



## PART 1 FORM PROJECT PROPOSAL INFORMATION REQUIREMENTS

To access NIRB documents, project screenings, and project reviews please visit the Nunavut Impact Review Board's ftp site <http://ftp.nirb.ca/>. The NIRB's website ([www.nirb.ca](http://www.nirb.ca)) is currently under construction. Please contact [info@nirb.ca](mailto:info@nirb.ca) should you have any questions or require further information.

### IMPORTANT!

Please be advised that your application will not be processed until the Sections 1 - 9 are completed in their entirety, in both English and Inuktitut (+ Inuinnaqtun, if in the Kitikmeot).

### SECTION 1: APPLICANT INFORMATION

1. **Project Name** Glacier-climate studies, Prince of Wales Icefield, Ellesmere Island

2. **Applicant's full name and mailing address:**

Shawn Marshall  
Department of Geography, University of Calgary  
2500 University Dr NW, Calgary AB, T2N 1N4

Phone: 403-220-4884  
Fax: 403-282-6561  
Email: shawn.marshall@ucalgary.ca

3. **Primary contact's full name and mailing address:**

Shawn Marshall  
Department of Geography, University of Calgary  
2500 University Dr NW, Calgary AB, T2N 1N4

Phone: 403-220-4884  
Fax: 403-282-6561  
Email: shawn.marshall@ucalgary.ca

### SECTION 2: AUTHORIZATION NEEDED

1. **Indicate all authorizations associated with the project proposal:**

<input type="checkbox"/>	Regional Inuit Association (RIA)
<input type="checkbox"/>	Nunavut Water Board (NWB)
<input type="checkbox"/>	Nunavut Planning Commission (NPC)
<input type="checkbox"/>	Indian and Northern Affairs Canada (INAC)
<input type="checkbox"/>	Department of Fisheries and Oceans (DFO)
<input type="checkbox"/>	Community Government & Services (CG&S)
<input checked="" type="checkbox"/>	Nunavut Research Institute (NRI)
<input type="checkbox"/>	Department of Culture, Language, Elders, and Youth (CLEY)

<input type="checkbox"/>	Canadian Launch Safety (CLS)
<input type="checkbox"/>	Environment Canada (EC)
<input type="checkbox"/>	Government of Nunavut (GN)
<input type="checkbox"/>	Department of National Defense (DND)
<input type="checkbox"/>	Hamlet
<input type="checkbox"/>	Parks Canada (PC)
<input type="checkbox"/>	Canadian Wildlife Service (CWS)
<input type="checkbox"/>	Other (please specify):
<input checked="" type="checkbox"/>	NSERC and PCSP environmental screening

2. **List the active permits, licenses, or other authorizations related to the project proposal, and their expiry date(s):**  
NRI 02 15 13R-M expiry Dec 31, 2013



3. List the pending permits, licenses, or other authorizations related to the project proposal:

Query submitted to Nunavut Water Board for renewal/waiver of license 3BC-GCS1212

4. Has this project or any components of this project been previously screened or reviewed by NIRB?

YES

If YES, indicate the previous project name and NIRB File No. 12YN016

### SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. Indicate the type of project proposal (check all that apply)<sup>(1,2)</sup>:  
(See Appendix A for Project Type Definitions)

1	All-Weather Road/Access Trail	<input type="checkbox"/>	9	Site Cleanup/Remediation	<input type="checkbox"/>
2	Winter Road/ Winter Trail	<input type="checkbox"/>	10	Oil and Natural Gas Exploration/Activities	<input type="checkbox"/>
3	Mineral Exploration	<input type="checkbox"/>	11	Marine Based Activities	<input type="checkbox"/>
4	Advanced Mineral Exploration	<input type="checkbox"/>	12	Scientific/International Polar Year Research*	<input checked="" type="checkbox"/>
5	Mine Development /Bulk Sampling	<input type="checkbox"/>	13	Harvesting Activities*	<input type="checkbox"/>
6	Pits and quarries	<input type="checkbox"/>	14	Tourism Activities*	<input type="checkbox"/>
7	Offshore Infrastructure (port, break water, dock)	<input type="checkbox"/>	15	Other <sup>(2)</sup> :	<input type="checkbox"/>
8	Seismic Survey	<input type="checkbox"/>			<input type="checkbox"/>

**Please note:**

1. All project types listed above, except those marked with an asterisk (\*), will also require the Proponent to submit a **Part 2 Project Specific Information Requirement (PSIR) Form**. The NIRB application process will not be considered complete without the Part 2 PSIR Form.
2. Please be advised that in order to complete the NIRB process, the NIRB may request additional information at any time during the process.
3. If "Other" is selected, contact NIRB for direction on whether a Part 2 PSIR Form is required.



2. If Project Type 3, 4 or 5 was selected above, please indicate the mineral of interest that is being extracted. Include a brief description.

<input type="checkbox"/>	Base Metals (zinc, copper, gold, silver, etc)
<input type="checkbox"/>	Diamonds
<input type="checkbox"/>	Uranium
<input type="checkbox"/>	Other: _____

3a. If Project Type 12, 13 or 14 was selected above, complete the table and questions below.

Transportation Type	Quantity	Proposed Use	Length of Use
Twin Otter	1	PCSP, Resolute to Prince of Wales Icefield, Ellesmere Island	2 days (dropoff, pickup)
Skis		All travel on-site will be on skis	

3b. Describe any docks, piers, air strips or related structures that are to be used in conjunction with the proposed project activities. **Please note:** the building of new structures may require a Part 2 Form.

**We will use a ski-access (snow) landing strip on the icefield**

3c. If a temporary camp site is to be established, describe the proposed structures in detail and indicate the type and source of power for the camp site if applicable.

**Temporary camp for 10 days (May 13-22, 2013), on the Prince of Wales Icefield. Three tents (portable), propane stoves, small (1 kW) generator to recharge batteries, computers.**

#### 4. Personnel

Total No. of personnel on site = (A)	<u>2</u>	Total No. of days on-site = (B)	<u>10</u>	Total No. of Person days (A) x (B) =	<u>20</u>
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#### 5. Timing

Period of operation: from May 13, 2013 to May 22, 2013  
Proposed term of authorization: from May 10, 2013 to May 31, 2013

#### 6a. Region (check all that apply):

<input checked="" type="checkbox"/> North Baffin	<input type="checkbox"/> Kivalliq	<input type="checkbox"/> Kitikmeot	<input type="checkbox"/> Transboundary: _____
<input type="checkbox"/> South Baffin	<input type="checkbox"/> National Park		

6b. Describe the location of the proposed project activities in a regional context, noting the proximity to the nearest communities and any protected areas.

**There are no nearby communities or protected areas. The field site is about midway between Grise Fiord and Eureka, more than 200 km from each. Site co-ordinates N 78.03° W 81.5°. We will**







### *Reporting*

Publications in scientific journals are anticipated (e.g., *Journal of Glaciology*). Reports will be provided to PCSP and NRI, and our group would be delighted to speak on Arctic climate change with any interested communities (e.g. Grise Fiord, Resolute).

### *Infrastructure*

No permanent structures are needed. We will establish a temporary (tent) camp on the glacier and all equipment and supplies will be flown in and out in May 2013. Camp will consist of three tents, we will cook from propane-burning Coleman stoves, and we will melt snow for drinking water. We will be using a portable backcountry toilet, and all waste will be flown out. Travel on-site will be on ski, pulling pulks to transport gear on and off the glacier site.

- TRANSLATIONS ATTACHED FOR THIS RESEARCH AND FOR THE 2012 PROGRESS REPORT -



**IMPORTANT:** IF THE PROPOSED ACTIVITIES REQUIRE SUBMISSION OF A NIRB PART 2 PSIR FORM, PLEASE COMPLETE SECTION 8 ONLY, OTHERWISE CONTINUE ON WITH SECTION 5.

## SECTION 5: MATERIAL USE

1. List equipment to be used (including drills, pumps, aircraft, vehicles, etc.):

Equipment type and number	Size – dimensions	Proposed use
Twin Otter access to site		field crew dropoff, pickup
generator	1 kW	Recharge batteries, laptop
Weather stations	1 m2 (poles, with instruments)	Collect weather data
Ice auger/coring drill	20 m long	Collect shallow ice core sample

2a. Detail fuel and hazardous material use:

Fuel	Number of Containers and Capacity of Containers	Total Amount of Fuel (in Litres)	Proposed Storage Methods
Diesel			
Gasoline	2 x 20 L	40 L	Jerry cans, stored on plastic tarps
Aviation fuel			
Propane	3 x 20 lb	60 lb	Camp cache
Other			
Hazardous Materials and Chemicals		Total Amount of Hazardous Materials and Chemicals (in Litres)	

2b. Describe the proposed Spill Prevention Plan.

Gasoline (for generator) to be poured on tarps; any spill to be towel-wiped.

3a. Detail the anticipated daily water consumption rates

Daily amount (m <sup>3</sup> )	Proposed water retrieval methods	Proposed water retrieval location
20 L (0.02 m <sup>3</sup> ) (drinking, cooking)	Snow melt	At glacier camp, surface snow

3b. Have you applied for a water License with the Nunavut Water Board?

YES

If yes, what class of licence?

Inquiry in place on whether we require a Class B Licence (Miscellaneous) (renewal from 2012)

## SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

### 1. List the types of waste associated with the proposed project activities:

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage (human waste)	20 kg	Portable toilet; flown out	
Greywater	100 L	Pour into snow pit or crevasse on the glacier surface	
Combustible wastes	20 kg	Flown out	
Non-Combustible wastes	10 kg	Flown out	
Overburden (organic soil, waste material, tailings)			
Hazardous waste			
Other:			

### 2. Describe the proposed Waste Management Plan.

All waste generated will be byproduct of camp activities (e.g. food preparation, packaging). Grey water from cooking/dishes will be disposed of on-site; all human waste and garbage will be flown out. The scientific activities do not generate waste: just data collection (weather, snow samples). Packaging will be flown out with the rest of our garbage.

## SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

### 1. List the community representatives that have been contacted and provide the minutes of the meetings if available:

None – we are not working near any communities, or on traditional lands, and most of our work is on the glacier, where Inuit don't traditionally travel and where specialized training is required.

Community	Name	Organization	Date Contacted

## SECTION 8: GENERAL QUESTIONS

### 1. Will you be disturbing any known archaeological sites?

NO

## SECTION 9: APPLICANT SIGNATURE



Professor, University of Calgary

Feb 11, 2012		
<b>Signature</b>	<b>Title</b>	<b>Date</b>





## APPENDIX A

### Project Type Definitions

**Access Trail:** A project proposal with the objective of providing vehicular access to an area of interest involving minimal alteration to the terrain.

**Advanced Exploration:** A project proposal with the objective of identifying size, grade, and physical characteristics of a mineral occurrence and to assess the economic and technical feasibility of developing the mineral deposit into a producing mine

**All-Weather Road:** A project proposal with the objective of road construction for use in all seasons.

**Bulk Sampling:** A project proposal with the objective of extracting of large samples of mineralized material involving hundreds to thousands of tonnes. Samples are selected as representative of the potential mineral deposit being sampled. May involve crushing/milling (on small-scale)

**Harvesting activities:** A project proposal with the objective of harvesting animals, marine mammals and/or fish from their natural habitats by means of hunting or trapping for traditional and commercial use.

**Marine Based Activities:** Any activity occurring in the marine environment, such as vessel use associated with land-based activities or disposal at sea.

\*Please note that normal community re-supply or individual ship movements not associated with land-based project proposals shall not be screened by NIRB (Section 12.12.2 of NLCA).

**Mine Development:** A project proposal with the objective of extracting broken rock with mineralization of sufficient grade and tonnage to sustain commercial mining operations (ore). Mining a body of ore can be achieved by either open pit and/or underground development. Mine development may involve milling. Milling involves treatment of the extracted ore through a combination of mechanical and chemical processes to selectively recover the valuable mineral.

**Mineral Exploration:** A project proposal with the objective of exploring an area to find geological anomalies. It involves site reconnaissance (ground and/or air) to locate broad and fiscal mineral deposits.

**Offshore Infrastructure:** A project proposal with the objective of building off loading facilities constructed off the shoreline and connected to the mainland of the marine or freshwater environment. Examples include a jetty, dock, or port facility.

**Oil and Gas Exploration/Activities:** A project proposal that includes 1) exploration, such as seismic or geological mapping, 2) drilling of oil and gas wells, 3) construction and operation of a pipeline, a gas processing plant or any oil and gas facility within Nunavut.

**Pits and Quarries:** A project proposal with the objective of pitting, which involves the extraction of granular material (i.e. sands and gravels) and quarrying, which involves the removal of consolidated rock (i.e. bedrock, frozen soil).

**Scientific Research:** A project proposal with the objective of implementing a series of site activities comprised of observation of phenomena, measurement and collection of data necessary for scientific investigation in designated areas within a limited time period.

**Seismic Survey:** A project proposal with the objective of conducting a survey to map the depths and contours of rock strata by timing the reflections of sound waves released from the surface. Survey site locations may be offshore (not within 12 nautical miles of any coast), near shore, and extended onshore.

**Site Cleanups:** A project proposal with the objective of site cleanups (includes DEW line site cleanups), which focuses on the remediation of chemically contaminated soils, stabilization of landfills and dumps, demolition/disposal of infrastructure and debris and monitoring after cleanup is completed.



**Tourism Activity:** A project proposal with the objective of conducting travel predominantly for recreational, sport or leisure purposes within a designated area and limited time period.

**Winter Road:** A project proposal with the objective of building a road for winter use by leveling and compacting surface snow and ice. Winter road is removed at end of season.

**Winter Trail:** A project proposal with the objective of building a trail for winter use by a single pass of a tracked vehicle using a blade, if necessary.