



**NIRB File No.: 25YN017**  
NPC File No.: 150680

April 29, 2025

Dr. Brian Glass  
NASA Ames Research Center  
Bldg N269, Rm 136  
Moffett Field, CA 94035  
United States of America

Sent via email: [brian.glass@nasa.gov](mailto:brian.glass@nasa.gov)

**Re: Notice of Screening for NASA Ames Research Center’s “Mars Exploration through Analog-site Drilling” Project Proposal**

Dear Brian Glass:

On March 20, 2025, the Nunavut Impact Review Board (NIRB) received a referral to screen NASA Ames Research Center’s “Mars Exploration through Analog-site Drilling (MEAD)” project proposal from the Nunavut Planning Commission (Commission), with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan. On March 21, 2025, the NIRB received the complete application from the Proponent.

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 s. 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB has commenced screening this project proposal and has assigned it file number **25YN017** - please reference this file number in all future related correspondence.

#### PROJECT OVERVIEW

***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/126161](http://www.nirb.ca/project/126161).

<b>Project:</b>	Mars Exploring through Analog-site Drilling (MEAD)
<b>Region:</b>	Qikiqtani (North Baffin) Region
<b>Location:</b>	Haughton River Valley (Haught Impact Structure) on Devon Island

<b>Closest Community:</b>	Resolute Bay	<b>Distance (approximate)</b>	175 kilometres (km)	<b>Direction</b>	Northeast
<b>Summary of Project Description:</b>	The Proponent intends to conduct MEAD drilling to excite the local surface to create a shallow seismic map and collect small samples to study microbial population changes at different depths. This information would enable future Mars and lunar missions to generate target maps before drilling and sampling.				
<b>Project Proposed Timeline:</b>	August 2025				

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

- Use of a low-power drill to drill up to four (4) shallow holes (less than 1 meter) for sampling and local seismic vibration at two (2) sites;
- Use of geophones to create shallow seismic map;
- Use of a tool called SOLID to search for tiny life signs;
- Use of a tool called ARIA to detect minerals and organic changes in crater rocks;
- Collect approximately 200 grams of soil per hole;
- Test new drilling imaging methods to avoid hazards and find underground targets;
- Use of all-terrain vehicles and trailers to transport personnel and equipment to scientific sites;
- Use of existing base camp at Houghton River Valley;
- Storage of fuel at camp site; and
- Collection of drinking water from nearby Houghton River.

### ***Inclusion or Exclusion of Scoping List***

At this time, the NIRB has identified no additional works or activities in relation to the project proposal. As a result, the NIRB will proceed with screening the project based on the scope as described above.

## REQUEST FOR COMMENTS

All documents received can be accessed from the NIRB's online public registry at [www.nirb.ca/project/126161](http://www.nirb.ca/project/126161) and include:

- *Nunavut Planning Commission Conformity Determination*
- *Nunavut Planning Commission Application*
- *NIRB Online Application*
- *Project Summary*

The NIRB will copy you on screening process related correspondence and upload related documents to the NIRB's online registry for public access. The NIRB may request additional information at any time during the process.

The NIRB is copying parties and municipalities potentially affected by NASA Ames Research Center's project proposal with this letter, and we invite interested parties to comment directly to the NIRB by **May 9, 2025**.

The NIRB would like parties to provide comments 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.

Please note that *proposed* project-specific terms and conditions, should the project proceed, have been attached for consideration and comment ([Appendix A](#)).

#### CONTACT INFORMATION

Please send your comments to the NIRB via email at [info@nirb.ca](mailto:info@nirb.ca), via fax at (867) 983-2594 or via the individual project dashboard for this assessment on the NIRB's online public registry at [www.nirb.ca/project/126161](http://www.nirb.ca/project/126161).

If you have any questions or require clarification, feel free to contact the undersigned at [kgillard@nirb.ca](mailto:kgillard@nirb.ca).

Sincerely,



Kelli Gillard PAg, CTAJ  
Manager, Impact Assessment  
Nunavut Impact Review Board

Attachments: Appendix A: *Proposed Project Specific Terms and Conditions*

Enclosures (4): Public Notice of Screening (English, and Inuktitut)  
Comment Forms (English, and Inuktitut)

cc:

Distribution List

Jared Ottenhof, Qikiqtani Inuit Association  
Chris Spencer, Qikiqtani Inuit Association  
Conor Goddard, Qikiqtani Inuit Association  
Joel Fortier, Qikiqtani Inuit Association  
Assol Kubeisinova, Qikiqtani Inuit Association  
Justin Buller, Government of Nunavut  
Dianne Lapierre, Qikiqtani Inuit Association  
Sean Joseph, Qikiqtani Inuit Association  
Jonas Azonaha, Qikiqtani Inuit Association  
Mosha Cote, Nunavut Research Institute  
Tracey McCaie, Crown-Indigenous Relations and Northern Affairs Canada  
Marcus Bermann, Crown-Indigenous Relations and Northern Affairs Canada  
Lisa Pirie-Dominix, Canadian Wildlife Service  
Environment and Climate Change Canada  
Peter Unger, Natural Resources Canada  
Pierre-Olivier Emond, Natural Resources Canada

## **Appendix A: Proposed Project Specific Terms and Conditions**

The following is a list of project-specific terms and conditions which, should the project proceed, may be recommended to be attached to any approval.

### **General**

1. NASA Ames Research Center (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.: 150680), and the NIRB (Online Application Form, March 21, 2025). 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 ensure that water extraction from any fish-bearing waterbody is done with appropriate care and caution. Small lakes or streams should not be used for water withdrawal unless approved by the appropriate authorizing agency.

### **Waste Management**

7. 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.

### **Fuel and Chemical Storage**

8. 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.
9. 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.
10. All fuel and chemical storage containers must be clearly marked with the Proponent's name for ease of identification.

11. 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.
12. 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.
13. 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**

14. 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.
15. 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.
16. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
17. 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.

### **Migratory Birds and Raptors Disturbance**

18. 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*.
19. 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.

### **Caribou Disturbance**

20. 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.
21. The Proponent shall not locate any operation or undertake activities that could block or cause any diversion to migration of caribou.
22. The Proponent shall immediately cease activities likely to interfere with the migration or calving of caribou until such time as the caribou have passed.

---

<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).

### **Road and Ground Disturbance**

23. 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**

24. The Proponent shall use existing trails where possible during project activities on the land.
25. The Proponent shall ensure that the land use area is kept clean and tidy at all times.
26. 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.

### **Heritage Sites**

27. The Proponent shall ensure that archaeological and paleontological sites are not purposely or inadvertently disturbed by clients or staff as a result of project activities.
28. The Proponent shall ensure that all clients and staff are aware of the Proponent's responsibilities and requirements regarding archaeological or palaeontological sites that are encountered during land-based activities. This should include briefings explaining the prohibitions regarding removal of artifacts, and defacing or writing on rocks and infrastructure.

### **Other**

29. The Proponent should consult with local residents regarding their activities in the area and solicit available Inuit Qaujimaningit and information that can inform project activities.
30. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
31. The Proponent should, to the extent possible, hire local people and access local services where possible.