Flemish Pass Exploration Drilling Program

Environmental Impact Statement

Statoil Canada Ltd.
December 2017

Statoil

Statoil Canada Ltd. gratefully acknowledges the contribution of the various firms that participated in the completion of this Environmental Impact Statement (EIS).

The EIS and its supporting studies were prepared by an integrated team comprised of personnel from Amec Foster Wheeler and Stantec Consulting, in association with RPS, JASCO Applied Sciences, and Environmental Research Consulting.

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EXECUTIVE SUMMARY AND TABLE OF CONCORDANCE

Statoil Canada Ltd. (Statoil), in association with its partners BP Canada Energy Group ULC, BG International Limited, Chevron Canada Limited and ExxonMobil Canada Ltd., is proposing to undertake an exploration / delineation / appraisal drilling program and associated activities (herein referred to as exploration drilling) in the Flemish Pass area of the Canada-Newfoundland and Labrador Offshore Area between 2018 and 2027 (herein referred to as the Project).

It has been determined that, under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), that the drilling of a well on ELs 1139, 1140, 1141, and 1142 constitutes a "designated project" under Section 10 of the *Regulations Designating Physical Activities*. This document is an Environmental Impact Statement (EIS) submitted to the Canadian Environmental Assessment Agency (CEA Agency) to fulfil the requirements of the EIS Guidelines, issued in December 2016, under CEAA 2012.

The mapping and much of the content of this EIS addresses the Project Area for, and components and activities associated with, both the Statoil Flemish Pass Exploration Drilling Program, and the ExxonMobil Canada Ltd. Eastern Newfoundland Offshore Exploration Drilling Project, which are undergoing separate but concurrent environmental assessment (EA) review under CEAA 2012.

The Project activities described herein are standard components of an offshore exploration drilling program, and include:

- Presence and operation of a drilling installation (including lights, noise, air emissions, anchoring)
- Drilling and associated marine discharges (including fluids and cuttings)
- Formation flow testing with flaring
- Wellhead decommissioning
- Geophysical / geohazard / wellsite / seabed surveys and vertical seismic profiling surveys
- Geological / geotechnical / environmental surveys / autonomous underwater vehicle / remotely operated vehicle / video surveys
- Supply and servicing

The Project includes the drilling, testing, and eventual decommissioning of exploratory wells within the ELs identified above, using one or more drilling installations, which may include a semi-submersible and/or drill ship. Over the course of the anticipated duration of the Project, it is estimated that up to 30 wells could be drilled by Statoil, with specific wellsite locations being selected as planning and design activities progress. The Project also includes supporting activities that are often associated with offshore exploration drilling, including: possible delineation drilling in the case of a hydrocarbon discovery, geohazard / wellsite surveys, vertical seismic profiling, possible batch drilling, formation flow testing with flaring, geotechnical surveys, environmental surveys, remotely operated vehicle / video surveys, and associated supply and service activities.

The environmental effects analysis within the EIS is focused on the identification and assessment of potential adverse environmental effects of the Project on Valued Components (VCs). VCs are environmental attributes associated with the Project that are of particular value or interest because they have been identified to be of concern to Indigenous peoples, regulatory agencies, the Operator,

resource managers, scientists, key stakeholders, and/or the general public. The following six VCs were selected to facilitate a focused and effective EA process that complies with government requirements and supports public review:

- Marine Fish and Fish Habitat
- Marine and Migratory Birds
- Marine Mammals and Sea Turtles
- Special Areas
- Indigenous Communities and Activities
- Commercial Fisheries and Other Ocean Users

The potential environmental effects of the Project are assessed in Chapters 8-15 using a standard framework for the assessment of each VC. Evaluation tables and matrices are used to document the assessment. Residual Project-related environmental effects (i.e., those environmental effects that remain after the planned mitigation measures have been applied) are characterized for each VC using specific analytical criteria (i.e., magnitude, geographic extent, duration, frequency, reversibility, and certainty). The significance of residual Project-related environmental effects is then determined based on pre-defined standards or thresholds.

The EA methods used in the preparation of this EIS include an evaluation of the residual environmental effects that may result from routine Project activities as well as from accidental events. The evaluation of potential cumulative environmental effects considers whether there is potential for the residual environmental effects of the Project to interact cumulatively with the residual environmental effects of other past, present, or future (i.e., certain, or reasonably foreseeable) physical activities in the vicinity of the Project. Mitigation measures have been proposed to address potential Project and cumulative environmental effects and address all components of the Project scope. They include general Project-wide mitigation measures, best management practices and VC-specific mitigation measures. Residual environmental effects are evaluated in consideration of these mitigation measures.

The residual adverse environmental effects resulting from planned Project activities are predicted to be not significant. With the implementation of proposed mitigation measures, most environmental effects are predicted to be reversible, of short to medium duration, low to moderate magnitude, and localized geographic extent. As there are no Indigenous communities or other aspects of the physical / cultural heritage and other socioeconomic components and activities of these groups located within or near the Project Area / Local Study Area, and because the environmental changes and effects of the Project will not likely extend to and affect lands and resources that are currently used by these groups for traditional purposes, the Project will not have adverse residual effects on this VC.

With respect to accidental events, the probability of hydrocarbon releases are calculated based on historical information. Although significant release or spill is extremely unlikely, the trajectory and fate of hypothetical batch spills and subsurface blowouts are modelled, which can be used by the Operator to inform emergency response and contingency plans. Residual environmental effects resulting from accidental events are evaluated in consideration of the modelling results and the response and contingency measures. The residual adverse environmental effects for most VCs are predicted to be not significant, although a significant residual effect to Marine and Migratory Birds could occur (although not likely) depending on the timing, location, and duration of a spill and the

effectiveness of mitigation measures. To reduce the likelihood of accidental events, the Operator will design the Project and conduct all activities with a focus on safety and pollution prevention.

In summary, with the implementation of proposed mitigation measures, residual adverse environmental effects of routine Project activities are predicted to be not significant for all VCs. The Operator has and will continue to follow a performance-based assessment and continuous improvement approach with respect to environmental management of the Project using the Corporate Management System.

A concordance table (Table 1) is provided to demonstrate compliance with the EIS Guidelines and indicate where requirements have been addressed in this EIS document.

GUIDELINES FOR THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT
pursuant to the *Canadian Environmental Assessment Act, 2012*
Flemish Pass Exploration Drilling Project
Statoil Canada Ltd.

Statoil Guidelines	EIS Reference
1. INTRODUCTION	
the EIS must include a full description of the changes the project will cause to the environment that may result in adverse effects on areas of federal jurisdiction (i.e. section 5 of CEAA 2012) including changes that are directly linked or necessarily incidental to any federal decisions that would permit the project to be carried out.	1.4; Chapters 8-12
The EIS must also include a list of key mitigation measures that the proponent proposes to undertake in order to avoid or minimize any adverse environmental effects of the project. It is the responsibility of the proponent to provide sufficient data and analysis on potential changes to the environment to ensure a thorough evaluation of the environmental effects of the project by the Agency.	1.4; Chapters 8-12
2. GUIDING PRINCIPLES	
2.1. Environmental assessment as a planning and decision making tool	1.4
2.2. Public participation	
The proponent is required to provide current information about the project to the public and especially to the communities likely to be most affected by the project	1.4; Chapter 3
2.3. Engagement with Indigenous groups	
The proponent is expected to engage with potentially affected groups, beginning as early as possible in the project planning process.	1.1.2; 1.4; Chapter 3
The proponent shall provide potentially affected groups with opportunities to learn about the project and its potential effects and to make their concerns known about the project's potential effects and discuss measures to mitigate those effects.	1.4; Chapter 3
The proponent is strongly encouraged to work with potentially affected groups to establish an engagement approach.	1.1.2; Chapter 3
The proponent will make reasonable efforts to integrate Aboriginal traditional knowledge into the assessment of environmental effects.	Chapter 3; 4.3.3; 7.3

Statoil Guidelines	EIS Reference
2.4. Application of the precautionary approach	
The proponent will demonstrate that all aspects of the project have been examined and planned in a careful and precautionary manner in order to avoid significant adverse environmental effects	Chapter 2
3. SCOPE OF THE ENVIRONMENTAL ASSESSMENT	
3.1. Designated project	
On August 8, 2016 Statoil Canada Ltd., the proponent of the Flemish Pass Exploration Drilling Program provided a project description to the Agency. Based on this project description, the Agency has determined that an EA is required under CEAA 2012 and will include the following project components and activities:	1.3.2
– the mobilization, operation and demobilization of Mobile Offshore Drilling Units designed for year-round operations for the drilling, testing and abandonment of up to thirty exploration wells within exploration licences operated by Statoil Canada Ltd. (1139, 1140, 1141 and 1142), including consideration of any proposed safety exclusion zones. Drilling may occur in various water depths under consideration, with various types of drilling units, and with multiple drilling units operating simultaneously;	4.1
– vertical seismic profiling surveys and in-water works (e.g. wellsite surveys) to support the specific exploration wells under consideration, but excluding surveys potentially required to support conduct of the EA (e.g. environmental baseline surveys) and surveys related to the broader delineation of resources; and	4.1
– the loading, refuelling and operation of marine support vessels (i.e. for re-supply and transfer of materials, fuel, and equipment and on-site safety during drilling activities and transport between the supply base and Mobile Offshore Drilling Unit(s)) and helicopter support (i.e. for crew transport and delivery of light supplies and equipment) including transportation to the Mobile Offshore Drilling Unit.	4.1
Note: If the proponent becomes the operator of additional exploration licenses within the Flemish Pass and submits corresponding information to the Agency prior to the submission of the EIS, the Agency will consider whether activities on these additional licences may be incorporated into the scope of this EA.	
3.2. Factors to be considered	
– environmental effects of the project, including the environmental effects of malfunctions or accidents 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 physical activities that have been or will be carried out;	4.1; Chapters 8-15
– the significance of the effects referred to above;	4.1; 8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 15.5
– comments from the public;	3.5; 4.1

Statoil Guidelines	EIS Reference
– mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project;	4.1; Chapters 8.0-13.0; 15.0
– the requirements of the follow-up program in respect of the project;	4.1; Chapters 8.0-13.0
– the purpose of the project;	2.2; 4.1
– alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;	2.10.1; 4.1
– any change to the project that may be caused by the environment; and	4.1; 4.6; Chapter 16
– the results of any relevant regional study pursuant to CEAA 2012.	1.3.2; 4.1; 4.3
3.2.1. Changes to the environment	
Under CEAA 2012, an examination of environmental effects that result from changes to the environment as a result of the project being carried out or as a result of the federal government exercising any power duty or function that would allow the project to be carried out must be considered in the EIS.	4.1; Chapters 8-13
In scoping the potential changes to the environment that may occur, the proponent should consider any potential changes in the physical environment such as changes to air quality, water quality and quantity, and physical disturbance of land that could reasonably be expected to occur.	4.1; 4.3; Chapters 8-13
3.2.1. Valued components to be examined	
The proponent must conduct and focus its analysis on VCs as they relate to section 5 of CEAA 2012, including the ones identified in Section 6.3 (Part 2) of these guidelines that may be affected by changes in the environment, as well as species at risk and their critical habitat as per the requirement outlined in section 79 of the Species at Risk Act.	1.4.2; 4.1; Chapters 8-12
The list of VCs presented in the EIS will be completed according to the evolution and design of the project and reflect the knowledge acquired through public consultation and engagement with Indigenous groups.	Chapter 3; 4.1; 4.2
The EIS will describe what methods were used to predict and assess the adverse environmental effects of the project on these valued components.	4.3; 4.4; 4.5; 8.3.1; 9.3.1; 10.3.1; 11.3.1; 12.3.1; 13.3.1
The VCs will be described in sufficient detail to allow the reviewer to understand their importance and to assess the potential for environmental effects arising from the project activities.	Chapters 5-7

Statoil Guidelines	EIS Reference
The EIS will provide a rationale for selecting specific VCs and for excluding any VCs or information specified in these guidelines. Challenges may arise regarding particular exclusions, so it is important to document the information and the criteria used to justify the exclusion of a particular VC or piece of information. Justification may be based on, for example, primary data collection, computer modelling, literature references, public participation or engagement with Indigenous groups, or expert input or professional judgement.	4.2
The EIS will identify those VCs, processes, and interactions that either were identified to be of concern during any workshops or meetings held by the proponent or that the proponent considers likely to be affected by the project. In doing so, the EIS will indicate to whom these concerns are important (i.e. the public or Indigenous groups) and the reasons why, including environmental, cultural, historical, social, economic, recreational, and aesthetic considerations, and traditional knowledge. If comments are received on a component that has not been included as a VC, these comments will be summarized and the rationale for excluding the component will address the comments.	Chapter 3.0; 4.2
3.2.1. Spatial and temporal boundaries	
The spatial and temporal boundaries used in the EA may vary depending on the VC and will be considered separately for each VC, including for VCs related to the current use of lands and resources for traditional purposes by Aboriginal peoples, or other environmental effects referred to under paragraph 5(1)(c) of CEAA 2012. The proponent is encouraged to consult with the Agency, federal and provincial government departments and agencies, local government, and Indigenous groups, and take into account public comments when defining the spatial and temporal boundaries used in the EIS.	4.3.1; 8.1; 9.1; 10.1; 11.1; 12.1; 13.1
The EIS will describe the spatial boundaries, including local and regional study areas, of each VC to be used in assessing the potential adverse environmental effects of the project and provide a rationale for each boundary. Spatial boundaries will be defined taking into account the appropriate scale and spatial extent of potential environmental effects, community knowledge and Aboriginal traditional knowledge, current or traditional land and resource use by Indigenous groups, ecological, technical, social, and cultural considerations.	8.1; 9.1; 10.1; 11.1; 12.1; 13.1
The temporal boundaries of the EA will span all phases of the project determined to be within the scope of this EA as specified under section 3.1 above. If effects are predicted after project decommissioning, this should be taken into consideration in defining boundaries. Community knowledge and Aboriginal traditional knowledge should factor into decisions around defining temporal boundaries.	4.3.1.1
If the temporal boundaries do not span all phases of the project, the EIS will identify the boundaries used and provide a rationale.	4.3.1

Statoil Guidelines	EIS Reference
4 PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT	
4.1. Guidance	
The proponent is encouraged to consult relevant Agency policy and guidance on topics to be addressed in the EIS, and to liaise with the Agency during the planning and development of the EIS. The proponent is also encouraged to consult relevant guidance from other federal departments.	1.0; 1.4.2; 4.1; 4.2; 4.3.1; 4.3.2
Submission of regulatory and technical information necessary for federal authorities to make their regulatory decisions during the conduct of the EA is at the discretion of the proponent. Although that information is not necessary for the EA decision, the proponent is encouraged to submit it concurrent with the EIS. While the EIS must outline applicable federal authorizations required for the project to proceed, the proponent must provide information relevant to the regulatory role of the federal government. It should be noted that the issuance of these other applicable federal legislative, regulatory, and constitutional requirements is within the purview of the relevant federal authorities, and are subject to separate processes post EA decision.	1.3; 1.4.2
4.2. Use of information	
4.2.1. Government expert advice	
The Agency will advise the proponent of the availability of pertinent information or knowledge or expert and specialist knowledge received from other federal authorities or other levels of government so that it can be incorporated into the EIS.	Noted
4.2.2. Community knowledge and Aboriginal traditional knowledge	
The proponent will incorporate into the EIS the community knowledge and Aboriginal traditional knowledge to which it has access or that is acquired through public participation and engagement with Indigenous groups, in keeping with appropriate ethical standards and obligations of confidentiality.	Chapter 3.0; 4.1; 7.3
The proponent will integrate Aboriginal traditional knowledge into all aspects of its assessment including both methodology (e.g. establishing spatial and temporal boundaries, defining significance criteria) and analysis (e.g. baseline characterization, effects prediction, development of mitigation measures).	Chapter 3.0; 4.1; 7.3
Agreement should be obtained from Indigenous groups regarding the use, management, and protection of their existing traditional knowledge information during and after the EA.	Chapter 3.0; 4.1; 7.3

Statoil Guidelines	EIS Reference
4.2.3. Existing information	
In preparing the EIS, the proponent can use existing information relevant to the project, if applicable. When relying on existing information to meet requirements of the EIS Guidelines, the proponent will either include the information directly in the EIS or clearly direct the reader to where it may obtain the information (i.e. through cross-referencing).	Chapters 5.0-7.0
When relying on existing information to support the effects assessment, the proponent will provide a rationale to support the use of the information in relation to the specific project (separate factual lines of evidence from inference, and state any limitations on the inferences or conclusions that can be drawn from the existing information. In such circumstances, the proponent will clearly describe potential or known data or knowledge gaps, and describe how such gaps have been addressed in the assessment of the project.	4.3.3; 6.2.1; 10.3.3; 10.3.7; 10.3.8; 10.5.2 Chapters 5 to 7
4.2.1. Confidential information	
In implementing CEAA 2012, the Agency is committed to promoting public participation in the EA of projects and providing access to the information on which EAs are based. All documents prepared or submitted by the proponent or any other stakeholder in relation to the EA are included in the Canadian Environmental Assessment Registry and made available to the public on request. For this reason, the EIS will not contain information that: • is sensitive or confidential (i.e. financial, commercial, scientific, technical, personal, cultural or other nature), that is treated consistently as confidential, and the person affected has not consented to the disclosure; or • may cause substantial harm to a person or specific harm to the environment through its disclosure.	Confidential information is not included in the EIS.
4.3. Study strategy and methodology	
It is possible these guidelines may include matters which, in the judgement of the proponent, are not relevant or significant to the project. If such matters are omitted from the EIS, the proponent will clearly indicate it in the EIS, and provide a justification so the Agency, federal authorities, Indigenous groups, the public and any other interested party have an opportunity to comment on this decision. Where the Agency disagrees with the proponent's decision, it will require the proponent to provide the specified information.	4.2; 4.3.3; 7.3
The assessment will include the following general steps:	
✓ identifying the activities and components of the project;	1.2.2; 2.5; 4.1; 4.3; 8.5.2; 9.5.1; 10.5.1; 11.4.1; 12.4.1; 13.4.1

Statoil Guidelines	EIS Reference
✓ predicting potential changes to the environment;	4.1; 8.2; 9.2; 10.2; 11.2; 12.2; 13.2
✓ predicting and evaluating the likely effects on identified VCs;	4.1; 4.2; 8.5.2; 8.5.8; 9.2; 9.5.2; 10.2; 10.5.1; 11.2; 11.4.1; 12.2; 12.4.1; 13.2; 13.4.1
✓ identifying technically and economically feasible mitigation measures for any significant adverse environmental effects;	4.1; 8.3.2; 9.3.2; 10.3.2; 11.3.2; 12.3.2; 13.3.2
✓ determining any residual environmental effects;	4.1; 8.5.8; 9.5.1; 10.5.1; 11.4.1; 12.4.1; 13.4.1
✓ considering cumulative effects of the project in combination with other physical activities that have been or will be carried out; and	4.4; Chapter 14
✓ determining the potential significance of any residual environmental effect following the implementation of mitigation measures.	4.3.2; 4.3.3; 8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 14.2.6; 14.3.6; 14.4.6; 14.5.5; 14.6.3; 14.7.5; 16.3
For each VC, the EIS will describe the methodology used to assess project-related effects.	4.3; 4.3.3; 4.4; 4.5; 8.3.1; 9.3.1; 10.3.1; 11.3.1; 12.3.1; 13.3.1
The EIS could include an analysis of the pathway of the effects of environmental changes on each VC.	4.1; 8.2; 9.2; 10.2; 11.2; 12.2; 13.2
The EIS will document where and how scientific, engineering, community knowledge and Aboriginal traditional knowledge were used to reach conclusions.	Chapters 5.0-7.0; 8.3; 8.4; 8.5; 9.3; 9.4; 9.5; 10.3; 10.4; 10.5; 11.3; 11.4; 12.3; 12.4; 13.3; 13.4; 16.2; 16.3
Assumptions will be clearly identified and justified.	4.3.3; Chapter 15
All data, models and studies will be documented such that the analyses are transparent and reproducible.	2.13; 4.7; 8.7; 10.7; 15.6 Appendices C, D, E, G

Statoil Guidelines	EIS Reference
All data collection methods will be specified. The uncertainty, reliability, sensitivity, and conservativeness of models used to reach conclusions must be indicated.	4.3; 4.3.3; 4.4; 4.5; 8.3.1; 9.3.1; 10.3.1; 11.3.1; 12.3.1; 13.3.1; 15.2; 15.3; 15.4 Appendices C, D, E, G
The EIS will identify all significant gaps in knowledge and understanding related to key conclusions, and the steps to be taken by the proponent to address these gaps. Where the conclusions drawn from scientific, engineering and technical knowledge are inconsistent with the conclusions drawn from Aboriginal traditional knowledge, the EIS will present each perspective on the issue and a statement of the proponent's conclusions.	4.3.3; 5.8.2.1; 7.1.6; 10.3.3; 10.3.7; 10.3.8; 10.5.2
The EIS will include a description of the environment (both biophysical and human), including the components of the existing environment and environmental processes, their interrelations as well as the variability in these components, processes, and interactions over time scales appropriate to the likely effects of the project. The description will be sufficiently detailed to characterize the environment before any disturbance to the environment due to the project and to identify, assess and determine the significance of the potential adverse environmental effects of the project. These data should include results from studies done prior to any physical disruption of the environment due to project related activities. The information describing the existing environment may be provided in a stand-alone chapter of the EIS or may be integrated into clearly defined sections within the effects assessment of each VC. This analysis will include environmental conditions resulting from historical and present activities in the local and regional study areas.	Chapters 5-7
If the baseline data have been extrapolated or otherwise manipulated to depict environmental conditions in the study areas, modelling methods and equations will be described and will include calculations of margins of error and other relevant statistical information, such as confidence intervals and possible sources of error. The proponent will provide the references used in creating their approach to baseline data gathering, including identifying where appropriate, the relevant federal or provincial standards. The proponent is encouraged to discuss the timeframe and considerations for its proposed baseline data with the Agency prior to submitting its EIS.	8.3.1; 8.3.4; 9.3.1; 10.3.1, Chapter 5, Chapter 15 Appendix E

Statoil Guidelines	EIS Reference
In describing and assessing effects to the physical and biological environment, the proponent will take an ecosystem approach that considers both scientific and community knowledge and Aboriginal traditional knowledge and perspectives regarding ecosystem health and integrity. The proponent will consider the resilience of relevant species populations, communities, and their habitats. The assessment of environmental effects on Aboriginal peoples, pursuant to paragraph 5(1)(c) of CEAA 2012, will undergo the same rigour and type of assessment as any other VC (including setting of spatial and temporal boundaries, identification and analysis of effects, identification of mitigation measures, determination of residual effects, identification and a clear explanation of the methodology used for assessing the significance of residual effects and assessment of cumulative effects).	Chapter 3.0; 7.3; Chapter 12.0; Chapter 14.0
The proponent will consider the use of both primary and secondary sources of information regarding baseline information, changes to the environment and the corresponding effect on health, socio- economics, physical and cultural heritage and the current use of lands and resources for traditional purposes.	Chapters 5.0-7.0; 4.3; 4.3.3; 4.4; 4.5; 8.3.1; 9.3.1; 10.3.1; 11.3.1; 12.3.1; 13.3.1
The proponent will provide Indigenous groups the opportunity to review and provide comments on the information used for describing and assessing effects on Aboriginal peoples (further information on engaging with Indigenous groups is provided in Part 2, Section 5 of this document). Where there are discrepancies in the views of the proponent and Indigenous groups on the information to be used in the EIS, the EIS will document these discrepancies and the rationale for the proponent's selection of information.	Chapter 3.0; 7.3; Chapter 12.0
The assessment of the effects of each of the project components and physical activities, in all phases, will be based on a comparison of the biophysical and human environments between the predicted future conditions with the project and the predicted future conditions without the project. In undertaking the environmental effects assessment, the proponent will use best available information and methods. All conclusions will be substantiated. Predictions will be based on clearly stated assumptions. The proponent will describe how each assumption has been tested. With respect to quantitative models and predictions, the EIS will document the assumptions that underlie the model, the quality of the data and the degree of certainty of the predictions obtained.	Entire EIS

Statoil Guidelines	EIS Reference
4.4. Presentation and organization of the environmental impact statement	
To facilitate the identification of the documents submitted and their placement in the Canadian Environmental Assessment Registry, the title page of the EIS and its related documents will contain the following information: - project name and location - title of the document, including the term “environmental impact statement” - subtitle of the document - name of the proponent - date of submission of the EIS	Title page
The EIS will be written in clear, precise language. A glossary defining technical words, acronyms and abbreviations will be included. The EIS will include charts, diagrams, tables, maps, and photographs, where appropriate, to clarify the text. Perspective drawings that clearly convey the various components of the project will also be provided. Wherever possible, maps will be presented in common scales and datum to allow for comparison and overlay of mapped features.	Entire EIS
Detailed studies (including all relevant and supporting data and methodologies) will be provided in separate appendices and will be referenced by appendix, section, and page in the text of the main document.	Throughout EIS Appendices C, D, E, G
The EIS will explain how information is organized in the document. This will include a table of contents with a list of all tables, figures, and photographs referenced in the text.	Table of Contents
A complete list of supporting literature and references will also be provided.	1.6; 2.13; 4.7; 5.9; 6.5; 7.5; 8.7; 9.7; 10.7; 12.6; 13.6; 14.9; 15.6; 16.4; 17.6
A table of concordance, which cross references the information presented in the EIS with the information requirements identified in the EIS Guidelines, will be provided.	Table of Concordance
4.5. Summary of the environmental impact statement	
The proponent will prepare a summary of the EIS in both of Canada’s official languages (French and English) to be provided to the Agency at the same time as the EIS that will include the following: - a concise description of all key components of the project and related activities; - a summary of the engagement with Indigenous groups, and the participation of the public and government agencies, including a summary of the issues raised and the proponent’s responses; - an overview of expected changes to the environment;	Plain Language Summary

Statoil Guidelines	EIS Reference
- an overview of the key environmental effects of the project, as described under section 5 of CEAA 2012, and proposed technically and economically feasible mitigation measures; - an overview of how factors under paragraph 19(1) of CEAA 2012 were considered; the proponent's conclusions on the residual environmental effects of the project, and the significance of those effects, after taking into account the mitigation measures.	
The summary is to be provided as a separate document and should be structured as follows:	Plain Language Summary
1. Introduction and EA context	
2. Project overview	
3. Alternative means of carrying out the project	
4. Public participation	
5. Engagement with Indigenous Groups	
6. Summary of environmental effects assessment for each valued component, including: a. description of the baseline b. anticipated changes to the environment c. anticipated effects d. mitigation measures e. significance of residual effects	
7. Follow-up and monitoring programs proposed	
The summary will have sufficient details for the reader to understand the project, any potential environmental effects, proposed mitigation measures, and the significance of the residual effects. The summary will include key maps illustrating the project location and key project components.	
Part 2 – Content of the Environmental Impact Statement	
1. INTRODUCTION AND OVERVIEW	1.0
1.1. The proponent	1.1
In the EIS, the proponent will:	
- provide contact information (e.g. name, address, phone, fax, email);	1.1.2; 1.1.3

Statoil Guidelines	EIS Reference
- identify itself and the name of the legal entity(ies) that would develop, manage, and operate the project; - describe corporate and management structures; - specify the mechanism used to ensure that corporate policies will be implemented and respected for the project; and - identify key personnel, contractors, and/or sub-contractors responsible for preparing the EIS.	
1.2. Project overview The EIS will describe the project, key project components and associated activities, scheduling details, the timing of each phase of the project and other key features. If the project is part of a larger sequence of projects, the EIS will outline the larger context.	1.2; 1.2.2 Chapter 2
1.1 Project location	
The EIS will contain a description of the geographical setting in which the project will take place. This description will focus on those aspects of the project and its setting that are important in order to understand the potential environmental effects of the project. The following information will be included:	
- the Universal Transverse Mercator (UTM) projection coordinates of the main project site;	1.2.1; 2.3
- current land and resource use in the area;	1.2.3; 2.4
- distance of the project facilities and components to any federal lands;	1.2.3
- the environmental significance and value of the geographical setting in which the project will take place and the surrounding area;	1.2.3; 2.4
- environmentally sensitive areas, such as national, provincial, and regional parks, ecological reserves, ecologically and biologically significant areas, fishery closure areas, vulnerable marine ecosystems, and habitats of federally or provincially listed species at risk and other sensitive areas;	1.2.3; 2.4; 6.1.9; 6.2.5; 6.3.8; 6.4
- description of local and Indigenous communities; and	1.2.3; 7.3
- traditional territories and/or consultation areas, treaty lands, and Indian Reserve lands.	1.2.3; 7.3
1.4. Regulatory framework and the role of government	
The EIS will identify:	
- any federal power, duty or function that may be exercised that would permit the carrying out (in whole or in part) of the project or associated activities;	1.3; 1.3.1

Statoil Guidelines	EIS Reference
- legislation and other regulatory approvals that are applicable to the project at the federal, provincial, regional, and municipal levels;	1.3.1; 1.3.1.2
- government policies, resource management plans, planning or study initiatives pertinent to the project and/or EA and their implications;	1.3.1.2
- any treaty, self-government, or other agreements between federal or provincial governments and Indigenous groups that are pertinent to the project and/or EA;	7.3
- any relevant land use plans, or land zoning; and	1.3
- regional, provincial, and/or national objectives, standards or guidelines that have been used by the proponent to assist in the evaluation of any predicted environmental effects.	1.3; 1.4.2
2. PROJECT JUSTIFICATION AND ALTERNATIVES CONSIDERED	
2.1. Purpose of the project	
The EIS will describe the purpose of the project by providing the rationale for the project, explaining the background, the problems, or opportunities that the project is intended to satisfy and the stated objectives from the perspective of the proponent. If the objectives of the project are related to broader private or public sector policies, plans or programs, this information will also be included.	2.2
The EIS will also describe the predicted environmental, economic, and social benefits of the project. This information will be considered in assessing the justifiability of any significant adverse residual environmental effects as defined in section 5 of CEAA 2012, if such effects are identified.	2.2; 2.2.1
2.2. Alternative means of carrying out the project	
The EIS will identify and consider the environmental effects of alternative means of carrying out the project that are technically and economically feasible.	2.10
The proponent will complete the following procedural steps for addressing alternative means: - Identify the alternative means to carry out the project. - Identify the effects of each technically and economically feasible alternative means. - Select the approach for the analysis of alternative means (i.e. identify a preferred means or bring forward alternative means). - Assess the environmental effects of the alternative means.	2.10

Statoil Guidelines	EIS Reference
In its alternative means analysis, the proponent will address, at a minimum, the following project components:	
- choice of drilling fluid (i.e. water-based drilling mud or synthetic-based drilling mud); - choice of drilling unit (i.e. drillship or semi-submersible); - management of drilling wastes (i.e. disposal on seabed or into water column, recover and ship to shore, re-inject); - water management and location of the final effluent discharge points; and - alternative ways to light the platform at night (or flare at night when testing the well), to reduce attraction and associated mortality of birds, such as by installing flare shields	2.10
The EIS should include a discussion on how wastes and potential associated toxic substances would be minimized. The proponent should also discuss any alternatives that would enable it to achieve these objectives and adopt best practices in waste management and treatment.	2.9; 2.10; 2.11
With the objective of minimizing potential environmental impacts of discharges to the marine environment, the proponent should identify the quantity and type of chemicals (or constituents) that may be used in support of the proposed project that are: - included on the *Canadian Environmental Protection Act's* List of Toxic Substances; - not included on the OSPAR[1] Pose Little or No Risk to the Environment (PLONOR) list of chemicals and have a PARCOM[2] Offshore Chemical Notification Scheme Hazard Rating of A, B or purple, orange, blue, or white; or - not included on the PLONOR list of chemicals and have not been assigned a PARCOM Offshore Chemical Notification Scheme Hazard Rating.	2.10
Alternatives to the use of the above-listed chemicals (e.g. through alternative means of operating or use of less-toxic alternatives) should be discussed in the EIS.	2.10.1.7
The Agency recognizes that projects may be in the early planning stages when the EIS is being prepared. Where the proponent has not made final decisions concerning the placement of project infrastructure, the technologies to be used, or that several options may exist for various project components, the proponent shall conduct an environmental effects analysis at the same level of detail for each of the various options available (alternative means) within the EIS.	2.10

Statoil Guidelines	EIS Reference
3. PROJECT DESCRIPTION	
3.1. Project components	
The EIS will describe the project, by presenting the project components, associated and ancillary works, and other characteristics that will assist in understanding the environmental effects. This will include:	
- maps, at an appropriate scale, of the project location; - project components; - boundaries and UTM coordinates of the proposed exploration licences (1139, 1140, 1141 and 1142); - the major existing infrastructure; - adjacent land and resource uses; and - any important environmental features.	2.3; 2.4; 2.5
If the project is part of a larger sequence of projects, the proponent will outline the larger context and present the relevant references, if available.	This project is a stand-alone project, and not part of any other project.
In its EIS, the proponent will describe:	
- the Mobile Offshore Drilling Units and/or drill ships and their operations (drilling, testing, abandonment) in locations and water depths under consideration;	2.1; 2.3; 2.5
- the size and types of vessels that will be used including navigation activities (i.e. routes, number, and frequency of trips) and icebreaking activities (time of year, frequency, duration, expected start and end dates);	2.1; 2.5.2.5
- helicopters, including routes, number, and frequency of trips;	2.1; 2.5.2.5
- vertical seismic profiling or any other in-water works (e.g. wellsite surveys) to support the specific exploration wells under consideration, but excluding surveys potentially required to support the conduct of the EA (e.g. environmental baseline surveys) and surveys related to the broader delineation of resources;	2.1; 2.5.2.4
- reagent requirements and uses (e.g. volumes, storage, types);	2.5.1.1; 2.9; 2.10
- petroleum products (e.g. source, volume, storage);	2.5.1.1; 2.9; 2.10

Statoil Guidelines	EIS Reference
- the nature, composition, and fate (e.g. areal extent) of drilling wastes (e.g. muds, cuttings) at various water depths and at various stages of drilling, including during riserless drilling and drilling with the marine riser in place, using dispersion modeling;	2.5; 2.9; 2.10.1.3
- the management or disposal of wastes (e.g. type and constituents of waste, quantity, treatment, and method of disposal) including: ✓ drilling muds, drill solids; ✓ bilge and ballast water; ✓ deck drainage; ✓ cooling water; ✓ fire control system test water; ✓ operational discharges from subsea systems and the installation of subsea systems; ✓ sewage and food wastes; ✓ well treatment or testing fluids; and ✓ other operational discharges.	2.5; 2.9; 2.10
- contributions to atmospheric emissions, including emissions profile (i.e. type, rate and source) for activities including routine or upset flaring, routine drilling, testing, shipping etc.;	2.9.1
- sources and extent of light, heat, and noise;	2.9.5
- transfers of bulk materials (e.g. mud) and fuel;	2.5.1.1; 2.9; 2.10.1.3
- number of employees and transportation of employees;	2.2.1.3; 2.5.1.1; 2.5.2.6; 2.6
- drinking and industrial water requirements (source, quantity required, need for water treatment);	2.5.1.1; 2.9.4
- energy supply (source, quantity);	2.5.1.1; 2.9.1
- waste disposal (types of waste, methods of disposal, quantity); and	2.9
- components requiring construction or modification at the supply base(s) under consideration.	2.5.2.5

3.2. Project activities	
The EIS will include descriptions of the drilling, testing and decommissioning, suspension or abandonment of exploration wells associated with the proposed project.	2.1; 2.5

Statoil Guidelines	EIS Reference
This will include descriptions of the activities to be carried out during each phase, the location of each activity, expected outputs and an indication of the activity's magnitude and scale. Water depths for potential drill sites will be specified.	2.5.1; 2.5.2
Although a complete list of project activities should be provided, the emphasis will be on activities with the greatest potential to have environmental effects. Sufficient information will be included to predict environmental effects and address concerns identified by the public and Indigenous groups. Highlight activities that involve periods of increased environmental disturbance or the release of materials into the environment.	2.5.1; 2.5.2
The EIS will include a summary of the changes that have been made to the project since originally proposed, including the benefits of these changes to the environment, Indigenous groups, and the public.	2.8
The EIS will include a schedule including time of year, frequency, and duration for all project activities. The information will include a description of:	2.7
3.2.1. Drilling and testing activities	
- operation of the Mobile Offshore Drilling Unit and/or drill ships, including: ✓ drilling at various water depths and in locations under consideration ✓ well flow testing ✓ waste management – water management	2.1; 2.5; 2.9
– vertical seismic profile surveys; equipment requirements (type, quantity); and	2.1; 2.5.2.4
– storage and management of hazardous materials, fuels, and residues.	2.9; 2.10
3.2.2. Supply and servicing	
- vessel support, including loading, refuelling and operation of marine support vessels (i.e. for transfer, re-supply, and on-site safety during drilling activities); and	2.5.2.6
- helicopter support (i.e. crew transport and delivery of supplies and equipment).	2.5.2.6
3.2.1 Decommissioning, suspension, or abandonment of wells	
- the preliminary outline of a well decommissioning, suspension and abandonment plan for wells at varying water depths	2.1; 2.5.2.7

Statoil Guidelines	EIS Reference
4. PUBLIC PARTICIPATION AND CONCERNS	
The EIS will describe the ongoing and proposed public participation activities that the proponent will undertake or that it has already conducted on the project. It will provide a description of efforts made to distribute project information and provide a description of information and materials that were distributed during the consultation process.	Chapter 3
The EIS will indicate the methods used, where the consultation was held, the persons and organizations consulted, the concerns voiced and the extent to which this information was incorporated in the design of the project as well as in the EIS.	3.2; 3.3; 3.4
The EIS will provide a summary of key issues raised related to the project and its potential effects to the environment as well as describe any outstanding issues and ways to address them.	3.4
5. ENGAGEMENT WITH INDIGENOUS GROUPS AND CONCERNS RAISED	
For the purposes of developing the EIS, the proponent will engage with Indigenous groups that may be affected by the project, to obtain their views on:	
- effects of changes to the environment on Aboriginal peoples (health and socio-economic conditions; physical and cultural heritage, including any structure, site or thing that is of historical, archaeological, paleontological, or architectural significance; and current use of lands and resources for traditional purposes) pursuant to paragraph 5(1)(c) of CEAA 2012; and	3.3; 3.3.1; 3.3.2; 3.3.3; 3.3.4 7.3
- potential adverse impacts of the project on potential or established section 35 rights, including title and related interests, in respect of the Crown's duty to consult, and where appropriate, accommodate Aboriginal peoples.	3.3; 3.3.1; 3.3.2; 3.3.3; 3.3.4; 7.3
With respect to potential adverse impacts of the project on potential or established section 35 rights, including title and related interests, the EIS will document for the groups identified in Section 5.1 below (or in subsequent correspondence from the Agency):	
- potential or established section 35 rights, including title and related interests, when this information is directly provided by a group to the proponent, the Agency or is available through public records, including: o geographical extent, nature, frequency and timing of the practice or exercise of the right; and, o maps and data sets (e.g. fish catch numbers);	7.3; Chapter 12.0

Statoil Guidelines	EIS Reference
– potential adverse impacts of each of the project components and physical activities, in all phases, on potential or established section 35 rights, including title and related interests. This assessment is to be based on a comparison of the exercise of the identified rights, title, and related interests between the predicted future conditions with the project and the predicted future conditions without the project. Include the perspectives of potentially impacted groups where these were provided to the proponent by the groups;	12.2; 12.3; 12.4.1
– measures identified to accommodate potential adverse impacts of the project on the potential or established section 35 rights, including title and related interests. These measures will be written as specific commitments that clearly describe how the proponent intends to implement them, and may go beyond mitigation measures that are developed to address potential adverse environmental effects;	12.3; 12.3.2
– potential adverse impacts on potential or established section 35 rights, including title and related interests that have not been fully mitigated or accommodated as part of the EA and associated engagement with Indigenous groups. The proponent will also take into account the potential adverse impacts that may result from the residual and cumulative environmental effects. Include the perspectives of potentially affected groups where these were provided to the proponent by the groups.	12.2; 12.3; 12.4.1; 14.6
The information sources, methodology and findings of the assessment of paragraph 5(1)(*c*) effects under CEAA 2012 may be used to inform the assessment of potential adverse impacts of the project on potential or established section 35 rights, including title and related interests. However, there may be distinctions between the adverse impacts on potential or established section 35 rights, including title and related interests and paragraph 5(1)(*c*) effects under CEAA 2012. The proponent will carefully consider the potential distinction between these two aspects and, where there are differences, will include the relevant information in its assessment.	7.3; 12.3.2
In terms of gathering views from potentially affected groups with respect to both environmental effects of the project and the potential adverse impacts of the project on potential or established section 35 rights, including title and related interests, the EIS will document:	Chapter 3
– VCs suggested by groups for inclusion in the EIS, whether they were included, and the rationale for any exclusions; specific suggestions raised by each group for mitigating the effects of changes to the environment on Aboriginal peoples or accommodating potential adverse impacts of the project on potential or established section 35 rights, including title and related interests;	3.3; 3.4; 12.2
– views expressed by each group on the effectiveness of the mitigation or accommodation measures;	3.3; 3.4
– from the proponent's perspective, any potential cultural, social, and/or economic impacts or benefits to each group identified that may arise as a result of the project. Include the perspectives of potentially affected groups where these were provided to the proponent by the groups;	3.3; 3.4; 12.0

Statoil Guidelines	EIS Reference
– any other comments, specific issues and concerns raised by potentially affected groups and how they were responded to or addressed;	3.3; 3.4
– changes made to the project design and implementation directly as a result of discussions with potentially affected groups;	2.8
– where and how Aboriginal traditional knowledge was incorporated into the environmental effects assessment (including methodology, baseline conditions and effects analysis for all VCs) and the consideration of potential adverse impacts on potential or established section 35 rights, including title and related interests, and related mitigation measures; and	3.3; 7.3; 12.2; 12.3
– any additional issues and concerns raised by potentially affected groups in relation to the environmental effects assessment and the potential adverse impacts of the project on potential or established section 35 rights, including title and related interests.	3.3; 7.3; 12.2; 12.3
The Agency recommends the proponent create a tracking table of key issues raised by each group, including the concerns raised related to the project, proposed mitigation measures, and where appropriate, a reference to the proponent's analysis in the EIS.	Chapter 3
5.1. Indigenous groups and engagement activities	
With respect to engagement activities, the EIS will document:	
– the engagement activities undertaken with each group prior to the submission of the EIS, including the date and means of engagement (e.g. meeting, mail, telephone);	3.3; 3.3.1; 3.3.2; 3.3.3; 3.3.4;
– any future planned engagement activities; and	3.3.2; 3.4
– how engagement activities by the proponent allowed groups to understand the project and evaluate its effects on their communities, activities, potential or established section 35 rights, including title and related interests.	3.3; 7.3; 12.2; 12.3
In preparing the EIS, the proponent will ensure that groups have access to timely and relevant information on the project and how the project may adversely impact them. The proponent will structure its engagement activities to provide adequate time for groups to review and comment on the relevant information. Engagement activities are to be appropriate to the groups' needs, arranged through discussions with the groups and in keeping with established consultation protocols, where available. The EIS will describe all efforts, successful or not, taken to solicit the information required from groups to support the preparation of the EIS.	3.3; 7.3; 12.2

Statoil Guidelines	EIS Reference
The proponent will ensure that views of groups are recorded and that groups are provided with opportunities to validate the interpretation of their views. The proponent will keep detailed tracking records of its engagement activities, recording all interactions with groups, the issues raised by each group and how the proponent addressed the concerns raised. The proponent will share these records with the Agency.	3.3; 3.4
For the groups listed below, the proponent will ensure they are notified about key steps in the EIS development process and of opportunities to provide comments on key EA documents and/or information to be provided regarding their community. The proponent will ensure these groups are reflected in the baseline information and assessment of potential environmental effects as described under paragraph 5(1)(c) of CEAA 2012 and/or impacts to potential or established section 35 rights, including title and related interest in the EIS. These groups include: – *the Labrador Inuit (Nunatsiavut Government),* – *the Labrador Innu (Innu Nation),* – *the NunatuKavut Community Council,*	Chapters 3, 7 and 12
In addition, for the purposes of good governance, the proponent should also provide information to and discuss potential environmental effects from the Project, as described under section 5(1)(c) of CEAA 2012, with the Qalipu Mi'kmaq First Nation Band and the Miawpukek First Nation.	7.3.1; Chapter 12
6. EFFECTS ASSESSMENT	
6.1. Project setting and baseline conditions	
Based on the scope of the project described in Section 3 (Part 1), the EIS will present baseline information in sufficient detail to enable the identification of how the project could affect the VCs and an analysis of those effects. Should other VCs be identified during the conduct of the EA, the baseline condition for these components will also be described in the EIS. As a minimum, the EIS will include a description of the following environmental components.	Chapters 5-7

Statoil Guidelines	EIS Reference
6.1.1. Atmospheric environment	
The EIS will describe the atmospheric environment and climate at the project site and within areas that could be affected by routine project operations or accidents and malfunctions, such as:	
– ambient air quality in the project areas and in the airshed likely to be affected by the project, including consideration of the following contaminants: total suspended particulates (TSP), fine particulates smaller than 2.5 microns (PM2.5), respirable particulates of less than 10 microns (PM10), carbon monoxide (CO), sulphur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), hydrogen sulfide (H2S) and any other potentially toxic air pollutants	5.4
– identify and quantify existing greenhouse gas emissions by individual pollutant measured as kilotonnes of CO2 equivalent per year in the project study areas;	2.9.1; 5.4
– direct and indirect sources of air emissions;	2.9.1; 5.4
– current provincial/territorial/federal limits for greenhouse gas emission targets; and	2.9.1
– information on the variation in weather conditions over the project area using historical records of relevant meteorological parameters, including the following: ✓ precipitation (rain and snow); ✓ air temperature (mean, maximum and minimum temperatures); ✓ wind speed and direction; ✓ freezing spray; ✓ lightning; and ✓ visibility.	5.3; 5.8.1; 16.1.1
Particular attention should also be given to the analysis of extreme meteorological events that have the potential to result in adverse effects on the project (e.g. high wind events).	5.3
Relevant marine climate data sources should be consulted, including but not limited to data from Environment and Climate Change Canada moored weather buoys and any offshore platforms operating in the Eastern Newfoundland Strategic Environmental Assessment (SEA) area. Data from the International Comprehensive Atmosphere Ocean Dataset (ICOADS), the United States of America National Oceanographic and Atmospheric Administration (NOAA) database of tropical cyclone activity in the North Atlantic, NOAA's Climate Forecast System Reanalysis (CFSR), and the Canadian Lightning Detection Network.	Chapter 5.0

Statoil Guidelines	EIS Reference
6.1.2. Marine environment	
The EIS will describe the marine environment within areas that could be affected by routine project operations or by accidents and malfunctions, including:	
– marine water quality (e.g. water temperature, turbidity, salinity, and pH);	5.5.4
– marine geology and geomorphology (i.e. bottom sediments, including quality, thickness, grain size, and mobility);	5.1.2
– physical oceanography including surface and subsurface current patterns, current velocities, waves, storm surges, long shore drift processes, tidal patterns, and tide gauges levels for the site, in proximity to the site, and along the marine transportation routes with consideration of predicted climate change effects	5.5
– available bathymetric information (e.g. maximum and mean water depths) for the site and along marine transportation routes if applicable	5.2
– ice climate in the regional study area, including ice formation and thickness, breakup, and movement;	5.7; 5.8.3
– ice conditions along the marine transportation routes with consideration of predicted climate change and its possible effect on the timing of ice formation in the future;	5.7; 5.8.3
– fast-ice characteristics, including its surface area and seasonal stability along the marine transportation routes;	5.7
– marine plants, including all benthic and detached algae, marine flowering plants, brown algae, red algae, green algae, and phytoplankton;	6.1.4
– acoustic environment (ambient noise levels from natural sources, shipping, seismic surveys, and other sources), including information on geographic extent and temporal variations and how the acoustic environment may be affected by the project.	5.6
When describing the baseline marine environment, relevant data sources should be consulted. In addition to data sources discussed under Atmospheric Environment and Climate (some of which contain marine data), the proponent should consult MSC50 Wind and Wave Hindcast Data, and long term gridded hourly wind and wave measurements for the North Atlantic.	Chapter 5.0

Statoil Guidelines	EIS Reference
6.1.3 Fish and fish habitat	
The EIS will describe fish and fish habitat within areas that could be affected by routine project operations or by accidents and malfunctions, including:	
– a characterization of fish populations on the basis of species and life stage, including information on the surveys carried out (e.g. location of sampling stations, catch methods, date of catches, species, catch per-unit effort) and the source of data available (e.g. government and historical databases, commercial fishing data);	6.1.1-6.1.9
– a description of primary and secondary productivity in affected water bodies with a characterization of seasonal variability;	6.1; 6.4
– a list of any fish or invertebrate species at risk that are known to be present; and	6.1.8
– benthic flora and fauna and their associated habitat, including sensitive features such as corals and sponges (Note: a benthic habitat survey (ROV / camera), including transects of seafloor in the area of the well locations, may be required).	6.1.6
Emphasis will be placed on the waters likely to be affected by the project and their physical characteristics, water, and sediment quality. Hence, for all areas in which effects are anticipated, the EIS will describe the biophysical water and sediment characteristics, including: – a description of the physical and biological characteristics of the fish and fish habitat likely to be directly or indirectly affected by the project;	6.1; 8.2
– maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitats and a description of these habitats as determined by water depths, type of substrate (sediments), aquatic vegetation, and potential use (i.e. spawning, rearing, nursery, feeding, overwintering, migration routes, etc.). Where appropriate, this information should be linked to water depths (bathymetry) to identify the extent of a water body's littoral / photic zone;	Chapter 6; Figure 6-9
– quality, thickness, grain size and mobility of bottom sediments; and	5.1.2
– a discussion of sea bottom stability at the project site.	5.1.4
Any sampling survey methods used by the proponent will be described in order to allow experts to ensure the quality of the information provided. If previous studies on the habitat in the study area were conducted, they are to be submitted with the EIS.	Section 6.1.6

Statoil Guidelines	EIS Reference
6.1.4 Migratory birds and their habitat	
The EIS will describe migratory and non-migratory marine birds and their habitat at the project site and within areas that could be affected by routine project operations or accidents and malfunctions.	6.2
Migratory birds are protected under the *Migratory Birds Convention Act* (MBCA) and associated regulations. Preliminary data from existing sources will be gathered, including information such as:	
– birds and their habitats that are found or are likely to be found in the study area. This description may be based on existing sources, but supporting evidence is required to demonstrate that the data used are representative of the avifauna and habitats found in the study area. The existing data must be supplemented by surveys, if required;	6.2.1; 6.2.2; 6.2.3; 6.2.4
– abundance, distribution, and life stages of migratory and non-migratory birds likely to be affected in the project area based on existing information, or surveys, as appropriate, to provide current field data;	6.2.1; 6.2.2; 6.2.3; 6.2.4
– year-round migratory bird use of the area (e.g. winter, spring migration, breeding season, fall migration), based on preliminary data from existing sources and surveys to provide current field data if appropriate; and	6.2.1; 6.2.2; 6.2.3; 6.2.4
– areas of concentration of migratory birds, such as for breeding, feeding or resting.	6.2.1; 6.2.2; 6.2.3; 6.2.4
Other relevant datasets should be consulted, such as those available from the Canadian Wildlife Service (e.g. Eastern Canadian Seabirds at Sea (ECSAS), Programme intégré de recherches sur les oiseaux pélagiques (PIROP)), the Atlantic Canada Conservation Data Centre (ACCDC), recovery strategies, management plans, Newfoundland and Labrador Department of Environment and Climate Change Wildlife Division, previous petroleum operations in the area and university or other research programs, if available.	Chapter 6
6.1.5. Species at Risk	
The EIS will describe federal species at risk and their habitat at the project site and within areas that could be affected by routine project operations or accidents and malfunctions, such as:	
– a list of all potential or known federally listed species at risk that may be affected by the project, using existing data and literature as well as surveys to provide current field data;	6.1.8; 6.2.4; 6.3.7

Statoil Guidelines	EIS Reference
– a list of all federal species designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) for listing on Schedule 1 of the Species at Risk Act. This will include those species in the risk categories of extirpated, endangered, threatened and of special concern;	6.1.8; 6.2.4; 6.3.7
– any published studies that describe the regional importance, abundance, and distribution of species at risk including management plans, recovery strategies or plans. The existing data must be supplemented by surveys, if required; and	Chapter 6.0
– residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, identified and proposed critical habitat and/or recovery habitat (where applicable) and general life history of species at risk that may occur in the project area, or be affected by the project.	6.1; 6.2; 6.3; 6.4
The following information sources on species at risk and species of conservation concern should be among those consulted: ✓ Species at Risk Act Registry (www.sararegistry.gc.ca); ✓ COSEWIC; ✓ Relevant government agencies; ✓ Local naturalist and interest groups; and ✓ Indigenous groups and First Nations.	Chapter 6.0
6.1.6. Marine mammals	
The EIS will describe marine mammals and their habitat at the project site and within areas that could be affected by routine project operations or accidents and malfunctions, such as:	
– marine mammal species that may be present, the times of year they are present, the ranges of the species and their migration patterns, and	6.3
– important areas in the vicinity of the drilling sites or supply routes (e.g. for mating, breeding, feeding and nursing of young) or that could be impacted by the project (e.g. acoustics, spills, etc.).	6.3; 6.3.8
6.1.7. Marine turtles	
The EIS will describe marine turtles and their habitat at the project site and within areas that could be affected by routine project operations or accidents and malfunctions, such as:	
– marine turtle species that may be present, the times of year they are present, the ranges of the species and their migration patterns; and	6.3.6

Statoil Guidelines	EIS Reference
– important areas in the vicinity of the drilling sites or supply routes (e.g. for mating, breeding, and feeding) or that could be impacted by the project (e.g. routine discharges, spills, etc.).	6.3.8
6.1.8. Indigenous peoples	
Baseline information will describe and characterize the elements in paragraph 5(1)(*c*) of CEAA 2012 based on the spatial and temporal scope selected for the EA according to the factors outlined in Part 1, Section 3.2.3 of this document. Baseline information will also characterize the regional context of each of the elements of paragraph 5(1)(*c*) of CEAA 2012 to support the assessment of project related effects and cumulative effects. Baseline information will be sufficient to provide a comprehensive understanding of the current state of each VC.	7.3
Baseline information for current use of lands and resources for traditional purposes will focus on the traditional activity (e.g. fishing) and include a characterization of all attributes of the activity that can be affected by environmental change. This includes not only identifying species of importance, but also assessing the quality and quantity of preferred traditional resources and locations, timing (e.g. seasonality, access restrictions, distance from community), ambient/sensory environment (e.g. noise, air quality, visual landscape, presence of others) and cultural environment (e.g. historical/generational connections, preferred areas). As applicable, specific aspects that will be considered include, but are not limited to:	
– current use of lands and resources for traditional purposes, including:	
– location of traditional territory (including maps where available);	7.3.1-7.3.5
✓ commercial and traditional fishing activity within the project's potential zone of influence, including licences and maps;	7.3.1-7.3.5
✓ fish, wildlife, birds, plants, or other natural resources of importance for traditional use;	7.3.1-7.3.5
✓ places where fish, wildlife, birds, plants, or other natural resources are harvested, including places that are preferred;	7.3.1-7.3.5
✓ access and travel routes for conducting traditional practices;	7.3.1-7.3.5
✓ frequency, duration, or timing of traditional practices; and	7.3.1-7.3.5
✓ cultural values associated with the area affected by the project and the traditional uses identified.	7.3.1-7.3.5
– any Project components and a description of any activities (e.g. exclusion zones) that may affect commercial fisheries or other uses;	12.2; 13.2
– human health, primarily with respect to potential contamination of food sources;	7.3.1-7.3.5

Statoil Guidelines	EIS Reference
– location of reserves and communities; and	7.3.1-7.3.5
– physical and cultural heritage (including any site, structure, or thing of archaeological, paleontological, historical, or architectural significance).	7.3; 12.2; 12.3.2
Any other baseline information that supports the analysis of predicted effects on Indigenous peoples will be included as necessary. The EIS will also indicate how input from groups, including Aboriginal traditional knowledge, was used in establishing the baseline conditions related to health and socio- economics, physical and cultural heritage and current use of lands and resources for traditional purposes.	7.3
6.1.9. Other changes to the environment arising as a result of a federal decision or due to changes on federal lands, in another province or outside Canada	17.5.3
Should there be the potential for a change to the environment arising as a result of a federal decision(s), or on federal lands, lands in another province or lands outside Canada, the EIS will include baseline information on the environmental component likely to be affected (if this information is not already covered in other subsections of these guidelines).	17.5.3
6.1.9.1. Special areas	
The EIS will describe special areas (e.g. species at risk critical habitat that has been designated and that has been proposed or that may be under consideration, Important Bird Areas, Migratory Bird Sanctuaries, ecological reserves, etc.) at the project site and within areas that could be affected by routine project operations or accidents and malfunctions, such as: – Ecologically and Biologically Significant Areas (e.g. The Southeast Shoal and Tail of the Banks, The Northeast Shelf and Slope, Lily Canyon-Carson Canyon, and The Virgin Rocks) – Fishery Closure Areas (e.g. Northwest Atlantic Fisheries Organization Coral Closures, Orphan Knoll Seamount) – Preliminary Representative Marine Areas (South Grand Bank Area)	6.4.4 6.4.4 6.4.5
The EIS will describe the distances between the edge of the project area (i.e. drill sites and marine transportation routes) and special areas. It shall state the rationale for designating specific areas as “special” (i.e. the defining environmental features of the special area).	6.4.1; 6.4.2; 6.4.3; 6.4.4; 6.4.5

Statoil Guidelines	EIS Reference
6.1.9.2. Human environment	
With respect to potential effects on the human environment, non-Indigenous people and the related VCs, baseline information will describe and characterize the following that could be affected by routine project operations or accidents and malfunctions. At a minimum, this should include:	
– any federal lands, lands located outside the province or Canada that may be affected by the project operations or by accidents and malfunctions;	7.1; 7.2; 7.3
– the current and historical use of waters that may be affected by routine project operations or by accidents and malfunctions, including:	
– current commercial and recreational fishing activity, including licence holders and species fished;	7.1.3
✓ other ocean uses (e.g. shipping, research, oil, and gas, military, ocean infrastructure [e.g. subsea cable]);	7.2
– the location of and proximity of any permanent, seasonal, or temporary residences or camps that could be affected by routine project operations or accidents and malfunctions;	7.4.1
– health and socio-economic conditions that could be affected by routine project operations or accidents and malfunctions, including the functioning and health of the socio-economic environment, encompassing a broad range of matters that affect communities in the study area in a way that recognizes interrelationships, system functions and vulnerabilities;	7.3; 7.4.2
– physical and cultural heritage, including structures, sites, or things of historical, archaeological, paleontological, or architectural significance that could be affected by routine project operations or accidents and malfunctions;	7.4.3
– the rural and urban settings that could be affected by routine project activities or accidents and malfunctions; and	7.4.1
– any project components and activities (e.g. exclusion zones) that may affect commercial or recreational fisheries or other uses.	Chapter 11-13; 15.1.2
The EIS should also discuss the potential to encounter unexploded ordnance (UXOs), based on consultation with the Department of National Defence.	1.3.3; 7.2.4

Statoil Guidelines	EIS Reference
6.2. Predicted changes to the physical environment	
The EA will include a consideration of the predicted changes to the environment as a result of the project being carried out or as a result of any powers, duties or functions that are to be exercised by the federal government in relation to the project. These predicted changes to the environment are to be considered in relation to each phase of the project (e.g. drilling, testing, decommissioning, suspension, abandonment) and are to be described in terms of the magnitude, geographic extent, timing, duration, frequency, ecological and social context, and whether the environmental changes are reversible or irreversible.	8.2; 8.3; 8.4; 8.5; 9.2; 9.3; 9.4; 9.5; 10.2; 10.3; 10.4; 10.5; 11.2; 11.3; 11.4; 12.2; 12.3; 12.4; 13.2; 13.3; 13.4; 14.2.2; 14.3.2; 14.4.2; 14.5.2; 14.6.2; 14.7.2
The EIS will include stand-alone sections that summarize those changes that may be caused by the project on the components of the environment listed in paragraph 5(1)(a) of CEAA 2012, namely fish and fish habitat, aquatic species, and migratory birds.	8.3; 8.4; 9.3; 9.4; 10.3; 10.4
The EIS will include a stand-alone section that summarizes any change the project may cause to the environment that may occur on federal lands or lands outside the province in which the project is to be located (including outside of Canada).	Chapters 8-13
In situations where the project requires one or more federal decisions identified in section 5(2), the EIS will also include a stand-alone section that describes any change that may be caused by the project on the environment that is directly linked or necessarily incidental to these decisions (e.g. changes to commercial fishing).	17.5.3
6.3. Predicted effects on valued components	
Based on the predicted changes to the environment identified in Section 6.2 above, the proponent is to assess the environmental effects of the project on the following VCs. All interconnections between VCs and between changes to multiple VCs will be described:	
6.3.1. Fish and fish habitat	
– the identification of any potential adverse effects to fish and fish habitat as defined in subsection 2(1) of the Fisheries Act, including the calculations of any potential habitat loss (temporary or permanent) in terms of surface areas (e.g. spawning grounds, juvenile, rearing and feeding areas), and in relation to availability and significance. The assessment will include a consideration of:	
✓ effects on water quality including changes to chemical composition, temperature, oceanographic conditions, etc.;	8.2; 8.3; 8.4
✓ the geomorphological changes and their effects on hydrodynamic conditions and fish habitats (e.g. modification of benthic habitat including corals and sensitive habitat, area affected by drilling waste, disturbance to water column);	8.2; 8.3

Statoil Guidelines	EIS Reference
✓ the modifications of hydrological and hydrometric conditions on fish habitat and on the fish species' life cycle activities (e.g. reproduction, juvenile, rearing, and feeding, movements);	8.2; 8.3
✓ any potential imbalances in the food web in relation to baseline conditions;	8.2; 8.3
✓ underwater noise and vibration emissions from project activities (i.e. drilling, vertical seismic profiling, offshore supply vessel operation, well abandonment) and how it may affect fish health and behaviour;	8.2; 8.3.3
✓ effects on the primary and secondary productivity of water bodies and how project-related effects may affect fish food sources;	8.2; 8.3; 8.5.1
– the effects of changes to the aquatic environment on fish and their habitat, including:	
✓ the anticipated changes in the composition and characteristics of the populations of various fish species, including shellfish and forage fish including mortality of fish, eggs, and larvae; environment and species (e.g. corals, plants);	8.2; 8.3; 8.4
✓ any modifications in migration or local movements during and after project activities (e.g. vertical seismic profiling, drilling);	8.2; 8.3; 8.4
✓ any modifications and use of habitats by federally or provincially listed fish species;	8.2; 8.4
– a discussion of the effects of drilling waste disposal on marine benthos and other components of the aquatic environment, recognizing that the disposal of these wastes is expected to be a primary cause of effect on benthos;	8.2; 8.3.3; 8.3.4
– a discussion of the length of time it would take for the benthic environment to return to baseline conditions in water depths within which the Project would occur;	8.2; 8.3.3.3; 8.3.4.3
– a discussion of how project timing correlates to key fisheries windows and any potential effects resulting from overlapping periods; and	8.2; 8.3; 13.2; 13.3
– a discussion of how data examining the deposition of drilling-related wastes (e.g. fluid, mud residues, cuttings) and acoustic monitoring data would be collected during and after drilling operations and how this would be used to verify effects predictions.	8.2; 8.3.3; 8.3.4
6.3.2. Marine plants	
– effects on marine plants, including all benthic and detached algae, marine flowering plants, brown algae, red algae, green algae, and phytoplankton.	8.2; 8.3

Statoil Guidelines	EIS Reference
6.3.3. Marine mammals	
– effects on marine mammals, including but not limited to:	
✓ mortality and other effects from vessel collisions or disturbance; and	10.2; 10.3; 10.4; 10.5
✓ direct and indirect effects caused by increased disturbance (e.g. noise, light, vibrations) including mortality, physical injury and behavioural changes (e.g. habitat avoidance, disruption to feeding behaviour, deviation in migration routes, communication masking, discomfort and behavioural disturbance).	10.2; 10.3; 10.4; 10.5
6.3.4. Marine turtles – effects on marine turtles, including but not limited to:	
✓ mortality and other effects from vessel collisions or disturbance; and	10.2; 10.3; 10.4; 10.5
✓ direct and indirect effects caused by increased disturbance (e.g. noise, light, vibrations) including mortality, physical injury and behavioural changes (e.g. habitat avoidance, disruption to feeding behaviour, deviation in migration routes, communication masking, discomfort and behavioural disturbance).	10.2; 10.3; 10.4; 10.5
6.3.5. Migratory birds	
– direct and indirect adverse effects on migratory birds, including population level effects that could be caused by all project activities, including but not limited to:	
✓ noise disturbance from seismic equipment including both direct effects (physiological), or indirect effects (foraging behaviour of prey species);	9.2; 9.3; 9.4; 9.5
✓ physical displacement as a result of vessel presence (e.g. disruption of foraging activities);	9.2; 9.3; 9.4; 9.5
✓ night-time illumination levels from lights and flares during different weather conditions and seasons and during different project activities (e.g. drilling, well testing) and associated nocturnal disturbance (e.g. increased opportunities for predators, attraction to the drilling unit and vessels and subsequent collision or exposure to vessel-based threats, incineration in flares, disruption of normal activities);	9.2; 9.3; 9.4; 9.5
✓ exposure to spilled contaminants (e.g. fuel, oils) and operational discharges (e.g. deck drainage, gray water, black water);	9.2; 9.3; 9.4; 9.5
✓ attraction of, and increase in, predator species as a result of waste disposal practices (i.e. sanitary and food waste) and the presence of incapacitated/dead prey near the Mobile Offshore Drilling Unit or support vessels;	9.2; 9.3; 9.4; 9.5

Statoil Guidelines	EIS Reference
✓ physical harm or mortality from flaring on the drilling unit or other vessel based threats;	9.2; 9.3; 9.4; 9.5
✓ collision risk with the drilling unit and other project infrastructure;	9.2; 9.3; 9.4; 9.5
✓ the effects of oil spills in the nearshore or that reach land on landbird species;	9.2; 9.3; 9.4; 9.5
✓ change in marine habitat quality from drill muds and cuttings and sedimentation; and	9.2; 9.3; 9.4; 9.5
✓ indirect effects caused by increased disturbance (e.g. noise, light, presence of workers), relative abundance movements and changes in migratory bird habitat.	9.2; 9.3; 9.4; 9.5
6.3.6. Species at risk	
– the potential effects of the project on federally listed species at risk and those species listed by the Committee on the Status of Endangered Wildlife in Canada classified as extirpated, endangered, threatened or of special concern (flora and fauna) and their critical habitat, including:	
✓ alteration of habitat (including critical habitat) features;	8.4; 9.4; 10.4
✓ direct and indirect effects from noise, vibrations, and increased exposure to contaminants of concern;	8.4; 9.4; 10.4
✓ a discussion of migration patterns of federal species at risk and related effects (e.g. displacement, increased risk of collision); and	8.4; 9.4; 10.4
✓ direct and indirect effects on the survival or recovery of federally listed species (list species).	8.4; 9.4; 10.4
6.3.7. Indigenous peoples	
With respect to Indigenous peoples, a description and analysis of how changes to the environment caused by the project will affect the following activities exercised by each Indigenous group, as applicable to the proposed project:	7.3; 12.0
– current use of lands and resources for traditional purposes. This assessment will characterize the effects on the use or activity (e.g. fishing) as a result of the underlying changes to the environment (i.e. how will the activity change if the project proceeds). The underlying changes to the environment will also be described, including, but not limited to:	7.3
✓ any changes to resources (fish, birds, or other natural resources) used for traditional purposes (e.g. fishing, use of sacred sites);	12.2; 12.3; 12.4
✓ effects on food, social, ceremonial, and commercial fishing;	12.2; 12.3; 12.4
✓ a discussion of how drilling activities correlates to key fisheries windows, and any potential impacts resulting from overlapping periods;	12.2; 12.3; 12.4; 13.2; 13.3; 13.4

Statoil Guidelines	EIS Reference
✓ changes related to species important to Indigenous people's current use of resources, including changes to key habitat;	12.2; 12.3; 12.4
✓ any changes or alterations to access into the areas used for traditional purposes and commercial fishing, including implementation of exclusion zones;	12.2; 12.3; 12.4
✓ any changes to the environment that affect cultural value or importance associated with traditional uses or areas affected by the project (e.g. values or attributes of the area that make it important as a place for inter-generational teaching of language or traditional practices, communal gatherings, integrity of preferred traditional practice areas);	12.2; 12.3; 12.4
✓ how timing of project activities (e.g. drilling, flaring) have the potential to interact with the timing of traditional practices, and any potential effects resulting from overlapping periods;	12.2; 12.3; 12.4
✓ consideration of the regional context for traditional use and the value of the project area in that regional context, including alienation of lands from traditional use;	7.3; 12.2; 12.3; 12.4
✓ any changes to environmental quality (e.g. air, water), the sensory environment (e.g. noise, light, visual landscape), or perceived disturbance of the environment (e.g. fear of contamination of water or country foods) that could detract from use of the area or lead to avoidance of the area;	12.2; 12.3; 12.4
✓ an assessment of the potential to return affected areas to pre-project conditions to support traditional practices;	13.3; 13.4
– human health, focusing on effects on health outcomes or risks in consideration of, but not limited to, potential changes in water quality (recreational and cultural uses), availability of country foods (e.g. marine species), and noise exposure. When risks to human health due to changes in one or more of these components are predicted, a complete Human Health Risk Assessment (HHRA) examining all exposure pathways for pollutants of concern may be necessary to adequately characterize potential risks to human health. Where adverse health effects are predicted, any incidental effects such as effects on current use of lands and resources for traditional purposes will also be assessed. The proponent must provide a justification if it determines that an assessment of the potential for contamination of country foods is not required or if some contaminants are excluded from the assessment;	12.1; 12.2; 12.3; 12.4; 13.2
– socio-economic conditions, including, but not limited to:	
✓ the use of navigable waters	7.2; 7.3
✓ commercial fishing (e.g. catch rates, exclusion zones, gear damage or loss, well abandonment, marketability of seafood products) and food security	Chapter 13
✓ commercial outfitters	7.1.10

Statoil Guidelines	EIS Reference
✓ recreational use	13.1; 13.2
– physical and cultural heritage, and structures, sites, or things of historical, archaeological, paleontological, or architectural significance to groups, including, but not limited to:	12.1;13.2
✓ the loss or destruction of physical and cultural heritage	12.2; 12.3; 12.4; 13.2
✓ changes to access to physical and cultural heritage	12.2; 12.3; 12.4; 13.2
✓ changes to the cultural value or importance associated with physical and cultural heritage	12.2; 12.3; 12.4; 13.2
– other effects of changes to the environment on groups should be reflected as necessary.	12.2; 12.3; 12.4; 13.2
6.3.8. Other valued components that may be affected as a result of a federal decision or due to effects on federal lands, another province or outside Canada	
If there is the potential for a change to the environment arising as a result of a federal decision(s), for example an authorization under section 138(1) of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* or section 35 of the *Fisheries Act*, the EIS should include a description of the specific project components for which a federal authorisation/decision is required, and an assessment of any other VCs (not already covered in other subsections of these guidelines) that may be affected by the changes to the environment caused by these specific project components. If there is the potential for the project to result in environmental changes on federal lands (or waters), another province, or another country, then VCs of importance not already identified should be included. For example, if the project will result in the generation of greenhouse gas emissions, the EIS should include a description of the project's greenhouse gas emissions in a regional, provincial, national, or international context if applicable.	17.5.3
Suggested VCs are noted below for this project.	
6.3.8.1. Air quality and greenhouse gas emissions	
– comparison of anticipated air quality concentration against the Canadian Ambient Air Quality Standards (CAAQS) for fine particulate matter or other relevant federal and/or provincial criteria for other contaminants of potential concern;	5.4; 7.4.2; 8.3.8; 8.5
– description of all methods and practices (e.g. control equipment) that will be implemented to minimize and control atmospheric emissions throughout the project life cycle. If the best available technologies are not included in the project design, the proponent will need to provide a rationale for the technologies selected;	2.9.1

Statoil Guidelines	EIS Reference
– an estimate of the direct greenhouse gas emissions associated with all phases of the project (i.e. including drilling, well testing and marine and helicopter transportation) as well as any mitigation measures proposed to minimize greenhouse gas emissions. This information is to be presented by individual pollutant and should also be summarized in CO_2 equivalent per year. The proponent is responsible for the following:	
✓ provide an estimate of the contribution of the project emissions at the local, provincial, and federal scale, and indicate the category into which the project falls in terms of the relative magnitude of its contribution to greenhouse gas emissions (project with low, medium, or high emission rates);	2.9.1
✓ justify all estimated emissions and emission factors used;	2.9.1
✓ provide the estimation or derivation method, and disclose and describe all assumptions and emission intensity factors used;	2.9.1
✓ compare and assess the level of estimated emissions to the regional, provincial, and federal emission targets;	2.9.1
✓ provide information related to the project's electrical demand and sources of electrical power for equipment, i.e. the project's main source and any other additional sources (generators, etc.), as appropriate;	2.5.1.1; 2.9.1
– changes in ambient noise levels; and	2.9; 5.6; 7.4.2; 8.2; 8.3; 8.5; 9.2; 9.3; 9.5; 10.2; 10.3; 10.5; 11.2; 11.3; 11.4; 12.2; 12.4; 13.2; 13.3; 14.2; 14.3; 14.4; 15.5
– changes in night-time light levels.	2.9; 9.2; 9.3; 9.4; 0.5; 10.2; 10.3; 10.5; 11.2; 11.3; 11.4; 12.2; 12.3; 12.4; 13.2; 13.3; 14.2; 14.3; 14.4; 15.5
6.3.8.2. Commercial fisheries	
– effects of changes to the environment on commercial fishing activities (e.g. effects on fished species affecting fisheries success, displacement from fishing areas (e.g. exclusion zones), gear loss or damage);	13.2; 13.3; 13.4
– a discussion of how drilling activities correlates to key commercial fisheries windows, and any potential impacts resulting from overlapping periods;	13.3
– effects from subsea infrastructure that could be left in place (e.g. wellheads) following abandonment; and	13.3

Statoil Guidelines	EIS Reference
– changes to habitat of commercial fish species (e.g. noise, water, and sediment quality).	Chapter 8; 13.3
6.3.8.3. Special areas	
– effects on special areas, including, but not limited to:	
✓ use of dispersants, and	11.2; 11.3
✓ change to habitat quality (e.g. noise, light, water, sediment quality).	11.2; 11.3
6.3.8.4. Human environment	
– effects of changes to the environment on health and socio-economic conditions, physical and cultural heritage and any structure, site or thing that is of historical, archaeological, paleontological, or architectural value, including, but not limited to the following, as applicable:	
✓ recreational activities;	Chapter 12; 13.1; 13.2
✓ other ocean uses;	Chapter 13
✓ socio-economic conditions;	12.2; 12.3; 12.4; Chapter 13
✓ human health;	12.1; 12.2; 12.3; 12.4; 13.2
✓ physical and cultural heritage (e.g. shipwrecks);	12.2; 12.3; 12.4; 13.2
✓ rural and urban settings that could be affected by routine activities and/or accidents and malfunctions.	7.4.1; 13.2
6.4 Mitigation measures	
Every EA conducted under CEAA 2012 will consider measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project. Under CEAA 2012, mitigation measures include measures to eliminate, reduce or control the adverse environmental effects of a designated project, as well as restitution for damage to the environment through replacement, restoration, compensation, or other means. Measures will be specific, achievable, measurable, and verifiable, and described in a manner that avoids ambiguity in intent, interpretation, and implementation. Mitigation measures may be considered for inclusion as conditions in the EA decision statement and/or in other compliance and enforcement mechanisms provided by other authorities' permitting or licensing processes.	4.3.3; 8.3; 9.3; 10.3; 11.3; 12.3; 13.3; 15.5; 16.2

Statoil Guidelines	EIS Reference
The EIS will describe the standard mitigation practices, policies and commitments that constitute technically and economically feasible mitigation measures and that will be applied as part of standard practice regardless of location. The EIS will then describe the project's environmental protection plan and its environmental management system, through which the proponent will deliver this plan. The plan will provide an overall perspective on how potentially adverse effects would be minimized and managed over time. The EIS will further discuss the mechanisms the proponent would use to require its contractors and sub-contractors to comply with these commitments and policies and with auditing and enforcement programs.	1.1.2; 4.3.4; 8.3; 9.3; 10.3; 11.3; 12.3; 13.3; 15.5; 16.2
The EIS will then describe mitigation measures that are specific to each environmental effect identified. Mitigation measures will be written as specific commitments that clearly describe how the proponent intends to implement them and the environmental outcome the mitigation measure is designed to address. The EIS will describe mitigation measures in relation to species and/or critical habitat listed under the *Species at Risk Act*. These measures will be consistent with any applicable recovery strategy and action plans.	8.3; 9.3; 10.3; 11.3; 12.3; 13.3; 16.2
The EIS will specify the actions, works, minimal disturbance footprint techniques, best available technology, corrective measures, or additions planned during the project's various phases to eliminate or reduce the significance of adverse effects. The EIS will also present an assessment of the effectiveness of the proposed technically and economically feasible mitigation measures. The reasons for determining if the mitigation measure reduces the significance of an adverse effect will be made explicit. The proponent is also encouraged to identify mitigation measures for effects that are adverse although not significant.	4.3.3
The EIS will indicate what other technically and economically feasible mitigation measures were considered, and explain why they were rejected. Trade-offs between cost savings and effectiveness of the various forms of mitigation measures will be justified. The EIS will identify who is responsible for the implementation of these measures and the system of accountability.	4.3.3
Where mitigation measures are proposed to be implemented for which there is little experience or for which there is some question as to their effectiveness, the potential risks and effects to the environment should those measures not be effective will be clearly and concisely described. In addition, the EIS will identify the extent to which technological innovations will help mitigate environmental effects. Where possible, it will provide detailed information on the nature of these measures, their implementation, management, and the requirements of the follow-up program.	2.11; 17.4
Adaptive management is not considered as a mitigation measure, but if the follow-up program (refer to Section 8 below) indicates that corrective action is required, the proposed approach for managing the action should be identified.	4.3.3; 17.4

Statoil Guidelines	EIS Reference
6.5. Significance of residual effects	
After having established the technically and economically feasible mitigation measures, the EIS will present any residual environmental effects of the project on the VCs identified in Section 6.3 above. The residual effects, even if very small or deemed insignificant, will be described.	4.3.2; 8.3; 8.4; 8.5; 9.3; 9.4; 9.5; 10.3; 10.4; 10.5; 11.3; 11.4; 12.3; 12.4; 13.3; 13.4; 14.2.6; 14.3.6; 14.4.6; 14.5.5; 14.6.3; 14.7.5; 15.5; 16.2; 16.3
The EIS will then provide a detailed analysis of the significance of the residual environmental effects that are considered adverse following the implementation of mitigation measures, using guidance described in Section 4 of the Agency's Operational Policy Statement, *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects under the Canadian Environmental Assessment Act,.2012*15.	4.3.2; 8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 14.2.6; 14.3.6; 14.4.6; 14.5.5; 14.6.3; 14.7.5; 15.5; 16.3
The EIS will identify the criteria used to assign significance ratings to any predicted adverse effects. It will contain clear and sufficient information to enable the Agency, technical and regulatory agencies, Indigenous groups, and the public to review the proponent's analysis of the significance of effects. The EIS will document the terms used to describe the level of significance.	4.3.3; 8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 15.5
The following criteria should be used in determining the significance of residual effects: – magnitude – geographic extent – timing – duration – frequency – reversibility – ecological and social context – existence of environmental standards, guidelines, or objectives for assessing the effect	4.3.3; 8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 15.5
In assessing significance against these criteria, the proponent will, where possible, use relevant existing regulatory documents, environmental standards, guidelines, or objectives such as prescribed maximum levels of emissions or discharges of specific hazardous agents into the environment. The EIS will contain a section which explains the assumptions, definitions and limits to the criteria mentioned above in order to maintain consistency between the effects on each VC.	Chapters 8-13

Statoil Guidelines	EIS Reference
Where significant adverse effects are identified, the EIS will set out the probability (likelihood) that they will occur, and describe the degree of scientific uncertainty related to the data and methods used within the framework of this environmental analysis.	4.3.3; 8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 15.5
6.6. Other effects to consider	
6.6.1. Effects of potential accidents or malfunctions	Chapter 15
The failure of certain works caused by equipment malfunctions, human error, or exceptional natural events (e.g. earthquake, hurricane, submarine landslide) could cause major environmental effects. The proponent will therefore conduct an analysis of the risks of accidents and malfunctions, determine their effects, and present preliminary emergency response measures.	Chapter 15
Taking into account the lifespan of different project components, the proponent will identify the probability of potential accidents and malfunctions related to the project, including an explanation of how those events were identified, potential consequences (including the environmental effects as defined in section 5 of CEAA 2012), the plausible worst case scenarios for each accident and malfunction type and the environmental effects of these scenarios. The EIS will identify the measures to be put in place to prepare, prevent for and respond to all such scenarios (e.g. contingency and emergency procedures). The EIS will also describe the existing mechanisms and arrangements with response organizations for emergency response within the spatial extent of the project.	15.1; 15.2; 15.3; 15.4; 15.5
This assessment will include an identification of the magnitude of an accident and/or malfunction, including the quantity, mechanism, rate, form and characteristics of the contaminants and other materials likely to be released into the environment during the accident and malfunction events and would potentially result in an adverse environmental effect as defined in section 5 of CEAA 2012. The spatial boundaries will identify the areas that could potentially be affected by a worst-case scenario for each accident type.	15.1-15.5
The EIS will describe the safeguards that have been established to protect against such occurrences and the contingency and emergency response procedures that would be put in place if such events do occur.	15.1; 15.2; 15.5
The effects of accidental spills and blowouts will therefore require assessment in the EIS, including fate and behaviour modelling, and hydrologic trajectory modelling for worst-case large-scale spill scenarios that may occur, including any assumptions, limitations, and formulated hypotheses, accompanied by supporting documentation of methodologies and the cumulative results of the modelling.	15.3; 15.4; 15.5

Statoil Guidelines	EIS Reference
Results should be reported in a manner that illustrates the effects of varying weather and oceanographic conditions that may occur throughout the year, and should include a projection for spills originating at the site and followed until the slick volume is reduced to a negligible amount or until a shoreline is reached. Spill scenarios should also consider potential worst–cases, including when species at risk and high concentrations of marine birds or fish are present or for areas important for reproduction. A discussion on water depth and its effect on blow-out rate and spill trajectory modelling assumptions must be provided. Where well locations have not yet been identified, points of origin selected for spill trajectory models should be conservative (e.g. selecting a potential location within the proposed drilling area that is closest to a sensitive feature or that could result in greatest effects).	15.3; 15.4
Based on the results of the spill modelling and analysis in the EIS, an emergency response plan (e.g. oil spill contingency plan) for spills (small and large) and blowouts will be required. At a minimum, an outline of the emergency response plan along with key commitments is required in the EIS. Depending on the outcomes of the effects analysis, specific detail on key components of the plan will be required in the EIS. The proponent should commit to finalizing the plan in consultation with regulators prior to the application of permits. The EIS shall include a discussion on the use, availability (including nearest location), timing (testing and mobilizing) and feasibility of a capping stack to stop a blowout and resultant spills. If dispersants are to be used, the proponent shall consider associated environmental effects in the EIS (e.g. effects on marine life) and provide a plan for their use. The environmental effects of other measures outlined in the emergency response plan should also be considered (e.g. effects from burns). The EIS shall include the means by which design and/or operational procedures, including follow-up measures, will be implemented to mitigate significant adverse effects from malfunctions and/or accidental events.	1.1.2; 8.5; 15.1
The potential to encounter shallow gas pockets, and associated implications, should also be discussed.	16.1.4
The EIS should also consider effects of accidents in the near-shore environment (e.g. spills and ship groundings, as applicable) and of spills reaching shore; including effects on species at risk and their critical habitat, colonial nesters and concentrations of birds, and their habitat. The proponent will also demonstrate what long-term actions it would be prepared to undertake to remediate spill-affected lands and waters.	15.1; 15.4; 15.5
The EIS should include a summarization of the nature, extent and magnitude of spills, and accidental releases related to existing production installations and past exploration drilling programs in the Newfoundland and Labrador offshore. Comparisons with similar settings (e.g. in the Ormen Lange field in Norway and elsewhere) would also be meaningful for deep water drilling where there is very low probability but very high consequences associated with landsliding.	15.5

Statoil Guidelines	EIS Reference
6.6.2. Effects of the environment on the project	
The EIS will take into account how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events (e.g. icebergs, seismic events, and submarine landslide potential), could adversely affect the project and how this in turn could result in effects to the environment (e.g. extreme environmental conditions result in malfunctions and accidental events) with consideration of predicted climate change effects. These events will be considered in different probability patterns (e.g. 5- year event vs. 100-year event).	Chapter 16
The EIS will provide details of planning, design and construction strategies intended to minimize the potential environmental effects of the environment on the project.	16.2
6.6.3. Cumulative effects assessment	
The proponent will identify and assess the project's cumulative effects using the approach described in the Agency's Operational Policy Statement entitled *Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012 and the guide entitled Technical Guidance for Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012.*	Chapter 14
In its EIS, the proponent will: – Identify and provide a rationale for the VCs that will constitute the focus of the cumulative effects assessment, focussing the cumulative effects assessment on the VCs most likely to be affected by the project and other project and activities. To this end, the proponent must consider, without limiting itself thereto, the following components likely to be affected by the project:	Chapter 14
✓ fish and fish habitat, ✓ migratory birds, ✓ marine mammals and marine turtles, ✓ species at risk, ✓ marine plants, ✓ special areas, ✓ commercial fisheries, ✓ Indigenous peoples, ✓ air quality and greenhouse gases, and ✓ human environment.	Chapter 14

Statoil Guidelines	EIS Reference
– Identify and justify the spatial and temporal boundaries for the cumulative effect assessment for each VC selected. The boundaries for the cumulative effects assessments will generally be different for each VC considered. These cumulative effects boundaries will also generally be larger than the boundaries for the corresponding project effects.	14.1.2
– Identify the sources of potential cumulative effects. Specify other projects or activities that have been or that are likely to be carried out that could cause effects on each selected VC within the boundaries defined, and whose effects would act in combination with the residual effects of the project. This assessment may consider the results of any relevant study conducted by a committee established under section 73 or 74 of CEAA 2012.	14.1.3
– Assess the cumulative effects on each VC selected by comparing the future scenario with the project and without the project. Effects of past activities (activities that have been carried out) will be used to contextualize the current state of the VC. In assessing the cumulative effects on current use of lands and resources for traditional purposes, the assessment will focus on the cumulative effects on the relevant activity (e.g. fishing).	14.2-14.7
– Describe the mitigation measures that are technically and economically feasible. The proponent shall assess the effectiveness of the measures applied to mitigate the cumulative effects. In cases where measures exist that are beyond the scope of the proponent's responsibility that could be effectively applied to mitigate these effects, the proponent will identify these effects and the parties that have the authority to act. In such cases, the EIS will summarize the discussions that took place with the other parties in order to implement the necessary measures over the long term.	1.1.2; 4.3.3; 8.3; 9.3; 10.3; 11.3; 12.3; 13.3; 15.2; 16.2
– Determine the significance of the cumulative effects; and	14.2.6; 14.3.6; 14.4.6; 14.5.5; 14.6.3; 14.7.5
– Develop a follow-up program to verify the accuracy of the assessment or to dispel any uncertainty concerning the effectiveness of mitigation measures for certain cumulative effects.	14.8
The proponent is encouraged to consult with key stakeholders and Indigenous groups prior to finalizing the choice of VCs and the appropriate boundaries to assess cumulative effects.	Chapter 3; 14.1.1
7. SUMMARY OF ENVIRONMENTAL EFFECTS ASSESSMENT	
The EIS will contain a table summarizing the following key information:	
– potential environmental effects on valued components;	8.5; 9.5; 10.5; 11.4; 12.4; 13.4; 15.5; Table 17.1

Statoil Guidelines	EIS Reference
– proposed mitigation measures to address the effects identified above; and	8.5; 9.5; 10.5; 11.4; 12.4; 13.4, Table 17.2
– potential residual effects and the significance of the residual environmental effects.	8.5; 9.5; 10.5; 11.4; 12.4; 13.4, Table 17.3
The summary table will be used in the EA Report prepared by the Agency. An example of a format for the key summary table is provided in Appendix 1 of this document.	Table 17.3
In a second table, the EIS will summarize all key mitigation measures and commitments made by the proponent which will more specifically mitigate any significant adverse effects of the project on VCs (i.e. those measures that are essential to ensure that the project will not result in significant adverse environmental effects).	Table 17.2
8. FOLLOW-UP AND MONITORING PROGRAMS	
A follow-up program is designed to verify the accuracy of the effects assessment and to determine the effectiveness of the measures implemented to mitigate the adverse effects of the project. Considerations for developing a follow-up program include: – whether the project will impact environmentally sensitive areas/VCs or protected areas or areas under consideration for protection; – the nature of Indigenous and public concerns raised about the project; – the accuracy of predictions; – whether there is a question about the effectiveness of mitigation measures or the proponent proposes to use new or unproven techniques and technology; – the nature of cumulative environmental effects; – the nature, scale, and complexity of the program; and – whether there was limited scientific knowledge about the effects in the EA.	8.6; 9.6; 10.6; 11.5; 12.5; 13.5; 17.4

Statoil Guidelines	EIS Reference
8.1. Follow-up program	
The EIS shall present a preliminary follow-up program and shall include: – objectives of the follow-up program and the VCs targeted by the program; – list of elements requiring follow-up; – number of follow-up studies planned as well as their main characteristics (list of parameters to be measured, planned implementation timetable, etc.); – intervention mechanism used in the event that an unexpected deterioration of the environment is observed; – mechanism to disseminate follow-up results among the concerned populations; – accessibility and sharing of data for the general population; – opportunity for the proponent to include the participation of Indigenous groups and stakeholders on the affected territory, during the development and implementation of the program; and – involvement of local and regional organizations in the design, implementation and evaluation of the follow-up results as well as any updates, including a communication mechanism between these organizations and the proponent.	8.6; 9.6; 10.6; 11.5; 12.5; 13.5; 17.4
The discussion / description of follow-up and monitoring programs relative to the currently proposed drilling program should include a short summary of the design and results/outcomes of monitoring programs that have been undertaken for previously assessed and/or completed offshore exploration drilling programs in similar environments and how these will be factored into the verification of impact predictions and design of the follow up and monitoring for the current exploration drilling program.	17.4
8.2. Monitoring	
The proponent will prepare an environmental monitoring program for all phases of the project.	2.11; 17.4
Specifically, the environmental impact statement shall present an outline of the preliminary environmental monitoring program, including the: – identification of the interventions that pose risks to one or more of the environmental and/or valued components and the measures and means planned to protect the environment;	2.11; 17.4
– identification of regulatory instruments that include a monitoring program requirement for the valued components;	1.4.2; 1.5
– description of the characteristics of the monitoring program where foreseeable (e.g. location of interventions, planned protocols, list of measured parameters, analytical methods employed, schedule, human and financial resources required);	9.6; 10.6; 13.5; 17.4

Statoil Guidelines	EIS Reference
– description of the proponent's intervention mechanisms in the event of the observation of non-compliance with the legal and environmental requirements or with the obligations imposed on contractors by the environmental provisions of their contracts;	Chapter 2
– guidelines for preparing monitoring reports (number, content, frequency, format) that will be sent to the authorities concerned; and	9.6; 10.6; 17.4
– plans to engage Indigenous groups in monitoring, where appropriate.	12.5

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2-D	Two-dimensional
3-D	Three-dimensional
AAROM	Aboriginal Aquatic Resource and Oceans Management
ACSS	Atlantic Canada Shorebird Survey
ADCP	Acoustic Doppler Current Profiler
ADW	Approval to drill a well
AFS	Aboriginal Fisheries Strategy
AICFI	Atlantic Integrated Commercial Fisheries Initiative
AIP	Agreement-in-principle
AMIK	Agence Mamu Innu Kaikusseht
ANSMC	Assembly of Nova Scotia Mi'kmaq Chiefs
AOI	Areas of Interest
APC	Atlantic Policy Congress
AQHI	Air Quality Health Index
AUV	Autonomous underwater vehicle
AZMP	Atlantic Zone Monitoring Program
BIO	Bedford Institute of Oceanography
BMP	Best management practice
BOP	Blowout preventer
CAM	Conseil des Atikamekws et des Montagnais
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
CEA Agency	Canadian Environmental Assessment Agency
CEPA, 1999	*Canadian Environmental Protection Act*
CI	Confidence interval
CIS	Canadian Ice Service
CMA	Crab management area
C-NLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
CNSOPB	Canada-Nova Scotia Offshore Petroleum Board
CO	Carbon monoxide
CO_2	Carbon dioxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPAWS	Canadian Parks and Wilderness Society
CSAS	Canadian Science Advisory Secretariat
CV	Coefficient of variation
CWS	Canadian Wildlife Services
DFO	Fisheries and Oceans Canada
DND	Department of National Defence
DNV	Det Norske Veritas

DOEC	Department of Environment and Climate Change
DP	Dynamic positioning
DU	Designatable Units
EA	Environmental assessment
EBSA	Ecologically and Biologically Significant Area
ECCC	Environment and Climate Change Canada
ECSAS	Eastern Canadian Seabirds at Sea Program
EEM	Environmental Effects Monitoring
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EL	Exploration Licence
EPAQ	Québec School of Fisheries and Aquaculture
EPCMP	Environmental Protection and Compliance Monitoring Plan
ESRF	Environmental Sciences Research Fund
FAO	Food and Agriculture Organization
FCA	Fisheries Closure Area
FFAW-Unifor	Food, Fish and Allied Workers-Unifor
FNI	Federation of Newfoundland Indians
FPSO	Floating production, offloading, and storage (facility)
FSC	Food, Social, and Ceremonial
FY	First year
GBS	gravity base structure
GDP	Gross Domestic Product
GESAMP	Joint Group of Experts on the Scientific Aspects of marine Environmental Protection
GFD	Gesgapegiag Fisheries Department
GHCS	Gesgapegiag Health and Community Services
GHG	Greenhouse gas
HBC	Hudson's Bay Company
HVGB	Happy Valley-Goose Bay
Hs	Significant wave height
Hz	Hertz
IBA	Important Bird Area
iBOF	Inner Bay of Fundy
ICOADS	International Comprehensive Ocean-Atmosphere Data Set
ICUN	International Union for Conservation of Nature and Natural Resources
IIP	International Ice Patrol
IMO	International Maritime Organization
INAC	Indigenous and Northern Affairs Canada
IPCC	Intergovernmental Panel on Climate Change

IWC	International Whaling Commission
KMKNO	Kwilmu'kw Maw-klusuaqn Negotiation Office
LCHS	Listuguj Community Health Services
LFA	Lobster Fishing Area
LIA	Labrador Inuit Association
LILCA	Labrador Inuit Land Claims Agreement
LMG	Listuguj Mi'gmaq Government
LISA	Labrador Inuit Settlement Area
LSA	Local Study Area
MAMKA	Mi'kmaq Alsumk Mowimsikik Koqoey Association
MANMAR	Manual of Marine Observations
MARPOL	International Convention for the Prevention of Pollution from Ships
MBCA	*Migratory Birds Convention Act*
MBES	multibeam echosounder
MBS	Migratory Bird Sanctuary
MCPEI	Mi'kmaq Confederacy of Prince Edward Island
MFN	Miawpukek First Nation
MITC	Mamit Innuat Tribal Council
MMAFMA	Mi'gmaq Maliseet Aboriginal Fisheries Management Association
MNWA	Marine National Wildlife Area
MOG	Micmacs of Gesgapegiag
MPA	Marine Protected Area
MSW	Multi-sea-winter
MTD	Mass transport deposits
MTI	Mi'gmawe' Tplu'taqn Incorporated
NAFO	Northwest Atlantic Fisheries Organization
NASCO	North Atlantic Salmon Conservation Organization
NB	New Brunswick
NCC	NunatuKavut Community Council
NCS	Norwegian Continental Shelf
NEB	National Energy Board
NL	Newfoundland and Labrador
NL ESA	*Newfoundland and Labrador Endangered Species Act*
NMCA	National Marine Conservation Area
NO_2	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Association
NO_X	Nitrogen oxides
NOROG	Norwegian Oil and Gas Authority
NPRI	National Pollutant Release Inventory

NRA	NAFO Regulatory Area
NRCan	Natural Resources Canada
NS	Nova Scotia
NWA	National Wildlife Area
OA	Operations Authorization
OAA	Office of Aboriginal Affairs
OBIS	Ocean Biogeographic Information System
OBM	Oil-base mud
OCNS	Offshore Chemical Notification Scheme
OCSG	Offshore Chemical Selection Guidelines
ODI	Ocean Data Inventory
OWTG	Offshore Waste Treatment Guidelines
PAL	Provincial Airlines
PBGB-LOMA	Placentia Bay Grand Banks Large Ocean Management Area
PEI	Prince Edward Island
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PM_{10}	Particulate matter less than 10 microns in diameter
PNET	predicted no effect threshold
PTS	Permanent threshold shift
QC	Quebec
QMFNB	Qalipu Mikmaq First Nation Band
R&D	Research and development
RCM	Recording current meter
RCMP	Royal Canadian Mounted Police
RMA	Representative marine area
ROV	Remotely operated vehicle
RSA	Regional Study Area
RV	Research vessel
SAR	Species at Risk
SARA	*Species at Risk Act*
SBM	Synthetic-based mud
SBP	sub-bottom profiler
SCC	Supreme Court of Canada
SDL	Significant Discovery Licence
SEA	Strategic environmental assessment
SFA	Shrimp Fishing Area
SGRIMM	Société de gestion des rivières Manitou et Mingan
SO_2	Sulphur dioxide
SOCC	Species of conservation concern

SOCP	Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment
SPE	Society of Petroleum Engineers
SPL	Sound pressure level
SPLcum	Cumulative sound pressure level
SPLpeak	Peak sound pressure level
SSS	Side-scan sonar
SST	Sea surface temperature
TC	Transport Canada
TDR	Time and depth recorder
TNASS	Trans North Atlantic Sightings Survey
Tp	Peak wave spectral period
TPM	Total particulate matter
TTS	Temporary threshold shift
UDG	Ulnooweg Development Group
UN	United Nations
UXO	Unexploded ordinance
VC	Valued Component
VME	Vulnerable Marine Ecosystem
VOC	Volatile organic compounds
VON	Victorian Order of Nurses
VSP	Vertical seismic profiling
WBM	Water-based mud
WCCTV	Wagmatcook Community Cable Television
WG-EAFM	NAFO Joint Fisheries Commission-Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management
WHS	World Heritage Site
WHSRN	Western Hemisphere Shorebird Reserve Network
WOCE	World Ocean Circulation Experiment
WWF	World Wildlife Fund