



**SCREENING DECISION REPORT  
NIRB FILE No.: 16DN061**

NPC File No.: 148361

February 28, 2017

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Department of National Defense's (DND) "NOREX 17" 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 REFERRAL
- 3) PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS
- 4) FACTORS FOR DETERMINING SIGNIFICANCE OF IMPACTS
- 5) VIEWS OF THE BOARD
- 6) RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS
- 7) OTHER NIRB CONCERNS AND RECOMMENDATIONS
- 8) REGULATORY REQUIREMENTS
- 9) CONCLUSION

**REGULATORY FRAMEWORK**

The primary objectives of the NIRB are set out in Section 12.2.5 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* (Nunavut Agreement) 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 Nunavut Impact Review Board (NIRB or Board) received a referral to screen Department of National Defence’s (DND) “NOREX 17” project proposal from the Nunavut Planning Commission (NPC or Commission) with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* (Nunavut Agreement) and section 87 of the *Nunavut Planning and Project Assessment Act* (NuPPAA), the NIRB commenced screening this project proposal and assigned it file number 16DN061.

### **Information Requests and Suspension of Assessment:**

Following a preliminary completeness check, the NIRB determined that the proposal as submitted did not contain the necessary information for the NIRB to carry out its screening. On November 7, 2016 the NIRB issued correspondence to DND requesting that additional information in support of this proposal be provided to the NIRB on or before November 21, 2016. On January 9, 2017 the NIRB received the requested additional information and commenced the screening pursuant to Part 3 of the NuPPAA.

## PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

### **1. Project Scope**

The proposed “NOREX 17” project is located within the North Baffin region, approximately 60 kilometres (km) northeast, south, and west from the community of Resolute Bay. The Proponent intends to conduct winter exercises involving the Arctic Response Company Group a division of the Canadian Armed Forces and the Canadian Rangers. The program is proposed to take place from March 6 to March 31, 2017.

As required under subsection 86(1) of the NuPPAA, the Board accepts the scope of the “NOREX 17” project proposal as set out by the Department of National Defense in the project proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Military training to be staged from the Canadian Armed Forces Arctic Training Centre (CAFATC) located in Resolute Bay;
- Mobilization of up to 134 personnel to CAFATC for acclimatisation training;
- Military exercises and patrols to be conducted by personnel within three (3) operational boxes (Eureka or Polaris, Gascoyne Inlet, Resolute);
- Establishment of temporary camps near Eleanor Lake on northeast portion of Cornwallis Island, near Eureka or Polaris and Gascoyne Inlet. A temporary camp near Eleanor Lake to be used as the primary temporary camp for military exercises;
- Establishment of austere airfield on Eleanor Lake (ice airstrip);
- Use of snowmobiles and tracked over snow vehicles (BV-206) for transportation of personnel and equipment to temporary camp and military exercise locations;
- Use of aircrafts, helicopter and/or snowmobiles to transport personnel and equipment to additional exercise locations (Eureka or Polaris and Gascoyne Inlet);
- Use of area near Resolute as rifle range;
- Transportation, storage and use of 2000 litres of gasoline, 200 litres of diesel and 60 litres of naphtha;
- Use and transportation of water from existing facilities at CAFATC;
- Production and management of wastes:
  - Combustible wastes, sewage, and greywater to be disposed of at Resolute or at an approved facility down south;
  - Hazardous and non-combustible wastes to be shipped to an approved facility down south for disposal; and
- Demobilization and removal of equipment and materials on completion of military exercises.

## 2. Inclusion or Exclusion to Scoping List

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 and positive conformity determination (North Baffin Land Use Plan) from the NPC
November 7, 2016	Information request(s)
January 9, 2017	Proponent responded to information request(s)
January 11, 2017	Public engagement and comment request
February 1, 2017	Receipt of public comments

## 4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on January 11, 2017 to community organizations in Resolute Bay, 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 February 1, 2017 regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide 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)**

- Noted that the project proposal is located within the Peary Caribou annual range, especially the Western Queen Elizabeth Island population range. Indicated that the caribou population is listed as "endangered" by the *Species at Risk Act*.
- Noted that aircrafts and vehicles are likely to cause auditory and visual disturbances to caribou.
- Noted concern that shooting exercises at the rifle range may cause injuries or death to wildlife that are present.
- Recommended that:
  - Exercises cease when caribou are observed in the area;
  - Hunting be prohibited for all personnel;

- Wildlife harassment be prohibited; and
- Visual surveys occur prior to every shooting exercise to detect wildlife and that exercises not begin until wildlife has left, and cease if it enters the range.

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

- No comments at this time.

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

- No comments or additional terms and conditions at this time.

**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.

**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 project proposal would occur near the municipality of Resolute Bay and near the Polar Bear Pass National Wildlife Area with several designated operational boxes identified where military activities would be confined to reduce the areas likely to be directly impacted by the proposed activities. The proposed project activities may also overlap with areas important for Polar Bear, caribou, muskox, wolves and non-migratory birds (such as ravens, snowy owl, ptarmigan) and Species at Risk (Polar Bear). Further, the Government of Nunavut has noted that military exercises are within the annual range of Peary Caribou and provided recommendations to minimize impacts to caribou.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur in areas with no particular identified ecosystemic sensitivity, with the exception of project locations near to the Polar Bear Pass National Wildlife Area. However, the project area has been identified as having value and priority to the local community for:

- i. Marine wildlife and fish such as seals, narwhal, beluga, Arctic char and cod;
- ii. Muskoxy harvesting;
- iii. Polar Bear harvesting and denning; and
- iv. Drinking water sources.

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

Neither the Proponent nor the Government of Nunavut have identified any areas of historical, cultural and archaeological significance associated with the project area other than a select few personnel that will be visiting some of the Franklin expedition locations. The Proponent has submitted an application for a permit to allow for this activity. Further, the Proponent has committed to avoiding areas of archaeological significance, but should the project be approved to proceed, the Proponent would be required to contact the Government of Nunavut – Department of Culture and Heritage if any sites are encountered.

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

The logistical support for the project as well as personnel accommodations would occur within the Hamlet of Resolute Bay. As such resident human populations are likely to be affected by additional noise from traffic, and activities generated by the proposed project. In addition, far-ranging wildlife species such as Polar Bears, caribou, muskox, wolves and non-migratory birds (ravens, snowy owl, or ptarmigan) are likely to be encountered within the 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.*

The “NOREX 2017” project proposal would be conducted in an area that has been frequently used for military exercises and other research activities and the nature of potential impacts is considered to be well-known, and limited to 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 would take place within a 100 kilometre radius to a number of other active projects that have been or are currently being assessed by the Board as listed in Table 1. Most of the projects listed in Table 1 are seasonal in nature and occur during the summer months, not during March as currently being proposed by this project. The potential for cumulative impacts to terrestrial and marine mammals, non-migratory birds, and the local environment including vegetation, water, and soil resulting from military exercises and training has been identified and considered in the development of the NIRB’s recommendations. Terms and conditions recommended for each of these projects are

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

**Table 1: Project List**

<b>NIRB Number</b>	<b>Project</b>	<b>Project Title</b>	<b>Project Type</b>
<i>Currently being assessed</i>			
		Le Boreal 2016 – Cruise Kangerlussuaq, Greenland to Nome, Alaska from August 2017 to September 2017	Tourism
17AN031		Canada C3 led by Students on Ice Foundation	Tourism
17AN005		Exploratory Skidoo Patrol to Qausuittuq National Park	Access
17AN010		Emergency Use of Polar Bear Wildlife Area Cabin	Access
<i>Active Projects</i>			
08YN010		Ice Dynamics and Cryospheric Changes in Northern Canada	Research (seasonal)
09YN019		An Investigation of the Sensitivity of High Arctic Permafrost to Climate Change	Research (seasonal)
10YN009		Arctic Carbonates, Sandstones and Volcanic Rocks – North Axel Heiberg Island, Nunavut	Research (seasonal)
13YN010		Upper Air Building Laboratory, Resolute Bay	Research (year round)
13AN028		L’AUSTRAL 2016 – Cruise Kangerlussuaq Greenland to Nome Alaska	Tourism (seasonal)
16FN015		Fuel Depot 2016 and field work CASE 19 Pearya in 2017	Research
16YN020		Seabird Research at St. Helena and Nasaruvaalik Island	Research (seasonal)
16DN063		Operation Nunaliivut 2017	Defence
<i>Past Projects</i>			
16YN002		Lake Ice in the Canadian High Arctic	Research
16DN004		Operation Nunaliivut 2016	Defence
16YN011		Devon Island Aerial Survey	Research
16DN017		Operation Nevus 2016	Defence
16YN043		Past climate reconstruction using annually-layered carbonate	Research

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

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

Although no significant public concerns were raised during the public commenting period, the NIRB notes that the close proximity of the proposed activities to the community of Resolute Bay and an area used by residents for recreational/traditional pursuits could potentially contribute to public concern developing. A term and condition has been recommended to direct engagement with the community, Hunters and Trappers Organization and interested parties, as well as posting of public notices to ensure residents are aware of the research being or to be conducted.

## 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 terrestrial wildlife, non-migratory birds (raven, snowy owl, and ptarmigan), marine mammals, and their respective habitats from military exercises, mobilization, and live fire exercises, specifically noise generated from transportation and movement of personnel, equipment, military exercises, and use of temporary camps.

**Board views:** As discussed in the previous section, the potential for impacts are applicable to targeted geographic areas or military boxes and the activities would only occur for a short duration of time while military exercises are occurring within the month of March. The Proponent has committed to avoidance of the Polar Bear Pass National Wildlife Area during military activities. Additionally, the Proponent has committed to training staff to be aware of wildlife issues, operational requirements to reduce the potential for impacts to wildlife, and the sensitivity of the tundra in the North.

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

**Recommended Mitigation Measures:** Specific and general measures have been recommended to mitigate any potential adverse impacts including recommending measures such as requiring the Proponent to maintain minimum flight altitudes, reducing wildlife attractants and avoidance tactics. The following terms and conditions are recommended to mitigate the potential adverse impacts: 5, 6, and 13 through 19.

**Issue 2:** Potential adverse impacts to surface water quality, marine water quality, sea ice, fish and fish habitat from military activities, noise from vehicle transport over frozen waterbodies, construction and decommissioning of temporary shelters, storage and use of fuel, and potential spills as a result of re-fuelling during operations or accidents/malfunctions during the military exercises.

**Board views:** The potential for adverse impacts from the military exercises is applicable to specific areas within the defined operations' boxes, the impacts of mobilization are well-understood, and mitigable with due care, therefore the probability of significant impacts occurring are considered to be low, with potential adverse effects anticipated from spills or accidents are expected to be low in magnitude, infrequent in occurrence and reversible in nature. Further, the Proponent has committed to ensuring that all hazardous materials and fuel be properly stored in approved storage containers and facilities in accordance with municipal, territorial, and federal regulations.

The Proponent would also require a water licence from the Nunavut Water Board for 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 operational procedures for the storage and transfer of fuel and chemicals, use of secondary containment, and spill response equipment would reduce the risk of uncontrolled releases of fuel or hazardous materials resulting in adverse impacts to surface water quality, marine water quality, sea ice, fish and fish habitat. Further, the potential negative impacts to freshwater sources are issues relevant for further consideration by the Nunavut Water Board during the permitting stage. The following terms and conditions are recommended to mitigate the potential adverse impacts from operations and the potential for unintended spills to waterbodies and sea ice: 7 through 11, 20, and 21.

**Issue 3:** Potential adverse impacts to vegetation, soils, terrain stability, and potential increase to shoreline erosion from personnel and vehicle movement during the proposed military exercises and the storage and use of fuel.

**Board Views:** As discussed in the previous section, the potential for impact(s) is applicable to targeted specific areas within the defined military operations' boxes and limited in duration due to the short period of time the military activities would occur. The Proponent has committed to providing training to those participating in the project, and to ensure that all personnel are briefed with respect to spill responses and reporting procedures.

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 may be mitigated by measures such as requiring the Proponent avoid disturbing the embankments of watercourses and paying attention to the terrain or sea ice being traversed or used for temporary structures. Further, 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 sea ice, soils and vegetation. Additionally, clean up and restoration of all areas utilized would be required to preserve the integrity of the environment. The following terms and conditions are recommended to mitigate the potential adverse impacts to the land and shoreline in addition to ensuring that transportation occurs only during appropriate conditions and that site remediation activities are undertaken: 9 through 12, 19, 22 through 26.

**Issue 4:** Potential adverse impacts to public and traditional land use activities in the area due to mobilization of personnel and transportation of equipment to project sites and ground based military activities.

**Board Views:** Due to the project's proximity to Resolute Bay, there is the potential for adverse impacts to arise as a result of the military exercises overlapping with traditional land use and harvesting activities from community members. The project activities are limited to the month of March, involve temporary camps and transportation activities, and if situations arise where the project may interfere with traditional land use, mitigation measures have been recommended to ensure minimal impacts to traditional land use activities.

**Recommended Mitigation Measures:** Term and condition 27 is recommended to ensure that the affected community and organizations are informed about the project proposal and term and condition 28 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. In addition, terms and conditions 13 through 19 have been recommended to minimize interference with the movements of wildlife.

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

**Issue 5:** Potential adverse impacts to historical, cultural and archaeological sites from ground based activities military activities.

**Board Views:** Although there are likely archaeological sites within each of the operations boxes that occur on land, as the project does not involve any permanent earthworks or alteration of the areas, it is unlikely that the Proponent would significantly alter archaeological sites. The Proponent is applying for permits to visit some of the Franklin Expedition areas and has committed to avoiding areas of archaeological significance. Therefore, the probability of significant impacts occurring is considered to be low. However, it is noted that the Proponent would be required to contact the Government of Nunavut-Department of Culture and Heritage when encountering historical sites and

would be required to follow the *Nunavut Act* (as recommended in Regulatory Requirements section).

Recommended Mitigation Measures: Term and condition 27, which is recommended to ensure that available Inuit Qaujimaningit can inform project activities, and reduce the potential for negative impacts occurring to any additional historical sites.

**Significant public concern:**

**Issue 6:** 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 27 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. Department of Defence (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 30, 2016; Additional information, January 9, 2017).

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

### **Waste Disposal**

5. The Proponent shall keep all garbage and debris in bags placed in a covered metal container or equivalent until disposed of at an approved facility. All such wastes shall be kept inaccessible to wildlife at all times.

### **Fuel Storage**

6. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
7. 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.
8. 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.
9. The Proponent shall use drip pans or other equivalent device when refueling equipment on-site. Appropriate spill response equipment and clean-up materials (e.g., shovels, drip pans, and absorbents) must be readily available during any transfer of fuel or hazardous substances.
10. The Proponent shall remove and treat hydrocarbon contaminated snow, ice, or soils on site or transport them to an approved disposal site for treatment.
11. 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**

12. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
13. 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.
14. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.

### **Aircraft Flight Restrictions**

15. 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.
16. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.

### **Caribou and Muskox Disturbance**

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

### **Winter Travel**

19. All vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.
20. The Proponent shall select a winter route that maximizes the use of frozen water bodies.
21. The Proponent shall ensure that no disturbance of the stream bed or banks of any definable watercourse be permitted.
22. The Proponent shall not move any equipment or vehicles without prior testing the thickness of the ice to ensure the lake is in a state capable of fully supporting the vehicles.
23. The Proponent shall not move any vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.
24. The Proponent shall avoid disturbance on slopes prone to natural erosion, and alternative locations shall be utilized.

### **Temporary Camps**

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

### **Restoration of Disturbed Areas**

26. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
27. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of field work.

### **Other**

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

## **OTHER NIRB CONCERNS AND RECOMMENDATIONS**

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

### **Change in Project Scope**

1. Responsible authorities or Proponent shall notify the Nunavut Planning Commission (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](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](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](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 Resolute Bay, phone: (867) 252-3879).

### **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](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.

### **Transport of Waste/Dangerous Goods and Waste Management**

6. Environment and Climate Change Canada recommends that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.
7. 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.

### **Aircraft Identification**

8. The Proponent shall provide the community of Resolute Bay the planned aerial 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.

#### REGULATORY REQUIREMENTS

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

1. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://www.canlii.org/ca/sta/n-28.8/whole.html>).
3. 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.
4. 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.
5. 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**.
6. 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.
7. 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 Department of National Defence's "NOEX 17". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated February 28, 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](http://www.sararegistry.gc.ca)) to get the current status of a species.

Updated: October 2016

Species at Risk <sup>1</sup>	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility <sup>2</sup>
<b>Migratory Birds</b>			
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 <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
<b>Vegetation</b>			
Felt-leaf Willow	Special Concern	Schedule 1	GN
Blanket-leafed Willow	Special Concern	Schedule 1	GN
Porsild's Bryum	Threatened	Schedule 1	GN
<b>Terrestrial Wildlife</b>			
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
<b>Marine Wildlife</b>			
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

<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>
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

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

<sup>2</sup>Environment 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.

<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.

<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 *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*<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 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](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, and Heritage (CH), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CH is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and the federal government. Its role in mitigating impacts of developments on heritage resources is as follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals

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<sup>3</sup> 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.