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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: _____ **Licence No:** _____
(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Manager: **Robert L'Heureux** Tel: **(780) 439-5380** Fax: **(780) 433-1336**

   E-mail : **rlheureux@apexgeoscience.com**

2. Project Manager: **Robert L'Heureux** Tel: **(780) 439-5380** Fax: **(780) 433-1336**

   E-mail : **rlheureux@apexgeoscience.com**

3. Does the applicant hold the necessary property rights? **Yes**
   Prospecting Permits from Aboriginal Affairs and Northern Development Canada (AANDC)
   P-18 to P-25 held in the name of Michael Dufresne on behalf of APEX Geoscience Ltd.
   Date of issuance: February 1, 2015 - Date of expiry: February 1, 2018

4. Is the applicant an 'operator' for another company (i.e., the holder of the property rights)? If so, please provide letter of authorization. **N/A**

5. Duration of the Project

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

   If Multi-Year indicate proposed schedule of on site activities
   Start: June 2015 (or as soon as approval can be granted)
   Completion: September 2020

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?

As the Property consists of three project locations (Contwoyto, James River and Muskox Prospects), three temporary camp locations have been identified to support the exploration activities. Only one site is anticipated to be used at a time. Each campsite, with fuel cache, will be subsequently reclaimed at the end of use in conjunction with the mobilization of the next camp.

The temporary exploration camp will house 10-12 people. Camp structures may include: 6 sleeper tents, medical tent, kitchen, dry (with showers), office, shop, core shack, generator housing, incinerator, and 2 outhouses. The majority of the structures will be aluminum tubed framed, Weatherhaven tents, or similar, with tarp floors.

Water used for the camp will be taken from an appropriate water bodies, with a large enough capacity to avoid impact on level or flow. The camp is anticipated to use approximately 2 m^3 per day.

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

Not used in the past

CAMP LOCATION

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

Proposed temporary camp Locations were selected from GIS and satellite imagery and were selected due to appropriate terrain composed of a consolidated and durable surface, such as gravel or sand, which is able to withstand aircraft and camp use. Each temporary camp location is near a sufficient body of water to accommodate the camp.

Contwoyto Camp: Latitude: (65° 48' 20" N) Longitude: (110° 59' 36" W)
James River Camp: Latitude: (66° 49' 17" N) Longitude: (111° 13' 23" W)
Muskox Camp: Latitude: (66° 2' 17" N) Longitude: (111° 26' 42" W)

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.

Proposed temporary camp Locations were selected from GIS and satellite imagery and therefore exact locations will be to be finalized upon mobilization. The proposed camp locations were selected due to appropriate terrain composed of a consolidated and durable surface, such as gravel or sand, which is able to withstand aircraft and camp use. See attached Google Earth Images.

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

X	Crown Lands	Permit Number (s)/Expiry Date: **Under application**
☐	Commissioners Lands	Permit Number (s)/Expiry Date: _____
X	Inuit Owned Lands	Permit Number (s)/Expiry Date: **Under application**

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

The nearest permanently inhabited community in Nunavut is Kugluktuk, approximately 250 km to the northwest.

13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work? **No consultations have been performed to date.**

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?

Although the Property is covered by a portion of an Area of Traditional Land Use (BHC-R2 249) and the Kugluktuk community water supply (BHC-R3 144B) as identified by the DNLUP, no impacts on traditional water use are anticipated. All potential environmental effects associated with the proposed Muskox Diamond Project are considered minor, localized effects that can be mitigated. No significant residual impacts to the environment are expected to occur as a result of the implementation of this program. All exploration activity planning will take into account any possible impacts to the cultural value, including subsistence harvesting, of the area and quality of water.

PURPOSE OF THE CAMP

15.

- [X] Mining (includes exploration drilling)
- [ ] Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.) (Omit questions # 16 to 21)
- [ ] Other _____

16. Activities (check all applicable)

- [X] Preliminary site visit
- [X] Prospecting
- [X] Geological mapping
- [X] Geophysical survey
- [X] Diamond drilling
- [ ] Reverse circulation drilling
- [ ] Evaluation Drilling/Bulk Sampling (also complete separate questionnaire)
- [X] Other: **Till sampling**_____

17. Type of deposit (exploration focus):

- [ ] Lead Zinc
- [X] Diamond
- [ ] Gold
- [ ] Uranium
- [ ] Other: _____

DRILLING INFORMATION

18. Drilling Activities

- [X] Land Based drilling
- [X] Drilling on ice

19. Describe what will be done with drill cuttings?

The drill waste, including water, cuttings and muds will be disposed of in a properly constructed sump or an appropriate natural depression; at least 31 m from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created.

20. Describe what will be done with drill water?

Drilling will utilize recirculation and filtration systems to minimize loss of water and drill additives. Bio-degradable drilling fluids will be used at all times where ever possible. Drilling fluids will be directed into a properly constructed sump or an appropriate natural depression, at least 31 m from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created. If any artesian water flow is detected, the hole will be plugged immediately and cemented in bedrock to prevent continued flow.

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.

The exact drill additives are not known at this time, but APEX will ensure that the drilling contractor maximizes the use of non-toxic and biodegradable additives. The Muskox Diamond Spill Prevention and Response Plan will be updated with appropriate MSDS sheets once any additional additives are been determined.

However, until confirmed, it is assumed that the following materials may potentially be present at the drill site:

- **drill fluid additive "550X polymer" (consists of copolyacrylamide / sodium acrylate; Non Toxic)**
- **tube grease - Beacon 2, Z-50 pipe dope (Non Toxic)**
- **circulation polymer – G-stop (Non Toxic)**
- **antifreeze –Beet juice antifreeze (Non Toxic)**
- **rod grease – Big Bear diamond drill rod grease (Non Toxic)**
- **motor oil – super plus SAE 10W30 and 15W-40 (Non Toxic)**
- **hydraulic oil –Harmony AW 22, 32, 46, 68 (Non Toxic)**
- **Linseed Soap – (Non Toxic)**

MSDS Sheets are located in Appendix 2 of the attached The Muskox Diamond Spill Prevention and Response Plan

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

Core will be cut and sampled at the camp, but all analytical testing will be performed in an accredited laboratory off site.

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.

See attached Muskox Diamond Spill Prevention and Response Plan

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

Spill kits will be located near any potential areas at risk such as: at one side of camp near the core shack/shop/Generator/incinerator, on the other side of camp near the kitchen/sleepers/outhouses and near the pump at the water source. See attached Figure 2.

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

The fuel caches are not anticipated to be stocked with all the amount of fuel listed below at one time, instead it is expected that the cache will be restocked with the weekly flights from Yellowknife. As fuel is brought into camp, empty drums will be brought out with samples and garbage.

Fuel	Number of Containers	Capacity of Containers
Diesel	100	205 Litre drum
Gasoline	10	205 Litre drum
Aviation Fuel	100	205 Litre drum
Propane	20	100 lb Cylinder

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources.

Water will be drawn for camp and drilling from numerous adjacent waterbodies. Care will be taken to ensure that water is drawn from bodies with sufficient capacity in order to avoid impact on lake level or flow

27. Estimated water use (in cubic metres/day):

☐ Domestic Use: 2 Water Source: _____
☐ Drilling: 40 per drill 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:

The water intakes for the camp will use an electrically powered submersible pump with a fine screen (<1/4" openings) on the intake. The drill pumps use a 1" inside diameter suction hose on the diesel pumps with a fine screen on the foot valve. For drilling, fiberglass window screen with a nominal opening size of less than 1/16" is also generally wrapped around the foot valve to prevent the intake of silt and sand into the pump, which can cause considerable damage to the pump chambers. In addition, it is common practice for the drilling contractor to place the foot valve of the intake hose in a perforated 20 L pail, which further protects against harmful materials and fish from being entrained into water intake hoses.

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

Drinking water quality will be monitored for various types of coliform bacteria, upon mobilization to the camp, periodically during the program and upon de-mobilization.

30. Will drinking water be treated? How?

Water will be lightly chlorinated and a UV filter used on the drinking water at the camp location.

31. Will water be stored on site?

Water will be stored in temporary 500 L plastic tanks.

WASTE TREATMENT AND DISPOSAL

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

Waste management operations at the Muskox Diamond Property comprise a number of activities with the common goal of reducing the amount of waste generated on site and to ensure that any wastes created are reused, recycled, or disposed of in a responsible manner. Wastes will be separated at the source into a number of categories including: organics (food wastes), materials for incineration, inert recyclables, inert non-combustible materials, and various hazardous

materials. Materials that cannot be incinerated or burned will be stored in appropriate containers until they can be removed from site for treatment and/or disposal at an accredited facility. For further information see the Muskox Diamond Property "Waste Management Plan," and "Abandonment and Reclamation Plan."

- ✕ Camp Sewage (blackwater)

The camp will have approximately 10 people to a maximum of 12 (~0.05 m^3/day) – The camp will utilize privy pits (outhouses), which will be located at least 31 m away from a water body. To control sewage pathogens, outhouses will be periodically treated with lime. When full, the pits will be covered with at least 30 cm of compacted soil.

- ✕ Camp Greywater

~2 m^3/day – Camp greywater will be stored and treated in an excavated sump, which will allow for slow infiltration into the soil and will be located at least 31 m away from a water body. If available, coarse gravel will be placed in the bottom of the sump to provide filtration, and supports will be built on the sides to prevent slumping. Filters will be installed on kitchen drains to ensure solid food wastes do not enter the sumps and have the potential to attract wildlife. When full, greywater sumps will be covered with enough material to allow for future ground settlement.

- ✕ Solid Waste

Combustible Waste: All combustible waste will be incinerated in accordance with the Nunavut Environmental Guideline for the Burning and Incineration of Solid Waste. Any residual waste (ash) will be placed in sealed containers and backhauled to Yellowknife for proper disposal.
Non-Combustible, Recyclable and Hazardous Waste: All non-combustible, recyclable and hazardous wastes will be sealed in appropriate containers and backhauled to Yellowknife for proper disposal.

- ✕ Bulky Items/Scrap Metal

Scrap metal, glass, electronics, waste tires, hoses, other rubber materials and bulky items will be repurposed for alternative uses whenever possible. Any residual metal or glass that cannot be reused will be placed in 205 L steel drums and backhauled for recycling. Vehicles and other mechanical equipment, such as generators, that are no longer usable, will be removed from site for refurbishment or recycling/disposal. Vehicles and equipment awaiting backhaul will be stored in a specially designated, bermed area.

- ✕ Waste Oil/Hazardous Waste

Waste oil will be collected and sealed in clearly marked plastic containers and transported to Yellowknife for disposal at and approved site. Lead acid batteries will also be sealed in appropriate, clearly marked containers, and transported to Resolute for disposal at an approved facility.

- ✕ Empty Barrels/Fuel Drums

Empty containers will be stored in a designated area and returned to the supplier. Drums may alternatively be drained, air dried, backhauled to a recycling facility. Any residual fuels drained will be burned in tent stoves or a waste oil burner, or consolidated into drums and backhauled to a registered hazardous waste receiver.

- ✕ Other

Used rags, sorbents, batteries, aerosol cans and any contaminated soil, snow, or ice will be placed in clearly labeled, tightly sealed containers, such as 205 L steel drums and stored in the hazardous waste storage area until backhaul is possible.
Waste lead acid batteries and rechargeable batteries can only be stored in this manner in quantities of 1,000 kg or less and for periods of less than 180 days. All waste lead acid and rechargeable batteries will be backhauled from site as necessary to conform to regulations. Use of aerosol cans at the Muskox Diamond Property will be limited and whenever possible, alternatives, such as spray bottles, will be used in place of aerosol cans.

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33. Please describe incineration system if used on site. What types of wastes will be incinerated?
A dual chamber, fuel fired incinerator will be used to incinerate inert combustible solid wastes, such as food, paper, cardboard and untreated wood. Ashes will be stored in sealed containers and removed from site for disposal at an approved facility.

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

Non-combustible waste will be stored in sealed containers and removed from site weekly for disposal at an approved facility in Yellowknife. Authorization will be secured before commencement of field work.

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

Camp and drilling greywater will be stored and treated in an excavated sump or natural depression, which will allow for slow infiltration into the soil and will be located at least 31 m away from a water body. If available, coarse gravel will be placed in the bottom of the sump to provide filtration, and supports will be built on the sides to prevent slumping. Filters will be installed on kitchen drains to ensure solid food wastes do not enter the sumps and have the potential to attract wildlife. Sumps will maintain a minimum 1 metre freeboard at all times. The camp sumps and pipes will be inspected at regular intervals for leaks or overflow. When full, greywater sumps will be covered with enough material to allow for future ground settlement.

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

No leachate will be produced on site.

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?

All water supply and waste treatment and disposal methods have been proven in cold climates. No O&M problems are anticipated. Contingency plans are N/A.

ABANDONMENT AND RESTORATION

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

All drill sites will be cleaned after the completion of each hole. Any contaminated areas around the drill sites or camp will be treated in accordance with the Muskox Diamond Property "Spill Prevention and Response Plan." Any washed out areas will be filled and re-contoured to natural levels. Any areas of disturbed vegetation, including camp, fuel caches or drill sites will be photographed and managed as per recommendation of the AANDC inspector, which may include fertilization to encourage re-growth. For additional information see the Muskox Diamond Property "Abandonment and Restoration Plan."

BASELINE DATA

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

Due to the small scale and nature of the camp and exploration program, baseline data collection is not anticipated at this stage other than the drinking water quality, which will be monitored for various types of coliform bacteria, upon mobilization to the camp, periodically during the program and upon de-mobilization.

- ☐ 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