

## **GENERAL COMMENTS**

### **Department of National Defence (DND)**

DND is likely to be operating in the vicinity of the study area in a non-interference manner during the project timeframe.

A search of unexploded ordnates (UXOs) records was conducted to determine the possible presence of UXO within the proponent's project area and no wrecks are present within the survey area. Given their understanding of the survey activities to be conducted, the associated UXO risk is negligible. Nonetheless, due to the inherent dangers associated with UXO and the fact that the Atlantic Ocean was exposed to many naval engagements during WWII, should any suspected UXO be encountered during the course of the proponent's operations it should not be disturbed/manipulated. The proponent should mark the location and immediately inform the Coast Guard. Additional information is available in the 2012 Annual Edition – Notices to Mariners, Section F, No. 37.

In the event of activities which may have contact with the seabed (such as drilling or mooring), it is strongly advised that operational aids, such as remote operated vehicles, be used to conduct seabed surveys in order to prevent unintentional contact with harmful UXO items that may have gone unreported or undetected. General information regarding UXO is available at [www.uxocanada.forces.gc.ca](http://www.uxocanada.forces.gc.ca)

### **Environment Canada (EC)**

On 4 January 2012, EC provided comments for a proposed Multi Klient Invest AS Northeast Newfoundland Slope 2D Seismic Program (as per *Project Description for 2-D Marine Regional Seismic Survey Northeast Newfoundland Slope* prepared by RPS Energy (Halifax) & YOLO Environmental Inc. [December 1, 2011]). Those comments remain applicable.

### **Fisheries and Oceans Canada**

Active project-based environmental assessments (EAs) available on the C-NLOPB website are being repeatedly cited for this EA. This is unsuitable given the draft status of these documents and the likelihood of re-citing misinformation into the document currently under review. Citing secondary publications (e.g., LGL 2003) rather than primary publications in the EA is not encouraged. There are many instances where references for statements concerning species/biology are attributed to consultant reports (e.g., LGL (2003)), rather than the original research. Original citations should be provided where possible.

The "Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment" (SOCP), specifies the mitigation requirements that must be met during the planning and conduct of marine seismic surveys, in order to minimize impacts on life in the oceans. These requirements are set out as minimum standards to be

implemented during the planning and conduct of seismic programs. As such, it is advised that the proponent **adhere to all relevant minimum mitigations** outlined in the SOCP including the Planning Seismic Surveys, Safety Zone and Start-up, Shut-down of Air Source Array(s), Line Changes and Maintenance Shut-downs, Operations in Low Visibility and Additional Mitigative Measures and Modifications sections of the SOCP.

The report indicates that surveys may occur May to November 2012-17 with surveys ranging in duration from 50-150 days. While the proponent does acknowledge that Species at Risk Act (SARA) requirements could change over this timeframe and that they will reassess accordingly, DFO would like to note that changes to SARA could include additions to species on Schedule 1 of SARA, changes in species status, new recovery strategies, action plans and/or management plans and identification of critical habitat. Please continue to refer to the Species at Risk Public Registry ([www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)) to get the most up to date information.

Marine mammal observers (MMO) are noted throughout the document, however, details with respect to MMO protocols employed are not provided. It is suggested that the role of the MMO be better described within the EA Report to ensure reviewers that the best possible methods are employed.

DFO conducts scientific surveys in the general area of the proposed program. The timing of the DFO scientific surveys will vary from year to year; therefore the proponent should contact DFO to ensure there are no timing conflicts.

### **Fish, Food and Allied Workers**

A consultation was held with fish harvesters during the development of this Environmental Assessment in February 2012. Issues and concerns concerning the impacts of seismic noise on the crab and shrimp resources were discussed at that time. (The effects on crab, however, were noticed following seismic work in 2008, page 240). As documented in the EA, MKI intends to follow the recommendation of fish harvesters and avoid active crab and shrimp grounds until after the dominant harvest season (page 184-185).

It should be noted while the “productive (harvesting) months” in the EA are listed as May to September (page 153), April can also be a busy month on the water. Furthermore, the industry post-season crab season is carried out from September to November. This is important as the timing of surveys in subsequent years is unknown at this point in time (Page 184).

Fisheries resources in this document are discussed for the overall study area of the project (pages 144-168). Fish harvesters have licenses to fish in select portions of the study area. Therefore, they may or may not be affected by resource declines or quota cuts in their fishing areas from year to year. One needs to be careful in making assumptions that could indicate that fishing effort may be on the decline overall. For example, the snow crab resource in 3L has been quite healthy in the last few years and quotas have actually

increased. As well, fishing effort can be influenced by price. Turbot effort, for example, is highly market dependent. Prices have been good in the last few years such that effort has increased (page 167). It is therefore important that MKI maintain regular communication with the FFAW to keep apprised of ongoing developments and activities with respect to commercial fisheries in the project area.

On the issue of submarine cables I am of the understanding that Hibernia Atlantic has plans to install a new cable across the Grand Banks in 2012-2013 (page 170-171). This project may have been delayed or aborted however.

Several companies plan to conduct seismic programs, VSP programs and geohazard surveys offshore Newfoundland this year and quite likely beyond (pages 172-178). The potential for seismic work to be conducted concurrently increases the risk for potential conflicts with fishing vessels and gear. This also increases the potential impact of seismic activity on important fish and shellfish resources. While each separate project predicts no significant impacts of seismic surveying on commercial fisheries the cumulative impacts are still of utmost concern to fish harvesters who depend on the resource for their livelihoods.

With respect to accidental oil spills or other discharges, however unlikely they may occur during seismic programs, it is understood that these events will be prevented through the application of mitigative measures. It is important to note however that while the impacts of an oil spill or accidental discharge may not result in tainting of fish or fouling of gear (page 242) there could be longer term negative impacts on Newfoundland and Labrador seafood products in the global marketplace with any perceived product tainting. Accidental oil spills and discharges significantly threaten the fishing industry.

Finally, one of the fishing industry's concerns with a multi-year seismic program is the need for frequent communication between the industry and the oil and gas company, in this case MKI. Harvesters are spread out over a wide geographic area and communication is vital to the safety of all involved. There is a need for good planning and further consultation directly with the fishing industry several months prior to the start of the various components of the seismic program to avoid potential conflict(s) at sea each year. This should be coordinated with the FFAW. While historical fishing patterns have been documented fishing activity can change from year to year and during the season as well to mitigate conflict.

### **Canada-Newfoundland and Labrador Offshore Petroleum Board**

The C-NLOPB agrees with the DFO comment “The “Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment” (SOCP), specifies the mitigation requirements that must be met during the planning and conduct of marine seismic surveys, in order to minimize impacts on life in the oceans. These requirements are set out as minimum standards to be implemented during the planning and conduct of seismic programs. As such, it is advised that the proponent **adhere to all relevant minimum mitigations** outlined in the SOCP”. The report provides a partial list

at various locations throughout the report, particularly in Section 6.0 Effects Assessment of Project Activities. It should be confirmed by MKI that all environmental planning, mitigation and reporting measures for marine seismic surveys, as recommended in Appendix 2 of the *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* (C-NLOPB January 2012) will be met.

## **SPECIFIC COMMENTS**

### **Environment Canada (EC)**

#### **§ 2.4.1.1 Shipboard Oil Pollution Emergency Plan (SOPEP) Page 10, paragraph 4**

The purpose of the Plan is guidance to the Sanco Spirit Masters and of officers on board the ship with respect to the steps to be taken when an oil pollution incident has occurred, or is likely to occur. *Used correctly in a given situation, you and we as ship operator will, avoid any claims and responsibility from official authorities.* It is understood that the purpose of the Shipboard Oil Pollution Emergency Plan is to provide guidance with regard to oil spills. However, the intent with regard to the statement highlighted above is unclear. Has Transport Canada been provided with this document for commentary? Please provide a copy of the Shipboard Oil Pollution Emergency Plan for EC review.

#### **§ 2.4.1.1 Shipboard Oil Pollution Emergency Plan (SOPEP) Page 10, last Paragraph and Page 11, paragraph 1.**

Further, the purpose of the Plan is to provide the Master, officers and crewmembers with a practical guide to the presentation of oil spills and in carrying out the responsibilities associated with regulation 26 of Annex I to MARPOL 73/78. Reporting procedures to report an oil pollution incident, Coastal State contacts to be contacted in the event of an oil pollution incident, response actions or reduce or control the discharge of oil following an incident, - co-ordination with national and local Authorities in combating oil pollution. Putting this passage into the appropriate local context would be helpful. EC understands the “Coastal State” to be contacted in the event of an oil spill for off-shore Newfoundland) is the Marine Safety Branch, Transport Canada (709 772 5166). This should be confirmed and put in the plan.

#### **§2.6 Potential Malfunctions and Accidental Events Paragraph 1**

There are unplanned situations that may be encountered during seismic operations. Potential hazards are addressed during site-specific planning as part of emergency response planning. Procedures are developed by MKI to ensure that such events are managed in a safe and environmentally sound manner. MKI have policies, plans, and procedures to prevent or mitigate effects of malfunctions and accidents. These policies, plans, and procedures will be located on the seismic vessel, and in MKI St. John’s (shore office). *During seismic surveys, there will be limited amounts of marine fuel and lube oil onboard that could potentially be spilled to the ocean. All of the vessels involved in the survey will use diesel fuel. The fuel capacity of seismic ships can range up to 1,550 t for large 3-D vessel.* Any accidental spill will be reported to the CNLOPB immediately.

The first part of the statement highlighted above should be quantified as “limited amounts” is subjective. The second part appears to be out of context from the earlier statements as a release of these volumes would be expected to be a result of a much more significant event.

**§4.2.1 Identification of Valued Environmental Components, Page 24 Table 4.1 Selection of Valued Ecosystem Components**

Migratory birds other than avian species at risk (SAR) have not been included as a Valued Ecosystem Component (VEC). Species at Risk cannot act as indicators for environmental effects on migratory birds. The degree of severity of impact of a project may be more serious when an avian SAR is affected. However, a lack of impacts on avian SAR cannot be interpreted as no effect or no significant effect on all migratory birds.

**§5.4.3 Marine and Migratory Birds, page 69 First Paragraph**

EC-CWS recommends revising the environmental assessment report to include all information concerning seabirds that are relevant to this assessment. Though the proponent may use the information contained in the listed documents to make its own revisions, interpretation of this information within the context of this Environmental Assessment and associated impacts has not been undertaken for the effects of this project upon migratory birds

**§5.4.3 Marine and Migratory Birds, page 69 First Paragraph**

The seabird survey program that is/was conducted on DFO AZMP surveys should be referred to as the “Eastern Canada Seabirds at Sea” (ECSAS) program. This program can be cited as:

Gjerdrum, C., D.A. Fifield, and S.I. Wilhelm. 2011. Eastern Canada Seabirds at Sea (ECSAS) standardized protocol for pelagic seabird surveys from moving and stationary platforms. Canadian Wildlife Service Technical Report Series No. 515. Atlantic Region. vi + 36 pp.

**§5.4.3.1 Distribution, page 69**

The term “hotspot” is a scientific term that is used extensively in the literature to describe important areas for various taxa. EC-CWS recommends that this term be appropriately defined as it is being used in the document and/or an alternative descriptor be used (with definition provided).

**§5.4.3.1 Distribution, page 70, Table 5.3 Sea Bird Hotspot Summary**

EC-CWS recommends revising the names of the seabird species given in Table 5.3 and throughout the text. Bird species should be referred to without pluralization when referring to a singular species (i.e. Dovekies become Dovekie, Northern Fulmars become Northern Fulmar, Northern Gannets becomes Northern Gannet, etc.). When referring to Gulls, it is acceptable to use the plural form, because more than one species is being referenced.

**§5.4.3.1 Distribution, page 72, Table 5.4 Distribution and Abundance of Seabirds Known to Occur in the Study Area**

The common names of two species have been recently updated, and EC-CWS recommends changing the names of these species throughout the text to reflect their proper nomenclature. “Greater Shearwater” should be referred to as “Great Shearwater”. “Greater Black-backed Gull” should be changed to “Great Black-backed Gull”.

**§5.4.3.1.1 Water birds, page 74**

EC-CWS recommends that the following changes be made in the text of this section:

- Bird density should be reported as birds/km<sup>2</sup>.
- The level of survey effort in September and October should be indicated when making statements concerning bird density at those times.
- Densities are reported as 10-100 in Figure 5.23, but are reported as 1-10 in the text; the proper density should be specified.

**§5.4.3.1.1 Water birds, page 74, Figures 5.23-5.42**

Density should be presented as birds/km<sup>2</sup>. For each density presented, the report needs to refer to a figure. It should be noted in the figure titles that these figures were taken directly from Fifield et al. 2009. As such these figures should provide appropriate citation.

**§5.4.3.1.1 Water birds, page 74, Northern Fulmar, etc.**

For each species-specific section (i.e. Northern Fulmar, Storm-Petrels, etc), statements of density and distribution should be revisited following the recommendations in EC-08 and EC-09 and through consultation of Fifield et al. 2009.

**§5.4.3.2 Prey and Foraging Habits, page 95**

“[Surface-feeding gull species are foragers.](#)”

This sentence should be clarified by making a statement to diet, behaviour, etc.

**§5.4.7.1 Marine and Migratory Birds, Page 135, Table 5.19 Marine & Migratory Species Found Within The Study Area Having SAR and/or COSEWIC Designations - Ivory Gull**

The text in Table 5.19 should be revised to reflect the text in Section 5.4.7.1. The breeding distribution stated in Table 5.19 should be updated with information from COSEWIC 2006.

**§6.1.3 Page 179, Significance Criteria**

EC-CWS recommends that the following changes be made in the text of this section:

- “Destruction or adverse effects of critical habitat” should be replaced with “destruction or adverse effects on critical habitat”;
- “Marine birds and migratory” should be replaced with “marine migratory birds”.

**§6.1.4.1.3 Page 180, Attraction to Lights**

“Under foggy conditions, coastal lighting is more of an influence as birds fly closer to land (Chaffey 2003, Weir 1976, Blomqvist and Peterz 1984). Routine checks for stranded birds will be recorded and reported and a release program of birds affected by light will be implemented.”

In offshore areas, coastal lighting is sufficiently distant as to be of negligible effect on seabird attractiveness in fog. Light provided by ships is likely to be of greater influence in the survey area. EC-CWS requests to review the protocol for routine checks for stranded birds. The protocol should contain information as to what data will be recorded, how often checks will be done, etc. Please refer to the Williams and Chardine protocol (attached) to help with protocol design.

**§6.1.4.1.3 Page 181, Attraction to Lights, First Paragraph**

“MKI will follow the Leach’s Storm Petrel Mitigation Program developed by Williams and Chardine (1999) (Appendix B) for stranded birds. An Environmental Observer will be assigned on the vessel during seismic surveys and responsible for this activity. All marine observations will be recorded and information will be given to appropriate organizations such as CWS to provide valuable information on the distribution of marine birds off the south coast of Newfoundland.”

EC-CWS notes that it is not clear as to what observations are being recorded, or as to whether the report is actually referring to bird strandings. This should be clarified in the revised version of the environmental assessment report.

**§6.1.4.1.3 Page 181, Attraction to Lights, Second Paragraph**

“The literature indicates there is no measurable effect on marine birds.”

The effect of light attraction on marine birds has not been verified. More data on the distribution and abundance of marine birds in the vicinity of the study area are essential for assessing the accuracy of predictions. Globally significant concentrations of marine birds are known to use the Grand Bank, and may concentrate in the vicinity of the proposed survey area. Data on marine birds are required from the project in order to assess risk and mortality should an accident occur.

**§6.1.4.1.3 Page 181, Attraction to Lights, Second Paragraph**

“However, as some seabirds are attracted to vessels opportunistically, seismic operations will not be delayed until they depart the area before ramping up. Such practice would hamper the entire program considering the attraction birds have for vessels.”

As stated in the EC-CWS reply to the scoping document, mitigation measures related to adverse effects of seismic activities should be identified. Measures should be consistent with the Migratory Bird Convention Act, 1994, the Migratory Bird Regulations, and the Species at Risk Act and with applicable management plans, recovery strategies and action plans. Mitigation should reflect a clear priority on impact avoidance opportunities.

The following specific measure could be among those which are considered in preparing a mitigation strategy:

- Ramping-up the air gun array over a 30-minute period - a procedure typically used for other animal groups - may encourage marine birds to leave the survey area and may reduce the potential for adverse interactions between the project and marine birds accordingly.

**§6.1.4.3 Page 182, Vessel Discharge and Accidental Deaths, Second Paragraph**

“If a spill occurred and marine birds were impacted, the Williams and Chardine protocol (entitled “The Leach’s Storm-Petrel: General Information and Handling Instruction”) or protocols recommended by the C-NLOPB for handling oiled or standard birds would be followed.”

The Williams and Chardine protocol is not appropriate for dealing with oiled birds, but rather is used for stranded Leach's Storm-petrels. Since even small spills of oil can have very serious effects on migratory birds, every effort should be taken to ensure that no oil spills occur. The proponent should ensure that all precautions are taken by contractors and staff to prevent fuel leaks from equipment, and that a contingency plan in case of oil spills is prepared. In order to assist proponents in preparing a plan for dealing with an oil spill which would potentially threaten birds, EC-CWS has prepared a guidance document (attached; still in draft form), as well as a sample protocol document used for oiled birds on beaches. A protocol for handling non-oiled but dead birds found on the vessel is also attached. Please note that a federal permit, under the MBCA, is required for handling migratory birds.

**§6.1.4.3 Page 182, Vessel Discharge and Accidental Deaths, Third Paragraph**

“The impacts of oil on birds have been well documented (e.g., Hartung 1995); however, no oil from seismic vessel discharge is expected to occur and thus, should not have any severe adverse effects of avifauna.”

Unexpected discharges of oil should be considered in the environmental assessment, and the oil spill response plan for this project should be sent to EC for review. See the first specific comment of Environment Canada.

**§6.1.4.3 Vessel Discharge and Accidental Events Page 182, Paragraph 5**

MKI will be using a solid streamer; therefore there will be no release of hydrocarbon in the event of hydrophone cable damage. Potential impacts are expected to be limited due to the high volatility and relatively small volume of spilled diesel or lubricant. If a spill occurred and marine birds were impacted, the Williams and Chardine protocol (entitled “The Leach’s Storm Petrel:General Information and Handling Instruction”) or protocols recommended by the C-NLOPB for handling oiled or standard birds would be followed. No significant adverse effects are likely to occur as a result of an accidental event associated with this Project.

As diesel fuel is extremely toxic, any amount spilled in the marine environment may negatively impact marine wildlife – not only birds, but mammals and fish. Depending on the timing and location of a release, significant adverse effects could occur. In order to support EA conclusions associated with the final statement highlighted above, alternative wording should be considered. For example, the passage could state “...the implementation of the protocols and response measures identified in the SOPEP will minimize the likelihood of significant adverse effects occurring as a result of an accidental event associated with this project” in order to support the final statement highlighted above.

**§6.1.4.3 Vessel Discharge and Accidental Events Page 182, Paragraph 6**

The impacts of oil on birds have been well documented (e.g., Hartung 1995); however, no oil from seismic vessel discharge is expected to occur and thus, should not have any severe adverse effects of avifauna. [Coastal and marine birds could also be affected by a spill from any vessel \(fishing, commercial and DFO research\) at sea. The single seismic vessel does not increase the risk to coastal and seabird populations.](#)

The sentences highlighted do not add anything relevant to the EA of the project. In EC’s view they should be removed.

**§6.1.4.3 Vessel Discharge and Accidental Events Page 182, paragraph 6**

Potential oil spillage may occur from ballast and bilge water discharge, however, [if oil is suspected to be in the water](#), it will be tested and if necessary, treated using an oil/water separator to ensure that oil concentrations in the discharge do not exceed 15 mg/L as required by the MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships 1972, and the Protocol of 1978 related thereto), International Maritime Organization and OWTG. There will be limited amounts of marine fuel and lube oil onboard that could potentially be spilled into the ocean. The potential for an oil pollution incident is low for this Project.

How is oil suspected to be in the water? It should be detected.

**§6.1.4.3 Vessel Discharge and Accidental Events Page 183, paragraph 2**

Effects due to accidental spills associated with the proposed operation therefore are considered, overall, to be detectable if they occur, negligible, but neither significant nor likely.

The concluding statement in this section is unclear.

**§6.1.4.4 Page 183, Monitoring and Follow-up**

[“An Environmental Observer will be onboard to record marine bird \(and marine mammals\) sightings during the program. The protocol will follow CWS’s Standardized Protocols for Pelagic Seabirds Surveys from Moving and Stationary Platforms for the Hydrocarbon Industry: Interim Protocol – June 2006 \(Appendix C\).”](#)

EC-CWS has attached an updated protocol for pelagic seabird surveys (Gjerdrum et al. 2011), which is a finalized version of the draft protocol listed in the EA report. This final version should be used in the revised EA report.

**§6.1.4.4 Page 183, Monitoring and Follow-up**

“MKI will ensure that CWS is provided field data collection with respect to marine birds.”

In an effort to expedite the process of data exchange, EC-CWS requests that the raw data (pertaining to migratory birds and species at risk) collected from these surveys and summary reports be forwarded in digital format to our office. These data will be centralized for our internal use to help ensure that the best possible natural resource management decisions are made for these species in Newfoundland and Labrador. Metadata will be retained to identify source of data and will not be used for the purpose of publication. EC-CWS will not copy, distribute, loan, lease, sell, or use this data as part of a value added product or otherwise make the data available to any other party without the prior express written consent.

**§6.1.4.5 Page 183, Table 6.1: Summary of Environmental Assessment for Marine and Migratory Birds (Interactions and Issues)**

“Disturbance from vessel noise and lights” should be changed to “Disturbance and death from collisions due to vessel noise and lights”.

**§6.1.4.5 Page 183, Table 6.1: Summary of Environmental Assessment for Marine and Migratory Birds (Impact and Analysis)**

“The literature indicates there is no measurable effect on marine birds.”

The effect of light attraction on marine birds has not been verified. More data on the distribution and abundance of marine birds in the vicinity of the study area are essential for assessing the accuracy of predictions. Globally significant concentrations of marine birds are known to use the Grand Bank, and may concentrate in the vicinity of the proposed survey area. Data on marine birds are required from the project in order to assess risk and mortality should an accident occur.

**§Section 6.1.4.5 Page 183, Table 6.1 Summary of Environmental Assessment for Marine and Migratory Birds (Mitigation)**

- A dedicated observer will be on board the seismic vessel to record marine birds and incidents of collisions, oiling and stranding
- Vessel compliant with audit prior to survey.
- Maintenance of equipment and responsible management of such equipment.
- Compliance with OWTG (NEB et al. 2010) and MARPOL for all discharges.

It is not clear how all of the above measures list can be considered mitigation. For example, observing and recording incidents is not considered mitigation. In the second bullet there should be some reference to specific audit protocols, and in the third there should be some reference maintenance and management protocols, plans and standards.

**§Section 6.2.4.2.5 Page 201, paragraph 4**

Mitigation measures to minimize the impact of seismic operations on fish spawning include:

- To minimize sudden changes in noise levels, a ramp up procedure will be implemented;
- All discharges will comply with Offshore Waste Treatment Guidelines;
- A Spill Prevention Program will be implemented; and
- [An Emergency Spill Response Plan will be developed and implemented when required.](#)

Concerning the last item in the above list, an Emergency Spill Response Plan should be developed, tested and in place before it is required.

**§Section 6.3.4.1 Vessel Presence Page 205, paragraph 3**

Collision with an endangered species would be considered significant; however, since there are no records of collision between the listed species at risk and seismic vessels, the probability of occurrence is low. The fact that there are no past records of collisions with listed species at risk should not be used to support this conclusion. There may have been collisions that were not recorded or collisions may have occurred involving species that were not listed at the time.

**§6.5.4 Page 224, Effects Assessment**

Each of the issues identified earlier in the text for migratory birds in general (e.g. sound, lights, oil, etc.) should be further considered for the Ivory Gull as a species at risk potentially affected by project activity in this area.

**§6.5.4.1 Page 224, Marine and Migratory Bird Species at Risk**

EC-CWS notes that the study area is offshore and that any incidental presence of the Ivory Gull will occur in the offshore during the winter season (i.e. over-wintering in the Study Area).

**Fisheries and Oceans Canada**

**§ 2.2 Project Overview Page 6, Table 2.1**

It would be helpful if the airgun array operating value was also provided in the same units as the CEAA trigger (kPa).

**§ 5.1 Marine Physical Setting Page 32, Figure 5**

This Figure should show the Labrador Basin and the Labrador Current as referenced.

**§ 5.4 Ocean Resources Page 104 (Skates)**

More explanation and a primary literature reference should be provided for the following statement, "... distribution and densities within these areas (NAFO Div. 3LN) are diminishing."

**§ 5.4 Ocean Resources, Table 5.16, Table 5.17 and Table 5.18**

There are inconsistencies between COSEWIC designations and the text. The COSEWIC designated populations and the most recent designations need to be cross-referenced and the most recent information sources referenced (e.g., Atlantic Cod Science Advisory Report (2011/026), Can. Sci. Advis. Sec. Proceed. Ser. 2010/053; Blue Whale, Atlantic Population – Recovery Strategy, Feb 2012).

**§ 5.4.4 Marine Fish and Shellfish**

Species distribution maps from 1998-2000 survey data are outdated. Current distribution maps of fish species could be generated from recent DFO Spring and Autumn RV survey data which is available from DFO upon request.

**§ 5.4.4 Marine Fish and Shellfish Page 98:** The study area covers a section of 3N; therefore 3NO cod should be included.

**§ 5.4.4 Marine Fish and Shellfish Page 100:** The description of American plaice should incorporate discussion of Morgan (2001, J. Northw. Atl. Fish. Sci. Vol. 29, p41-49).

**§ 5.4.4 Marine Fish and Shellfish Page 104:** "... The Atlantic population of deepwater redfish is designated as threatened under COSEWIC..." There are two species of redfish that would reside within the study area but only the deepwater redfish is mentioned (Acadian redfish is not included).

**§ 5.4.4 Marine Fish and Shellfish Page 128:** A primary reference should be identified for the following statement, "Wolffish and roughhead grenadier, amongst other species are known to use EBSA and it is important area for the reproduction and survival of striped wolffish (CPAWS 2009)".

**§ 5.4.6 Species at Risk Page 131**

Reference to Figure 5.52 showing the VMEs and EBSAs within the Study Area would be helpful.

**§ 5.4.7 Sea Turtles Page 134**

The Leatherback turtle/Southeast Shoal EBSA discussion should include a reference to Figure 5.52.

**§ 5.4.8 Sensitive Areas Page 136**

Establishing Areas of Interest of Marine Protected Areas are not the only management options for EBSAs. Additional EBSA management models should be incorporated in the discussion. The Southern Newfoundland Strategic Environmental Assessment (<http://www.cnlopb.nl.ca/environment/snseac.shtml>) would facilitate this discussion.

**§ 5.4.8 Sensitive Areas Page 142**

A Total Allowable Catch (TAC) has been re-established for Redfish in 3LN and is therefore not a NAOF Fishing Closure.

### **§ 5.5.1 Commercial Fisheries**

Nearshore and offshore fleets harvest different species and have different requirements (i.e., fishing patterns). Separate information for each of these fleets should be provided, including the number of vessels and relative species dependency.

In order to benchmark the value of the fishery in the study area, the average landed value per species over the 2005-2010 period should be provided.

### **§ 5.5.1 Commercial Fisheries Page 162**

The Statement, “However, concerns for over-fishing have reduced the quotas in the last two years.” is inaccurate. While there was a biomass reduction, the cause was not identified as over-fishing by DFO or NAFO.

### **§ 5.5.1 Commercial Fisheries Page 167**

The source of the following statement should be indentified, “... An annual survey review document is produced to summarize the results of the survey and is provided to Fisheries Management to assist them in deciding which stocks require a more complete assessment.”

### **§ 5.5.1 Commercial Fisheries Table 5.22**

The figures for SFA 7 should be 18,325 t for 06/07 and 15,994 t for 10/11.

### **§ 6.2 Marine Finfish and Shellfish page 185**

Reference should be provided for the following statements:

“... recent concerns expressed by Newfoundland fishers on their observation or harvest results following seismic programs in 2011.”

“... The effects of intense and potential harmful sound on fish hearing and behaviour are poorly understood. Such noise may disturb fish and may produce temporary or permanent hearing impairment in some individuals, but is unlikely to cause death or life threatening injury.”

### **§ 6.2 Marine Mammals page 205**

Mortality or life-threatening injury to individuals of a species at risk should be an independent significance criterion for marine mammals as it is for marine fish.

### **§ 6.4 Sea Turtles page 217**

Define “short” and “long-term” displacement from preferred or critical habitat by sea turtles.

### **§ 6.5 Species at Risk page 226**

The statement, “... There are no recovery potential assessment or recovery strategies finalized or developed yet for roughhead or roundnose grenadier” is inaccurate. A recovery potential assessment was conducted for roundnose grenadier in 2010 (DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2010/021).

**§ 6.5 Species at Risk page 226**

There are Recovery Potential Assessment documents now available (CSAS) for Roundnose Grenadier, Acadian and Deepwater Redfish and Atlantic Bluefin Tuna.

**§ 6.5 Species at Risk page 234**

MKI has committed to plan the survey lines for each annual survey “to avoid the EBSAs in May to July as per each EBSA specific sensitive species, until spawning has ceased.” Although DFO is pleased with this measure, it is unclear whether it also applies to the Bonavista Cod Box.

**§ 6.8 Commercial Fisheries and RV Surveys page 238**

There is a spring multi-species bottom trawl survey in NAFO Divs. 3PsnLNO and autumn multi-species survey in NAFO Divs. 2H-3O.

**§ 8.0 Cumulative Effects page 246**

The reference to the Joint Review panel for the Express Pipeline Project in Alberta is a case study. The cumulative effects assessment (e.g., CEEA CEA Practitioners Guide) for a single project should do the following:

1. Determine if the project will have an effects on a VEC;
2. If such an effect can be demonstrated, determine if the incremental effect acts cumulatively with the effects of other actions, either past, existing or future.
3. Determine if the effect of the project, in combination with other effects, may cause a significant change now or in the future in the characteristics of the VEC after the application of mitigation for that project. [http://www.ceaa-acee.gc.ca/43952694-0363-4B1E-B2B3-47365FAF1ED7/Cumulative\\_Effects\\_Assessment\\_Practitioners\\_Guide.pdf](http://www.ceaa-acee.gc.ca/43952694-0363-4B1E-B2B3-47365FAF1ED7/Cumulative_Effects_Assessment_Practitioners_Guide.pdf)

A CEA should examine the effects of each VEC until the incremental contribution of all activities and of the project (total cumulative effect), is understood. Based on this it is recommended that a summary table of environmental effects should be completed for each VEC (e.g., Table 6.12, Page 243).

**§ 8.2 Marine Fish pages 247-248**

Exposure to low-frequency ship noise may be associated with chronic stress in whales. If available, please incorporate: Rolland, R.M., Parks, S.E., Hunt, K.E., Castellote, M., Corkeron, P.J., Nowacek, D.P., Wasser, S.K., and Krauss, S.D. 2012. Evidence that ship noise increases stress in right whales. Proceedings of the Royal Society B: Biological Sciences (In press.)

**§ 8.2 Ocean Resource Users page 250**

The statement, “In the event of another seismic survey being conducted in the vicinity within the proposed timeframe, a significant distance between surveys will be necessary to prevent both operational conflict and acoustic interference.” “A significant distance”, should be given a numerical value.

## **§ 9.2 Conclusions/Executive Summary**

The executive summary concludes; “With the application of mitigative measures, this environmental assessment predicts that potential adverse environmental effects on the above VECs will not be adversely significant because the potential extent of physically harmful sound levels on fish occurs within 20 m or less of the air gun source. No other marine species is expected or known to experience physical harm by these surveys.”

Similarly, the summary of environmental assessment for marine fish and shellfish states: “Although there are few studies on the effects of seismic surveys on specific fish species in Newfoundland waters, research studies show that mortality or serious injury is unlikely beyond a distance of approximately 2 m from the sound source.”

These statements are based on limited (one to three airguns) studies to investigate mortality or overt pathological effects. These statements should acknowledge the knowledge gap with respect to recent studies on distance-effect relationships as well as physiological effects of sound on fish and shellfish.

## **Canada-Newfoundland and Labrador Offshore Petroleum Board**

**§ 1.1 Purpose and Need for the Project, 2<sup>nd</sup> para., pg 1** – Is the statement “fulfilling work commitments...the C-NLOPB” relevant.

**§ 1.3 Regulatory Context, pg 4** – The *Geophysical, Geological, Environmental, and Geotechnical Program Guidelines* have been revised. Please refer to the January 2012 version.

**§ 1.5 Stakeholder Consultation, pg 4** – Details of the stakeholder consultation should be provided. When were the consultations conducted? Who was contacted? What information was provided? What were the results of the consultation process? How and where were they incorporated into the EA Report. Table 3.1 on page 22 should not be considered a report on stakeholder consultation.

**§ 2.1 Project Name and Location, pg 5** – The coordinates for the “Project Area” should be provided as well. MKI should also include the area where the 2012 program will be conducted. There are four coordinates identified for the “Study Area” but the Study Area identified on Figure 1.1 is not square in shape. Please review and provide accurate coordinates.

**§ 2.2 Project Overview, 1<sup>st</sup> para., pg 6** – It is not clear what is meant by the statement “Although the environmental assessment...geophysical surveys”. When will environmental mitigations for the planned geophysical surveys be addressed?

**§ 2.3.2.2 Alternatives to Program Timing, pg 8** – It is stated that “MKI have scheduled their 2012 survey to minimize interference with shellfish harvesting”. It is important that a change in this schedule should be communicated well in advance of project commencement.

**§ 2.4 Project Components, pg 8** – “a support chase/picket vessel”. Please confirm that a dedicated chase vessel will be included as a component of the 2-D survey. It is stated on page 17 that the “support vessel’s” primary function is to provide supplies for the seismic vessel and to assist in emergency situations (including oil spills).

**§ 2.4.1 Seismic Vessel, pg 9** – Is it MKI’s intention to use the “M/V Sanco Spirit” for every survey conducted between 2012 and 2017? If not, it should be confirmed that it is only for the 2012 program and that other vessels with similar specs may be used between 2013 and 2017.

**§ 2.4.1 Seismic Vessel, last para., pg 10** – “It is estimated that...identified survey area”. The Project Area should include the area required for the survey vessel turning radius.

**§ 2.4.1.1 Shipboard Oil Pollution Emergency Plan (SOPEP), 1<sup>st</sup> para., pg 10** – It is not clear what is meant by the following sentence “*Used correctly in a given situation, you and we as ship operator will, avoid any claims and responsibility from official authorities*”.

**§ 2.4.1.1 Shipboard Oil Pollution Emergency Plan (SOPEP), 3rd para., line 9, pg 10** – Should “presentation” be “prevention”.

**§ 2.4.1.2 Waste Management – Sanco Shipping AS, pg 11** – “Office Manual”. The name implies that it is available in the office. Is it also applicable and available to personnel on the vessel?

**§ 2.4.2 2-D Seismic Survey Towed Array, 1st para., pg 14** – “MKI will include a 10 to 12 km vessel turn-around perimeter around the survey area”. The Project Area should include the area required for the survey vessel turning radius.

**§ 2.4.4 Logistical Support, 2<sup>nd</sup> para., last line, pg 17** – Do you mean “fishers” instead of “fisheries”.

**§ 2.5.2 Atmospheric Emissions, pg 18** – The term “minor” has not been defined.

**§ 2.6 Potential Malfunctions and Accidental Events, last para., pg 20** – “*if wave heights reach or exceed unacceptable limits*”. What are these limits?

**§3.1 C-NLOPB Scoping Requirements, pg 21** – The C-NLOPB identified “potential issues” to be “considered” not “issues of concern”.

**Section 4 Environmental Assessment Methodology, pg 23** – The correct reference for the “Canada-Newfoundland and Labrador Offshore Resources Accord Implementation Act” is the *Canada-Newfoundland Atlantic Accord Implementation Act* and the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act*.

**Section 4 Environmental Assessment Methodology, pg 23** –All the factors in subsection 16(1) of the CEAA should be listed.

**§4.1 Approach, 2<sup>nd</sup> para., pg 23** – “valued environmental components (VECs)” should be “valued ecosystem components (VECs)”. Also applicable in Section 4.2.1.

**§4.2.3.1 Temporal Boundaries, pg 25** – Please define the “licence area”.

**§4.2.3.2 Spatial Boundaries, pg 25** – There appears to be some confusion with regard to Spatial Boundaries. Section 5.1 of the “Multi Klient Invest AS Northeast Newfoundland Slope Area Seismic Program 2012 – 2017 Scoping Document” (C-NLOPB January 4, 2012) states that *The proponent shall clearly define, and provide the rationale for the spatial and temporal boundaries that are used in its EA*. Specifically, the EA report shall clearly describe the spatial boundaries (e.g. Project Area, Study/Affected Area, Regional Area). The “Project Area” should be defined and as stated in the Scoping Document and should be *“the area in which seismic survey activities are to occur, including the area of the buffer zone normally defined for line changes”*. There is inconsistency in terminology used throughout the EA Report for the “Project Area” (e.g. Study Area, Licence Area, Project Activity Area, Survey Area). This should be reviewed and corrected.

**§4.2.4 Interactions Between Project Activities and VECs, Table 4.2, pg 27** – Table 4.2 does not appear to be complete. Please update and include the complete list of identified VECs, as per the reference to Section 6.

**§5.1.2 Seafloor Stratigraphy, Figure 5.2, pg 34** – Please revise figure to ensure that the legend can be read. This is also applicable to other figures throughout the report.

**§5.4.8.7 Corals and Sponges, figure 5.53, pg 141** – NAFO Divisions are not on the figure.

**§5.5.2.1 Commercial Marine Traffic, pg 169** – “light to moderate and light to very light”. These terms have not been defined. Data to support this conclusion should be included.

**§5.5.5 Petroleum Industry, pg 172** – Please provide the source of this information.

**§6.6 Sensitive Areas, pg 232** – This section should reference Figure 5.52. Southeast Shoal and Tail EBSA, as identified on Figure 5.52 is outside the Study Area.

**§6.8.1.2 Potential Interactions and Issues, pg 236** – Reference is made to 3Ps, 3Pn and 4Vn. The figure identifying these areas should be referenced. Figure 5.55 on page 145 does not include 3Ps, 3Pn and 4Vn.

**§6.8.1.4.1 Vessel Presence, 1<sup>st</sup> para., last sentence, pg 237** – “For the 2-D survey....but not in any one area”. As requested above, please provide details of the 2012 survey. It

has already been stated that a plan has been developed and provided to FFAW, fishers, and One Ocean. Survey activity can only occur in the Project Area that has been identified in the EA Report.

**§6.8.1.4.1 Vessel Presence, pg 238** – Mitigations measures.....

**Avoidance Mitigation** – “avoiding active fixed gear fishing areas”. Active fishing areas should be avoided, not just fixed gear fishing areas.

**Avoidance Mitigation** – “streamer deployment during transits to a survey area”. If it is the intention to deploy streamers outside the Project Area, then this activity should be included in the assessment. In particular, for the 2012 program, if the vessel is entering the Project Area from the Labrador Shelf Project Area after completion of this program, then this activity should be addressed.

**Avoidance Mitigation** – “As noted above, a route analysis...undertaken before the transits”. Adequate time should be allowed for these discussions.

**Communications Mitigation, 1<sup>st</sup> para, last sentence** – It should read “Open lines of communications between “participants in” the commercial fishery and “MKI” should prevent potential adverse effects”.

**Communications Mitigation, 2nd para** – The exchange of survey information should be transmitted and obtained well in advance of commencement of the survey.

**§6.8.1.4.1 Vessel Presence, last para., pg 239** – “The long term observations and experience with seismic program offshore Nova Scotia and Newfoundland provides a high level of confidence in this assessment”. Please provide references for this statement.

**§6.8.1.4.2 Noise Emissions, last para., pg 242** – “It was agreed with MKI.....data analysis of reduced landings.” It is not clear what is meant by this sentence.

**§6.8.2 Follow-up and Monitoring, pg 243** – “Key shore-based personnel...line scheduling.” Do you mean the SPOC that was identified earlier in the report.

**§7.1 Metocean, 2nd para., pg 245** – “A reflection of climate change”. Please provide the reference for this statement.

**§7.1 Metocean, last para., pg 245** – “A weather observation and site-specific forecasting program would be “prudent”. Does this mean that MKI will be undertaking this program.

**§7.1 Metocean, 4th para., pg 245** – “reduced visibility of less than one kilometer occurs from 40 to 50% of the time.” How does this affect the survey program?

**§7.2 Ice, pg 245** – “Sea ice and icebergs...limits of these seasonal phenomena”. Please expand on this statement, in particular, how they are expected to be a factor for seismic operations.

**§8 Cumulative Effects Assessment, Table 8.1, pg 246** –The source should be identified and reviewed for completeness.

**§8.2 Marine Fish, Sea Turtle, pg 249** – “A trained Environmental Observer will keep records of marine turtles within visual range, weather permitting.” What is meant by “weather permitting”?

**§8.2 Marine Fish, Sensitive Areas, pg 250** – “MKI has committed to avoiding the EBSAs before end of July”. Please make reference to each EBSA and identify the reasoning for avoidance before the end of July.

**§8.3.1 Marine Traffic, pg 250** – Please define “small” and provide reference to the section of the report where this has been described.

**§8.3.2 Offshore Petroleum Activity, last sentence, pg 250** – “The MKI will not be surveying in the area of the production platform or during exploration drilling areas while they are underway.” There are established safety zones around production and drilling facilities (and other authorized activities) that the survey vessel should not enter. The locations of these safety zones are available from the Coast Guard.

**§8.3.3 Commercial Fisheries, 1<sup>st</sup> para., pg 250** – “Seismic vessel activity is minor component of total marine transportation.” Again, define “minor” and reference the section of the report where this has been described.

**§8.3.3 Commercial Fisheries, 2nd para., pg 250** – “As discussed above, shrimp fishers are investigating a sudden decrease...following two WesternGeco surveys.” Please identify where in the report that this has been previously discussed and provide the source for this statement.

**§8.3.3 Commercial Fisheries, 3rd para., pg 250** – “a significant distance”. Please define “significant distance”.

**§9.1 Summary of Mitigation and Follow-up, Table 9.1, pg 252** – See previous comment regarding complete list of mitigation measures.

**§9.1 Summary of Mitigation and Follow-up, Table 9.1, pg 252** – Please review and ensure that all mitigation measures for all VECs are included.

**§9.1 Summary of Mitigation and Follow-up, Table 9.1, pg 252** –

**Species at Risk, line 1** – “a meeting”. Who will be attending the meeting?

**Species at Risk, line 15** – “to the extent reasonably practical”. The *Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment* specifies the mitigation requirements that must be met during the planning and conduct of marine seismic surveys, in order to minimize impacts on life in the oceans. These requirements are set out as minimum standards,

**Species at Risk, line 21** – The GGEG Program Guidelines state that “the air source array(s) must be “shut down completely” or “reduced to a single source element”.

**Species at Risk, line 29** – “vessels will maintain a steady course and speed, and use existing travel routes, where possible.” How can this occur during the seismic survey?

**Ocean Resource Users** – Incidents of contact with fishing gear should be reported immediately as per the *C-NLOPB/CNSOPB Guideline for the Reporting and Investigation of Incidents*.

**§9.2 Conclusions, 2<sup>nd</sup> paragraph, line 2, pg 253** – “vessel activity will generally be restricted to the immediate Project Area”. The seismic survey program should not occur outside the Project Area.

**§9.2 Conclusions, 2<sup>nd</sup> paragraph, line 8, pg 253** –Again, please provide the source of the 2011 reduction in shrimp catches statement.