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Kathryn MacCarthy
 Project Manager, Atlantic Regional Office
 Impact Assessment Agency of Canada
 200-1801 Hollis Street
 Halifax, NS B3J 3N4

Dear Ms. MacCarthy,

As the proponent for the Newfoundland Orphan Basin Exploration Drilling Program, BP Canada Energy Group ULC (BP) appreciates the opportunity to review and comment on the Newfoundland Orphan Basin Exploration Drilling Project Draft Environmental Assessment (EA) Report and associated Potential Conditions under the *Canadian Environmental Assessment Act, 2012*.

In general, the draft Environmental Assessment Report is an accurate representation of the Environmental Impact Statement (EIS) and the EA review process to date. However, we would like to take this opportunity to propose some corrections and clarifications on the report as presented in Table 1.

Table 1 Proposed Edits to Draft EA Report

Draft EA Report Reference	Draft EA Report Reference Text	BP Comment/Recommended Revision
3 Alternative Means of Carrying Out the Project <i>Drilling Rig Selection</i> (p. 14)	Floating semi-submersible drill rigs and drill rigs were both considered to be technically and economically feasible options and would have comparable environmental effects.	“Floating semi-submersible drill rigs and drill rigs <u>ships</u> were both considered to be technically and economically feasible options and would have comparable environmental effects.”
6.1.1 Predicted Effect <i>Change in Risk of Mortality or Physical Injury</i> (p. 28)	Deposition thickness above the burial depth threshold may extend up to 128 metres from the discharge point at the shallower site in West Orphan Basin (exploration licence 1149) and 57 metres at the deeper site in East Orphan Basin (exploration licences 1145, 1146, and 1148). [...] The proponent used a 1.5 millimetre deposition threshold for potential interference with benthic feeding structures, resulting in a deposition area of 540 metre from the discharge point at the shallower site in West Orphan Basin (exploration licence 1149) and 125 metres at the deeper site in East Orphan Basin (exploration licences 1145, 1146, and 1148).	References to exploration licence numbers for West and East Orphan Basin are reversed and require correction. West Orphan Basin exploration licences are 1145, 1146 and 1148; East Orphan Basin exploration licence is 1149. Correct text is shown below. “Deposition thickness above the burial depth threshold may extend up to 128 metres from the discharge point at the shallower site in West Orphan Basin (exploration licences 1145, 1146 and 1148) and 57 metres at the deeper site in East Orphan Basin (exploration licence 1149). [...] The proponent used a 1.5 millimetre deposition threshold for potential interference with benthic feeding structures, resulting in a deposition area of 540 metre from the discharge point at the shallower site in West Orphan Basin (exploration licences 1145, 1146, and 1148) and 125 metres at



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		the deeper site in East Orphan Basin (exploration licence 1149).”
6.1.1 Predicted Effect <i>Change in Risk of Mortality or Physical Injury</i> (p. 28)	The maximum area of water-based drilled cuttings deposition above threshold was predicted to be 8500 square metres for the West Orphan Basin site and 6400 square metres for the East Orphan Basin site.	BP’s EIS did not differentiate between water-based and synthetic-based cuttings deposition with regard to the 6.5 mm threshold. If referring to these footprints, reference to water-based drilled cuttings should be removed in this statement.
6.1.1 Predicted Effects <i>Change in Risk of Mortality or Physical Injury</i> (p. 29)	Although intense, the VSP sound source would be activated intermittently and for a short period of time, with survey operations occurring for one to four days for each well.	BP’s EIS indicated that VSP survey operations would be approximately one day per well, particularly with regard to the use of a seismic sound source.
6.6.3 Agency Analysis and Conclusion <i>Analysis of the Effects</i> (p. 69)	In the unlikely event that damage or loss of fishing gear was caused by contact with wellhead infrastructure, the proponent would be required to provide compensation to the injured party consistent with their obligations in civil law.	BP proposes the following edit for correctness: “In the unlikely event that damage or loss of fishing gear was caused by contact with wellhead infrastructure, the proponent would <u>may</u> be required under <u>common law</u> to provide compensation to compensate the injured party”. consistent with their obligations in civil law.
6.6.3 Agency Analysis and Conclusion <i>Follow-up</i> (p. 70)	In addition, the Fisheries Communication Plan Le promoteur demanderait à l’OCTNLHE l’autorisation de laisser la tête de puits en place would provide a means of identifying potential issues should they arise.	French text inserted in error should be removed.
7.1.1 Proponent’s Assessment of Environmental Effects <i>Fate and Behaviour of a Blowout</i> (p. 79)	For the scenarios described above, deterministic modelling in both the West Orphan Basin and East Orphan Basin predicted that for the 120 day spill scenarios the majority of oil released would be dispersed, biodegraded and evaporated, with less than one percent predicted to remain on the surface after 160 days.	We would recommend inserting the word “naturally” in front of “dispersed” to clarify that this is not due to the use of chemical dispersants.
7.1.3 Agency Analysis and Conclusion (p. 91)	Spill prevention and response would be described in the proponent’s Incident Management Plan and Spill Response Plans, which would be reviewed as part of the C-NLOPB’s authorization process.	To clarify, Incident Management and Spill Response Plans address spill response and not spill prevention. Spill prevention is addressed through various other mechanisms (e.g., Environmental Protection Plan, various operating plans and procedures).
7.3.3 Agency Analysis and Conclusion	The model predicted that in exploration licence 1145 and 1149, drill cuttings would be deposited with a thickness greater than one millimetre across a	There is an error in the calculated footprint. 0.07 square kilometres refers to a thickness threshold of 0.5 mm. The correct number is 0.035 square



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(p. 107)	maximum area of 0.081 and 0.07 square kilometres, respectively. The areas of exploration licences 1145 and 1149 provided by the proponent are 2336.54 and 2642.49 square kilometres, respectively. The Agency calculated that if all 20 potential exploration wells were drilled in one exploration licence, the maximum area covered with drill cuttings would be 0.07 percent and 0.05 percent of the areas of exploration licences 1145 and 1149, respectively.	kilometres for the 1 mm threshold. Accordingly, the reference text should be updated as follows: “The model predicted that in exploration licence 1145 and 1149, drill cuttings would be deposited with a thickness greater than one millimetre across a maximum area of 0.081 and 0.07 <u>0.035</u> square kilometres, respectively. The areas of exploration licences 1145 and 1149 provided by the proponent are 2336.54 and 2642.49 square kilometres, respectively. The Agency calculated that if all 20 potential exploration wells were drilled in one exploration licence, the maximum area covered with drill cuttings would be 0.07 percent and 0.05 <u>0.03</u> percent of the areas of exploration licences 1145 and 1149, respectively.
Appendix C Summary of Indigenous Concerns Impact of a spill on species of importance to Indigenous groups Column 4, Summary of Proponent’s Response (p. 169)	The proponent noted that laboratory studies have shown that effects of an oil spill on marine fish, including salmon, have resulted in effects on feeding, food conversion, or changes to enzyme levels. Fish returned to baseline conditions in two to eight weeks. The proponent stated that concentrations used in these studies would be expected to be higher from an accidental spill due to dilution from the ocean.	Word is missing from sentence which clarifies the proponent’s response. Corrected text is below. “The proponent noted that laboratory studies have shown that effects of an oil spill on marine fish, including salmon, have resulted in effects on feeding, food conversion, or changes to enzyme levels. Fish returned to baseline conditions in two to eight weeks. The proponent stated that concentrations used in these studies would be expected to be higher <u>than</u> from an accidental spill due to dilution from the ocean.”

We would also like to take the opportunity to comment on the Potential Conditions with the intention of helping to improve clarity for implementation and compliance reporting (refer to Table 2).

Table 2 Comments on Proposed Conditions

Potential Condition	BP Comment
3.9.2 ensure that observation requirements specify the requirement for shut down of the seismic sound source if any marine mammal or sea turtle species is observed within the 500 metre safety zone;	BP respects the Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment which requires survey activities to be “suspended if an endangered or threatened marine mammal or sea turtle or if a marine mammal or sea turtle identified by an environmental assessment process as possibly subject to population-level impacts enters the safety zone”. BP recognizes the risk of uncertainty around species identification during vertical seismic profiling (VSP) surveys and appreciates the need to take a precautionary approach for shut down procedures. Based on previous discussions with Fisheries and Oceans Canada around marine mammal monitoring during VSP during the Scotian Basin Exploration Project, we propose the following replacement text in this condition: “ensure that observation requirements specify the requirement for shut down of the seismic sound source if a marine mammal or sea turtle species listed on



Potential Condition	BP Comment
	Schedule 1 of SARA, as well as all other baleen whales and sea turtles is observed within the 500 metre safety zone;”
3.12.2.1 measurement of sediment deposition extent and thickness post-drilling to verify the drill waste deposition modelling predictions	BP notes that in the draft EA Report (see Section 6.1.3, Appendix A) the corresponding text around follow-up for fish and fish habitat provides examples of appropriate methods to measure sediment deposition (e.g., core samples and/or high definition visual data). BP proposes the condition be amended to include these examples as follows: “measurement of sediment deposition extent and thickness (e.g., core samples and/or high definition visual data) post-drilling to verify the drill waste deposition modelling predictions”.
3.12.3 for the first well in each exploration licence, develop and implement, in consultation with Fisheries and Oceans Canada and the Board, follow-up requirements to verify the accuracy of the environmental assessment as it pertains to underwater sound levels. As part of the development of these follow-up requirements, the Proponent shall determine how underwater sound levels shall be monitored through field measurement by the Proponent during the drilling program and shall provide that information to the Board prior to the start of the drilling program.	Having recently undertaken an acoustic monitoring program during the Scotian Basin Exploration Project, BP understands the complexities of implementing such a program and how the data collected can serve to improve the level of existing knowledge of underwater acoustics. However, BP questions the value of implementing an acoustic monitoring program for the first well in <i>each</i> exploration licence and submits that the proposed condition be amended to reflect the analysis of data obtained during the first well of the drilling program. In other words, if the predicted sound source and/or transmission loss is validated through monitoring during the first exploration well of the drilling program, then the requirement for monitoring subsequent wells in new exploration licences would be determined in consultation with the Board. “for the first well in <u>the drilling program</u> , each exploration licence , develop and implement, in consultation with Fisheries and Oceans Canada and the Board, follow-up requirements to verify the accuracy of the environmental assessment as it pertains to underwater sound levels. As part of the development of these follow-up requirements, the Proponent shall determine how underwater sound levels shall be monitored through field measurement by the Proponent during the drilling program and shall provide that information to the Board prior to the start of the drilling program.

We appreciate your consideration of these comments and are available to discuss further if you have any questions or concerns. We look forward to the completion of the environmental assessment process for the Newfoundland Orphan Basin Exploration Drilling Project.

If you have any questions or concerns, please do not hesitate to contact me or our Environmental Impact Advisor, Heather Giddens at heather.giddens@bp.com.

Sincerely,
<Original signed by>

John Drinkwater
Regulatory Compliance and Environment Manager

cc: Adrienne Bosch, President and Chairman, BP Canada