



NIRB File No.: 19YN020
NPC File No.: 149049

May 14, 2019

Maya Bhatia
University of Alberta
1-26 Earth Sciences Building, University of Alberta
Edmonton, AB T6G 2E3

Sent via email: mbhatia@ualberta.ca.

Re: Notice of Screening for the University of Alberta's "Impacts of Melting Tidewater Glaciers on Marine Biogeochemical Cycles" project proposal

Dear Maya Bhatia:

On March 25, 2019 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen the University of Alberta's (U of A) "Impacts of Melting Tidewater Glaciers on Marine Biogeochemical Cycles" project proposal from the Nunavut Planning Commission (NPC or Commission), with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB has commenced screening this project proposal and has assigned it file number **19YN020**.

INFORMATION REQUEST

On March 25, 2019 the NIRB requested that the Proponent complete the online application form through the NIRB's public registry system and ensure, pursuant to s. 144(1) of the *NuPPAA*, that the information provided be sufficient to determine the scope of the project activities being proposed and that sufficient information has been provided to commence screening. On April 9, 2019 the NIRB followed up with the Proponent in order to obtain a complete online application and on April 16, 2019 the NIRB received the online application. Following a review of the application, the NIRB determined that additional information in order to carry out the screening of the project proposal and on April 26, 2019 the NIRB requested that the Proponent provide the required information.

On April 26, 2019 the NIRB received the required additional information and commenced the screening pursuant to Part 3 of the *NuPPAA*.

PROJECT OVERVIEW

Project Scope:

The proposed “Impact of Melting Tidewater Glaciers on Marine Biogeochemical Cycles” project is located within the Qikiqtani (North Baffin) region, up to 250 kilometres (km) from Grise Fiord on the Devon Ice Cap on Devon Island and in Jones Sound. The Proponent intends to monitor the glacier dynamics and hydrology of the Sverdrup, Belcher, Sydkap and Jakeman Glaciers over the course of five (5) years to determine the quantity, timing, and routing of meltwater delivery to the ocean, characterize the chemistry and microbiology of these meltwaters, and evaluate their impact on the downstream marine environment. The program is proposed to take place from July 2019 to July 2024.

According to the project proposal, the scope of the project includes the following undertakings, works or activities:

- Use of Twin Otter or helicopter to transport equipment and personnel to field sites, temporary camp, and to conduct land reconnaissance surveys;
- Use and storage of approximately 5,000 litres (L) of fuel:
 - Aviation fuel stored in drums supplied by Polar Continental Shelf to operate helicopter and Twin Otter, with drums to be stored either at the camp or in a temporary fuel cash at TrueLove Inlet for subsequent years with empty fuel barrels removed annually;
- Land-based activities to conduct scientific research on the glacier:
 - Accommodations may be sources locally in Grise Fiord and/or the establishment of a six (6) man temporary camp for up to on (1) month annually;
 - Installation, data collection, and retrieval of the following equipment annually:
 - Cameras and tripods to be bolted into bedrock, battery and solar panel to take time-lapse pictures of the glaciers;
 - Pressure transducers in/around ice-marginal ponds and streams around the glaciers;
 - Collection of glacier ice and meltwater samples for analysis;
 - Generation and disposal of human waste and grey water by burial;
 - Drinking water would be sourced from glacial melt water;
- Marine-based research activities to conduct oceanic surveys;
 - Use of either a sailboat or small motor boat to transport equipment and personnel to travel from Grise Fiord to the termini of glaciers on Devon and Ellesmere Islands;
 - Use of multi-channel logger to collect and measure changes in seawater conductivity, temperature, and pressure;
 - Collection of seawater in Jones Sound for analysis;
 - Gasoline and/or diesel held on sailboat and for outboard motors and generators and to transport personnel and equipment to research sites;
 - Greywater would be stored in holding tanks and disposed of offshore in accordance with international norms;

- Use and storage of three (3) litres of hazardous materials to sterilize tubes and preserve water samples; and
- All waste generated either by boat or camp would be brought back to appropriate locations (e.g., Resolute Bay, Grise Fiord or other locations) for proper disposal.

Inclusion or Exclusion of Scoping List

At this time, the NIRB has identified no additional works or activities in relation to the project proposal; however, the Proponent has indicated in their application and subsequent materials that any winter sampling would be applied for separately and not included in the application at this time. As a result, the NIRB will proceed with screening the project based on the scope as described above.

REQUEST FOR COMMENTS

All documents received and pertaining to this project proposal can be accessed from the NIRB's online public registry at www.nirb.ca/project/125462.

The documents received include:

- *NPC Screening Referral and Conformity Determination*
- *NPC Application and Conformity Questionnaire*
- *NIRB's Online Application Form*
- *Non-technical Project Proposal summary in English and Inuktitut*
- *Maps noting proposed project areas*
- *Supplemental Information*
- *Hamlet of Grise Fiord Letter of Support*

The NIRB will copy you on screening process related correspondence and upload related documents to the NIRB's online registry for public access. The NIRB may request additional information at any time during the process.

The NIRB is copying parties and municipalities potentially affected by the University of Alberta project proposal with this letter, and we invite interested parties to comment directly to the NIRB by **May 24, 2019**.

The NIRB would like parties to provide comments regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; and if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (and providing any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

Please note that *proposed* project-specific terms and conditions, should the project proceed, have been attached for consideration and comment ([Appendix A](#)).

CONTACT INFORMATION

Please send your comments to the NIRB via email at info@nirb.ca, via fax at (867) 983-2594 or via the individual project dashboard for this assessment on the NIRB's online public registry at www.nirb.ca/project/125462.

If you have any questions or require clarification, please contact the undersigned at (867) 983-5627 or at tmaksagak@nirb.ca.

Sincerely,



Talia Maksagak
Junior Technical Advisor
Nunavut Impact Review Board

Enclosures (4): Public Notice of Screening (English and Inuktitut)
Comment Forms (English and Inuktitut)

cc: Distribution List
Richard Dwyer, Nunavut Water Board
Stephen Williamson Bathory, Qikiqtani Inuit Association
Jared Ottenhof, Qikiqtani Inuit Association
Joel Fortier, Qikiqtani Inuit Association
Mosha Cote, Nunavut Research Institutes
Tracey McCaie, Crown-Indigenous Relations and Northern Affairs Canada
Mark D'Aguiar, Fisheries and Oceans Canada

Appendix A
Proposed Project Specific Terms and Conditions

The following is a list of project-specific terms and conditions which, should the project proceed, may be recommended to be attached to any approval.

General

1. University of Alberta (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
2. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 149049), and the NIRB (Online Application Form, April 16, 2019; additional information with respect to the research activities, April 26, 2019).
3. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Water Use

4. The Proponent shall not use water, including constructing or disturbing any stream, lakebed or the banks of any definable water course unless approved by the Nunavut Water Board.

Waste Disposal

5. The Proponent shall keep all garbage and debris in bags placed in a covered metal container or equivalent until disposed of at an approved facility. All such wastes shall be kept inaccessible to wildlife at all times.
6. The Proponent shall manage all wastes (including domestic, garbage and debris) on board the vessel prior to final disposal at approved port facilities.
7. The Proponent shall remove wastes from the project site to an approved facility for disposal.

Fuel and Chemical Storage - General

8. The Proponent shall ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. All spills of fuel or other deleterious materials of any amount must be reported immediately to the 24 hour Spill Line at (867) 920-8130.

Fuel and Chemical Storage for Land Based Activities

9. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
10. The Proponent shall locate all fuel and other hazardous materials a minimum of thirty-one (31) metres away from the high water mark of any water body and in such a manner as to prevent their release into the environment, unless otherwise authorized by the Nunavut Water Board.
11. The Proponent shall ensure that re-fueling of all equipment occurs a minimum of thirty-one (31) metres away from the high water mark of any water body, unless otherwise authorized by the Nunavut Water Board.

12. The Proponent shall use adequate secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) when storing barreled fuel and chemicals at all locations.
13. The Proponent shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available during any transfer of fuel or hazardous substances, at all fuel storage sites and when refuelling equipment.

Fuel and Chemical Storage for Water Based Activities

14. The Proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes (including waste water) or sediment into any marine waters.

Wildlife - General

15. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
16. The Proponent shall not harass wildlife. This includes persistently circling, chasing, hovering over pursuing or in any other way harass wildlife, or disturbing large groups of animals.
17. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
18. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.
19. The Proponent shall, where practicable, coordinate with other vessels to minimize simultaneous vessel traffic in critical wildlife habitat areas allowing wildlife to continue to use the habitat undisturbed (e.g., Jones Sound).

Migratory Birds and Raptors Disturbance

20. The Proponent shall not disturb or destroy the nests or eggs of any birds. If active nests of any birds are discovered or located (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have naturally left the vicinity of the nest by establishing a protection buffer zone¹ appropriate for the species and the surrounding habitat.
21. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.
22. The Proponent shall avoid the seaward site of seabird colonies and areas used by flocks of migrating waterfowl by three (3) kilometres.
23. The Proponent shall ensure its aircraft avoid excessive hovering or circling over areas where bird presence is likely.

Aircraft Flight Restrictions

24. The Proponent shall not alter flight paths to approach wildlife, and avoid flying directly over animals.
25. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum flight altitude of 610 metres above ground level unless except during landing, take-off or if

¹ Recommended setback distances to define buffer zones have been established by Environment and Climate Change Canada for different bird groups nesting in tundra habitat and can be found at www.ec.gc.ca/paom-itmb.

there is a specific requirement for low-level flying, which does not disturb wildlife or migratory birds.

26. The Proponent shall ensure that aircraft maintain a vertical distance of 1000 metres and a horizontal distance of 1500 metres from any observed groups (colonies) of migratory birds. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.
27. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
28. The Proponent shall advise all pilots of relevant flight restrictions and enforce their application over the project area, including flight paths to/from the project area.

Caribou and Muskozen Disturbance

29. The Proponent shall cease activities that may interfere with the migration or calving of caribou or muskox, until the caribou or muskox have passed or left the area.
30. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration such as movement of equipment or personnel until such time as the caribou have passed.

Temporary Camps and Land Use

31. The Proponent shall ensure that all camps are located on gravel, sand or other durable land.
32. The Proponent shall not erect camps or store material on the surface ice of lakes or streams.
33. The Proponent shall ensure that the land use area is kept clean and tidy at all times.

Restoration of Disturbed Areas

34. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
35. The Proponent shall complete all clean-up and restoration of the lands used prior to the end of each field season and/or upon abandonment of site.

Other

36. The Proponent should engage with local residents regarding planned activities in the area and should solicit available Inuit Qaujimaningit and information regarding current recreational and traditional usage of the project area which may inform project activities. Posting of translated public notices and direct engagement with potentially interested groups and individuals prior to undertaking project activities is strongly encouraged.
37. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
38. The Proponent should, to the extent possible, hire local people and access local services where possible.