



**Project Description Summary
Statoil Canada Ltd.
Flemish Pass Exploration Drilling Program**

August 8, 2016

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List of Abbreviations and Units of Measure

°C	degrees Celsius
AUV	autonomous underwater vehicle
BOP	blow-out preventer
CEAA 2012	<i>Canadian Environmental Assessment Act, 2012</i>
CEA Agency	Canadian Environmental Assessment Agency
C-NLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
CPAWS	Canadian Parks and Wilderness Society
CSEM	controlled-source electromagnetic
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EL	Exploration License
km	kilometre
m	metre
MODU	mobile offshore drilling unit
NAFO	Northwest Atlantic Fisheries Organization
nm	nautical mile
OWTG	Offshore Waste Treatment Guidelines
ROV	remotely operated vehicle
SARA	<i>Species at Risk Act</i>
SBM	synthetic-based drilling mud
SDL	Significant Discovery License
SEA	Strategic Environmental Assessment
VSP	vertical seismic profile
WBM	water-based drilling mud

1 Introduction

Statoil Canada Ltd. (herein referred to as Statoil), on behalf of its partners BP Canada Energy Group ULC, BG International Limited, Chevron Canada Limited and ExxonMobil Canada Ltd., is proposing to undertake an exploration drilling program on current and potential licences operated by Statoil in the Flemish Pass area (herein referred to as the Project).

The drilling, testing and abandonment of offshore exploratory wells in the first drilling program in an area set out in one or more exploration licences issued in accordance with the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* is a designated project under the *Canadian Environmental Assessment Act (CEAA 2012)*. This Project Description has been prepared to address the information requirements pursuant to the CEAA 2012 and its regulations, as well as requirements under the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* and the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act* (the Accord Acts). This Project Description Summary is provided to the Canadian Environmental Assessment Agency (CEA Agency) so that it may determine whether an environmental assessment (EA) is required.

1.1 Project Background and Objectives

The Project includes the drilling and abandonment of exploration wells using one two mobile offshore drilling unit (MODUs) or drill ships. For the purposes of environmental assessment, and to allow for drilling on licences held by Statoil, over the course of 10 years it is estimated that up to 10 wells could be drilled. The Project is located in the eastern region of the Newfoundland and Labrador offshore area.

The Project is aimed at defining and drilling for potential oil and gas resources on current or potential future Statoil-held land holdings within the Project Area. Current Exploration Licences (ELs) on which drilling may occur and which triggers the CEAA 2012 are ELs 1125, 1139, 1140, 1141, and 1142. Drilling will only occur on EL 1138, should a change in operator status occur. The Project includes activities associated with offshore exploration drilling. As such, there is no production capacity associated with the Project.

1.2 Proponent Information

Statoil ASA is a technology oriented oil and gas producer, focused on upstream exploration and production activities. It is a Norwegian-based company with business operations in 33 countries and territories. Headquartered in Stavanger, Norway, Statoil ASA has more than 20,000 employees worldwide.

Statoil Canada Ltd. (Statoil) runs operations in Canada and is headquartered in Calgary, Alberta, with a local office in St. John's, Newfoundland and Labrador. In the Eastern Newfoundland offshore area, Statoil is operator of five Significant Discovery Licences (SDLs) and 10 ELs, has interests in 31 SDLs and one EL, and is a partner in three oil and gas producing operations, and one production operation set to start in 2017. Statoil undertook its first drilling and seismic program activities offshore Newfoundland in 2008 and had its first offshore oil discovery in 2009 with Mizzen in the Flemish Pass area. Following the success of the Mizzen, Statoil continued its seismic and exploration drilling activities. Additional seismic surveys were undertaken offshore Newfoundland in 2011, 2012, and 2014. Further exploration drilling in the Flemish Pass area in 2013 resulted in the Harpoon and Bay du Nord discoveries. Statoil continued its exploration and appraisal drilling program in the Flemish Pass area through a 19-month drilling program which began in the fall of 2015. A total of 10 exploration and/or appraisal wells were drilled.

All communications regarding the EA process for this Project should be referred to the following:

Primary Contact for Environmental Assessment Process:

Stephanie Curran
Regulatory Lead
Statoil Canada Ltd.
709-726-9091
scurr@statoil.com

Primary Contact for Statoil Canada Ltd., Newfoundland Operations:

David Ralph, P. Eng.
Operations Manager, Newfoundland Offshore
Statoil Canada Ltd.,
709-726-9091
dral@statoil.com

1.2.1 Collaboration with other Operators in EA Process

In the Newfoundland and Labrador offshore area, Statoil is aware that other operators, for instance ExxonMobil Canada Ltd. (ExxonMobil) will be undertaking CEEA 2012 environmental assessments for drilling programs. ExxonMobil is also a partner with Statoil on a number of its licences offshore.

Through Statoil's ongoing engagements with stakeholders, feedback indicates that stakeholders want a streamlined review process to reduce the number of environmental assessments they have to review each year. To address these concerns, and in consideration of partnership on certain licences, Statoil and ExxonMobil will collaborate, as appropriate, during the EA process. The Project Area has been designed in consideration of the potential collaboration between the two operators. If possible, Statoil and ExxonMobil may look for opportunities to file one Environmental Impact Statement (EIS) or an EIS report with common sections, thereby reducing the need to review duplicate information. In order to commence the EA process, however, each operator will be filing a separate Project Description.

1.3 Regulatory Framework

The Project is expected to require an EA under the CEAA 2012. It is a designated project pursuant to the CEAA 2012. Schedule I of the *Regulations Designating Physical Activities* (SOR/2012-147) designates “*The drilling, testing and abandonment of offshore exploratory wells in the first drilling program in an area set out in one or more exploration licences issued in accordance with the Canada-Newfoundland and Labrador Atlantic Accord Implementation Act or the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act*” as a designated project under the CEAA 2012.

Oil and gas activities offshore Newfoundland and Labrador are regulated by the C-NLOPB under the Accord Acts. The role of the C-NLOPB, under the Accord Acts, is to facilitate oil and gas exploration and development in the Newfoundland and Labrador Offshore Area while overseeing compliance with regulatory requirements for worker safety, environmental protection and safety, conservation of the resource, land tenure, and Canada/Newfoundland and Labrador benefits. ELs are issued in accordance with the C-NLOPB land tenure process, pursuant to the Accord Acts and are valid for up to nine years consisting of Period I and Period II. Note that the land tenure process is under review and changes are anticipated. The issuance of ELs is based on work commitments, whereby a well must be drilled or diligently pursue by the end of Period I.

Pursuant to Section 138(1) of the Accord Acts, the C-NLOPB issues an Operations Authorization for offshore exploratory drilling activities. In accordance with the Accord Acts and Section 6 of the *Newfoundland Offshore Petroleum Drilling and Production Regulations* (SOR/2009-316), prior to the issuance of an Operations Authorization, information such as an environmental assessment report and environmental protection plan must be submitted by the Operator and approved by C-NLOPB. The EIS will address the environmental assessment requirements of the C-NLOPB Operations Authorization process.

Additional oversight for environmental protection and safety of operations is provided by regulations and guidelines issued by the C-NLOPB, and jointly with the Canada-Nova Scotia Offshore Petroleum Board and/or National Energy Board (NEB). For exploration drilling programs, the *Newfoundland Offshore Drilling and Production Regulations* (SOR/2009-316) govern drilling activities and establish the framework for safety and environmental protection. Environmental guidelines to support drilling programs include Offshore Waste Treatment Guidelines (OWTG) (NEB et al. 2012), the Environmental Protection Plan Guidelines (NEB et al., 2011) and the Offshore Chemical Selection Guidelines for Drilling and Production Activities on Frontier Lands (NEB et al. 2009).

Depending on the nature of the activities offshore, federal departments may require permits, authorizations or approvals for the activities or works associated with the Project. The following is a provisional list of Acts under which permits / approvals / authorizations may be required for the Project:

- *Fisheries Act* (R.S.C., 1985, c. F-14)
- *Canadian Environmental Protection Act* (CEPA) (S.C. 1999 c. 33)
- *Navigation Protection Act* (R.S.C., 1985, c. N-22)
- *Species at Risk Act* (SARA) (S.C.2002, c. 29)

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- *Migratory Birds Convention Act, 1994* (S.C. 1994, c. 22)
- *Canada Shipping Act* (S.C. 2001, c. 26)

Given the scope of the Project, it is not anticipated that the Newfoundland and Labrador *Environmental Protection Act* (2002) and *Environmental Assessment Regulations* 54/03 will apply to the Project. Statoil will not be constructing any on-land facilities as part of the Project. Statoil will use a third-party operated shore base to support logistical requirements of the Project.

No federal funding will be requested, nor provided, to the proponent from any federal authority to support the Project.

2 Project Description

2.1 Project Area

The Project is located in the eastern region of the Newfoundland and Labrador offshore area (Figure 1). The Project Area describes an area where drilling activities may occur on ELs where no drilling activity has occurred and includes ELs currently operated by Statoil (EL 1125, 1139, 1140, 1141, 1142) or in which Statoil is a partner (Figure 1). Drilling will only occur on partner-operated licences should a change in operator status occur.

The boundaries of the Project Area incorporate licences where Statoil may undertake exploration drilling and includes an area surrounding those licences to accommodate spatial boundaries of ancillary activities that are often carried out in support of drilling activities. For instance, for wellsite surveys, the survey area must include requirements per the C-NLOPB guidelines and be sized to accommodate the turning of vessels towing streamers. Therefore, the Project Area boundary has been sized to include a 20 km buffer surrounding the outer boundaries of licences. While it is not certain exactly where drilling activities will be conducted, it is likely that they may occur on ELs (as identified above) in the Project Area within the term of the EL.

The coordinates are listed in Table 1 and the Project Area is illustrated in Figure 1. The EIS will include an assessment of drilling activities within the identified licences (see above). Specific drilling locations cannot be identified at this time as they will be based on the interpretation of seismic data yet to be acquired, and may be modified due to changes in licencing ownership or operatorship.

Statoil may acquire new exploration licenses under the C-NLOPB land tenure process through the current 2016 Call for Bids (NL16-CFB01 and NL16-CFB02) (Figure 2). If Statoil is awarded additional exploration license(s), these may be included in the scope of the Project to be assessed in the Environmental Impact Statement, should an environmental assessment be required.

Table 1 Project Area Coordinates

Project Area Vertices	Coordinates - NAD83 UTM ZONE 22N			
	Longitude (DMS)	Latitude (DMS)	Easting (m)	Northing (m)
A	-44° 56' 47.837"	49° 47' 31.003"	935561.8	5533101
B	-44° 55' 20.940"	48° 34' 29.722"	948190.3	5398059
C	-45° 41' 44.381"	47° 16' 25.966"	901154.7	5249260
D	-47° 21' 4.077"	49° 49' 18.334"	762439.6	5525202
E	-48° 54' 9.763"	47° 22' 44.044"	658313.9	5249404

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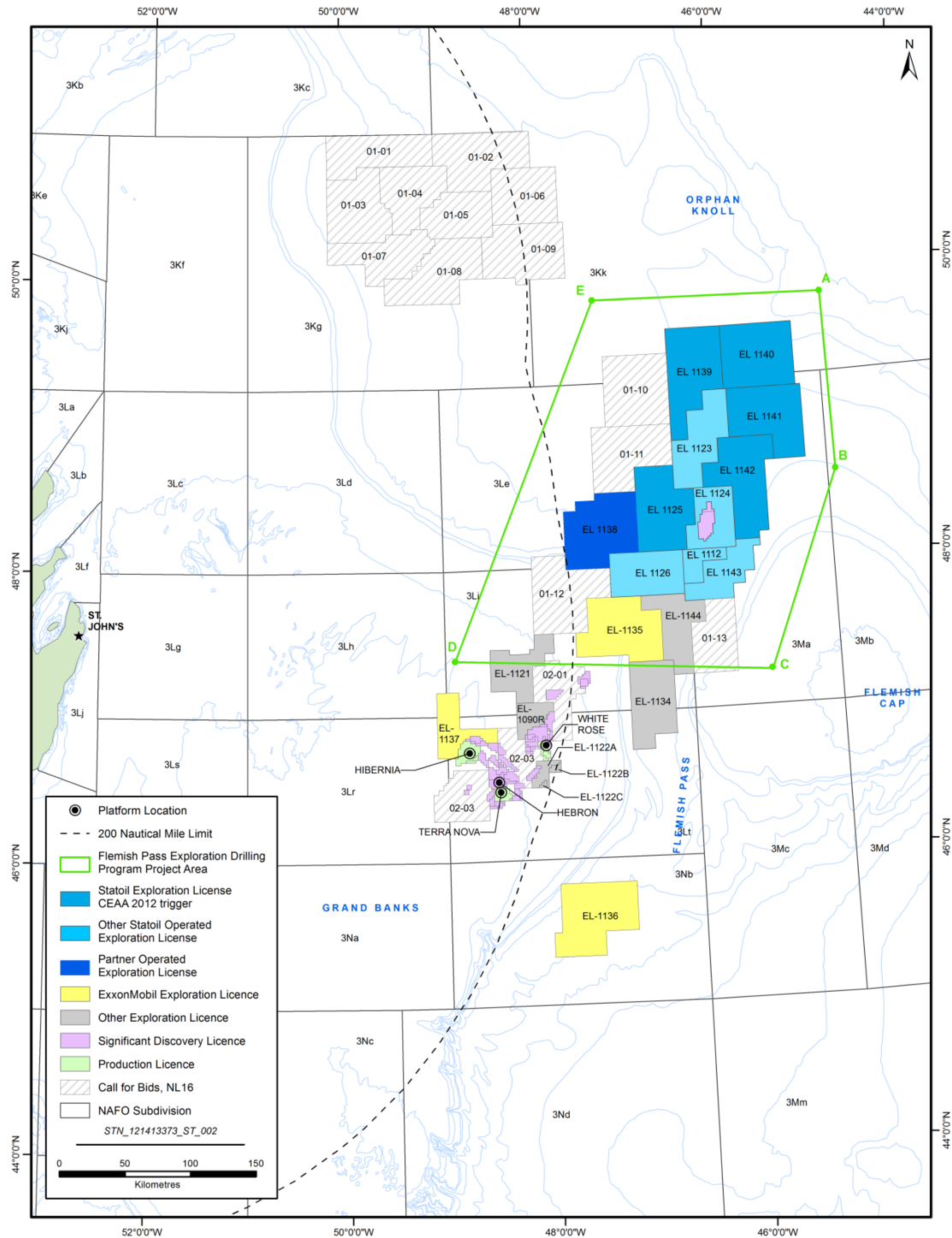


Figure 1 Project Area

Statoil holds interest rights (ELs, SDLs and PLs), in the Newfoundland and Labrador Offshore Area. As of May 2016, Statoil is the operator of ten ELs and five SDLs, and is an interest holder on 1 EL, 31 SDLs, and 6 PLs. Table 2 lists ELs on which drilling may occur.

Table 2 Licences Where Drilling Activity May Occur

Licence Number	Interest Holders (% ownership)	Expiry: Period 1 Period 2	Drilling Activity
1125	Statoil (40%)* Chevron (40%) BP (10%) BG (10%)	Jan. 15, 2018 Jan 15, 2021	No drilling has occurred
1138	Chevron (operator) (35%) Statoil (35%) BG (30%)	Jan. 15, 2018 Jan 15, 2021	No drilling has occurred
1139	Statoil (40%)* ExxonMobil (35%) BG (25%)	Jan. 15, 2022 Jan. 15, 2025	No drilling has occurred
1140	Statoil (34%)* ExxonMobil (33%) BP (33%)	Jan. 15, 2022 Jan. 15, 2025	No drilling has occurred
1141	Statoil (34%)* ExxonMobil (33%) BP (33%)	Jan. 15, 2022 Jan. 15, 2025	No drilling has occurred
1142	Statoil (50%)* BP (50%)	Jan. 15, 2022 Jan. 15, 2025	No drilling has occurred

2.2 Project Components and Activities

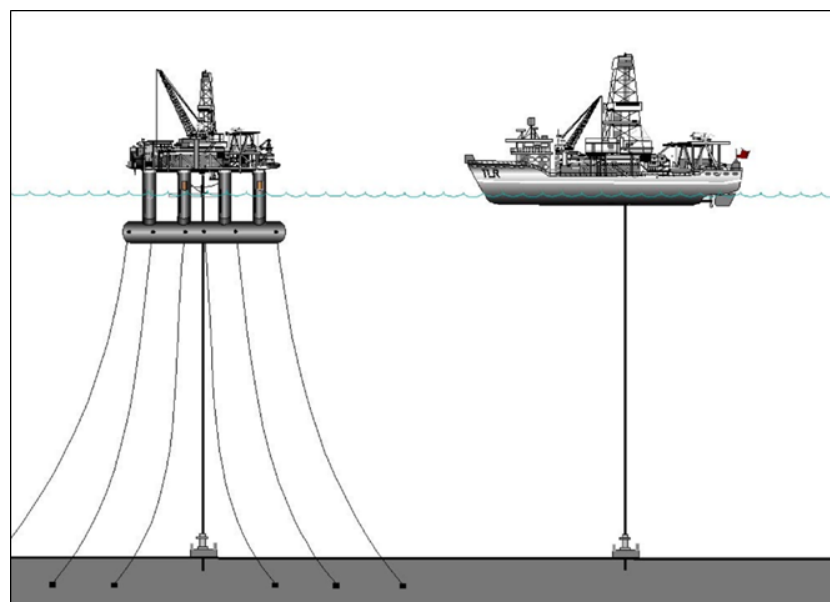
The key Project components and activities include the drilling facilities, drilling activities, supporting / ancillary activities to a drilling program and well abandonment. These activities are described in the following sections. The key activities are:

- drilling
- well-flow testing
- decommissioning and well abandonment
- geophysical, geological, geotechnical, and environmental surveys
- logistical support

2.2.1 Drilling Activities

Exploration wells could be drilled at varying water depths, ranging from approximately 500 to 3,000 m within the Project Area. Well designs have not been completed but each well is typically drilled in sections, gradually reducing the size of the well bore. Once the initial sections are drilled, a steel casing is cemented in place to prevent the wall of the wellbore from caving in and to prevent the seepage of muds and other fluids. The riser and blowout preventer (BOP) are then installed onto a wellhead. The riser is a large diameter pipe that connects the drill rig to the wellhead through the water column, and the wellhead provides structural integrity to house the BOP and pressure integrity for drilling operations. A BOP is a system of high-pressure valves that prevent water or hydrocarbons from escaping into the environment in the event of an emergency or equipment failure.

Options for conducting drilling include various mobile offshore drilling units including drill ships and floating semi-submersible drill units. In shallow waters (less than 500 m) drilling activities can be carried out with a semi-submersible drilling unit. In deeper waters (greater than 500 m) semi-submersible drilling units or drill ships would be the preferred drilling facility. Semi-submersibles can either be moored via anchors in shallower waters, or use dynamic positioning to maintain location in deep water. Drill ships maintain position through dynamic positioning. Drilling units will be capable of drilling year-round and in the environmental conditions prevalent in the North Atlantic. Over the life of the Project, there may be up to two drilling units actively engaged in drilling activities in the Project Area at any one time. Figure 2 provides a schematic of a drill ship and a semi-submersible.



Source: Adapted from MMS 2000

Figure 2 Schematic of a Drillship and a Semi-submersible

Drilling activities may also include batch drilling. Batch drilling is the process of consecutively drilling the top hole portions of the hole for multiple wells.

2.2.2 Well Flow Testing

Well flow testing involves the flowing of well fluids from the reservoir. Reservoir fluids may contain hydrocarbons and/or formation water. The formation fluid sampled during testing may be stored for future data analysis. Upon completion of well flow testing, the well may be suspended or abandoned in accordance with regulatory requirements. In certain situations, a formation flow test in the form of a Drill Stem Test may be conducted. In such cases, test equipment will be installed on the drilling unit and some of the hydrocarbons recovered and the small volume of produced water is sent to a flare.

2.2.3 Decommissioning and Well Abandonment

Decommissioning includes suspension and abandonment. This involves the isolation of the wellbore by placing cement and/or mechanical plugs at varying depths in the wellbore, to prevent subsurface fluids from escaping. There may be instances when it is necessary to re-enter the wellbore. In such circumstances, the well is not abandoned but suspended. The same safeguards regarding wellbore isolation are implemented.

Water depths in the Project Area will determine the method by which well heads are removed. In depths greater than 1,500 m, wellheads will be left in place and not removed; at these depths there is little if any commercial fishing activity. At water depths between 500 and 1,500 m, the well head will be removed either by mechanical cutting inside the casing or using an external mechanical cutter. At depths up to 500 m, the wellhead will be removed using internal mechanical cutters.

2.2.4 Geophysical, Geological, Geotechnical and Environmental Surveys

Throughout the Project there may be surveys to support drilling operations such as geophysical, geotechnical and environmental surveys including 2D seismic surveys, geohazard / wellsite surveys, and vertical seismic profile (VSP) surveys.

Geophysical / Geohazard / Wellsite and Seabed Surveys: These surveys are used to identify unstable areas beneath the seafloor (i.e., shallow gas deposits) or hazards (large boulders, ocean debris, shipwrecks) so as to avoid these hazards when drilling. These surveys can involve the mapping of the seabed through multibeam echo sounder, side scan sonar, subbottom profiler, 2D seismic, video and other non-invasive equipment. The equipment is either mounted on a vessel's hull or towed.

VSP surveys: A VSP survey uses a sound source in the wellbore, rather than towed behind a vessel. The hydrophone is either towed via a vessel or deployed over the side of the drilling unit.

Geological Surveys: involve the collection and analysis of lithological, paleontological or geochemical materials.

Geotechnical Surveys: involve the measurement of the physical properties of the seabed and subsoil through the collection of sediment samples and in-situ testing. Methods to collect the samples typically include drilled boreholes or gravity coring. In-situ testing is done through cone penetration testing and pore pressure measurements. Installation of piezometers in boreholes to measure soil properties may also be carried out.

Environmental Surveys: involve the collection of samples to analyze the physical, chemical, and biological aspects of the Project Area. Environmental surveys may include oceanography, meteorology, and ice / iceberg surveys, biota, water, sediment, and remotely operated vehicle (ROV)-video or drop camera surveys.

ROV / Autonomous Underwater Vehicles (AUV) Surveys: conduct visual inspections (camera equipped) of facilities. ROV surveys may also be used during pre-drill surveys and before marine installations to determine presence / absence of physical objects on seafloor. They may also be used during any or all of the surveys described above to support drilling operations.

2.3 Logistical Support

An onshore supply base provides temporary storage, staging and loading of materials and supplies to support offshore drilling and other exploration activities. Onshore supply base facilities have operated on the island of Newfoundland since the 1970's when offshore exploration activity began in Newfoundland and are owned and operated by independent third party service providers. The Project will not require any upgrades or new construction associated with established onshore supply base facilities; therefore these facilities and associated activities are not considered part of the Project scope.

Supply and support vessels will also be contracted from third party suppliers. All vessels contracted by the Operator must have valid marine certification and meet regulatory requirements as set out by Canada and international organizations as well as Statoil's marine vetting requirements. It is estimated that there could be an average of eight to ten return transits per month if servicing one drilling unit or up to an average of 16 return transits per month for two drilling installations, an increase of approximately 12 to 20 percent from current offshore oil and gas-associated vessel transits. Vessels supporting the Project will transit in a straight line approach to and from a port to a facility, a common industry practice for energy efficiency employed for over 20 years by operators with facilities offshore Newfoundland. The industry works in cooperation with other marine users (e.g., commercial fisheries) to minimize potential effect along traffic routes. In the history of offshore exploration drilling environmental assessments for the Newfoundland offshore area, support vessel traffic was never raised as an issue. Similarly, supply vessel traffic associated with ongoing drilling and production operations in offshore Newfoundland has not been raised as a concern by the fishing industry in the One Ocean forum. Established communication and cooperation methods between the fishing and petroleum industries in vessel traffic are effective. Project-specific environmental effects associated with vessel traffic outside the Project

Area are not expected. Therefore, transit through routes commonly and currently used by other vessels outside the Project Area is not part of the Project scope for the EIS. Project-specific environmental effects associated with vessel traffic outside the Project Area are not expected. Therefore, transit through routes commonly and currently used by other vessels outside the Project Area is not part of the Project scope for the EIS.

Helicopter support will be used for crew transfers. Helicopter support will be supplied by a third-party licenced operator under contract to Statoil. For areas further offshore (e.g., greater than 400 km), it is estimated that there would be one to -three helicopter transits per day to the drilling facility and up to four transits per day for facilities that are within 300 km. Helicopter support will be based out of St. John's and operate out of the St. John's International Airport. Helicopters supporting the Project will transit to and from the Project using routes commonly used over the past 20 years of oil and gas activities and therefore, helicopter transit through these routes is not part of the Project scope. There are no anticipated Project-specific environmental effects associated with helicopter traffic transiting to and from the airport to offshore facilities.

Multiple vessels will be engaged to support drilling activities. All vessels will be acquired from third party suppliers. The following types of vessels are likely to be engaged during the Project life:

- support / supply vessels for drilling unit(s)
- geophysical vessels (e.g., 2D seismic; wellsite / geohazard surveys; VSP surveys)
- seabed survey vessels (multibeam surveys, side-scan sonar, subbottom profiler, magnetometer, etc.,)
- geotechnical vessels (soil investigation programs, cone penetration testing, piezometers, etc.,)
- vessels capable of undertaking environmental sampling
- vessels equipped with ROVs / AUVs, and the deployment of ROVs / AUVs
- support / picket vessels for any of the above
- vessels engaged in ice management operations (only during ice season)

2.4 Project Schedule

The temporal period upon which drilling activities may occur, including abandonment, will be aligned with the EL term (see Section 1.3). The temporal scope will end once regulatory obligations and commitments have been met and the licences have either reverted back to the Crown or have been converted to a SDL. A period of 10 years, commencing in 2018, has been selected to provide an adequate and conservative timeframe within which Project activities may occur. Within the period from 2018 to 2028, Project activities, as described herein, may be carried out at any time of the year. The temporal scope includes anticipated changes to EL terms and additional time for an adequate period for completion of well activities (i.e., abandonment) and any future licence applications prior to land reversion to the Crown. Drilling plans are still being developed and a drilling commencement date cannot be identified.

2.5 Emissions, Discharges, and Waste Management

Statoil's Management Plan includes pollution prevention policies and procedures, and plans for emergency response, spill response, and waste management. Discharges during drilling activities include air emissions, treated overboard discharges to the sea, and for wastes shipped to shore, disposal at approved shorebase waste management facilities. The OWTG provide performance targets for overboard discharges from drilling and production operations. In accordance with the OWTG, discharges will be treated before release overboard, where applicable. All chemicals used for drilling operations will be screened in accordance with a chemical management system that adheres to the C-NLOPB requirements.

2.5.1 Atmospheric Emissions

Exhaust emissions from the operation of the drilling unit and support vessels will be the primary source of atmospheric emissions for the Project; well testing could result in potential flaring associated with produced gas. Flaring activities will be kept to a minimum, and will only be carried out if a drill stem test is required (see Section 3.4.2). Duration of flaring during a drill stem test may be one to two days.

Air emissions, including greenhouse gasses (GHG), resulting from Project activities, include:

- MODU, vessel and helicopter traffic (carbon monoxide (CO), nitrogen oxides (NO_x), total suspended particulates (TSP), volatile organic compounds (VOCs), GHGs)
- power generation (CO, NO_x, TSP, VOCs, sulphur dioxide, GHGs)
- flaring (CO, NO_x, VOCs, TSP, GHGs)

For the purposes of the Project Description requirements, the following is an estimate of potential greenhouse gas emissions associated with the drilling of a single well. Assuming that it could take up to 45 days to drill well, it is estimated that CO₂e emissions associated with operational drilling and vessel traffic could be in the range of 5000 to 10,000 tonnes CO₂e per well. Given the location of ELs offshore Newfoundland, the drilling rig could be over 350 km from the nearest community, and it is anticipated that there will be no project related effects on coastal communities. Note that these are estimates only and emissions are specific to a drilling unit class, vessel class, time of year, and number of days drilling a well. An estimate of GHG emissions (CO₂ equivalent units) will be calculated and compared to regional, sector, provincial, national, and global estimates as applicable, in the EIS.

These exhaust emissions will be in accordance with the CEPA National Ambient Air Quality Objectives and the *Newfoundland and Labrador Air Pollution Control Regulations* for specified criteria air contaminants, and relevant regulations under MARPOL. Potential flaring will occur in accordance with the Drilling and Production Guidelines (C-NLOPB and Canada-Nova Scotia Offshore Petroleum Board 2011).

2.5.2 Sound

The operation of helicopters, supply vessels and the drilling vessel will generate sound underwater and above water; the level of sound will reflect the type of vessel being used and method of positioning. Underwater sound generated from a drilling vessel is continuous during a drilling program, while underwater sound from VSP operations is impulsive in nature, with sound occurring over a much shorter period.

2.5.3 Drilling Waste

A combination of water-based muds (WBM) and synthetic-based muds (SBM) will be used to drill a well. Wastes generated from drilling include drilling muds, drilling fluid and cuttings that retain a portion of the drilling mud. Salt or fresh water is the carrier liquid for WBM, while the carrier fluid for SBM is a synthetic base fluid. Both WBM and SBM are typically composed of barite, bentonite or other clays, silicates, lignite, caustic soda, sodium carbonate/bicarbonate, inorganic salts, surfactants, corrosion inhibitors, lubricants and other additives for unique drilling problems (Thomas 1984; GESAMP 1993). All chemicals used in SBM and WBM are screened in accordance with the Offshore Chemical Selection Guidelines for Drilling and Production Activities On Frontier Lands (NEB et al., 2009).

WBM cuttings are discharged for the first sections of the well in accordance with the OWTG. Once the riser is connected, SBM are generally used. SBM cuttings are treated prior to discharge to the sea as per the OWTG. The recovered drilling mud is reconditioned and reused until it is spent, at which point it is returned to shore for disposal at an approved facility.

2.5.4 Cement

Surplus cement associated with riserless drilling, if any, will be discharged at the seabed, which is considered standard practice. During initial commissioning and testing of the cementing unit, small volumes may be discharged at sea. Any spent cement created as a result of riser drilling will be transported back to shore to be disposed of at an approved facility.

2.5.5 Liquid Wastes

Liquid wastes may include produced water, bilge and deck drainage water, ballast water, grey/black water (sewage), cooling water, and fire control water. Liquid wastes, if generated, will be treated and managed in accordance with the OWTG on the drilling vessel. Liquid wastes that do not meet the performance, sampling and analysis targets set out in the OWTG are stored and transported to shore for disposal at an approved facility.

2.5.6 Hazardous and Non-Hazardous Solid Waste

Hazardous wastes generated during the Project, including any dangerous goods, will be stored in designated areas in appropriate containers/containment for transport to shore in compliance with the *Transportation of Dangerous Goods Act* and its regulations. Non-hazardous wastes generated during the Project will be stored in appropriate containers onboard, to be transported back to shore for disposal by a third-party contractor at an approved facility. Waste food will be macerated to maximum particle size, and discharged overboard in accordance with the OWTG and MARPOL.

All vessels used to support Project activities will adhere to Canadian and international (International Convention for the Prevention of Pollution from Ships (Marpol 73/78)) requirements, as appropriate for the handling and disposal of vessel waste material.

2.6 Accidental Events and Emergency Response

Statoil's objective in all its operations is to ensure safe and efficient operations; spill prevention is a primary focus in all operations. During drilling, well control measures will be in place, such as well casings and BOPs, to prevent incidents from occurring.

Non-routine activities, or accidental events, can include hydrocarbon and/or chemical spills (batch spills) from drilling facilities and vessels, uncontrolled release of hydrocarbons from a well during drilling, and spills of drilling mud, hydraulic fluid, etc. Spill trajectory modelling will predict areas that could potentially be affected by a batch spill of hydrocarbons and an uncontrolled discharge from a well. The EIS will address the potential environmental effects from spill events.

Emergency response plans, consistent with those employed on Statoil's previous exploration drilling activities in the Newfoundland and Labrador offshore will be developed. Spill response plans ensure, that should a spill event occur, our response is robust, efficient and adapted to the conditions in which we operate. The EIS will provide additional details regarding measures implemented to prevent accidental events, and contingency and response plans designed to reduce environmental effects in the unlikely event that they should occur.

3 Environmental Setting

3.1 Previous Studies

Oil and gas activities have been occurring in offshore Newfoundland for over 30 years, and there have been many EAs carried out for exploration and development projects in the area. No regional studies, as defined in CEAA 2012, have been undertaken in the Newfoundland and Labrador Offshore area, including the Project Area. However, the C-NLOPB completed a Strategic Environmental Assessment (SEA) of offshore oil and gas activities for the eastern Newfoundland offshore area in 2014. The “Eastern Newfoundland Strategic Environmental Assessment” (AMEC 2014) provides information on the existing environment within the defined SEA Study Area and identifies and highlights key environmental features and considerations for future oil and gas activities in the region. The defined SEA Study Area includes the Project Area. The SEA report will be considered a primary reference document for the Project EIS.

Other project-specific EAs that have been completed within the vicinity of the Project include, but are not limited to:

- Suncor Energy’s Eastern Newfoundland Offshore Area 2D / 3D / 4D Seismic Program, 2014-2024 (Suncor Energy 2013)
- Environmental Assessment East Canada CSEM Survey, 2014-2018 (LGL Limited 2014)
- White Rose Extension Project Environmental Assessment (Husky 2012)
- Environmental Assessment of Statoil’s Geophysical Program for Jeanne d’Arc and Central Ridge / Flemish Pass Basins, 2011-2019 (LGL Limited 2011)
- Hebron Project Comprehensive Study Report (ExxonMobil Canada Properties 2011)
- Husky Delineation/Exploration Drilling Program for Jeanne d’Arc Basin Area, 2008-2017, Environmental Assessment (LGL Limited 2007)
- Orphan Basin Exploration Drilling Program Environmental Assessment (LGL Limited 2005)
- Environmental Assessment of Exploration Drilling in Annieopsquotch (Exploration License (EL) 1052), Bonnavinkie (EL 1056) and Gambo (EL 1048) Leases (Jacques Whitford Environment Limited 2002a)
- Flemish Pass Drilling Environmental Assessment (Jacques Whitford Environment Limited 2002b)
- Since 2008 Statoil collected biological meteorological and oceanographic data during its drilling and seismic / geotechnical surveys in the Flemish Pass area. Subject to approval from its licence partners, Statoil will include this data in the EIS:
 - seabird and marine mammal observations
 - side scan sonar data (seafloor mapping)
 - core samples provide sediment grain size and sediment distribution
 - ROV video data of each well location provides visual data of seafloor regarding presence / absence of some benthic organisms and corals
 - met-ocean data

3.2 Physical Environment

The geology of the Eastern Newfoundland offshore area is complex and dynamic, and the current bedrock and surficial characteristics of the area have been shaped by various natural and human factors and processes over time. Located on the eastern continental shelf, the seabed in the vicinity of the Project Area contains the deposits that have been classified as the Grand Banks Sand and Gravel and Adolphus Sand and Gravel (Piper et al. 1988). Seabed features in the area include iceberg scouring, sand ridges and waves, shell beds, pockmarks, and seabed depressions of unknown origin (Cameron and Best 1985).

The Project Area is situated in the deeper waters of the Flemish Pass area, with water depths ranging from 500 to over 3,000 m.

Existing and available climatological information for sites within the Project Area indicate that air temperatures are coolest in January or February and warmest from July through September. Prevailing winds in the area are from the west to northwest in winter and from the southwest in summer. Rain or drizzle can occur at any time of year and is most likely to occur with southerly or southwesterly winds. Snow and freezing rain are possible any time from October through May, and snow can accompany winds of any direction. Freezing rain is most common with easterly or northeasterly winds, and frequently persists for days in the spring along the East Coast. In general, visibility is most favourable in fall and winter and most frequently restricted in summer and spring with some of the highest occurrences of marine fog in North America (AMEC 2014).

Within the Project Area and surrounding area, the largest seas are typically found farthest offshore, usually during the winter season. Circulation, which includes the continental shelf waters, is dominated by a generally southward flow of the cold Labrador Current. Over parts of the Grand Banks, the mean currents are generally weak and flow southward, dominated by wind-induced and tidal current variability. Average sea surface temperatures generally range from 0°C to 7°C in February to 10°C to 16°C in summer, whereas near-bottom sea temperatures generally range from 3°C to 4°C on average year-round.

The Project Area is, like the rest of the Eastern Newfoundland offshore area, subject to seasonal intrusions of sea ice (winter and spring), as well as vessel icing during particular meteorological conditions. Sea ice and iceberg conditions may vary each year and by location, and are influenced by colder or milder winter conditions over Newfoundland and the surrounding waters, and seasonal wind patterns. By early May, the southern Grand Banks and Flemish Cap regions are generally free of sea ice. The iceberg season typically lasts from March to July. Icebergs can range in size from growlers (less than 1 m height) to very large (100 to 200 m in length). The International Ice Patrol annual count of icebergs south of 48°N is highly variable but has an annual average of approximately 550 icebergs, and range from 0 to 2,202 icebergs (based on data through 2006) (AMEC 2014).

3.3 Biological Environment

Fish, marine mammals, sea turtles, and marine birds occur in the Project Area. This includes 23 species of fish, seven species of marine mammals, two species of sea turtles, and one species of marine bird that are of conservation interest (i.e., listed under SARA or assessed by the Committee on the Status of Endangered Wildlife in Canada) that have the potential to be found in the Project Area.

Primary fish species known to occur in the Project Area include wolffish, skate, hake, cusk, eel, spike, sculpin, sand lance, tuna, and shark species (AMEC 2014). Benthic invertebrate species known to occur within the Project Area include polychaetes, whelks, echinoderms, isopods, crustaceans, and molluscs. Deep water corals, sponges, and sea pens have been recorded within the Project Area, primarily in the vicinity of the Flemish Pass and around the edges of the Grand Banks and Flemish Cap (Figure 3). These organisms increase habitat complexity, provide habitat to fin fish and shellfish species. These corals are of conservation interest and designated as Vulnerable Marine Ecosystems due to their role in marine habitat development, and their sensitivity to stressors on the environment, including anthropogenic impacts such as fishing and oil and gas activities (Fisheries and Oceans Canada (DFO) 2015; Statoil 2016).

Approximately 20 species of marine mammals (including species at risk), including cetaceans (whales and dolphins) and pinnipeds (seals), are known to occur in offshore Newfoundland. The majority of species are not year-round residents in the area, and many use it as a migratory passage or for foraging. Common species include humpback, minke killer and false killer, Sowerby's beaked, and a variety of dolphin species (LGL Limited 2011; AMEC 2014). There are three species of seals that are generally known to occur in the offshore area of eastern Newfoundland: harp; hooded; and grey seals.

Three species of sea turtles have potential to occur within the Project Area; the loggerhead and leatherback sea turtles are the two predominant species (LGL limited 2011).

The Project Area encompasses the Flemish Pass, a portion of the Flemish Cap, and deeper waters associated with a portion of the eastern Orphan Basin (LGL Limited 2011). This area is known to support an abundance of seabird species, including kittiwake, fulmar, gannet, gull, shearwater, and storm-petrel. Seabirds are at their highest density during the spring and summer months, when species are migrating and zooplankton productivity is highest (Templeman 2010; AMEC 2014). Other species with potential to occur within the Project Area include puffins, razorbills, phalarope, skua, and jaeger.

Currently, there are no known Marine Protected Areas within the vicinity of the Project. However, nationally DFO is increasing the number of Marine Protected Areas. This initiative includes the marine waters off Newfoundland and Labrador. Multiple areas within offshore Newfoundland have been designated as Ecologically and Biologically Significant Areas (DFO 2004) (Figure 3).

Project Description Summary
 Statoil Canada Ltd.
 Flemish Pass Exploration Drilling Program

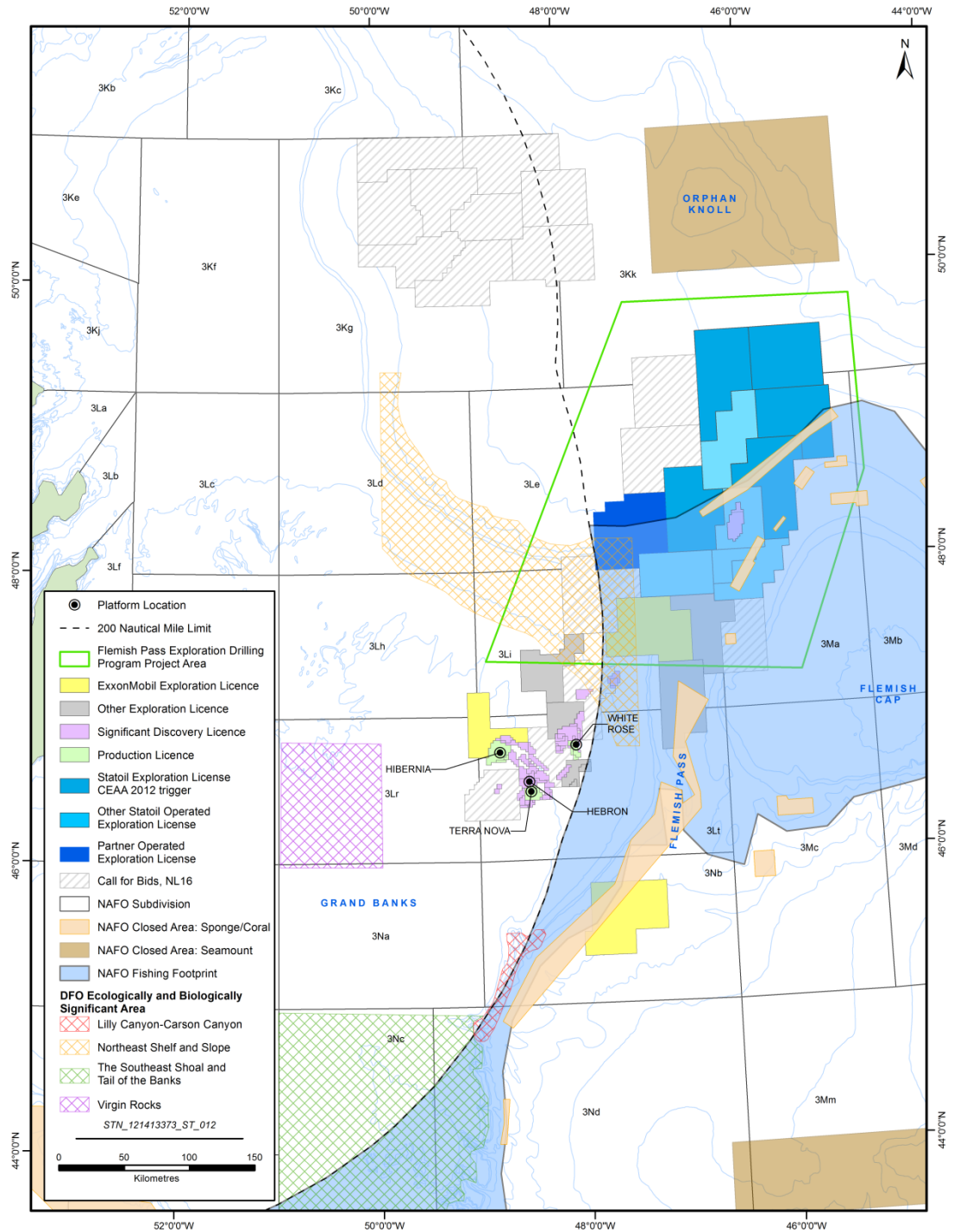


Figure 3 Special Areas in and near the Project Area

In NL offshore area, there are no areas identified where drilling cannot occur. While DFO and NAFO have identified Ecologically and Biologically Significant Areas and Vulnerable Marine Ecosystems, there are no restrictions in these areas regarding drilling activity. The C-NLOPB requires mitigation to be put in place to reduce potential effects on sensitive marine organisms (e.g., corals). Prior to spudding a well in waters where there is a potential for corals, the C-NLOPB requires that a pre-spud survey be undertaken at the wellsite and a setback of the final spud location by 100 m from any coral colonies defined as either a *Lophelia pertusa* reef complex or five or more corals larger than 30 cm in height or width.

3.4 Socio-economic Setting

The Project is located both within and outside Canada's 200 nm Exclusive Economic Zone (EEZ) on the outer continental shelf. The Newfoundland and Labrador offshore area, as defined in the Accord Acts includes those lands within the Canada's 200 nm EEZ or to the edge of the continental margin, whichever is greater. The CEAA 2012 defines "federal lands" as those lands that include the continental shelf of Canada. Therefore, the Project will be carried out on federal lands under the jurisdiction of the C-NLOPB. The C-NLOPB issues licences for land tenure that afford the holder of the licence exclusive rights to explore for or produce petroleum resources.

The Government of Canada has jurisdiction over commercial fisheries for sedentary and non-sedentary species within its 200 nm EEZ, and for sedentary commercial fisheries to the extent of the defined continental shelf. Beyond the EEZ, the Northwest Atlantic Fisheries Organization (NAFO) has jurisdiction over the management of non-sedentary species, and the ability to designate protected areas (AMEC 2014). The Project Area includes NAFO Unit Areas 3KLM. Key commercial fisheries within the Project Area include snow crab, northern shrimp, surf clam, Greenland halibut (turbot), yellowtail flounder, and redfish (LGL Limited 2011; AMEC 2014). Atlantic cod and American plaice have historically been important fisheries on the Grand Banks, but due to overfishing and other economic conditions, commercial fishing of the species has ceased and they have been placed under moratoria. These moratoria have the potential to be lifted during the life of the Project.

Innu Nation, Nunatsiavut Government, NunatuKavut Community Council, Miawpukek First Nation, Qalipu Mi'kmaq First Nation Band, and Mi'kmaq Alsumk Mowimsikik Koqoey Association have communal commercial fishing licences issued under the *Aboriginal Communal Fishing Licences Regulations* within NAFO units that overlap with the Project Area. There are no documented food, social, or ceremonial (FSC) licences within the Project Area. The closest Aboriginal reserve to the Project Area, the Miawpukek First Nation, is Conne River located on Bay d'Espoir, on the south coast of Newfoundland, approximately 900 km west of the Project Area. The Miawpukek First Nation holds a FSC licence for near shore waters adjacent to their reserve.

In addition to commercial fishing activity, other ocean users within the Newfoundland offshore area include research and scientific studies, military defence operations, other oil and gas activities, marine shipping, and underwater transmission cables.

Marine research is typically conducted annually by DFO and activities include, but are not limited to annual multi-species trawl surveys to monitor the status of fish populations, and collection of data from buoys and moorings for DFO's RAPID Climate Change Program Study and the Atlantic Zone Off-Shelf Monitoring Program. Bottom trawl surveys typically occur in NAFO divisions 3LNOPs in the spring (Spring Atlantic Zone Monitoring Program), and in divisions 2HJ3KLMNO in the fall (AMEC 2014). After the annual commercial snow crab fishery has closed, industry-DFO collaborative post-season trap surveys for snow crab are conducted by FFAW-Unifor in NAFO Divisions 2J3KLOPs4R. Each year approximately 1,500 stations are sampled.

The Royal Canadian Navy and Air Force conduct routine surveillance operations throughout Atlantic Canadian waters, which may include aircraft or marine patrols within the Project Area. Military vessels sometimes support DFO with research operations or conducting fishery patrols (AMEC 2014). In the past, many sites across Canada have been used for military training and weapons testing by the Department of National Defence. Legacy sites exist across Canada's coastline where unexploded ordnance may still remain, however it is not anticipated that legacy sites exist within the Project Area.

Offshore oil and gas production activities have been occurring off the coast of Newfoundland and Labrador for approximately 20 years; exploration has occurred for a much longer period. There are various international oil and gas operators who hold interests offshore Newfoundland and Labrador. There are currently three producing fields within the Jeanne d'Arc Basin: Hibernia (Hibernia Management and Development Company Limited), Terra Nova (Suncor Energy Inc.), and White Rose (Husky Energy Inc.). Hebron (ExxonMobil Canada Properties), the newest production field, is scheduled to begin production in 2017.

Both active and inactive marine subsea cables are known to occur within the Project Area (AMEC 2014). The majority of these cables span the Atlantic Ocean, connecting North America to the United Kingdom and Europe. There is the potential for more marine cables to be constructed within the Project Area over the life of the Project. Marine cables have not been substantially affected by offshore exploration drilling from previous projects, and are not anticipated to be affected by project activities.

Due to the Project being located in offshore Newfoundland, the consideration of heritage sites is limited to the identification of shipwrecks in the Project Area. While shipwrecks have been identified within the Eastern Newfoundland offshore area (AMEC 2014), it is not anticipated there are any currently located in the Project Area.

4 Regulatory, Aboriginal and Stakeholder Engagement

Statoil understands the importance and benefit of meaningful engagement with interested and potentially affected stakeholders, including relevant communities, organizations and the general public. Indeed, early and ongoing stakeholder engagement comprises a key aspect of the planning and implementation of the company's oil and gas exploration and other activities. As part of its ongoing operations in Newfoundland and Labrador, for example, Statoil regularly engages with interested and applicable stakeholders through various existing forums, such as the One Ocean initiative, and conducts additional and specific engagements with particular persons and groups if and as new activities, issues and requirements arise.

4.1 Aboriginal Engagement

Statoil is committed to ensuring that relevant Aboriginal organizations are appropriately engaged regarding the company's ongoing and planned drilling activities, particularly where Aboriginal groups are known to reside and/or undertake activities in areas where Statoil is or is planning to carry out its operations.

Several Aboriginal groups hold commercial fishing licenses for areas that overlap the Project Area. The commercial fishing licenses are held by the following Aboriginal groups, and are discussed further in Section 3.4:

1. the Labrador Inuit (Nunatsiavut Government)
2. the Labrador Innu (Innu Nation)
3. the NunatuKavut Community Council (NCC)
4. the Conne River Mi'kmaq (Miawpukek First Nation (MFN))
5. the Qalipu Mi'kmaq First Nation Band (QMFNB)

The Mi'kmaq Alsumk Mowimsikik Koqoey Association, a fishing organization formed by MFN and QMFNB, also hold commercial fishing licence for areas that overlap the Project Area.

While these groups hold commercial fishing licenses for areas that include the Project Area or transportation route, Statoil is not aware that these (or any other) Aboriginal groups hold, claim or otherwise assert Aboriginal or Treaty rights within or near the Project Area or transportation route, pursuant to Section 35 of the Canadian *Constitution Act*, 1982. Rather, it is Statoil's understanding that these organizations undertake fishing activity off Eastern Newfoundland through commercial licences issued by the federal government under the *Fisheries Act* and its associated *Aboriginal Communal Fisheries Licencing Regulations* and other federal policies and strategies that are designed to involve Aboriginal people and communities in commercial fisheries in Canada.

As part of its planned engagement with relevant commercial fishing interests in and near the Project area during the EA process, Statoil will engage with each of the Aboriginal organizations that are known to be involved in the commercial fishery in the area. As part of the planning and preparation of this

Project Description stage, Statoil wrote to each group on June 5 2016 to inform them of the Project and seek any initial feedback.

4.2 Regulatory and Stakeholder Engagement

Statoil engaged with regulatory agencies and stakeholders during the development of the Project Description to provide notification of the upcoming EIS and acquire feedback. Stakeholders engaged include:

- CEA Agency
- C-NLOPB
- DFO
- FFAW-Unifor
- Ocean Choice International
- One Ocean
- Nature Newfoundland and Labrador
- Canadian Parks and Wilderness Society

As a result of consultation efforts, these stakeholders are now aware of the Project and opportunities for involvement in the EA process.

In developing the EIS Statoil will continue to meet with regulatory agencies stakeholders and the public to share information on the proposed Project, note issues and concerns raised and as appropriate identify how the concerns have been addressed. In addition to the above, other regulatory agencies and stakeholders to be engaged include:

- Environment Canada
- Canadian Wildlife Service
- Transport Canada
- Canadian Coast Guard
- Industry Canada
- Newfoundland and Labrador Department of Environment and Conservation
- Department of Defence
- Natural Resources Canada
- Newfoundland and Labrador Department of Natural Resources

As part of the eventual preparation of the EIS, Statoil will design and implement a public and stakeholder consultation program that will provide various mechanisms and opportunities for persons and groups to receive and review information, as well as to provide information and perspectives related to the Project and its potential effects.

5 Potential Project-Related Changes to the Environment and Scoping Considerations

5.1 Potential Project-related Changes to the Environment

Project Activities that have potential to result in changes to the environment include:

- presence and operation of the drilling vessel(s), including discharges from drilling operations and presence of a safety zone
- geophysical surveys (e.g., 2D seismic surveys, VSP surveys, etc.),
- Vessels associated with drilling geotechnical / geohazard / wellsite / seabed / environmental / ROV / AUV surveys
- well abandonment
- vessel traffic within the Project Area
- helicopter traffic within the Project Area

Pursuant to CEAA 2012, the Project Description must provide a description of any potential changes to fish and fish habitat, aquatic species, and migratory birds that may be caused as a result of carrying out the project, and the effects of any potential environmental changes to federal or transboundary lands and to Aboriginal peoples. Table 3 provides an overview of the potential environmental interactions with routine Project activities, including offshore logistical support operations that have the potential to result in changes to the environmental components identified in the CEAA 2012. These potential interactions will be assessed in more detail in the EIS.

Table 3 Potential Environmental Interactions with Routine Project Activities

Environmental Component of Concern	Relevant Section of CEAA, 2012	Potential Environmental Interactions
Fish, Fish Habitat, and Aquatic Species	5(1)(a)(i) 5(1)(a)(ii)	<p>Routine project activities may result in changes affecting fish, fish habitat, and aquatic species as defined under SARA, marine mammals, and other aquatic species include the following interactions with the environment:</p> <ul style="list-style-type: none"> • sensory disturbance to aquatic species from underwater noise emissions associated with drilling and geophysical activities • localized effects to the benthic environment (including benthic species) due to seabed deposition at drill site(s) (i.e., drilling discharges) including smothering and mortality of benthic organisms • localized effects on marine water quality due to discharges to the ocean from the drilling facility and offshore supply vessels • potential injury or mortality to marine mammal(s) from vessel collisions <p>Routine activities associated with helicopter flights are not expected to result in changes to aquatic species or fish habitat</p>

Environmental Component of Concern	Relevant Section of CEEA, 2012	Potential Environmental Interactions
Migratory Birds	5(1)(a)(iii)	<p>Routine project activities could potentially result in changes to the environment that may affect migratory birds, as defined under the <i>Migratory Birds Convention Act, 1994</i>, due to the following interactions with the environment:</p> <ul style="list-style-type: none"> • attraction of migratory birds to artificial lighting (including flares) and discharges (e.g., food wastes) • mortality or stranding of migratory birds
Project Activities Occurring on Federal Lands	5(1)(b)(i)	<p>Routine project activities could potentially result in changes to the environment (i.e., as described above and including air and noise emissions) that would occur on federal land as defined by the Accord Acts</p>
Transboundary Issues	5(1)(b)(iii)	<p>Routine project activities are not anticipated to result in changes to the environment outside Newfoundland and Labrador, or outside the marine waters under the jurisdiction of Canada</p>
Health and Socio-Economic Conditions for Aboriginal and Non-Aboriginal People	5(1)(c)(i) 5(2)(b)(i)	<p>Routine project activities may result in the following changes to the environment that may affect commercial fishing activities, including those carried out under Aboriginal communal commercial fishing licenses in and around the Project Area:</p> <ul style="list-style-type: none"> • establishment of a safety zone, as required by the C-NLOPB, and associated spatial and temporal restrictions on Aboriginal communal commercial fish harvesting and commercial fishing activity within the safety zone • Routine supply vessel operations outside of the safety zone will be consistent with existing offshore and nearshore shipping traffic in the Project Area and are not anticipated to result in any changes to the environment that would have an effect on Aboriginal commercial fishing and commercial fishing activities • Routine project activities are not expected to result in any changes to the environment that would have an effect on the health conditions of Aboriginal or non-Aboriginal peoples
Physical and Cultural Heritage, or Resources of Historical, Archaeological, Paleontological, or Architectural Significance	5(1)(c)(ii) 5(1)(c)(iv) 5(2)(b)(ii) 5(2)(b)(iii)	<p>Given the location of the Project offshore, routine project activities are not anticipated to result in any changes to the environment that would have an effect on physical and cultural heritage areas or resources of historical, archaeological, paleontological, or architectural significance. Information gathered during 3D seismic surveys, geotechnical and geohazard surveys, and pre-drill ROV site surveys in the Project Area may identify marine heritage resources on the seabed.</p>
Current Use of Lands and Resources for Traditional Purposes by Aboriginal Groups	5(1)(c)(iii)	<p>No Aboriginal groups are known to undertake traditional activities within or near the proposed Project Area, including the vessel transit route to offshore, and so routine project activities, including supply vessel traffic, are not likely to result in any interaction with or effect on the current use of land and resources for traditional purposes by Aboriginal persons.</p>

Environmental Component of Concern	Relevant Section of CEEA, 2012	Potential Environmental Interactions
Other Changes to the Environment Directly Related or Necessarily Incidental to a Federal Authority's Exercise of a Power or Performance of a Duty or Function in Support of the Project	5(1)(b)(i)	Routine project activities authorized by the C-NLOPB have the potential to result in directly related or necessarily incidental changes to the atmospheric environment.

5.2 Non-routine Project Activities

Environmental interactions can also occur from unplanned events and malfunctions. Potential unplanned events that could occur during exploration drilling include blowouts (uncontrolled release of hydrocarbons during drilling) and MODU and vessel spills and releases (e.g., hydraulic fluid, drilling mud, diesel). Spill trajectory modelling, to be conducted as part of the environmental assessment, will predict areas that could potentially be affected by a spill. Potential environmental interactions can occur within the spill trajectory or as a result of transitory species or their prey travelling through an affected area.

Statoil's objective in its operations is to ensure safe and efficient operations; spill prevention is our primary focus in all our operations. Spill prevention and response measures will be implemented to prevent and/or reduce risk of adverse environmental effects. The EIS will provide additional details regarding these preventative measures designed to prevent accidental events, and emergency response measures designed to manage adverse environmental effects in the unlikely event that they should occur.

Table 4 provides an overview of the potential environmental interactions resulting from non-routine activities.

Table 4 Potential Environmental Interactions with Non-Routine Activities

Environmental Component of Concern	Relevant Section of CEEA 2012	Potential Environmental Interactions
Fish, Fish Habitat, and Aquatic Species	5(1)(a)(i) 5(1)(a)(ii)	An accidental event during project activities could potentially result in changes to the environment that may affect fish, fish habitat, aquatic species as defined in SARA, marine mammals, and other aquatic species, including: <ul style="list-style-type: none"> • reduced availability and quality of habitat • degradation and reduction in marine water quality • injury, mortality and/or reduced health for fish and other aquatic species

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Migratory Birds	5(1)(a)(iii)	<p>An accidental event during project activities could potentially result in changes to migratory birds, as defined under the <i>Migratory Birds Convention Act, 1994</i>, including:</p> <ul style="list-style-type: none"> • oiling of feathers • ingestion of oil • injury or mortality of marine birds
Project Activities Occurring on Federal Lands	5(1)(b)(i)	<p>An accidental event during Project activities could potentially result in changes to the environment, as described above and including air and noise emissions, that would occur in federal lands as defined by the Accord Acts</p>
Transboundary Issues	5(1)(b)(ii)	<p>An accidental event has the potential to result in transboundary effects (e.g. fish and fish habitat, aquatic species, and migratory birds, air quality, water quality) outside the marine waters under the jurisdiction of Canada; no land masses are anticipated to be affected. Spill trajectory modelling will be conducted to predict areas that could potentially be affected by a spill</p>
Health and Socio-Economic Conditions for Aboriginal and Non-Aboriginal People	5(1)(c)(i) 5(2)(b)(i)	<p>An accidental event may result in the following changes to the environment that may have an effect on commercial fisheries, including Aboriginal communal fishing licenses:</p> <ul style="list-style-type: none"> • contamination-related closure of commercial fishing areas, and associated restrictions on commercial and Aboriginal communal commercial fish harvesting activity • reduced catchability associated with damage to fishing gear (e.g., fouling) • changes in population size and health of individuals among commercial fish species, and associated loss of income through reduced catch value • an accidental event is not anticipated to result in any changes to the environment that would have an effect on the health conditions of Aboriginal or non-Aboriginal persons
Physical and Cultural Heritage, or Resources of Historical, Archaeological, Paleontological, or Architectural Significance	5(1)(c)(ii) 5(1)(c)(iv) 5(2)(b)(ii) 5(2)(b)(iii)	<p>Given the location of the Project offshore, non-routine Project activities are not expected to result in changes to resources of historical, archeological, paleontological, or architectural significance. Information gathered during 3D seismic surveys, geotechnical and geohazard surveys, and well site pre-drill ROV video surveys in the Project Area may include marine heritage resources.</p>
Current Use of Lands and Resources for Traditional Purposes	5(1)(c)(iii)	<p>No Aboriginal groups are known to undertake traditional activities within or near the proposed Project Area or transportation route, and so non-routine project activities are not likely to result in any interaction with or effect on the current use of land and resources for traditional purposes by Aboriginal persons.</p>
Other Changes to the Environment Directly Related or Necessarily Incidental to a Federal Authority's Exercise of a Power or Performance of a Duty or Function in Support of the Project	5(1)(b)(i)	<p>An accidental event occurring as a result of Project activities authorized by the C-NLOPB could potentially result in temporary and localized changes to the marine and atmospheric environment. These potential changes have been discussed above.</p>

5.3 Scoping Considerations

Based on a consideration of the potential changes to the environment identified in Section 5.1 and guidance from previous scoping documents and environmental assessments (e.g., Shelburne Basin Venture Exploration Drilling Project, Scotian Basin Exploration Drilling Project), should an environmental assessment be required, Statoil proposes to focus the potential EIS on the following environmental components:

- Fish and Fish Habitat (including Species at Risk)
- Marine Mammals and Sea Turtles (including Species at Risk)
- Marine and Migratory Birds (including Species at Risk)
- Commercial Fisheries and Other Ocean Users
- Special Areas

It is recognized that Project-specific EIS Guidelines will be issued by the Agency following a public review of the Project Description and input received from Stakeholder and Aboriginal engagement and that the final components to be assessed may change.

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