



## SCREENING DECISION REPORT NIRB FILE No.: 15EN052

NPC File No.: 148160

**February 8, 2016**

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of North Arrow Minerals Inc.'s "Luxx Exploration" is not required pursuant to paragraph 92(1)(a) of the *Nunavut Planning and Project Assessment Act* (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 OVERVIEW & NIRB ASSESSMENT PROCESS
- 3) FACTORS FOR DETERMINING SIGNIFICANCE OF IMPACTS
- 4) RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS
- 5) MONITORING AND REPORTING REQUIREMENTS
- 6) OTHER NIRB CONCERNS AND RECOMMENDATIONS
- 7) REGULATORY REQUIREMENTS
- 8) CONCLUSION

### REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the Nunavut Land Claims Agreement (NLCA) as follows:

*"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."*

These objectives are confirmed under section 23 of the NuPPAA.

The purpose of screening is provided for under section 88 of the NuPPAA:

*“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:

*“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) provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b).

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. Specifically, paragraph 92(2)(a) of NuPPAA provides:

*“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 OVERVIEW & THE NIRB ASSESSMENT PROCESS

### 1. Project Description

The proposed “Luxx Exploration” project is located within the Kivalliq region, approximately 60 kilometres (km) west of Chesterfield Inlet and 90 km north of Rankin Inlet. The Proponent intends to conduct exploration activities (ground geophysical survey, prospecting and/or till sampling, delineation and exploration drilling) to gauge the potential for diamond deposits. The program is proposing to take place seasonally from March 2016 to September 2018.

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

- Crew accommodations, aviation fuel purchases, temporary fuel storage, and waste disposal sourced through community services in Chesterfield Inlet;
- Daily helicopter transport of equipment, personnel and fuel as required to and from each target drilling site. Empty fuel barrels would be transported back to Chesterfield Inlet and disposed of appropriately at an approved facility;
- Conduct drilling activities using one (1) drill rig during a one (1) to two (2) week period in April, May, July or August of 2016 with the potential of additional drilling activities in April, May, July or August of 2017 depending on results on the first year's activities;
  - Drilling three (3) to six (6) holes approximately 500-1000 metres total depth at three (3) or four (4) target areas
- Storage in Chesterfield Inlet of the following items in a temporary berm (location yet to be determined):
  - Up to 50 barrels of diesel,
  - Up to 20 barrels of aviation fuel,
  - 3 or 4 x 20 litre jerry cans of gasoline, and
  - 5 x 100 pound tanks of propane
- Use of water from nearby lakes for drilling activities;
- Use and storage of hazardous materials, chemicals and fuel [up to seven (7) barrels of fuel] at drill site(s); and
- Disposal of sludge (drill cuttings and water) in sumps as appropriate or a cuttings-capture system when drilling on-ice.

## 2. Scoping

The NIRB has identified no additional works or activities in relation to the project proposal.

## 3. Key Stages of the Screening Process

The following key stages were completed:

Date	Stage
December 1, 2015	Receipt of project proposal from the NPC
December 1, 2015	Scoping pursuant to subsection 86(1) of the NuPPAA
December 8, 2015	Information request
December 9, 2015	Proponent responded to information request
December 16, 2015	Public engagement and comment request
December 18 2015	Ministerial extension requested
January 15, 2016	Receipt of public comments
January 25, 2016	Ministerial extension granted
January 21, 2016	Proponent responded to comments/concerns raised by public

## 4. Public Comments and Concerns

From December 16, 2015 to January 15, 2016 the NIRB provided opportunity for the public to provide comments and concerns regarding the project proposal. The following is a summary of the comments and concerns received:

## **Government of Nunavut (GN)**

### *Socio Economic*

- Noted that no systematic archaeological reconnaissance has been conducted in this area. Recommended that at minimum an archaeological reconnaissance be conducted within a 50 metres (m) buffer of each proposed drill hole and along the water hose route to the closest water source intake.
- Recommended that no activities be conducted within 50 m of any archeological/historical site.
- Noted that all archaeological sites encountered by recorded and reported to the Department of Culture and Heritage.
- Requested clarification regarding the number of holes to be drilled on-land.

### *Biophysical*

- Recommended all remaining casing are cut to ground level and no structures remain above ground during the winter months/snow covered periods.
- Recommended specific minimum flight altitudes over areas of wildlife occurrence and higher minimum flight altitudes when large concentrations of birds are observed.
- Potential interaction of muskox with project activities with potential displacement from calving areas could have negative effects on muskox breeding. Recommended seasonal restrictions be put in place on project activities.
- Noted the Proponent be aware of the *Species at Risk Act* listed species in the area, specifically Peregrine Falcon and Short-eared Owl and the potential disturbance of raptors and nesting raptors by project activities.
- Recommended Proponent refrain from approaching nesting raptors during the critical nesting periods. Also noted legislation regarding disturbance of nests. Requested the Proponent monitor and report on any wildlife sightings in the area during operations.

## **Fisheries and Oceans Canada (DFO)**

- Recommended the Proponent follow the guidance and implements the appropriate mitigation measures available on the DFO website.
- Reminded the Proponent it is their responsibility to ensure it avoids causing serious harm to fish in compliance with *the Fisheries Act*. Additionally, it is the Proponent's *Duty to Notify* DFO if it has caused, or about to cause, serious harm to fish that are part of, or support, a commercial, recreational or Aboriginal fishery.
- Noted that no formal approval was required for the proposal.

## **Environment and Climate Change Canada (ECCC)**

- Noted that the nesting period for the proposed project's location is mid-May to mid-August and that variations could occur due to climatic conditions.
- Noted the *Migratory Birds Convention Act Regulations* do not provide for authorizations or permits for the incidental take (accidental killing) of migratory birds, their nests or eggs in the course of industrial or other activities. Recommended that if active nests are encountered the nesting area avoided until nesting is complete.
- Provided a website for guidance on avoidance of incidental take of migratory birds.

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

- Recommended the Proponent undertake additional consultation prior to commencing field activities and address previously stated concerns and requests for information.
- Recommended the Proponent consult with the GN in regards to archaeological/paleontological sites in the area and the steps to be taken should any sites be found during the course of the proposed project.
- Recommended the Proponent instruct all field personnel on the importance of locating all human waste a minimum of 31 m away from the normal high water mark of any waterbody due to the long days that personnel would be working.

### **Aqigiq Hunters and Trappers Organization (Aqigiq HTO)**

- Acknowledged the proposal for a small, entry level exploration; however, any impacts could be significant to Chesterfield Inlet.
- Noted that allowing the project to proceed would create precedent for future exploration in the area.
- Noted that no meaningful consultation have taken place to date. Requested that approval not be granted until, at minimum, the Proponent holds a meeting in Chesterfield Inlet to discuss how it would avoid negatively impacting the culture and ecosystem.
- The HTO recommended that the Proponent prepare answers to the following questions prior to a community meeting:
  - Explain what impacts the project proposal could potentially have on marine mammals, caribou, caribou migrations, and caribou water crossings and explain how through project design, monitoring, and mitigation measures it would avoid impacts.
  - Explain what impacts it believes its project proposal could potentially have on fish, fish running, and fish spawning and how through project design, monitoring, and mitigation measures it will avoid these impacts.
  - Explain how it intends to monitor caribou and marine wildlife near the proposed project.
  - Requested information be provided in plain language.
- Noted interest in developing a local commercial fishery.

## **5. Comments and Concerns with respect to Inuit Qaujimaningit**

The following is a summary of the comments and concerns received with respect to Inuit Qaujimaningit:

### **Government of Nunavut (GN)**

- Noted the exploration area is located along a natural transitory corridor between Chesterfield Inlet and Baker Lake and the potential for the presence of archaeological sites along the shores of the inlet could be high.

### **Aqigiq Hunters and Trappers Organization (Aqigiq HTO)**

- The proposed Project area in high cultural and ecological importance.
- Noted importance of project area to wildlife and the community of Chesterfield Inlet and requested meaningful consultation.

- Noted proposed project activities are in an area that is an important hunting and fishing area for Chesterfield Inlet. Further, the Proposed Project area is located along a traditional hunting travel corridor, and there are camping areas and a cabin located near the Project.
- Noted that hunters throughout the Kivalliq region have experiences with hunting being disturbed by low-flying aircraft.
- Expressed concerns regarding low level flying and noted that even small disturbances to sea or land mammals could impact subsistence hunting and culture.
- Noted the area contains important fish habitat and that fish are an important resource for the community.
- Expressed concerns that the project may impact traditional fishing and char spawning/running through habitat destruction, noise disturbance, and contamination.
  - Arctic Char spawn in Pujjuut Lake and run into Chesterfield Inlet in spring and return to the lake in the fall.
- Noted the proposed Project is along a caribou migration route, and near an important caribou water crossing. Caribou migrate through the area in mid-summer and early fall.
- Caribou are sensitive to disturbance at and near major water crossings. Disturbance to caribou migration could negatively impact caribou and disrupt hunting.

#### FACTORS FOR DETERMINING SIGNIFICANCE OF IMPACTS

In determining whether a review of the project is required, the Board considered whether the project proposal had a 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 NuPPAA. The Board took particular attention to take into account traditional knowledge and Inuit Qaujimaningit 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 size of the geographic area for the project proposal ranges to about 25 square kilometres (km<sup>2</sup>) area and does not include a camp for the helicopter-assisted mineral exploration due to the proximity to Chesterfield Inlet. The proposed activities may take place within habitat for many far-ranging wildlife species; however neither the Proponent, nor any of the government agencies or community organizations identified any protected wildlife areas in or near the project area.

2. *The ecosystemic sensitivity of that area.*

The proposed Project would occur in an area with no formal designation for wildlife protection; however, the Aqigiq HTO has noted that the area is an important caribou

migration route and a caribou water crossing which was confirmed by information provided previously by the Government of Nunavut.

This area has also been identified by the Aqigiq HTO as having value and priority to local communities for:

- i. Caribou (migration routes),
- ii. General wildlife,
- iii. Fish and fish habitat (char),
- iv. Traditional hunting and fishing,
- v. Hunting corridor.

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

The project Proponent has indicated that there are no known areas of historical, cultural and archaeological significance associated with the project area; however, the GN has indicated that the project is located along a natural transitory corridor between Chesterfield Inlet and Baker Lake and there is a high potential for the presence of archaeological sites. Should the Project be approved to proceed, the Proponent has committed to consult with the Government of Nunavut for advice on archaeological sites.

The proposed Project would occur near Chesterfield Inlet and in an area that have been identified by the Aqigiq HTO to be an area of importance for the Inuit from Chesterfield Inlet and continue to be used for traditional land use activities.

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

The proposed project would occur approximately 60 kilometres (km) west of Chesterfield Inlet and 90 km north of Rankin Inlet; as such no human populations are likely to be affected by Project impacts. Terrestrial species at risk have been identified as potentially occurring within the project area and may be impacted by the project proposal.

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 “Luxx Exploration “ project is a proposed mineral exploration level project, the nature of potential impacts is considered to be well-known, with potential for infrequent, localized impacts to the biophysical environment that are temporary in nature, 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 areas would take place in proximity to other active mineral exploration nearby (including advanced exploration) in addition to exploration proposal currently being assessed.

Potential for cumulative impacts to caribou migration, muskox and general wildlife resulting from exploration activities (noise and presence of people and equipment), and transportation of equipment, fuel and personnel to the exploration site via helicopter has been identified and considered in development of the recommended mitigation measures set out in the following section. Further, this project proposal could induce additional exploration activities in the area.

*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.

In considering the factors as set out above in the screening of the project proposal, the NIRB has identified a number of issues and provides the following views regarding whether or not the proposed project has the potential to result in significant impacts, and 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.

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

**Issue 1:** Potential negative impacts to caribou and caribou calving habitat, and muskox and muskox habitat from prospecting, diamond drilling activities and daily transport of personnel, fuel and equipment to drill sites by helicopter.

**Board views:** As discussed above in the assessment of factors relevant to this project proposal, the proposed activities may take place within caribou corridors. The impacts from the proposed project may be negative and the Proponent has committed to adhering to the Keewatin Regional Land Use Plan caribou protection measures and to develop a Wildlife Monitoring and Mitigation Plan with Chesterfield Inlet. North Arrow has also committed to minimum flight altitudes and seasonal restrictions and is expected to further mitigate potential adverse impacts to caribou through operational shutdowns if caribou are noted within the area. The NIRB is also recommending that a Wildlife Mitigation and Monitoring Plan be developed (see Monitoring and Reporting Requirements). It is expected that any resulting impacts would be temporary in nature.

**Noted Traditional Knowledge or Inuit Qaujimaningit:** As noted by the Aqigiq HTO, the Project proposal is within a caribou migration route and near an important caribou water



crossing. Further the HTO noted that the importance of the area for hunting and traditional activities.

**Recommended Mitigation Measures:** 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. The following terms and conditions are recommended to mitigate the potential adverse impacts: 21 through 28.

**Issue 2:** Potential negative impacts to other terrestrial and/or marine wildlife species and their associated habitat, and to migratory birds from conducting project activities. This includes potential impacts from noise generated from prospecting and diamond drilling activities, from daily transport of personnel, fuel and equipment to Project sites by helicopter. Further, cumulative impacts have also been identified.

**Board views:** As discussed in the assessment of impacts section, the area has been identified as having value and priority to the residents of Chesterfield Inlet. The potential for impacts is applicable to a limited geographic area and the probability of impacts occurring is considered to be low, with potential adverse effects anticipated to be low in magnitude and it is unlikely that the proposed activities would interact significantly with identified wildlife and wildlife habitat. The Proponent has committed to develop a Wildlife Monitoring and Mitigation Plan with Chesterfield Inlet. Specific and general measures have been recommended to mitigate any potential negative impacts.

In addition, as discussed above in the assessment of factors, the proposed activities may have the potential for cumulative impacts to caribou migration, muskox and general wildlife from the exploration activities as the Project proposal could induce additional exploration activities in the area.

The Proponent will be required to follow the *Migratory Birds Convention Act* and *Migratory Birds Regulations*. Further, the Proponent would be required to provide a finalized Wildlife Mitigation and Monitoring Plan (see Monitoring and Reporting Requirements) which would further address the impacts noted here and parties concerns.

**Noted Traditional Knowledge or Inuit Qaujimaningit:** The Aqigiq HTO has noted the importance of the area for wildlife and for hunting and traditional activities.

**Recommended Mitigation Measures:** 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. The following terms and conditions are recommended to mitigate the potential adverse impacts: 7, 10 and 14 through 24.

Further, recommendations have been made to the Nunavut Planning Commission, territorial and federal agencies, Regional Inuit Associations, co-management boards and industry to develop an action plan to identify and mitigate potential cumulative effects of human land use activities, including mineral exploration, on barren-ground caribou.

The Board is also recommending that a plan be developed that identifies appropriate land use in these areas prior to potential mineral exploration (see Other NIRB's Concerns and Recommendations).

**Issue 3:** Potential negative impacts to surface and ground water quality and quantity, and fish and fish habitat from storage and use of fuel, chemicals and drilling additives, and from drilling activities (on-land and on-ice).

**Board views:** The probability of negative impacts occurring is considered to be low, infrequent in occurrence and reversible in nature and while the magnitude of impacts resulting from a potential spill is unknown, the Proponent has provided a comprehensive spill contingency plan.

Further, the Proponent will require a water licence from the Nunavut Water Board for the use of water for the project activities and for the storage of fuel (see Regulatory Requirements section).

**Noted Traditional Knowledge or Inuit Qaujimaningit:** The Aqigiq HTO has noted that the Project proposal is within a char spawning/running area and noted the importance of the area for fishing and traditional activities.

**Recommended Mitigation Measures:** It is recommended that operational procedures for storing and transfer of materials, use of secondary containment, and spill response equipment would reduce the risk of uncontrolled releases of fuel or hazardous materials resulting in negative impacts to surface and ground water quality and quantity. Further, the potential negative impacts are also issues relevant for consideration by the Nunavut Water Board.

In addition, the following terms and conditions are recommended to mitigate the potential adverse impacts to waterbodies in addition to ensuring no wastes enter surrounding lakes or waterbodies from drilling activities: 5, 6, 8, 9, 30 through 32, 35, and 37 through 40.

**Issue 4:** Potential negative impacts to vegetation, soils and land from storage and use of fuel, chemicals and drilling additives, and from on-land drilling activities.

**Board views:** The potential for negative impacts is applicable to a small geographic area 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. While the magnitude of impacts resulting from a potential spill is unknown, the Proponent has provided a comprehensive Spill Contingency Plan and an Abandonment and Restoration Plan.

**Recommended Mitigation Measures:** It is recommended that operational procedures for storing and transferring of materials, use of secondary containment, and spill response equipment would reduce the risk of uncontrolled releases of fuel or hazardous materials

resulting in negative impacts to soils and vegetation. The following terms and conditions are recommended to mitigate the potential adverse impacts to the land in addition to ensuring that the activities occurs only during appropriate conditions and that site remediation activities are undertaken: 8 through 13, 29 through 36, and 41 through 43.

## **2. Socio-economic effects on northerners:**

**Issue 5:** Potential negative impacts to historical, cultural and archaeological sites.

**Board Views:** The Proponent has committed to notifying the GN if an archaeological site is located. Further, the Proponent is required to contact the Culture and Heritage Department to conduct surveys as the project area is in a corridor with high potential to find archaeological sites.

**Noted Traditional Knowledge or Inuit Qaujimaningit:** As noted by the Aqigiq HTO, the project proposal is within an area of high cultural and ecological importance.

**Recommended Mitigation Measures:** The Proponent is required to follow the *Nunavut Act*. Term and condition 44 is recommended to ensure that available Inuit Qaujimaningit can inform project activities.

**Issue 6:** Continued potential positive socio-economic effect on northerners from employment opportunities as the Proponent has committed to continue to hire beneficiaries.

**Board Views:** It is noted that the Proponent will hire and train local beneficiaries, which is considered a continued positive impact.

**Recommended Mitigation Measures:** Term and condition 44 has been recommended to ensure the Proponent continues to hire local people.

**Issue 7:** Potential negative impact to hunting areas or local routing to past and present Inuit land use areas due to helicopter traffic and drilling activities which could also have areas become temporarily unavailable for traditional use.

**Board views:** The areas identified for exploration activities are known for traditional land use activities, however, due to the low-intensity and intermittent nature of the proposed project components, standard measures would be expected to mitigate any potential negative impacts. The Proponent has noted that no camp would be established for the proposed project and personnel would be working for approximately up to two (2) weeks in the areas. North Arrow has committed to also consult with Chesterfield Inlet and the Aqigiq HTO to provide information on the Project and updates on the status of the Project should it be delayed for any reason.

**Noted Traditional Knowledge or Inuit Qaujimaningit:** As noted by the Aqigiq HTO, the Project proposal includes areas of current and past hunting and traditional land use.

**Recommended Mitigation Measures:** It is recommended that the potential negative impacts may be mitigated by measures such as requiring the Proponent to communicate with local organizations and be aware of locations commonly used for hunting so as to choose routes that do not interfere with local subsistence hunting. Term and condition 45 has been recommended to mitigate potential negative impacts to traditional land use activities and Inuit wildlife harvesting, and term and condition 44 has been recommended to ensure local communities are consulted on the proposal.

### **3. Significant public concern:**

**Issue 8:** No significant public concern was expressed during the public commenting period for this file.

**Board Views:** Follow up consultation and involvement of local community members is expected to mitigate any potential for public concern resulting from project activities.

**Recommended Mitigation Measures:** Term and condition 44 is recommended to ensure that the affected community and organizations are informed about the project proposal and to mitigate any concerns that may arise from the project activities.

### **4. 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. North Arrow Minerals Inc. (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 (Application to Determine Conformity and Questionnaire, Abandonment and Restoration Plan, and Spill Contingency Plan, December 1, 2015) and the NIRB (NIRB Part 1 and 2 forms, Non-technical summary, December 9, 2015 as well as Response to Clarification, December 14, 2015).

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

### **Water**

5. The Proponent shall not extract water from any fish-bearing waterbody 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 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. Unless otherwise authorized by the Nunavut Water Board, the Proponent shall locate all fuel and other hazardous materials a minimum of thirty-one (31) metres away from the high water mark of any water body and in such a manner as to prevent their release into the environment.
9. The Proponent shall ensure that re-fueling of all equipment occurs a minimum of thirty-one (31) metres away from the high water mark of any water body, unless otherwise authorized by the Nunavut Water Board.
10. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
11. 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.
12. 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, and at all fuel storage sites.
13. 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**

14. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
15. The Proponent shall not harass wildlife. This includes persistently worrying or chasing animals, or disturbing large groups of animals. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.

16. 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**

17. 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 metre 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.
18. The Proponent shall avoid the seaward site of seabird colonies and areas used by flocks of migrating waterfowl by three (3) kilometres.
19. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.
20. The Proponent shall ensure its aircraft avoid excessive hovering or circling over areas where bird presence is likely.

### **Aircraft Flight Restrictions**

21. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum altitude of 610 metres above ground level unless there is a specific requirement for low-level flying, which does not disturb wildlife and migratory birds.
22. The Proponent shall ensure that aircraft maintain a vertical distance of 1000 metres and a horizontal distance of 1500 metres from any observed groups (colonies) of migratory birds. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.
23. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
24. 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**

25. 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.
26. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration such as, drilling or movement of equipment or personnel until such time as the caribou have passed.
27. The Proponent shall not cache any fuel within ten (10) kilometre (km), or conduct any drilling operation within five (5) km of any paths or crossings known to be frequented by caribou (e.g., designated caribou crossings).
28. During the period of May 15 to July 15, when caribou are observed within 1 km of project operations, the Proponent shall suspend all operations, including low-level over flights. Following July 15, if caribou cows or calves are observed within 1 km of project operations,

the Proponent shall also suspend all operations in the vicinity, including low-level over flights until caribou are no longer in the immediate area.

### **Ground Disturbance**

29. 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.

### **Drilling on Land**

30. Unless otherwise approved, the Proponent shall not conduct any land based drilling or mechanized clearing within thirty-one (31) metres of the normal high water mark of a water body.
31. The Proponent shall not allow any drilling wastes to spread to the surrounding lands or water bodies.
32. If an artesian flow is encountered, the Proponent shall ensure the drill hole is immediately plugged and permanently sealed.
33. The Proponent shall ensure that all drill areas are constructed to facilitate minimizing the environmental footprint of the project area. Drill areas should be kept orderly with garbage removed daily to an approved disposal site.
34. The Proponent shall ensure that all sump/depression capacities are sufficient to accommodate the volume of waste water and any fines that are produced. The sumps shall only be used for inert drilling fluids, and not any other materials or substances.
35. The Proponent shall not locate any sump within thirty-one (31) metres of the normal high water mark of any water body. Sumps and areas designated for waste disposal shall be sufficiently bermed or otherwise contained to ensure that substances do not enter a waterway unless otherwise authorized.
36. The Proponent shall ensure all drill holes are backfilled or capped prior to the end of each field season. All sumps must be backfilled and restored to original or stable profile prior to the end of each field season.

### **Drilling on Ice**

37. If drilling is conducted on lake ice, the Proponent shall ensure that any return water is non-toxic, and will not result in an increase in total suspended solids in the immediate receiving waters above the Canadian Council of Ministers for the Environment (CCME) Guidelines for the Protection of Freshwater Aquatic Life.
38. The Proponent shall ensure that drill muds and additives are not used in connection with holes drilled through lake ice unless they are re-circulated or contained such that they do not enter the water, or are demonstrated to be non-toxic.
39. The Proponent shall ensure that all drill cuttings are removed from ice surfaces daily.

### **Land Use**

40. The Proponent, unless otherwise approved, shall not store material on the surface ice of lakes or streams.

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

### **Restoration of Disturbed Areas**

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

43. The Proponent shall complete all clean-up and restoration of the lands used prior to the end of each field season and/or upon abandonment of site.

### **Other**

44. The Proponent should, to the extent possible, hire local people and to consult with local residents regarding their activities in the region.

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

## **MONITORING AND REPORTING REQUIREMENTS**

In addition, the Board is recommending the following:

### **Wildlife Mitigation and Monitoring Plan**

1. Prior to the start of project activities, the Proponent shall submit a Wildlife Mitigation and Monitoring Plan (WMMP) to the Nunavut Impact Review Board, Government of Nunavut Department of Environment and Aqigaaq Hunters and Trappers Association. At a minimum, this plan should include proposed template for a wildlife log/record of observations and proposed mitigation measures for caribou, migratory birds, grizzly bear and other sensitive species that may be encountered within the project area. The Proponent is encouraged to consult with the Government of Nunavut's Regional Biologists during the revision of the WMMP, regarding project schedule and timelines so as to ensure adequate mitigation of potential wildlife impacts.

### **Community Consultation Report**

2. The Proponent shall submit a public consultation report prior to the commencement of project activities. The report shall include a copy of materials presented to community members, a description of issues and concerns raised, and advice offered to the company as well as any follow-up actions that were required or taken to resolve any concerns expressed about the project proposal.

### **Annual Report**

3. The Proponent shall submit a comprehensive annual report with copies provided to the Nunavut Impact Review Board and Government of Nunavut – Department of Environment, by March 31<sup>st</sup> of each year of permitted activities beginning March 31, 2017. The annual report must contain at least the following information:

- a) A summary of activities undertaken for the year, including:
  - a map showing the approximate location of drill sites;
  - a map showing the location of the fuel caches;
  - a description of local hires, contracting opportunities and initiatives;



- site photos;
- b) A summary of the overview assessment conducted of the exploration areas;
- c) A work plan for the following year, including any progressive reclamation work undertaken;
- d) A summary of community consultations undertaken throughout the year, providing copy of materials presented to community members, a description of issues and concerns raised, discussions with community members and advice offered to the company as well as any follow-up actions that were required or taken to resolve any concerns expressed about the project proposal;
- e) A log of instances in which community residents occupy or transit through the project area for the purpose of traditional land use or harvesting. This log should include the location and number of people encountered, activity being undertaken (e.g., berry picking, fishing, hunting, camping, etc.), date and time; and any mitigation measures or adaptive management undertaken to prevent disturbance;
- f) A log of flights and/or transits related the Project proposal. This log should, at a minimum, include:
- the date and time of each flight (frequency of flights);
  - the type of aircraft used;
  - the average flight altitude;
  - the flight routes;
  - a general description and purpose of the flight (e.g., drill relocation, transport of personnel, resupply);
  - incidental observations including archaeology sites, traditional land use and/or wildlife; and
  - a description of mitigation measures or adaptive management undertaken to prevent disturbance to wildlife or traditional land use for the project.
- g) A discussion of issues related to wildlife and environmental monitoring, including the number of cease-work orders required as a result of proximity to caribou;
- h) A brief summary of WMMP results as well as any mitigation actions that were undertaken. In addition, the Proponent shall maintain a record of wildlife observations while operating within the project area and include it as part of the summary report. The summary report based on wildlife observations should include the following:
1. Locations (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible.
  2. Prior to conducting project activities, the Proponent should map the location of any sensitive wildlife sites such as denning sites, calving areas, caribou crossing sites, and raptor nests in the project area, and identify the timing of critical life history events (i.e., calving, mating, denning and nesting).

3. Additionally, the Proponent should indicate potential impacts from the project, and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites.
  - i) An analysis of the effectiveness of mitigation measures for wildlife as proposed in the WMMP;
  - j) Summary of any heritage sites encountered during the exploration activities, any follow-up action or reporting required as a result and how project activities were modified to mitigate impacts on the heritage sites;
  - k) Summary of its knowledge of Inuit land use in/near the project area and explain how project activities were modified to mitigate impacts on Inuit land use; and
  - l) A summary of how the Proponent has complied with conditions contained within this Screening Decision, and all conditions as required by other authorizations associated with the project proposal.

#### OTHER NIRB CONCERNS AND RECOMMENDATIONS

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

##### **Bear and Carnivore Safety**

1. The Proponent review the bear/carnivore detection and deterrent techniques outlined in “Safety in Grizzly and Black Bear Country” which can be down-loaded from this link: [http://www.enr.gov.nt.ca/sites/default/files/web\\_pdf\\_wd\\_bear\\_safety\\_brochure\\_1\\_may\\_2015.pdf](http://www.enr.gov.nt.ca/sites/default/files/web_pdf_wd_bear_safety_brochure_1_may_2015.pdf). There are polar bear and grizzly bear safety resources available from the Government of Nunavut at the following link: <http://env.gov.nu.ca/wildlife/resources/polarbearsafety> and a “You are in Polar Bear Country” pamphlet from Parks Canada at the following link <http://www.pc.gc.ca/eng/lhn-nhs/mb/prince/securite-safety/ours-bear.asp> following link <http://www.pc.gc.ca/eng/pn-np/nu/auyuittuq/visit/visit6/d/i.aspx>.
2. 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 in Chesterfield Inlet, phone: (867) 898-9130).

##### **Species at Risk**

3. 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://epe.lac-bac.gc.ca/100/200/301/environment\\_can/cws-scf/environmental\\_assessment-ef/ea\\_best\\_practices\\_2004\\_e.pdf](http://epe.lac-bac.gc.ca/100/200/301/environment_can/cws-scf/environmental_assessment-ef/ea_best_practices_2004_e.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**

4. 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.

5. 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/>.

### **Change in Project Scope**

6. 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.

### **Caribou Management**

7. Territorial and federal government agencies in Nunavut should work together with Regional Inuit Associations, co-management boards and industry to develop an action plan to identify and mitigate potential cumulative effects of human land use activities, including mineral exploration, on barren-ground caribou. This assessment of cumulative effects should occur at a regional scale (i.e., larger than individual project areas).
8. Territorial and federal government agencies update the Caribou Protection Map with updated data and information from the Beverly Qamanirjuaq Caribou Management Board (BQCMB).
9. As a result of expressed concerns regarding mineral exploration and the associated potential for cumulative effects on caribou and caribou habitat within the Kivalliq region, the Nunavut Planning Commission, territorial and federal government agencies should work together with Regional Inuit Associations, co-management boards, the public, and industry to develop a plan that identifies appropriate land use in these areas prior to potential mineral exploration. The plan should identify and mitigate potential cumulative effects of human land use activities on barren-ground caribou on both localized and regional scales.
10. The Nunavut Planning Commission (NPC) should be aware of the public concerns regarding a perceived lack of protection for caribou and caribou habitat within the Kivalliq Region of Nunavut. In developing a Nunavut-wide land use plan, the NPC may wish to consider formalized protection of important caribou habitat, and seasonal restrictions on potentially disruptive activities in these areas to minimize disturbance to caribou lifecycles and Inuit harvesting activities.

### **Indigenous and Northern Affairs Canada**

11. Indigenous and Northern Affairs Canada (INAC) impose mitigation measures, conditions and monitoring requirements pursuant to the Federal Land Use Permit, which require the Proponent to respect the sensitivities and importance of the area. These mitigation measures, conditions and monitoring requirements should be in regard to the location and area; type, location, capacity and operation of facilities; use, storage, handling and disposal of chemical or toxic material; wildlife and fisheries habitat; and petroleum fuel storage.
12. INAC consider the importance of conducting regular Land Use Inspections, pursuant to the authority of the Federal Land Use Permit, while the project is in operation. The Land Use

Inspections should be focused on ensuring the Proponent is in compliance with the conditions imposed through the Federal Land Use Permit.

13. INAC forward to the NIRB copies of any decisions by Inspectors which allow project activities to continue in areas of caribou presence between dates indicating work stoppages are necessary (exemptions from Caribou Protection Measures).
14. It is recommended to INAC that no extension be issued to the Land Use Permit until the Wildlife and Mitigation Monitoring plan, community consultation plan and annual report(s) are received and up to date.

### **Nunavut Water Board**

15. The Nunavut Water Board impose mitigation measures, conditions and monitoring requirements pursuant to the Water Licence, which require the Proponent to respect the sensitivities and importance of water in the area. These mitigation measures, conditions and monitoring requirements should be in regard to use of water, snow and ice; waste disposal; access infrastructure and operation for camps; drilling operations; spill contingency planning; abandonment and restoration planning; and monitoring programs.

### **Indigenous and Northern Affairs Canada – Water Resources Division**

16. INAC – Water Resources Division should consider the importance of conducting regular inspections, pursuant to the authority of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, while the project is in operation. Inspectors should focus on ensuring the Proponent is in compliance with the conditions imposed through the Water Licence.

## **REGULATORY REQUIREMENTS**

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

1. The Proponent is advised that the *Canadian Environmental Protection Act* (<http://laws.justice.gc.ca/en/C-15.31/>) lists calcium chloride (CaCl) as a toxic substance. The Proponent should assess alternatives to the use of CaCl as a drill additive, including biodegradable and non-toxic additives.
2. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
3. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://www.canlii.org/ca/sta/n-28.8/whole.html>).
4. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>).
5. 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.
6. The *Wildlife Act* (<http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html>) which contains provisions to protect and conserve wildlife and wildlife habitat, including specific protection measures for wildlife habitat and species at risk.
7. 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**.

8. The *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act* (<http://www.tc.gc.ca/eng/tdg/safety-menu.htm>), and the *Canadian Environmental Protection Act* (<http://laws-lois.justice.gc.ca/eng/acts/C-15.31/>). The Proponent must ensure that proper shipping documents accompany all movements of dangerous goods. The Proponent must register with the Government of Nunavut, Department of Environment Manager of Pollution Control and Air Quality at 867-975-7748.
9. The *Aeronautics Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-2/>).

#### CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the North Arrow Minerals Inc.'s "Luxx Exploration".

Dated February 8, 2016 at Arviat, 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](http://www.sararegistry.gc.ca)) to get the current status of a species.

Updated: June 2015

Species at Risk <sup>1</sup>	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility <sup>2</sup>
Eskimo Curlew	Endangered	Schedule 1	Environment and Climate Change Canada (ECCC)
Ivory Gull	Endangered	Schedule 1	ECCC
Ross's Gull	Threatened	Schedule 1	ECCC
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	ECCC
Rusty Blackbird	Special Concern	Schedule 1	Government of Nunavut (GN)
Peregrine Falcon	Special Concern ( <i>anatum-tundrius</i> complex <sup>3</sup> )	Schedule 1 - Threatened ( <i>anatum</i> ) Schedule 3 – Special Concern ( <i>tundrius</i> )	GN
Short-eared Owl	Special Concern	Schedule 3	GN
Red Knot ( <i>rufa</i> subspecies)	Endangered	Schedule 1	ECCC
Red Knot ( <i>islandica</i> subspecies)	Special Concern	Schedule 1	ECCC
Horned Grebe (Western population)	Special Concern	Pending	ECCC
Red-necked Phalarope	Special concern	Pending	ECCC
Buff-breasted Sandpiper	Special concern	Pending	ECCC
Felt-leaf Willow	Special Concern	Schedule 1	GN
Porsild's Bryum	Threatened	Schedule 1	GN
Peary Caribou	Endangered	Schedule 1	GN
Barren-ground Caribou (Dolphin and Union population)	Special Concern	Schedule 1	GN
Polar Bear	Special Concern	Schedule 1	GN/Fisheries and Oceans Canada (DFO)
Grizzly Bear	Special Concern	Pending	GN
Wolverine	Special Concern	Pending	GN
Atlantic Cod, Arctic Lakes	Special Concern	Pending	DFO
Atlantic Walrus	Special Concern	Pending	DFO
Beluga Whale (Cumberland Sound population)	Threatened	Schedule 2	DFO
Beluga Whale (Eastern Hudson Bay population)	Endangered	Pending	DFO
Beluga Whale (Western Hudson Bay population)	Special Concern	Pending	DFO
Beluga Whale (Eastern High Arctic – Baffin Bay population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Canada – West Greenland population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Arctic population)		Schedule 2	DFO

<b>Species at Risk <sup>1</sup></b>	<b>COSEWIC Designation</b>	<b>Schedule of SARA</b>	<b>Government Organization with Primary Management Responsibility <sup>2</sup></b>
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Narwhal	Special Concern	Pending	DFO

<sup>1</sup> The Department of Fisheries and Oceans Canada (DFO) has responsibility for aquatic species.

<sup>2</sup> 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.

<sup>3</sup> The *anatum* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was assessed by COSEWIC as Special Concern.



## 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:

	<b>Types of Development</b> (See Guidelines below)	<b>Function</b> (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*<sup>1</sup> to issue such permits.

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

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<sup>1</sup> 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 *Nunavut Land Claims 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*<sup>2</sup>, the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under

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<sup>2</sup> s. 51(1)

the *Nunavut Archaeological and Palaeontological Sites Regulations*<sup>3</sup>, 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 Nunavut Land Claims 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.*

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<sup>3</sup> P.C. 2001-1111 14 June, 2001

## *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](http://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, Language, Elders and Youth (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 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 Nunavut Land Claims 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*

## **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.