



NIRB Application for Screening #125785

Bedrock Mapping from Angikuni Lake

Application Type: New

Project Type: Scientific Research

Application Date: 3/31/2023 1:17:46 PM

Period of operation: from 0001-01-01 to 0001-01-01

Proposed Authorization: from 0001-01-01 to 0001-01-01

Project Proponent: Lorraine Lebeau
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DETAILS

Non-technical project proposal description

English:

The geology of this area remains poorly described, visited only by the Geological Survey once by aerial survey in the 1950s. This work focuses on aspects of stratigraphy, structural geology and age dating of the rocks to form a bedrock map and create associated scientific publications. According to western science, this area could provide critical information involving the initial assembly of North American continents and critical minerals. Therefore, the necessity of the work is to advance our understanding of the Earth's evolution, and to investigate the potential for critical minerals. The project will be undertaken in the study area outlined in the map (attached). We aim for the field research to tentatively commence from July 10th to the 31st. The team will collect field observations by taking notes, photographs, and rock samples by hammer. The team will be transported by foot, helicopter and boat; with the intention being mostly by boat (inflatable Zodiak) and helicopter to a lesser extent. Immediate risk to the environment is noise from the helicopter. We will follow the Government of Nunavut's recommended altitude for aircraft of 610 meters during point-to-point travel, and only intended on using the helicopter for 7 days. To mitigate noise caused by boats, we will use a smaller more quiet motor and stay well away from large mammals. Our stay at a field camp will also impact the environment with the use of water and the production of waste and garbage. The field crew will be advised that water use should be kept to a minimum and be well within the constraints of our Nunavut Water Board permit. Waste will be incinerated and/or stored in a bear safe container for later disposal. Crew members will give a wide berth of at least 100m to large mammals. We will have safety protocols in place for predatory wildlife. Human impacts will be limited. The Hunters and Trappers Organization Office and Senior Administrative Officer of Arviat have been will be consulted and this was not a point of concern that was raised to avoid potential disturbance to for Nunavummiutthe community. The data will be stored in the Geological Survey of Canada's, and the Canada-Nunavut Geoscience Office's database. Field notes and photographs will be catalogued and archived. Archeological findings will be photographed and coordinates noted; this data will be sent to the Inuit Heritage Trust for their management. It is our intention to involve as many Inuit owned firms and employees as possible for this project. This includes: 1) hiring interpreters for community consultations, 2) Indigenous translators for text in permits, presentations and letters to the community, 3) a wildlife monitor/ field assistant/cook is intended to be hired from Arviat to join us into the field, and 4) the contract for building the field camp will be prioritised to Indigenous owned firms. We intend to share our findings by:•Providing all publications to the local community of Arviat and the Nunavut Research Institute•Potentially presenting findings at the Nunavut Mining Symposium (if space is available). •Following-up•with the community after the field season to report the activities and findings.

French: This work is not in Iqaluit, and thus does not require French translation

[illegible]

Inuinnaqtun: Not required as this is in the Kivalliq region

Operations Phase: from 2023-07-10 to 2023-07-31

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Study area 2023	Researching	Crown	Angikuni Lake was previously inhabited by communities prior to the 1960's. The area continues to be an area that is visited by the nearest communities.	This area likely will contain evidence of community living in the area. Artifacts such as tent rings, kayak stands, traps, food caches, and inuksuit are likely to be observed in the area.	The nearest community in Nunavut is Arviat, is 330 km away.
Field camp	Camp	Crown	Angikuni Lake was previously inhabited by communities prior to the 1960's. The area continues to be an area that is visited by the nearest communities.	We will not have a camp in proximity to an archeological/paleontological site.	330 km distance from Arviat

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Arviat	Mona Okalik	Hunters and Trappers Office	2023-02-10
Arviat	Joe Savikataaq	Arviat Hamlet	2023-02-10
Arviat	Nicole Issakiark - Manager	HTO	2023-03-16
Arviat	Bobby Suluk	Arviat Interpreter	2023-03-16

Authorizations

Indicate the areas in which the project is located:

Kivalliq

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Research Institute	sent permit to Mosha Cote, pending approval.	Applied, Decision Pending		
Indigenous and Northern Affairs Canada	Application sent to Tracie McCaie and discussions with Kyle Amsel (Rankin Inlet)	Applied, Decision Pending		
Nunavut Water Board	Application sent to Robert Hunter Licensing Admin.	Applied, Decision Pending		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	fixed wing aircraft to mob in and out of camp. Possibly 7 days helicopter	
Water	4-person Zodiak boats	
Land	walking	

Project accomodation types

Temporary Camp

Other,

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Zodiak boat	2	4 person	daily boating geologists for mapping and transportation across the lake.
Helicopter	1	206 Bell Long Ranger	1 week of helicopter supported mapping
generator	1	3000-5000 KW	generator electricity for the camp
refrigerator	1	280 lbs	food storage, propane fueled
freezer	1	190 lbs	food storage
Heater	4	32 000 BTU	heating the tents
incinerator	1	180 lbs	waste management

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Motor oil	hazardous	2	1	2	Liters	4-stroke outboard oil change kit. includes 1 liter of 4-stroke marine engine oil
Diesel	fuel	4	45	180	Gallons	heaters for office and kitchen tents
Gasoline	fuel	2	45	90	Gallons	For boats
Propane	fuel	2	100	200	Lbs	refrigerator and freezer
Aviation fuel	fuel	10	45	450	Gallons	helicopter

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0	water pump	Angikuni Lake

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Camp	Combustible wastes	500 lbs	incineration and/ or transported back to town for appropriate disposal	-
Camp	Greywater	130L daily	grey water pit	-
Camp	Hazardous	16 45 gallon drums	empty drums will be transported outside of Nunavut for proper disposal	-
Camp	Sewage (human waste)	250 lbs	outhouse/burial	-

Environmental Impacts:

Environmental impacts from this project is largely from the use of a helicopter. Immediate risk to the environment from the helicopter is noise. To decrease stress on animals, we will follow the recommended altitude for aircraft by the Government of Nunavut of 610 meters during point-to-point travel. In addition, we will provide a wide berth to any animals spotted, including migratory birds. Long term impacts of the helicopter include the burning of fossil fuels into the atmosphere, contributing to climate change. To mitigate this, we will mostly be boating as a mode of transportation rather than using the helicopter. To mitigate this, we will only be using a 20 or 25 horse power motor, and stay well away from large mammals. Our stay at a field camp will also impact the environment with the use of water and the production of waste and garbage. The field crew will be advised that water is a precious resource, and that water use should be kept to a minimum. In addition, if wildlife is spotted in the field or around the field camp, all crew members will be advised not to distress any animals. If large mammals are spotted, crew members should give them a wide berth of at least 100m). We will have safety protocols in place for predatory wildlife. The only impact we should have on flora is when we are hiking along the land and we may step on small plants. We will not disturb the flora any further than this. There are no current communities nearby this area, and members of the community of Arviat did not present concern of our presence in this area.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

Angikuni Lake is one of several lakes located along the Kazan River. The lake is notable for rocky outcroppings of the Precambrian shield, with many islands. Small shrubs and stunted coniferous trees are present in the lows of the landscape.

Description of Existing Environment: Biological Environment

The Qamanirjuaq caribou herd migrate through this area every year. Grizzly bears, wolverine, muskox, and wolves also inhabit the area.

Description of Existing Environment: Socio-economic Environment

Presently there are no communities that inhabit the immediate area. It was once an area in which Inuit ancestors lived and were relocated from. Members from Arviat do not often visit this area to hunt or fish, though it is visited occasionally (as per communications with the HTO of Arviat).

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

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Cumulative Effects

This is a short term project, and on its own will not present cumulative effects.

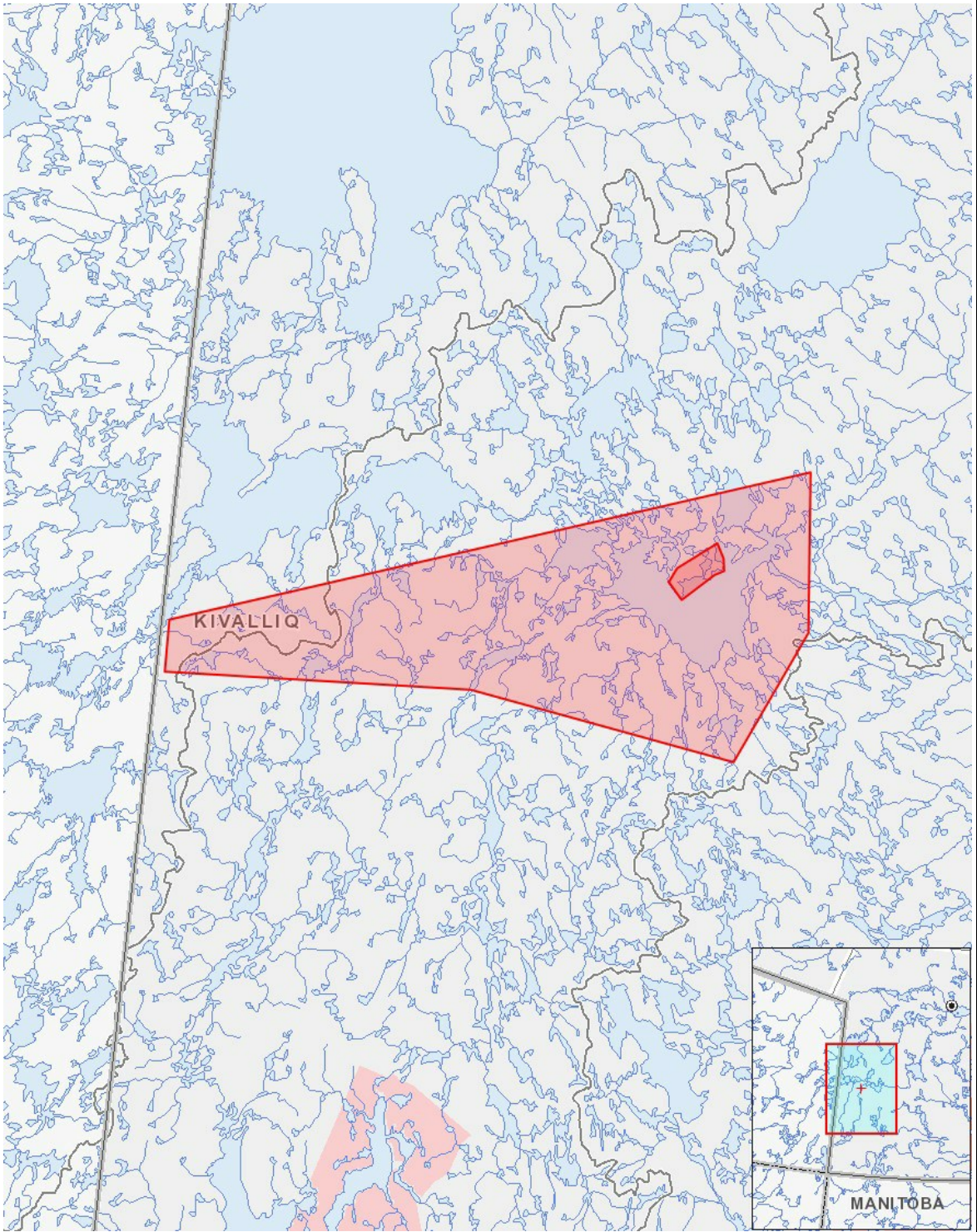
Impacts

Identification of Environmental Impacts

		PHYSICAL																		BIOLOGICAL										SOCIO - ECONOMIC							
		Designated environmental areas																		Ground stability										Permafrost							
		Hydrology / Limnology																		Water quality										Climate conditions							
		Eskers and other unique or fragile landscapes																		Surface and bedrock geology										Sediment and soil quality							
		Tidal processes and bathymetry																		Air quality										Noise levels							
		Vegetation																		Wildlife, including habitat and migration patterns										Birds, including habitat and migration patterns							
		Aquatic species, incl. habitat and migration/spawning																		Wildlife protected areas										Archaeological and cultural historic sites							
		Employment																		Community wellness										Community infrastructure							
		Human health																																			
Construction																																					
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Operation																																					
Camp		-	-	-	-	M	-	-	M	M	-	-	M		-	M	M	M	-		U	P	-	-	-	-	-	-	-	-	-	-	-	-	-		
Decommissioning																																					
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(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	polygon	Study area 2023
2	polygon	Field camp