CANADA-NEWFOUNDLAND and LABRADOR OFFSHORE PETROLEUM BOARD

Hibernia Drill Centres Construction and Operations Program

Scoping Document

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1 Purpose

This document provides scoping information for the environmental assessment (EA) of the proposed construction, operation, maintenance, modification, decommissioning, and abandonment of up to six drill centres and associated subsea equipment, drilling operations within these drill centres, and all other related works and activities (the Project) at the Hibernia field. The Hibernia South Extension (HSE) subsea development is the first planned subsea tie-back to the Hibernia GBS. Five additional drill centres may be constructed over the life of the project. The proposed Project is located on the Grand Banks offshore Newfoundland, approximately 320 km east-southeast of St. John's (Figure 1 in Project Description). Hibernia Management Development Corporation (HMDC) is the project Proponent.

Included in this document is a description of the scope of the project that will be assessed, the factors to be considered in the assessment, and the scope of those factors.

This Scoping Document has been developed by the C-NLOPB in consultation with the Department of Fisheries and Oceans, Environment Canada and other agencies in the Governments of Canada and Newfoundland and Labrador.

2 Canadian Environmental Assessment Act - Regulatory Considerations

In 1986, the Hibernia Development Project received Development Plan approval from the C-NLOPB. In addition, the Hibernia Development was subject to a panel review under the former Environmental Assessment and Review Process (EARP) and it was determined that the project was not likely to cause significant adverse environmental effects.

The Project, as outlined in the Project Description submitted by HMDC, is in support of production operations at the Hibernia platform. However, the proposed Project is outside the scope of the project previously assessed in the EARP panel review of the Hibernia Development Project and the location of the drill centre(s) is outside the original project area (as defined by the Hibernia Significant Discovery Area[1]).

The C-NLOPB has determined, in accordance with paragraph 3(1)(a) of the *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* (FCR), that an EA of the project under section 5 of the *Canadian Environmental Assessment Act* (CEA Act) is required.

[1] Hibernia Development Project Environmental Impact Statement Volume IIIa Biophysical Assessment. 1985. Mobil Oil Canada Ltd.

The Project will require authorizations pursuant to Section 138 (1)(b) of the *Canada-Newfoundland Atlantic Accord Implementation Act* and Section 134(1)(a) of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act.* Environment Canada has indicated that the proposed project will require an ocean disposal permit pursuant to the *Canadian Environmental Protection* Act (Schedule 1, Part 1, Paragraph 3, Section 127(1) (formerly Subsection 71 (1)). In addition, the Department of Fisheries and Oceans has indicated that an authorization pursuant to Section 35(2) of the *Fisheries* Act will be required. Pursuant to Section 5(1)(d) of the CEA Act, the C-NLOPB, Environment Canada, and the Department of Fisheries and Oceans are Responsible Authorities (RAs) and must undertake an EA of the Project**.** The project, as proposed, is described in the *Inclusion List Regulations* and therefore is subject to a screening level of assessment under the CEA Act.

Pursuant to Section 12.2 (2) of the CEA Act, the C-NLOPB will be assuming the role of the Federal Environmental Assessment Coordinator (FEAC) for this screening and in this role will be responsible for coordinating the review activities of the RAs and the expert government departments and agencies that participate in the review.

The C-NLOPB, Environment Canada, and the Department of Fisheries and Oceans, as Responsible Authorities (RAs) intend that the environmental assessment submitted with any supporting documents as may be necessary, will fulfill the requirements for a Screening. The RAs therefore, pursuant to Section 17(1) of the CEA Act, formally delegate the responsibility for preparation of an acceptable Screening environmental assessment to HMDC, the project proponent. The RAs will prepare the Screening Report, which will include the determination of significance.

3 Scope of the Project

The Project to be assessed consists of the following components:

3.1 Construction, installation, operation, maintenance, modification, decommissioning and abandonment of up to 6 drill centres, including seabed excavation and soil deposition;

3.2 Installation, operation, maintenance, modification, decommissioning and abandonment of subsea flowlines/umbilicals and associated equipment (inclusive of injection and production flowlines) tied back to the Hibernia GBS. Upgrades to the Hibernia GBS will be included, if required. This includes any associated seabed trenching, excavation, covering and/or soil deposition;

3.3 Drilling and workover of up to 11 wells per drill centre;

3.4 Vertical Seismic Profiling (VSP) and wellsite/geohazard surveys;

3.5 Operation of support craft associated with above activities, including but not limited to vessels for the excavation of glory holes, mobile offshore drilling units, supply/standby vessels, helicopters, and shuttle tanker activity that is incremental to that already in existence or expected to be in existence; and

3.6 Project activities are likely to be undertaken year-round, commencing in 2009 until end of project, currently estimated to be 2036. For the Hibernia South Extension (HSE), the following is a proposed project schedule, which is dependent on project approval.

- Geotechnical/Geophysical (wellsite surveys) investigations from summer to fall 2009;
- HSE glory hole excavation from summer to fall 2011
- subsea equipment installation activities from summer to fall of 2012;
- Drilling activities will likely occur year round, commencing in 2012, with possible completion by 2012;
- VSP surveys may occur year round from commencement of drilling activities through to end of production;
- Production operations are likely to commence in 2012 and will continue year round through to 2036. Abandonment will likely commence after 2036.

For the remaining five drill centres, it is assumed that project activities will require similar timelines for completion, with activities to commence at any time of the year throughout the life of the project.

4 Factors to be Considered

The environmental assessment shall include a consideration of the following factors in accordance with Section 16 of CEAA:

4.1 The purpose of the Project;

4.2 Alternative means of carrying out the project which are technically and economically feasible and the environmental effects of any such alternative means;

4.3 The environmental effects[2] of the Project, including those due to malfunctions or accidents that that may occur in connection with the Project and any change to the Project that may be caused by the environment;

4.4 Cumulative environmental effects of the Project that are likely to result from the project in combination with other projects or activities that have

[2] The term “environmental effects” is defined in Section 2 of the *CEA Act*, and Section 137 of the *Species at Risk Act*.

been or will be carried out, including all activities and ancillary activities for the construction, operation and maintenance of the drill centres;

4.5 The significance of the environmental effects described in 4.3 and 4.4;

4.6 Measures, including contingency and compensation measures as appropriate, that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project;

4.7 The significance of adverse environmental effects following the employment of mitigative measures, including the feasibility of additional or augmented mitigative measures;

4.8 The need for, and the requirements of, any follow-up program in respect of the Project consistent with the requirements of the CEA Act and the SARA; and

4.9 Report on consultations undertaken by HMDC with interested parties who may be affected by program activities and/or the public respecting any of the matters described above.

5 Scope of the Factors to be Considered

Hibernia Management Development Corporation will prepare and submit to the C-NLOPB, as lead RA, an EA for the above described physical works and activities, and those described in the project description "*Hibernia Drill Centres Construction and Operations Program Project Description*" (HMDC,2008). The EA will address the factors listed above; the issues identified in Section 5.2, and document any issues and concerns that may be identified by the proponent through regulatory, stakeholder, and public consultation**.**

Program activities are proposed for the Jeanne d'Arc Basin, an area that has been studied extensively in a number of recent EAs. For the purposes of this assessment, the information provided in previous EA documents for offshore oil and gas activities in the Jeanne d'Arc Basin area can be used, where applicable, in support of the EA for the proposed Project. Where new or updated information (i.e., modelling, new field data) is not included, justification for the use of older information must be provided.

If the "valued ecosystem component" (VEC) approach is used to focus its analysis, a definition of each VEC (including components or subsets thereof) identified for the purposes of EA, and the rationale for its selection, shall be provided.

The scope of the factors to be considered in the EA includes the components identified in Section 5.2 "Summary of Potential Issues" setting out the specific matters to be considered in assessing the environmental effects of the project and in developing environmental plans for the project and the defined "Boundaries" (see below). Considerations relating to definition of "significance"

of environmental effects are provided in the following sections.

Discussion of the biological and physiological environments should consider the data available for the project and study areas. Where data gaps exist, the EA should clearly identify the lack of data available.

5.1. Boundaries

The EA will consider the potential effects of the proposed physical works and physical activities within spatial and temporal boundaries that encompass the periods and areas during and within which the project may potentially interact with, and have an effect on, one or more VEC. These boundaries may vary with each VEC and the factors considered, and should reflect a consideration of:

- The proposed schedule/timing of the construction, operation, maintenance, and decommissioning phases of the proposed physical works and/or physical activities;
- The natural variation of a VEC or subset thereof;
- The timing of sensitive life cycle phases in relation to the scheduling of proposed physical works and/or physical activities;
- Interrelationships/interactions between and within VECs;
- The time required for recovery from an effect and/or return to a pre-effect condition, including the estimated proportion, level, or amount of recovery;
- The area within which a VEC functions and within which a project effect may be felt.

The proponent shall clearly define, and provide the rationale for the spatial and temporal boundaries that are used in its EA. The EA report shall clearly describe the spatial boundaries (i.e. Study Area, Project Area), and shall be clearly defined by illustration in figures and maps. The corner-point coordinates should be included.

Boundaries should be flexible and adaptive to enable adjustment or alteration based on field data and/or modeling results. The Study Area and associated boundaries will be described based on consideration of potential areas of effects as determined by modeling (e.g., spill trajectory and cuttings dispersion), the scientific literature, and project-environment interactions (including transportation corridors). A suggested categorization of spatial boundaries follows.

5.1.1 Spatial Boundaries

Project Area The areas in which Project activities are to occur.

Affected Area The area that could potentially be affected by Project activities beyond the “Project Area”.

Regional Area The area extending beyond the "Affected Area" boundary. The "Regional Area" boundary will also vary with the component being considered (e.g., boundaries suggested by bathymetric and/or oceanographic considerations).

5.1.2 Temporal Boundaries

The temporal scope should describe the timing of project activities. Scheduling of project activities should consider the timing of sensitive life cycle phases of the VECs in relation to physical activities.

5.2 Summary of Potential Issues

The EA report for the proposed program should contain descriptions of the physical and biological environments, as identified below. Where applicable, information may be summarized from existing environmental assessment reports for the Jeanne d'Arc Basin. However, where new information is available for any of the following factors, the new data and/or information must be provided. If information is not updated, justification must be provided. Where information is summarized from existing EA reports, it should be properly referenced, with specific reference to those sections of the existing EA report summarized.

The EA should contain descriptions and definitions of EA methodologies employed in the assessment of effects. Effects of relevant Project activities on those Valued Ecosystem Components (VECs) most likely to be in the Study Area will be assessed. Discussion of cumulative effects within the Project and with other relevant marine projects will be included. Issues to be considered in the EA will include, but not be limited, to the following.

5.2.1 Physical Environment

Provide a summary description of the following:

- Meteorological and oceanographic characteristics in the Study Area, including extreme conditions;
- Site-specific sea ice and iceberg conditions, including iceberg scour of the seabed;
- Overview of physical environmental monitoring, observation and forecasting programs that will be in place for all phases of the project ;
- Ice management/mitigation procedures to be implemented, including criteria respecting disconnection of project installations and assessment of the efficiency of detection and deflection techniques, and any change to the Project that may be caused by the environment; and
- Effects of the environment on the Project, including cumulative effects. The effects assessment should pay specific attention to effects of environmental factors on mobile drilling units, and mitigations that may be implemented to reduce these effects.

Marine Resources

Characterization, including quantification to the degree possible, of the spatial area of seabed that is predicted to be affected by the following activities should be provided: dredging, trenching and dredge spoil disposal; stitching and dumping; drill cuttings and other discharges

5.2.2 Marine and/or Migratory Birds using the Study Area

Provide a summary description of the following:

- Spatial and temporal species distributions in the Study Area (observation/monitoring data collected during ongoing petroleum activities should be included);
- Species habitat, feeding, breeding, and migratory characteristics of relevance to the Study Area;
- Physical displacement as a result of vessel presence (e.g. disruption of foraging activities);
- Effects of hydrocarbon spills from accidental events;
- Attraction of birds to vessel lighting and flares;
- Procedures for handling birds that may become stranded on offshore structures (e.g., rigs, supply vessels, construction vessels);
- Means by which bird mortalities associated with project operations may be documented and assessed;
- Means by which potentially significant effects upon birds may be mitigated through design and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects.

5.2.3 Marine Fish and Shellfish

Provide a summary description of the following:

- Characterization of existing environment in the Study Area;
- Distribution and abundance of species utilizing the Study Area with consideration of critical life stages (e.g., spawning areas, overwintering, juvenile distribution, migration);
- Description, to the extent possible, of location, type, diversity and areal extent of marine fish habitat in the Study Area, in particular those indirectly or directly supporting traditional, aboriginal, historical, present or potential fishing activity, and including any essential/critical (e.g. spawning, feeding, overwintering) habitats;
- Means by which potentially significant effects upon fish (including critical life stages) may be mitigated through design, scheduling, and/or operational procedures; and

- Environmental effects due to the Project, including cumulative effects.

5.2.4 Marine Mammals and Sea Turtles

Provide a summary description of the following:

- Spatial and temporal distribution and abundance of species utilizing the Study Area (observation and monitoring data collected during exploration and development activities operated by Hibernia should be discussed). Data from other recent operations, if available, within the Jeanne d'Arc Basin should also be included;
- Description of marine mammal and sea turtle lifestyles/life histories relevant to Study Area;
- Means by which potentially significant effects upon marine mammals/sea turtles (including critical life stages) may be mitigated through design, scheduling, and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects.

5.2.5 Species at Risk (SAR)

Provide a summary description of the following:

- A description, to the extent possible, of species at risk as listed in Schedule 1 of the *Species at Risk Act (SARA)*, and those under consideration by COSEWIC in the Study Area, including fish, marine mammals, sea turtles and seabird species;
- A description of critical habitat (as defined under SARA), if applicable, relevant to the Study Area;
- Means by which adverse effects upon SAR and their critical habitat may be mitigated through design, scheduling, and/or operational procedures;
- Monitoring and mitigation, consistent with recovery strategies/action plans (endangered/threatened) and management plans (special concern);
- Assessment of effects (adverse and significant) on species and critical habitat, including cumulative effects;
- The means by which the Proponent intends to ensure that relevant changes or updates to SARA listed species, including recovery strategies and management plans, are tracked throughout the project life and incorporated into its environmental planning; and
- A summary statement stating whether project effects are expected to contravene the prohibitions of SARA (Sections 32 (1), 33, 58(1)).

5.2.6 "Sensitive" Areas

Information should include:

- A description, to the extent possible, of any 'Sensitive" areas in the Study Area such as important or essential habitat to support any of the marine resources identified;
- Environmental effects due to the project, including cumulative effects, on those "Sensitive" areas identified;
- Means by which adverse effects upon "Sensitive" areas may be mitigated through design, scheduling, and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects, on those sensitive areas identified.

Marine Use

5.2.7 Noise/Acoustic Environment

Provide a description of the following:

- Noise and acoustic issues in the marine environment that may be generated from construction activities (e.g., drill centre excavation); drilling operations (e.g., drill rig, thruster-equipped vessels), VSP geohazard/wellsite survey programs and abandonment (wellhead severance);
- Disturbance/displacement of VECs and SAR associated with the above activities;
- Means by which potentially significant effects may be mitigated through design and/or operational procedures; and
- Assessment of effects of noise/disturbance on the VECs and SAR, including cumulative effects.

5.2.8 Presence of Structures and/or Operations

Provide a description of the following:

- Size and location of temporary or project-life exclusion zones;
- Description of project-related traffic, including routings, volumes, scheduling and vessel types;
- Means by which adverse effects upon marine use may be mitigated through design, scheduling and/or operational procedures; and
- Effects of physical presence of structures upon access to fishing grounds, fish research surveys and upon general marine traffic/navigation, including cumulative effects.

5.2.9 The EA should describe the relationship of the existing Hibernia production project, with the proposed Project. For example, the EA should address whether the produced water discharge rate is likely to change or whether any elements of that project, other than the drilling of the wells and subsea

construction/installation are additional or supplementary to the project already assessed.

5.2.10 Discharges and Emissions

Provide a description of planned project discharges to the marine environment, including:

- Dredge spoil, drilling muds, fluids and cuttings, produced water, bilge water, grey water, black water, cooling water, deck drainage, blow out preventer fluid; ballast water; etc.;
- Characterization, quantification and modelling of expected discharges (e.g., cuttings dispersion; concentration of metals, nutrients, hydrocarbons, biocides) and the timing of discharges, including a description of the models employed;
- Means for reduction, re-use and recovery of wastes beyond those specified in regulations and guidelines, including a description of “best available/practicable technology”; and
- Environmental effects of discharges, with consideration of EEM data from Hibernia and other Grand Banks production operations, including cumulative effects.

5.2.11 Air Quality

Provide a description of the following:

- Annual estimates of rates and quantities of emissions (e.g., as reported through the OWTG, NPRI, and Environment Canada's GHG Facility Reporting), and a description of potential means for their reduction and reporting;
- Implications for health and safety of workers that may be exposed to them;
- Mitigation and monitoring; and
- Assessment of effects, including cumulative effects.

5.2.12 Commercial Fisheries

Provide a description of commercial fisheries in the Jeanne d’Arc Basin area including the most recent data available. The information should include:

- Description of fisheries in the Study Area (including traditional, existing and potential commercial, recreational and aboriginal/subsistence and foreign fisheries, where practicable);
- Traditional historical fishing activity – abundance data for certain species in this area, prior to the severe decline of many fish species (e.g., an overview of survey results and fishing patterns in the survey areas for the last 20 years);

- Consideration of underutilized species that may be found in the Study Area as determined by analyses of past DFO research surveys and Industry GEAC survey data, with emphasis on those species being considered for future potential fisheries, and species under moratoria;
- Fisheries liaison/interaction policies and procedures;
- Program(s) for compensation of affected parties, including fisheries interests, for accidental damage resulting from project activities;
- Means by which adverse effects upon commercial fisheries may be mitigated through design and/or operational procedures; and
- Environmental effects of the Project, including cumulative effects.

5.2.13 Accidental Events

The discussion should not be limited to crude oil, but should consider accidental releases of drilling fluids, drilling muds, other hydrocarbons, and/or chemicals that may be spilled. An update to the information presented in previous environmental assessments should be provided. The information should include:

- Quantification of blowout risk;
- Quantification of risk of hydrocarbon/chemical spills of all volumes, from all facilities associated with the project (hydrocarbons should not be limited to crude and or diesel, but shall include synthetic based muds and fluids, and other hydrocarbons);
- Discussion of the potential for spill events from drilling and production activities to enter the marine environment;
- Modelled physical fate of oil spills, including descriptions of models and/or analyses that are employed and the physical data upon which they are based;
- Description of the marine area likely to be affected by hydrocarbons from a spill event that enters the marine environment;
- Fate of hydrocarbons in the marine environment, as determined by spill trajectory analysis;
- Mitigation measures to be employed to reduce or prevent such events from occurring;
- Contingency plans to be implemented in the event of an accidental release;
- Environmental effects of petroleum or chemical spills on all VECs identified, including losses from streamers (VSP and geohazard surveys) and drilling muds/fluids/cuttings, with consideration of effectiveness of spill countermeasures; and

- Cumulative effects in consideration of "chronic" oil pollution on the Grand Banks (e.g. spills from other offshore operations, bilge dumping and other discharges from vessels).

5.2.14 Environmental Management

Provide a general overall description of Hibernia Management and Development Company Limited's environmental management system and its components, including, but not limited to:

- Pollution prevention policies and procedures;
- Environmental compliance monitoring;
- Provisions or management system auditing;
- Chemical selection and management procedures;
- Fisheries liaison/interaction policies and procedures;
- Program(s) for compensation of affected parties, including fisheries interests, for accidental damage resulting from project activities; and
- Emergency response plan(s).

Biological and Follow-up Monitoring

5.2.15 Discuss the need for and requirements of a follow-up program (as defined in Section 2 of CEAA) and pursuant to the SARA. The discussion should also include any requirement for compensation monitoring (compensation is considered mitigation). Modifications to existing follow-up programs to accommodate project modifications should be addressed, including compensation monitoring (Section 35(2) HADD authorization), EEM design and implementation, and the need for baseline information in support of these programs.

5.2.16 Provision of an acceptable fish habitat compensation strategy, including options considered, in accordance with the Department of Fisheries and Oceans "*Policy for the Management of Fish Habitat".*

5.2.17 Detailed description of monitoring and observations procedures to be implemented regarding marine mammals, sea turtles, and seabirds (observation protocols should be consistent with the "*Geophysical, Geological, Environmental and Geotechnical Program Guidelines"* (C-NLOPB 2008)).

5.2.18 Abandonment/Decommissioning

Plans for abandonment and/or decommissioning of the project area and associated facilities following termination of production, including any anticipated requirement for post-abandonment monitoring.

5.3 Significance of Adverse Environmental Effects

The Proponent shall clearly describe the criteria by which it proposes to define the "significance" of any residual adverse effects (i.e., following the employment of mitigative measures) that are predicted by the EA. This definition should be consistent with the November 1994 CEAA reference guide "*Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects"*, and be relevant to consideration of each VEC (including components or subsets thereof) that is identified. SARA species shall be assessed independent of non-SARA species. The effects assessment methodology should clearly describe how data gaps are considered in the determination of significance of effects.

5.4 Cumulative Effects

The assessment of cumulative environmental effects should be consistent with the principles described in the February 1999 CEAA "*Cumulative Effects Assessment Practitioners Guide*" and in the March 1999 CEAA operational policy statement "*Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*". It should include a consideration of environmental effects that are likely to result from the proposed project in combination with other projects or activities that have been or will be carried out. These include, but are not limited to:

- Ongoing oil and gas activities;
- Proposed oil and gas activities under EA review (listed on the C-NLOPB Public registry at www.cnlopb.nl.ca);
- Seismic activities;
- Fishing activities, including Aboriginal fisheries; and
- Marine transportation.

6 Projected Timelines for the Environmental Assessment Process

The following are estimated timelines for completing the EA process. The timelines are offered based on experience with recent environmental assessments of similar project activities.

ACTIVITY	TARGET	RESPONSIBILITY
Submission of EA upon receipt of Scoping Document	8 weeks	Proponent
Prepare for EA Review	~1 week	C-NLOPB
EA Review	6 weeks	C-NLOPB & Regulatory Agencies
Compile Comments on EA	1 week	C-NLOPB
Submission of EA Addendum/Response to EA Comments	4 weeks	Proponent
Review of EA Addendum/Response	3 weeks	C-NLOPB &

Document		Regulatory Agencies
Screening Report (Determination of Significance of Project Effects)	3 weeks	C-NLOPB
Total	26 weeks	