



SCREENING DECISION REPORT NIRB FILE No.: 16EN062

NPC File No.: 148356

January 10, 2017

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 Mineral Inc.'s "Mel Project" 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 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) accept this Screening Decision Report.

OUTLINE OF SCREENING DECISION REPORT

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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 REFERRAL

On October 31, 2016 the NIRB received a referral to screen the project proposal from the Nunavut Planning Commission (NPC or Commission), which also noted that it considered this project proposal to be located outside of an area with an approved land use plan in place.

Pursuant to Article 12, Section 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* (Nunavut Agreement) and section 86 of the *Nunavut Planning and Project Assessment Act* (NuPPAA), the NIRB commenced screening this project proposal and assigned it file number 16EN062.

1. Project Description

The proposed “Mel Project” is located on the Melville Peninsula near the planning region boundary between the Kitikmeot and Qikiqtani (South Baffin) regions, approximately 150 kilometres (km) south from Hall Beach and 200 km northeast from Naujaat. The Proponent intends to conduct a seasonal exploration program for diamonds within six (6) mineral claims.

The program is proposed to take place for up to six (6) weeks in either April/May, or July through September from 2017 to 2019.

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

- Transportation of up to twelve (12) personnel, equipment, and supplies via helicopter or fixed wing aircraft from Hall Beach or Naujaat to the exploration site(s);
- Establishment of a temporary twelve-person exploration camp on site;
- Use of up to two (2) snowmobiles to transport field personnel from camp to exploration site(s);
- Conduct prospecting, mapping, till sampling, geophysical surveys, and drilling on land or ice;
- Temporary storage of the following fuels and hazardous materials at the camp site to support exploration activities:
 - i. 10,250 litres of diesel, 60 litres of gasoline, 10,250 litres of aviation fuel, and 12 litres of engine oil;
 - ii. 500 pounds of propane;
 - iii. 125 litres of antifreeze;
 - iv. 40 litres of drilling muds/grease; and
 - v. 20 pounds of salt;
- Withdrawal of up to 50 cubic metres of water daily from surrounding waterbodies for drinking, cooking and cleaning, and drilling activities;
- Generation and disposal of the following wastes associated with the exploration program:
 - i. Greywater to be disposed in sumps and backfilled;
 - ii. Combustible, non-combustible, and hazardous waste to be transported offsite to an approved disposal facility;
 - iii. Drill cuttings and drill water to be contained in a natural depression or hand-dug sump;
 - iv. Sewage to be buried with application of lime; and
- Demobilization and removal of exploration equipment and materials from site on completion of the program.

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
October 31, 2016	Receipt of project proposal from the NPC
October 31, 2016	Scoping pursuant to subsection 86(1) of the NuPPAA
November 8, 2016	Public engagement and comment request
November 29, 2016	Receipt of public comments
December 15, 2016	Proponent responded to comments/concerns raised by public
December 15, 2016	Ministerial extension requested from the Minister of Indigenous and Northern Affairs

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on November 8, 2016 to community organizations in Igloolik, Hall Beach, and Nauyasat, 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 provide the Board with any comments or concerns by November 29, 2016 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 is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; if so, why;
- Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please 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:

Government of Nunavut (GN)

- Additional detail should be provided on the project activities, specifically:
 - A description of project activities, timeframes, duration and intensity, drill locations, and flight paths.
 - A description of the physical environment, including geomorphological features and hydrology.
 - A description of the biological environment, including vegetation and wildlife such as caribou and Species at Risk with habitat overlapping the area proposed for the project activities.
 - Measures proposed to mitigate potential environmental impacts, including cumulative impacts, associated with the project activities.
 - Measures to remediate the project site on closure.

- Due to the potential for adverse impacts to archaeological sites, the Proponent should:
 - Conduct a field archaeological assessment program before any land disturbances associated with the proposed project are initiated.
- The Department of Environment noted that part of the project occurs within the calving ground for the Wager Bay caribou (map provided), and other sections of the claims are within the late summer range, therefore specific mitigation is required to address potential adverse impacts to caribou, specifically:
 - Not conducting exploration activities within 14 kilometres outside the boundaries of calving grounds during the period of May 30 to June 25.
 - Implementing measures to avoid interfering with caribou movement.
 - Ceasing field operations when pairs of cows and calves are observed or when 25 or more caribou are observed within two (2) kilometres of location of project activities.
 - Avoid flying over calving and post-calving grounds from May 30 to July 12, and maintain a minimum altitude of 610 metres, except when approaching landing sites.
- The Proponent should locate the temporary exploration camp to the east side of the most northeastern mineral claim as this location is outside the habitat range of the Wager Bay caribou herd.

Environment and Climate Change Canada (ECCC)

- The Proponent should update the emergency contact list and spill reporting procedures in its Spill Contingency Plan.

Indigenous and Northern Affairs Canada (INAC)

- The Proponent should locate any hand-dug pits for sewage disposal no closer than 31 metres from the high water mark of any water bodies.
- The Proponent should clarify whether the proposed project activities will be conducted during summer, winter/spring, or both periods.

Hall Beach Hunters and Trappers Association (Hall Beach HTA)

- Requested that the Proponent consult with community members in Hall Beach prior to initiating any project-related fieldwork.

Abraham Qammaniq of Hall Beach

- Recommended that the Proponent consult with community members in Hall Beach about the proposed project including local employment opportunities.

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.

6. Proponent's Response to Public Comments and Concerns

The following is a summary of the Proponent's response to concerns as received on December 15, 2016:

- To address concerns on conducting pre-development consultation with Hall Beach, North Arrow committed to consulting with the Hamlet Council, the Hunters and Trappers Association and community members in Hall Beach prior to undertaking any exploration work associated with the project proposal.
- Provided additional detail on the project and environment by submitting an updated NIRB Part 2 – PSIR form as well as directly responding to the following concerns:
 - The schedule for project activities will be influenced by the timing of receipt of permits, availability of funding, and the Proponent's internal project priorities and logistics.
 - The Proponent expects that the program would be conducted sometime in the mid July to end September, with a spring program considered only if drill targets were identified under lakes or wet ground, which could not otherwise be tested using angled drill holes during the summer, could result in drilling in April/May.
 - Indicated that the exact locations of drill targets has yet to be determined as these will be confirmed after an assessment of results of a recently completed 2016 till sampling program.
 - Referenced its submission of updated project description information to the NIRB, including a description of physical and biological environment in the proposed project area.
 - Committed to locating hand-dug sewage pits no less than 31 metres from the high water mark of any water bodies.
- Provided the following details or commitments regarding concerns of adverse impacts to caribou:
 - Restricting field work and avoiding low level flights to protect caribou.
 - Where possible, conducting operations outside of the calving season, unless a drill target is identified under a lake or wet ground and which is otherwise unreachable by angled drill hole during the summer.
 - The Proponent provided a Qilalugaq Project Caribou Monitoring Protocol document which outlined specific flight restrictions, monitoring duties for workers, as well as reporting and consultation procedures to inform local HTO and Hamlet.
 - The Proponent noted its concerns about the GN's recommendation that the exploration camp be located to the east side of the most northeastern mineral claims; however, previous surveys of the area have not shown any safe aircraft landing sites, nor have they directly observed wildlife in the area of the proposed camp. Therefore, North Arrow expects to proceed with the proposed camp location, subject to the seasonal restrictions for caribou calving.

- Responded to concerns regarding disturbance or adverse impacts to archaeological sites:
 - Noted that it considered the cost of conducting a detailed archaeological assessment too high at the current stage of development (would cost +\$50,000), considering the GN did not identify any recorded archaeological sites in the proposed project area from a review of the Nunavut Archaeological Site Database, North Arrow has not identified evidence of cultural or historic objects in the past four (4) years of field work in the project area. Committed to conduct archaeological surveys with the completion of its geotechnical surveys which would also inform its drill site locations.
 - Committed to consulting with community members from Hall Beach about specific knowledge of potential areas of cultural significance and historic and current land use in and near the area for the proposed project.
 - Proposed to engage a knowledgeable person from Hall Beach to inspect the camp area and proposed drill sites for potential cultural resources.

- Proponent submitted a revised Spill Contingency Plan with updated emergency contact list to the NIRB as recommended by ECCC.

FACTORS FOR DETERMINING SIGNIFICANCE OF IMPACTS

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 exploration activities for diamonds will to occur in an area approximately 150 kilometres (km) south and 200 km northeast of Hall Beach and Naujaat, respectively. The total area of the mineral claims to be explored is approximately 75 square kilometres, and will include a twelve-person temporary exploration camp. The project footprint also includes helicopter-assisted travel routes to prospecting areas and drill sites on the mineral claims. The proposed project activities may take place within habitat for caribou, muskox, wolves, Arctic fox, Arctic hare, migratory birds, and Species at Risk such as Polar Bear.

Some of the claims outlined within this project proposal fall within one of the Wager Bay caribou herd's calving grounds, and other claims fall within the herd's late summer ranges. As such, the GN noted that strict operational limitations be adhered to by the Proponent to reduce adverse impacts on the herd, especially during the calving period. The Proponent has

committed to following the specific recommendations and has provided a Qilalujak Project Caribou Monitoring plan to outline the commitments and procedures related to mitigating adverse impacts on caribou.

2. *The ecosystemic sensitivity of that area.*

The proposed project may occur in an area with ecosystemic sensitivity, including the potential for overlap of portions of the project footprint with caribou habitat. Specifically, the footprint of the proposed project may overlap areas identified as having value and priority to local communities for:

- i. Abundance of caribou and caribou migration routes;
- ii. Subsistence harvest of caribou; and
- iii. Travel routes.

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

Neither the Proponent nor the GN has identified any 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.*

The proposed project would occur at locations approximately 150 km from Hall Beach, the nearest community; as such, no human populations are likely to be affected by project impacts. However, it was noted during the commenting period that there is potential for impact to the Wager Bay caribou herd, which could result in adverse impacts to traditional pursuits such as caribou hunting. No other specific animal populations have been identified as likely to be affected by potential project impacts.

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 “Mel” project is a proposed exploration program for diamonds involving prospecting and use of conventional reverse circulation drilling equipment, 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 (up to six (6) weeks). However, due to the proximity of portions of the mineral claims to calving and post-calving habitat for the Wager Bay caribou herd, specific mitigation measures for the protection of critical life stages of the herd may be necessary. Based on past evidence of similar scope of activities, potential adverse impacts will 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 project footprint does not overlap with other ongoing exploration projects (i.e., no other exploration projects occurring within 100 km of the project proposal); however, the project occurs just to the southeast of a previously screened exploration project, NIRB No. 11EN035 – Fraser Bay 1-3 Property project, which maintains current permits for its operations. The transportation activities related to the current project proposal may utilize similar routes as the other explorations, or research projects within the general area, however due to the mitigation measures expected to be implemented by North Arrow, the impacts would be short term and intermittent. Therefore, no cumulative impacts have been identified as potentially resulting from this proposed project in association with any projects that have been carried out, are being carried out or are likely to be carried out.

Although no significant public concerns were raised during the public commenting period, the NIRB notes that the close proximity of the proposed activities to areas used by the communities of Hall Beach and Nauyasat for recreational/traditional pursuits could potentially contribute to public concern developing. A term and condition has been recommended to direct engagement with the communities, local Hunters and Trapper's Organizations and posting of public notices to ensure residents are aware of the exploration program to be conducted.

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.

IEWS 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 caribou and caribou habitat (Wager Bay caribou herd) from noise and traffic generated by the proposed prospecting, exploration drilling, or associated overland travel and flights to/from the camp and exploration sites.

Board views: The activities associated with the project involve helicopter-assisted travel, or overland travel to conduct prospecting and exploration drilling activities. Although some components of proposed project activities may be in proximity to habitat for critical life stages of caribou (calving and post-calving), the potential impacts associated with these proposed activities are considered to be short-term (up to six (6) weeks). Also, the Proponent has committed to complying with GN's recommendations regarding periods for restricting or ceasing field work and avoiding low level flights to protect caribou, and has provided a list of mitigation measures in its Qilalugaq Project Caribou Monitoring plan. As a result of the mitigation measures provided by the Proponent, the adverse impacts to caribou and caribou habitat are considered to be infrequent and reversible.

The Proponent would also be required to follow the *Nunavut Wildlife Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that the potential adverse impacts may be mitigated by measures such as requiring the Proponent to cease activities that may interfere with the migration or calving of caribou until the caribou have left the area. The Board recommends the following terms and conditions to mitigate the potential adverse impacts to caribou and caribou habitat: 7, 10, 16, 18, and 22-29.

Issue 2: Potential adverse impacts to other terrestrial wildlife and migratory birds from noise associated with geophysical surveys and transport of personnel to and from the camp and exploration drill sites, fuel spills or leaks, and disturbance to nests.

Board views: There is potential for disturbance of wildlife and migratory birds from helicopter operations associated with the proposed project. However, the potential adverse impact(s) of the project to terrestrial wildlife and birds is considered to be minimal due to the scale and duration (up to six (6) weeks) of the exploration program. The Proponent has committed to avoiding low-altitude flights except when landing or taking off. The adverse impacts to terrestrial wildlife and migratory birds are considered to be of low magnitude and reversible.

The Proponent would be required to follow the *Nunavut Wildlife Act*, the *Migratory Birds Convention Act*, *Transportation of Dangerous Goods Act* and the *Canadian Environmental Protection Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that the potential adverse impacts may be mitigated by measures such as requiring the Proponent to ensure no damage to wildlife habitat and minimize activities during periods when birds are particularly sensitive to disturbance especially during migration, nesting and moulting. The Board recommends the following terms and conditions to mitigate the potential adverse impacts to water quality, fish and fish habitat: 7, 10, and 16-26.

Issue 3: Potential adverse impacts on fish and fish habitat, including water and ice quality, from exploration activities, specifically water withdrawal for camp operations, drilling, use of

drill salts, and deposition of drill cuttings, as well as possible accidents or malfunctions resulting in fuel spills, salts, or chemical releases.

Board views: The project may adversely impact water quality, fish and fish habitat from fuel and hazardous material spills, erosion and deposition of contaminated soil into or in proximity to the aquatic environment, including fish-bearing water bodies. However, the potential for adverse impacts on fish and fish habitat, including water and ice quality from drilling, deposition of drill cuttings, and water withdrawal are likely to be limited to the footprint of the proposed temporary camp and locations for exploration drilling. There is also potential for adverse impacts to the aforementioned resources from accidents and malfunctions including spills of fuel, salts, and wastes associated with the proposed project. The Proponent has committed to implementing a Spill Contingency Plan for the project and to constructing temporary berms at fuel caches to prevent the spread of any fuel spill incidents. As a result, the potential adverse impacts to water quality, fish and fish habitat are considered to be of low magnitude and reversible.

The Proponent would require a water licence from the Nunavut Water Board for the water usage activities and fuel storage. In addition, the Proponent would also be required to follow the *Fisheries Act*, the *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act* and the *Canadian Environmental Protection Act* (see *Regulatory Requirements* section).

Recommended Mitigation Measures: It is recommended that the potential adverse impacts to water quality, fish and fish habitat resulting from exploration activities, specifically drilling and camp development, may be mitigated by implementing standard measures such those recommended in term and condition: 33. The Board further recommends the following terms and conditions to mitigate the potential adverse impacts resulting from possible spills and releases during refuel of equipment or managing drill salts, by encouraging such activities occur a minimum of thirty-one (31) metres from the high water mark of water bodies, as outlined by recommendations: 5-11, 13, 15, 31-34, 37, 39-41 and 43.

Issue 4: Potential adverse impacts to ground stability and soil quality from the establishment of a camp and fuel caches, and from exploration drilling activities.

Board Views: The activities proposed for the project, including establishment of temporary camp and fuel caches, and the exploration drilling activities, may result in degradation of permafrost which would negatively affect ground stability and soil quality from erosion, and possibly result in pooling of water on disturbed land. However, the potential for impacts is limited to the footprint of drill sites, camp and fuel caches, which are also temporary in nature. To mitigate potential impacts to soil quality, the Proponent has committed to removing all materials brought to the site upon demobilization. The potential adverse impacts to ground stability and soil quality are considered to be of low magnitude, short-term and reversible.

Recommended Mitigation Measures: It is recommended that potential adverse impacts to ground stability be mitigated by measures such as requiring the Proponent to locate the temporary camp on gravel, sand or other durable material. The following terms and conditions are recommended to mitigate the potential adverse impacts to ground stability and soil quality: 11-15, 30, 31, 33, 35, 36, 38, 42, and 44-46.

Issue 5: Potential adverse impacts to public and traditional land use pursuits from noise associated with exploration drilling and aircraft use.

Board Views: The Proponent is proposing to work in an area in proximity to caribou habitat for calving and post-calving events. There is potential for disruption of these critical caribou events as a result of noise generated from activities associated with the project proposal, which may reduce local caribou populations and availability of caribou as country food. The Proponent has committed to consulting with the Hamlet Council, the Hunters and Trappers Association and community members in Hall Beach prior to undertaking any field work. As a result of concerns raised during the public commenting period regarding disturbance to caribou habitat and caribou movement, and recommendations that the project activities occur outside of the critical periods for the Wager Bay caribou herd, the NIRB has included recommendations that the Proponent conduct the operations outside of May 15 to July 15 in project areas in proximity to natural ranges for caribou calving and post-calving.

Recommended Mitigation Measures: It is recommended that potential adverse impacts to public and tradition land use activities may be mitigated by measures such as requiring the Proponent to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use pursuits. The following terms and conditions are recommended to mitigate the potential adverse impacts to public and tradition land use activities: 47 and 49.

Socio-economic effects on northerners:

Issue 6: Potential adverse impacts to historical, cultural and archaeological sites from disturbance as a result of overland travel and drilling activities.

Board Views: The Proponent has not identified sites of historical, cultural and archaeological importance in the proposed project area. The probability of impacts to historical, cultural and archaeological sites is considered to be low due to the anticipated minimal footprint of drill sites and the temporary twelve-person camp. However, the Proponent has committed to engaging a knowledgeable person from Hall Beach to inspect the proposed camp area and drill sites for potential cultural resources during field work.

The Proponent is required to follow the *Nunavut Act* (as recommended in the Regulatory Requirements section) and would be required to contact the Government of Nunavut-Department of Culture and Heritage if sites of historical, cultural and archaeological importance are encountered.

Recommended Mitigation Measures: It is recommended that the potential adverse impacts may be mitigated by measures such requiring the Proponent to solicit available Inuit Qaujimaningit from local residents. The Board recommends the following term and condition to mitigate the potential adverse impacts to traditional land use activities: 47.

Issue 7: Potential positive impact to the local economy from employment associated with the project.

Board Views: It is noted that the Proponent has committed to hiring locally in support of exploration activities, which may result in a positive impact to the local economy.

Recommended Mitigation Measures: Term and condition 48 is recommended by the Board to ensure the Proponent meets its commitment to procure local services for the project.

Significant public concern:

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

Board Views: It is noted that there is potential for public concern due to the proximity of the proposed project to areas used for traditional land use activities. Follow up consultation and involvement of local community members, as committed to by the Proponent, is expected to mitigate any potential for public concern resulting from project activities.

Recommended Mitigation Measures: Term and condition 47 is recommended to ensure that the affected community and organizations are informed about the project proposal, and to provide the Proponent with an opportunity to proactively address or mitigate any concerns that may arise from the project activities findings.

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 Mineral 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, October 31, 2016), and the NIRB (Online Application Form, November, 2, 2016; and the Proponent's supplementary application information, December 15 and 16, 2016).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Water Use

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 drilling 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.
12. The Proponent shall use drip pans or other equivalent device when refueling equipment. The Proponent shall also use secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) at all refueling stations.
13. The Proponent shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available during any transfer of fuel or hazardous substances, at all fuel storage sites, at vehicle maintenance areas and at drill sites.
14. The Proponent shall remove and treat hydrocarbon contaminated soils on site or transport them to an approved disposal site for treatment.

15. 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

16. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
17. 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.
18. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.

Migratory Birds and Raptors Disturbance

19. 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.
20. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.
21. The Proponent shall ensure its aircraft avoid excessive hovering or circling over areas where bird presence is likely.

Aircraft Flight Restrictions

22. 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.
23. The Proponent shall ensure that aircraft maintain a vertical distance of 1000 metres and a horizontal distance of 1500 metres from any observed groups of wildlife or colonies of migratory birds. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.
24. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
25. 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

26. 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.

27. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration such as airborne geophysics surveys, drilling or movement of equipment or personnel until such time as the caribou have passed.
28. The Proponent shall not construct or operate any camp or cache any fuel within ten (10) kilometres, or conduct any drilling operation within five (5) kilometres of any paths or crossings known to be frequented by caribou (e.g., designated caribou crossings).
29. During the period of May 15 to July 15, when caribou are observed within one (1) kilometre of project operations, the Proponent shall suspend all operations, including low-level over flights, drilling, and use of snowmobiles and all-terrain vehicles outside the immediate vicinity of the camps. Following July 15, if caribou cows or calves are observed within one (1) kilometre of project operations, the Proponent shall also suspend all operations in the vicinity, including low-level over flights, drilling, and use of snow mobiles and all-terrain vehicles, until caribou are no longer in the immediate area.

Ground Disturbance

30. 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.
31. The Proponent shall implement suitable erosion and sediment suppression measures on all areas before, during and after conducting activities in order to prevent sediment from entering any waterbody.

Drilling on Land

32. 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.
33. The Proponent shall not allow any drilling wastes to spread to the surrounding lands or water bodies.
34. If an artesian flow is encountered, the Proponent shall ensure the drill hole is immediately plugged and permanently sealed.
35. 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.
36. 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.
37. 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.
38. 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

39. 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.
40. 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.
41. The Proponent shall ensure that all drill cuttings are removed from ice surfaces daily.

Temporary Camps

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

Restoration of Disturbed Areas

45. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
46. 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

47. The Proponent should consult with local residents regarding their activities in the area and solicit available Inuit Qaujimaningit and information that can inform project activities.
48. The Proponent should, to the extent possible, hire local people.
49. 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:

Annual Report

1. The Proponent shall submit a comprehensive annual report with copies provided to the Nunavut Impact Review Board by March 31st of each year of permitted activities beginning March 31, 2018. 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 and fuel caches;
 - a description of local hires, contracting opportunities and initiatives;
 - flight altitudes, frequency of flights and anticipated flight routes;
 - site photos;
 - b) A work plan for the following year, including any progressive reclamation work undertaken;

- c) 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;
- d) 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;
- e) 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 and any other wildlife;
- f) A brief summary of wildlife monitoring conducted under the Qilalugaq Project Caribou Monitoring plan, 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 identify in its annual report the potential impacts from the project, and outline what operational activities are proposed to manage these impacts or those that are modified to avoid impacts on wildlife and sensitive sites.
 - 4. An analysis of the effectiveness of mitigation measures for wildlife;
- g) A 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;
- h) A 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
- i) 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.

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 (NPC) 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 Hall Beach, phone: (867) 928-8507).

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/>.

Transport of Waste/Dangerous Goods and Waste Management

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

Aircraft Identification

11. The Proponent shall provide the communities of Hall Beach and Nauyasat the planned helicopter activities, including photo(s) of the helicopter to be used, approximate flight paths, plans and times as available prior to commencement of activities to ensure community members are aware of the planned activities.

Indigenous and Northern Affairs Canada

12. 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.
13. 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.

Qikiqtani Inuit Association

14. The Qikiqtani Inuit Association impose strict mitigation measures and/or conditions upon the Proponent pursuant to the Inuit Owned Lands License in regard to fuel and chemical storage, drilling, water conditions, ground disturbance and wildlife on Inuit owned land.

Nunavut Water Board

15. If a Type "B" Water Licence is required for this project proposal, the Nunavut Water Board should 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; 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:

Acts and Regulations

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://laws-lois.justice.gc.ca/eng/acts/n-28.8/>).
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* (<http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm>), *Transportation of Dangerous Goods Act* (<http://laws-lois.justice.gc.ca/eng/acts/t-19.01/>), 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/>).

Other Applicable Guidelines

10. The Proponent shall practice progressive reclamation in accordance with the restoration guidelines outlined in Indigenous and Northern Affairs Canada's *Northern Land Use Guidelines Pits and Quarries* (<http://www.aadnc-aandc.gc.ca/eng/1100100023585>).

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to North Arrow Mineral Inc.'s "Mel Project". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated January 10, 2017 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) to get the current status of a species.

Updated: October 2016

Species at Risk ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Migratory Birds			
Eskimo Curlew	Endangered	Schedule 1	ECCC
Buff-breasted Sandpiper	Special concern	Pending	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	GN
Peregrine Falcon	Special Concern (<i>anatum-tundrius</i> complex ³)	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
Vegetation			
Felt-leaf Willow	Special Concern	Schedule 1	GN
Blanket-leafed Willow	Special Concern	Schedule 1	GN
Porsild's Bryum	Threatened	Schedule 1	GN
Terrestrial Wildlife			
Peary Caribou	Endangered	Schedule 1	GN
Peary Caribou (High Arctic Population)	Endangered	Schedule 2	GN
Peary Caribou (Low Arctic Population)	Threatened	Schedule 2	GN
Barren-ground Caribou (Dolphin and Union population)	Special Concern	Schedule 1	GN
Marine Wildlife			
Polar Bear	Special Concern	Schedule 1	GN/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	Pending	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)	Special Concern	Schedule 2	DFO
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Grey Whale (Eastern North Pacific population)	Special Concern	Schedule 1	DFO

Species at Risk ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Humpback Whale (Western North Atlantic population)	Special Concern	Schedule 3	DFO
Narwhal	Special Concern	Pending	DFO
Fish			
Northern Wolffish	Threatened	Schedule 1	DFO
Atlantic Wolffish	Special Concern	Schedule 1	DFO
Bering Wolffish	Special Concern	Schedule 3	DFO
Fourhorn Sculpin	Special Concern	Schedule 3	DFO
Roundnose Grenadier	Endangered	Pending	DFO
Spotted Wolffish	Threatened	Schedule 1	DFO
Thorny Skate	Special Concern	Pending	DFO
Atlantic Cod, Arctic Lakes	Special Concern	Pending	DFO
Blackline Prickleback	Special Concern	Schedule 3	DFO

Notes: DFO: Fisheries and Oceans Canada; ECCC: Environment and Climate Change Canada; GN: Government of Nunavut

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

²Environment and Climate Change Canada 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.

³The *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:

	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, 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

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.