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BAB 3970-130

Ms. Kimberly A. Coady
Environmental Assessment Officer
Canada-Newfoundland and Labrador Offshore Petroleum Board
5th Floor, TD Place
140 Water Street
St. John's, NL A1C 6H6

Dear Ms. Coady:

Subject: Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area, 2008-2017 Environmental Assessment

As requested, DFO has reviewed the document entitled, *Husky Delineation/ Exploration Drilling Program for Jeanne d'Arc Basin Area, 2008-2017 Environmental Assessment*, dated November, 2007. Based upon the description of the proposed project, it is understood that Husky Oil Operations intends to drill up to 18 exploration and delineation wells at various locations in the Jeanne d' Arc Basin over the next nine years (2008-2017), commencing in 2008. The attached comments are provided for your review and consideration.

General Comments

There is a significant level of uncertainty with regards to the project description, including the project timing, the equipment to be used and the number of wells that will be drilled (annually and in total). For example, the type of drilling unit to be used is stated to likely vary depending upon drilling location, rig availability, and other factors. Reports have stated that drilling noise can extend as far as 10 km from its source on the noisiest of drilling units (*i.e.*, drillship) while other types of drilling units generate above background noise only within 1.5 km of the drill site. Similarly, the timing window for the survey is very broad making it difficult to determine the potential impact on resources, conflict with fisheries, overlap between projects in time and space, and cumulative effects. Clarity and certainty in the above elements are critically important for an assessor to appreciate the scope and nature of work to be performed. The lack of information in the document makes it difficult to determine the potential impacts on marine resources. In order to be able to fully assess cumulative effects in the offshore, DFO requests to be advised in advance of any changes in project information and particularly, in the timing of drilling or seismic survey work. To this end, the Department requests that an annual project update outlining wellsite locations, timing of activities, rig type, *etc.* be submitted each year within a reasonable timeframe to allow review and provision of appropriate advice

There should be a section, however brief, discussing traditional and historical fishing activities in the study area. As DFO and NAFO are committed to encouraging the recovery of depleted fish stocks, a description of the patterns of abundance of depleted species in this area would be useful. Past and present fishing activities and information on species moratoria should be presented in context in order to provide a more complete and informative overview. Additionally, the document should include a discussion of the underutilized species commonly found in the study area as determined from analyses of past DFO research vessel and industry survey data, with emphasis on those being considered for potential harvesting.

As presented, the absence of some species from the discussion on species at risk raises several questions. It is unclear whether a particular species is not included in the "list of marine species that potentially occur in the area" because it was overlooked, because it was not on the website when it was reviewed for the document; or because it actually is likely not to occur in the project area. In order to facilitate a proper review of possible impacts to species at risk, a different approach to describing potential effects is recommended. The section should begin with a comprehensive list of species for the general area which includes those listed and those under consideration for listing under the *Species at Risk Act*. Details on those species likely to occur in the immediate project area should be provided.

Geohazard and VSP surveys will collect high resolution seismic, side scan sonar, sub bottom profiler, and multi-beam bathymetric data as needed during well operation and reservoir assessments. This variety of sound sources could output sound energy at a frequencies and amplitudes that might impact numerous marine species. For instance, higher frequency sources would be a concern for the beaked whales, whereas airgun sounds would be more of a concern for baleen whales. Each type of sound source should be considered separately. Ideally, the same types of mitigation protocols for marine mammals and sea turtles should be employed for these operations (e.g., trained Marine Mammal Observers, ramp-up and shut down, provision of sightings data to regulatory agencies).

Dynamically positioned rigs and vessels will produce significant and long-duration underwater noise from propeller cavitation and thruster operations. These may displace marine mammals, or in the case of northern bottlenose whales, may attract them to such operations. Regular monitoring should be carried out before, during, and after the onset of such activities would help to determine if there were distributional or behavioural responses to such noise sources.

Cumulative effects estimations are fraught with uncertainty due to the relative lack of knowledge about effects of offshore developments on marine mammal distribution and abundance. Given this uncertainty, large-scale baseline surveys need to be carried out in order to assess the abundance and distribution of marine megafauna over larger areas of the region. To address this data gap, albeit with limited resources, DFO has carried out a large-scale aerial survey for marine megafauna in Newfoundland and Labrador waters during the summer of 2007; this survey covered some of the project area, but had relatively low coverage. It is recommended that, perhaps through the Environmental Studies Research Fund, this survey be enhanced in scope, and other surveys during other seasons and years be conducted to assess seasonal, annual, and geographic variation in distribution and abundance of marine megafauna. This type of

baseline information is critical prior to starting significant offshore developments, and to track effects of current operations on ecosystem components.

Throughout the document, there are numerous typos and mis-spellings. One reference is missing from the reference section (pg. 135 Moulton et al. 2006c), and one figure (Fig 4.6) has the units mislabeled. Closer attention to detail during editing would be appreciated in EA documents.

Specific Comments

Page 15 and page 163. If well-head removal explosives are to be used during abandonment, it should be a requirement that the mitigation protocols for marine mammals and sea turtles be conducted prior to detonation of the wellhead removal charge.

Page 27, Para. 1. "The Study Area has a highly variable wind climate due to its large coverage." DFO suggests that this statement is false and is not sufficient.

Page 27, Para. 2. The assertion that the "stronger, and slightly more westerly, wind field..." is due to the proximity of the Icelandic Low and Azores High is highly doubtful; a more reasonable explanation would cite sea surface temperature and the proximity to the Labrador Current and Gulf Stream.

Page 28, Para. 2. The statement concerning fully developed seas and the 1000 km boundary should be tempered with a comment about fetch and duration.

Several comments are made regarding the stability of the marine boundary layer. Some of these appear to be contradictory (e.g. pg 43, pg 46, pg 49). Some discussion of stability should be provided.

Page 49, Para. 3. Although it may not have been possible to adjust winds observed on platforms for atmospheric stability, the actual measurements could have been used to set upper limits on wind speeds.

Page 59, Para. 1. "However, in April 2006 this cold water and the strong temperature gradient was not observed." This statement is false as it can be observed in Figure 4.21.

Section 4.3.2 . The authors used archived temperature and salinity data at BIO and omitted all of the T-S data recorded by NWAFC trawl mounted CTDs that is archived at NWAFC and at MEDS. Consequently, only a small fraction of available data was captured.

Page 77, Para. 2. The reference to Lazier and Wright (1993) is misleading because most of the increased flow in autumn is in deep water. Thus mass or volume transport is more greatly affected than is current speed.

Page 78, Para. 3. The assertion that Figure 4.32 illustrates effects of the North Atlantic Current is incorrect as it is not observed.

Page 85, Para. 2. The observation that currents at White Rose are stronger than those at Terra Nova does not make them an anomaly.

Page 89, Para. 1. Please provide the source for the ice analyses “update.”

Page 89, Para. 3. The statement “... sea ice was present only during...” does not define where the ice was actually present.

Page 123. The Department of Fisheries and Oceans conducted a large-scale aerial survey of eastern Canada in the summer of 2007. This survey included several transect lines that passed through Husky’s study area. Marine mammals sighted during these efforts approximate those listed previously in the Husky EA (2006) and in the DFO sightings database. The results of this survey are being prepared for publication now and will be available to proponents in the near future.

Table 5.12. There is a document with a more recent estimate for fin whale abundance in Newfoundland (Lawson, J.W. 2006. Preliminary information on distribution and abundance of fin whales (*Balaenoptera physalus*) in Newfoundland and Labrador, Canada. SC/14/FW/21-SC/M06/FW21. Joint NAMMCO/IWC Scientific Workshop On The Catch History, Stock Structure And Abundance Of North Atlantic Fin Whales. Reykjavík, Iceland, 23-26 March, 2006. 12 p.) This describes results of DFO’s aerial surveys which include an estimate for the number of fin whales in Newfoundland waters (relatively nearshore to at least 172 km). These analyses yielded an uncorrected point estimate of 1,103 fin whales (95% CI: 459-2,654) in the study area. There is also a recent document with the first abundance estimate for killer whales in Atlantic Canada (Lawson J.W., T.S. Stevens, and D. Snow. 2007. Killer whales of Atlantic Canada, with particular reference to the Newfoundland and Labrador Region. DFO Res. Doc. 2007-062. 14 p.). This study identified at least 63 individual killer whales, plus likely a number that exist in offshore waters as well.

Page 130. There have been sightings of northern bottlenose whales in waters less than 500 m (including within meters of shore), so depth should not be the sole criteria used to exclude the possibility that this species might be seen in the project area.

Section 5.7. The discussion of SAR and their potential distribution within the project area contains no real explanation of “potential occurrence.” Is it based on literature searches, known occurrences, visual observation, etc?

Section 5.7.1. This section is entitled *Profiles of SARA*, however, very little information related to the understanding of a profile of a species (biological information) is actually included within. There is reference to where these profiles can be found and for some species, detailed information is provided. Consistency in format with respect to the kind of information provided and the details of the information is recommended in the future.

Table 8.7. The NLOA experience over the 1997-2006 timeframe is less successful regarding small and medium-sized spills than the US GOM experience decades earlier. One would expect that experience and technological advances in environmental and safety equipment would have led to a decrease in spill frequency percentage, especially in closely regulated jurisdictions. Based on the values provided it can be expected that

21 small spills and 1 medium spill will occur as a result of drilling 18 wells; statistics this Region should be striving to reduce.

Page 220. As MODU selection and acquisition is required well in advance of actual drilling, the information regarding location and timing of drilling should be available much earlier than Q1 of the drilling year and should therefore be submitted earlier for planning/assessment purposes. Previous coordination between offshore oil and gas operators and DFO has proved to successfully mitigate the potential for overlap between offshore oil and gas activities and DFO/ Industry research surveys. It is requested that the Department be notified of wellsite locations as soon as they are known.

Thank you for providing DFO the opportunity to comment on this document. Should you have any questions or comments regarding the above, please contact Senior Habitat Biologist James Meade by phone at 772-3521, or by e-mail (meadej@dfo-mpo.gc.ca).

Yours sincerely,

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