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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: _Shawn Marshall_____Licence No: _____
(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Manager: Shawn Marshall Tel: 403-220-7516 Fax: 403-282-6561 E-mail: shawn.marshall@ucalgary.ca

2. Project Manager: Shawn Marshall Tel: 403-220-7516 Fax: 403-282-6561 E-mail: shawn.marshall@ucalgary.ca

3. Does the applicant hold the necessary property rights? No

4. Is the applicant an 'operator' for another company (i.e., the holder of the property rights)? If so, please provide letter of authorization. No

5. Duration of the Project

   X One year or less Start and completion dates: __May 2013_____
   ☐ Multi Year:

   If Multi-Year indicate proposed schedule of on site activities
   Start: _____ Completion:_____

CAMP CLASSIFICATION

6. Type of Camp

   ☐ Mobile (self-propelled)
   X Temporary
   ☐ Seasonally Occupied: _____
   ☐ Permanent
   ☐ Other:_____

7. What is the design, maximum and expected average population of the camp?

   2 people, May 13-22, 2013 Tent camp.

8. Provide history of the site if it has been used in the past.

   We camped on the icefield in spring 2013.

CAMP LOCATION

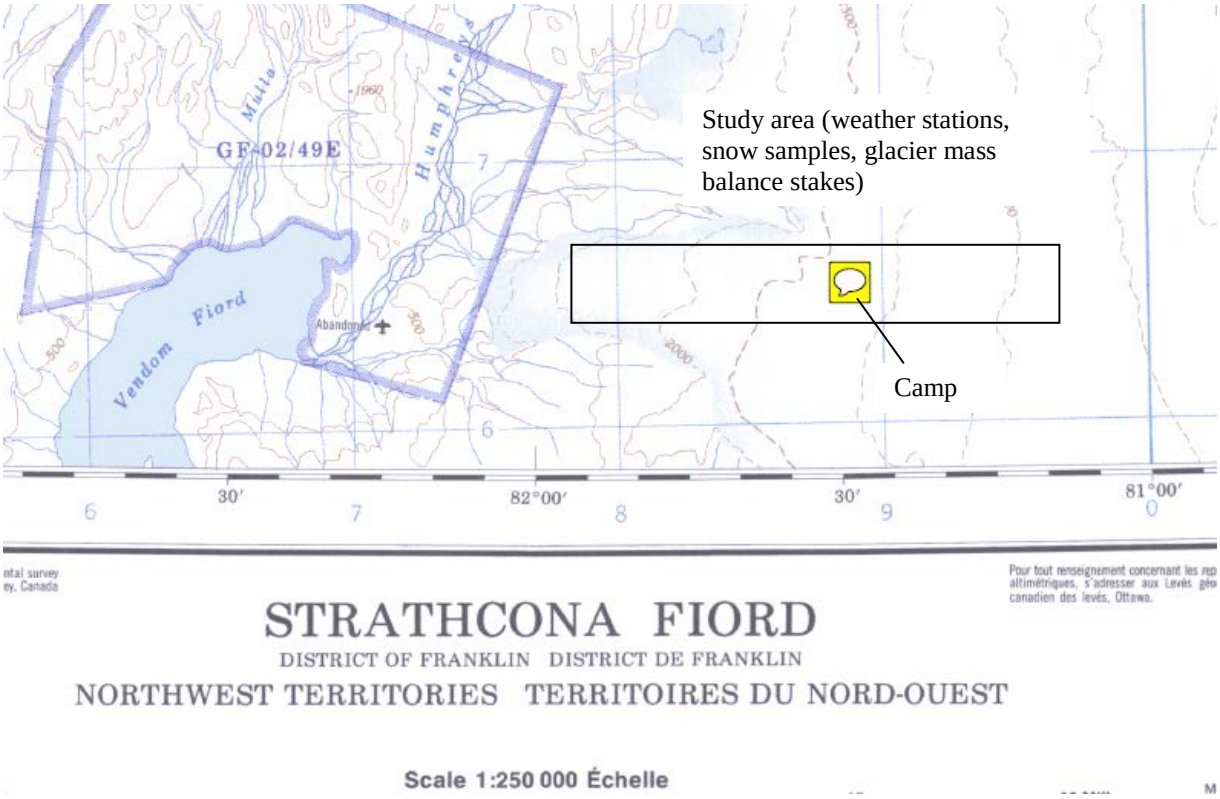
9. Please describe proposed camp location in relation to biogeographical and geomorphological features, and water bodies.

See map below.

The site is not near any significant historical/archaeological sites. There is no viable ecology on the glacier, where our work will be carried out. The Prince of Wales Icefield itself is a large (ca. 19,000 km^2) glacier complex and our research and travel will confined to the 'Vendom' outlet glacier.

10. How was the location of the camp selected? Was the site previously used? Was assistance from the Regional Inuit Association Land Manager sought? Include maps and/or aerial photographs.

Excerpt from NTS Map Sheet (49E, 1:250,000)



Study Site. The rectangle indicates our study area on the glacier, where we have a transect of weather stations and glacier mass balance stakes drilled into the ice. Data will be collected and all stations and poles will be removed in May 2013.

This site was selected because it was well-suited to our research objectives. Our research group has worked on the icefield near here off and on since 2001, and our weather data from the region indicates strong ice-marginal warming at this site that we wish to better quantify and understand. The glacier is relatively flat and safe at this location, making for safe, simple travel and a good landing strip for the Twin Otter.

11. Is the camp or any aspect of the project located on:

X	Crown Lands	Permit Number (s)/Expiry Date: AANDC, pending
☐	Commissioners Lands	Permit Number (s)/Expiry Date: _____
☐	Inuit Owned Lands	Permit Number (s)/Expiry Date: _____

12. Closest Communities (direction and distance in km):

Grise Fiord (220 km to the south)

13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work?

KIA were aware of and sanctioned our 2012 activities, but in 2013 we will not be on Inuit-owned land.

14. Will the project have impacts on traditional water use areas used by the nearby communities? Will the project have impacts on local fish and wildlife habitats?

No impacts.

PURPOSE OF THE CAMP

15.
- ☐ Mining (includes exploration drilling)
- ☐ Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.) (Omit questions # 16 to 21)
- X Other ____scientific (climate) research_____

16. Activities (check all applicable)

- ☐ Preliminary site visit
- ☐ Prospecting
- ☐ Geological mapping
- ☐ Geophysical survey
- ☐ Diamond drilling
- ☐ Reverse circulation drilling
- ☐ Evaluation Drilling/Bulk Sampling (also complete separate questionnaire)
- X Other: glacier, atmosphere, snowpack, and stream measurements

17. Type of deposit (exploration focus):

- ☐ Lead Zinc

- ☐ Diamond
- ☐ Gold
- ☐ Uranium
- ☐ Other: _____n/a_____

DRILLING INFORMATION

18. Drilling Activities

    - ☐ Land Based drilling
    - ☐ Drilling on ice

19. Describe what will be done with drill cuttings?

20. Describe what will be done with drill water?

21. List the brand names and constituents of the drill additives to be used? Includes MSDS sheets and provide confirmation that the additives are non-toxic and biodegradable.

22. Will any core testing be done on site? Describe.

SPILL CONTINGENCY PLANNING

23. The proponent is required to have a site specific Spill Contingency Plan prepared and submitted with the application This Plan should be prepared in accordance with the *NWT Environmental Protection Act, Spill Contingency Planning and Reporting Regulations, July 22, 1998* and *A Guide to the Spill Contingency Planning and Reporting Regulations, June 2002*. Please include for review.

We require 2 20-L jerry cans to fuel the generator. We will pour over a plastic tarp and mop up any spills. Gasoline will be stored wrapped in tarps. All of our travel is on foot/ski, so fuel needs are minimal and we will not have fuel or oil drums.

24. How many spill kits will be on site and where will they be located?

One spill kit, kept at our camp gear cache with the fuel.

25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.

6 20-lb propane tanks
2 20-L jerry cans gasoline; wrapped in tarps
All fuel cached at our camp on the glacier

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources.

Snowpack (melted for drinking water)

27. Estimated water use (in cubic metres/day): 20 L/day = 0.02 m^3/day

- X Domestic Use: (cooking, drinking) Water Source: _snow ____
- ☐ Drilling: _____ Water Source: _____
- ☐ Other: _____ Water Source: _____

28. Describe water intake for camp operations? Is the water intake equipped with a mesh screen to prevent entrapment of fish? (see *DFO 1995, Freshwater Intake End-of-Pipe Fish Screen Guideline*) Describe:

We will directly scoop from the snowpack (to be melted on cook stoves)

29. Will drinking water quality be monitored? What parameters will be analyzed and at what frequency?

No, no need – all fresh snow/ice melt

30. Will drinking water be treated? How?

No, no need – all fresh snow/ice melt

31. Will water be stored on site?

No

WASTE TREATMENT AND DISPOSAL

32. Describe the characteristics, quantities, treatment and disposal methods for:

X Camp Sewage (blackwater)

portable toilet; packed out on completion of the study, ca. 1 kg/day

X Camp Greywater

filtered and poured into a snowpit on the glacier; ca. 10 (0.01 m^3) per day

X Solid Waste

Garbage (paper, packaging); packed out on completion of the study, ca. 0.03 m^3/day

☐ Bulky Items/Scrap Metal

☐ Waste Oil/Hazardous Waste

☐ Empty Barrels/Fuel Drums

☐ Other:

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33. Please describe incineration system if used on site. What types of wastes will be incinerated?

34. Where and how will non-combustible waste be disposed of? If in a municipality in Nunavut, has authorization been granted?

All waste to be flown out

35. Describe location (relative to water bodies and camp facilities) dimensions and volume, and freeboard for all sumps (if applicable).

36. Will leachate monitoring be done? What parameters will be sampled and analyzed, and at what frequency?

OPERATION AND MAINTENANCE

37. Have the water supply and waste treatment and disposal methods been used and proven in cold climate? What known O&M problems may occur? What contingency plans are in place?

ABANDONMENT AND RESTORATION

38. Provide a detailed description of progressive and final abandonment and restoration activities at the site.

No reclamation necessary; the site will be left as we found it.

BASELINE DATA

39. Has or will any baseline information be collected as part of this project? Provide bibliography.

- ☐ Physical Environment (Landscape and Terrain, Air, Water, etc.)
- ☐ Biological Environment (Vegetation, Wildlife, Birds, Fish and Other Aquatic Organisms, etc.)
- ☐ Socio-Economic Environment (Archaeology, Land and Resources Use,
- ☐ Demographics, Social and Culture Patterns, etc.)
- ☐ Other: _____

REGULATORY INFORMATION

40. At a minimum, you should ensure you have a copy of and consult the documents below for compliance with existing regulatory requirements:

- ✓ ARTICLE 13 – *NCLA -Nunavut Land Claims Agreement*
- ✓ NWNSRTA – *The Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002*
- ✓ *Northwest Territories Waters Regulations, 1993*
- ✓ NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants
- ✓ NWB - Interim Rules of Practice and Procedure for Public Hearings
- ✓ RWED – *Environmental Protection Act, R-068-93- Spill Contingency Planning and Reporting Regulations, 1993*
- ✓ RWED A Guide to the Spill Contingency Planning and Reporting Regulations, 2002
- ✓ NWTWB - Guidelines for Contingency Planning
- ✓ *Canadian Environmental Protection Act, 1999 (CEPA)*
- ✓ *Fisheries Act, RS 1985* - s.34, 35, 36 and 37
- ✓ DFO - Freshwater Intake End of Pipe Fish Screen Guideline
- ✓ NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT
- ✓ Canadian Council for Ministers of the Environment (CCME); Canadian Drinking Water Quality Guidelines, 1987
- ✓ Public Health Act - Camp Sanitation Regulations
- ✓ Public Health Act - Water Supply Regulations
- ✓ *Territorial Lands Act* and *Territorial Land Use Regulations*; Updated 2000