



**SCREENING DECISION REPORT
NIRB FILE No.: 23YA018**

Related to NIRB File No.: 08YN010

NPC File No.: 149999

Related to NPC File No.: 148430

July 13, 2023

Following the Nunavut Impact Review Board’s (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Carleton University’s “Arctic coastal and drifting ice processes and dynamics” is not required pursuant to Article 12, Section 12.4.4(a) of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 92(1)(a) of the *Nunavut Planning and Project Assessment Act, S.C. 2013, c. 14, s. 2 (NuPPAA)*.

Subject to the Proponent’s compliance with the terms and conditions as set out in below, the NIRB is of the view that the project proposal is not likely to cause significant public concerns, and it is unlikely to result in significant adverse environmental and social impacts. The NIRB therefore recommends that the responsible Minister accepts this Screening Decision Report.

OUTLINE OF SCREENING DECISION REPORT

| | |
|--|-----------|
| REGULATORY FRAMEWORK..... | 2 |
| PROJECT REFERRAL | 3 |
| PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS..... | 3 |
| ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF THE NUPPAA..... | 6 |
| VIEWS OF THE BOARD | 7 |
| RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS | 12 |
| OTHER NIRB CONCERNS AND RECOMMENDATIONS | 16 |
| CONCLUSION | 18 |

APPENDICES

| | |
|---|----|
| APPENDIX A: PREVIOUSLY-SCREENED PROJECT PROPOSALS..... | 19 |
| APPENDIX B: SPECIES AT RISK IN NUNAVUT | 20 |
| APPENDIX C: ARCHAEOLOGICAL AND PALAEOLOGICAL RESOURCES TERMS AND CONDITIONS FOR LAND USE PERMIT HOLDERS | 23 |

The primary objectives of the NIRB are set out in Article 12, Section 12.2.5 of the *Nunavut Agreement* and are confirmed by s. 23 of the *NuPPAA*:

Nunavut Agreement, Article 12, Section 12.2.5: In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area.

The purpose of screening is provided for under Article 12, Section 12.4.1 of the *Nunavut Agreement* and s. 88 of the *NuPPAA* which states:

NuPPAA, s. 88: The purpose of screening a project is to determine whether the project has the potential to result in significant ecosystemic or socio-economic impacts and, accordingly, whether it requires a review by the Board...

To determine whether a review of a project is required, the NIRB is guided by the considerations as set out under Article 12, Section 12.4.2(a) and (b) of the *Nunavut Agreement* and s. 89(1) of *NuPPAA* which states:

NuPPAA, s. 89(1): The Board must be guided by the following considerations when it is called on to determine, on the completion of a screening, whether a review of the project is required:

- (a) a review is required if, in the Board's opinion,
 - i. the project may have significant adverse ecosystemic or socio-economic impacts or significant adverse impacts on wildlife habitat or Inuit harvest activities,
 - ii. the project will cause significant public concern, or
 - iii. the project involves technological innovations, the effects of which are unknown; and
- (b) a review is not required if, in the Board's opinion,
 - i. the project is unlikely to cause significant public concern, and
 - ii. its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

It is noted that under Article 12, Section 12.4.2(c) and s. 89(2) of the *NuPPAA* provides that the considerations set out in s.89(1)(a) prevail over the considerations set out in s. 89(1)(b) of the *NuPPAA*.

As set out under Article 12, Section 12.4.4 of the *Nunavut Agreement* and s. 92(1) of the *NuPPAA*, upon conclusion of the screening process, the Board must provide its written report the Minister. The contents of the NIRB's report are specified under *NuPPAA*:

NuPPAA, s. 92(1): The Board must submit a written report to the responsible Minister containing a description of the project that specifies its scope and indicating that:

- (a) a review of the project is not required;
- (b) a review of the project is required; or
- (c) the project should be modified or abandoned.

Where the NIRB determines that a project may be carried out without a review, the NIRB has the discretion to recommend specific terms and conditions to be attached to any approval of the project proposal pursuant to paragraph 92(2)(a) of *NuPPAA* as follows:

NuPPAA, s. 92(2) In its report, the Board may also

- (a) recommend specific terms and conditions to apply in respect of a project that it determines may be carried out without a review.

PROJECT REFERRAL

On March 30, 2023, the Nunavut Impact Review Board (NIRB) received a referral to screen Carleton University’s (Carleton) “Arctic coastal and drifting ice processes and dynamics” project proposal from the Nunavut Planning Commission (Commission), with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan. The NPC noted that the previous conformity determination issued on June 9, 2022 for the activities associated with the current proposal continues to apply and has determined that the project proposal is a significant modification to the project because of the inclusion of fish sampling as part of their research activities.

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 section 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB commenced screening this project proposal. Due to the proposal containing activities that are sufficiently related to previously assessed activities under NIRB file number **08YN010**, the NIRB viewed this project proposal as an amendment to the previously screened project and assigned this proposal with the file number **23YA018**.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

1. Screening Process Timelines

The following key stages were completed for the screening process:

| Date | Stage |
|----------------|---|
| March 20, 2023 | Receipt of <i>amended</i> project proposal and positive conformity determination (North Baffin Regional Land Use Plan) from the Commission. |

| Date | Stage |
|----------------|---|
| March 31, 2023 | Request to complete public registry online and provide information pursuant to s. 144(1) of the <i>NuPPAA</i> |
| May 11, 2023 | Receipt of online application from Proponent |
| May 12, 2023 | Scoping pursuant to s. 86(1) of the <i>NuPPAA</i> |
| June 1, 2023 | Public engagement and comment request |
| June 16, 2023 | Receipt of public comments |
| July 13, 2023 | Issuance of Screening Decision Report |

2. Project Scope

All documents received and pertaining to this project proposal can be accessed from the NIRB's online public registry at www.nirb.ca/project/125786.

The following table provides a summary of the *original and previously amended* project as previously screened by the NIRB (File No. 08YN010):

| | | | |
|--|--|-------------------------------|------------------------|
| Original Project: | Ice Dynamics and Cryospheric Changes in Northern Canada | | |
| Region: | The project as previously approved was located within the Qikiqtani region. | | |
| Location: | Ellesmere Island, Axel Heiberg Island, Devon Island | | |
| Closest Community: | Grise Fiord | Distance (approximate) | 80-700 kilometres (km) |
| Summary of Project Description: | The Project as originally screened included monitoring the characteristics, dynamics and recent changes of the glaciers, ice shelves and sea ice in the Canadian Arctic Archipelago. A complete description of the scope of activities previously approved has been included within Appendix A . | | |
| Original Project Timeline: | 2008 to 2040 | | |

The following table provides a summary of the current *amended* project as proposed by Carleton:

| | | | |
|--|---|-------------------------------|---------------------|
| Amended Project: | Arctic coastal and drifting ice processes and dynamics | | |
| Region: | The project would be located in the same area as previously approved and would be located within the Qikiqtani region. | | |
| Location: | Ellesmere Island | | |
| Closest Community: | Grise Fiord | Distance (approximate) | 600 kilometres (km) |
| Summary of Project Description: | The Proponent intends to amend the scope of previously approved activities to include taking sediment cores and sampling benthic organisms. | | |
| Project Proposed Timeline: | 2023 to 2040 | | |

As required under s. 86(1) of the *NuPPAA*, the Board accepts the scope of the project as set out by Carleton in the proposal. The scope of the amended project proposal includes the following additional undertakings, works, or activities:

- Use of sediment corer and sediment traps;
- Sampling of benthic organisms;
- Use of an underwater ROV; and
- Continue to use existing temporary camp to facilitate ongoing research.

3. Inclusion or Exclusion to Scoping List

The NIRB has identified no additional works or activities in relation to the project proposal. As a result, the NIRB proceeded with screening the project based on the scope as described above.

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on June 1, 2023 to community organizations in Resolute Bay and Grise Fiord, as well as to relevant federal and territorial government agencies, Inuit organizations and other parties. The NIRB requested that interested parties review the proposal and the NIRB's proposed project-specific terms and conditions, and provide the Board with any comments or concerns by June 16, 2023, 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.

On or before June 16, 2023, the NIRB received comments from the following interested parties:

- **Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)**

a. Summary of Public Comments and Concerns Received during the Public comment period of this file

The following provides a summary of the comments and concerns received by the NIRB:

- **Crown-Indigenous Relations and Northern Affairs Canada**
 - Noted the proponent did not provide a description of the fuel cache, secondary containment and land on which fuel would be stored. Recommended standard terms and conditions regarding fuel use and handling.
 - Noted and encouraged Proponent's community consultation.
 - Recommended standard terms and conditions for local and Inuit employment.

Technical note: the screening only involved the new activities being proposed. The existing activities (including the fuel cache) are covered by the previously approved project.

b. Comments and Concerns with respect to Inuit Qaujimaningit, Traditional, and Community Knowledge

No concerns or comments were received with respect to Inuit Qaujimaningit and traditional and community knowledge in relation to the proposed project. However, Inuit Qaujimaningit and traditional and community knowledge is incorporated into the terms and conditions recommended below based on information collected from prior and similar projects, data collected and mapped by the Commission, and other available sources.

ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF THE *NuPPAA*

In determining whether a review of the project is required, the Board considered whether the project proposal had potential to result in significant ecosystemic or socio-economic impacts.

Accordingly, the assessment of impact significance was based on the analysis of those factors that are set out under s. 90 of the *NuPPAA*. The Board took particular care to take into account Inuit Qaujimaningit, traditional and community knowledge in carrying out its assessment and determination of the significance of impacts.

The following is a summary of the Board’s assessment of the factors that are relevant to the determination of significant impacts with respect of this project proposal:

| Factor | Comment |
|---|---|
| The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts. | <ul style="list-style-type: none"> ▪ The size of the geographic area for the existing project includes the glaciers on Axel Heiberg, Ellesmere, Devon Islands and Trinity Glacier. The amended project includes Milne Fiord. ▪ The proposed activities may take place within habitats for many far-ranging wildlife species such as Peary caribou, muskox, wolves, polar bears, migratory birds and Species at Risk (Ivory Gulls), as identified by mapping sources, and may potentially affect animal migratory patterns |
| The ecosystemic sensitivity of that area. | <ul style="list-style-type: none"> ▪ The proposed project would occur in an area with no particular identified ecosystemic sensitivity, with the exception of a portion of the research area which would occur within the identified Bylot Island Bird Sanctuary. However, this area has been identified as having value and priority to the local community for: |

| Factor | Comment |
|--|--|
| | <ul style="list-style-type: none"> ○ Terrestrial wildlife including muskox and Peary caribou, ○ Migratory birds, ○ Arctic char, and ○ polar bears. |
| The historical, cultural and archaeological significance of that area. | <ul style="list-style-type: none"> ▪ No specific areas of historical, cultural and archaeological significance have been identified by the Proponent within the physical footprint of the proposed project. |
| The size of the human and the animal populations likely to be affected by the impacts. | <ul style="list-style-type: none"> ▪ The proposed project would occur approximately 80 to 700 kilometres (km) northwest to northeast of Grise Fiord and approximately 500 to 600 km west to north-northeast of Resolute Bay, the nearest communities; as such no human populations are likely to be affected by project impacts. No specific animal populations have been identified as likely to be affected by potential project impacts. |
| The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts. | <ul style="list-style-type: none"> ▪ A zone of influence of up to 50 km from the most potentially-disruptive project activities was selected for the NIRB's assessment. ▪ With adherence to the relevant regulatory requirements and application of the mitigation measures recommended by the NIRB, no significant residual effects are expected to occur. |
| The cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out. | <ul style="list-style-type: none"> ▪ The NIRB has not identified any past, present, and reasonably foreseeable projects at this time; however, the mitigation measures recommended by the NIRB have been designed to reduce cumulative effects should projects occur in the area in the future. |
| Any other factor that the Board considers relevant to the assessment of the significance of impacts. | <ul style="list-style-type: none"> ▪ No other relevant factors were identified. |

VIEWS OF THE BOARD

In considering the factors as set out above in the screening of the project proposal, the NIRB has identified a number of issues below and respectfully provide the following views regarding whether or not the proposed project has the potential to result in significant impacts. In addition, the NIRB has proposed terms and conditions that would mitigate the potential adverse impacts identified.

The NIRB has listed specific Acts and Regulations below that may be applicable to the project proposal but this list should not be considered as a complete list and the Proponent is responsible to ensure that it follows all Acts and Regulations that may be applicable to the project proposal.

Ecosystem, wildlife habitat and Inuit harvesting activities:

| | |
|---|--|
| Valued Component | Wildlife, including caribou, muskox, migratory and non-migratory birds, and Species at Risk |
| Potential effects: | Potential negative impacts to wildlife (including caribou and muskox), polar bears, migratory and non-migratory birds, and their associated habitat due to project activities. This includes potential impacts from increased noise generated from transportation of personnel and equipment via aircrafts to the proposed camp facility site and research sites, set-up and use of the temporary field camp, storage and use of fuel and undertakings in support of research activities. |
| Nature of Impacts: | The potential for impacts is considered to be limited due to infrequent and temporary activities and minimal number of personnel. Any resulting impacts would be expected to be reversible. |
| Mitigating Factors: | It is recommended that the potential negative impacts may be mitigated by measures such as requiring the Proponent to maintain minimum flight altitudes and seasonal restrictions, to avoid interaction and disturbance to wildlife, and to provide wildlife training to project personnel. The Board is recommending terms and conditions to ensure project activities minimize potential negative impacts. |
| Previously Recommended Terms and Conditions: | Waste Disposal/Incineration: 7 Fuel and Chemical Storage: 12 Wildlife General – 16 through 18 Migratory Birds and Raptor Disturbance – 19 through 23 Aircraft Flight Restrictions – 24 through 27 Caribou and Muskox – 28 through 30 |
| Proposed New Terms and Conditions: | Aircraft Flight Restrictions – 44 and 45 |
| Related Acts and/or Regulations: | The Board previously recommended in the June 20, 2016 Screening Decision Report the following legislation, which continues to apply to the current proposal: 1. The <i>Migratory Birds Convention Act and Migratory Birds Regulations</i> (http://laws-lois.justice.gc.ca/eng/acts/M-7.01/). 2. The <i>Species at Risk Act</i> (http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html). Attached in Appendix B is a list of Species at Risk in Nunavut. |

| | |
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| | 3. The <i>Wildlife Act (Nunavut)</i> and its corresponding regulations (http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html). |
|--|---|

| | |
|---|--|
| Valued Component | Potential adverse effects on marine mammals and marine aquatic environment, surface water, fish and fish habitat. |
| Potential effects: | Potential adverse effects to marine mammals and marine aquatics due to research activities. |
| Nature of Impacts: | The potential for impacts is considered to be limited and temporary as the nature of the activities and any resulting impacts would be expected to be minimal and reversible. The nature of the proposed activities are unlikely to cause any significant disturbance to the marine environment. |
| Mitigating Factors: | The localized area and nature of the project activities make it unlikely any significant impacts will occur. The Board is recommending terms and conditions to ensure project activities minimize potential negative impacts. |
| Previously Recommended Terms and Conditions: | Water courses/Water bodies: 5 and 6 Fuel and Chemical Storage: 10 through 15 Wildlife General – 16 through 18 Temporary Camps and Land Use - 33 |
| Proposed New Terms and Conditions: | Water courses/Water bodies: 41 Marine-Based Activities: 46 through 52 |
| Related Acts and/or Regulations: | The Board previously recommended in the June 20, 2016 Screening Decision Report(s) the following legislation, which continues to apply to the current proposal: <ol style="list-style-type: none"> 1. The <i>Fisheries Act</i> (http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html). 2. The <i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i> (http://laws-lois.justice.gc.ca/eng/acts/n-28.8/). 3. The <i>Transportation of Dangerous Goods Regulations, Transportation of Dangerous Goods Act</i> (http://www.tc.gc.ca/eng/tdg/safety-menu.htm) 4. The <i>Canadian Environmental Protection Act</i> (http://laws-lois.justice.gc.ca/eng/acts/C-15.31/) |

| | |
|---------------------------|---|
| Valued Component | Soils and Vegetation |
| Potential effects: | Potential negative impacts to soils, vegetation, and land from the project activities; including set-up and use of the temporary field camp. |
| Nature of Impacts: | The potential for impacts is considered to be limited due to infrequent and temporary activities and minimal number of personnel. Any resulting impacts would be expected to be reversible. |

| | |
|---|--|
| Mitigating Factors: | The potential for negative impacts is applicable to the temporary field camp facilities, with a low probability of impacts occurring, and the impacts being reversible in nature. The Board is recommending terms and conditions to ensure project activities minimize potential negative impacts. |
| Previously Recommended Terms and Conditions: | Waste Disposal/Incineration: 7 through 9 Fuel and Chemical Storage: 13 through 15 Ground Disturbance: 31 Temporary Camps and Land Use: 32 through 34 Land Use and Restoration of Disturbed Areas: 35 and 36 |
| Proposed New Terms and Conditions: | Fuel and Chemical Storage: 42 and 43 |
| Related Acts and/or Regulations: | 1. The <i>Canadian Environmental Protection Act</i> (http://laws-lois.justice.gc.ca/eng/acts/C-15.31/) |

| | |
|---|--|
| Valued Component | Traditional Activities and Land Use |
| Potential effects: | Potential negative impacts to public and traditional land use activities in the area due to transportation of personnel and equipment to the research sites and camp and research activities. |
| Nature of Impacts: | The potential for impacts is considered to be limited and temporary as the nature of the activities and any resulting impacts would be expected to be minimal and reversible. |
| Mitigating Factors: | The Board is recommending terms and conditions to ensure project activities are informed by available Inuit Qaujimaningit and that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities. |
| Previously Recommended Terms and Conditions: | Other: 37 and 39 |
| Proposed New Terms and Conditions: | n/a |
| Related Acts and/or Regulations: | The Board previously recommended in the June 20, 2016 Screening Decision Report the following legislation, which continues to apply to the current proposal: 1. The <i>Nunavut Act</i> (http://laws-lois.justice.gc.ca/eng/acts/N-28.6/). |

Socio-economic effects on northerners:

| | |
|---------------------------|---|
| Valued Component | Historical and archaeological sites. |
| Potential effects: | Potential disturbance to historical and archaeological sites. |

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|---|--|
| Nature of Impacts: | No specific concerns regarding historical and archaeological sites have been raised. |
| Mitigating Factors: | The Board is recommending terms and conditions to ensure that archaeological and paleontological sites are not purposely or inadvertently disturbed should they be encountered. |
| Previously Recommended Terms and Conditions: | n/a |
| Proposed New Terms and Conditions: | Heritage Sites – 53 and 54 |
| Related Acts and/or Regulations: | 1. The <i>Nunavut Act</i> (http://laws-lois.justice.gc.ca/eng/acts/N-28.6/). The Proponent must comply with the proposed terms and conditions listed in the attached Appendix C . |

Significant public concern:

| | |
|---|---|
| Valued Component | Public concern |
| Potential effects: | No significant public concern was expressed during the public commenting period for this file; however, the Board is recommending terms and conditions to ensure that to the extent possible hire local people and access local services where possible, and to ensure planned activities in the area utilizes available Inuit Qaujimaningit. |
| Nature of Impacts: | The potential for impacts is considered to be minimal as long as the Proponent follow the recommended terms and conditions. |
| Mitigating Factors: | Recommended terms and conditions |
| Previously Recommended Terms and Conditions: | Other – 37 through 39 |
| Proposed New Terms and Conditions: | N/A |
| Related Acts and/or Regulations: | Public concern |

Technological innovations for which the effects are unknown:

- No specific issues have been identified associated with this project proposal.

Administrative Conditions:

Responsible authorities or the Proponent shall notify the Nunavut Planning Commission and the NIRB of any changes in operating plans or conditions, including phase advancement, associated with this project prior to any such change.

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the Board has previously recommended terms and conditions 1 through 4, which continue to apply to the current project proposal. The Board is also recommending term and condition 40 to ensure complete reference to applicable regulatory requirements.

In considering the above factors and subject to the Proponent's compliance with the terms and conditions necessary to mitigate against the potential adverse environmental and social effects, the Board is of the view that the proposed project is unlikely to cause significant public concern and its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS

The following terms and conditions were previously issued by the NIRB in the June 20, 2016 Screening Decision Report(s) for File No. **08YN010**, **and continue to apply to the "Arctic coastal and drifting ice processes and dynamics" project:**

General

1. *(updated)* Carleton University (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times and make it accessible to enforcement officers upon request.
2. *(updated)* The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 149999) and the NIRB (Online Application Form, April 22, 2023; email, May 11, 2023). This information should be accessible to enforcement officers upon request.
3. *(updated)* The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.
4. *(updated)* The Proponent shall ensure that it meets the standards and/or limits as set out in the authorizing agencies' permits or licences as required for this project.

Water courses/Water bodies (including fresh and marine waters) *(updated)*

5. *(updated)* The Proponent shall not extract water from any fish-bearing water body unless the water intake hose is equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams should not be used for water withdrawal unless otherwise authorized by the appropriate authorizing agency.
6. *(updated)* The Proponent shall ensure that no disturbance of the stream bed, lakebed or the banks of any definable watercourse be permitted, except where deemed necessary for maintaining project-specific operational commitments or approved by a responsible authority in cases of spill management.

Waste Disposal/Incineration

7. *(updated)* The Proponent shall manage all hazardous and non-hazardous waste including food, domestic wastes, debris and petroleum-based chemicals (e.g., greases, gasoline, glycol-based

antifreeze) in such a manner to avoid release into the environment and access to wildlife at all times until disposed of appropriately or at an approved facility.

8. (*updated*) The Proponent shall incinerate all combustible wastes as needed and dispose of as required by the appropriate authorizing agencies. All non-combustible wastes from the project site shall be removed to an approved facility for disposal.
9. The Proponent shall ensure that no waste oil/grease is incinerated on site.

Fuel and Chemical Storage

10. (*updated*) The Proponent shall locate all fuel and other hazardous materials a minimum distance away from the high-water mark of any water body and environmentally sensitive areas as required by the appropriate authorizing agencies. The materials shall be stored in such a manner as to prevent their release into the environment.
11. (*updated*) The Proponent shall ensure that re-fuelling of all equipment occurs a minimum distance away from the high-water mark of any water body as required by the appropriate authorizing agencies.
12. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
13. 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.
14. (*updated*) The Proponent shall have a Spill Contingency Plan in place at all fuel storage or transfer locations and shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available.
15. (*updated*) The Proponent shall ensure that all spills of fuel or other deleterious materials of 100 litres or more must be reported immediately to the 24-hour Spill Line at (867) 920-8130.

Wildlife - General

16. (*updated*) The Proponent shall not substantially alter or damage or destroy any wildlife habitat in conducting this operation unless otherwise authorized by the appropriate authorizing agencies.
17. (*updated*) The Proponent shall not chase, weary, harass or molest wildlife. This includes persistently circling, chasing, hovering over, pursuing or in any other way harass wildlife, or disturbing large groups of animals.
18. (*updated*) The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.

Migratory Birds and Raptors Disturbance

19. (*updated*) The Proponent shall carry out all phases of the project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions

in applying the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*.

20. (*updated*) 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. (*updated*) The Proponent shall avoid the seaward site of seabird colonies and areas used by flocks of migrating waterfowl, a minimum distance away on the recommendation of the appropriate authorizing agencies.
23. The Proponent shall ensure its aircraft avoid excessive hovering or circling over areas where bird presence is likely.

Aircraft Flight Restrictions

24. (*updated*) The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum flight altitude of 610 metres (2,100 ft) above ground level except during landing, take-off or if there is a specific requirement for low-level flying, which does not disturb wildlife or migratory birds.
25. (*updated*) The Proponent shall avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of 1.5 kilometre. If avoidance is not possible maintain a minimum flight altitude of 1,100 metres (3,500 feet) over these areas.
26. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
27. 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 Muskoxen Disturbance

28. (*updated*) The Proponent shall avoid interfering with any paths or crossings known to be frequented by caribou during periods of migration as identified by current land use plans in place and/or by Inuit Qaujimaningit.
29. (*updated*) The Proponent shall not locate any operation or undertake activities that could block or cause any diversion to migration of caribou or muskoxen.
30. (*updated*) The Proponent shall immediately cease activities likely to interfere with the migration or calving of caribou or muskoxen until such time as the caribou or muskox have passed.

Ground Disturbance

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.

31. The Proponent shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles must be suspended if rutting occurs.

Temporary Camps and Land Use

32. *(updated)* The Proponent shall ensure that all camps are located durable surfaces, such as gravel or sand that is consolidated and can withstand repeated, heavy use. Measures shall be put in place to prevent erosion, trail formation and damage to the ground.

33. *(updated)* The Proponent shall not erect camps or store materials on the surface ice of lakes or streams, except that which is for immediate use.

34. The Proponent shall ensure that the land use area is kept clean and tidy at all times.

Land Use and Restoration of Disturbed Areas *(updated)*

35. *(updated)* The Proponent shall remove all garbage, fuel and equipment at the end of each field season and/or upon completion of work and/or upon abandonment.

36. *(updated)* The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state using Best Available Technology Economically Achievable (BATEA) upon completion of work and/or abandonment.

Other

37. The Proponent should consult with local residents regarding their activities in the area and solicit available Inuit Qaujimaningit and information that can inform project activities.

38. The Proponent should, to the extent possible, hire local people.

39. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.

In addition to the previously issued terms and conditions, the Board recommends the following project-specific terms and conditions:

General

40. The Proponent shall ensure that all personnel, staff and contractors are adequately trained prior to commencement of all project activities, and shall be made aware of all operational plans, management plans, guidelines and Proponent commitments relating to the project.

Water courses/Water bodies (including fresh and marine waters)

41. The Proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes (including wastewater) or sediment into any water body. The Proponent should have in place an Emergency Spill Response Plan that is approved by the appropriate authorizing agency(ies).

Fuel and Chemical Storage

42. All fuel and chemical storage containers must be clearly marked with the Proponent's name for ease of identification.

43. The Proponent shall follow the authorizing agencies' direction for management and removal of hazardous materials and wastes (e.g., contaminated soils, sediment and waste oil).

Aircraft Flight Restrictions

44. The Proponent shall not alter flight paths to approach wildlife and avoid flying directly over animals.
45. The Proponent shall plan flight paths that minimize flights over known habitat likely to have birds or concentrations of wildlife. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.

Marine-Based Activities

46. The Proponent shall ensure that noise be kept to a minimum and shall refrain from making sharp or loud noises, blowing horns or whistles and shall maintain constant engine noise levels.
47. The Proponent shall not visit cliffs used by nesting and breeding birds during the late afternoon or early evening hours during the months of August and September.
48. The Proponent shall not attempt to intersect or interfere with the movements of marine mammals. This includes ensuring that there are no wake zones within 250 metres and a minimum of 100 metre no go zone around marine mammals. Strategic positioning of vessels ahead of the path being traveled by mobile mammals and waiting for the mammals to pass is also prohibited.
49. When marine mammals appear to be trapped or disturbed by vessel movements, the Proponent shall implement appropriate measures to mitigate disturbance, including stoppage of movement until wildlife have moved away from the immediate area.
50. The Proponent shall maintain a distance of 100 metres if a Polar Bear is encountered on land or ice while conducting activities from a zodiac or other small craft; all interaction with Polar Bears should be avoided if possible.
51. The Proponent shall maintain a distance of 500 metres of a walrus haul out while conducting activities from a zodiac or other small craft.
52. The Proponent shall report all incidents, injuries or sightings of marine mammals to the appropriate authorizing agencies.

Heritage Sites

53. The Proponent shall ensure that archaeological and paleontological sites are not purposely or inadvertently disturbed by clients or staff as a result of project activities.
54. The Proponent shall ensure that all clients and staff are aware of the Proponent's responsibilities and requirements regarding archaeological or palaeontological sites that are encountered during land-based activities. This should include briefings explaining the prohibitions regarding removal of artifacts, and defacing or writing on rocks and infrastructure.

OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board has previously recommended the following on June 20, 2016:

Bear and Carnivore Safety

1. (*updated*) The Proponent should review the Government of Nunavut’s booklet on Bear Safety, which can be downloaded from this link: http://gov.nu.ca/sites/default/files/bear_safety_-_reducing_bear-people_conflicts_in_nunavut.pdf. Further information on bear/carnivore detection and deterrent techniques can be found in the “*Safety in Grizzly and Black Bear Country*” pamphlet, which can be downloaded from this link: https://www.enr.gov.nt.ca/sites/enr/files/resources/safety_in_grizzly_and_black_bear_country_english.pdf.
2. (*updated*) There are polar bear and grizzly bear safety resources available from the Bear Smart Society with videos on polar bear safety available in English, French and Inuktitut at <http://www.bearsmart.com/play/safety-in-polar-bear-country/>. Information can also be obtained from Parks Canada’s website on bear safety at the following link: <http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/d.aspx> or in reviewing the “*Safety in Polar Bear Country*” pamphlet, which can be downloaded from the following link: http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/~media/pn-np/nu/auyuittuq/pdf/shared/PolarBearSafety_English.ashx.
3. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officer of Resolute Bay, phone: (867) 252-3879).

Species at Risk

4. (*updated*) The Proponent review Environment and Climate Change Canada’s “Environment Assessment Best Practice Guide for Wildlife at Risk in Canada”, available at the following link: http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf. The guide provides information to the Proponent on what is required when Wildlife at Risk, including *Species at Risk*, are encountered or affected by the project.

Migratory Birds

5. (*updated*) The Proponent review Canadian Wildlife Services’ “Key migratory bird terrestrial habitat sites in the Northwest Territories and Nunavut”, available at the following link: <http://publications.gc.ca/site/eng/317630/publication.html> and “Key marine habitat sites for migratory birds in Nunavut and the Northwest Territories”, available at the following link: <http://publications.gc.ca/site/eng/392824/publication.html>. The guide provides information to the Proponent on key terrestrial and marine habitat areas that are essential to the welfare of various migratory bird species in Canada.
6. (*updated*) For further information on how to protect migratory birds, their nests and eggs when planning or carrying out project activities, consult Environment and Climate Change Canada’s Incidental Take web page and the fact sheet “Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs” available at: http://publications.gc.ca/collections/collection_2013/ec/CW66-324-2013-eng.pdf.

Incineration of Wastes

7. The Proponent review Environment and Climate Change Canada’s “Technical Document for Batch Waste Incineration”, available at the following link: <http://www.ec.gc.ca/gdd->

mw/default.asp?lang=En&n=F53EDE13-1. The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting.

Transport of Waste/Dangerous Goods and Waste Management

8. Environment and Climate Change Canada recommends that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.
9. The Proponent shall ensure that a waste manifest or the appropriate transportation of dangerous goods (TDG) documentation accompany all potential hazardous samples and/or materials that are transported off site. Further, the Proponent shall ensure that the shipment of waste is registered with the Government of Nunavut Department of Environment (GN-DoE). Contact the Manager of Pollution Control and Air Quality at (867) 975-7748 to obtain a manifest if hazardous waste will be generated during project activities.

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Carleton University's (Carleton) "Arctic coastal and drifting ice processes and dynamics". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated July 13, 2023 at Baker Lake, NU.



Kaviq Kaluraq, Chairperson

Attachments: Appendix A: Previously Screened Project Proposals
Appendix B: Species at Risk in Nunavut
Appendix C: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

APPENDIX A: PREVIOUSLY-SCREENED PROJECT PROPOSALS

| NIRB File No. | NIRB received NPC Conformity | Screening Decision Issued | Notes |
|---------------|---------------------------------|------------------------------|---|
| 08YN010 | February 4, 2008 | March 26, 2008 | |
| 08YN010 | December 12, 2008 | January 27, 2009 | Amendment |
| 08YN010 | March 28, 2014 | May 2, 2014 | Amendment |
| 08YN010 | April 21, 2016 | June 20, 2016 | Amendment Updated Terms and Conditions issued |

The current scope of the Project includes the following undertakings, works or activities:

- Glaciers to be studied to include glaciers on Axel Heiberg, Ellesmere and Devon Islands with installation of instruments at Trinity Glacier to occur in August 2016;
- Research activities to include the following to measure glacier motion and changes to ice cover:
 - Differential Global Positioning Systems (dGPS) to measure ice movement;
 - Chemical analyses of samples collected via shallow ice-coring with the use of an ice auger;
 - Operation of time-lapse cameras to monitor glacier melt and iceberg calving;
 - Installation of temporary weather stations to monitor ice-climate interactions;
 - Use of ground-penetrating radar to measure ice thickness and snow;
 - Installation of ablation stakes to measure snow and ice melt and accumulation;
- Use of twin otter and helicopter to transport personnel and equipment to and from field sites;
- Use of snowmobiles and komatiks to transport personnel to and from glaciers, ice shelves and sea ice;
- Use of the McGill Arctic Research Station camp facilities at Expedition Fiord on Axel Heiberg Island for two (2) to six (6) weeks/year;
- Set-up of temporary camp (3 sleeping accommodation and 1 kitchen) at Purple Valley, Northern Ellesmere Island for two (2) weeks/year;
- Transportation, storage and use of 135 gallons diesel, 135 gallons gasoline, 540 gallons aviation fuel and 300 pounds propane;
- Incineration of combustible and sewage wastes with ash removed;
- Grey water to be disposed in sump;
- All other wastes to be removed from research sites; and
- Use of water for domestic purposes

APPENDIX B: SPECIES AT RISK IN NUNAVUT

Due to the requirements of Section 79(2) of the Species at Risk Act (SARA), and the potential for project-specific adverse effects on listed wildlife species and its critical habitat, measures should be taken as appropriate to avoid or lessen those effects, and the effects need to be monitored. Project effects could include species disturbance, attraction to operations and destruction of habitat. This section applies to all species listed on Schedule 1 of SARA, as listed in the table below, or have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which may be encountered in the project area. This list may not include all species identified as at risk by the Territorial Government. The following points provide clarification on the applicability of the species outlined in the table.

- Schedule 1 is the official legal list of Species at Risk for SARA. SARA applies to all species on Schedule 1. The term “listed” species refers to species on Schedule 1.
- Schedule 2 and 3 of SARA identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are “pending” addition to Schedule 1 of SARA. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the species at risk Registry at <http://www.sararegistry.gc.ca> for information on specific species.

Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of species at risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.

For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.

Mitigation and monitoring measures must be undertaken in a way that is consistent with applicable recovery strategies and action/management plans.

Schedules of SARA are amended on a regular basis so it is important to check the SARA registry (www.sararegistry.gc.ca) to get the current status of a species.

Updated: September 2019

| Terrestrial Species at Risk ² | COSEWIC Designation | Schedule of SARA | Government Organization with Primary Management Responsibility ³ |
|---|---------------------|------------------|---|
| Migratory Birds | | | |
| Buff-breasted Sandpiper | Special Concern | Schedule 1 | Environment and Climate Change Canada (ECCC) |
| Common Nighthawk | Threatened | Schedule 1 | ECCC |
| Eskimo Curlew | Endangered | Schedule 1 | ECCC |
| Harlequin Duck | Special Concern | Schedule 1 | ECCC |
| Harris's Sparrow | Special Concern | Schedule 1 | ECCC |
| Horned Grebe | Special Concern | Schedule 1 | ECCC |
| Ivory Gull | Endangered | Schedule 1 | ECCC |
| Olive-sided Flycatcher | Threatened | Schedule 1 | ECCC |
| Peregrine Falcon | Special Concern | Schedule 1 | ECCC |
| Red Knot Islandica Subspecies | Special Concern | Schedule 1 | ECCC |
| Red-necked Phalarope | Special Concern | Schedule 1 | ECCC |
| Ross's Gull | Threatened | Schedule 1 | ECCC |
| Rusty Blackbird | Special Concern | Schedule 1 | ECCC |
| Short-eared Owl | Special Concern | Schedule 1 | ECCC |
| Vegetation | | | |
| Porsild's Bryum | Threatened | Schedule 1 | Government of Nunavut (GN) |
| Arthropods | | | |
| Transverse Lady Beetle | Special Concern | No Schedule | GN |
| Terrestrial Wildlife | | | |
| Caribou (Dolphin and Union Population) | Endangered | Schedule 1 | GN |
| Caribou (Barren-ground Population) | Threatened | No Schedule | GN |
| Caribou (Torngat Mountains Population) | Endangered | No Schedule | GN |
| Grizzly Bear (Western Population) | Special Concern | Schedule 1 | ECCC |
| Peary Caribou | Endangered | Schedule 1 | GN |
| Polar Bear | Special Concern | Schedule 1 | ECCC |
| Wolverine | Special Concern | Schedule 1 | GN |
| Marine Wildlife | | | |
| Atlantic Walrus (High Arctic Population) | Special Concern | No Schedule | Fisheries and Oceans Canada (DFO) |
| Atlantic Walrus (Central/Low Arctic Population) | Special Concern | No Schedule | DFO |
| Beluga Whale (Cumberland Sound Population) | Threatened | Schedule 1 | DFO |
| Beluga Whale (Eastern Hudson Bay Population) | Endangered | No Schedule | DFO |

² The Department of Fisheries and Oceans has responsibility for aquatic species.

³ Environment and Climate Change Canada (ECCC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

| Terrestrial Species at Risk² | COSEWIC Designation | Schedule of SARA | Government Organization with Primary Management Responsibility³ |
|--|----------------------------|-------------------------|---|
| Beluga Whale (Eastern High Arctic-Baffin Bay Population) | Special Concern | No Schedule | DFO |
| Beluga Whale (Western Hudson Bay Population) | Special Concern | No Schedule | DFO |
| Fish | | | |
| Atlantic Cod (Arctic Lakes Population) | Special Concern | No Schedule | DFO |
| Fourhorn Sculpin (Freshwater Form) | Data Deficient | Schedule 3 | DFO |
| Lumpfish | Threatened | No Schedule | DFO |
| Thorny Skate | Special Concern | No Schedule | DFO |

**APPENDIX C: ARCHAEOLOGICAL AND PALAEOLOGICAL RESOURCES TERMS AND
CONDITIONS FOR LAND USE PERMIT HOLDERS**



INTRODUCTION

The Department of Culture and Heritage (CH) routinely reviews land use applications sent to the Nunavut Water Board, Nunavut Impact Review Board and the Indigenous and Northern Affairs Canada. These terms and conditions provide general direction to the permittee/proponent regarding the appropriate actions to be taken to ensure the permittee/proponent carries out its role in the protection of Nunavut’s archaeological and palaeontological resources.

TERMS AND CONDITIONS

- 1) The permittee/proponent shall have a professional archaeologist and/or palaeontologist perform the following **Functions** associated with the **Types of Development** listed below or similar development activities:

| | Types of Development (See Guidelines below) | Function (See Guidelines below) |
|----|---|--|
| a) | Large scale prospecting | Archaeological/Palaeontological Overview Assessment |
| b) | Diamond drilling for exploration or geotechnical purpose or planning of linear disturbances | Archaeological/Palaeontological Overview Assessment and/or Inventory and Documentation and/or Mitigation |
| c) | Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities | Archaeological/Palaeontological Overview Assessment and/or Inventory and Documentation and/or Mitigation |

Note that the above-mentioned functions require either a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit. CH is authorized by way of the *Nunavut and Archaeological and Palaeontological Site Regulations*⁴ to issue such permits.

⁴P.C. 2001-1111 14 June, 2001

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.
- 3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
- 4) The permittee/proponent shall immediately contact CH at (867) 934-2046 or (867) 975-5500 should an archaeological site or specimen, or a palaeontological site or fossil, be encountered or disturbed by any land use activity.
- 5) The permittee/proponent shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation until permitted to proceed with the authorization of CH.
- 6) The permittee/proponent shall follow the direction of CH in restoring disturbed archaeological or palaeontological sites to an acceptable condition. If these conditions are attached to either a Class A or B Permit under the Territorial Lands Act Indigenous and Northern Affairs Canada directions will also be followed.
- 7) The permittee/proponent shall provide all information requested by CH concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.
- 8) The permittee/proponent shall make best efforts to ensure that all persons working under its authority are aware of these conditions concerning archaeological sites and artifacts and palaeontological sites and fossils.
- 9) If a list of recorded archaeological and/or palaeontological sites is provided to the permittee/proponent by CH as part of the review of the land use application the permittee/proponent shall avoid the archaeological and/or palaeontological sites listed.
- 10) Should a list of recorded sites be provided to the permittee/proponent, the information is provided solely for the purpose of the proponent's land use activities as described in the land use application, and must otherwise be treated confidentially by the proponent.

Legal Framework

As stated in Article 33 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*:

Where an application is made for a land use permit in the Nunavut Settlement Area, and there are reasonable grounds to believe that there could be sites of archaeological importance on the lands affected, no land use permit shall be issued without written consent of the Designated Agency. Such consent shall not be unreasonably withheld. [33.5.12]

Each land use permit referred to in Section 33.5.12 shall specify the plans and methods of archeological site protection and restoration to be followed by the permit holder, and any other conditions the Designated Agency may deem fit. [33.5.13]

Palaeontology and Archaeology

Under the *Nunavut Act*⁵, the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*⁶, it is illegal to alter or disturb any palaeontological or archaeological site in Nunavut unless permission is first granted through the permitting process.

Definitions

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

“archaeological site” means a place where an archaeological artifact is found.

“archaeological artifact” means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement).

“palaeontological site” means a site where a fossil is found.

“fossil” includes:

Fossil means the hardened or preserved remains or impression of previously living organisms or vegetation and includes:

- (a) natural casts;*
- (b) preserved tracks, coprolites and plant remains; and*
- (c) the preserved shells and exoskeletons of invertebrates and the preserved eggs, teeth and bones of vertebrates.*

Guidelines for Developers for the Protection of Archaeological Resources in the Nunavut Territory

(Note: Partial document only, complete document at: www.ch.gov.nu.ca/en/Archaeology.aspx)

Introduction

The following guidelines have been formulated to ensure that the impacts of proposed developments upon heritage resources are assessed and mitigated before ground surface altering activities occur. Heritage resources are defined as, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings and cairns. Effective collaboration between the developer, the Department of Culture, and Heritage (CH), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CH is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and

⁵ s. 51(1)

⁶ P.C. 2001-1111 14 June, 2001

the federal government. Its role in mitigating impacts of developments on heritage resources is as follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals prepared to undertake the study to the developer; issue an archaeologist or palaeontologist permit authorizing field work; assess the completeness of the study and its recommendations; and ensure that the developer complies with the recommendations.

The primary regulatory agencies that CH provides information and assistance to are the Nunavut Impact Review Board, for development activities proposed for Inuit Owned Lands (as defined in Section 1.1.1 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*), and the Indigenous and Northern Affairs Canada, for development activities proposed for federal Crown Lands.

A developer is the initiator of a land use activity. It is the obligation of the developer to ensure that a qualified archaeologist or palaeontologist is hired to perform the required study and that provisions of the contract with the archaeologist or palaeontologist allow permit requirements to be met; i.e. fieldwork, collections management, artifact and specimen conservation, and report preparation. On the recommendation of the contract archaeologist or palaeontologist in the field and the Government of Nunavut, the developer shall implement avoidance or mitigative measures to protect heritage resources or to salvage the information they contain through excavation, analysis, and report writing. The developer assumes all costs associated with the study in its entirety.

Through his or her active participation and supervision of the study, the contract archaeologist or palaeontologist is accountable for the quality of work undertaken and the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

Types of Development

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*
- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*

- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*
- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources.*

Types of Studies Undertaken to Preserve Heritage Resources

Overview: An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

Reconnaissance: This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may indicate a very low or negligible heritage resource potential. Alternately, in the case of small-scale or linear developments, an inventory study may be recommended and obviate the need for a reconnaissance.

The main goal of a reconnaissance study is to provide baseline data for the verification of the presence of potential heritage resources, the determination of impacts to these resources, the generation of terms of reference for further studies and, if required, the advancement of preliminary mitigative and compensatory plans. The results of reconnaissance studies are primarily useful for the selection of alternatives and secondarily as a means of identifying impacts that must be mitigated after the final siting and design of the development project. Depending on the scope of the study, a Class 1 or Class 2 Permit is required for this type of investigation.

Inventory: A resource inventory is generally conducted at that stage in a project's development at which the geographical area(s) likely to sustain direct, indirect, and perceived impacts can be well defined. This requires systematic and intensive fieldwork to ascertain the effects of all possible and alternate construction components on heritage resources. All heritage sites must be recorded on Government of Nunavut Site Survey forms. Sufficient information must be amassed from field, library and archival components of the study to generate a predictive model of the heritage resource base that will:

- allow the identification of research and conservation opportunities;
- enable the developer to make planning decisions and recognize their likely effects on the known or predicted resources; and
- make the developer aware of the expenditures, which may be required for subsequent studies and mitigation. A Class 1 or 2 permit is required.

Assessment: At this stage, sufficient information concerning the numbers and locations of heritage resources will be available, as well as data to predict the forms and magnitude of impacts. Assessments provide information on the size, volume, complexity and content of a heritage resource, which is used to rank the values of different sites or site types given current archaeological knowledge. As this information will shape subsequent mitigation program(s), great care is necessary during this phase.

Mitigation: This refers to the amelioration of adverse impacts to heritage resources and involves the avoidance of impact through the redesign or relocation of a development or its components; the protection of the resource by constructing physical facilities; or, the scientific investigation and recovery of information from the resource by excavation or other method. The type(s) of appropriate mitigative measures are dictated by their viability in the context of the development project. Mitigation strategies must be developed in consultation with, and approved by, the Department of Culture and Heritage. It is important to note that mitigation activities should be initiated as far in advance of the construction of the development as possible.

Surveillance and monitoring: These may be required as part of the mitigation program.

Surveillance may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

Monitoring involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.