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Your file Votre référence

April 14, 2016

Our file Notre référence
PATH #16-HNFL-00057

Darren Hicks
Canada-Newfoundland and Labrador Offshore Petroleum Board
140 Water St., 4th Floor
St. John's, NL A1C 6H6

Dear Mr. Hicks:

Re: Review of Environmental Assessment of Seitel Canada Limited East Coast Offshore Seismic Program 2016-2025

I am writing further to your March 2, 2016 letter requesting review of the February 2016 Environmental Assessment (EA) Report prepared in relation to the above noted offshore seismic program proposed by Seitel Canada Limited covering the timeframe 2016 – 2025.

Based on review of the above noted EA Report the following comments are offered for your review and consideration.

- Section 2.2.8 Ocean Bottom Nodes (page 8) – This section notes that the proponent plans to use cable less Ocean Bottom Nodes (OBNs) in conjunction with towed streamers during surveys planned for 2017 – 2025. From that description it is assumed that OBNs will not be deployed during surveys planned for 2016, this should be confirmed. It should also be noted that details relative to the OBNs sites (e.g. coordinates, benthic habitat substrates, water depth, presence of important benthic habitat features (e.g. sponge/corals, invertebrates species)) and description of potential impacts and mitigations of potential impacts of OBN deployment on benthic habitat will be provided in annual project EA Updates.
- Section 4.2 Fish and Fish Habitat VEC (page 42) - regarding the last sentence in this section “...data gaps identified in the two SEAs are also discussed...” the two SEAs should be identified as there are three SEAs referenced in this section.
- Section 4.2.2 Fish – Northern Shrimp 2nd sentence 1st paragraph (page 55) - the reference to “...snow crab...” in this sentence should be removed and replaced with “...northern shrimp...”
- Section 4.2.3 Fish and Fish Habitat Data Gaps Identified in Relevant SEAs (page 61) - regarding the last sentence in this section “Any new information that has been made available since the two SEAs were completed...” there are three SEAs referenced in this section, as such the last sentence be amended to make reference to “...three SEAs...”. Based on Section 5.2.2 of the Project EA Scoping Document it is not clear if (or how) the project EA has “...described the relevance of such data gaps in the conduct of the EA” this should be clarified.



- Section 4.3.4 Traditional and Aboriginal Fisheries (page 61) – there are a number of sentences (e.g. 3rd sentence 1st paragraph, 1st sentence 2nd paragraph and 3rd sentence 4th paragraph) that incorrectly reference “...DFO, Resource Management and Aboriginal Affairs.....” These sentences should be amended to refer to “...DFO, Resource Management and Aboriginal Fisheries.....”
- Section 4.5.1 Marine Mammals (p 123) - Regarding Table 4.17 appropriate population names should be included for those species noted as being listed under SARA or by COSEWIC.
- Section 4.6 Species at Risk (page 135) - regarding the last sentence in this section “*Relevant data gaps identified in the two SEAs are also discussed...*” there are three SEAs referenced in this section, as such the last sentence should be amended to make reference to “...three SEAs....”. or the two referenced SEAs should be identified in the sentence accordingly..
- Section 4.7 –Sensitive Areas (page 142) – This section should be amended to include reference to the approximately 60 km² Gilbert Bay Marine Protected Area (MPA) located on the southeast coast of Labrador in NAFO Subdivision 2J which was formally designated in 2005 to conserve and protect Gilbert Bay cod and its habitat.
- Section 5.5 Mitigation Measures (page 149) – the 4th bullet should also include reference to the *Species at Risk Act*. This section should also note that the *Marine Mammal Regulations (MMR)* under the *Fisheries Act* is currently undergoing amendment. While public consultation on proposed amendments have only just recently ended it should be noted that Schedule 11 of the proposed amended *MMR* provide approach distances for marine mammals based on species, vehicle (vessel, aircraft, etc), area and timing. Given that the proposed seismic survey(s) are scheduled to run from 2016 to 2025 it is recommended that the proponent be aware of any potential implications that may arise if any proposed amendments to *MMR* are accepted during the timeframe covered by the proposed survey program.
- Section 5.7.4 Fish and Fish Habitat VEC (page 154) – as described in Section 2.2.8 the proponent has noted plans to deploy up to 10,000 OBNs within survey areas in conjunction with the deployment of hydrophone streamers. The OBNs will be placed on the sea floor in as yet unknown or unspecified locations. To indicate in the 2nd sentence of this section that “*The seismic program will not result in any direct physical disturbance of the bottom substrate*” is not entirely accurate and not in keeping with information presented in Table 5.2 and Vessel/Equipment Presence (page 159). This sentence should be amended accordingly.
- Section 5.7.4.1 Sound (page 156-157) – The 2nd sentence 5th paragraph (page 156) which notes that “*Available experimental data suggest that there may be physical impacts on the fertilized eggs of snow crab and on the egg, larval, juvenile and adult stages of cod at very close range*” requires an appropriate reference. The 1st sentence 2nd paragraph (page 157) which notes that “*Snow crab, thought to be sensitive to the particle motion component of sound only..*” requires an appropriate reference and since this is the first mention of particle motion a definition / description should be provided. The 1st sentence 4th paragraph (page 157) which notes that “*The physical effects of exposure to sound with frequencies >500 HZ are negligible, based on the available information from the scientific literature.*” requires an appropriate reference.
- Section 5.7.4.1 Sound (Fish and Fish Habitat VEC) (page 154-157) – this section should include a short summary discussion (similar in detail to that provided for physical effects) of the potential behavioural effects in fish in relation to seismic sound (e.g. startle response;



change in swim speed, depth and direction; schooling; reproduction; recruitment; feeding) that are reported in literature including among others - Popper and Hawkins 2012 *Advances in Experimental Medicine and Biology* Vol 730 - and other project EAs and applicable SEAs. This will also provide support to the linkage to the discussion on effects of seismic sound on Fisheries VEC presented in Section 5.7.5.1 of the EA Report.

- Section 5.7.4.2 Vessel/Equipment Presence (page 159) – Although OBN use is predicted to have negligible / non-significant impacts on fish and fish habitat VECs it is felt (see above comment on Section 2.2.8) that subsequent annual project EA Updates should provide details relative to OBNs deployment (e.g. site coordinates, benthic habitat / substrate, water depth, presence of important benthic habitat features (e.g. sponge/corals, invertebrates species)) and any associated updated description of potential impacts and mitigations of potential impacts of OBN deployment on fish, fish habitat and sensitive areas. It should be clarified (either here or later in Section 5.7.9 Sensitive Areas VEC page 192) whether OBNs will be placed in sensitive marine areas and to what extent such placement is in keeping with regulations, accepted practices, restrictions and/or guidelines which may be in place governing activity within NAFO coral closure areas and/or other marine sensitive areas.
- Section 5.7.7.1 Sound (Marine Mammals and Sea Turtle VEC) (page 174 and 175) – with respect to the discussion of Masking while it is safe to say (see 2nd sentence on page 175) that “*Based on past and current reviewed research, the potential for masking of marine mammal calls and/or important environmental cues is considered low....*” It is felt that this section should provide a short summary (similar to that provided on pages 175 and 176 for Disturbance, Hearing Impairment and Non Auditory Physical Effects) of some of the potential effects on masking that are provided within among others Erbe *et al* 2015 and Guan *et al* 2015.
- Section 5.7.7.1 Sound (Marine Mammals and Sea Turtle VEC) Hearing Impairment (page 176) – Regarding the 2nd sentence of the 4th paragraph examples of the “*Several aspects of the planned monitoring and mitigation measures for this project are designed to detect marine mammals and sea turtles occurring near the airgun array*” should be provided either here or more likely in the discussion of project mitigations and monitoring (Sections 5.5 and 5.9). If monitoring other than visual monitoring of the 500 m safety zone is planned then the EA Report (e.g. Sections 5.5 and/or 5.9) should specify same and a linkage provided in the above noted 4th paragraph.
- Section 5.9 Mitigation Measures and Follow up (page 195-197) – the 3rd and 4th sentences of the 1st paragraph on page 197 note that “*...observers will watch for marine mammals and sea turtles when the air gun array is active ..*” and that “*...the array will be shut down whenever endangered and/or threatened marine mammals or sea turtles are sighted within the safety zone*”. That being said it is not clear what measures will be employed to monitor for SARA listed endangered and/or threatened mammals and sea turtles during periods of darkness and/or low visibility. This should be clarified accordingly.



Thank you for providing the opportunity to review and provide comment on this project EA Report. If you have any questions or comments with respect to the above or if you require anything further please contact the undersigned.

Sincerely,

Senior Fisheries Protection Biologist – Marine, Coastal, Oil and Gas Development
Fisheries Protection and Regulatory Reviews
Ecosystems Management Branch