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Environmental Stewardship Branch  
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15 December 2011

Mr. Darren Hicks  
Canada Newfoundland Offshore Petroleum Board  
Fifth Floor, TD Place  
140 Water Street  
St. John's, NF A1C 6H6

Dear Mr. Hicks:

**RE: Jeanne d'Arc Basin/Flemish Pass Regional Seismic  
Program, 2012 - 2020**

**EAS 2011-352**

As requested in your memorandum of 5 December 2011, Environment Canada (EC) has reviewed the project description and scoping document for the above-noted project to identify the department's interests in accordance with the Federal Coordination Regulations under the *Canadian Environmental Assessment Act* (CEAA). It is understood that the CNLOPB has already confirmed its responsibilities for ensuring an environmental assessment (EA) of the project is conducted in accordance with the Act.

According to the project description, Husky Energy is proposing to conduct 2-D and/or 3-D seismic surveys offshore Newfoundland in the region of the Jeanne d'Arc Basin and Flemish Pass. Husky may conduct 2-D or 3-D seismic surveys, vertical seismic profiling (VSP), and geohazard well site surveys in one or more years within a 2012-2020 timeframe.

The proposed project is a ship-based seismic program which is designed to acquire 2-D and/or 3-D data within the White Rose field in 2012. The seismic survey vessel(s) used during the program will be approved for operation in Canadian waters. For 2-D or 3-D surveys, the seismic survey ship will have airgun arrays and multiple streamers (approximately 8 km long). The proposed 2D or 3D survey sound source will consist of one or two airgun arrays (3000 to 6000 in<sup>3</sup> in total volume; operate at towed depths between 6 m and 15 m). The initial 2-D and 3-D seismic surveys will use up to 12 towed streamers with an approximate length of 8, 100 m and deployed at depths ranging from 5 to 30 m.

In 2012, Husky Energy may conduct one or more 2-D and/or 3D seismic surveys starting as early as 1 May and concluding as late as 30 November. Any seismic surveys conducted during subsequent seasons in the 2013-2020 timeframe will also occur during the same temporal window of 1 May to 30 November. If required, geohazard surveys will be conducted over a much reduced geographic and temporal scope (possibly between 1 March and 30 November during 2012-2020) using a combination of acoustic equipment including a much smaller airgun array (reduced number of airguns and volume), or sparkers, boomers, and sonars. VSP surveys would occur in close proximity to the drill rig and may potentially be conducted year-round.

Based on the information provided and as indicated on the attached form, it is not likely that EC has any powers, duties or functions in relation to the proposed project that would require an environmental assessment under the Act.

Environment Canada is responsible for administering several statutes including the *Department of Environment Act*, *Fisheries Act* (Section 36), *Canadian Environmental Protection Act*, *Canada Water Act*, *Canada Wildlife Act* and the *Migratory Birds Convention Act*, which are focused on promoting sustainable development, protecting the environment, conserving certain renewable resources and reporting on environmental conditions. Stemming from these responsibilities, Environment Canada possesses expertise relevant to this proposal that should be considered by any Responsible Authority, in conducting the environmental assessment. The following comments are for your consideration in the screening of this project.

## REVIEW COMMENTS

### Regulatory Requirements

#### Fisheries Act

The proponent should be aware of the general applicability of Section 36(3) of the *Fisheries Act* which states: “no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substances or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water”. Environmental protection and mitigation measures should reflect the need to comply with Section 36(3) of the *Fisheries Act*. For example, measures should be taken to prevent substances such as lubricating fluids, fuels, etc. from being deposited into water frequented by fish, and drainage from construction and operational drainage must not be harmful to fish.

#### Migratory Birds Convention

Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds except cormorants and pelicans, all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). Most of these birds are specifically named in the Environment Canada (EC) publication, *Birds Protected in Canada under the Migratory Birds Convention Act*, Canadian Wildlife Service Occasional Paper No. 1.

Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities.

Furthermore, subsection 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

- (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- (2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a

substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.

It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations.

#### Species at Risk Act

The Responsible Authority should be reminded that the Species at Risk Act (SARA) amends the definition of “environmental effect” in subsection 2(1) of the Canadian Environmental Assessment Act (CEAA) to clarify, for greater certainty, that EAs must always consider impacts on a listed wildlife species, its critical habitat or the residences of individuals of that species.

SARA also requires that the person responsible for a federal EA must, without delay, notify the competent minister(s) in writing if the project being assessed is likely to affect a listed wildlife species or its critical habitat. Notification is required for all effects, including adverse and beneficial effects, and the requirement to notify is independent of the significance of the likely effect. The person must also identify adverse effects of the project on listed species and their critical habitat. And if the project is implemented, the person must ensure that measures are taken to avoid or lessen adverse effects and that effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for the species.

The complete text of SARA, including prohibitions, is available at [www.sararegistry.gc.ca](http://www.sararegistry.gc.ca). For guidance on SARA and EA, the proponents may wish to make use of the *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada* available at: [http://www.sararegistry.gc.ca/virtual\\_sara/files/policies/EA%20Best%20Practices%202004.pdf](http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf)

#### Canadian Environmental Protection Act

The proponent should also be aware of the potential applicability of the *Canadian Environmental Protection Act* (CEPA). The *Canadian Environmental Protection Act* enables protection of the environment, and human life and health, through the establishment of environmental quality objectives, guidelines and codes of practice, and the regulation of toxic substances, emissions and discharges from federal facilities, international air pollution, and disposal at sea.

#### ***Migratory Birds & Species at Risk***

The Canadian Wildlife Service of Environment Canada (EC-CWS) has reviewed the above document and offers the following comments.

Migratory birds, their eggs, nests, and young are protected under the federal *Migratory Birds Convention Act* and the complementary regulations (Migratory Bird Regulations, Migratory Bird Sanctuary Regulations). Certain species are recognized to be at risk under the federal *Species at Risk Act* (SARA), provincial species at risk legislation, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or by the Atlantic Canada Conservation Data Centre.

In conducting the EA, the vulnerability of individual species/groups of migratory birds to seismic programs should reflect a consideration of the following basic factors:

- distribution and abundance of species during scheduled project activities
- impact pathways

- mitigation
- cumulative effects
- provisions for follow-up on assessment accuracy and mitigation effectiveness.

### *Impact Pathways for Migratory Birds*

The following impact pathways influencing migratory birds should be considered in the analysis of any seismic survey:

- noise disturbance from seismic 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);
- nocturnal disturbance from light (e.g., increased opportunities for predators, attraction to vessels and subsequent collision, disruption of incubation);
- exposure to contaminants from accidental spills (e.g., fuel, oils, streamer fluids) and operational discharges (e.g., deck drainage, gray water, black water); and
- attraction of, and increase in, predator species as a result of waste disposal practices (i.e., sanitary and food waste) and the presence of incapacitated/dead prey behind the vessel.

### *Considerations Specific to Species at Risk*

If a wildlife species is listed under Schedule 1 of the Species at Risk Act (SARA) or under provincial legislation (a listed wildlife species), and could be affected by seismic activities, certain steps must be taken to ensure compliance with both SARA and the *Canadian Environmental Assessment Act* (CEAA). SARA amends the definition of “environmental effect” in subsection 2(1) of the CEAA to ensure that assessments always consider potential impacts on listed wildlife species; their critical habitat; or the residences of these species.

SARA requires that the responsible authority for a federal EA notifies in writing and without delay the competent minister(s), if the project being assessed is likely to affect a listed wildlife species, its residence, or its critical habitat. In addition, any adverse effects of the project on listed species, their residences, and their critical habitat must be identified. If a project under consideration is implemented, the responsible authority must ensure that measures are taken to avoid or lessen the adverse effects on species at risk and, that these effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for species at risk. Furthermore, if such a project is being undertaken on federal land, or affects a listed migratory bird or aquatic species, the proponent will require a permit under Section 73 of SARA and permits under the Fisheries Act and Migratory Birds Convention Act.

The **Ivory Gull** has been uplisted to Endangered on SARA’s Schedule 1. This species may be found in the project area, and should be considered in the environmental assessment.

### *Cumulative Effects*

The discussion of cumulative effects should be shaped primarily by the valued ecosystem components under consideration. While an accounting of past, present and future projects and activities is a starting point in a cumulative effects assessment, the analysis should consider how impacts from the proposed project will combine with impacts from other projects and activities. In the context of marine birds, for example, the proponent should consider how the

project will contribute to existing impacts (e.g., increase in predation, loss of foraging habitat) on birds from other activities (e.g., other oil and gas activities, fishing, shipping).

### *Information Sources*

The proponent should be aware of Environment Canada's Eastern Canadian Seabirds at Sea (ECSAS) program. This program has conducted over 4000 surveys covering 7800 km of ocean track in the Newfoundland and Labrador offshore area since 2006. The most up to date data for the study area should be included in the EA. This information is available by contacting Paul Chamberland at [paul.chamberland@ec.gc.ca](mailto:paul.chamberland@ec.gc.ca) or (506) 364-5049.

While proponents are also encouraged to employ peer-reviewed literature to support their conclusions, few studies on the interactions between birds and seismic survey activities have been conducted<sup>1</sup>, and none have been conclusive. It is important to recognize the limited applicability of available research findings in the discussion of impacts (i.e., conclusions likely do not apply to interactions with large concentrations of birds). It should also be noted that, while the Eastern Canadian Seabirds at Sea dataset contains the most recent seabird data available for the Newfoundland and Labrador offshore area, surveys have not been dedicated to determining impacts of seismic on seabirds, but rather are distribution data collection exercises.

While an EA may conclude that the overall impact of a seismic survey on seabirds is relatively small, it remains important that the opportunity for this activity to impact federally-protected avian species be properly acknowledged in the EA. Accordingly, it is also expected that the proponent commit to all reasonable measures to mitigate the potential for such impacts to occur. These measures are outlined below.

### *Mitigation*

Mitigation measures related to adverse effects, including cumulative effects, should be identified. Measures should be consistent with the *Migratory Bird Convention Act* and SARA and with applicable management plans, recovery strategies and action plans. Mitigation should reflect a clear priority on impact avoidance opportunities. The following specific measures should be among those which are considered in preparing a mitigation strategy:

- Should storm-petrels or other species become stranded on vessels, the proponent is expected to adhere to the protocol described in Williams and Chardine's brochure entitled, *The Leach's Storm Petrel: General Information and Handling Instructions* (to be provided directly). A permit is required to implement the Williams and Chardine protocol. **The proponent should be advised that it is required to complete a permit application form prior to proposed activities.** This form is available from Andrew Macfarlane at the Canadian Wildlife Service, who can be reached by phone at 506-364-5033 or email at [andrew.macfarlane@ec.gc.ca](mailto:andrew.macfarlane@ec.gc.ca).
- Ramping-up the air gun array over a 30-minute period - a procedure typically used for other animal groups - may encourage marine birds to leave the survey area and may reduce the potential for adverse interactions between the project and marine birds accordingly.
- It is expected that the proponent demonstrate how they will minimize or prevent the release of hazardous substances onboard the seismic vessel (e.g. streamer fluid, chemicals for streamer repairs, fuels, lubricants) into the marine environment. Attention should be paid to

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<sup>1</sup> These studies include: Lacroix *et al* (2003), Stemp (1995), Turnpenny and Nedwell (1994), Evans *et al* (1993).

impact avoidance and pollution prevention opportunities and a contingency plan should be developed to enable a quick and effective response in the event of a spill. Other management practices and preventative maintenance plans should be outlined such as a protocol to prevent streamer-associated spill events. This protocol should describe conditions that will allow the seismic program to be conducted without spill incidents (e.g., the range of environmental conditions within which streamers can operate, monitoring to detect leaks or tears).

### *Data Collection*

The proponent could also take the opportunity to collect bird distribution data during proposed activities in anticipation of EA needs related to future activity in the area. As with the testing of impact predictions, a data collection effort should be designed in consultation with EC-CWS and be carried out by an individual who is appropriately trained and dedicated to recording marine bird observations. EC-CWS requests to review the results of a data collection program.

EC-CWS has developed a pelagic seabird monitoring protocol that we are recommending for all offshore projects. Attached is a version of the protocol for experienced observers. This protocol is a work in progress and we would appreciate feedback from the observers using it in the field. A guide sheet to the pelagic seabirds of Atlantic Canada is available through EC-CWS in Mount Pearl.

A report of the seabird monitoring program, together with any recommended changes, is to be submitted to EC-CWS on a yearly basis.

In an effort to expedite the process of data exchange, the Canadian Wildlife Service would appreciate that the data (as it relate to migratory birds or species at risk) collected from these baseline surveys be forwarded in digital format to our office following completion of the study. These data will be centralized for our internal use to help ensure that the best possible natural resource management decisions are made for these species in Newfoundland and Labrador. Metadata will be retained to identify source of data and will not be used for the purpose of publication. The Canadian Wildlife Service will not copy, distribute, loan, lease, sell, or use of this data as part of a value added product or otherwise make the DATA available to any other party without the prior express written consent.

### ***Effects of the Environment on the Project***

Seismic operations will be somewhat sensitive to environmental conditions (e.g., wind, waves, ice). The EA should focus on how such conditions acting on the project could have consequences for the environment (e.g., increased risk of spills and impacts on valued ecosystem components).

### ***Effects of Accidents and Malfunctions***

The mandatory assessment of environmental effects that result from accidents and malfunctions should include a consideration of potential spill events, such as spills from damaged seismic streamers. The assessment should be guided by the need to ensure compliance with the general prohibitions against the deposit of a deleterious substance into waters frequented by fish (Section 36, *Fisheries Act*) and against the deposit of oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds (Section 35,

Migratory Birds Regulations). In addition, it should be focused on potential worst-case scenarios (e.g., concentrations of marine birds, presence of wildlife at risk). Based on this analysis, the EA should describe the precautions that will be taken and the contingency measures that will be implemented to avoid or reduce the identified impacts.

Proponents are encouraged to prepare contingency plans that reflect a consideration of potential accidents and malfunctions and that take into account site-specific conditions and sensitivities. The Canadian Standards Association publication, *Emergency Preparedness and Response*, CAN/CSA-Z731-03, is a useful reference.

All spills or leaks of petroleum or other hazardous materials, including those from machinery, fuel tanks or streamers, should be promptly contained, cleaned-up and reported to the 24-hour environmental emergencies reporting system (St. John's 709-772-2083; other areas 1-800-563-9089).

I trust that this information will be of assistance in your review of this proposal. If you wish to discuss these comments or have further questions, please do not hesitate to contact me at your convenience.

Yours truly,

Original Signed by Jerry Pulchan

Jerry Pulchan  
Environmental Assessment Analyst  
Environmental Protection Operations Directorate

Attachments

Cc: J. Corkum  
M. Hingston

**Federal Coordination Regulations  
Environment Canada Section 6 Response**

**Project Title:** Jeanne d'Arc Basin/Flemish Pass Regional Seismic Program, 2012 - 2020

**Location/Province:** Jeanne d'Arc Basin and Flemish Pass; NL

**Proponent:** Husky Energy

**Notification Date:** 5 December 2011 **EAS #** 2011-352

In accordance with the Federal Coordination Regulations (Section 6), under the Canadian Environmental Assessment Act (CEAA), Environment Canada (EC) has reviewed the project description, and wishes to advise you of the following:

EC is likely to be a Responsible Authority (RA), and thus require an environmental assessment under Section 5 of CEAA.

Trigger Type:  Proponent  Land Transfer  
 Funding  Law List

Law List Item :

OR

EC is NOT likely to be a Responsible Authority (RA).

OR

Additional information (below) is required to determine if EC is likely to be an RA.

EC is in possession of expert and specialist information that is necessary to conduct an environmental assessment of this project.

<b>Original Signed by Jerry Pulchan</b>	(709) 772-2126	15 December 2011
Reviewer, Environment Canada (Atlantic Region)	Telephone	Date



