



## SCREENING PART 2 FORM PROJECT SPECIFIC INFORMATION REQUIREMENTS (PSIR)

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### 1. SUBMISSIONS

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The Proponent must submit all information pertaining to the Project as a whole. The information requirements below are designed for the purpose of environmental assessment and are not limited to the scope of a single permit or license application.

**IMPORTANT:** Please be advised of the following:

1. NIRB does not accept references to an ftp or web sites as a submission.
2. The Proponent must provide NIRB with 1 (one) electronic copy and 1 (one) hardcopy of the required information in English.
3. All maps should be shapefiles, be legible, and should include grids, be of appropriate scale, indicate the scale, include latitude and longitude references, NTS Maps numbers, title, legend and a north arrow. To the extent possible, avoid hand-drawn demarcations and faxed maps; and,
4. Please complete all required information in each section below. If the required information is not applicable to the project proposal, please indicate this in the response with "n/a". If the request has been provided in a different section or report, please note the section or report where the response can be found.

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### 2. GENERAL PROJECT INFORMATION REQUIREMENTS

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#### Project Coordinates and Maps

1. The preferred method for submitting project coordinates information is through the use of a Geographic Information System (GIS) compatible digital file. Although an ESRI ArcView 3.x shape file (in decimal degrees) is the preferred interchange format, the NIRB has the capacity to receive over 100 GIS and CAD related formats, including MapInfo and AutoCAD, provided proper format and projection metadata is also submitted. The NIRB requires coordinates for the project proposal which reflect the entire project area as defined by:
  - Area/sites of investigation;
  - Boundaries of the foreseen land use permit/right-of-way area(s) to be applied for;
  - Location of any proposed infrastructure or activity(s); and,

- Boundaries of the mineral claim block(s) where proposed activities will be undertaken.

All exploration activities will be conducted within the Baffin Gold Property boundaries. The property extents are:

Maximum Latitude: 68° 45' 00" N  
Maximum Longitude: 74° 30' 00" W  
Minimum Latitude: 68° 22' 30" N  
Minimum Longitude: 70° 30' 00" W

UTM Coordinate Extents:

7,584,000mN to 7,615,000mN and 520,500mE to 622,500mE, NAD83, Zone 18  
7,586,000mN to 7,628,500mN and 377,500mE to 439,500mE, NAD 83, Zone 19

Commander Resources Ltd.'s (Commander) pre-existing Dewar Lakes Camp will be utilized as a base of operations. The Dewar Lakes Camp is located at 68°37'59" N, 71°06'38" W. Commander has an application for a land use permit pending for the Dewar Lakes Camp. Kivalliq Energy Corp. (Kivalliq Energy) will assist in the rehabilitation of the camp and will utilize Commander's camp facilities during this process and to commence exploration activities on the Baffin Gold Property. When the camp rehabilitation is complete and both INAC and Kivalliq Energy are satisfied that there are no legacy issues associated with the camp site, Commander will transfer the new Dewar Lakes Camp permit to Kivalliq Energy. **Please refer to Commander's NIRB application for details pertaining to the Dewar Lakes Camp.**

To provide effective daily access to and from priority target areas and accommodate workers, Kivalliq Energy is permitting up to two temporary fly camps. Proposed fly camp locations are:

Malrok Fly Camp: 68°30'06" N, 72°27'08" W

- Beside Malrok Lake and near the Malrok target area on IOL BI-35.

Tuktu Fly Camp: 68°37'10" N, 73°12'45" W

- Adjacent to the Fox-B North Warning System Site near Nadluardjuk Lake.

Please refer to the "Project Description and Work Plan" attached as Appendix A for property maps and complete details outlining the locations of proposed infrastructure and activities.

2. Map of the project site within a regional context indicating the distance to the closest communities.

The centre of the property is located 260 kilometres southwest of Clyde River and 360 kilometres northwest of Qikiqtarjuaq.

Please refer to the "Project Description and Work Plan" attached as Appendix A for a Property location map showing closest communities.

3. Map of any camp site including locations of camp facilities.

Please refer to the "Project Description and Work Plan" attached as Appendix A for maps of the proposed fly camp locations.

4. Map of the project site indicating existing and/or proposed infrastructure, proximity to water bodies and proximity to wildlife and wildlife habitat.

Please refer to the “Project Description and Work Plan” attached as Appendix A for maps of the proposed camp layouts and areas of potential exploration interest.

## **Project General Information**

5. Discuss the need and purpose of the proposed project.

The need and purpose of the project is to evaluate the mineral potential for gold on the claim area in the central Baffin Island area.

6. Discuss alternatives to the project and alternative methods of carrying out the project, including the no-go alternative. Provide justification for the chosen option(s).

There are no alternatives to the proposed project activities that have been described.

A compilation of the exploration work conducted in the region has defined the areas of interest which dictated boundaries staked and justifies further exploration for mineral potential.

The proposed 2017 exploration program includes low-impact activities that are consistent with grassroots exploration such as prospecting, geological mapping, rock and channel sampling, soil/till sampling, airborne geophysics, ground geophysics, drone surveying and baseline environmental monitoring.

Every effort will be made to minimize any impacts to the environment. Activities will be conducted in such a manner to avoid disturbance to wildlife. Any archaeological sites that are discovered will be designated off limits to all workers, their location will be recorded and submitted to the Chief Archaeologist at the Department of Culture, Language, Elders and Youth (CLEY), and the Qikiqtani Inuit Association.

7. Provide a schedule for all project activities.

The 2017 program will commence in June with the mobilization of crews to assist Commander in the rehabilitation of the Dewar Lakes Camp. Exploration activities will operate from June through the end of September.

Annual explorations in future years may commence as early as March to utilize winter conditions during which snowmobiles may be used to assist exploration and camp activities. All exploration activities will be concluded by the end of September annually.

The airborne geophysical survey will commence after July 15<sup>th</sup> and weather dependent, the program will run for an estimated 16 to 21 day period.

8. List the acts, regulations and guidelines that apply to project activities.

✓ ARTICLE 13 – NCLA -Nunavut Land Claims Agreement

- ✓ 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
- ✓ Nunavut Archaeological and Paleontological Sites Regulations
- ✓ Territorial Lands Act and Territorial Land Use Regulations, 2000
- ✓ Transport Canada – Transportation of Dangerous Goods Regulations

9. List the approvals, permits and licenses required to conduct the project.

Applications for the following permits and licences have been prepared by Kivalliq Energy Corp. for the Baffin Gold Property and are attached in the appendices. Applications will be sent to INAC, NWB and the QIA once NPC has reached a determination of conformity and NIRB has reached a screening decision.

Class A - Indigenous and Northern Affairs Canada (INAC) Land Use Permit - **Appendix C**

Class B - Nunavut Water Board (NWB) Water Licence - **Appendix D**

Class I - Qikiqtani Inuit Association (QIA) Land Use Licence – **Appendix E**

### **DFO Operational Statement (OS) Conformity**

10. Indicate whether any of the following Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the project proposal:

- Bridge Maintenance **N/A**
- Clear Span Bridge **N/A**
- Culvert Maintenance **N/A**
- Ice Bridge **N/A**
- Routine Maintenance Dredging **N/A**
- Installation of Moorings **N/A**

Please see DFO's OS for specific definitions of these activities available from DFO's web-site at <http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/index-eng.htm>

11. If any of the DFO's OS apply to the project proposal, does the Proponent agree to meet the conditions and incorporate the measures to protect fish and fish habitat as outlined in the applicable OS? If yes, provide a signed statement of confirmation.

**N/A**

## Transportation

12. Describe how the project site will be accessed and how supplies will be brought to site. Provide a map showing access route(s).

Access to the Baffin Gold Property is facilitated by fixed wing aircraft and helicopter flights. Fixed wing flights will bring personnel and supplies onto the Property via the Fox-3 Airstrip, located 350 metres southwest of the Dewar Lakes Camp. During the exploration program, access to various work sites across the property will be primarily facilitated by helicopter. Snow machines may be utilized during winter months.

The centre of property is located 260 kilometres southwest of Clyde River and 360 kilometres northwest of Qikiqtarjuaq. Both communities are serviced by commercial flights from Iqaluit multiple times per week. Iqaluit is located 550 kilometres from the property and has daily commercial flights to Ottawa, Ontario and commercial flights three times weekly servicing Yellowknife, Northwest Territories. Yellowknife has daily flights to major centres in the south and hosts a well-developed infrastructure of mineral exploration related companies including fixed wing and helicopter charter companies and expeditors.

Please refer to the "Project Description and Work Plan" attached as Appendix A for a map showing access routes.

13. If a previous airstrip is being used, provide a description of the type of airstrip (ice-strip/all-weather), including its location. Describe dust management procedures (if applicable) and provide a map showing location of airstrip.

The Fox-3 Airstrip is a 1,200 metre (4,000 ft.) gravel airstrip at the Dewar Lakes North Warning System radar station. The airstrip is located at 68°37'36"N 71°7'35"W and use of the airstrip requires permission from Biogenie Ltd. who maintains it on behalf of the Department of National Defense.

The Fox-B Airstrip is located at 68°37'10" N, 73°12'45" W near Nadluardjuk Lake. If the Tuktu Fly Camp is established near this location, personnel, equipment and supplies will be flown to the Fox-B airstrip via fixed wing aircraft.

Please refer to the "Project Description and Work Plan" attached as Appendix A for a property map showing the location of the airstrip.

14. If an airstrip is being constructed, provide the following information: **N/A**
- Discuss design considerations for permafrost
  - Discuss construction techniques
  - Describe the construction materials, type and sources, and the acid rock drainage (ARD) and metal leaching (ML) characteristics (if rock material is required for airstrip bed).
  - Describe dust management procedures.
  - Provide a map showing location of proposed airstrip.

15. Describe expected flight altitudes, frequency of flights and anticipated flight routes.

Weekly fixed wing flights will bring personnel and supplies to the property from Iqaluit.

Daily helicopter flights will transport personnel between the Dewar Lakes Camp or temporary fly camps and exploration areas. Approximately 2 to 4 helicopter flights will be required each day, depending on the number of crews going out. Additional flights may be needed to ferry in heavy samples at the end of the day.

Helicopter flights maintain a >300 metre altitude whenever possible. In areas where wildlife is observed helicopters are to maintain a minimum of altitude of 610 metres.

## Camp Site

### 16. Describe all existing and proposed camp structures and infrastructure

**Please refer to Commander's NIRB application for details pertaining to the Dewar Lakes Camp.**

Kivalliq Energy's proposed temporary fly camps will accommodate up to 15 people and consist of a combination of WeatherPort vinyl tents, canvas prospectors' tents and small plywood structures.

- 1- Kitchen Tent
- 1- Office Tent
- 1- Dry Tent
- 1- Utility Tent
- 1- Toilet Facility (Pactos or Latrines)
- 5- Crew Accommodations (1 tent will house the First Aid Attendant and First Aid Equipment)
- 1- Generator Shack
- 1- portable fuel-fired incinerator

### 17. Describe the type of camp:

- a. Mobile
- b. Temporary**
- c. Seasonal
- d. Permanent
- e. Other

The proposed fly camps are temporary. The field camps will be fully closed and dismantled completely once exploration activities cease. The sites will then be reclaimed and restored to their original state.

### 18. Describe the maximum number of personnel expected on site, including the timing for those personnel involved with the project.

The 2017 exploration program will have up to 20 personnel on site and is scheduled from June through to the end of September. Mobilization of crews and equipment will commence in June 2017. A seasonal shutdown will take place at the completion of exploration activities for the year, September 2017. If temporary fly camps are constructed, they may accommodate up to 15 personnel.

## Equipment

### 19. Provide a list of equipment required for the project and discuss the uses for the equipment.

| Type            | Size/Details           | Purpose                        |
|-----------------|------------------------|--------------------------------|
| Helicopter - 1  | Bell Long Ranger       | Transportation-crews/equipment |
| Generator - 2   | 20 kW                  | Power generation for fly camps |
| Water Pumps - 2 | Gasoline powered       | Provide water for fly camps    |
| Snowmobiles - 4 | Small to mid-size      | Transportation-crews/equipment |
| Rock Saw - 1    | Hand-held, gas powered | Cutting channel samples        |

20. If possible, provide digital photos of equipment.

This is the first year Kivalliq Energy is proposing to do an exploration program on the Baffin Gold Property. As such, equipment has not been purchased.

### Water

21. Describe the location of water source(s), the water intake methods, and all methods employed to prevent fish entrapment. Provide a map showing the water intake locations.

For temporary fly camp operations, water will be drawn from a nearby lake. Coordinates of the lakes near the proposed fly camp locations are:

Malrok Fly Camp: 68°30'06" N, 72°27'08" W

- Will intake water from Malrok Lake on IOL BI-35.

Tuktu Fly Camp: 68°37'10" N, 73°12'45" W

- Will intake water from Nadluardjuk Lake. The fly camp is adjacent to the Fox-B North Warning System Site.

The temporary fly camps will use a portable gasoline powered supply pump to intake water. Water intake hoses will be equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams will not be used for water intake. The supply pump will be placed in a secondary containment structure, of sufficient height and depth to hold any potential spill.

Please refer to the "Project Description and Work Plan" attached as Appendix A for a map showing the water intake locations.

**Please refer to Commander's NIRB application for details pertaining to the Dewar Lakes Camp.**

22. Describe the estimated rate of water consumption (m<sup>3</sup>/day).

Camp Water Use: Camp water use will be 3m<sup>3</sup>/day or less. Only one temporary fly camp will be operating at a time.

No water will be required for exploration activities.

**Please refer to Commander's NIRB application for details pertaining to the Dewar Lakes Camp.**

23. Describe how waste water will be managed. If relevant, provide detail regarding location of sumps, including capacity of sumps and monitoring.

Waste water from fly camps will be discharged through a grease trap to a grey water sump. The discharge outlet will be inaccessible to wildlife. The grey water sump will be located at least 31 metres away from a water body. No contamination of the water supply is predicted.

24. If applicable, discuss how surface water and underground water will be managed and monitored.

Waste water will be returned to a grey water sump and no waste water will be allowed to flow directly into a water source. Due to the short field season and minimal water consumption, no impacts upon underground water are predicted.

### **Waste Water (Grey water, Sewage, Other)**

25. Describe the quantities, treatment, storage, transportation, and disposal methods for the following (where relevant):

- **Sewage**  
Pacto toilets or an outhouse latrine facility will be used for the temporary fly camps. Pacto bags containing waste will be incinerated. Ash generated from sewage incineration will be stored in designated, sealed metal 45-gallon drums and removed from site for proper disposal. If outhouse latrine facilities are used at the proposed temporary field camps, they will be located at least 31 metres away from a water body. When full, the pits will be treated with lime and covered with at least 30 cm of compacted soil.
- **Camp grey water.**  
No water will be returned directly to the source. Waste water will be discharged to a grey water sump for slow infiltration into the surrounding soils. The waste water sump will be located at least 31 metres away from any water body. A grease trap and screens will be installed on kitchen drains to ensure grease and food solids do not enter the waste water sump. The discharge pipe in to the sump will be inaccessible to wildlife.
- **Combustible solid waste**  
All combustible waste will be incinerated according to the “Environmental Guidelines for the Burning and Incineration of Solid Waste” and the “Canada-Wide Standards for Dioxins and Furans” by the Canadian Council of Ministers of the Environment. Untreated wood and large pieces of cardboard will be burned in a controlled open burn in compliance with the “Municipal Solid Wastes Suitable for Open Burning Guidelines”. Ash generated from the ongoing incineration will be stored in sealed metal 45-gallon drums and removed from site via regularly scheduled backhaul.
- **Non-combustible solid waste, including bulky items/scrap metal**  
All non-combustible and recyclable wastes will be packaged in the appropriate containers and backhauled to Iqaluit for recycling or proper disposal.
- **Hazardous waste or oil**  
Hazardous wastes will be sealed in the appropriate containers, labeled and documented in accordance with the “Transportation of Dangerous Goods Act” and removed from site for proper disposal at an accredited facility.
- **Contaminated soils/snow**  
Any soil/snow that has become contaminated will be treated as per the Baffin Gold Property “Spill Contingency Plan”. Contaminated snow/soil will be scraped/shoveled into

labelled containers and shipped from site to an appropriate and approved facility for disposal. A Waste Manifest will accompany all movements of contaminated soils/snow.

At the advice, discretion and approval of land use inspectors and permitting or licensing authorities' bioremediation, or land farming, may be implemented to treat certain contaminated soils temporarily contained in sealed drums on the property. Bioremediation is performed in biotreatment cells or the upper soil zone. Contaminated soils or sediments are incorporated into non contaminated soils and periodically turned over or tilled to aerate the mixture.

- Empty barrels/ fuel drums  
Empty fuel drums will be removed from site regularly on backhaul flights and returned to the vendor for recycling or sent to an approved facility for disposal.
- Any other waste produced  
N/A

Refer to the "Waste Management Plan" for additional information pertaining to waste management.

26. If the project proposal includes a landfill or landfarm, indicate the locations on a map, provide the conceptual design parameters, and discuss waste management and contact-water management procedures.  
N/A

**Fuel**

27. Describe the types of fuel, quantities (number of containers, type of containers and capacity of containers), method of storage and containment. Indicate the location on a map where fuel is to be stored, and method of transportation of fuel to project site.

Kivalliq Energy is applying to store up to 60 drums of fuel on the Baffin Gold Property. This will include up to:

| Material       | Container        | Max Quantity On-Site | Location           |
|----------------|------------------|----------------------|--------------------|
| Diesel         | 205 litre drum   | 23                   | Temporary Fly Camp |
| Jet Fuel (A/B) | 205 litre drum   | 25                   | Temporary Fly Camp |
| Propane        | 100 lb. cylinder | 10                   | Temporary Fly Camp |
| Gasoline       | 205 litre drum   | 2                    | Temporary Fly Camp |

A main cache will be established at the temporary fly camp location. Temporary supply caches of less than nine drums may be located as required to service the airborne geophysical surveying or remote exploration activities. Please refer to the "Project Description and Work Plan" attached as Appendix A for a map showing fuel storage locations.

All fuel is to be stored in secondary containment berms equipped with Spilfyter RailMat 3 ply hydrocarbon absorbent fabric and Rain Drain hydrocarbon filters for water drainage. Fuel drums will be transported to camp via fixed wing aircraft. All drums, secondary containment berms and fuel caches will be located a minimum 31 meters from any water body and will be inspected regularly. All storage, fueling and staging areas have easily visible and readily available spill kits.

Refer to the "Fuel Management Plan" attached as Appendix G for detailed description of the storage, handling and transfer of fuel.

Drummed fuel will be transported to site via fixed-wing aircraft to the Fox-3 Airstrip or the Fox-B Airstrip on the property.

**Please refer to Commander's NIRB application for details pertaining to the fuel at the Dewar Lakes Camp.**

28. Describe any secondary containment measures to be employed, including the type of material or system used. If no secondary containment is to be employed, please provide justification.

All fuels and other hazardous materials will be stored in Arctic grade secondary containment berms from Raymac Environmental Services Inc. or similar. All secondary containment berms will be equipped with Spilfyter RailMat 3 ply hydrocarbon absorbent fabric, Rain Drain hydrocarbon filters for water drainage and a spill kit. All secondary containment berms will be capable of holding 110 percent of the volume of the largest fuel reservoir that is housed within the secondary containment.

29. Describe the method of fuel transfer and the method of refuelling.

Manual or automatic pumps will be used for the transfer of all petroleum products. Spill kits will be available and drip trays will be underlay all areas where refueling or the transfer of fuels is undertaken.

Please refer to the Baffin Gold Property's "Fuel Management Plan" attached as Appendix G for detailed description of the storage, handling and transfer of fuel.

30. Describe spill control measures in place.

Please refer to the Baffin Gold Property's "Spill Contingency Plan" attached as Appendix F for detailed spill control measures in place.

Please refer to Environment Canada's fuel storage tank system regulations (*Storage Tank System for Petroleum and Allied Petroleum Products*) website at <http://www.ec.gc.ca/st-rs/> for details on fuel storage requirements.

### **Chemicals and Hazardous Materials\***

*\*included but not limited to oils, greases, drill mud, antifreeze, calcium or sodium chloride salt, lead acid batteries and cleaners*

31. Describe the types, quantities (number of containers, the type of container and capacity of containers), method of storage and containment. Indicate the location on a map where material is to be stored, and method of transportation of materials to project site.

Chemicals and hazardous materials that may be located on the Baffin Gold Property include small amounts of hydrochloric acid, cleaners, batteries, electronics, fluorescent light bulbs/tubes, motor oil and hydraulic oil. Materials will be stored in their original containers. Refer to the "Waste Management Plan" for the types, quantities and method of storage.

Please refer to the "Spill Contingency Plan" attached as Appendix F for MSDS sheets that accompany these materials.

32. Describe any secondary containment measures to be employed, including the type of material or system used.

The small supply of motor oil and hydraulic oil will be located in the utility tent at the temporary field camp. They will be kept in a drip tray with a spill kit nearby. Hydrochloric acid is used for core logging in very small amounts (<0.5 litre) and will be kept in a sealed container in the core shack. Cleaners (solvents) will be kept on drip trays in a designated area in their original containers.

33. Describe the method of chemical transfer.

Chemical transfer will be completed within designated areas, ideally in secondary containment. When secondary containment is not practical (e.g. adding hydraulic oil to the helicopter), absorbent pads will be used to protect from drips and spills. Funnels will be used to reduce the potential for spillage.

34. Describe spill control measures in place.

Please refer to the Baffin Gold Property's "Spill Contingency Plan" attached as Appendix F for detailed spill control measures in place.

### **Workforce and Human Resources/Socio-Economic Impacts**

35. Discuss opportunities for training and employment of local Inuit beneficiaries. .

Kivalliq Energy will hire Inuit whenever possible and plans to hire locals from Qikiqtarjuaq on short term employment for the 2017 program. Kivalliq Energy will utilize northern businesses and services wherever available.

36. Discuss workforce mobilization and schedule, including the duration of work and rotation length, and the transportation of workers to site.

The 2017 exploration program will operate from June through to September, pending funding. Personnel will be transported to the Baffin Gold Property via fixed-wing aircraft from Qikiqtarjuaq or Iqaluit. Field crews will be flown to the exploration targets each day via helicopters. As per the Worker's Safety and Compensation Commission, no personnel will remain onsite for more than 42 days. Duration of work and rotation length will be determined upon hiring.

37. Discuss, where relevant, any specific hiring policies for Inuit beneficiaries.

Kivalliq Energy is committed to hiring qualified local Inuit whenever possible. The company has had multiple long term employees and has employed up to ten Nunavummiut during seasonal programs at their Angilak Property in the Kivalliq Region.

### **Public Involvement/ Traditional Knowledge**

38. Indicate which communities, groups, or organizations would be affected by this project proposal.

The closest communities to the Property are Qikiqtarjuaq, Clyde River and Pangnirtung. Other

groups or organizations that may be affected by this project include: the Qikiqtani Inuit Association, the Nangmoutaq Hunters and Trappers Organization (HTO) and the Naativak HTO.

39. Describe any consultation with interested Parties which has occurred regarding the development of the project proposal.

Kivalliq has planned visits to communities adjacent to the property (Clyde River, Qikiqtarjuaq, Pangnirtung, Iqaluit) prior to the start of the exploration program to discuss available Inuit Qaujimajatuqangit (IQ), the exploration program and any potential concerns the communities may have.

40. Provide a summary of public involvement measures, a summary of concerns expressed, and strategies employed to address any concerns.

See section 39 above. Public consultations are scheduled for the coming months. Once the community visits have taken place, a community consultation log will be created that includes a summary of public involvement and concerns expressed.

41. Describe how traditional knowledge was obtained, and how it has been integrated into the project.

Inuit Qaujimajatuqangit/Traditional knowledge will be integrated into the project once it is obtained at the planned community visits.

42. Discuss future consultation plans.

Kivalliq has planned visits to communities adjacent to the property (Clyde River, Qikiqtarjuaq, Pangnirtung, Iqaluit) prior to the start of the exploration program to discuss available Inuit Qaujimajatuqangit, the exploration program and any potential concerns the communities may have.

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### 3. PROJECT SPECIFIC INFORMATION

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The following table identifies the project types identified in Section 3 of the NIRB, Part 1 Form. Please complete all relevant sections.

It is the proponent's responsibility to review all sections in addition to the required sections to ensure a complete application form.

**Table 1: Project Type and Information Required**

| Project Type | Type of Project Proposal      | Information Request                    |
|--------------|-------------------------------|--|
| 1            | All-Weather Road/Access Trail | Section A-1 and Section A-2            |
| 2            | Winter Road/Winter Trail      | Section A-1 and Section A-3            |
| 3            | <b>Mineral Exploration</b>    | <b>Section B-1 through Section B-4</b> |
| 4            | Advanced Mineral Exploration  | Section B-1 through Section B-8        |

|    |  |                                  |
|----|--|----------------------------------|
| 5  | Mine Development/Bulk Sampling                   | Section B-1 through Section B-12 |
| 6  | Pits and Quarries                                | Section C                        |
| 7  | Offshore Infrastructure(port, break water, dock) | Section D                        |
| 8  | Seismic Survey                                   | Section E                        |
| 9  | Site Cleanup/Remediation                         | Section F                        |
| 10 | Oil and Natural Gas Exploration/Activities       | Section B-3 and Section G        |
| 11 | Marine Based Activities                          | Section H                        |
| 12 | Municipal and Industrial Development             | Section I                        |

## **SECTION A: Roads/Trails – N/A**

### **A-1. Project Information – N/A**

1. Describe any field investigations and the results of field investigations used in selecting the proposed route (e.g. geotechnical, snow pack)
2. Provide a conceptual plan of the road, including example road cross-sections and water crossings.
3. Discuss the type and volume of traffic using the road/trail (i.e. type of vehicles and cargo and number of trips annually).
4. Discuss public access to the road.
5. Describe maintenance procedures.
6. Describe whether any portion of the road will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

### **A-2. All-Weather Road/Access Trail – N/A**

7. Discuss road design considerations for permafrost.
8. Describe the construction materials (type and sources for materials), and the acid rock drainage (ARD) and metal leaching characteristics of the construction materials.
9. Discuss construction techniques, including timing for construction activities.
10. Indicate on a map the locations of designated refuelling areas, water crossings, culverts, and quarries/borrow sources.
11. Identify the proposed traffic speed and measures employed to ensure public safety.
12. Describe dust management procedures.

### **A-3. Winter Road/Trail – N/A**

13. Describe the surface preparation, including the use of snow berms or compaction, and any flooding. If flooding is to be used, provide the location of the water source on a map.

14. Describe the operating time period.
15. Identify the proposed traffic speed and measures employed to ensure public safety.
16. Discuss whether the selected route traverses any fish-bearing water bodies.

## **SECTION B: Mineral Exploration /Advanced Exploration /Development**

### **B-1. Project Information**

1. Describe the type of mineral resource under exploration.  
Gold

### **B-2. Exploration Activity**

2. Indicate the type of exploration activity:
  - Airborne Geophysical Electromagnetic (EM) Survey
  - Drone Survey
  - Ground Magnetic/EM Surveys
  - Prospecting and Geological Mapping
  - Enzyme Leach or Conventional Soil Geochemistry Soil /Till Sampling
  - Rock/Channel Sampling
3. Describe the exploration activities associated with this project:

Refer to the “Project Description and Work Plan” attached as Appendix A for details on the exploration activities.

### **B-3. Geosciences**

4. Indicate the geophysical operation type:
  - Magnetic – ground geophysical survey
  - Electromagnetic – airborne and ground surveys
5. Indicate the geological operation type:
  - Geological Mapping – during Prospecting
  - Aerial Photography – Drone survey
6. Indicate on a map the boundary subject to air and/or ground geophysical work.

Please refer to the “Project Description and Work Plan” attached as Appendix A for maps of the proposed air and ground geophysical survey grids.

7. Provide flight altitudes and locations where flight altitudes will be below 610m.

Please refer to the “Project Description and Work Plan” attached as Appendix A for the details of the proposed airborne and ground geophysical surveys and maps showing survey grid locations.

### **B-4. Drilling – N/A**

8. Provide the number of drill holes and depths (provide estimates and maximums where

possible).

9. Discuss any drill additives to be used.
10. Describe method for dealing with drill cuttings.
11. Describe method for dealing with drill water.
12. Describe how drill equipment will be mobilized.
13. Describe how drill holes will be abandoned.
14. If project proposal involves uranium exploration drilling, discuss the potential for radiation exposure and radiation protection measures. Please refer to the *Canadian Guidelines for Naturally Occurring Radioactive Materials* for more information.

#### **B-5. Stripping/ Trenching/ Pit Excavation – N/A**

15. Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other)
16. Describe expected dimensions of excavation(s) including depth(s).
17. Indicate the locations on a map.
18. Discuss the expected volume material to be removed.
19. Discuss methods used to determine acid rock drainage (ARD) and metal leaching potential and results.

#### **B-6. Underground Activities – N/A**

20. Describe underground access.
21. Describe underground workings and provide a conceptual plan.
22. Show location of underground workings on a map.
23. Describe ventilation system.
24. Describe the method for dealing with ground ice, groundwater and mine water when encountered.
25. Provide a Mine Rescue Plan.

#### **B-7. Waste Rock Storage and Tailings Disposal – N/A**

26. Indicate on a map the location and conceptual design of waste rock storage piles and tailings disposal facility.
27. Discuss the anticipated volumes of waste rock and tailings.
28. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.

#### **B-8. Stockpiles – N/A**

29. Indicate on a map the location and conceptual design of all stockpiles.
30. Describe the types of material to be stockpiled. (i.e. ore, overburden)
31. Describe the anticipated volumes of each type of material to be stockpiled.

32. Describe any containment measures for stockpiled materials as well as treatment measures for runoff from the stockpile.
33. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.

#### **B-9. Mine Development Activities – N/A**

34. Indicate the type(s) of mine development activity(s):
  - Underground
  - Open Pit
  - Strip Mining
  - Other
35. Describe mine activities.
  - Mining development plan and methods
  - Site access
  - Site infrastructure (e.g. airstrip, accommodations, offshore infrastructures, mill facilities, fuel storage facilities, site service roads)
  - Milling process
  - Water source(s) for domestic and industrial uses, required volumes, distribution and management.
  - Solid waste, wastewater and sewage management
  - Water treatment systems
  - Hazardous waste management
  - Ore stockpile management
  - Tailings containment and management
  - Waste rock management
  - Site surface water management
  - Mine water management
  - Pitting and quarrying activities (please complete Section C)
  - Explosive use, supply and storage (including on site manufacturing if required)
  - Power generation, fuel requirements and storage
  - Continuing exploration
  - Other
36. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.

#### **B-10. Geology and Mineralogy – N/A**

37. Describe the physical nature of the ore body, including known dimensions and approximate shape.
38. Describe the geology/ mineralogy of the ore deposit
39. Describe the host rock in the general vicinity of the ore body.
40. Discuss the predicted rate of production.
41. Describe mine rock geochemical test programs which have been or will be performed on the ore, host rock, waste rock and tailings to determine acid generation and contaminant leaching potential. Outline methods and provide results if possible.

#### **B-11. Mine – N/A**

42. Discuss the expected life of the mine.
43. Describe mine equipment to be used.
44. Does the project proposal involve lake and/or pit dewatering? If so, describe the

- activity as well as the construction of water retention facilities if necessary.
45. Discuss the possibility of operational changes occurring during the mine life with consideration for timing. (e.g. open pit to underground)
  46. If project proposal involves uranium mining, consider the potential for radiation exposure and radiation protection measures. Particular attention should be paid to *The Nuclear Safety and Control Act*.

**B-12. Mill – N/A**

47. If a mill will be operating on the property in conjunction with mining, indicate whether mine-water may be directed to the mill for reuse.
48. Describe the proposed capacity of the mill.
49. Describe the physical and chemical characteristics of mill waste as best as possible.
50. Will or does the mill handle custom lots of ore from other properties or mine sites?

**SECTION C: Pits and Quarries – N/A**

1. Describe all activities included in this project.
  - Pitting
  - Quarrying
  - Overburden removal
  - Road use and/or construction (please complete Section A)
  - Explosives transportation and storage
  - Work within navigable waters
  - Blasting
  - Stockpiling
  - Crushing
  - Washing
  - Other
2. Describe any field investigations and the results of field investigations used in determining new extraction sites.
3. Identify any carving stone deposits.
4. Provide a conceptual design including footprint.
5. Describe the type and volume of material to be extracted.
6. Describe the depth of overburden.
7. Describe any existing and potential for thermokarst development and any thermokarst prevention measures.
8. Describe any existing or potential for flooding and any flood control measures.
9. Describe any existing or potential for erosion and any erosion control measures.
10. Describe any existing or potential for sedimentation and any sedimentation control measures.
11. Describe any existing or potential for slumping and any slump control measures.
12. Describe the moisture content of the ground.
13. Describe any evidence of ice lenses.
14. If blasting, describe methods employed.
15. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.
16. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.
17. Discuss safety measures for the workforce and the public.

**SECTION D: Offshore Infrastructure – N/A**

#### **D-1. Facility – N/A**

1. Describe any field investigations and the results of field investigations used in selecting the site (i.e. aerial surveys, bathymetric surveys, tidal processes, shoreline erosion processes, geotechnical foundation conditions)
2. Provide a conceptual plan, profile description and drawing(s) indicating shoreline, facility footprint, tidal variations, required vessel draft, keel offset, deck height freeboard
3. Discuss how anticipated loads on the seabed foundation and on the offloading platform will be incorporated into the design.
4. Describe how vessels will manoeuvre around the facility. (e.g. pull alongside or in front)
5. Discuss the anticipated life of the facility.
6. Describe whether part of the facility or project will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

#### **D-2. Facility Construction – N/A**

7. Describe the types of material used for construction (i.e. granular or rock, steel piling or sheet piling, concrete). If material is granular, consider acid rock drainage potential, metal leaching potential, percentage of fines, size.
8. Describe dredging activities.
9. Indicate source of granular or rock material used in construction.
10. List quantities of the various types of material used in construction.
11. Describe construction method(s).
12. Indicate whether a site engineer will be on-site to inspect construction.
13. If proposed construction method involves dumping of fill into water, discuss measures for mitigating the release of suspended solids.

#### **D-3. Facility Operation – N/A**

14. Describe maintenance activities associated with the facility (e.g. dredging, maintenance to account for potential settlement of facility,)
15. Discuss whether the public will have access to the facility(s) and describe public safety measures.
16. Describe cargo and container handling, transfer and storage facilities.
17. Indicate whether fuel will be transferred from barges at this site and describe the method of that fuel transfer.
18. Discuss frequency of use.

#### **D-4. Vessel Use in Offshore Infrastructure – N/A**

19. Please complete Section H

### **SECTION E: Seismic Survey – N/A**

#### **E-1. Offshore Seismic Survey – N/A**

1. Indicate whether the survey is 2D or 3D at each site.

2. Describe the type of equipment used, including:
  - Type and number of vessels including length, beam, draft, motors, accommodation capacity, operational speeds when towing and when not towing
  - Sound source (type and number of airguns)
  - Type and number of hydrophones
  - Number, length, and spacing of cables/ streamers
3. On a map, indicate the grid, number of lines and total distance covered by each line, the distance to nearby community/communities and sensitive areas (e.g., National Parks, National Wildlife Areas, Migratory Bird Sanctuaries, recognized breeding grounds or migratory routes).
4. Indicate the discharge volume of the airguns, the depth of airgun discharge, the noise levels of acoustic signal at various distances from the source (e.g., 500 metres, 1000 metres), and the frequency and duration of airgun operation at each site.
5. Discuss the potential for dielectric oil to be released from the streamer array, and describe proposed mitigation measures.
6. Indicate whether additional seismic operations are required for start-up of operations, equipment testing, repeat coverage of areas.
7. Indicate whether air gun procedures will include a “ramping up” period and, if so, the proposed rate of ramping up.
8. Indicate whether the measures described in the *Statement of Canadian Practice for Mitigation of Noise in the Marine Environment* will be adhered to for this project.
9. Describe whether any part of the project will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEEA).

**E-2. Nearshore/Onshore Seismic Survey – N/A**

10. For each site, indicate whether nearshore and onshore surveys will be conducted during the ice season or once the ice has melted
11. Describe how nearshore and onshore areas will be accessed.
12. Describe the survey methods to be used (e.g. explosive charge, vibration, air or water gun, other)
13. Describe equipment to be used
14. If applicable, indicate number, depth and spacing of shot holes
15. Describe explosive wastes including characteristics, quantities, treatment, storage, handling, transportation and disposal methods.

**E-3. Vessel Use in Seismic Survey – N/A**

16. Please complete Section H.

**SECTION F: Site Cleanup/Remediation – N/A**

1. Describe the location, content, and condition of any existing landfills and dumps (indicate locations on a map).
2. Identify salvageable equipment, infrastructure and/or supplies.
3. Provide a list of all contaminants to be cleaned up, anticipated volumes and a map delineating contaminated areas. This includes buildings, equipment, scrap metal and debris, and barrels as well as soil, water (surface and groundwater) and sediment.
4. Describe the degree of pollution/contamination, and list the contaminants and toxicity.
5. Describe technologies used for clean-up and/or disposal of contaminated materials. Include a list of all the physical, chemical and biological cleanup/ remediation methods, operational procedures, and the dosage/frequency of reagents and bacterial medium.

6. Identify and describe all materials to be disposed of off site, including the proposed off site facilities, method of transport and containment measures.
7. Discuss the viability of landfarming, given site specific climate and geographic conditions.
8. Describe the explosive types, hazard classes, volumes, uses, location of storage (indicate on a map), and method of storage (if applicable).
9. If blasting, describe the methods employed.
10. Describe all methods of erosion control, dust suppression, and contouring and re-vegetation of lands.
11. Describe **all** activities included in this project.
  - Excavation (please complete Section B-5)
  - Road use and/or construction (please complete Section A)
  - Airstrip use and/or construction
  - Camp use and/or construction
  - Stockpiling of contaminated material
  - Pit and/or quarry (please complete Section C)
  - Work within navigable waters (please complete Section H)
  - Barrel crushing
  - Building Demolition
  - Other

## **SECTION G: Oil and Natural Gas Exploration/Activities – N/A**

### **G-1. Well Authorization – N/A**

1. Identify the location(s) of the well centre(s) by latitude and longitude. Attach a map drawn to scale showing locations of existing and proposed wells.
2. Indicate if the site contains any known former well sites.
3. Include the following information for each well:
  - a. Well name
  - b. Surface location
  - c. Proposed bottomhole location
  - d. Ground elevation (in metres)
  - e. Spacing area (in units)
  - f. Identify the well type:
    - i. Production
    - ii. Injection
    - iii. Disposal
    - iv. Observation
    - v. Storage
    - vi. Experimental
    - vii. Other (specify)
  - g. Identify the well classification:
    - i. Exploratory wildcat
    - ii. Exploratory outpost
    - iii. Development
  - h. Drilling operation (deviation):
    - i. Vertical
    - ii. Directional
    - iii. Horizontal
    - iv. Slant
  - i. Objective Zones (copy chart style below)

| Objective Formation | Fluid (oil/gas/water) | Depth (mTVD) | Core (Y/N) |
|---------------------|-----------------------|--------------|------------|
|                     |                       |              |            |
|                     |                       |              |            |
|                     |                       |              |            |

- j. Proposed Total Depth in mTDV and mMD.
- k. Formation of Total Depth
- l. Sour well? (yes or no)
  - i. If Yes: Maximum H<sub>2</sub>S concentration in mol/kmol  
Emergency planning zone radius in km
- m. Blowout Prevention (Well Class I – VI)
- n. Deviation Surveys
  - i. Will be run at intervals less than 150m? (yes or no)
- o. Wireline logs
  - i. Will run logs in hole for surface casing? (yes or no)
  - ii. Will run a minimum of 2 porosity measuring logs? (yes or no)

**G-2. On-Land Exploration – N/A**

- 4. Indicate if the site contains any known:
  - a. Waste Dumps
  - b. Fuel and Chemical Storage Areas
  - c. Sump Areas
  - d. Waste Water Discharge Locations
- 5. Attach maps drawn to scale showing locations of existing and proposed items identified in (2) above, as well as all proposed:
  - a. Sumps
  - b. Water sources
  - c. Fuel and chemical storage facilities
  - d. Drilling mud storage areas
  - e. Transportation routes
- 6. If utilizing *fresh water*, estimate maximum drawdown and recharge capability of the river or lake from which water will be drawn.
- 7. Indicate if permafrost is expected to be encountered under:
  - a. Camp Facilities
  - b. Well Site
  - c. Access Routes
  - d. Sumps
  - e. Other: \_\_\_\_\_
- 8. Indicate any potential for encountering artesian aquifers or lost circulation within the surface hole (to casing depth).
- 9. Will drilling wastes contain detrimental substances (including, but not limited to, oil-based or invert mud and high salinity fluids)? If yes, indicate the substances and estimated volumes.
- 10. Indicate methods for disposal of drilling wastes:
  - a. Sump
  - b. Down Hole (requires NEB approval)
  - c. On-Site Treatment (provide plan)
  - d. Off-Site (give location and method of disposal)
- 11. If a sump is being used, attach the following information:
  - a. scale drawings and design of sumps

- b. capacity in cubic metres
  - c. berm erosion protection
  - d. soil permeability and type
  - e. recycling/reclaiming waters
  - f. surface drainage controls
  - g. abandonment procedures
12. Attach the proposed or existing contingency plan which describes the course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.
13. Attach an outline of planned abandonment and restoration procedures.

**G-3. Off-Shore Exploration – N/A**

14. Will drilling wastes contain detrimental substances (including, but not limited to, oil-based or invert mud and high salinity fluids)? If yes, indicate the substances and estimated volumes.
15. Attach the proposed or existing contingency plan which describes the course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.
16. Attach an outline of planned abandonment and restoration procedures.
17. Please complete Section H.

**G-4. Rig – N/A**

18. Type of Rig. Draw works, make and model
19. Derrick/Mast make and model
20. H.P. available to draw-works

**SECTION H: Marine Based Activities – N/A**

**H-1. Vessel Use – N/A**

1. Describe the purpose of vessel operations.
2. List classes and sizes of vessels to be used.
3. Indicate crew size.
4. Indicate operating schedule.
5. Provide a description of route to be traveled (include map).
6. Indicate whether the vessel will call at any ports. If so, where and why?
7. Describe wastes produced or carried onboard including the quantities, storage, treatment, handling and disposal methods for the following:
  - a. Ballast water
  - b. Bilge water
  - c. Deck drainage
  - d. Grey and black water
  - e. Solid waste
  - f. Waste oil
  - g. Hazardous or toxic waste
8. List all applicable regulations concerning management of wastes and discharges of materials into the marine environment
9. Provide detailed Waste Management, Emergency Response and Spill Contingency

## Plans

10. Does the vessel(s) possess an Arctic Pollution Prevention Certificate? If yes, indicate the date of issue and the name of the classification society.
11. Describe the source of fresh water and potable water
12. Indicate whether ice-breaking will be required, and if so, approximately where and when? Discuss any possible impacts to caribou migration, Inuit harvesting or travel routes, and outline proposed mitigation measures.
13. Indicate whether the operation will be conducted within the Outer Land Fast Ice Zone of the East Baffin Coast. For more information on the Outer Land Fast Ice Zone, please see the Nunavut Land Claims Agreement (NLCA), Articles 1 and 16.
14. Indicate whether Fisheries or Environmental Observers or any other *Qualified Marine Observer* will be onboard during the proposed project activities. If yes, describe their function and responsibilities.
15. Describe all proposed measures for reducing impacts to marine habitat and marine wildlife (including mammals, birds, reptiles, fish, and invertebrates).
16. Describe whether any part of the project will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

## **H-2. Disposal at Sea – N/A**

17. Provide confirmation you have applied for a *Disposal at Sea* permit with Environment Canada.
18. Provide a justification for the disposal at sea.
19. Describe the substance to be disposed of, including chemical and physical properties.
20. Indicate the location where the disposal is to take place.
21. Describe the frequency of disposals (disposals per day/week or month).
22. Describe the route to be followed during disposal and indicate on a map.
23. Indicate any previous disposal methods and locations.
24. Provide an assessment of the potential effects of the disposal substance on living marine resources.
25. Provide an assessment of the potential of the disposal substance, once disposed of at sea, to cause long-term physical effects.
26. Describe all mitigation measures to be employed to minimize the environmental, health, navigational and aesthetic impacts during loading, transport and disposal.

## **SECTION I: Municipal and Industrial Development – N/A**

1. Describe the business type, including public, private, limited, unlimited or other.
2. Describe the activity (e.g. development of quarry, development of hydroelectric facility, bulk fuel storage, power generation with nuclear fuels or hydro, tannery operations, meat processing and packing, etc.).
3. Describe the production process or service provision procedures.
4. Describe the raw materials used in this activity, the storage and transportation methods. If hazardous materials are included in raw materials, products or by-products; include safety regulations methodology.
5. Provide detailed information about the structure and/or building in which the activity will be conducted.
6. List the PPE (personal protective equipment) and tools to be used to protect personal health and safety.
7. Describe the firefighting equipment that are or will be installed.
8. Describe the noise sources, noise level in work area, technical measurements that will

be adopted to abate the noise levels and regulatory requirements for noise abatement and noise levels.

9. Describe the type of gaseous emission that will be produced during this activity. Include the allowable thresholds and mitigation measures.
10. Describe odours that the activity might release and include corresponding allowable threshold. Describe mitigation measures if thresholds are exceeded.
11. Describe radiation sources that might be emitted during the activity. Include type and source and include mitigation measures. Also describe preventative measures for human exposure (i.e. PPE).
12. Discuss the employee safety and environment protection training program.
13. If the activity involves a bulk fuel storage facility, include drawings showing the bulk fuel storage facility location in proximity to natural water courses, high water marks, etc.
14. If the activity involves the development of a new quarry or expansion of an existing quarry, complete Section C.

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#### 4. DESCRIPTION OF THE EXISTING ENVIRONMENT

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Describe the existing environment, including physical, biological and socioeconomic aspects. Where appropriate, identify local study areas (LSA) and regional study areas (RSA).

Please note that the detail provided in the description of the existing environment should be appropriate for the type of project proposal and its scope.

The following is intended as a guide only.

##### **Physical Environment**

*Please note that a description of the physical environment is intended to cover all components of a project, including roads/trails, marine routes, etc. that are in existence at present time.*

- Proximity to protected areas, including:
  - i. designated environmental areas, including parks;
  - ii. heritage sites;
  - iii. sensitive areas, including all sensitive marine habitat areas;
  - iv. recreational areas;
  - v. sport and commercial fishing areas;
  - vi. breeding, spawning and nursery areas;
  - vii. known migration routes of terrestrial and marine species;
  - viii. marine resources;
  - ix. areas of natural beauty, cultural or historical history;
  - x. protected wildlife areas; and
  - xi. other protected areas.
- Eskers and other unique landscapes (e.g. sand hills, marshes, wetlands, floodplains).
- Evidence of ground, slope or rock instability, seismicity.
- Evidence of thermokarsts.
- Evidence of ice lenses.
- Surface and bedrock geology.
- Topography.
- Permafrost (e.g. stability, depth, thickness, continuity, taliks).

- Sediment and soil quality.
- Hydrology/ limnology (e.g. watershed boundaries, lakes, streams, sediment geochemistry, surface water flow, groundwater flow, flood zones).
- Tidal processes and bathymetry in the project area (if applicable).
- Water quality and quantity.
- Air quality.
- Climate conditions and predicted future climate trends.
- Noise levels.
- Other physical Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

To our knowledge there are no protected areas within the Baffin Gold Property.

The regional terrain is glaciated with the topography varying from coastal plains and glacial outwash (a.s.l) on the western side of the property to rolling hills with elevations up to 350 metres on the eastern side. This region is underlain by continuous permafrost.

The Baffin Gold Property is centered on the Bravo Lake Formation (BLF), an east-west trending metavolcanic-sedimentary belt located along the southern edge of Piling Group rocks within the Foxe Fold Belt (FFB). The Foxe Fold Belt (FFB) is a Proterozoic aged supra-crustal sequence developed on Archean basement. The belt is characterized by upper greenschist to amphibolite facies metamorphism and complex poly-phase deformation.

The property is covered by a thin glacial till blanket with occasional southwest trending eskers, significant bedrock exposure and boulder float.

Due to the remote location of the property, water, soil and air quality are expected to be pristine and only effected by global factors.

## Biological Environment

- Vegetation (terrestrial as well as freshwater and marine where applicable).
- Wildlife, including habitat and migration patterns.
- Birds, including habitat and migration patterns.
- Species of concern as identified by federal or territorial agencies, including any wildlife species listed under the *Species at Risk Act (SARA)*, its critical habitat or the residences of individuals of the species.
- Aquatic (freshwater and marine) species, including habitat and migration/spawning patterns.
- Other biological Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

The Baffin Gold Property is located on the border of the Melville Peninsula Plateau Ecoregion (MPPE) and the Baffin Island Uplands Ecoregion (BIUE) within the Northern Arctic Ecozone (NAE) (Environment Canada). These ecoregions are described as having a mid to high-arctic ecoclimate with temperatures ranging from a summer mean of 0.5°C and a winter mean of -25°C with a mean temperature of -13°C. The Baffin Island Uplands Ecoregion received more precipitation than the adjacent MPPE to the southwest. Mean annual precipitation ranges from 100-300mm and snow covers the ground from roughly September through June.

The Northern Arctic Ecozone is above the tree line; therefore, no full size tree species are present. Vegetation is generally sparse and stunted and mainly consists of mosses, sedges, grasses and lichen.

The project activities are not located within Caribou Protection Areas or Schedule 1 Species at Risk known locations.

There are no designated caribou calving grounds or caribou protection areas on the Baffin Gold Property or on the surrounding area. Kivalliq Energy plans to implement wildlife monitoring designed to describe wildlife use of the study area and produce coarse-scale population estimates for valued ecosystem components (VECs) occurring in the study area. The 2017 wildlife program will consist of logging incidental observations of all wildlife encountered by field staff and noting any listed species or high priority VEC known to occur in the study area. The wildlife incidental observations will be included in the Annual Report to QIA, INAC and NIRB.

Wildlife is rare around the project area. Species that may be present include: polar bear, muskox, caribou, arctic wolf, arctic fox, arctic hare and snowy owl. While the listed wildlife are characteristic of the Ecozone, historic exploration in the area has recorded minimal wildlife sightings. Please refer to the Baffin Gold Property's "Environmental and Wildlife Management Plan" attached as Appendix H for Kivalliq Energy's wildlife policy and a complete description of wildlife mitigation measures.

## **Socioeconomic Environment**

- Proximity to communities.
- Archaeological and culturally significant sites (e.g. pingos, soap stone quarries) in the project (Local Study Area) and adjacent area (Regional Study Area).
- Palaeontological component of surface and bedrock geology.
- Land and resource use in the area, including subsistence harvesting, tourism, trapping and guiding operations.
- Local and regional traffic patterns.
- Human Health, broadly defined as a complete state of wellbeing (including physical, social, psychological, and spiritual aspects).
- Other Valued Socioeconomic Components (VSEC) as determined through community consultation and/or literature review.

The centre of the property is located 260 kilometres southwest of Clyde River and 360 kilometres northwest of Qikiqtarjuaq. Due to the properties isolation and a lack of road access it is predicted that there will be little to no local or regional traffic in the area.

There are no known archaeological or culturally significant sites on the property. Any archaeological sites identified during the course of exploration activities will be handled with the utmost care. Site coordinates will be recorded and designated off limits to all workers. Disturbance will be prohibited.

The Naativak and Nangmoutaq Hunters and Trappers Organizations will be contacted to determine whether the project area coincides with hunting grounds and to discuss their potential concerns.

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## **5. IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES**

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1. Please complete the attached Table 1 – Identification of Environmental Impacts, taking into consideration the components/activities and project phase(s) identified in Section 4 of this

document. Identify impacts in Table 1 as either positive (P), negative and mitigable (M), negative and non-mitigable (N), or unknown (U).

Please see Table 1: Identification of Environmental Impacts at the end of this document.

2. Discuss the impacts identified in the above table.

Temporary field camps will be constructed quickly and with minimal impact to the environment. Permafrost disturbance due to sump digging will be mitigated with backfilling upon final closure of the camp. Limited noise will be associated with the construction of camp including mobilizing equipment and personnel to site which cannot be mitigated.

All activities associated with operations are considered low-impact and mitigatable except for noise levels related to aircraft and generators for camp operations. Aircraft are necessary due to the location of the property and lack of roads.

Temporary field camps will be completely removed upon final closure according to the "Abandonment and Restoration Plan" (Appendix I). No buildings, equipment or waste will remain once the project is complete.

Please refer to the "Abandonment and Restoration Plan" which outlines reclamation procedures for the potential impacts identified on the property and the "Environmental and Wildlife Management Plan" and "Fuel Management Plan" for mitigate measures in place on the Baffin Gold Property.

3. Discuss potential socioeconomic impacts, including human health.

Kivalliq Energy predicts positive socioeconomic impacts for the nearby communities including job creation for local Inuit and increased business for northern companies and services. All employees and contractors will be required to be familiar with all of the Baffin Gold Property management plans.

4. Discuss potential for transboundary effects related to the project.

N/A

5. Identify any potentially adverse effects of the project proposal on species listed under the *Species at Risk Act (SARA)* and their critical habitats or residences, what measures will be taken to avoid or lessen those effects and how the effects will be monitored.

Please refer to the "Environmental and Wildlife Management Plan" in Appendix H. Every effort will be made to avoid all wildlife contact.

6. Discuss proposed measures to mitigate all identified negative impacts.

Please refer to the Baffin Gold Property "Environmental and Wildlife Management Plan" for mitigation measures related to the environment and wildlife, the "Fuel Management Plan" and "Spill Contingency Plan" for fuel mitigation measures.

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## 6. CUMULATIVE EFFECTS

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A cumulative impact (or effect) can be defined as the impact on the environment that results

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from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can also result from individually minor but collectively significant actions taking place over a period of time.

Discuss how the effects of this project interact with the effects of relevant past, present and reasonably foreseeable projects in a regional context.

Early stage grassroots exploration programs are low-impact and occur over a short period of time. The effects of these programs are expected to be minor and mitigable.

Please refer to the “Environmental and Wildlife Management Plan” which outlines mitigation measures employed by Kivalliq Energy. All Baffin Gold Property management plans will be used in combination to minimize effects to environment and wildlife.

Predicted positive cumulative effects include job opportunities for locals and increased business in the communities.

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## 7. SUPPORTING DOCUMENTS

The following supporting documents are provided:

- Baffin Gold Property: Project Description and Work Plan – Appendix A
- Maps – included in Appendix A
- Non-Technical Project Proposal – English and Inuktitut – Appendix B
- INAC Land Use Permit Application – Appendix C
- NWB Water Licence Application – Appendix D
- QIA Land Use Licence Application – Appendix E
- Spill Contingency Plan – Appendix F
- Fuel Management Plan – Appendix G
- Environmental and Wildlife Management Plan – Appendix H
- Abandonment and Restoration Plan – Appendix I
- Emergency Response Plan– Appendix J
- Waste Management Plan– Appendix K

In addition, for Project Type 9 (Site Cleanup/Remediation), please provide the following additional supporting documents:

- Remediation Plan including cleanup criteria and how the criteria were derived.
- Human Health Risk Assessment of the contaminants at the site.

N/A



Notes: Please indicate in the matrix cells whether the interaction causes an impact and whether the impact is:

- P** Positive
- N** Negative and non-mitigatable
- M** Negative and mitigatable
- U** Unknown

If no impact is expected then please leave the cell blank

| <b>THE NUNAVUT IMPACT REVIEW BOARD</b><br><b>SCREENING PART 2 FORMS</b><br><b>TABLE 2 - MITIGATION AND MONITORING</b> |  |   |                  |  |  |
|---|--|---|------------------|--|--|
|                                      | PROPOSED MITIGATION MEASURE  | IMPLEMENTATION SCHEDULE                         | RESIDUAL IMPACTS | PROPOSED MONITORING SCHEDULE               | REPORTING SCHEDULE   |
| <b>IMPACTS (IDENTIFIED IN TABLE 1)</b>  |  |   |                  |  |  |
| Temporary Fly Camps – effects on permafrost layer and soil due to grey water sump                                     | Backfilled to pre-existing natural contour.  | Upon final abandonment and restoration.         | N/A              | N/A  | Final camp closure report  |
| Noise due to camp operations and flights  | Minimize flights required. Noise will stop once operations cease.  | Upon seasonal closure and final closure.        | Unknown          | N/A  |  |
| Sediment/soil quality effected by fuel cache/camp operations.   | Treat spills as per the “Spill Contingency Plan”.  | Immediately once spill has been discovered.     | N/A              | Annually until approved by INAC inspector. | Within 24 hours to NU Spill Report Line and INAC Inspector. Annually until final approval. |
| Effects on vegetation due to camp operations (i.e. tents, fuel cache)   | Camps and fuel caches will be located in areas with minimal vegetation. Upon final closure, areas may be reseeded to encourage regrowth of vegetation. | During camp construction and final abandonment. | N/A              | N/A  | Final camp closure report.   |
| Effects on wildlife.  | Every effort will be made to avoid all wildlife. Refer to Environmental and Wildlife Management Plan.  | During the entire exploration program.          | N/A              | N/A  | Annually to NIRB, QIA and INAC.  |
| Effects on birds.   | No birds, eggs or nests are to be disturbed. Refer to Environmental and Wildlife Management Plan.  | During the entire exploration program.          | N/A              | N/A  | Annually to NIRB, QIA and INAC.  |

Note: Residual impacts refers to those impacts that remain after mitigation has been implemented.