

ExxonMobil Canada Properties' Seabed Survey for the Potential Sable Subsea Satellites Development
Scoping Document for the Environmental Assessment

Canada Nova Scotia Offshore Petroleum Board

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1.0 Purpose

This document provides a description of the scope of the project, the factors to be considered, and the scope of those factors related to the Environmental Assessment (EA) for the proposed seabed survey to be conducted by ExxonMobil Canada Properties.

This document has been prepared by the Canada Nova Scotia Offshore Petroleum Board (CNSOPB), as the Responsible Authority (RA) for this project, pursuant to Sections 15 and 16 of the Canadian Environmental Assessment Act.

2.0 Regulatory Considerations

The project will require authorizations pursuant to Section 142 (1)(b) of the *Canada – Nova Scotia Offshore Petroleum Resources Accord Implementation Act*. Issuance of this authorization is described in the Law List Regulations of the *Canadian Environmental Assessment Act* (CEAA) and therefore constitutes a power as described in sub-section 5(1)(d) of the CEAA.

The CNSOPB, as the sole RA, must ensure that an EA of the project is carried out. Pursuant to Section 17(1) of the CEAA, the CNSOPB will delegate the preparation of the EA to the proponent.

Based in the information provided in the Project Description submitted to the CNSOPB in February, 2010, Fisheries and Oceans Canada, Environment Canada, Transport Canada and Natural Resources Canada have determined that they are in possession of specialist or expert knowledge and information to support the EA process.

3.0 Scope of the Project

ExxonMobil Canada Properties and its co-venturers, herein referred to collectively as “the proponent”, are considering developing the Glenelg and Citnalta fields, which contain significant discovery licenses (SDLs), and potentially additional prospects in the same general vicinity as these fields. A seabed survey is required to determine whether possible hazards exist at potential drilling locations as well as along potential flowline routes. Potential hazards include hazardous shallow gas, unstable substrate, and seabed obstructions. During the seabed survey benthic habitat data will also be collected.

The proposed seabed survey will occur in the marine waters under the jurisdiction of the CNSOPB, on the Scotia Shelf, over undeveloped fields in the vicinity of the existing Sable Offshore Energy Project producing fields. Survey areas include the undeveloped Glenelg and Citnalta fields, and potentially additional prospects in the same general vicinity as these fields, as well as associated flowline corridors (see Figure 1 of the document *Project Description – Seabed Survey – Potential Sable Subsea Satellites Development*). The Glenelg field is approximately 31 km from Sable Island (measured from the closest point of the island to the N-49 delineation well), and approximately 300 km from Halifax. The Citnalta field is approximately 20 km from Sable Island (measured from the NE tip of the Island to the only well), and is approximately 320 km from Halifax.

The proponent is proposing a targeted start date of June, 2010 for this project. Activities will include:

- 2D high resolution (2DHR) digital seismic data acquisition over an approximately 1km x 1km area (not including turns) at each potential wellsite location;
- use of a sub-bottom profiler, multi-beam echo sounder, magnetometer, and side scan sonar over an approximately 1km x 1km area at each potential wellsite location and along approximately 1km wide projected flowline routes;
- seabed core sampling at each potential wellsite location and along approximately 1km wide projected flowline routes; and
- benthic habitat sampling via surficial sediment grab and underwater video drop camera at each well site location and at selected sampling stations along projected flowline route corridors.

The program will take 1-2 months, with the exception of seismic data acquisition, which will occur for approximately 1-2 days at each wellsite location.

4.0 Factors to be Considered

The EA shall include a consideration of the following factors as described in Subsection 16 (1) of the CEAA:

Factors to be considered in accordance with subsection 16 (1) are:

- the environmental effects of the project, including the environmental effects of malfunctions or accidental events that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the significance of the environmental effects;
- comments from the public that are received in accordance with the *Canadian Environmental Assessment Act* and its regulations; and
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.

The project has been posted on the Canada Environmental Assessment Registry and the CNSOPB public registry. The proponent's EA will be posted on the CNSOPB public registry. There will not be a specific public comment period, though comments can be submitted by the public at any time during the CEAA process. Any public comments received will be posted online on the CNSOPB public registry.

5.0 Scope of the Factors to be considered

Based on a variety of previous EAs involving similar surveying and data collection methods, the CNSOPB has focused the scope of the factors to be considered to those that have the potential to have significant adverse environmental effects. This scope included consideration of the regulations, standards and required mitigation to be followed during project activities, should the project proceed.

Section 6 of this document outlines the valued environmental components that shall be assessed in the EA, and includes discussion of the rationale for the inclusion of each of these components.

Appendix A describes those factors that are considered unlikely to have the potential to cause significant adverse environmental effects. Rationale for the exclusion of the factors, and specific mitigation that must be implemented to allow for their exclusion in the EA are included in Appendix A. These excluded

factors are considered outside the scope of the EA and do not require assessment in the EA beyond that indicated. If mitigation other than that indicated in Appendix A is to be used, further assessment may be required.

6.0 Valued Environmental Components to be Assessed

6.1 Species at Risk

The EA shall include a listing of all species-at-risk known to occur in the study area. The EA shall identify and evaluate all environmental effects, including cumulative effects, of the project on species listed on Schedule 1 of the *Species at Risk Act* (SARA), and their critical habitat, that are likely to occur in the study area. The proponent shall also assess the means by which potential adverse effects on species-at-risk and their critical habitat will be mitigated through design and/or operational procedures, including those listed in the *Statement of Canadian Practice with Respect to the Mitigation of Seismic Noise in the Marine Environment* (the Statement). Additional mitigation measures identified shall be consistent with SARA recovery strategies and/or action plans that are in place for species at risk in the project area.

The proponent shall indicate whether the project will be in compliance with the SARA prohibitions (SARA Sections 32, 33 and 58) and shall identify whether any SARA Section 73 permits will be requested.

Due to the potential for additional prospects in the same general vicinity as Glenelg and Citnalta to be added to the list of survey locations after the publication of this scoping document, or following the publication of the EA, a commitment to an update within, or following the publication of, the EA shall be required to determine if the species-at-risk assessment remains valid and includes all potentially impacted species-at-risk. The proponent should note that additional mitigation may be required should new species-at-risk be added to the assessment as a result of these additional prospects.

6.2 Special Areas

6.2.1 Sable Island

Sable Island is adjacent to the proposed project area. It is federally protected, a designated Migratory Bird Sanctuary, and is currently undergoing consideration to become either a National Wildlife Area or a National Park. Avian species, including species-at-risk (the Roseate Tern and the Savannah (Ipswich) Sparrow), breed on Sable Island. Spills from malfunctions and/or accidental events may have the potential to reach Sable Island. Therefore, assessment of the potential for significant adverse effects on Sable Island and resident avian species-at-risk and critical habitat is required.

The assessment shall address the potential for spills from malfunctions and effects of accidental spills on Sable Island and its resident species. The EA shall also include the means by which design and/or operational procedures, including follow-up measures, will be implemented to mitigate the potential effects on Sable Island.

6.2.2 The Gully MPA

The Citnalta SDL is closest to the Gully Marine Protected Area (MPA), approximately 20 km from the western corner of the Gully MPA. The Gully Marine Protected Area Regulations prohibit activities in the vicinity of the Gully MPA that are likely to result in disturbance to any living marine organism with the MPA. The proponent shall therefore provide assessment of the potential impacts of the project on the Gully MPA ecosystem, as well as demonstrate intent of compliance with the Gully MPA regulations. An assessment of the potential for spills from malfunctions and/or accidental events to reach the Gully shall be included in the EA. It is acknowledged that the 2DHR seismic acquisition component of this seabed survey (Section 3.0) is of a much smaller scale (energy output, duration, and survey area) than a typical 2D or 3D seismic exploration survey and therefore site-specific noise modeling is not required. Nonetheless, an assessment shall be made of the potential for significant adverse environmental effects caused by noise on the Gully MPA ecosystem.

The proponent shall also discuss the means by which design and/or operational procedures, including follow-up measures, will be implemented to mitigate significant adverse effects on the Gully MPA.

6.3 Malfunctions and Accidental Events

Accidental spills have the potential to affect the health and/or survival of plankton, fish eggs and larvae, juvenile and adult fish, marine mammals, marine birds, marine turtles and marine invertebrates in the project area. There is some historic evidence of hydrocarbon releases from seismic streamers on the Scotian Shelf and well as the possibility of light oil spills, such a fuel oil, from other vessels associated with petroleum exploration activity. Therefore, an assessment of the potential for, and potential effects of, accidental spills shall be included in the EA. This includes the targeted survey areas, as well as the aforementioned special areas.

The proponent shall provide information on the sources and volumes of petroleum products expected to be on board all vessels to be used for the project. The proponent shall also be required to state the measures to be used to minimize the potential for accidental release of these materials into the environment. This includes a Spill Response Plan specific to the project.

6.4 Other Ocean Users

Commercial fisheries for groundfish, pelagics and invertebrates (shellfish), as well as the potential for interaction with marine shipping and scientific research vessels, may occur in the project area. Subsea cables are present on Sable Island Bank, including a communication cable linking Sable Island to the mainland of Nova Scotia. The potential project interactions with DND training exercises and/or munitions may exist as well. Therefore, an assessment of the potential effects of the project, including noise, on commercial fisheries that occur, or have the potential to develop, in the project area shall be included in the EA. The proponent shall determine the potential for interactions with marine shipping, subsea cables, and DND training exercises and the potential for the existence of munitions, and shall contact DFO to determine if any fisheries research survey vessels are expected to be in the project area at the time of the project as well.

6.5 Cumulative Effects

Section 16(1) of the CEAA requires that every screening include consideration of any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out. A number of seismic projects have occurred on the Sable Island Bank. The proponent will therefore be required to assess the potential effects of the additional seismic surveying, taking into account past seismic activity in the project area. As well, given the close proximity to the existing SOEP program, the proponent shall include an assessment of the potential for cumulative impacts of spills that could result from the seabed survey program and the SOEP project occurring simultaneously, for the duration of the seabed survey program. The assessment shall include the means by which design and/or operational procedures, including follow-up measures, will be implemented to mitigate significant adverse effects as a result of cumulative effects.

7.0 Effects of the Environment on the Project

Physical environmental conditions acting on the project that could have consequences for the environment (factors which could affect the project design or operation) include meteorology, oceanography and ice regime. The proponent is required to monitor physical environmental conditions and develop a plan to avoid potential adverse effects on the environment as a result of environmental influences on the project. An Emergency Response Plan is required. A certificate from Transport Canada to assure vessels are suited for possible effects from the environment is required as well

8.0 Follow-Up Monitoring

Based on the discussion of the above valued environmental components, the proponent shall include discussion of the need for a follow-up program.

9.0 Spatial and Temporal Boundaries

The proponent will clearly define, and provide rationale for, the spatial and temporal boundaries that are used in its environmental assessment. Boundaries should be flexible and adaptive to enable adjustment or alteration based on field data. Given that the potential exists for additional prospects in the same general vicinity as Glenelg and Citnalta to be added to the list of survey locations after the publication of this scoping document, a commitment to an update within, or following the publication of, the EA is required.

10.0 Significance of Environmental Effects

The proponent will clearly describe the criteria by which it proposes to define the term “significance” of any adverse effects (i.e. such as following the employment of mitigation measures) that are predicted within the EA. This definition should be consistent with the November 1994 CEA Agency reference guide *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects*.

11.0 Assessment Summary Section

The assessment will include a detailed summary of all mitigation, commitments and follow-up measures discussed in the EA. Adherence to mitigation measures, commitment and/or follow-up measures will be considered by the CNSOPB as possible conditions of authorization.

Appendix A: Components and Activities Outside of the Scope

I) Air quality

The major emission sources from the proposed project are the seismic vessel and other potential survey vessels. It is expected that project emissions will not cause an exceedences of applicable air quality standards or guidelines. There are limited emissions sources, and few receptors in the project area with the exception of Sable Island. Assessment of potential effects on air quality can be excluded from the EA provided that:

- the proponent adheres to MARPOL Annex VI, Regulations for the Prevention of Air Pollution from Ships; and
- the proponent adheres to the Air Emissions provisions of the Offshore Waste Treatment Guidelines, including submissions of greenhouse gas emissions.

II) Water Quality

Malfunctions and accidental events may have an effect on water quality. An assessment of the effects of hydrocarbon spills on living organisms and special areas, rather than water quality, is the appropriate focus for this assessment. Assessment of the effects of malfunctions and/or accidental events is required as is stated in Section 6.3.

Assessment of the potential effects on water quality can be excluded from the EA provided that:

- the proponent adheres to the Nova Scotia Offshore Area Petroleum Geophysical Regulations;
- the proponent adheres to the Offshore Waste Treatment Guidelines; and
- the proponent is in compliance with the *Fisheries Act* (Section 36).

III) Fish

There is no scientific evidence to date to suggest that seismic has adverse population level effects on fish, therefore significant adverse environmental effects are not expected to result from this project. The project area does not include spawning grounds. The potential effect on commercial fisheries is required as stated in Section 6.4.

No further assessment of the potential effects on fish will be required beyond the species-at-risk assessment and commercial fisheries assessment provided that:

- the proponent adheres to all mitigation measures outlined in the *Statement of Canadian Practice with Respect to the Mitigation of Seismic Noise in the Marine Environment*.

IV) Marine Benthos

The proponent will be required to adequately assess the effects of the project on snow crab and other commercial invertebrate species, as stated in Section 6.4. No further assessment of marine benthos is required at this time.

V) Marine Mammals and Sea Turtles

As stated in Sections 6.1 and 6.2, the potential for effects on marine mammal and/or turtle species-at-risk, as well as those species that may occur in the Gully MPA ecosystem, will be assessed. Provided that appropriate mitigation is applied, it is not expected that small scale (energy output, duration, survey area) of the 2DHR seismic acquisition component of this seabed survey will have an adverse population level effect on marine mammals or sea turtles.

No further assessment beyond that stated in Sections 6.1 and 6.2 will be required provided that:

- the proponent adheres to mitigation measures outlined in the *Statement of Canadian Practice with Respect to the Mitigation of Seismic Noise in the Marine Environment* for marine mammals and sea turtles.

As stated in section 6.1, the proponent should note that additional mitigation may be required should new species-at-risk be added to the assessment.

VI) Marine Birds

It is recognized that the attraction of any avian species to lights on vessels or discharge of food waste may cause collision, landing, and may disrupt migration. An assessment of the potential adverse environmental effects on bird species at risk will be required, as outlined in Section 6.1. Population level effects are not anticipated from the seismic or other surveying project components, however.

As stated in section 6.1, the proponent should note that additional mitigation may be required should new avian species-at-risk be added to the assessment.

No further assessment of effects on marine birds shall be required, provided that:

- the EA consider the potential impacts of vessel lights on marine birds and identify any necessary mitigation measures (i.e. implementation of the Williams and Chardine handling protocol brochure entitled “The Leach’s Storm Petrel: General Information and Handling Instructions” should birds land on vessels involved with the project). A permit is required from the Canadian Wildlife Service of Environment Canada to implement this protocol.