



NIRB Application for Screening #125646 Tree River Geoscience Project 2022

Application Type: New

Project Type: Scientific Research

Application Date: 12/20/2021 4:04:36 PM

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

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

Project Proponent: Jesse Reimink
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USA
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DETAILS

Non-technical project proposal description

English: • Who: A scientific collaboration between Professor D. Graham Pearson of the University of Alberta and Dr. Jesse Reimink of Penn State University in the United States. Additional personnel involved include a PhD student from Penn State, and possibly regional geoscience experts from: the University of Alberta, Laurentian University, or the Nunavut Geoscience Office, as well as a float plane pilot. • What: We will conduct field sampling of ancient basement rocks exposed on the surface. We will be residing at the Plummer's Tree River Lodge and Kugluktuk for the duration of our project and will be flying a Bush Hawk float plane up to 80 km from this location during the day. We will land the Bush Hawk on small lakes, and hike to outcrops near the lakes. Once at outcrops of scientific interest, we will use small hand hammers to take geological samples for research (~1 kg samples) of the rocks of scientific interest. We will be sampling for 8-10 days and expect to collect ~100 samples of rocks in this time period. The sampling will be spread out and will largely be focused on going back to sample locations that have been described by previous Geological Survey of Canada bedrock mappers, projects that took place in the 1980's. Our crew will consist of three to five geologists and a float plane pilot. • Why: Sedimentary rocks exposed in this region contain mineral grains that are extremely old. With the advanced scientific laboratories currently in use at the University of Alberta, we are able to learn a lot about how the very ancient Earth operated by analyzing tiny mineral grains that are found in these sediments. We will be collecting rock samples that contain these tiny mineral grains, extracting the grains, and analyzing their chemical signatures. Our results will be published in peer-reviewed scientific journals. Hopefully, we will learn a lot about how the ancient Earth operated by analyzing these ancient mineral grains.

French: NA

Inuktitut: NA

Inuinnaqtun: • Kina: Naunaiyaut havaqatiriigunmi uumanga D. Graham Pearson-mit Ilihaqvikiyuamit Alberta-mi, Dr. Jesse Reimink-milu Penn State-mi Ilihaqvikiyuamit Amialigat Nunagiyaanit. Ilagiarutit havaktuni ilauyuni ilaqaqtuq PhD-nigiamini ilihaqtuq Penn State-mit, nunamilu nunamiutaliqiyit ayugituv uvanga, Ilihaqvikiyuamit Alberta-mit, Laurentian-mit Ilihaqvikiyuamit, uvaluniit Nunavumi Nunamiutanik Naunaiyainit Titiraqvanik, unalu qayalikmik. • Hunauk: Maniqami naunaiyainiaqtugut igilraat tungaviuyunik uyaqaik takuukhauqitunik qaagani nunap. Hiniktaqviquaqniaqtugut Plummer-p Qugluaqtualukmi Aguniaqtitiviani Kugluktumilu atuqhimaatqilugu havaariyaqut tikminiaqtugulu Bush Hawk-mi qayalikmi tikmiaqmi 80-kilaamitanik umanga inigiyauyumit ubluani. Miniaqtugut mikiyuni tahiqli, pihuklutalu uyaraqtuniqnut haniani tattit. Uyaraktuniqmugarupta naunaiyaivikhamut, atuqniaqtugut mikiyunik kautauyanik nunami naunaiyagakhanik ilituqhaqtakhanik (~1-kilogram-guyut naunaiyagakhat) uyaqanik naunaiyagakhanik. Naunaiyainiaqtugut 8-mit qulinut ubluni nahuriyugulu katitiriami ~100-nik naunaiyagakhanik uyaqanik talvuuna. Naunaiyainiq hiamayaktauniaqtuq ihumagiyaauluaqniaqtulu utiriami naunaiyariagani inigiyauyut uqautauyut kiguliqmi Nunaliqijutinik Naunaiyautimi Kanatami qaiqtunik nunauyiuqtinit, havaat atuqhimayut 1980 ukiut atuqtilugit. Havaktivut pigahunit talimanut nunamiutaliqiyit ilauniaqtut qayalikmiklu tikmialikmik. • Huuq: Qaliriiktuuyaaqtut uyaqat hatqitqut uvani nunami piqaqtut uyaraktaakhanik utuqaqyuaguyunik. Ihuaqhivaaliqtuni naunaiyautimi ilituqhautit taja atuqtauyuuq Ilihaqvikiyuami Alberta-mi, ilitpaliahimayugut amihunik qanuq igilraat Hilaqyuaq aulaniganik ilituqhaqhugit mikanuit uyaraktaakhani ilagiyait naniyauhmayut ukunai hiuraliani. Katitiriniaqtugut uyaqanik naunaiyagakhanik piqaqtunik mikanuanik uyaraktaakhanik avugiinik, ahivaqtiqlugit avugiinigit, ilituqhaqlugilu hunavaluqaqnginik nalunairutinik. Naluhuiqtavut takuupkaqtitauniqtut havaqatinik ihivriuniginik naunaiyautinik uqauhiini. Ihumami, iliniaqtugut amihunik qanuq taimaniraaluk Nunaqyuaq aulaniqaqmagaa ilituqhaqnginik ukua igilraat uyaraktaakhani ilaliutihimayut.

Personnel

Personnel on site: 4

Days on site: 12

Total Person days: 48

Operations Phase: from 2022-07-15 to 2022-07-25

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Sampling Region of Interest #1	Researching	Crown	NA	NA	NA
Sampling Region of Interest #2	Researching	Crown	NA	NA	NA
Tree River Lodge Base Camp #4	Camp	Crown	NA	NA	NA
Sampling Region of Interest #3	Researching	Inuit Owned Surface Lands	NA	NA	NA
Sampling Region of Interest #5	Researching	Inuit Owned Surface Lands	NA	NA	NA
Sampling Region of Interest #6	Researching	Inuit Owned Sub-Surface Lands	NA	NA	NA

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Information is not available			

Authorizations

Indicate the areas in which the project is located:

Kitikmeot

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Information is not available				

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Float Plane	

Project accomodation types

Permanent Camp

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Hand hammers	3	1x10x3	We will use handheld rock hammers to sample basement rocks
Bush Hawk on floats	1	1	We will utilize a BushHawk on floats for transport to and from field areas.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Aviation fuel	fuel	2	55	110	Gallons	Aviation fuel is required for flying to remote locations

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
1	Drinking water will be gathered from streams and lakes in the region	

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Information is not available				

Environmental Impacts:

No environmental impacts will be produced. We will remove all garbage and will take only small research rock samples.

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

Description of Existing Environment: Biological Environment

Description of Existing Environment: Socio-economic Environment

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Cumulative Effects

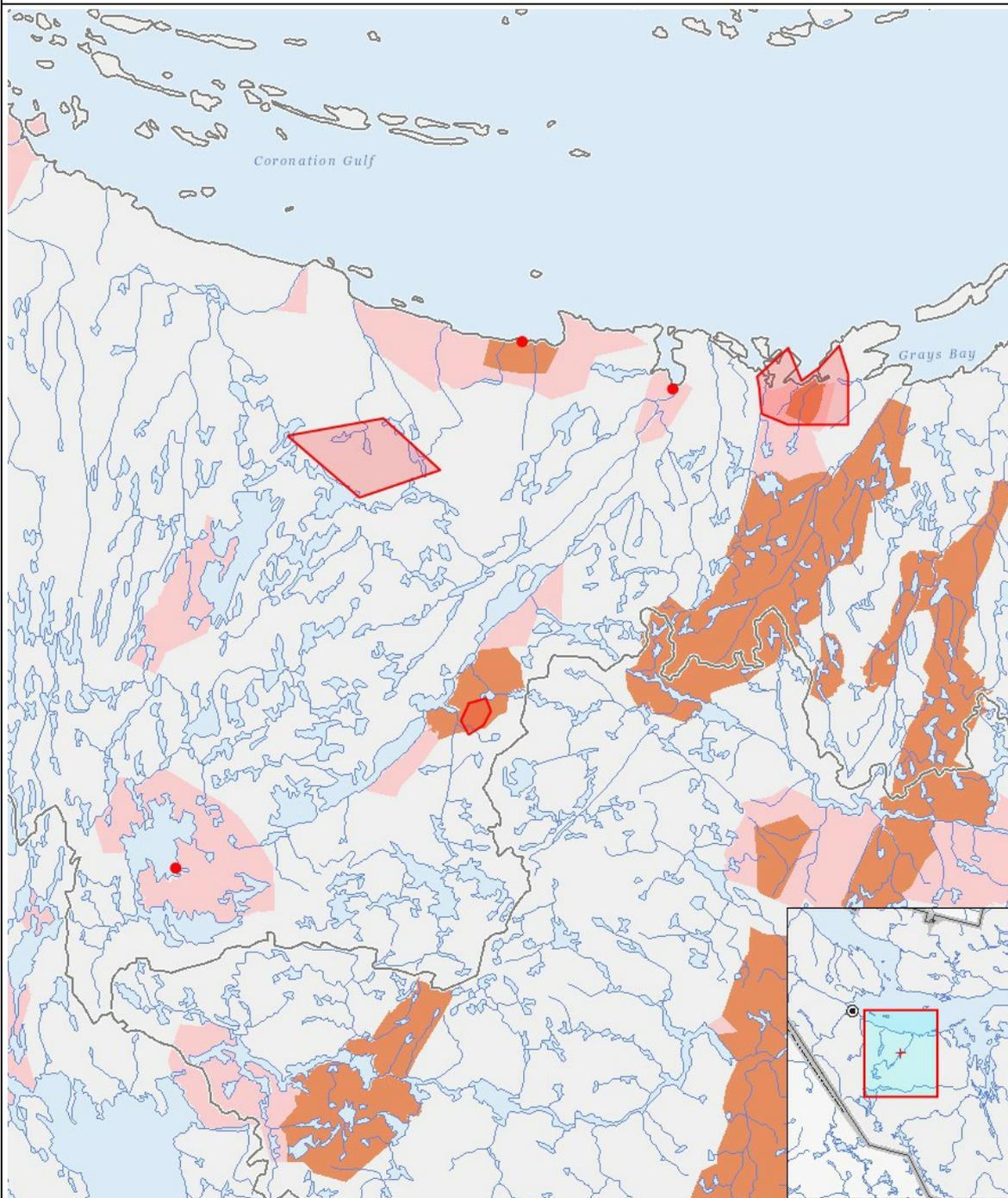
Impacts

Identification of Environmental Impacts

	PHYSICAL	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	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Decommissioning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	polygon	Sampling Region of Interest #1
2	polygon	Sampling Region of Interest #2
3	polygon	Sampling Region of Interest #3
4	point	Tree River Lodge Base Camp #4
5	point	Sampling Region of Interest #5
6	point	Sampling Region of Interest #6