



**SCREENING DECISION REPORT  
NIRB FILE No.: 22EN057**

NPC File No.: 149880

**February 2, 2023**

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

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

**OUTLINE OF SCREENING DECISION REPORT**

**REGULATORY FRAMEWORK..... 2**

**PROJECT REFERRAL ..... 3**

**PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS..... 3**

**ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF NUPPAA..... 9**

**VIEWS OF THE BOARD ..... 11**

**RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS ..... 17**

**MONITORING AND REPORTING REQUIREMENTS..... 22**

**OTHER NIRB CONCERNS AND RECOMMENDATIONS ..... 23**

**CONCLUSION ..... 24**

**APPENDICES**

**APPENDIX A: SPECIES AT RISK IN NUNAVUT ..... 25**

**APPENDIX B: ARCHAEOLOGICAL AND PALAEOLOGICAL RESOURCES TERMS AND CONDITIONS FOR LAND USE PERMIT HOLDERS ..... 28**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## PROJECT REFERRAL

On October 18, 2022, the NIRB received a referral to screen Viridis Mining and Minerals (Viridis)’s “South Kitikmeot Gold Project” proposal from the Nunavut Planning Commission (Commission), which noted that the project proposal is outside the area of an applicable regional land use plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Nunavut Agreement* and s. 87 of the *NuPPAA*, the NIRB commenced screening this project proposal and assigned it file number **22EN057**.

## PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

### 1. Screening Process Timelines

The following key stages were completed for the screening process:

<b>Date</b>	<b>Stage</b>
October 18, 2022	Receipt of project proposal and referral from the Commission.
October 19, 2022	Request to complete public registry online and provide information pursuant to s. 144(1) of the <i>NuPPAA</i>
November 8, 2022	Receipt of online application from Proponent
October 8, 2022	Request(s) to Proponent for additional information in order to carry out screening pursuant to s. s. 144(1) of the <i>NuPPAA</i>
November 25, 2022	Proponent responded to information request(s) and provided additional information
November 25, 2022	Scoping pursuant to s. 86(1) of the <i>NuPPAA</i>
December 8, 2022	Public engagement and comment request
January 6, 2023	Receipt of public comments
January 12, 2023	Proponent responded to comments/concerns raised by public

Date	Stage
January 19, 2023	Ministerial extension requested from the Minister of Northern Affairs
February 2, 2023	Issuance of Screening Decision Report

## 2. Project Scope

All documents received and pertaining to this project proposal can be accessed from the NIRB's online public registry at [www.nirb.ca/project/125742](http://www.nirb.ca/project/125742).

<b>Project:</b>	South Kitikmeot Gold Project				
<b>Region:</b>	Kitikmeot				
<b>Location:</b>	Southern mainland Kitikmeot				
<b>Closest Community:</b>	Kugluktuk	<b>Distance (approximate)</b>	424 kilometres (km)	<b>Direction</b>	Southeast
<b>Summary of Project Description:</b>	The Proponent intends to conduct mineral exploration of several mineral properties in the region.				
<b>Project Proposed Timeline:</b>	2023 to 2029				

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

- Mineral exploration activities over life of project including:
  - Geological mapping
  - Soil and rock sampling;
  - Exploration drilling on land and ice;
  - Air and ground geophysics; and
  - Trenching
- Use of drill rigs which may include:
  - Diamond drilling;
  - Rotary air blast drilling; and
  - Reverse circulation drilling;
  - Use of water pumps
- Establishment of a tent camp for up to 60 persons, including use of:
  - Generators;
  - Water pump;
  - Waste disposal including:
- Open burning of combustible waste;
- Backhaul of hazardous and combustible waste;
- Incineration or backhaul of human waste;
- Discharge of camp greywater to a sump;
- Treatment and discharge of accumulated water in secondary containment;

- Drilling water discharged into upland sump or natural depression;
- Temporary field camps for up to six (6) people;
- Use of small aircraft for mobilization;
- Use of helicopters for transportation of personnel and personnel to exploration sites;
- Use of drones for airborne mapping and geophysics;
- Use of ground vehicles and small watercraft for camp and drilling support and personnel transport, including:
  - Snowmobiles;
  - All Terrain Vehicles (ATV);
  - Utility Terrain Vehicles (UTV);
  - Skid-steer (Bobcat); and
  - Small watercraft;
- Potential use of Tibbit-Contwoyto Winter Road for mobilization of supplies;
- Use of up to 299 cubic meters of water for domestic and drilling purposes;
- Use of:
  - Propane (up to 2,500 pounds/1,100 kilograms);
  - Lubricants (up to 180 gallons/680 litres);
  - Drilling additives (up to 180 gallons/680 litres);
  - Drilling Salt (up to 25,000 pounds/11,400 kilograms);
  - Cement (up to 25,000 pounds/11,400 kilograms)
  - Aviation Fuel (up to 41,000 litres);
  - Diesel (up to 46,125 litres);
  - Gasoline (up to 5,125 litres);
  - Oxygen; and
  - Acetylene;

### 3. Inclusion or Exclusion to Scoping List

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

### 4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal including the inclusion of scope activities was distributed on December 8, 2022, to community organizations in Cambridge Bay and Kugluktuk, 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 January 6, 2023, regarding:

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

- Any matter of importance to the Party related to the project proposal.

On or before January 6, 2023, the NIRB received comments from the following interested parties:

- **Kitikmeot Inuit Association,**
- **Government of Nunavut,**
- **Crown-Indigenous Relations and Northern Affairs Canada,**
- **Environment and Climate Change Canada,**
- **Fisheries and Oceans Canada,**
- **Transport Canada, and**
- **D. Adjun**

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

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

**Kitikmeot Inuit Association (KIA)**

- KIA will work with the Proponent to address any concerns that may arise separately from the NIRB screening.

**Government of Nunavut (GN)**

- A field archaeological assessment program, with proper authorizations and licenses, is recommended to be initiated prior to any land disturbance activities.
- The GN recommends that the Proponent clearly identify the range of activities required to support the “maximum program magnitude” and include relevant information which details each component.
- The waste management plan requires greater detail and emphasis on secure storage of wastes and certain materials.
- The GN recommends that the Proponent deals with issues and deficiencies within the Spill Response Plan ranging from the stated definition of a spill to the handling and storage of certain materials.
- The GN recommends that the Proponent contact the local GN Conservation Officer and Wildlife Biologist based in Kugluktuk to report wildlife incidents and mortalities.
- The Wildlife Surveillance Monitoring Procedures should indicate an increase in survey wildlife frequency based on the presence of caribou in the Early Warning Area and/or Zone of Influence.
- The GN recommends that the Proponent be vigilance and caution to reduce disturbance from Project activity as caribou are moving between important habitats and across their range.

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

- The sump treatment method may require confirmation with the Nunavut Water Board to ensure appropriate measures are used for sump treatment.
- CIRNAC recommends that the Proponent ensure no trenching or pitting occurs within thirty-one (31) metres of the highwater mark of any water body.
- CIRNAC recommends that the Proponent continue to consult with the relevant interested Indigenous peoples and organizations regarding employment and training, mitigation measures, business opportunities, and status updates about the project.

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

- ECCC recommends that the Proponent follow the guidelines in the Technical Document for Batch Waste Incineration to ensure diligent operation and maintenance of the incineration device.
- Recommends the Proponent consult the Species at Risk registry to obtain the most current information for their operations and to identify appropriate mitigation and/or monitoring measures to avoid and lessen project effects on species under their responsibility.
- Recommends the Proponent identify adverse effects of the Project on the species at risk likely to be affected and their critical habitat.
- Recommends the Proponent carry out all phases of the project in a manner that reduces risk to migratory birds and to avoid harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests and eggs.
- Recommends the Proponent make attractants (food, domestic wastes and petroleum-based chemicals) inaccessible to wildlife at all times.

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

- Fisheries and Oceans Canada recommends the proponent review the following:
  - The Interim Code of Practice for End-of-pipe fish screens (<https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html>),
  - The Code of Practice for Ice bridges and snow fills (<https://www.dfo-mpo.gc.ca/pnw-ppe/practice-pratique-eng.html>), and
  - The Measures to Protect Fish and Fish Habitat (<http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>).
- Notes that if the project is able to comply with the conditions and measures set out in the Interim Code of Practice, the Proponent's proposal will not require an authorization under the Fisheries Act or the Species at Risk Act.
- Notes it is the proponent's Duty to Notify DFO if they have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat.

## Transport Canada (TC)

- Notes the proponent must identify the location of the proposed screened water intakes and docks at camp sites, as this will determine Transport Canada (TC)'s involvement under the Canadian Navigable Waters Act (CNWA).
- Note the proponent can either 1) voluntarily apply to the Minister of Transport for approval of each work; or 2) seek authorization using the public resolution process set out in the CNWA.

## D. Adjun

- Recommends is for the project not to be done in the area.
- Believes that the mining industry is inadequately helping people in the north.
- Believe youth should be given enough time to obtain education and be able to fill higher level mining positions.

### *b. 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. However, Inuit Qaujimaningit and traditional and community knowledge is incorporated into the terms and conditions recommended below based on information collected from prior and similar projects, data collected and mapped by the Commission, and other available sources.

## 5. Proponent's Response to Public Comments and Concerns

On January 12, 2023, the Proponent provided a response to the concerns raised during the commenting period. The following is a summary of the Proponent's response:

- In response to KIA's comments, the Proponent noted that Viridis looks forward to working with the Kitikmeot Inuit Association
- In response to GN's comments, the Proponent noted:
  - Viridis plans to conduct an archaeological impact assessment prior to any new land disturbances.
  - Mineral exploration programs evolve over time largely in response to the sampling results. For regulatory efficiency and operational flexibility, Viridis scoped its application to include the maximum program extents reasonably foreseeable over the project life.
  - The total level of expected activity over the project lifespan is as described in the project application form and section 5 of the Project Description.
  - Viridis commits to updating the Waste Management Plan and Spill Response Plan prior to the start of operations and to store materials in a secondary containment.

- Viridis accepts these recommendations and commits to updating and Spill Response Plan prior to the start of operations where required.
- Viridis will update section 7.1.3 of the Environment & Heritage Resources Protection Plan (EHRPP) to clarify wildlife reporting.
- Viridis considers its Monitoring measures to be adequately protective and proactive for wildlife surveillance.
- In response to DFO’s comments, the Proponent noted:
  - Viridis has reviewed the Interim Code of Practice for End-of-pipe fish screens and is confident that it will comply with the Fisheries Act and notify DFO if there are any fish mortalities.
  - Viridis considers the Mitigation measures to adequately address flying heights of 610 m and avoidance of water crossings, calving and post-calving areas.
- In response to CIRNAC’s comments:
  - Viridis will addressing the sump with the Inspector and the Nunavut Water Board during the water licence process.
  - Viridis confirms that no trenching or pitting will occur within thirty-one (31) metres of the highwater mark of any water body.
  - Viridis is committed to realizing benefits for Nunavummiut to the greatest extent possible.
- In response to TC’s comments, the Proponent noted that it will update its relevant management plans with figures illustrating its camp water intake location once the camp is established.

## 6. Time of Report Extension

As a result of the time required to allow review of the comments received from interested parties and the responses of the proponent, the NIRB was not able to provide its screening decision report to the responsible Minister within 45 days as required by Article 12, Section 12.4.5 of the *Nunavut Agreement* and s. 92(3) of the *NuPPAA*. Therefore, on January 19, 2023, the NIRB wrote to the Minister of Northern Affairs, Government of Canada, seeking an extension to the 45-day timeline for the provision of the Board’s Report.

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

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

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

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

Factor	Comment
The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.	<ul style="list-style-type: none"> <li>▪ The physical footprint of the proposed project components is 110 square kilometres (km<sup>2</sup>).</li> <li>▪ The proposed project would take place within habitats of far-ranging wildlife species such as caribou, migratory and non-migratory birds, arctic fox, arctic hare and Species at Risk such as Polar Bears. As such, project activities may potentially affect terrestrial habitat and migratory patterns.</li> </ul>
The ecosystemic sensitivity of that area.	<ul style="list-style-type: none"> <li>▪ No specific areas of ecosystemic sensitivity have been identified by the Proponent within the physical footprint of the proposed project.</li> <li>▪ Part of the proposed project area is near/within the migration route of the Bathurst caribou herd.</li> </ul>
The historical, cultural and archaeological significance of that area.	<ul style="list-style-type: none"> <li>▪ No specific areas of historical, cultural and archaeological significance have been identified by the Proponent within the physical footprint of the proposed project.</li> </ul>
The size of the human and the animal populations likely to be affected by the impacts.	<ul style="list-style-type: none"> <li>▪ Animal populations may be affected due to increase in noise and dust from drilling, material transportation, and construction activities at the drill site.</li> </ul>
The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts.	<ul style="list-style-type: none"> <li>▪ A zone of influence of up to 100 km from the most potentially-disruptive project activities was selected for the NIRB’s assessment.</li> <li>▪ With adherence to the relevant regulatory requirements and application of the mitigation measures recommended by the NIRB, no significant residual effects are expected to occur.</li> </ul>
The cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.	<ul style="list-style-type: none"> <li>▪ The mitigation measures recommended by the NIRB have been designed with consideration for the potential for cumulative effects to result from the impacts of the project combined with other past, present, and reasonably foreseeable projects.</li> </ul>
Any other factor that the Board considers relevant to the assessment of the significance of impacts.	<ul style="list-style-type: none"> <li>▪ No other relevant factors were identified.</li> </ul>

**Other past, present and reasonably foreseeable projects considered in this assessment:**

<b>NIRB Project Number</b>	<b>Project Title</b>	<b>Project Type</b>
<i>Proposed Developments – undergoing assessment</i>		
12MN036	Back River Energy Center	Mine Development
<i>Present Projects – approved or in operation</i>		
12MN036	Back River Mine	Mine Development
<i>Past Projects</i>		
00MN059	Jericho Diamond Mine	Mine Development
00RN085	Tibbit-Contwoyto Winter Road	Winter Road

**VIEWS OF THE BOARD**

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

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

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

<b>Valued Component</b>	Caribou, Caribou Calving and Post-Calving Habitat, and Caribou Migration Corridors
<b>Potential effects:</b>	Potential adverse effects to caribou and caribou habitat particularly calving, post-calving and migration areas of the Bathurst caribou herd from disturbance and disruption of movement from project-related noise, including the development and operations of a permanent camp, the potential use of Tibbit-Contwoyto Winter Road, movement of fuel cache, drilling, exploration and air transportation activities. Project activities would occur during May through October when the caribou are the most sensitive to noise disturbance. Further, there is potential for cumulative effects on disturbance to the caribou from other projects in the area.
<b>Nature of Impacts:</b>	Potential long-term adverse effects are possible from increased stress to caribou. If the mitigation measures proposed by the Proponent and the terms and conditions recommended by the NIRB are adhered to, the potential adverse effects to caribou and caribou habitat are considered to be of moderate magnitude, over the short-term and reversible upon cessation of activities.

<b>Mitigating Factors:</b>	The Proponent has committed to executing its work in a way that minimizes the adverse effects to wildlife and has developed an <i>Environment and Heritage Resources Protection Plan</i> . In addition to the Proponent’s proposed mitigation measures, it is expected that the terms and conditions including 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 would mitigate any potential adverse impacts to caribou in the direct project area and areas adjacent to the proposed project.
<b>Proposed Terms and Conditions:</b>	Wildlife General – 21 through 26 Aircraft Flight Restrictions – 29 through 33 Caribou and Muskox – 34 through 38
<b>Related Acts and/or Regulations:</b>	1. The <i>Wildlife Act (Nunavut)</i> and its corresponding regulations ( <a href="http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html">http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html</a> ).

<b>Valued Component</b>	Wildlife harvesting and traditional land use activities.
<b>Potential effects:</b>	No specific concerns or impacts to public and traditional land use activities in the area have been identified, however, the Board is recommending terms and conditions to ensure project activities are informed by available Inuit Qaujimaningit and that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
<b>Nature of Impacts:</b>	The potential for impacts is considered to be minimal due to the activity being a relocation of an existing camp that has been in operation for over 10 years, giving time for wildlife and local residents to have adapted to its presence.
<b>Mitigating Factors:</b>	The Proponent has committed to executing its work in a way that minimizes the negative effects to wildlife. The Board is also recommending terms and conditions that ensure that the affected communities and organizations are informed about the project proposal, and that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. Terms and conditions associated with the protection of wildlife and wildlife habitat have also been recommended.
<b>Proposed Terms and Conditions:</b>	Other – 47 and 48
<b>Related Acts and/or Regulations:</b>	1. The <i>Nunavut Act</i> ( <a href="http://laws-lois.justice.gc.ca/eng/acts/N-28.6/">http://laws-lois.justice.gc.ca/eng/acts/N-28.6/</a> ).

<b>Valued Component</b>	Terrestrial wildlife including muskoxen, wolves, wolverine, Arctic fox, Arctic hare, migratory and non-migratory birds and Species at Risk (Grizzly Bear, Wolverine, Peregrine Falcon, Short-eared Owl and Red-necked Phalarope)
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<b>Potential effects:</b>	Potential adverse effects to terrestrial wildlife, migratory and non migratory birds, and their associated habitats due to increased noise and dust generated from the project activities, including the development and operations of a permanent camp, the potential use of Tibbit-Contwoyto Winter Road, movement of fuel cache, drilling, exploration and air transportation activities.
<b>Nature of Impacts:</b>	The potential adverse effects of the proposed project activities to terrestrial wildlife and birds is considered to be of low magnitude, of short duration and reversible.
<b>Mitigating Factors:</b>	The Proponent has committed to executing its work in a way that minimizes the adverse effects to wildlife and has developed an <i>Environment and Heritage Resources Protection Plan</i> . The Board is also recommending terms and conditions that ensure that the potential adverse impacts can be mitigated by measures such as minimizing activities when wildlife and birds are particularly sensitive to disturbance especially during denning periods, migration, nesting and moulting, that minimum flight heights and restrictions are adhered to, and ensuring that all project personnel are made aware of the measures to protect wildlife.
<b>Proposed Terms and Conditions:</b>	Waste Management – 9 and 10 Fuel and Chemical Storage – 11 through 20 Wildlife General – 21 through 26 Migratory Birds and Raptors Disturbance – 27 and 28 Aircraft Flight Restrictions – 29 through 33 Caribou and Muskox – 34 through 38 Land Use and Restoration of Disturbed Areas – 40 through 44 Camps – 45 and 46
<b>Related Acts and/or Regulations:</b>	<ol style="list-style-type: none"> <li>1. The <i>Migratory Birds Convention Act</i> and <i>Migratory Birds Regulations</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/M-7.01/">http://laws-lois.justice.gc.ca/eng/acts/M-7.01/</a>).</li> <li>2. The <i>Species at Risk Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html">http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html</a>). Attached in <b>Appendix A</b> is a list of Species at Risk in Nunavut.</li> <li>3. The <i>Wildlife Act (Nunavut)</i> and its corresponding regulations (<a href="http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html">http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html</a>).</li> <li>4. The <i>Aeronautics Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/A-2/">http://laws-lois.justice.gc.ca/eng/acts/A-2/</a>).</li> </ol>

<b>Valued Component</b>	Surface water quality, fish and fish habitat
<b>Potential effects:</b>	Potential adverse effects on surface water quality, and fish and fish habitat, from the establishment and operation of the camp, the storage, transportation, and use of fuel, exploration drilling activities and the seasonal use of the winter road.

<b>Nature of Impacts:</b>	It is expected that standard operational considerations would mitigate any potential adverse impacts to water quality, fish, and fish habitat. As such, potential impacts would be considered to have a low magnitude, be mostly reversible and temporary in nature, and would have a low probability of extending beyond the immediate project area.
<b>Mitigating Factors:</b>	The Proponent has developed a <i>Spill Response Plan</i> for the project and has committed to adequate spill response equipment materials and personnel during fuel transfer, and to maintain fuel storage and transfer within secondary containment. The Board is also recommending terms and conditions such as requiring the Proponent to employ mitigation measures related to water protection during operations; fuel storage, use, and spill response; waste management; and personnel training related to fuel and waste. It is expected that these terms and conditions would mitigate any potential adverse impacts to water quality, fish and fish habitat in the direct project area and areas adjacent to the proposed project.
<b>Proposed Terms and Conditions:</b>	Water Use – 6 through 8 Fuel and Chemical Storage – 8, 11 through 20 Road and Ground Disturbance – 39 Land Use and Restoration of Disturbed Areas 40– 44 Camps – 45 and 46
<b>Related Acts and/or Regulations:</b>	<ol style="list-style-type: none"> <li>1. The Proponent is advised that the Canadian Environmental Protection Act (<a href="http://laws.justice.gc.ca/en/C-15.31/">http://laws.justice.gc.ca/en/C-15.31/</a>) 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.</li> <li>2. The <i>Fisheries Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html">http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html</a>).</li> <li>3. The <i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/n-28.8/">http://laws-lois.justice.gc.ca/eng/acts/n-28.8/</a>).</li> <li>4. The <i>Transportation of Dangerous Goods Regulations</i> (<a href="http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm">http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm</a>), <i>Transportation of Dangerous Goods Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/t-19.01/">http://laws-lois.justice.gc.ca/eng/acts/t-19.01/</a>), and the <i>Canadian Environmental Protection Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/C-15.31/">http://laws-lois.justice.gc.ca/eng/acts/C-15.31/</a>).</li> <li>5. The <i>Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations</i> (<a href="http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/FullText.html">http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/FullText.html</a>).</li> </ol> <p>The Proponent must identify their tank system to Environment and Climate Change Canada and installation of new systems must comply with the regulations’ design requirements.</p>

<b>Valued Component</b>	Terrestrial vegetation, land, soil quality, terrain stability and permafrost
<b>Potential effects:</b>	Potential adverse effects to ground stability, vegetation health, soil quality, terrain, and permafrost from the establishment and operation of the camp; the storage, transportation, and use of fuel; exploration drilling activities; and the seasonal use of the winter road.
<b>Nature of Impacts:</b>	The potential for adverse effects is limited to the project footprint and the probability of long-term impacts occurring is considered to be low, and with proper remediation is reversible.
<b>Mitigating Factors:</b>	The Board is recommending terms and conditions such as requiring the Proponent to employ mitigation measures related to the vegetation, soil, permafrost and surface water quality, spill response, personnel training related to fuel and waste; use appropriate measures to prevent unplanned deposition of sediment and runoff. The Board is also recommending terms and conditions to ensure that the potential adverse effects are minimized should they be observed.
<b>Proposed Terms and Conditions:</b>	Fuel and Chemical Storage – 11 through 20 Ground Disturbance – 39 through 44
<b>Related Acts and/or Regulations:</b>	<ol style="list-style-type: none"> <li>1. The <i>Transportation of Dangerous Goods Regulations</i> (<a href="http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm">http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm</a>), <i>Transportation of Dangerous Goods Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/t-19.01/">http://laws-lois.justice.gc.ca/eng/acts/t-19.01/</a>), and the <i>Canadian Environmental Protection Act</i> (<a href="http://laws-lois.justice.gc.ca/eng/acts/C-15.31/">http://laws-lois.justice.gc.ca/eng/acts/C-15.31/</a>).</li> <li>2. The <i>Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations</i> (<a href="http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/FullText.html">http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/FullText.html</a>). The Proponent must identify their tank system to Environment and Climate Change Canada and installation of new systems must comply with the regulations' design requirements.</li> <li>3. <i>Environmental Guidelines for the Management of Hazardous Waste</i>, Government of Nunavut, Revised October 2010 (<a href="https://www.gov.nu.ca/sites/default/files/Guideline%20-%20General%20Management%20of%20Hazardous%20Waste%20-%28revised%20Oct%202010%29_0.pdf">https://www.gov.nu.ca/sites/default/files/Guideline%20-%20General%20Management%20of%20Hazardous%20Waste%20-%28revised%20Oct%202010%29_0.pdf</a>).</li> </ol>

<b>Valued Component</b>	Wildlife harvesting and traditional land use activities.
<b>Potential effects:</b>	Potential adverse effects to traditional land use pursuits in the area from caribou migration disruptions and other wildlife disturbances from increased noise associated with the operational and drilling activities at the Southern Arctic Ecozone site, the transportation of personnel and equipment to and from the drill locations, the construction of a new permanent camp, and the mineral exploration activities. The Proponent is proposing to work in an area in proximity to caribou calving, post-calving and caribou migration routes and the potential for disruption

	may cause stress and avoidance of critical caribou habitat. As a result, local caribou populations may be reduced and subsequently the availability of caribou as country food.
<b>Nature of Impacts:</b>	Although the proposed project would include temporary and intermittent activities that would have limited potential for direct interaction with traditional land use activities, potential long-term impacts are possible from increased stress to wildlife (particularly to caribou) in key habitat areas. Unmitigated project impacts could affect the migratory patterns of the caribou herds and could result in indirect impacts.
<b>Mitigating Factors:</b>	The Proponent has committed to executing its work in a way that minimizes the negative effects to wildlife and has developed an <i>Environment and Heritage Resources Protection Plan</i> and has committed to adopting mobile caribou protection measures. The Board is also recommending terms and conditions that ensure that the affected communities and organizations are informed about the project proposal, and that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area.
<b>Proposed Terms and Conditions:</b>	Wildlife General – 21 through 26 Aircraft Flight Restrictions – 29 through 33 Caribou and MuskoX – 34 through 38
<b>Related Acts and/or Regulations:</b>	N/A

**Socio-economic effects on northerners:**

<b>Valued Component</b>	Local hiring, contracting and economic impact
<b>Potential effects:</b>	Potential positive impacts from the hiring of local community members for various projects and activities.
<b>Nature of Impacts:</b>	Potential for impacts is considered to be positive if the Proponent adheres to its commitment to hiring locally to the extent possible.
<b>Mitigating Factors:</b>	The Board is recommending terms and conditions to ensure that the Proponent continues to inform the communities of the ongoing site activities and to ensure community members are aware of and best able to successfully connect with hiring opportunities.
<b>Proposed Terms and Conditions:</b>	Other – 49
<b>Related Acts and/or Regulations:</b>	N/A

**Significant public concern:**

<b>Valued Component</b>	Public Concern
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<b>Potential effects:</b>	While no explicit public concern were expressed over this particular project proposal, potential impacts on the Bathurst caribou herd due to projects in this region have been expressed in the past.
<b>Nature of Impacts:</b>	Proposed project activities are located in proximity to the calving, post-calving and migration areas of the Bathurst Caribou Herd; this is also an area that may be used for traditional activities, such as hunting and camping. There is also the potential for cumulative effects of the proposed with other projects in the area which may cause cumulative effects on the Bathurst Caribou herd abundance and habitat quality.
<b>Mitigating Factors:</b>	Follow up consultation and involvement of local community members is expected to mitigate any potential for public concern resulting from project activities. The Board has recommended a term and condition to ensure that available Inuit Qaujimaningit and community knowledge of the area can inform project design. Additionally, the Board is recommending that the Proponent provide an annual report that includes wildlife observations and an evaluation of the success of the mitigative measures applied.
<b>Proposed Terms and Conditions:</b>	Other – 47 and 48
<b>Related Acts and/or Regulations:</b>	N/A

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

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

**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: 1-5.

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:

1. Viridis Mining and Minerals (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times and make it accessible to enforcement officers upon request.

2. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 149088), and the NIRB (Online Application Form, October 21, 2022), and all relevant terms and conditions in effect for active project 22EN057. This information should be accessible to enforcement officers upon request.
3. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.
4. The Proponent shall ensure that it meets the standards and/or limits as set out in the authorizing agencies' permits or licences as required for this project.
5. The Proponent shall ensure that all personnel, staff and contractors are adequately trained prior to commencement of all project activities, and shall be made aware of all operational plans, management plans, guidelines and Proponent commitments relating to the project.

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

6. The Proponent shall not extract water from any fish-bearing water body unless the water intake hose is equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams should not be used for water withdrawal unless otherwise authorized by the appropriate authorizing agency.
7. The Proponent shall ensure that no disturbance of the stream bed, lakebed or the banks of any definable watercourse be permitted, except where deemed necessary for maintaining project-specific operational commitments or approved by a responsible authority in cases of spill management.
8. The Proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes (including wastewater) or sediment into any water body. The Proponent should have in place an Emergency Spill Response Plan that is approved by the appropriate authorizing agency(ies).

### **Waste Management**

9. The Proponent shall manage all hazardous and non-hazardous waste including food, domestic wastes, debris and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) in such a manner to avoid release into the environment and access to wildlife at all times until disposed of appropriately or at an approved facility.
10. The Proponent shall incinerate all combustible wastes as needed and dispose of as required by the appropriate authorizing agencies. All non-combustible wastes from the project site shall be removed to an approved facility for disposal.

### **Fuel and Chemical Storage**

11. The Proponent shall locate all fuel and other hazardous materials a minimum distance away from the high-water mark of any water body and environmentally sensitive areas as required by the appropriate authorizing agencies. The materials shall be stored in such a manner as to prevent their release into the environment.
12. The Proponent shall use adequate secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) when storing barreled fuel and chemicals at all locations.

13. The Proponent shall ensure that re-fuelling of all equipment occurs a minimum distance away from the high-water mark of any water body as required by the appropriate authorizing agencies.
14. Fuel and hazardous material storage areas and fuel lines should be clearly marked with signs or flagging to avoid accidental breaks and punctures, and to ensure areas remain visible during the winter months.
15. All fuel and chemical storage containers must be clearly marked with the Proponent's name for ease of identification.
16. The Proponent shall routinely inspect and document the conditions of fuel and hazardous material storage containers and containment areas as required by the appropriate authorizing agencies. Fuel containment areas shall be kept clear of debris, water and snow to facilitate inspections for leaks.
17. The Proponent shall have a Spill Contingency Plan in place at all fuel storage or transfer locations and shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available.
18. The Proponent shall follow the authorizing agencies' direction for management and removal of hazardous materials and wastes (e.g., contaminated soils, sediment and waste oil).
19. The Proponent shall ensure that wildlife deterrent systems are utilized at the time of a spill incident in order to avoid wildlife (terrestrial or marine) and migratory birds from being contaminated.
20. The Proponent shall ensure that all spills of fuel or other deleterious materials of 100 litres or more must be reported immediately to the 24-hour Spill Line at (867) 920-8130.

### **Wildlife – General**

21. The Proponent shall not substantially alter or damage or destroy any wildlife habitat in conducting this operation unless otherwise authorized by the appropriate authorizing agencies.
22. The Proponent shall not chase, weary, harass or molest wildlife. This includes persistently circling, chasing, hovering over, pursuing or in any other way harass wildlife, or disturbing large groups of animals.
23. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
24. The Proponent shall ensure that all wildlife have the right-of-way on any roads or trails. Vehicles are required to slow down or stop and wait to permit the free and unrestricted movement of wildlife across roads or trails at any location.
25. The Proponent shall enforce safe speed limits for vehicles travelling along the road to ensure drivers have sufficient time to react in a safe manner if wildlife are encountered on or adjacent to the road or trail.
26. The Proponent shall ensure that drivers maintain spacing appropriate for driving and road conditions, and speed limits, to ensure drivers have time to safely react to any wildlife on the road.

## **Migratory Birds and Raptors Disturbance**

27. The Proponent shall carry out all phases of the project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions in applying the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*.
28. The Proponent shall not disturb or destroy the nests or eggs of any birds. If active nests of any birds are discovered or located (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have naturally left the vicinity of the nest by establishing a protection buffer zone<sup>1</sup> appropriate for the species and the surrounding habitat.

## **Aircraft Flight Restrictions**

29. The Proponent shall not alter flight paths to approach wildlife and avoid flying directly over animals.
30. The Proponent shall plan flight paths that minimize flights over known habitat likely to have birds or concentrations of wildlife. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.
31. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum flight altitude of 610 metres (2,100 ft) above ground level except during landing, take-off or if there is a specific requirement for low-level flying, which does not disturb wildlife or migratory birds.
32. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
33. 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**

34. The Proponent shall avoid interfering with any paths or crossings known to be frequented by caribou during periods of migration as identified by current land use plans in place and/or by Inuit Qaujimaningit.
35. The Proponent shall not locate any operation or undertake activities that could block or cause any diversion to migration of caribou or muskoxen.
36. The Proponent shall immediately cease activities likely to interfere with the migration or calving of caribou or muskoxen until such time as the caribou or muskox have passed.
37. Should pregnant caribou cows, cows with young calves, or groups of 50 or more caribou be observed within one (1) kilometer of project operations at any time, the Proponent shall suspend all operations in the vicinity, including low level overflights, drilling,

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<sup>1</sup> Recommended setback distances to define buffer zones have been established by Environment and Climate Change Canada for different bird groups nesting in tundra habitat and can be found at [www.ec.gc.ca/paom-itmb](http://www.ec.gc.ca/paom-itmb).

blasting/trenching, and use of snowmobiles and all terrain vehicles outside the immediate vicinity of the camp, until caribou are no longer in the immediate area.

38. During the period of April 14 to June 1 when muskoxen are present, the Proponent shall not approach muskoxen closer than one (1) kilometer. This includes all operations, including low-level over flights, blasting, and use of snowmobiles and all-terrain vehicles outside the immediate vicinity of the camps.

### **Road and Ground Disturbance**

39. 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.

### **Land Use and Restoration of Disturbed Areas**

40. The Proponent shall use existing trails where possible during project activities on the land.
41. The Proponent shall ensure that the land use area is kept clean and tidy at all times.
42. The Proponent shall avoid disturbance on slopes prone to natural erosion, and alternative locations shall be utilized.
43. The Proponent shall remove all garbage, fuel and equipment at the end of each field season and/or upon completion of work and/or upon abandonment.
44. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state using Best Available Technology Economically Achievable (BATEA) upon completion of work and/or abandonment.

### **Camps**

45. The Proponent shall ensure that all camps are located durable surfaces, such as gravel or sand that is consolidated and can withstand repeated, heavy use. Measures shall be put in place to prevent erosion, trail formation and damage to the ground.
46. The Proponent shall not erect camps or store materials on the surface ice of lakes or streams, except that which is for immediate use.

### **Other**

47. 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.
48. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
49. The Proponent should, to the extent possible, hire local people and access local services where possible.

In addition, the Board is recommending the following:

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

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

### **Abandonment and Restoration Plan**

2. The Proponent shall submit a revised and final version of the Abandonment and Restoration Plan to the Nunavut Impact Review Board, Indigenous and Northern Affairs Canada and Government of Nunavut- Department of Environment prior to undertaking activities in the potential development area. The revised Plan should include procedures for using native plant species for re-vegetation in order to eliminate risk of introducing invasive species to the area pursuant to the Wildlife Act.

### **Community Consultation Report**

3. The Proponent shall maintain and update a community engagement strategy plan and a public consultation report to the Nunavut Impact Review Board as follows:
  - a. Community Engagement Strategy Plan should be provided prior to the commencement of project activities and include:
    - i. information on how the Proponent plans to inform local residents of the project proposal; and
    - ii. how the community will be briefed on the monitoring results.
  - b. Public Consultation Report should be provided following completion of project activities and include:
    - i. copy of materials presented to community members;
    - ii. a description of issues and concerns raised; and
    - iii. advice offered to the Proponent as well as any follow-up actions that were required or taken to resolve any concerns expressed about the project.

### **Spill Contingency Plan**

4. The Proponent shall update its Spill Contingency Plan to include the up to date emergency contact numbers for the Government of Nunavut-Department of Environment, Manager of Environmental Protection (867-975-7748) and Environment and Climate Change Canada, Enforcement Branch (867-975-4644).

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

### **Change in Project Scope**

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

### **Copy of licences, etc. to the Board and Commission**

2. The NIRB respectfully requests that responsible authorities submit a copy of each licence, permit or other authorization issued for the Project to the NIRB to assist in enabling possible project monitoring that may be required. Please forward a copy of the licences, permits and/or other authorizations to the NIRB directly at [info@nirb.ca](mailto:info@nirb.ca) or upload a copy to the NIRB's online registry at [www.nirb.ca](http://www.nirb.ca).

### **Use of Inuit Qaujimaningit**

3. The Proponent is encouraged to work with local communities and knowledge holders to inform project design, to carry out the project, and to confirm or validate the perspectives represented in publications produced as part of the project. Care should be taken to ensure that Inuit Qaujimaningit and local knowledge collected for the project is used with permission and is accurately represented.

### **Bear and Carnivore Safety**

4. 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: [https://www.enr.gov.nt.ca/sites/enr/files/resources/safety\\_in\\_grizzly\\_and\\_black\\_bear\\_country\\_english.pdf](https://www.enr.gov.nt.ca/sites/enr/files/resources/safety_in_grizzly_and_black_bear_country_english.pdf).
5. 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).
6. 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 Kugluktuk, phone: 867-982-7450).

## Species at Risk

7. 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.

## Incineration of Wastes

8. The Proponent review Environment and Climate Change Canada’s “Technical Document for Batch Waste Incineration”, available at the following link: <http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1>. The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting.

## CONCLUSION

The foregoing constitutes the Board’s screening decision with respect to the Viridis Mining and Minerals’ “South Kitikmeot Gold Project”. The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated February 2, 2023 at Baker Lake, NU.



Kaviq Kaluraq, 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: September 2019

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

<sup>2</sup> The Department of Fisheries and Oceans has responsibility for aquatic species.

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

<b>Terrestrial Species at Risk<sup>2</sup></b>	<b>COSEWIC Designation</b>	<b>Schedule of SARA</b>	<b>Government Organization with Primary Management Responsibility<sup>3</sup></b>
Beluga Whale (Eastern High Arctic-Baffin Bay Population)	Special Concern	No Schedule	DFO
Beluga Whale (Western Hudson Bay Population)	Special Concern	No Schedule	DFO
<b>Fish</b>			
Atlantic Cod (Arctic Lakes Population)	Special Concern	No Schedule	DFO
Fourhorn Sculpin (Freshwater Form)	Data Deficient	Schedule 3	DFO
Lumpfish	Threatened	No Schedule	DFO
Thorny Skate	Special Concern	No Schedule	DFO

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



**INTRODUCTION**

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

**TERMS AND CONDITIONS**

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

	<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 Overview Assessment and/or Inventory and Documentation and/or Mitigation
c)	Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities	Archaeological/Palaeontological Overview Assessment and/or Inventory and Documentation and/or Mitigation

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

<sup>4</sup>P.C. 2001-1111 14 June, 2001

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

## Legal Framework

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

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

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

## Palaeontology and Archaeology

Under the *Nunavut Act*<sup>5</sup>, the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*<sup>6</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

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<sup>5</sup> s. 51(1)

<sup>6</sup> P.C. 2001-1111 14 June, 2001

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

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

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

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

### **Types of Development**

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

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

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

### **Types of Studies Undertaken to Preserve Heritage Resources**

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

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

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

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

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

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

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

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

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

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