**SCREENING DECISION REPORT**
**NIRB FILE No.: 18YN019**

NPC File No.: 148780

**May 22, 2018**

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of the University of Winnipeg's "Impacts of wastewater at Baker Lake, Nunavut" project proposal is not required pursuant to paragraph 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(s) accepts this Screening Decision Report.

## OUTLINE OF SCREENING DECISION REPORT


1) REGULATORY FRAMEWORK
2) PROJECT REFERRAL
3) PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS
4) ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NUPPAA*
5) VIEWS OF THE BOARD
6) RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS
7) OTHER NIRB CONCERNS AND RECOMMENDATIONS
8) REGULATORY REQUIREMENTS
9) CONCLUSION


## REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (*Nunavut Agreement*) and are confirmed by section 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 section 88 of the *NuPPAA*:

> *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 subsection 89(1) of *NuPPAA*:

> *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 subsection 89(2) of the *NuPPAA* provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b) of the *NuPPAA*.

As set out under subsection 92(1) of the *NuPPAA*, upon conclusion of the screening process, the Board must provide its written report the Minister:

> *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 20, 2018 the NIRB received a referral to screen the University of Winnipeg's "Impacts of wastewater at Baker Lake, Nunavut" project proposal from the Nunavut Planning Commission (NPC or Commission), with an accompanying positive conformity determination with the Keewatin Regional Land Use Plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Nunavut Agreement* and section 87 of the *NuPPAA*, the NIRB commenced screening this project proposal and assigned it file number 18YN019.

## PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

### 1. Project Scope

The proposed "Impacts of wastewater at Baker Lake, Nunavut" project is located within the Kivalliq region, within approximately two (2) kilometres (km) of the community of Baker Lake and within its municipal boundaries. The Proponent intends to conduct water sampling to study the impacts of wastewater releases on water quality into Baker Lake. The program is proposed to take place from June to September, 2018 and 2019.

As required under subsection 86(1) of the *NuPPAA*, the Board accepts the scope of the "Impacts of wastewater at Baker Lake, Nunavut" project as set out by the University of Winnipeg in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Collection of water samples (approximately one (1) Litre (L)) from the wastewater lagoon, two (2) reference lakes upstream of the lagoon, Finger Lake inflow and outflow, Airplane Lake inflow and outflow, Baker Lake inflow, Baker Lake receiving water, and the shoreline of Baker Lake;
- Temporary installation of growth meters and passive samplers in the water, secured with buoys or poles if necessary, to measure algal production, chemical contaminants and water flow rates;
- Addition of approximately 1 L of non-toxic, water-soluble dye to the lagoon to characterize flow direction;
- Characterizing vegetation (species identification and counts) in one metre by one metre (1 m x 1 m) sample quadrats near the lagoon and the upstream reference sites;
- Collection of small samples of soil near the vegetation study areas;
- Use of a pickup truck and small boat hired through the Baker Lake Hunters and Trappers Organization (HTO) to access sampling sites;
- Use of approximately 50 L of diesel fuel for the boat and approximately 100 L of gasoline for the truck; and
- Use of accommodations and facilities in Baker Lake for two (2) to three (3) personnel.

### 2. 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.

## 3. Key Stages of the Screening Process

The following key stages were completed:

| Date | Stage |
|---|---|
| March 20, 2018 | Receipt of project proposal and positive conformity determination (Keewatin Land Use Plan) from the NPC |
| March 20, 2018 | Information request |
| April 11, 2018 | Proponent responded to information request |
| April 11, 2018 | Scoping pursuant to subsection 86(1) of the *NuPPAA* |
| April 23, 2018 | Public engagement and comment request |
| May 3, 2018 | Receipt of public comments |

## 4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project was distributed on April 23, 2018 to community organizations in Baker Lake, 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 May 3, 2018 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.

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

**Fisheries and Oceans Canada (DFO)**

- Not aware of any significant public concern at this stage of review and has no concerns with the Project as proposed.
- Provided that the Project is implemented in the manner, and during the timeframe described, the Project would not result in serious harm to fish or prohibited effects on listed aquatic species at risk.
- No concerns on the amount of water taking outlined by the Proponent.
- Noted that DFO-FPP must be notified by the Proponent if it has caused or is about to cause serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery.

**Indigenous and Northern Affairs Canada (INAC)**

- No comments or additional terms and conditions to offer.

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

No concerns or comments were received with respect to Inuit Qaujimaningit or traditional and community knowledge in relation to the proposed project.

## ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *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 section 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:

1. *The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.*

   The proposed research activities would occur within the municipal boundaries of Baker Lake, limited to in-water or on-shore sampling at the following sites: the wastewater lagoon, two (2) lakes upstream of the lagoon, Finger Lake inflow and outflow, Airplane Lake inflow and outflow, Baker Lake inflow, Baker Lake receiving water, and the shoreline of Baker Lake. The proposal also involves the use of existing roads to access on-shore sampling sites and a small boat to visit offshore sites. Proposed project activities may overlap habitat for fish, migratory and non-migratory birds, and small mammals, and may potentially affect animal migration patterns. Muskox and caribou are found in the region and occasionally in the area, but due to the project's proximity to the community of Baker Lake and the focus on aquatic ecosystems, it is unlikely that muskox and caribou would interact with the proposed project activities.

2. *The ecosystemic sensitivity of that area.*

   The proposed project would occur within the municipal boundaries of Baker Lake in area with no particular identified ecosystemic sensitivity. However, the area has been identified by the Proponent and/or from NPC's online mapping data as having value and priority to the local community for:

   i. Fish and fish habitat;
   ii. Large rivers connected to Baker Lake (Kazan, Thelon, and Quoich Rivers);
   iii. Water quality (Baker Lake is the source of the Hamlet's drinking water);
   iv. Berry picking in non-disturbed areas;
   v. Muskox, caribou, and wildlife hunting in surrounding areas.

3. *The historical, cultural and archaeological significance of that area.*

   Neither the Proponent nor any parties that submitted comments for this project identified any known areas of historical, cultural and archaeological significance associated with the project area. Should the project be approved to proceed, the Proponent would be required to conduct an archaeological assessment of the project area, and contact the Government of Nunavut-Department of Culture and Heritage if any sites of historical, cultural or archaeological significance are encountered.

4. *The size of the human and the animal populations likely to be affected by the impacts.*

   Although no significant public concerns were raised during the public commenting period, the NIRB notes that the close proximity of the proposed activities to the community of Baker Lake could potentially contribute to public concern developing. Baker Lake is used by community members in summer and winter for boating, fishing, snowmobiling, ice-fishing, and collection of water and ice by individuals for drinking water. Baker Lake is also the community's drinking water source. Other nearby lakes in the area, including Airplane Lake, provide opportunities for birding and photography. A term and condition has been recommended to direct engagement with the community, hunters and trappers organization and interested parties, as well as the posting of public notices to ensure residents are aware of the research activities being or to be conducted.

5. *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.*

   As the proposed "Impacts of wastewater at Baker Lake, Nunavut" project is a research project focused on the collection of small water, vegetation, and soil samples, the nature of potential impacts is considered to be well-known. Potential adverse impacts are likely to be localized, of low magnitude, infrequent and restricted to the short period of project activities in each field season (approximately three (3) weeks). Based on past evidence of similar scope of activities, the probability of adverse impacts is low, and any such impacts are likely to be reversible and mitigable with due care.

6. *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.*

   The proposed project would take place within a 100 kilometre radius to a number of other current or recently active projects that have been assessed by the Board, as listed in Table 1 below. However, it is noted that this project is not likely to result in residual or cumulative impacts. The potential for cumulative impacts to water quality, fish and fish habitat, and migratory and non-migratory birds, resulting from the research activities and from other projects occurring in the region has been identified and considered in the development of the NIRB's recommendations. Terms and conditions recommended for each of these projects

are expected to reduce any residual impacts, and as such would limit or eliminate the potential for cumulative effects to occur.

**Table 1: Project List**

| NIRB Project Number | Project Title | Project Type |
|---|---|---|
| ***Active Projects*** | | |
| 03MN107 | Meadowbank Gold Mine | Mine |
| 16QN069 | Baker Lake Landfarm and Interceptor Trench | Quarry |
| 17EN029 | Gibson-MacQuoid Project | Mineral Exploration |
| ***Past Projects*** | | |
| 17EN020 | Meadowbank Precious Metal | Mineral Exploration |
| 16YN067 | Synthesis of Glacial History and Dynamics in the Rae Geological Province | Research |

7. *Any other factor that the Board considers relevant to the assessment of the significance of impacts.*

   No other specific factors have been identified as relevant to the assessment of this project proposal.

## 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.

**Administrative Conditions:**

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the following project-specific terms and conditions have been recommended: 1-4.

**Ecosystem, wildlife habitat and Inuit harvesting activities:**

**Issue 1:** Potential adverse impacts to migratory and non-migratory birds and small mammals and their associated habitat from the transport of personnel and equipment to research sites by truck or boat and from the presence of personnel in and near the selected waterbodies.

Board views: There is the potential for the project to adversely impact small mammals and birds due to noise and disturbance from the truck and small boat and the presence of personnel in and near water when taking samples. However, as discussed above, the potential for impacts is applicable to small geographic area and a short time period

(several weeks in the summer). Potential adverse impacts related to noise and disturbance are anticipated to be low in magnitude and infrequent in occurrence.

The Proponent would also be required to follow the *Migratory Birds Convention Act*, the *Migratory Birds* Regulations, the *Species at Risk Act*, and the *Wildlife Act (Nunavut)*.

Recommended Mitigation Measures: It is recommended that the potential adverse impacts may be mitigated by requiring the Proponent to avoid and not interfere with wildlife and birds and to take steps to avoid damaging wildlife habitat. The NIRB recommends the following terms and conditions to mitigate the potential adverse impacts to wildlife due to research activities: 7, 8, and 11 through 18. In addition, term and condition 23 is recommended to mitigate potential adverse impacts from noise.

**Issue 2:** Potential adverse impacts to water quality and fish and fish habitat from the use of small boat and collection of water samples, and to vegetation health and soil quality from the use of a vehicle to access research sites and potential fuel spills during refuelling activities.

Board views: There is the potential for the project to adversely impact freshwater ecosystems and the land due to fuel spills when refuelling the small boat to be used when accessing sampling sites. In addition, there is potential for adverse impacts to the surrounding areas from the use of a vehicle to transport personnel to research sites. The potential for impacts is applicable to small geographic areas within the project footprint and the probability of impacts occurring is considered to be low, with potential adverse effects anticipated to be low in magnitude, infrequent in occurrence and reversible in nature.

The Proponent would be required to follow the *Fisheries Act* and *Nunavut Waters and Nunavut Surface Rights Tribunal Act*.

Recommended Mitigation Measures: It is recommended that the potential adverse impacts may be mitigated by requiring the Proponent to properly store, use, and transport fuel and hazardous materials. Further, the potential adverse impacts may be mitigated by measures requiring the Proponent to ensure wastes are properly disposed of and transported back to the community of Baker Lake; that the sites are kept clean and tidy and that movement of vehicles would only be conducted over ground surfaces that are capable of supporting the vehicles. The NIRB recommends terms and conditions 5 through 10, and 19 through 22 to mitigate the potential adverse impacts to the freshwater ecosystems, vegetation and soils.

**Issue 3:** Potential adverse impacts to public and traditional land use activities in the area due to research activities in Baker Lake and other nearby waterbodies.

Board Views: It is noted that the proposed project would take place within water in close proximity to the community of Baker Lake. However, these activities will be of short duration (several weeks in the summer). If situations arise where the project may

interfere with tradition land use, a term and condition has been recommended to ensure minimal impacts to traditional land use activities.

Recommended Mitigation Measures: Term and condition 24 is recommended to ensure that the affected communities and organizations are informed about the project proposal and term and condition 25 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. In addition terms and conditions 11 through 18 have been recommended to minimize interference with the movements of small mammals, ungulates, and nesting/breeding birds.

**Socio-economic effects on northerners:**

**Issue 4:** Potential adverse impacts to historical, cultural and archaeological sites from research activities.

Board Views: The Proponent is working in an area of no known historical significance. The Proponent would be required to contact the Government of Nunavut-Department of Culture and Heritage when encountering any historical sites and follow the *Nunavut Act* (as recommended in Regulatory Requirements section).

Recommended Mitigation Measures: The Board recommends term and condition 24 to ensure that the potential adverse impacts to historical sites may be mitigated by measures such as soliciting available Inuit Qaujimaningit from local residents.

**Issue 5:** Potential beneficial impacts to the community due to improved water quality in the long-term.

Board Views: The Proponent's proposal notes that the sewage lagoon has been used by the community of Baker Lake as a repository for sewage for more than 30 years. The Proponent also notes that the waters and wetlands downstream of the lagoon are enriched with algae from sewage nutrients, that runoff from the community's solid waste facility has been observed to discharge into Finger Lake and influence metal concentrations downstream, and that community members have expressed concerns about water quality. The Proponent notes that the proposed project should have a net positive impact on the community as it will improve information about the community's sewage wastewater and waters downstream affected by the release of that wastewater. As a result, there is the potential the project could influence future upgrades to waste treatment at Baker Lake, and thus improved human health in the long-term. The Proponent has also committed to share research results with community members.

Recommended Mitigation Measures: Term and condition 24 is recommended to ensure that available Inuit Qaujimaningit can inform project activities.

**Issue 6:** Potential positive impacts to the local community from the sourcing of accommodations for personnel within the community, purchasing of local goods and services, the hiring of local assistants and boat and truck from the Baker Lake Hunters and Trappers Organization (HTO).

Board Views: It is noted that the Proponent has committed to hire individuals and a boat and truck from the local HTO to assist with sampling activities. In addition the Proponent will be sourcing accommodation, and purchasing various goods and services within the community, which will allow the community to increase income and expenditures within the community.

Recommended Mitigation Measures: Terms and conditions 24 and 26 have been recommended to ensure the Proponent continues to inform the community of the research activities and findings as well as provide community members with information to ensure a successful local hiring opportunity.

**Significant public concern:**

**Issue 7:** No significant public concern was expressed during the public commenting period for this file.

**Technological innovations for which the effects are unknown:**

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

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 Board is recommending the following specific terms and conditions to apply in respect of the project:

### General

1. The University of Winnipeg (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
2. The Proponent shall forward copies of all permits obtained and required for this project to the Nunavut Impact Review Board (NIRB) prior to the commencement of the project.
3. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 148780), and the NIRB (Online Application Form, April 10, 2018).

4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

**Water Use**

5. The Proponent shall ensure that water extraction from any fish-bearing waterbody is done with appropriate care and caution. Small lakes or streams should not be used for water withdrawal unless approved by the Nunavut Water Board.
6. 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**

7. 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.

**Fuel and Chemical Storage**

8. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
9. 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.
10. 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.

**Wildlife - General**

11. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
12. 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.
13. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
14. 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.

**Migratory Birds and Raptors Disturbance**

15. The Proponent shall not disturb or destroy the nests or eggs of any birds. If nests are encountered and/or identified, the Proponent shall take precaution to avoid further interaction and or disturbance (e.g., a 100 metres buffer around the nests). If active nests of any birds are discovered (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have left the nest.

16. The Proponent shall avoid the seaward site of seabird colonies and areas used by flocks of migrating waterfowl by three (3) kilometres.

**Caribou and Muskoxen Disturbance**

17. 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.

18. 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.

**Ground Disturbance and Land Use**

19. 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.

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

**Restoration of Disturbed Areas**

21. The Proponent shall remove all garbage, fuel and equipment upon abandonment.

22. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of field work.

**Other**

23. All vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.

24. 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.

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

26. The Proponent should, to the extent possible, hire local people and access local services where possible.

## OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board is recommending the following:

**Change in Project Scope**

1. Responsible authorities or 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.

**Bear and Carnivore Safety**

2. 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: http://www.enr.gov.nt.ca/sites/default/files/web_pdf_wd_bear_safety_brochure_1_may_2015.pdf.

3. 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*.

4. 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 Baker Lake, phone: 867-793-2944).

**Species at Risk**

5. 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**

6. 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.

7. 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://www.ec.gc.ca/paom-itmb/.

## REGULATORY REQUIREMENTS

The Proponent is also advised that the following legislation may apply to the project:

## Acts and Regulations

1. The *Fisheries Act* (http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (http://laws-lois.justice.gc.ca/eng/acts/n-28.8/).
3. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (http://laws-lois.justice.gc.ca/eng/acts/M-7.01/).
4. The *Species at Risk Act* (http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html). Attached in **Appendix A** is a list of Species at Risk in Nunavut.
5. The *Wildlife Act (Nunavut)* and its corresponding regulations (http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html).
6. The *Nunavut Act* (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 B**.

## CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the University of Winnipeg's "Impacts of wastewater at Baker Lake, Nunavut" project proposal. The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated May 22, 2018 at Whale Cove, NU

Elizabeth Copland, Chairperson

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

## Appendix A
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 2017

| Terrestrial Species at Risk [1] | COSEWIC Designation | Schedule of SARA | Government Organization with Primary Management Responsibility [2] |
|---|---|---|---|
| Migratory Birds | | | |
| Buff-breasted Sandpiper | Special concern | Schedule 1 | ECCC |
| Eskimo Curlew | Endangered | Schedule 1 | ECCC |
| Harlequin Duck (Eastern population) | Special Concern | Schedule 1 | ECCC |
| Harris's Sparrow | Special Concern | Pending | ECCC |
| Horned Grebe (Western population) | Special Concern | Schedule 1 | ECCC |
| Ivory Gull | Endangered | Schedule 1 | ECCC |
| Peregrine Falcon | Special Concern (*anatum-tundrius* complex[3]) | Schedule 1 - Schedule 3 | ECCC |
| Red Knot (*islandica* subspecies) | Special Concern | Schedule 1 | ECCC |
| Red Knot (*rufa* subspecies) | Endangered | Schedule 1 | ECCC |
| Red-necked Phalarope | Special concern | Pending | ECCC |
| Ross's Gull | Threatened | Schedule 1 | ECCC |
| Rusty Blackbird | Special Concern | Schedule 1 | ECCC |
| Short-eared Owl | Special Concern | Schedule 1 | ECCC |
| Vegetation | | | |
| Blanket-leaved Willow | Special Concern | Schedule 1 | Government of Nunavut |
| Felt-leaf Willow | Special Concern | Schedule 1 | Government of Nunavut |
| Porsild's Bryum (Moss) | Threatened | Schedule 1 | Government of Nunavut |
| Arthropods | | | |
| Traverse Lady Beetle | Special Concern | Pending | Government of Nunavut |
| Terrestrial Wildlife | | | |
| Caribou (Barren-Ground population) | Threatened | Pending | Government of Nunavut |
| Dolphin and Union Caribou | Special Concern | Schedule 1 | Government of Nunavut |
| Grizzly Bear (Western Population) | Special Concern | Pending | Government of Nunavut |
| Peary Caribou | Endangered | Schedule 1 | Government of Nunavut |
| Peary Caribou (High Arctic Population) | Endangered | Schedule 2 | Government of Nunavut |
| Peary Caribou (Low Arctic Population) | Threatened | Schedule 2 | Government of Nunavut |
| Wolverine | Special Concern | Pending | Government of Nunavut |
| Wolverine (Western population) | Non-active | Pending | Government of Nunavut |
| Marine Wildlife | | | |
| Atlantic Walrus | Special Concern | Pending | DFO |
| Beluga Whale (Cumberland Sound population) | Endangered | Schedule 2 | DFO |
| Beluga Whale (Eastern High Arctic – Baffin Bay population) | Special Concern | Pending | DFO |
| Beluga Whale (Eastern Hudson Bay population) | Endangered | Pending | DFO |

| | | | |
|---|---|---|---|
| Beluga Whale (Southeast Baffin Island – Cumberland Sound population) | Endangered | Schedule 2 | DFO |
| Beluga Whale (Western Hudson Bay population) | Special Concern | Pending | DFO |
| Bowhead Whale (Eastern Arctic population | Endangered | Schedule 2 | DFO |
| Bowhead Whale (Eastern Canada – West Greenland population) | Special Concern | Pending | DFO |
| Killer Whale (Northwest Atlantic / Eastern Arctic populations) | Special Concern | Pending | DFO |
| Narwhal | Special Concern | Pending | DFO |
| Polar Bear | Special Concern | Schedule 1 | Government of Nunavut/DFO |
| Fish | | | |
| Atlantic Cod, Arctic Lakes | Special Concern | Pending | DFO |
| Atlantic Wolffish | Special Concern | Schedule 1 | DFO |
| Bering Wolffish | Special Concern | Schedule 3 | DFO |
| Blackline Prickleback | Special Concern | Schedule 3 | DFO |
| Fourhorn Sculpin | Special Concern | Schedule 3 | DFO |
| Fourhorn Sculpin (Freshwater form) | Data Deficient | Schedule 3 | DFO |
| Northern Wolffish | Threatened | Schedule 1 | DFO |
| Roundnose Grenadier | Endangered | Pending | DFO |
| Spotted Whitefish | Threatened | Schedule 1 | DFO |
| Thorny Skate | Special Concern | Pending | DFO |

[1] The Department of Fisheries and Oceans has responsibility for aquatic species.

[2] Environment Canada (EC) 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.

## Appendix B
## Archaeological and Palaeontological 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 Inventory |
| c) | Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities | Archaeological/ Palaeontological Inventory or Assessment 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*[1] to issue such permits.

2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.

[1] P.C. 2001-1111 14 June, 2001

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*[2], the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under

[2] s. 51(1)

the *Nunavut Archaeological and Palaeontological Sites Regulations*[3], 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 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

[3] P.C. 2001-1111 14 June, 2001

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.