



Fisheries and Oceans
Canada

Pêches et Océans
Canada

PO Box 1006
Dartmouth, NS
B2Y 4A2

November 2, 2018

Your file *Votre référence*
30,008.35

Our file *Notre référence*
18-HMAR-00404

Elizabeth McDonald
Advisor, Environmental Affairs
Canada-Nova Scotia Offshore Petroleum Board
1791 Barrington Street
8th Floor, TD Centre
Halifax, NS, B3J 3K9

Subject: Multiklient Invest AS Offshore Nova Scotia Seismic Program – Fisheries and Oceans Canada Response to Request for Comments on Draft Scoping Document for the Environmental Assessment

Dear Ms. McDonald:

On September 26, 2018 Fisheries and Oceans Canada (DFO) received your request for comments on the draft Scoping Document for the Environmental Assessment of Multiklient Invest's Proposed Seismic Program in the Canada – Nova Scotia Offshore Area. We understand that Multiklient Invest (MKI) is proposing to conduct two dimensional (2D), three dimensional (3D), and/or four dimensional (4D) seismic surveys offshore Nova Scotia in any given year from 2019-2028. The Project Area is approximately 259,400 km² and encompasses most of the Canada-Nova Scotia Offshore Petroleum Board's (CNSOPB) jurisdictional area over the Scotian Shelf and Slope. A maximum of 15,000 km² of 3D seismic data acquisition and 10,000 linear km of 2D seismic survey lines will be conducted per year within the Project Area.

Please be advised that DFO has information and expertise related to fish and fish habitat, marine mammals, aquatic species at risk, special areas (e.g., marine protected areas, fishery closures), physical oceanography and fisheries that are relevant to the project environmental assessment.

DFO has reviewed the document and offers the following comments for consideration:

Section 1.0 Purpose

- The document states that it has been prepared by the CNSOPB in consultation with DFO. We would like to clarify that DFO did not receive the draft Scoping Document prior to September 26, 2018 and that the Department was not given any opportunity to provide input on the development of the document.

- Although 4D seismic surveys were proposed in the Project Description document dated August 3, 2018, there is no reference to 4D surveys in the draft Scoping Document and this inconsistency requires clarification.

Section 2.0 Regulatory Considerations

- The requirement for addenda to the EA to be submitted to the CNSOPB for each activity application beyond 2019 should be highlighted upfront in the Scoping Document. DFO recommends that Indigenous groups, stakeholders, and the public be given an opportunity to review and comment on any and all addenda to the EA.
- Each individual seismic survey proposed as part of the project will require a review by DFO to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act* unless authorized, and whether it is likely to affect listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act* (SARA), unless authorized.
- For DFO to complete a regulatory review, the Department will require detailed survey-specific acoustic modelling performed by a qualified professional to inform the potential effects on fish and fish habitat, SARA-listed aquatic species at risk, and special areas. The modelling should consider the best available information about sound propagation and oceanographic conditions in the survey area as well as the specific equipment, vessels, and methods that will be used for the survey.
- If DFO determines that a *Fisheries Act* authorization is required, the proponent will need to provide DFO with the prescribed information set out in Schedule 1 of the *Fisheries Act* Applications Regulations. If DFO determines that a SARA permit is required, the proponent will need to provide DFO with the prescribed information identified in the document *Information Required For The Consideration Of The Approval Of Activities That Are Otherwise Prohibited Under The Species At Risk Act*.
- On February 6, 2018, the Government of Canada introduced proposed amendments to restore lost protections and incorporate modern safeguards into the *Fisheries Act*. The Bill outlining these amendments is currently undergoing the parliamentary review process. It is expected that regulations and policies will be updated or developed to support the implementation of the amendments. Please be advised that these legislative and regulatory amendments are likely to change DFO's regulatory review process under the *Fisheries Act* during the proposed 2019-2028 project period. DFO will notify the CNSOPB and the proponent of any changes that may be relevant to the project.

Section 3.0 Scope of the Project

- It will be challenging to assess the potential effects of the project and evaluate environmental risks because of the large spatial boundary, extensive temporal boundary, and lack of specificity about the surveys that may be conducted. There is much uncertainty about the potential effects of the project because information is lacking about the specific number, locations, frequency, duration, and magnitude (e.g., sound source type, array configuration, source levels) of the seismic surveys that will be conducted. Undertaking the proposed maximum annual seismic survey

effort each year from 2019 to 2028 would result in a substantial and long-term increase in underwater noise offshore Nova Scotia.

- DFO recommends reducing the temporal boundary of the project to five years or less to better align with the five-year review period for the Strategic Environmental Assessments (SEAs) which will be used to inform this project-specific EA. A shorter temporal boundary would reduce the likelihood that the EA will become outdated by future changes in the status of species and habitats in the Project Area and by new scientific findings from the large body of international research currently underway on underwater noise and marine mammal biology and ecology.
- The relevant SEAs for the Project Area are over 5 years old and require updating. Until this process is completed, DFO does not support use of the SEAs as the primary information base for this project.
- If relying on information from the SEAs to support the project EA, the proponent should summarize the relevant information from the SEAs directly in the project EA. The proponent should also provide any updates to the information in the SEAs that are relevant to the assessment (e.g., changes in species status under SARA, identification of critical habitat, designation of special areas, changes in fishing activity, new information from scientific studies, etc.).
- DFO's preference is for a proponent to plan their project to avoid impacts to fish and fish habitat and aquatic species at risk whenever possible. In regards to the proposed project, DFO recommends that the proponent avoid potential impacts to fish and fish habitat and aquatic species at risk by excluding areas where 3D seismic surveys have recently been conducted and areas where surveys are planned in the near future, including:
 - The 3D wide azimuth (WAZ) seismic survey conducted by Shell Canada Limited in 2013 in association with their former Exploration Licences (ELs) 2324, 2424, 2425, 2426, 2429, and 2430;
 - The 3D WAZ seismic survey conducted by BP in 2014 in association with their ELs 2431, 2432, 2433, and 2434; and
 - The 3D seismic survey proposed by Equinor in association with their ELs 2435 and 2436.
- DFO notes that the proponent is tentatively planning a WAZ 3D seismic survey for spring 2019 and that additional information about this survey will be provided in the EA. Given the proposed timeline for this survey, detailed information about the proposed 2019 survey should be provided to DFO as soon as possible to allow sufficient time for the Department to complete a regulatory review.

Section 6.0 Valued Components (VC)

- Marine fish and invertebrates are not identified in the draft Scoping Document as a VC to be included in the EA. Section II of Appendix A states that an assessment of potential effects on fisheries resources is required as stated in Section 6.4; however, Section 6.4 refers only to marine mammals. Section III of the Appendix A states that an assessment of the effects of the project on commercially fished marine invertebrate species is required as stated in Section 6.7; however, Section 6.7 refers only to accidents and malfunctions.

- It is DFO's view that the project has potential to result in adverse effects to marine fish and invertebrates. DFO strongly recommends that the EA include marine fish and invertebrates as a VC and that the proponent provide a detailed assessment of potential adverse effects to this VC from project activities. Research suggests that the sensitivity of fish and invertebrates to effects from seismic sound may vary between life stages; therefore, potential effects to all life stages should be considered in the assessment (i.e., egg, larvae, juvenile, adult).
- Known aggregations of habitat forming marine benthos are identified as a VC on page 3, but are then scoped out of the EA in Appendix A of the draft Scoping Document. This inconsistency requires clarification by either including the VC in the EA or providing a detailed rationale for its exclusion.
- Potential VCs likely to interact with the project that have been scoped out of the assessment should also be described in the EA and a rationale provided for their exclusion.

Section 6.1 Species of Species Status

- DFO recommends that the EA include an effects assessment for all species assessed as endangered, threatened, and special concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), but not currently listed under SARA. To ensure that the EA includes an assessment of potential effects on these species, the first sentence of the second paragraph in this section should be modified as follows: "The EA shall evaluate all environmental effects, including cumulative effects, of the project on **species of special status** and their identified critical habitat **or identified important habitat**, and any migratory birds."
- During the project's 10-year timeline, the Government of Canada may decide to list additional species under Schedule 1 of SARA that occur within the Project Area. The prohibitions under section 32 and 33 of SARA come into force immediately upon listing under Schedule 1.
- Mitigation measures #4 and #5 of the *Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment* (SOCP) involve planning seismic surveys to avoid adverse effects to species listed as endangered or threatened on Schedule 1 of SARA. In addition to a commitment to adhere to the SOCP, the proponent should provide specific details in the EA on how seismic surveys have been planned to avoid such adverse effects.
- The draft Scoping Document states that "*The proponent...shall identify whether any SARA Section 73 permits will be requested.*" DFO would like to clarify the regulatory review process related to activities, such as seismic surveys, that may contravene the prohibitions under sections 32, 33, and 58 of SARA that apply to aquatic species at risk and are administered by DFO. As noted above in Section 2.0 Regulatory Considerations, DFO will need to review the specific details of each individual seismic survey proposed as part of the project to determine whether it is likely to result in prohibited effects under SARA. If DFO determines that a survey is likely to result in prohibited effects under SARA, the proponent will be required to submit an application to DFO for a SARA permit. DFO will then review the application and decide whether to issue a SARA permit for the proposed survey.

- A survey-specific assessment of whether project activities are likely to result in a prohibited effect on each aquatic species at risk listed as endangered or threatened (i.e., killing, harming, and harassing individuals, destruction of critical habitat) is required for DFO to complete a regulatory review under SARA. Therefore, DFO recommends that the EA and any subsequent EA addendums include such an assessment.
- The draft Scoping Document acknowledges that Shortland, Haldimand, and Logan canyons are within the Project Area and are known habitat for the Northern Bottlenose Whale (NBW). It is important to recognize that the Gully, Shortland, and Haldimand canyons are identified critical habitat for NBW and are protected under section 58 of SARA.
- Known high use areas where NBW are likely to occur includes identified critical habitat and water depths of 500 metres (m) to 2500 m between critical habitat areas. DFO notes that NBW and Sowerby's Beaked Whale (listed as special concern under Schedule 1 of SARA) have been sighted along the entire Shelf break within the Project Area.
- DFO expects that the proponent will propose project-specific measures to avoid and mitigate potential effects to species of special status. DFO offers the following comments for consideration related to avoidance and mitigation measures:
 - If seismic surveys are planned in or near critical habitat or important habitat for endangered or threatened species listed under Schedule 1 of SARA, DFO may recommend or require additional mitigation measures not listed in the SOCP to avoid or mitigate potential impacts to these species. Potential mitigations are outlined in a 2015 DFO CSAS Science Advisory Report.¹
 - DFO supports the requirement for a 60 minute observation period prior to ramp-up of the airgun array when beaked whales have been detected. DFO will also require this mitigation for surveys proposed within known high use areas where NBW are likely to occur.
 - DFO may require the use of a combination of real-time detection methods (e.g., concurrent visual and passive acoustic monitoring (PAM)) while a seismic source is active to increase the probability of detection and effective mitigation.
- In 2017, there were an unprecedented number of North Atlantic Right Whale (NARW) mortalities in Canadian waters. The assessment should consider potential effects to NARW from the proposed project in the context of the current status of the NARW population, and all feasible measures to avoid and mitigate potential effects to NARW from project activities should be implemented.
- In 2018, DFO Science published a report that identified important habitat for the Blue Whale (listed as endangered under Schedule 1 of SARA) that extends along the entire

¹ DFO. 2015. Review of Mitigation and Monitoring Measures for Seismic Survey Activities in and near the Habitat of Cetacean Species at Risk. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2015/005. (http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2015/2015_005-eng.html)

Scotian Shelf edge within the Project Area.² The EA should consider this information in the assessment of potential effects to Blue Whale from the project.

6.2 Special Areas

- In addition to their ecological and/or conservation sensitivities, most of the Special Areas listed in the draft Scoping Document are defined under regulation and subject to specific regulatory provisions which may include restricted or prohibited activities.
- On October 16, 2018, the Final Report of the National Advisory Panel on Marine Protected Area Standards was submitted to the Minister of Fisheries, Oceans and the Canadian Coast Guard. The report provides the following recommendations for protection standards in marine protected areas (MPAs) and other effective area-based conservation measures:
 - *“That the government adopt International Union for the Conservation of Nature standards and guidelines for all marine protected areas, therefore prohibiting industrial activities, such as oil and gas exploration and exploitation, mining, dumping, and bottom trawling.*
 - *When industrial activities are allowed to occur in areas counted as other effective area-based conservation measures, the Minister of Fisheries, Oceans and the Canadian Coast Guard must be satisfied through effective legislation or regulation that risks to intended biodiversity outcomes are avoided or mitigated.”*
- The Western/Emerald Banks Conservation Area (WEBCA) is located with the Project Area and is known to be a significant spawning and nursery ground for haddock. As noted in the draft Scoping Document, Georges Bank is also known to be an important spawning area for haddock and other groundfish species. Mitigation measure #5(c) of the SOCP involves planning seismic surveys to avoid dispersing aggregations of spawning fish from a known spawning area. In addition to a commitment to adhere to the SOCP, the proponent should provide specific details on how seismic surveys will be planned to avoid dispersing spawning fish from the WEBCA and Georges Bank.
- DFO acknowledges that the Project Area is located a minimum distance of 40 km from the Roseway Basin critical habitat for NARW; however, seismic sound originating in the Project Area may extend great distances and reach Roseway Basin. Therefore, DFO recommends that the EA identify Roseway Basin critical habitat for NARW as a Special Area and include an assessment of potential effects associated with sound from seismic surveys conducted within the Project Area.
- Additional critical habitat for species listed as endangered or threatened under Schedule 1 of SARA may be identified within the Project Area during the project timeframe.
- There are a number of other Special Areas located within or adjacent to the Project Area that have not been addressed in the draft Scoping Document, including: Lophelia Coral Conservation Area, Northeast Channel Coral Conservation Area, Corsair and Georges Canyons Conservation Area, Emerald Basin and Sambro Bank

² DFO. 2018. Identification of habitats important to the blue whale in the western North Atlantic. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/003. (http://publications.gc.ca/collections/collection_2018/mpo-dfo/fs70-6/Fs70-6-2018-003-eng.pdf)

Sponge Conservation Areas, St. Anns Bank Marine Protected Area, Fundian Channel-Browns Bank Area of Interest, and Eastern Shore Islands Area of Interest. These areas should either be added to Section 6.2 of the Scoping Document or added to Appendix A with a detailed rationale for their exclusion.

6.6 Other Ocean Users

- DFO recommends that the proponent engage with other ocean users during the EA and early in the planning process for each individual survey to identify potential interactions and to discuss potential accommodations.

6.7 Malfunctions and Accidental Events

- DFO recommends that the Spill Response Plan for the project be reviewed and updated, as necessary, prior to each individual seismic survey.

6.8 Cumulative Effects

- It is important that the EA include a detailed cumulative effects assessment based on the best available scientific information. The cumulative effects assessment should consider potential cumulative effects from all stressors on the VCs, not just the potential cumulative effects from sources of underwater sound.
- The cumulative effects assessment should be based on a conservative scenario that uses the maximum potential annual seismic survey effort over the project period (i.e., 15,000 km² of 3D seismic data acquisition and 10,000 linear km of 2D seismic survey lines each year) as well as other ongoing and reasonably foreseeable projects and activities that may contribute to cumulative effects on the VCs (e.g., Equinor's proposed 3D seismic survey).

7.0 Indigenous and Public Engagement

- DFO recommends that the commitment made in Section 7.2 to ongoing communication and information sharing with the public also be included in Section 7.1 of the Scoping Document in regards to engagement with Indigenous groups.

9.0 Follow-up Program

- DFO recommends that a Marine Mammal Monitoring and Mitigation Plan be included in the EA. The plan should include, but not be limited to, the following information:
 - a description of survey-specific measures to avoid and mitigate effects to marine mammals;
 - an appropriate number of MMOs to adequately observe the entire safety zone;
 - a detailed description of the PAM configuration, including frequency ranges and sensitivity of receivers, placement of receivers in the water (e.g., length of array, distance from airguns, distance from vessel, etc.) and display setup for monitoring incomings signals;
 - a copy of MMO and PAM operator reference materials;
 - information on MMO and PAM operator qualifications and experience;
 - an open line of communications between MMOs on different vessels in a multi-vessel fleet, to aid in effective, efficient, and timely detections;

- adequate equipment for MMOs to make detections;
 - sensitivity curves of the hydrophones; and
 - dedicated PAM operators with no overlap in MMO visual observation duties.
- DFO may require an environmental effects monitoring program (EEMP) to verify the predictions made in the EA and in any subsequent applications for authorizations and/or permits. EEMPs may include acoustic monitoring and other activities to verify underwater sound propagation modelling and to verify EA predictions related to environmental effects from project activities (e.g., behavioural changes in marine mammals).
- DFO recommends that the CNSOPB require marine wildlife monitoring reports to include sufficient detail about each marine mammal and sea turtle sighting record (e.g., date/time, species, GPS location of sighting, observation platform, etc.) to allow for the sightings to be entered into the Maritimes Region Cetaceans Sightings Database, and that the reports be provided to the CNSOPB and DFO in a timely manner following completion of each individual seismic survey.

11. Significance of Environmental Effects

- Determinations of whether the project is likely to result in significant adverse environmental effects for each VC should be based on the maximum potential annual seismic survey effort over the project period (i.e., 15,000 km² of 3D seismic data acquisition and 10,000 linear km of 2D seismic survey lines each year).

Appendix A: Components and Activities Outside of the Scope of the Assessment of the Potential for Adverse Environmental Effects

- For clarity, references to VCs in Appendix A should be revised to align with those identified in the Scoping Document.
- Serious harm to fish that are part of, or support, commercial, recreational, and Aboriginal (CRA) fisheries is prohibited under subsection 35(1) of the *Fisheries Act*, unless authorized. Section II of Appendix A does not provide a rationale for excluding recreational fishery species, Aboriginal fishery species, or fish that support CRA fishery species from the scope of the EA.
- Section II of Appendix A states that “*Most of the resident deep water fish species are identified as non-commercial*”. DFO notes that water depths within the Project Area range from 100 m to 4,500 m which means that both shallow-water and deep-water fish species are present in the Project Area, including many CRA fishery species.

Thank you for the opportunity to provide comments on the draft Scoping Document. We look forward to continued participation in the EA process for the project.

If you have any questions with the content of this letter, please contact me at our Dartmouth office at 902-233-9731 or by email at christopher.burbidge@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

A handwritten signature in black ink, reading "C. Burbidge". The signature is fluid and cursive, with a large initial "C" and a stylized "Burbidge".

Chris Burbidge
Senior Fisheries Protection Biologist