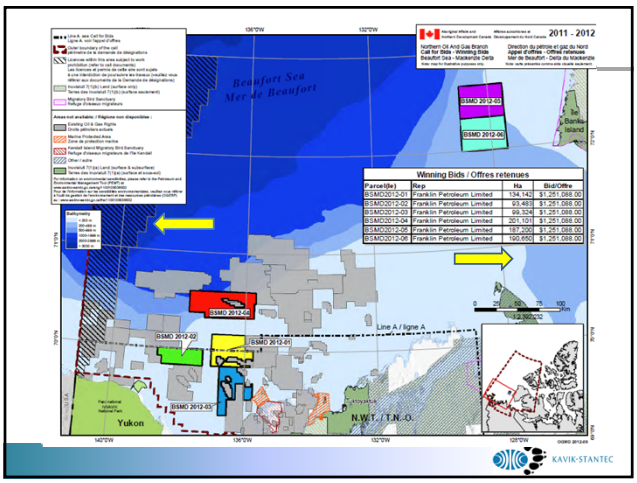
2011 - 2012
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BSMD 2012-02
BSMD 2012-01
BSMD 2012-03
Line A / ligne A
Yukon
N.W.T. / T.N.-O.
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Stages of a Spill Response and Potential Response Roles

Overview of Presentation

- Three “phases” of overall response: planning, active response, monitoring
- Planning: prior to spill and an ongoing activity
- Response: hands-on cleanup activities
- Monitoring: during response and potential for some time after

Pre-spill planning

- Elements of contingency planning
- Evaluation of potential spill scenarios
- Selection of appropriate countermeasures
  - Evaluation of likely effectiveness
  - Develop new approaches if required
- Ensure required resources are available
  - Equipment
  - Manpower
  - Support (boats, planes, re-supply)

Pre-spill planning

- Test the contingency plan
- Regulatory review and peer-review
- Exercises and drills
  - Look at key decision-making elements
  - Bring main players together to examine decision processes and build relationships
  - Discover and fix weak elements of plan

Pre-spill planning: potential roles

- Consultation during plan development
- Local knowledge
  - Selection of response techniques
  - Evaluation of likely effectiveness
  - Comparison of alternatives
- Participation in exercises of plan

"During the spill" planning: potential roles

- Consultation on countermeasures selection
- Consultation on cleanup and protection priorities
- Consultation on cleanup endpoints
- Local knowledge
  - Selection of response techniques
  - Evaluation of likely effectiveness
  - Comparison of alternatives

Hands-on cleanup activities

- Largely related to nearshore protection and cleanup
- Offshore techniques have low labour requirement beyond crew of vessel / aircraft
- Near shore protection of important coastal entities
- Shoreline clean-up operations

Hands-on cleanup activities: potential roles

- Nearshore protection of important coastal areas
  - Containment or diversion booms
  - In-situ burning
  - Application of dispersants
  - Response equipment deployed from small/medium size vessels
  - Would benefit greatly from local knowledge.
- Shoreline clean-up operations
  - Manual cleanup
  - Use of portable burners
  - Application of cleaning agents
  - Cleanup teams would require marine-based access to nearshore and shoreline areas using small/medium vessels supported by larger craft and floating accommodations.

Monitoring

- During response and potentially for some time after
- Spill assessment for setting cleanup priorities
- Cleanup effectiveness
- Effects of burning and dispersants
- Wildlife and habitat effects
- Post-spill recovery
- Documentation of damages

Monitoring: potential roles

- Field sampling of water, air, shorelines
  - In-water sampling, dispersant use
  - Shoreline assessment (SCAT)
- Observation of cleanup activities
  - Monitoring effectiveness
  - Advice to response command team
- Wildlife and habitat monitoring:
  - Wildlife and habitat effects
  - Post-spill recovery
  - Documentation of damages
- Would benefit greatly from local knowledge

Summary

- Three main areas of response effort
  - Pre-spill and "during the spill" planning
  - Hands-on response activities
  - Monitoring
- Potential roles in each area

Beaufort Sea Oil Spill Response Cooperative

KAVIK-STANTEC

SLR SL ROSS

Overview of Presentation

- Structure of Co-op
- Rationale for its existence
- Key pieces of equipment
- Training and exercise program
- Lessons learned

Structure of Beaufort Sea Cooperative

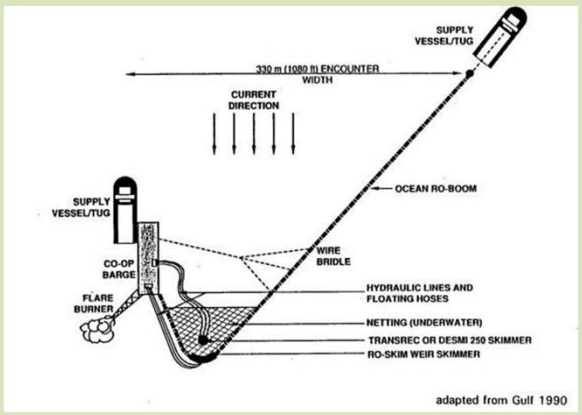
- Cooperative effort between Dome Petroleum (Canmar), Imperial Oil (Esso), and Gulf Canada (Beaudril)
- Jointly funded by the three companies
- Operated by Dome/Canmar for most of its life
- Equipment and personnel based at Dome/Canmar camp in Tuk

Rationale for Co-op

- Maintain a core group of personnel for range of potential spill response activities
- Maintain an inventory of equipment for spills beyond Tier 1 capability
- Each of the three companies maintained a base level of Tier 1 equipment at Tuk, various drilling locations, and other operating areas such as McKinley Bay

Key pieces of equipment

- Offshore containment boom
- Offshore skimmer
- Response barge with oil/water separation, emulsion treater, flare burner
- Fire-resistant boom
- Dispersant capability
- Nearshore protection booms and skimmers
- Small watercraft



Training and exercise program

- Training in equipment deployment and operation
- Operation of major equipment using barge
- Shoreline protection tactics
- Safety
- Joint training with Canmar, Esso, Beaudril crews
- Annual deployment exercise

Lessons learned

- Very positive experience
- Group of trained and committed workers available for
  - Routine spill responses
  - Field experiments
  - Support for other environmental projects
- Provided a visible presence for spill response and attention to “clean” operations at Canmar’s base

Summary

- Structure of Co-op
- Rationale for its existence
- Key pieces of equipment
- Training and exercise program
- Lessons learned

Thoughts on Training
Tim Taylor
October 23, 2012

Who we are?

- Mackenzie Delta Spill Response Corporation is a not-for-profit company

Established in 2002

- Owned by five oil companies: BP, Shell, ConocoPhillips, MGM, Chevron
- Devon recently stepped away, and Husky will be joining

Scope

- Owners provide all capital and operating costs based on an annual budget
- No Employees, contract manager and a contract trainer
- Budget covers
  - Equipment, new and replacement
  - Maintenance of equipment
  - Training - offered free
  - Exercise
  - Some advice to owners, recommended strategies

Capacity

Geographic Area of Service

- Original area was the Mackenzie Delta, on land, riverine and shores
  - Not offshore
- 2011/2012 expansion to provide similar service to the oil and gas industry based out of Norman Wells - Sahtu

Equipment -Inuvik

- A warehouse of equipment and several sea cans of equipment are based in a warehouse in Inuvik
- Warehouse space is currently shared with one of the member companies

Command Trailer

Equipment

- MDSRC has one purpose built boat
- Designed for spill response
- It has a bow door and twin 175 HP marine jet
- Long open deck for loading boom, wide enough for a quad
- River service

Boat Operations

Specialty Equipment

- Effective spill response needs both simple and complex tools
- Specialty equipment needs training, but more-over it needs practice

Boom Vane

Training - Safety

- Spill response can be a hazardous occupation
- Needs clear safety plans
- Safety equipment and personal protection
- MDSRC is committed to safety first in all its training
- Its a commitment that can't be met by book or video learning

Summer Exercise

Equipment - Norman Wells

- 5 spill containers
- 4 nuisance spill containers
- 1 spill container with river boom and skimmer plus other riverine support equipment
- Owners take a nuisance spill container to their project location to provide ready access to spill response equipment

Training Offered

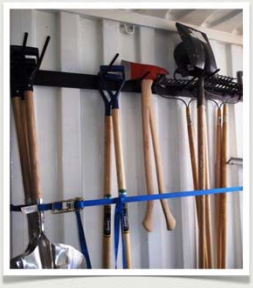
- On-water training
  - Pulling boom
  - Setting boom
  - Setting skimmers
  - Boom vane
- Winter training
- Incident Command System
- SCAT - Could not generate enough interest

Training

- Training has focused on skills first responders might need or those skills that might be needed for a small spill cleanups
- We have completed a joint venture with Aurora College to produce a self study guide
- We don't offer boat operator training, in-situ burning or dispersants
  - Boat operations is a specialized skill for only accomplished operators

Nuisance Spills

- The mostly likely spill that could occur is a small spill
- The nuisance spill kit is designed to help first responders get the cleanup going
- In most cases it will have all the tools that will be needed



What is Nuisance Spill Kit

- A nuisance spill kit contains a variety of gear:
  - Hand tools like shovels and rakes
  - Waste containment
  - Various absorbents
  - Emergency generator and a small selection of small power tools

Inside Number 5

Services

- Mapped control points in Delta
- Developed standard operating spill procedures and strategies for the Delta
- Maintain a web site
- Training
  - Goal is to offer one course a year
  - If owners are active, there may be a demand for two courses
  - Try to alternate between summer and winter
  - Courses are free and open to all
  - Owners get first call, but we have never turned anyone away

Recent Courses

- 2009 Inuvik - Winter
- 2010 Inuvik - Summer
- 2011 Norman Wells - Winter

- 2011 Inuvik - Summer cancelled because of lack of participants
- 2012 Norman Wells - Summer

Summer Course

- Most summer courses simulate a spill of diesel on the river
- Generally one day of theory (lecture) and the second day is the excercise
- Particpants learn how to safely set and anchor the boom, assemble the skimmers and test the equipment
- If time, the boom vane is also set
- At the end of the exercise, all gear is cleaned and put away

Setting the anchor bouy

Winter Course

- Format for winter is similar with a combination of lecture and excercise
- In the past we have demonstrated the ice saw, but we have dropped this from the curriculum
- Attendees must have appropriate arctic gear

ICS Course

- Incident Command is the backbone of most emergency response organizations
- Most owners of MDSRC have an incident command based system to manage their own emergencies
- It is critical that everyone know how to fit into an ICS system
- All exercises are completed using ICS principles and participants wear ICS command vests
- Interest in the course was weak

Advice

- Spill response capacity requires all of equipment, maintenance, strategies, training and practice
- But of vital importance is experience, training alone cannot gain experience
- In every organization you need people who have done the jobs, seen the mistakes and the successes and can adapt to the situation

Conclusion

- Training is essential, but without practice it is not worth much
- Start with realistic expectations of what can be achieved
- Understand what the scenarios are that you are likely to be facing
- But training and exercises alone is not enough, it has to be part of an overall capacity strategy which includes expert advice

Questions?

Fisheries and Oceans Canada / Pêches et Océans Canada
Canadian Coast Guard / Garde côtière canadienne

Safety First, Service Always

CCG Spill Response Training

Joanne Munroe, Canadian Coast Guard

Canada

Goal

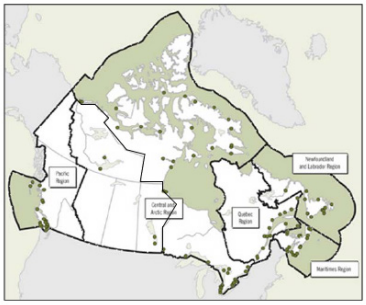
- Overview of current CCG training program

CCG Training Program

- **Primary focus is to train CCG employees**
  - Environmental Response Staff
  - Ship's crew
  - Base staff
- **Types of training**
  - Basic Oil Spill Response Course
    - First Responder Oil Spill Training
  - Marine Spill Response Operations Course
  - On Scene Command Course
  - Pollution Response Officer Training
  - Response Management System Course

Curriculum held by Canadian Coast Guard College

Regime overview



Background: CCG training North of 60

- 1998 Community Communications Study
- 1999 Arctic Response Strategy
- CCG training officer coordinates through SAO
- Goal: 3 communities per year
- Coordinated with exercise cycle

5

Challenges to CCG training initiatives

- **Location / Mandate**
  - CCG only delivers first response training where it has equipment
- **Recruitment**
  - Historical participation rates vary by community, often not enough to hold a course
- **Compensation**
  - CCG ER has no mechanism to compensate time of non-staff for delivery of training
- **Staff Retention**
  - Inconsistent staffing
- **Follow-up**
  - Exercise cycle

6

Recent changes

- **Target groups**
  - Canadian Rangers
  - Coast Guard Auxiliary Units

7

CANUSNORTH Opportunity

- **One of CCG main depots is in Tuktoyaktuk**
  - Delta 1000 Tonne
- **Community concern about spill response training**
  - Repeated concerns raised at BREA and through HOTO
- **Leverage exercise for training recruitment**

CANUSNORTH 2012
TUKTOYAKTUK, NWT

8

Training Session Goals

- **Develop pool of qualified non-pleasure craft vessel crew**
  - Method: Deliver Marine Emergency Duties course
- **Develop pool of responders in community**
  - Method: Deliver First Responder Oil Spill Training
- **Develop pool of personnel for SCAT teams**
  - Method: Deliver Shoreline Cleanup Assessment Technique training (Environment Canada)

9

How we overcame historical challenges

- **Coordinated with local contacts**
  - Inuvialuit Game Council
  - Joint Secretariat
  - Tuktoyaktuk Hunters and Trappers
  - Tuktoyaktuk Community Corporation
  - Word of mouth
- **Partnered with Inuvialuit Regional Corporation**
  - With assistance from local employment officer and Tuk CC

10

Results

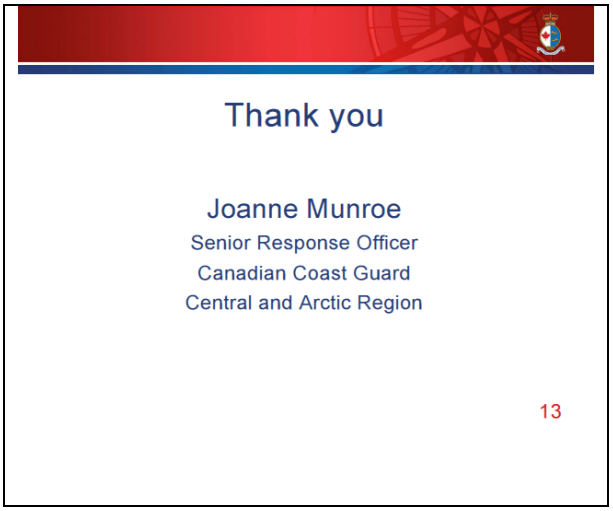
- **8 MED A3 certified**
- **10 FROST certified**

11

Way forward

- **Recognize that the Canadian system places responsibilities on the potential polluter**
- **New design of Community spill response training and exercise program**
- **Consider outcomes from this workshop**
- **Consider outcomes from Arctic Regime Review**

12


Thank you
Joanne Munroe
Senior Response Officer
Canadian Coast Guard
Central and Arctic Region
13

Environnement Canada Environment Canada

Canada

Tuktoyaktuk 2012 Oil Spill Training: training, operations and lessons learned

Mathieu Dussault
Environnemental Emergencies Program
National Environmental Emergency Centre (NEEC)
Inuvik, October 2012

Objectives of the Canusnorth Tuktoyaktuk Exercise 2012:

- To provide a general overview of:

1. Environment Canada (EC)'s Environmental Emergencies Program (EEP)
2. Recent EEP organizational changes
3. REET and SCAT in the North
4. Provide SCAT Training
5. Enhance preparedness for EC and all partners

Presentation and Table Top Exercise

Highlights and lessons learned:

- Great opportunity to discuss the recent changes at EC
  - Location
  - Staff
  - CONOPS
  - Preparedeness
  - Services
  - Training
  - Etc.

Presentation and Table Top Exercise (2)

Highlights and lessons learned:

- Discussion on Arctic REET delivery
  - Great preparedness to link with potential REET partners and participants
  - Review of activation and REET process
  - Demonstration of the flexibility and AREET
  - Opportunity to underline that REET deals only with Environmental issues and natural resources

Presentation and Table Top Exercise (3)

Highlights and lessons learned:

- Dispersants
  - Important topic
  - In the event of a major spill, the use of dispersants would be a topic address at the AREET
- SCAT
  - Each country would be responsible of their own response according to relevant Act, regulations and regimes
  - Canusnorth Joint Emergency Plan: is the key component for coordinated and integrated SCAT response in accordance to 2 separate jurisdiction

Shoreline cleanup assessment technique (SCAT) Training

Highlights and lessons learned:

- 1 full day of training
- A.M. classroom training / P.M. Field training
- 16 participants, now certified
- Creation of a reach back list for actual spills
- SCAT training allowed discussions on:
  - Oil fate and behaviour
  - Natural Resources Shoreline impact
  - Clean-up options

Shoreline Clean-up Assessment Technique

Shoreline cleanup assessment technique (SCAT) Training (2)

Highlights & Lessons learned

- SCAT training was appreciated and a success
- SCAT is a good technique to allow objective prioritization of shoreline clean-up
- Training allowed discussion on the importance of prioritization, when everything is sensitive
- Team members where all complementary
- Feedback from participants showed that SCAT training should part of the Basic training for communities

Shoreline Clean-up Assessment Technique

Overall comments and leassons learned

- EC considers that the Canusnorth Tuktoyaktuk 2012 was a success
- Under the current changes in the Environmental Emergencies programs, the Tuktoyaktuk exercise proved to be a great preparedness activity
- Canusnorth exercise underlined the importance oil spill training
- 3 EC's environmental emergency training could be considered essential in a basic training program:
  - Basic oil spill response training
  - SCAT training
  - Hazmat training (HAZWOPER, awerness)

Thank you for the invitation at this BREA Workshop in Inuvik

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Types of Training for Different Spill Response Roles

Potential spill response roles

- Three main areas for potential roles:
  - Advisory and consultative role
  - Hands-on response role
  - Monitoring and assessment

Advisory and consultative role

- Participation in pre-spill planning
- Participation in decision-making on countermeasures selection
- Very important to communities when dispersants or in-situ burning might be considered
- Command team would benefit from experience and knowledge on local conditions regarding weather and sea conditions, and wildlife and habitat issues.

Advisory role: Training needs

- Spill behaviour, with in-depth coverage on weathering and transport processes
- Countermeasures techniques
  - Need to be able to compare techniques in specific situations and the trade-offs between the main offshore techniques
- Net environmental benefit analysis (NEBA)
  - Important for technique selection

Hands-on response role

- Large-scale offshore spill response will have limited opportunities for local input
- Main role for community members would be in nearshore activities
- Shoreline protection using booms and skimmers
- Shoreline clean-up operations

Hands-on role: Training needs

- Oil spill behaviour (basics)
- Shoreline protection techniques
- Safe operation and maintenance of powered spill equipment and watercraft
- Boom deployment and operation
- Skimmer deployment and operation
- Pumping and fluid handling
- Shoreline response techniques
- Standardized shoreline assessment techniques and terminology

Monitoring and assessment

- Assistance in monitoring and assessing clean-up activities for their effectiveness
- Assessing potential spill effects on the environment
- Response team would benefit from local knowledge on regarding weather and sea conditions, and wildlife and habitat issues

Monitoring and assessment: Training needs

- Basics of oil spill behaviour
- Overview of countermeasures techniques
- Principles of NEBA
- Data and sample collection for water, wildlife and habitat monitoring
- Standardized shoreline assessment techniques and terminology
- First-aid training for all field responders

Overall community training:

- Need for broadly delivered information on a range of spill behaviour and spill response issues

Overall community training: Training needs

- Oil spill behaviour
- Overview of main offshore response techniques (containment, recovery, in-situ burning, dispersant use)
- Shoreline response techniques
- Advantages, disadvantages, and limitations of each technique
- Net environmental benefit analysis
- First-aid training for all potential field responders

Summary

- Three main areas for potential roles:
  - Advisory and consultative role
  - Hands-on response role
  - Monitoring and assessment
  - Broad-based community training
- Training needs listed for each role

Training, Certification and Delivery Options

Training, Certification and Delivery Options

- Work to be completed following workshop
- Review of existing training programs for suitability to needs identified here
- Course curriculum still to be reviewed against identified training needs

Training, Certification and Delivery Options

- Given proposed roles and training requirements, customization will likely be necessary
- Some courses are highly portable, and easily given at northern locations
- Some more specialized courses will require travel, but only for a small number of personnel
- No certification program exists

Training Options

Canadian Coast Guard	BSROC, MSROC
Environment Canada	SCAT
ECRC, WCMRC	These RO's use a variety of contractors to provide customized on-site training (e.g. Triox Environmental, Counterspil Research)

Training Options

Interactive Oil Spill Training Centre (Vancouver)
ICS, Physical, SCAT, oil response course for cold and ice conditions

Enform (Western Canadian Spill Services, Nisku)
ICS, MED, Physical

Lambton College (Sarnia)
Fire and safety

Training Options

Canadyne (Vancouver, BC)
Physical, management

HN Consultants Ltd (West Vancouver, BC)
Physical, Response management

Polaris Applied Sciences Inc. (Washington)
ICS, Physical, SMART, SCAT

SL Ross Environmental Research (Ottawa)
Dispersants, In-situ burning, SMART monitoring

Training Options

Ohmsett National Oil Spill Response Research Facility (New Jersey)
HAZWOPER, dispersant, physical

Prince William Sound Community College (Alaska)
HAZWOPER, response management, safety

Texas A&M National Spill Control School (Texas)
HAZWOPER, SCAT, physical, response management

Summary

- Various training options (to be evaluated)
- Given proposed roles and training requirements, customization will likely be necessary
- Some courses are highly portable, and easily given at northern locations

Other Training

Inuvialuit Spill Needs
Training Workshop
Inuvik, 23-25, 2012

KAVIK•STANTEC

First Aid

- Basic first aid training
- CPR
- Can be taught anywhere
- Many suppliers of this type of training
- Certificate of successful completion of course

KAVIK•STANTEC

EGRESS Training

- Training required when in helicopters which fly over water
- Learn how to escape from a helicopter if it lands on water and overturns
- Can and has been taught in Inuvik
- Possibly could be taught in Aklavik
- Certificate of successful completion of course

KAVIK•STANTEC

Small Boat Operators

- Transport Canada requirement for all pleasure craft
- Many require even if boat is not being used for pleasure
- Teaches safe boating practices and legal requirements for boat usage (e.g., # of life jackets)
- Can be taken online
- Obtain Pleasure Craft Operators Card

KAVIK•STANTEC

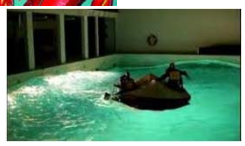
Oiled Birds and Animals

- International Bird Rescue based in California (Canadian Oiled Bird Academy)
- P&G

MED Courses

- Marine Emergency Duties
- Can be taught at different locations as well as marine institutes on east and west coasts.
- lifesaving measures, emergency responses, survival rescue, marine environment hazards and safety equipment and records

Read more: Marine Emergency Duty Training | eHow.com http://www.ehow.com/facts_7577643_marine-emergency-duty-training.html#ixzz29u1vYC2J



Environmental Monitors

- Water and sediment sampling
- Biological sampling
- BEAHR certification
- Specifically designed courses
- Aurora College
- Can be taught anywhere

BEAHR environmental Monitoring Course

- Graduates trained in the basic principles of Environmental Monitoring, including:
- Communication & Technical Skills
- Local & Traditional Knowledge
- Health & Safety
- Regulatory Monitoring - Environmental Legislation & Monitoring Effects and or;
- Research Monitoring - Basic Ecology & Research skills