

Western Newfoundland 2017 Controlled Source Electromagnetic (CSEM) Survey-
Environmental Assessment (Stantec May 2017)

GENERAL COMMENTS

Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB)

Throughout the document, beginning in **Section 4.2 Spatial and Temporal Boundaries**, there is reference made to the *Local Assessment Area (LAA)*. Section 5.1.1 Spatial Boundaries of the Scoping Document that was provided to EMGS on December 14, 2016 stated that the Study Area should be clearly defined. Is the *Local Assessment Area (LAA)* the Study Area?

Department of Fisheries and Land Resources (Government of Newfoundland and Labrador)

Our dept would request that, based on the information available, the timing of the survey be conducted during the period which would have the lowest risk on interaction with fish species or fishing activity.

Environment and Climate Change Canada (ECCC)

Clarification – Oil-based products in Transmitter and/or Receivers.

It is not stated if oil-based products (e.g. lubricants or fuel) will be used in the transmitter and receivers. The presence or lack thereof of oil-based products in these devices should be stated in the environmental assessment. ECCC recommends that transmitters and receivers without hydrocarbon-based fluids be used.

Mitigations - Stranding

Should storm-petrels or other species become stranded on vessels, the proponent is expected to adhere to the protocol The Leach's Storm-Petrel: General Information and Handling Instructions (**attached**). A permit will be required to implement this protocol and the proponent must be advised that such a permit must be in place prior to the initiation of proposed activities. Please note that Migratory Birds Convention Act permit applications can be obtained from the Canadian Wildlife service of ECCC (ECCC-CWS) via email at ec.scfatlpermis-cwsatlpermits.ec@canada.ca.

Mitigations - Data Collection

ECCC-CWS has developed a pelagic seabird monitoring protocol (**attached**) that is recommended for use by experienced observers on all offshore projects. A guide for pelagic seabirds of Atlantic Canada has also been **attached**, for assistance in identifying pelagic seabirds in the area.

A report of the seabird monitoring program, together with any recommended changes, is to be submitted to ECCC-CWS on a yearly basis. In an effort to expedite the process of data exchange, ECCC-CWS recommends that the data (as it relate to migratory birds or Species at Risk) collected from the monitoring program be forwarded in digital format to

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ECCC-CWS following annual program completion (Contact for data is Josh Mailhiot, ECCC-CWS Environmental Assessment Coordinator: joshua.mailhiot@canada.ca). These data will be centralized for ECCC-CWS's 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. ECCC-CWS will not copy, distribute, loan, lease, sell, or use of this data as part of a value added product or otherwise make the data available to any other party without prior express written consent.

Mitigations - Oil Pollution Incidents

The assessment of environmental effects which could result from accidents and malfunctions should include a consideration of potential spill events. The assessment should be guided by the need to ensure compliance with the general prohibitions against the deposit of a deleterious substance into waters frequented by fish (Section 36, Fisheries Act) and against the deposit of oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds (Section 5.1, Migratory Birds Convention Act). In addition, it should be focused on potential worst-case scenarios (e.g., concentrations of marine birds, presence of wildlife at risk). Based on this analysis, the environmental assessment should describe the precautions that will be taken and the contingency measures that will be implemented to avoid or reduce the identified impacts.

In developing a contingency plan that would support the assessment of accidents and malfunctions, and a determination that impacts could be avoided or reduced, it is recommended that the Canadian Standards Association publication, Emergency Preparedness and Response, CAN/CSA-Z731-03¹ (Reaffirmed 2014), be consulted as a useful reference. All spills or leaks, including those from machinery, fuel tanks or streamers, should be promptly contained, cleaned-up and reported to the 24-hour environmental emergencies reporting system (Phone: 1-800-563-9089).

Spills could result in significant effects on migratory birds in the event that large numbers of birds, or individual species at risk (SAR), are affected. Migratory birds, including bird species at risk, could be significantly affected if spills affect important habitats or critical habitat for SAR. Disturbance resulting from accidental events during the breeding season in the vicinity of SAR or colonial bird nesting areas could also result in significant effects if it results in nesting failure or site abandonment by the birds.

¹ Canadian Standards Association publication, Emergency Preparedness and Response, CAN/CSA-Z731-03 (<http://shop.csa.ca/en/canada/injury-prevention/canca-z731-03-r2009/inv/27019912003>)

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Strategies to minimize or prevent accidental or chronic releases must be emphasized in a mitigation program. Proponents are required to demonstrate response preparedness and to identify provisions for ensuring measures are implemented to eliminate or minimize resulting sheens or slicks in the event of accidents and malfunctions involving the release of oil. The following considerations are requested to be factored into the development of a response plan that would help reduce impacts on seabirds:

- Measures for containing and cleaning up spills (of various sizes).
- Equipment that would be available to contain spills.
- Specific measures for the management of large and small spills (e.g., breaking up sheens).
- Mitigation measures to deter migratory birds from coming into contact with the oil.
- Mitigation measures to be undertaken if migratory birds and/or sensitive habitat become contaminated with the oil.
- The type and extent of monitoring that would be conducted in relation to various spill events.

In order to assist proponents in preparing a plan for dealing with an oil spill which would potentially threaten migratory birds, ECCC-CWS has prepared a guidance document ([attached](#)), a sample protocol document used for oiled birds on beaches ([attached](#)), and a protocol for handling non-oiled but dead birds found on vessels ([attached](#)).

Department of National Defence (DND)

MARLANT Safety and Environment (MARL SE) has the following comments:

- Please identify a specific individual or office to serve as a Point of Contact (POC) for MARLANT queries and concerns;
- Confirm the appropriate Notice to Mariners will be issued for all underwater activities and any significant surface ventures, such as use of flares, buoys, and unconventional night lighting; and
- Publish the appropriate Notice to Airmen of activities that could affect air safety, such as use of balloons, UAVs or tethered airborne devices.

The UXO Program has conducted a search of our database and there are no identified UXO sites of concern in that area.

Due to the fact that there may be uncharted shipwrecks or unidentified UXO sites or munition dumps and in the event of activities are conducted that have contact with the seabed (such as drilling or mooring), it is strongly advised that operational aids, such as remotely operated vehicles, be used to conduct seabed survey in order to prevent unintentional contact with shipwrecks or dump sites that are not noted on the maps or harmful UXO items that may have gone unreported or undetected.

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The St. Lawrence Coalition (SLC)

Follow-up and monitoring (pages 4.8, 6.6, 6.11, 6.14, 6.26, 6.30, 6.33)

It is clearly established, in the scoping document, that a follow-up and monitoring program should be implemented or at least discussed:

“Discuss the need for and requirements of a follow-up program to verify the accuracy of the EA, to verify the effectiveness of any mitigation measures identified in the EA, or both.” (Section 5.2.14, page 10) However, in numerous sections of the EA Report, the need for a follow-up program, to measure the effectiveness of the mitigation measures, is dismissed as non-necessary. This should be corrected.

We have been reading the documents for the EMGS survey on the EAST coast and something important struck me. On page 1 of the amendment tabled to the C-NLOPB on June 12th 2017, EMGS affirms that they will have TWO marine mammal observers (MMO) on board the survey ship:

“In addition, the CSEM vessel will have a fisheries liaison officer (FLO) and two marine mammal observers (MMOs) onboard to spot fishing gear in the water during all survey operations, including receiver deployment operations.”

On the contrary, the Western Nfld Environmental Assessment Report tabled to the C-NLOPB on May 2017 talks of only ONE marine mammal observer (page 2.3):

"The survey vessel will also have a Fisheries Liaison Officer (FLO) and a seabird and marine mammal observer (SMMO) onboard."

This is pretty troubling given the wave of Right Whales deaths in the Gulf during this summer (over 11 deaths) and the role that collision with ships has played in the record number of dead whales.

Natural Resources Canada (NRCan)

The Mi'kmaq Confederacy of Prince Edward Island expressed no specific concerns with the CSEM survey project, however noted the significance of the area in relation to Aboriginal and treaty rights, including Food Social and Ceremonial fisheries.

The Conseil des Innus de Pessamit requested additional information on the effects of the project. The Innus of Pessamit were invited to direct their questions to EMGS for response. A follow-up email was sent following the close of the comment period but no further requests or comments were received.

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The Conseil des Innus de Ekuanitshit advised that it collaborates with the Malécite of Viger and the Mi'gmaq of Gespe'gewa'gi on oil and gas development in the Gulf of St. Lawrence (in the Innu-Maliseet-Mi'gmaq Alliance for the Protection of the Gulf). They requested additional time and capacity funding to comment. In response, my office offered to arrange a meeting/teleconference call to discuss any issues with the proponent, and nine additional days were provided for the submission of comments. Although there was interest in a meeting, the Innu of Ekuanitshit advised that it could not meet until mid October (after the projected commencement of the survey in the first week of October). Additional comments were submitted August 29, 2017, which outlined the importance of salmon in the Gulf of St. Lawrence to the Innu, Malécite and Mi'gmaq. Other concerns raised in relation to the EA report included: lack of information on potential effects on Aboriginal rights; mischaracterization of the Aboriginal commercial fishery; lack of information on effects of noise and mitigation measures for marine mammals; and the assessment of cumulative effects of noise. Procedural concerns raised in the August 29 letter included: inadequate consultation stemming primarily from the timing and time available for consultation; as well as the lack of capacity funding provided. Based on the view that there has been inadequate consultation, the Innu of Ekuanitshit have requested that project approval be withheld.

The Mi'gmawei Mawiomi Secretariat (MMS), representing the Gesgape'gewa'gi Mi'gmaq governing councils of Gesgapegiag, Gespeg and Listuguj, stated they have concerns regarding the project, but no project specific issues were noted. The MMS stated it was not in receipt of the notification letters sent July 19, 2017, and requested that the consultation request be resent to the MMS Consultation and Accommodation Unit and the comment period be restarted. In response, my office offered to arrange a meeting/teleconference with the proponent to discuss concerns with the project.

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SPECIFIC COMMENTS

Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB)

Section 1.2 Regulatory Framework, Figure 1.1, pg 1.2 – This figure should also include the Study Area, as defined in the Scoping document provided to EMGS on December 14, 2016.

Section 2.1 Project Location, pg 2.2 – The Study Area Coordinates should be provided in this section.

Section 2.2.1 Survey Vessel Operation, pg 2.2 – All project related activities may only occur in the Project Area, including, but not limited to, deployment and testing of survey equipment and vessel turning.

Section 2.2.1 Survey Vessel Operation, 2nd para, pg 2.3 – The FLO and SMMO must be two separate people as to ensure all mitigations involving them can occur uninterrupted.

Section 4.3 Issues Scoping and Selection of Valued Components, Fisheries and Other Ocean Users, pg 4.5 – The rationale for selection of *Fisheries and Other Ocean Users* as a VC was that the fishery is an important element in both Newfoundland and Labrador and other Gulf of St. Lawrence jurisdictions. However, there is no evidence in the report that commercial fishers in the Gulf of St. Lawrence jurisdiction were consulted.

Section 5.1.2 Atmospheric Environment, pgs 5.3 to 5.5 – The climate data provided only goes up to 2010. More up to date information needs to be included.

Section 6.5.4 Assessment of Residual Environmental Effects, 1st para, pg 6.17 – The statement “Many of the Project-related activities are limited to the Project Area...”. What project-related activities will occur outside the Project Area?

Section 6.7.3 Mitigation, 4th bullet, pg 6.32 – Please define *high concentrations*. Also, actively fished areas are to be avoided.

Section 7.0 Accidental Events, 4th para, pg 7.1 – The document reads, “The SOPEP will be filed with the C-NLOPB as part of the Operations Authorization.” The SOPEP should be submitted as part of the Operations Authorization application.

Section 7.0 Accidental Events, 4th para, pg 7.2 – The document reads, “In the event of a spill, the implementation of the SOPEP and communication with the Canadian Coast Guard, the C-NLOPB and fishers will reduce the geographic extent and duration of an

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event to the extent feasible.” How will “communication” reduce geographic extent and duration of a spill event?

Fisheries and Oceans Canada (DFO)

Section 4.2 Spatial and Temporal Boundaries, last 2 paragraphs, page 4.2 - The timing of commercial fishing activities and other marine users should be taken into account when scheduling project activities. Please include a statement to address this.

Section 4.3 Issues Scoping and Selection of Valued Components, 2nd and 3rd sentence, Marine Fish, Shellfish, and Habitat paragraph, page 4.4 - Regarding the VC 'Marine Fish, Shellfish, and Habitat', recommend changing to "... Fish Habitat', which includes phytoplankton, zooplankton and benthos (i.e. infaunal and epifaunal invertebrates).

Section 4.8 Assessment of Cumulative Environmental Effects, page 4.8 - In the 1st and 2nd sentence, change "past, present, or future" to "past, present and/or future". In sentence 2, please define "substantive interaction".

Section 5.2.1 Plankton, page 5.8 - "Plankton" should fall under the heading of "Fish Habitat' and should include a description of phytoplankton, zooplankton, and benthos (i.e. infaunal and epibenthic invertebrates such as polychaetes and echinoderms), which play an important role in ecosystem structure. Please provide additional description for fish habitat.

Section 5.2.2 Marine Fish and Fish Habitat, pages 5.8-5.13 - Invertebrates other than shellfish should be addressed in this EA. Other invertebrates (e.g., polychaetes, echinoderms) can play important roles in ecosystem structure. A comprehensive overview of fish habitat, particularly for species relevant to the fisheries, has not been provided. Please provide additional fish habitat descriptions.

Section 5.2.6 Species at Risk, Table 5.11 - Atlantic Cod (Laurentian North population, Laurentian South population), pages 5.36-5.37 - Because two populations are being described, efforts should be made to clarify whether one or both populations are being referenced.

Section 5.2.6 Species at Risk (Table 5.11 - Roughead Grenadier, American Plaice (Newfoundland and Labrador population), Striped Bass (Southern Gulf of St. Lawrence population), White Hake (Southern Gulf of St. Lawrence population), Spiny Dogfish (Atlantic population), and Northern Bottlenose Whale (Davis Strait-Baffin Bay-Labrador Sea population) - Information on the expected distributional overlap with the project is should be included for these species.

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Section 5.2.6 Species at Risk, Table 5.11 - American Plaice (Newfoundland and Labrador population), page 5.41 - Two different depth ranges are provided for this species. The appropriate depth range should be clarified.

Section 5.2.6 Species at Risk, Table 5.11 - Atlantic Sturgeon (St. Lawrence populations, Maritimes populations), last sentence, 1st paragraph, page 5.42 - "Population could pass through as transient is unclear. It should be clarified if this means that Atlantic Sturgeon may be present in the project area on a transient basis (e.g., area could be a migration route).

Section 5.2.6 Species at Risk, Table 5.11 - Loggerhead Sea Turtle, page 5.47 – This species is listed as Endangered under SARA Schedule 1. This should be corrected in Section 5.2.6 Species at Risk (1st sentence, 8th paragraph, page 5.53), and Table 6.3 (page 6.20).

Section 5.2.7 Sensitive Areas, pages 5.53-5.54 - Significant Benthic Area (SBA) delineations for corals and sponges have been identified for this area, and should be included in this report (Canadian Science Advisory Secretariat Science Advisory Report 20171007). Gulf and Quebec Regions have identified candidate areas for potential protection in SBAs in and adjacent to the PA, LAA, and the RAA (Kenchington et al., 2016).

Kenchington, E., L. Beazley, C. Lirette, F.J. Murillo, J. Guijarro, V. Wareham, K. Gilkinson, M. Koen Alonso, H. Benoit, H. Bourdages, B. Sainte-Marie, M. Treble, and T. Siferd. 2016. Delineation of Coral and Sponge Significant Benthic Areas in Eastern Canada Using Kernel Density Analyses and Species Distribution Models. DFO Can. Sci. Advis. Sec. Res. Doc. 2016/093. vi + 178 p. (http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016_093-eng.html)

Section 5.2.7.1 Ecologically and Biologically Significant Areas, page 5.54 - The wording of this paragraph is not accurate and should be replaced as follows: "Canada's Oceans Act authorizes DFO to conserve and protect living aquatic resources and their supporting ecosystems through the development of a well-designed network of Marine Protected Areas (MPAs) and other effective area-based conservation measures. The Estuary and Gulf of St. Lawrence (GOSL) has been identified as one of five priority Bioregions to undergo MPA Network Planning. Ecologically and Biologically Significant Areas (EBSAs) are areas that have particularly high ecological or biological significance which may facilitate provision of a greater than usual degree of risk aversion in the management of activities in these areas. EBSAs have been identified as priority areas for protection and an important design feature of MPA Networks. DFO has identified 10 EBSAs within the GOSL Bioregion; three of which are located within the RAA (Figure 5.6).

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As outlined in Table 5.12 these include the West Coast of Newfoundland EBSA, the South Fringe of the Laurentian Channel, and the Western Cape Breton EBSA."

Section 5.2.7.1 Ecologically and Biologically Significant Areas, page 5.54 – Lower portions of the PA, LAA and/or RAA appear to have a small portion overlap/adjacent to the Scotian Shelf Bioregion and the Newfoundland and Labrador Shelves Bioregion, which are also priority Bioregions for MPA Network Planning. The ESS Laurentian Channel and Slope EBSA is also located here (King et al., 2016) and should be mentioned.

King, M., Fenton, D., Aker, J. and Serdynska, A. 2016. Offshore Ecologically and Biologically Significant Areas in the Scotian Shelf Bioregion. DFO Can. Sci. Advis. Sec. Res. Doc. 2016/007. (http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016_007-eng.html)

Section 5.2.7.1 Ecologically and Biologically Significant Areas, page 5.56 - Table 5.12 is missing the Laurentian Channel and Slope EBSA (in PBGB Area/NL Shelves Bioregion). The AOI is noted but not the EBSA (DFO, 2016).

DFO. 2016. Marine Protected Area Network Strategy for the Estuary and Gulf of St. Lawrence Bioregion. (<http://www.dfo-mpo.gc.ca/oceans/publications/mpaegsl-egslamp/index-eng.html>)

Section 5.2.7.2 Areas of Interest, page 5.56 - It is anticipated that the Laurentian Channel AOI will receive Ocean's Act MPA designation before the end of 2017, and should be noted.

Section 5.2.7.3 Other Marine Fish Sensitive Areas, page 5.57 - Please provide references for the Potential Redfish Mating Area and Potential Redfish Larvae Extrusion Area.

Section 5.3.1.3 Aboriginal Fisheries, 2nd and 3rd paragraph, pages 5.72-5.73 – licencing information for the Qalipu Mi'kmaq First Nation Band and MAMKA is dated, footnoted as 2011. Updated information (e.g., 2014 and 2015) should be provided.

Section 5.3.2.1 Hunting, 1st paragraph, final sentence, page 5.73 - The seal data presented comes from the province and is significantly different than the value DFO assigns for those years and is inconsistent with the Landed Value data presented for other species. DFO data for seals should be included.

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Section 6.2.1 Residual Environmental Effects Significance Criteria, sentence 1, paragraph 1, page 6.2 - In this context "change" could refer to a positive alteration, and should be associated with negative alterations. Recommend adding "negative" before "change". This comment also applies to Section 6.3.1 Residual Environmental Effects Significance Criteria (sentence 1, paragraph 1, page 6.6) and Section 6.4.1 Residual Environmental Effects Significance Criteria (sentence 1, paragraph 1, page 6.12).

Section 6.2.2 Project Interactions, paragraph 3, page 6.3 - Please provide a description of the disturbance to benthic habitat and species (e.g., dimensions of receivers, total area affected, depth of disturbance, affected species). Is there any potential for species to be transported between sites by attachment to receivers? If this is a potential issue then it should be addressed in the mitigations. The issue of species introductions/movement is also relevant to Section 6.2.3 Mitigation (5th bullet, page 6.3), Section 6.5.3 Mitigation (5th bullet, page 6.16), Section 6.6.3 Mitigation (5th bullet, page 6.28), Section 6.7.3 Mitigation (2nd bullet, page 6.32), Section 10.0 Summary and Conclusions (6th bullet, page 10.1).

Section 6.2.3 Mitigation, 2nd bullet, page 6.3 - Species at risk should be recorded by the SMMO. This comment also applies to Section 6.3.3 Mitigation (151 bullet, page 6.7), Section 6.5.3 Mitigation (151 bullet, page 6.16), Section 6.6.3 Mitigation (2nd bullet, page 6.28), Section 10.0 Summary and Conclusions (2nd bullet, page 10.1).

Section 6.2.3 Mitigation, 3rd bullet, page 6.3 - regarding the sentence "In areas where water depth are greater than 500 m, the EM source will not be initiated", ramp-up procedures are relevant to all depths, not only in depths greater than 500 m. This sentence should be revised. Ramp-up procedures should also apply to Species at Risk. Regarding "... 20 minutes have elapsed ..." The Statement of Canadian Practice recommends a 30 minute wait since the last sighting. This sentence should be revised accordingly. These comments also apply to 6.3.3 Mitigation (2nd bullet, page 6.7), 6.5.3 Mitigation (2nd bullet, page 6.16), Section 6.6.3 Mitigation (3rd bullet, page 6.28), Section 10.0 Summary and Conclusions (3rd bullet, page 10.1).

Section 6.2.4 Assessment of Residual Environmental Effects, pages 6.4 - 6.5 - Please describe the consequences for species that cannot move away from the disturbance (e.g., benthic invertebrates).

Section 6.2.4 Assessment of Residual Environmental Effects, paragraph 13, pages 6.5-6.6 - Animals are often attracted to physical structures on the seafloor. Please describe whether receivers may attract species and if so, the potential consequences. There will be some impact on the benthic habitat and associated species - this should be noted. These comments are also relevant to Section 6.6.4 Assessment of Residual Environmental Effects (paragraph 5, page 6.29).

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Section 6.2.5 Determination of Significance, page 6.6 - The effects assessment should incorporate uncertainty and the level of confidence associated with a prediction which should be noted and an explanation provided. This applies to each valued component.

Section 6.3.3 Mitigation, 5th bullet, page 6.7 - should include "species at risk". This comment also applies to Section 10.0 Summary and Conclusions (7th bullet, page 10.1).

Section 6.3.6 Follow-up and Monitoring, page 6.11 - Data collected on marine mammal and sea turtle observations should also be reported to the C-NLOPB.

Section 6.5 Species at Risk, 2nd sentence, paragraph 3, and page 6.15 - There are 23 species populations listed on Schedule 1 of SARA, including populations for two sea turtle species. This should be revised.

Section 6.5.1 Residual Environmental Effects Significance Criteria (3rd bullet, page 6.15) - This bullet should read "results in temporary or permanent loss of critical habitat." Also, "recovery strategy" and "action plan" should be used instead of "recovery plan" and "action strategy". These comments also apply to Sections 6.5.5 Determination of Significance (2nd sentence, page 6.26), 6.6.1 Residual Environmental Effects Significance Criteria (2nd bullet, page 6.27), 6.6.5 Determination of Significance (3rd sentence, page 6.30).

Section 6.5.2 Project Interactions, 2nd last sentence, page 6.16 - Regarding "EM emissions generated by the CSEM source can potentially result in physiological and/or behavioural changes in fish Species at Risk." - other species (e.g. marine mammals) that could be affected physiologically and/or behaviourally by EM emissions should be included. This comment also applies to Section 6.6.2 Project Interactions (3rd sentence, 1st paragraph, page 6.27).

Section 6.5.3 Mitigation (3rd bullet, page 6.16) - the EM source should be shut down for all water depths if a SARA-listed species is observed within the safety zone.

Section 6.5.4 Assessment of Residual Environmental Effects (final sentence, 1st paragraph, page 6.17) - This sentence should apply to all species at risk, not just fish species.

Section 6.5.4 Assessment of Residual Environmental Effects (7th paragraph, page 6.23) - The frequency range expected from vessel operation should be included here to demonstrate the overlap with sensitivities reported in sea turtles.

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Section 6.6 Sensitive Areas, pages 6.26-6.27 - There are missing sensitive areas that should be included: significant coral and sponge areas (Kenchington, 2016), ESS Laurentian Channel and Slope EBSA, NL Shelves Laurentian Channel and Slope EBSA, and IBAs located outside the PA but within the RAA (e.g., Magdalen Islands).

Section 6.6.2 Project Interactions last sentence, 1st paragraph, page 6.27 - It should be mentioned that benthic species could be impacted by the deployment of receivers to the seafloor.

Section 6.6.3 Mitigation, page 6.28 - To prevent harm to important benthic habitats, including significant coral and sponge areas, receivers should not be deployed on known coral and sponge locations. This comment also applies to Section 6.2.3 Mitigation (page 6.3) and Section 10.0 Summary and Conclusions (pages 10.1-10.2).

Section 6.6.4 Assessment of Residual Environmental Effects, Survey Vessel Operations, page 6.29 - Residual effects of vessel noise should also be discussed.

Section 6.6.4 Assessment of Residual Environmental Effects, Receiver Deployment and Retrieval, page 6.29 - Reference to corals and sponges when discussing impacts to benthic habitat should be included.

Section 6.7.1 Residual Environmental Effects Significance Criteria, 3rd paragraph, page 6.31 - Additional information should be provided for scientific research. Interference with research activities or changes to species distributions would both hinder scientific research.

Section 6.7.3 Mitigation, 6th bullet, page 6.32 - include posting of advisories with the Canadian Coast Guard and the CBC Fisheries Broadcast.

Fish, Food and Allied Workers (FFAW-Unifor)

Section 3.0 Consultation and Engagement, pg 3.1 - There are strong indications from science that redfish and other groundfish resources are on the rise in the Gulf. On the west coast there has been a significant increase in Atlantic halibut, which is harvested by long line (not haddock).

Section 3.0 Consultation and Engagement, Table 3.1 Comments Raised during Consultations, pg 3.2 - FFAW-Unifor members do not generally use trawl gear for the species that have been fished in the project area. An exception would be redfish but a fishery for redfish in 2017, if opened, would be limited.

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Section 5.2.7 Sensitive Areas, pgs 5.53-5.57 - As the Potential Redfish Mating Area (September-December) overlaps with the Project Area (September-October) with respect to timing, further information regarding how the project may impact redfish mating is warranted in this assessment.

Section 6.1 Overview of Project Interactions and Potential Effects, Table 6.1 Potential Project-VC Interactions, pg 6.1 - While we recognize it is unlikely that there would be interaction between the fishery and receiver deployment and retrieval due to the mitigation measures proposed (i.e. FLO onboard, Notice to Shipping, etc.) there is still a potential for interaction and it should be noted as such in Table 6.1.

Section 9.3 Follow-up and Monitoring, pg 9.3 - It is understood that the receiver bases that are left on the ocean floor following the survey are designed to disintegrate in about a year. Has the proponent returned to a survey site and done testing to confirm that this is the case? There is a potential concern that a commercial fish harvester could hook a receiver base for example in the spring or summer next year (2018). Have there been any incidences of this occurring in other jurisdictions?

Appendix C, Commercial Fishing Locations by Species, Figure 2, Commercial Fisheries Activity by Year Greenland Flounder Halibut - Is this information for Greenland halibut (also known as turbot)?

Appendix C, Commercial Fishing Locations by Species, Figure 7, Commercial Fisheries Activity by Year Snow Queen Crab - The species predominately fished in Newfoundland and Labrador is snow crab *Chionoecetes opilio*. It may sometimes be referred to as queen crab in the market.

The St. Lawrence Coalition (SLC)

Section 1.1 Project Justification, pg 1.1 - The proponent offers no convincing justification for the project. Over the years, a very large number of scientists, fishermen associations, tourist associations, municipalities, private citizens, as well as numerous First Nations around the Gulf of St. Lawrence have expressed strong concerns over oil exploration in the Gulf. In view of this, and the fact that any eventual drilling will be met with fierce opposition, it is surprising to see a proposal to continue further oil exploration in the Gulf. The proponent should offer an extensive justification for this CSEM project.

Section 2.2.1 Survey Vessel Operation, pg 2.2 - The proponent will have a seabird and marine mammal observer (SMMO) on-board the survey vessel. Considering the difficulty of accurately observing marine mammals during the course of operations, while attending to stranded seabirds, we believe that this job should be split between two

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persons: a marine mammal observer and a seabird specialist. In addition, these persons should be adequately trained and be certified to perform these important tasks. What will be their qualification? Will they be certified observers? The EA Report is silent about these aspects.

Section 2.4 Project Schedule, pg 2.6 - We read on page 2.6 that the project could be performed between August and December 2017, pending regulatory authorizations. Yet, on page 2.1 we can read that the survey could be performed between August and November 2017. This should be clarified. We read on page 2.6 that the timing of the survey will depend on “EMGS’ client priority and circumstances”. This requires clarification: 1) who is this client of EMGS? 2) What is meant by the “priorities and circumstances” of the client?

Section 3.0 Consultation and Engagement, Table 3.1 Comments Raised during Consultations, Fisheries Liaison Officer, pg 3.3 - We learn on page 3.3 that EMGS intends to deal with a Fisheries Liaison, most likely a member of FFAW-Unifor. Has such a liaison been considered with fishing associations from other provinces, considering that their members could also be active in the project area? Have any contacts been made with fishing associations from other provinces?

Section 3.0 Consultation and Engagement, Table 3.1 Comments Raised during Consultations, Survey Details, Project Area, pg 3.3 - On page 3.3, the “project zone” is described as corresponding with exploration licence 1153 (Old Harry). Yet, on page 1.2, Figure 1.1 clearly shows that the “project zone” is much larger than the 1153 exploration licence. This should be clarified.

Section 5.2.2.3 Coral and sponges, pgs 5.12 and 5.13 - Up to 14 taxa of coral, including sea pens and gorgonian corals, can be found in the Laurentian Channel. These can also be found “within or near the Project Area”, according to the Environmental Assessment Report. The dropping of the CSEM receivers as well as their accompanying cement bases by EMGS could be a definite perturbation factor to these fragile organisms. No mitigation measures, such as photographs of the sea bottom prior to the placement of the receivers, seem to have been considered in order to minimize the impact on these sessile organisms. This should be corrected.

Section 5.2.3 Marine Mammals, Table 5.6, pg 5.14, North Atlantic Right Whales - On page 5.14, as well as in five other instances in the EA Report, the North Atlantic Right Whale is mentioned as being endangered and “rarely” seen in the Gulf of St. Lawrence. These sections should definitely be updated in view of the dramatic events of summer 2017. During a span of 4 weeks, eight North Atlantic Right Whales were found dead in the waters of the Gulf. Considering that their total population is only 525 individuals,

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this is truly a major concern towards the survival of the species. Preliminary necropsies have revealed that the two major causes of death were impacts with ships and entanglement with fishing gear. DFO even closed early the crab fishing season to prevent further deaths. In that context, it seems irresponsible to hold the CSEM surveys in Fall 2017, adding to the pressure on this extremely fragile species. EMGS affirms that a marine mammal observer will be on-board to monitor any approaching marine mammal. The North Atlantic Right Whale is one of the most difficult marine mammals to observe considering that its back is barely visible above the surface of the sea. What particular measures will be used to remove any threat to the Right Whale?

Section 5.2.6 Species at Risk, Table 5.11 Species at Risk Occurring in the RAA, pg 5.45, Beluga Whale - In Table 5.11, the Beluga Whale (St. Lawrence Estuary population) is said to be “Threatened” in Annex I of the Species At Risk Act. This needs to be updated as this population of Beluga is now considered “Endangered” in Annex I of SARA.

Section 5.2.7.2 Areas of Interest, pg 5.56 - Two major updating of Section 5.2.7.2 need to be made:

- a.) Laurentian Channel MPA (Marine Protected Area). The EA Report refers to this area, in the Laurentian Channel, as being a simple “area of interest” to DFO. This needs to be updated since the proposed regulation of the official MPA has been recently published in the Canada Gazette.
- b.) Magdalen Islands Marine Protected Area Project (**attached**). A vast 15,000 km² area around the Magdalen Islands is being considered as an area of interest for a marine protected area (MPA) by the federal and Québec governments. This area should be added to Figure 5.6 and to Section 5.2.7.2.

Section 6.2.4 Assessment of Residual Environmental Effects, pg 6.3 - It is clearly determined that some organisms are negatively influenced by strong electromagnetic fields, notably species or groups such as eels, salmon, sharks, crustaceans, etc., who use such natural fields to navigate. The EA report minimizes any residual environmental effects of the CSEM survey and says the residual effects are both spatially and temporally negligible. Based on the Precautionary Principle, the C-NLOPB should refuse the CSEM project.

Section 6.6.3 Mitigation, ramp-up procedures, pg 6.28 - In section 6.6.3, as well as in various other sections of the EA Report, it is proposed to use ramp-up procedures based on the Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment. However, this Statement has been criticized by numerous marine mammal scientists as being too permissive. The proponent’s ramp-up procedure should definitely be strengthened to be more in line with current scientific knowledge¹.

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¹ Weir, C.R. and S.J. Dolman. 2007. Comparative Review of the Regional Marine Mammal Mitigation Guidelines Implemented during Industrial Seismic Surveys, and Guidance Towards a Worldwide Standard. *Journal of International Wildlife Law and Policy*, 10:1–27