

1. Purpose

This document provides scoping information for the screening level environmental assessment of the proposed White Rose Extension Project (the Project). Husky Oil Operations Limited (Husky), on behalf of the White Rose Extension Project (WREP) proponents, Husky; Suncor Energy Inc. (Suncor) and Nalcor Energy - Oil and Gas Inc. (Nalcor), is leading the development of the WREP. The proposed project is located on the Grand Banks offshore Newfoundland and Labrador, approximately 350 km east of St. John's in water depth between 115 and 120 m.

Initial development of the White Rose field was through excavated subsea drill centres, with flexible flowlines bringing production to a centralized floating production platform, the *SeaRose* floating production, storage and offloading (FPSO) vessel. The White Rose field was originally developed using subsea wells in two subsea drill centres; the Central Drill centre (CDC) and the Southern Drill Centre (SDC). A third drill centre, the Northern Drill Centre (NDC) is used as an injection site for gas that is being stored for future use. First oil from the White Rose field was produced in November 2005. **1st May 2010, production commenced from the North Amethyst Drill Centre (NADC) which was tied back to the *SeaRose* FPSO for production, storage and export to tanker.** The current focus of the WREP is on the development of West White Rose.

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.

The document was developed by the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) in consultation with other departments and agencies in the Governments of Canada and of Newfoundland and Labrador.¹

2. Regulatory Considerations


The original White Rose field underwent an environmental assessment in 2000 pursuant to the *Canadian Environmental Assessment Act* (the "CEA Act") (S.C. 1992, c. 37) as a Comprehensive Study. In 2007, a further environmental assessment was undertaken on activities associated with construction of up to five additional subsea drill centres and associated flowlines under *Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment Addendum* (LGL 2007).

The Project, as described in the "White Rose Extension Project Description" (Husky Energy May 2012), describes two development options to develop the WREP: a

¹Appendix 1 contains a list of the departments and agencies consulted during the preparation of the document.

Summary of Comments on 1

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 Number: 1 Author: noblel Subject: Highlight Date: 06/18/2012 1:43:56 PM
The 2007 EA should be mentioned in this context.

Wellhead Platform (WHP) development in the West White Rose pool plus up to three future subsea drill centres; or a subsea drill centre development in the West White Rose pool plus up to three additional future subsea drill centres. **The WHP development option will include engineering, procurement, construction, fabrication, installation, commissioning, development drilling, operations and maintenance, and decommission activities.** Under the subsea development option it will be comprised of an excavated subsea drill centres into which subsea well infrastructure will be placed. Drilling of the wells will be done from a mobile offshore drilling unit (MODU).

The Project will require authorizations under sub-sections 138 (1) (b) and 139(4) (a) of the *Canada-Newfoundland Atlantic Accord Implementation Act*. Pursuant to Section 5(1)(d) of the CEA Act, the C-NLOPB must ensure that an environmental assessment is conducted. 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. This draft scoping document therefore has been developed based on the requirements of the CEA Act for Screening Level Assessments.

The C-NLOPB will act as the Federal Environmental Assessment Coordinator (FEAC) respecting the assessment and in this role will be responsible for coordinating the review activities of the other responsible authorities as well as those of other expert government departments and agencies that participate in the review.

The C-NLOPB, pursuant to Section 17 (1) of the CEA Act, formally delegate the responsibility for preparation of an acceptable environmental assessment report that satisfies the requirements of a Screening level of environmental assessment to Husky Oil Operations Limited, the project proponent. The C-NLOPB will prepare the Screening Report, which will include the determination of significance.

3. Scope of the Project

3.1 Project Components

The subsea development option, which includes the subsea drill centre, flowlines, and the activities associated with that development option, have previously been assessed under *the Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment Addendum* (LGL 2007). The construction of a subsea drill centre for the West White Rose pool was one of the potential subsea drill centres assessed and compensated for in 2007. A fish habitat compensation agreement (Authorization No. 07-01-002) has been in place with Fisheries and Oceans Canada (DFO) since 2007 to compensate for the excavation of


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The on/nearshore graving dock should be referenced here because it is a large component of the WHP option.


up to five subsea drill centre sites, of which only one has been excavated to date (the NADC).


The WHP development option will consist of construction of a concrete gravity structure (CGS) in Argentia, Newfoundland which is located in Placentia Bay on the southern Avalon Peninsula, 130 km south west of St. John's. The construction site is a **1rownfield location** in the northeast portion of the Northside Peninsula, bordering Argentia Harbor. The topsides will be constructed at an existing fabrication facility and therefore are not considered part of this assessment. The CGS will be constructed in the dry, in a de-watered graving dock. **2Upon completion of the CGS, the CGS structure will be floated to a deep-water site in Placentia Bay** where it will be mated with the topsides structure. The WHP will then be towed to and installed in the western portion of the White Rose field and tied back to the *SeaRose FPSO*. New subsea Drill Centres, using subsea drill centre technology, may be developed in conjunction with the WHP development option. The project to be assessed consists of the following components.


3.1.1 Argentia – Graving Dock Construction Site:


- (a) **3Onshore/Nearshore Graving Dock Site Preparation;**
- (b) Excavation of Graving Dock behind the natural coastal berm to a depth of 20 m below sea level in Argentia, may include the following activities: site surveys (e.g. geophysical, geological, geotechnical, environmental), sheet pile/driving, bund construction, installation of gated system, dredging, blasting, grouting, dewatering, disposal of excavated material;
- (c) Construction of mooring points at deepwater site;
- (d) Completion of CGS construction at the Argentia site and **4decommissioning shoreline berm (e.g. shoreline dredging activities)**
- (e) Tow out of the WHP to the deepwater site; dredging activities and material disposal may be required;
- (f) Mating of the CGS with topside components and all ancillary activities;
- (g) Tow out of the CGS platform to its offshore location through Placentia Bay; **6redging activities may be required during tow-out;** and
- (h) Operation of support craft associated with the above activities, including but not limited to vessels for the berm/mooring construction, topside mating activities, and CGS tow out, diving programs, supply vessels, helicopters, tow vessels, barges, ROVs. 


 Number: 1 Author: noblel Subject: Highlight Date: 06/18/2012 1:46:16 PM
State why considered brownfield


 Number: 2 Author: noblel Subject: Highlight Date: 06/19/2012 11:35:08 AM
It should indicate that berm is to be removed to flood graving dock to allow WHP flotation and dredging for subsequent towing out to sea

 Number: 3 Author: noblel Subject: Highlight Date: 06/19/2012 11:38:34 AM
Shoreline/nearshore dredging and any other in-water works (infilling/spoils) should be addressed.

 Number: 4 Author: noblel Subject: Highlight Date: 06/18/2012 1:52:00 PM
Unclear if decommissioning is meant to address the berm removal and shoreline dredging for the WHP floating or if it is post WHP removal/
graving dock clean-up.
In either case the graving dock berm removal and dredging activities should be included in the scope of the project.

 Number: 5 Author: noblel Subject: Highlight Date: 06/18/2012 1:51:35 PM

 Number: 6 Author: noblel Subject: Highlight Date: 06/18/2012 1:53:28 PM
If blasting possibility it should be addressed

 Number: 7 Author: noblel Subject: Sticky Note Date: 06/18/2012 11:18:24 AM
Disposal of the berm, dredge or site excavation material, particularly as it relates to shoreline deposit or dumping in The Pond should be included.

3.1.2 White Rose Field

- (a) Offshore site and clearance surveys, including geophysical, geological, geotechnical, environmental (including iceberg) surveys;
- (b) Installation of the CGS at its offshore location; may include site preparation activities such as clearance dredging, seafloor levelling, underbase grouting, offshore solid ballasting, docking piles, mooring points;
- (c) Connection of CGS to *SeaRose FPSO*, including flowlines.
- (d) Construction of flowlines (including trenching, excavation, covering, and or spoil deposition), installation, maintenance, protection, and abandonment/decommissioning of subsea;
- (e) Construction, installation, maintenance, abandonment/decommissioning of up to three subsea Drill Centres associated with the CGP and up to four subsea Drill Centres for the subsea Drill Centres development option;
- (f) Drilling operations from the CGS option (40 wells plus up to 16 well each for three Drill Centres for a total of 88 wells), including well testing, workover of development wells, VSP programs, wellsite/geohazard surveys;
- (g) Drilling operations from the subsea Drill Centre option using a semi-submersible drilling rig (West White Rose plus up to three additional Drill Centres, each with 16 wells for a total of 64 wells); including well testing; workover of development wells, VSP programs; wellsite/geohazard surveys;
- (h) Support activities, including diving programs, ROV surveys, and operation of support craft associated with the above activities, including but not limited to dredging vessels, mobile offshore drilling units, platform supply and standby vessels, helicopters, and shuttle tankers.
- (i) Operation, maintenance, modifications, decommissioning and abandonment;

3.2 Project Timing

3.2.1 Argentina

- (a) Construction activities at Argentina will likely commence near Q3 of 2013 with activities ongoing for approximately three years.

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3.2.2 White Rose Field

- (a) Offshore construction, site preparation, and installation of the CGS will likely occur between Q2 2015 and Q3 2016; and
- (b) Production and drilling activities will commence in Q4 2016 or early 2017 and continue through the life of the project, estimated at 25 years.
- (c) Offshore construction using a subsea drill centre would begin in 2014 with installation of equipment, and first oil potentially in 2015.

4. Factors to be Considered

The screening level assessment shall include a consideration of the following factors, which include those prescribed by Section 16, in accordance with Section 16 of CEAA:

- (a) Purpose of and need for the project;
- (b) Alternatives to the project;
- (c) Alternative means of carrying out the project which are technically and economically feasible and the environmental effects of any such alternative means;
- (d) The environmental effects² of the Project, including those due to malfunctions or accidents that that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out, and the significance of these effects;
- (e) 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;
- (f) The significance of adverse environmental effects following the employment of mitigative measures;
- (g) The need for, and the requirements of, any follow-up program in respect of the Project (refer to the Canadian Environmental Assessment Agency's 2002 "Operational Policy Statement" regarding Follow-up Programs³);
- (h) The capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future; and

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

³ CEA Agency Guidance documents and Operational Policy Statements are available on its web site: http://www.ceaa-acee.gc.ca/012/newguidance_e.htm#6.

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- (i) Report on consultations undertaken by Husky Energy with interested parties who may be affected by the Project and comments that are received from interested parties and the general public respecting any of the matters described above.

5. Scope of the Factors to be Considered

Husky will prepare and submit to the C-NLOPB an environmental assessment, which satisfies the requirements for a screening level assessment, for the above described physical works and activities, and as described in the project description “*White Rose Extension Project Description*” (Husky 2012). The environmental assessment will address the factors listed above, as well as the issues identified in Section 5.3, and will document any issues and concerns that may be identified by Husky through regulatory, stakeholder, and public consultations.

It is recommended that the “valued ecosystem component” (VEC) approach be used to focus its analysis. A definition of each VEC (including components or subsets thereof) identified for the purposes of environmental assessment, and the rationale for its selection, shall be provided.


The scope of the factors to be considered in the environmental assessment includes the components identified in the “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 Area. Where data gaps exist, the EA should clearly identify the lack of available data.

5.1 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.*” Cumulative effects assessment must 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 the following activities:

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- proposed offshore oil and gas activities under EA review (listed on the C-NLOPB Public registry at www.cnlopb.nl.ca);
- ongoing offshore oil and gas activities, including development drilling, production, exploration drilling and marine seismic surveys; 
- fishing activities (including Aboriginal fisheries); and
- **marine transportation.**


5.2 Boundaries


The Screening level assessment 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;
- the 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; and
- 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 the Screening Level Assessment. The spatial boundaries of the Study Areas, and those areas within the Study Areas (Project Area), shall be clearly described in the document using figures and maps as appropriate. The corner-points for all areas should be included.

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

 Number: 1 Author: noblel Subject: Sticky Note Date: 06/19/2012 11:40:58 AM
Near shore (Argentina) construction activities should be included

 Number: 2 Author: noblel Subject: Highlight Date: 06/18/2012 1:57:12 PM
Including tanker traffic in relation to tow-out and other activities in Placentia Bay

5.2.1 Spatial Boundaries

Project Area: All areas in which project works and activities are to occur.

Affected Area(s): The area(s) beyond the project area which could potentially be affected by Project works and activities beyond the project area.

Region: The area extending beyond the “affected area” boundary. The “region” boundary will also vary with the component being considered (e.g., boundaries suggested by bathymetric and/or oceanographic considerations).

5.2.2 Temporal Boundaries.

The temporal scope should describe the timing of Project activities at Argentia and the White Rose Field. Scheduling of Project activities should consider the timing of sensitive life cycle phases of the VECs in relation to physical activities.

5.3 Summary of Potential Issues and Environmental Effects Assessment


The Environmental Assessment Report (EA) should contain descriptions of the physical and biological environments, as identified below. The description of the environment and the effects assessment shall include the ¹Argentia Study Area and the White Rose Field Study Area.


Program activities are proposed for the Jeanne d’Arc Basin, which has been studied extensively in a number of recent environmental assessments. ²or the purposes of this assessment, the information provided in the environmental assessment documents for the exploration and development programs on the Jeanne d’Arc Basin can be used in support of the environmental assessment for the proposed White Rose Expansion ³Project. However, where new information is required for any of the following factors, the new data and/or information must be provided. ⁴Where information is summarized from existing EA reports, it should be properly referenced, with the sections of the existing EA report.


Physical, environmental, and monitoring data from offshore exploratory and production activities on the Jeanne d’Arc Basin have been collected for more than 10 years. This information must be considered and incorporated, where applicable, in the EA.


The EA should contain descriptions and definitions of methodologies employed in the assessment of effects. Effects of relevant Project works and activities on those Valued Ecosystem Components (VECs) most likely to be in the Study Area(s) will be assessed. Discussion of cumulative effects within the Project and with other relevant marine

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 Number: 1 Author: noblel Subject: Highlight Date: 06/18/2012 1:58:08 PM
including Placentia Bay?

 Number: 2 Author: noblel Subject: Highlight Date: 06/15/2012 10:57:11 AM

 Number: 3 Author: noblel Subject: Sticky Note Date: 06/19/2012 11:41:49 AM
Any EA document referenced must be peer reviewed and finalized. Primary literature should be referenced where able.

 Number: 4 Author: noblel Subject: Highlight Date: 06/15/2012 11:04:22 AM

projects will be included. Issues to be considered will include, but not be limited, to the following.

5.3.1 Physical Environment

A description of relevant ¹physical environmental ²parameters, including the following elements:

- Meteorological and ³oceanographic characteristics of Study Areas, including extreme conditions;
- Site-specific sea ice and iceberg conditions, including iceberg scour of the seabed;
- Physical environmental monitoring, observation and forecasting programs that will be in place during the project;
- Ice management/mitigation procedures, including criteria respecting disconnection of project installations and assessment of the efficiency of detection and deflection techniques; and
- Effects of the environment on the Project.


5.3.2 Marine Resources


5.3.2.1 Marine Ecosystem


Characterization, including quantification to the degree possible, of the spatial area of seabed that is predicted to be affected by dredging, trenching, dredge spoil disposal; footprint of CGS, drill centres, flowlines, berm (Argentina), MODU moorings; discharge of drill cuttings and other discharges.

5.3.2.2 Marine and/or Migratory Birds Using the Study Area(s)

- Spatial and temporal species distributions in Study Areas (observation/monitoring data collected during ongoing petroleum activities should be discussed);
- Species habitat, feeding, breeding, and migratory characteristics of relevance to the environmental assessment;
- Exposure to contaminants from accidental spills (e.g., fuel, oils) and operational discharges (e.g., deck drainage, gray water, black water);
- Attraction of birds to vessel lighting, flares, potential effects and mitigations;
- Noise disturbance from equipment including both direct effects (physiological), or indirect effects (foraging behaviour or prey species);
- Physical displacement as a result of vessel presence (e.g., disruption of foraging activities);
- Attraction of, and increase in, predator species as a result of waste disposal practices (i.e., sanitary and food waste);

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 Number: 2 Author: noblel Subject: Highlight Date: 06/18/2012 2:00:07 PM
The same information should be presented for Freshwater Resources (i.e, The Pond)

 Number: 3 Author: noblel Subject: Highlight Date: 06/19/2012 11:42:35 AM
Oceanographic characteristics should include bathymetry and currents of Argentinia/Placentia Study Area.

 Number: 4 Author: noblel Subject: Sticky Note Date: 06/15/2012 11:27:16 AM
The same information should be presented for Freshwater Resources (i.e, The Pond).

- Procedures for handling birds that become stranded on offshore structures (e.g. rigs, supply vessels, construction vessels);
- Means by which bird mortalities associated with Project operations will be documented and assessed;
- Means by which potentially significant effects upon birds may be mitigated through design and/or operational procedures; and
- Environmental effects of the Project, including cumulative effects (e.g., other offshore oil and gas activities, hunting, fishing (long line by-catch), shipping).

5.3.2.3 Marine Finfish and Shellfish:


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


5.3.2.4 Marine Mammals and Sea Turtles

- Spatial and temporal distribution and abundance of species utilizing the Study Areas (observation and monitoring data collected during exploration and development activities should be considered);
- Description of marine mammal lifestyles/life histories relevant to Study Areas;
- 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 of the Project, including cumulative effects.

5.3.2.5 Species at Risk (SAR)

- Description 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 Areas, including fish, marine mammals, sea turtles and seabird species;
- Description of critical habitat(as defined under SARA), if applicable, relevant to the Study Areas;
- Means by which adverse effects upon SAR and their critical habitat may be mitigated through design, scheduling, and/or operational procedures;

 Number: 1 Author: noblel Subject: Highlight Date: 06/15/2012 11:32:42 AM
all life stages should be considered with special attention on critical life stages/habitat requirements

 Number: 2 Author: sullivank Subject: Sticky Note Date: 06/19/2012 11:30:18 AM
Need to include a point on mitigation measures for effects on fish habitat including the implementation of fish habitat compensation measures.

- Monitoring and mitigation, consistent with recovery strategies/action plans (endangered/threatened) and management plans (special concern);
- Environmental effects (adverse and significant) of the Project on SAR identified species and critical habitat, including cumulative effects; and
- A summary statement stating whether project effects are expected to contravene the prohibitions of SARA (Sections 32(1), 33, 58(1)).

5.3.2.6 Sensitive Areas

- Description (e.g. definitions, maps, photos as appropriate), of any sensitive areas in the Study Areas, such as important or essential habitat to support any of the marine resources identified, or areas identified through the Grand Banks-Placentia Bay Large Ocean Management Area (LOMA) Integrated Management Plan initiative (Ecologically and Biologically Significant Areas, Valuable Marine Ecosystems, Marine Protected Areas, etc.);
- Means by which adverse effects upon sensitive areas may be mitigated through design, scheduling, and/or operational procedures; and
- Environmental effects of the Project, including cumulative effects, on those sensitive areas identified.


5.3.3 Marine Use

5.3.3.1 Noise/Acoustic Environment

- Noise and acoustic issues in the marine environment that may be generated from construction activities at Argentia and the White Rose Field (e.g., graving dock construction, mooring construction, pile driving, ocean disposal, drill centre excavation, berm/gate construction); drilling operations (e.g. drill rig, thruster-equipped vessels, VSP/Geohazard programs) and abandonment (wellhead severance);
- Means by which potentially significant effects may be mitigated through design and/or operational procedures; and
- Assessment of effects of noise/disturbance on VECs, including cumulative effects.

5.3.3.2 Presence of Structures and/or Operations:

- 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 and/or operational procedures; and
- Assessment of effects on access to fishing grounds, fish research surveys and upon general marine traffic/navigation; including cumulative effects.

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blasting

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5.3.3.3 *Traditional, Existing and Potential Commercial, Recreational and Aboriginal/Subsistence Fisheries, including Foreign Fisheries*


- Description of fisheries in Study Areas (including traditional, existing and potential commercial, recreational and aboriginal/subsistence);
- 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 Areas as determined by analyses of past DFO research surveys and Industry GEAC survey data, with emphasis on those species being considered for future potential fishers, 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.


5.3.4 Discharges and Emissions – Argentia and White Rose Field Study Areas

5.3.4.1 *Construction and Operational Discharges*

Planned project discharges to the marine environment, including but not limited to the following:

- Description and quantification of project discharges including, but not limited to: dredge spoil, **Deck** fill or flow line insulation material, drilling fluids and cuttings, bilge water, produced sand, grey water, black water, cooling water, deck drainage, blow out preventer fluid; ballast water;
- Characterization, quantification and modelling of expected discharges (e.g., dredge spoil disposal, cuttings dispersion; concentration of metals, nutrients, hydrocarbons, biocides, 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 an evaluation of the applicability of “best available/practicable technology” (e.g., cuttings re-injection) to the project; and
- Environmental effects of discharges on VECs, including cumulative effects (effects assessment should consider existing EEM data from petroleum production operations on the Jeanne d’Arc Basin).

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study area?

 Number: 2 Author: noblel Subject: Sticky Note Date: 06/18/2012 1:35:52 PM
including Graving dock berm removal and deposition into The Pond

5.3.4.2 Air Quality

Provide a description of the following:

- Description and annual estimates (rates and quantities) of air emissions associated with project activities, including greenhouse gas emissions;
- Implications for health and safety of workers that may be exposed to them;
- Description of potential means for reduction and reporting of above air emissions;
- Mitigation and monitoring; and
- Assessment of effects, including cumulative effects.

5.3.4.3 Accidental Events

The discussion should consider accidental releases of drilling fluids, hydrocarbons (including fuels), and/or chemicals that may be spilled and should address:

- Quantification of blowout risk, particularly of crude oil;
- Quantification of risk of hydrocarbon/chemical spills of all volumes, from all facilities associated with the project. Hydrocarbons must not be limited to crude oil, but also include synthetic/oil based drilling fluids, and refined hydrocarbons. NL offshore experience shall explicitly be considered as part of this discussion;
- Description of the marine area likely to be affected by hydrocarbons from a spill event in the marine environment;
- Fate of hydrocarbons in the marine environment, as determined by spill trajectory analysis and supported, where feasible, with modelling of weathering parameters such as evaporation, dispersion and emulsification. A description should be included of the models and/or analyses that are employed and the physical data upon which they are based;
- Mitigation measures to be employed to reduce or prevent such events from occurring;
- Contingency plans to be implemented in the event of a spill, including an analysis of the likely efficiency of spill response measures and any equipment upgrade or acquisition that may be required to support the Project;
- Environmental effects of hydrocarbon or chemical spills on all VECs identified, including losses from streamers (VSP and geohazard surveys) and drilling muds, 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), and with those of other offshore oil and gas activities.

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5.3.5 Environmental Management

Provide a general overview of Husky's environmental management system and its components, including, but not limited to:

- Pollution prevention policies and procedures;
- Environmental effects monitoring (see Section 5.3.6.1, below);
- Environmental compliance monitoring;
- Provisions for 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;
- Emergency response plan(s); and
- Environment-related training of project employees and contractors, including project vessels.

5.3.6 Biological and Follow-up Monitoring

- Discuss the requirements of a follow-up program (as defined in Section 2 of CEAA) as may be required pursuant to the SARA. The discussion should also include any requirement for compensation monitoring (including fish habitat) as compensation is considered mitigation under the CEAA. Modification 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.
- Provision of an acceptable fish habitat compensation strategy, including options considered, in accordance with DFO's *Policy for the Management of Fish Habitat*.
- Detailed description of monitoring and observations procedures to be implemented regarding marine mammals and seabirds (observation protocols should be consistent with the C-NLOPB Geophysical, Geological, Environmental and Geotechnical Program Guidelines (2012)).

5.3.7 Emergency Response Plan

Risk-based determination of oil spill response needs, including those for small-volume spills. The EA should identify:

- Types and location of response equipment; and
- Target times for equipment deployment.

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5.3.8 Abandonment/Decommissioning

Plans for abandonment and/or decommissioning of the Project Areas and associated facilities following termination of production, including design considerations relating to removal of the production platform and any anticipated requirement for post-abandonment monitoring.

5.4 Significance of Adverse Environmental Effects

The Proponent shall clearly describe the criteria by which it proposes to define the “significance” of any adverse effects (i.e., following the employment of mitigative measures) that are predicted by the environmental assessment. 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. The effects assessment methodology should clearly describe how data gaps are considered in the determination of significance of effects.

APPENDIX 1

Departments and Agencies Consulted by the Responsible Authority

“Federal Authorities” and likely “Responsible Authorities” under the *Canadian Environmental Assessment Act*

Environment Canada
Fisheries and Oceans Canada
Industry Canada
Transport Canada
Natural Resources Canada
Department of National Defence
Health Canada
Parks Canada

Other Departments/Agencies

Canadian Environmental Assessment Agency

Provincial Departments (Government of Newfoundland and Labrador)

Department of Natural Resources
Department of Environment and Conservation
Department of Fisheries and Aquaculture

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