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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: MARS INSTITUTE

Licence No: _____
(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Mgr: Pascal Lee Tel: 4086877103 Fax: N/A E-mail: pascal.lee@marsinstitute.net
2. Project Mgr: Pascal Lee Tel: 4086877103 Fax: N/A E-mail: pascal.lee@marsinstitute.net
3. Does the applicant hold the necessary property rights? Yes
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

☐ One year or less
☒ Multi Year:

Start and completion dates: Aug 1997 – 31 May 2018

If Multi-Year indicate proposed schedule of on site activities
Start: Jul 2000 Completion: 31 May 2018

CAMP CLASSIFICATION

6. Type of Camp

☐ Mobile (self-propelled)
☐ Temporary
☒ Seasonally Occupied: _____
☐ Permanent
☐ Other: _____
7. What is the design, maximum and expected average population of the camp?
Camp has tent and wooden structures. Max pop: 45. Average pop: 20
8. Provide history of the site if it has been used in the past.
Site used by NASA Houghton-Mars Project since 1997. (Since 200 at this location).

CAMP LOCATION

9. Please describe proposed camp location in relation to biogeographical and geomorphological features, and water bodies.
Camp located on northwestern rim area of Haughton Crater.
Nearest water body is Lowell Creek.
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.
Camp was selected to be located outside yet near Haughton Crater, on Mars-like terrain.



Aerial photograph showing location of camp (foreground), airstrip (left), and Haughton Crater in the distance (upper left).

11. Is the camp or any aspect of the project located on:
- | | | |
|-------------------------------------|---------------------|---|
| <input checked="" type="checkbox"/> | Crown Lands | Permit Number (s)/Expiry Date: 58H/7-1-2, 31 May 2018 |
| <input type="checkbox"/> | Commissioners Lands | Permit Number (s)/Expiry Date: _____ |
| <input checked="" type="checkbox"/> | Inuit Owned Lands | Permit Number (s)/Expiry Date: Q12X023, 31 Aug 2014 |
12. Closest Communities (direction and distance in km):
Grise Fiord (150 km).
Resolute Bay (150 km)
13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work?
Yes.
14. Will the project have impacts on traditional water use areas used by the nearby communities?
No.
Will the project have impacts on local fish and wildlife habitats?
No.

PURPOSE OF THE CAMP

15. ☐ Mining (includes exploration drilling)
☐ Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.)
(Omit questions # 16 to 21)
☒ Other: Scientific 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)
- ☒ Other: Scientific Research

17. Type of deposit (exploration focus):

- ☐ Lead Zinc
- ☐ Diamond
- ☐ Gold
- ☐ Uranium
- ☒ Other: N/A

DRILLING INFORMATION: N/A

18. Drilling Activities:

N/A

- ☐ Land Based drilling
- ☐ Drilling on ice

19. Describe what will be done with drill cuttings?

N/A

20. Describe what will be done with drill water?

N/A

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.

N/A

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

N/A

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.

24. How many spill kits will be on site and where will they be located?
Two spill kits on site at all times: At airstrip and at camp, near refueling stations.
25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.
Fuel stored in drums at airstrip and at camp. All drums on spill containment mats with raised berms.

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources.
Lowell Creek, located 200 m from camp.
27. Estimated water use (in cubic metres/day):
- ☒ Domestic Use: Drinking and Dishwashing Water Source: Lowell Creek
- ☐ 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:
Small electric water pump with intake filter. No fish in creek.
29. Will drinking water quality be monitored? What parameters will be analyzed and at what frequency?
Drinking Water is sampled and examined every year for quality control.
30. Will drinking water be treated? How?
Drinking water is UV-treated.
31. Will water be stored on site?
Occasionally, in small (5 gallon) water coolers.

WASTE TREATMENT AND DISPOSAL

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

☒ Camp Sewage (blackwater)

Collected in empty fuel drums and flown out of camp for disposal in Resolute Bay municipal landfill. _____

✓ Camp Greywater

Disposed of in sump.

✓ Solid Waste

Incinerated.

☐ Bulky Items/Scrap Metal

Flown out of camp.

☐ Waste Oil/Hazardous Waste

Flown out of camp and flown south.

☐ Empty Barrels/Fuel Drums

Flown out of camp.

☐ Other:

N/A

33. Please describe incineration system if used on site. What types of wastes will be incinerated?
High temperature two-stage burner.
Feces and other burnable waste only.
34. Where and how will non-combustible waste be disposed of? If in a municipality in Nunavut, has authorization been granted?
In Resolute Bay municipal landfill. Yes, permission in writing has been granted by hamlet.
35. Describe location (relative to water bodies and camp facilities) dimensions and volume, and freeboard for all sumps (if applicable).
One sump (2m x 5m) at camp.
36. Will leachate monitoring be done? What parameters will be sampled and analyzed, and at what frequency?
N/A.

OPERATION AND MAINTENANCE

37. Have the water supply and waste treatment and disposal methods been used and proven in cold climate? Yes. What known O&M problems may occur? None. What contingency plans are in place? N/A.

ABANDONMENT AND RESTORATION

38. Provide a detailed description of progressive and final abandonment and restoration activities at the site.
Upon completion of project, site will be restored to close to its initial condition.
Sump will be filled in with soil from raised berms.

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.)
Human-associated microbe concentration in soils measured prior to first occupation of site. Data part of long-term monitoring activity. Not published yet.
 - ☐ 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*