APPENDIX 2:

HOPE LAKE
REMEDIATION PROJECT

NUNAVUT IMPACT REVIEW BOARD PART 2 FORM – PROJECT SPECIFIC INFORMATION REQUIREMENTS

SCREENING PART 2 FORM
PROJECT SPECIFIC INFORMATION REQUIREMENTS (PSIR)

1. SUBMISSIONS

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.

2. GENERAL PROJECT INFORMATION REQUIREMENTS

Project Coordinates and Maps

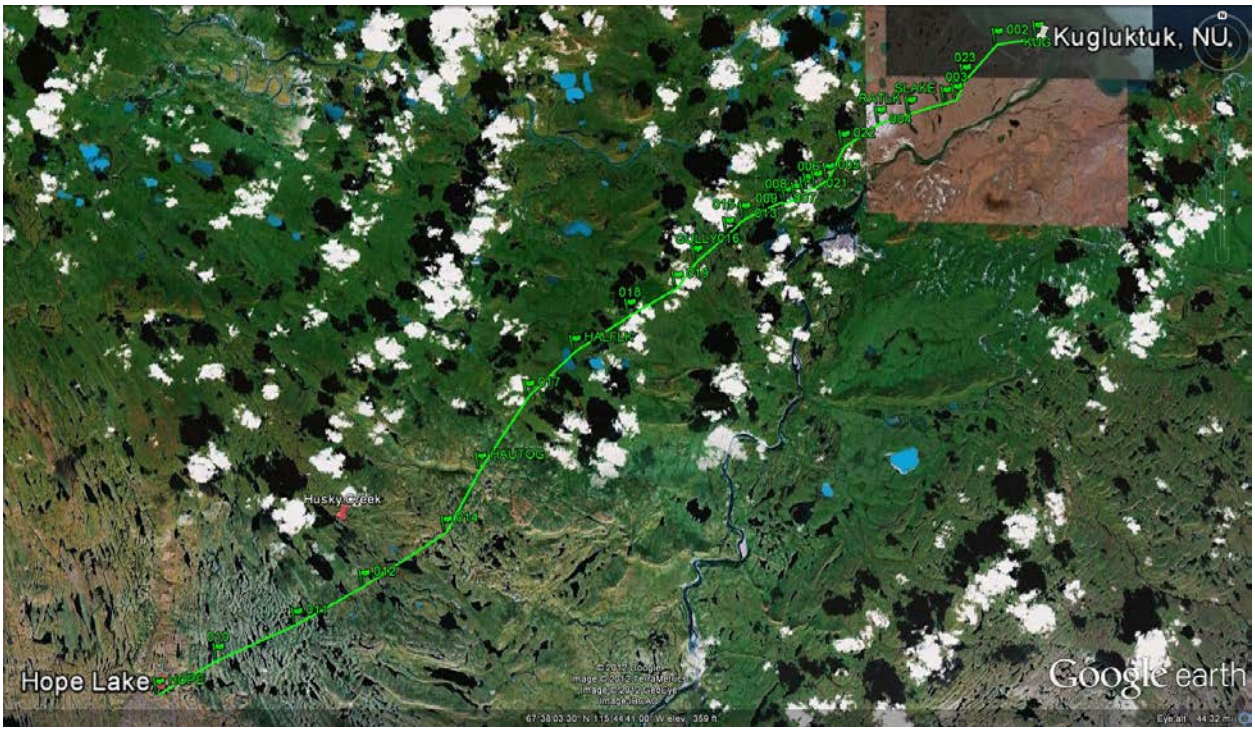
1. The preferred method for submitting project coordinates information is through the use of a Geographic Information System (GIS) compatible digital file. Although an ESRI ArcView 3.x shape file (in decimal degrees) is the preferred interchange format, the NIRB has the capacity to receive over 100 GIS 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.

   The Hope Lake Remediation Project includes five (5) individual sites that have been grouped together for efficiency and cost effectiveness. The largest of the five sites is Hope Lake; the others are satellite sites and include Husky Creek and Willow Creek – includes South Cabins and Southwest Cabin. Husky Creek is located approximately 16 kilometres from Hope Lake. Willow Creek is located approximately 20 kilometres from Hope Lake. The nearest community is Kugluktuk, located 75 kilometres to the northeast of Hope Lake.

   During the 2012 field season the work at the satellite sites was completed and all the debris and materials for disposal were transported to the Hope Lake site via Helicopter.

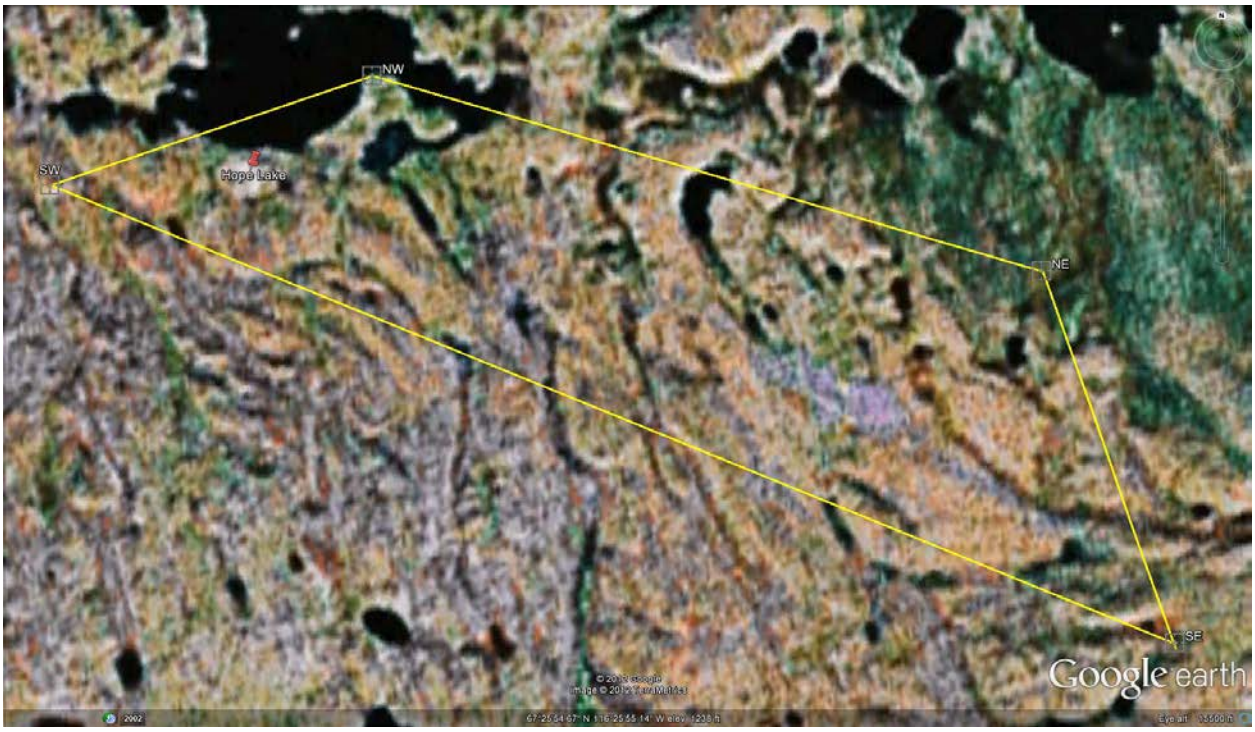
   Mobilization to the Hope Lake site will take place in March/April 2014 via CAT-Train, see map below showing the proposed CAT-Train route.



The proposed site activities for the remainder of the project will take place within the boundaries detailed below:

NW: Latitude: (67°26'33" N) Longitude: (116°27'20" W)
NE: Latitude: (67°26'06" N) Longitude: (116°23'34" W)
SE: Latitude: (67°25'17" N) Longitude: (116°22'53" W)
SW: Latitude: (67°26'20" N) Longitude: (116°29'10" W)

See map below. Additional Site Maps and Drawings are provided in Appendix 4.

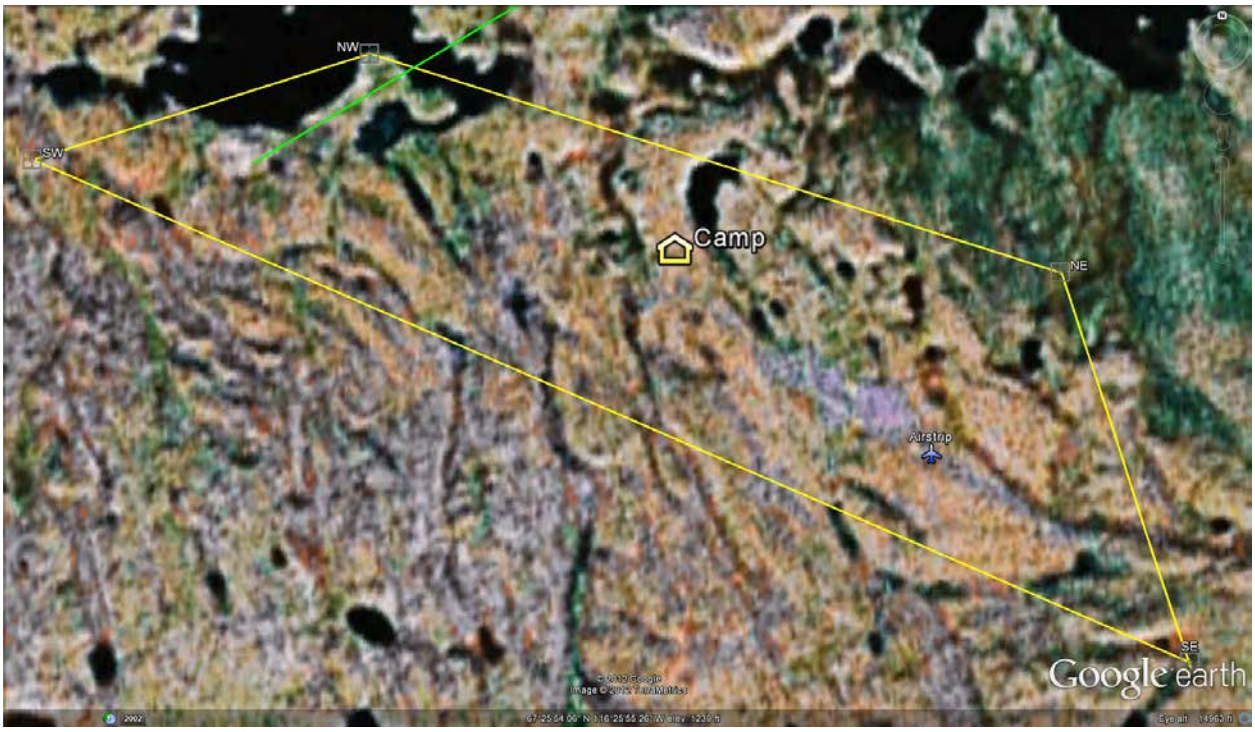


2. Map of the project site within a regional context indicating the distance to the closest communities.

   The closest community to Hope Lake is Kugluktuk, approximately 75 kilometres to the northeast. See map of CAT-Train route above.

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

   The proposed location of the camp facilities is along the trail north of the airstrip (GPS Coordinates 67°26'06.45" N, 116°25'40.30"W). The approximate location is indicated in the figure below (see appendix 5 for additional Maps & Drawings).



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

   Detailed maps of the project site are provided in Appendix 4.

Project General Information

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

   The purpose of the Hope Lake Remediation Project is to eliminate/reduce the hazards (human health and environmental) associated with the sites. The hazards at the site include heavy metals, asbestos, petroleum hydrocarbons, and physical hazards associated with the site infrastructure and debris.

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).

   Alternative methods for carrying out the project are discussed in the Hope Lake Remedial Action Plan (Appendix 4). The Remedial Action Plan also provides justification for the methods chosen based on eliminating/reducing the hazard and the associated costs.

7. Provide a schedule for all project activities.

   A project schedule is provided in Appendix 7.

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

The project is being undertaken in accordance with the following federal and departmental regulations and policies:

- **Nunavut Land Claim Agreement (Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada, 1993)**
- **Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME, 1999)**
- **Canadian Water Quality Guidelines for the Protection of Aquatic Life (CCME, 1999)**
- **Canadian Environmental Protection Act (EC, 1999)**
- **Nunavut Waters and Surface Rights Tribunal Act (2002)**
- **Nunavut Environmental Guideline for Waste Asbestos (2002)**
- **Contaminated Sites Management Policy (INAC, 2002)**
- **Northern Affairs Contaminated Sites Management Policy (INAC, 2002)**
- **A Federal Approach to Contaminated Sites (CSMWG, 2002)**
- **Risk Management Guidance Document (INAC, 2006)**
- **Contaminated Sites Cost Estimating Guide (INAC, 2006)**
- **Treasury Board Policy on Management of Real Property (TB, 2006)**
- **Risk Management Tool & Reporting Tool User Guide (INAC, 2007)**
- **Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil (CCME, 2008)**
- **Environment, Health & Safety Management System Manual (INAC, 2008)**
- **Environment, Health & Safety Standard Operating Procedures Manual (INAC, 2008)**
- **Environment, Health & Safety Control Framework, Northern Contaminated Sites Program (INAC, 2008)**
- **Environment, Health & Safety Audit Program Guide (INAC, 2008)**
- **Construction Project Safety Management Guide, 5th Edition (PWGSC, 2008)**
- **PCB Regulations (EC, 2008)**
- **Abandoned Military Site Remediation Protocol (INAC, 2009)**

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

The approvals, permits and licenses required include:

- **Water Licence (Nunavut Water Board)**
- **Crown Land Use Permit (Indian and Northern Affairs Canada)**
- **Inuit Owned Land Access Permit (Kitikmeot Inuit Association)**

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
  - Not Applicable

- Clear Span Bridge
  - Not Applicable

- Culvert Maintenance
  - Not Applicable

- Ice Bridge
  - Not Applicable

- Routine Maintenance Dredging
  - Not Applicable

- Installation of Moorings
  - Not Applicable

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.
    - Not Applicable

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).

    Equipment and materials were mobilized to Kugluktuk via barge/sealift in September 2012. They will be transported to Hope Lake via CAT-Train in March/April 2013. Personnel and perishable items will be mobilized to site in June 2013 via fixed wing aircraft from Kugluktuk and Yellowknife.

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.

    An abandoned airstrip exists at the site, this airstrip will be used throughout the remediation activities. Maps showing the airstrip can be found in Appendix 5.

14. If an airstrip is being constructed, provide the following information:
    a. Discuss design considerations for permafrost
       - Not Applicable

    b. Discuss construction techniques
       - Not Applicable

c. 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).
- Not Applicable

d. Describe dust management procedures.
- Not Applicable

e. Provide a map showing location of proposed airstrip.
- Not Applicable

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

Flights will fly at a minimum altitude of 1,100 metres and maintain a minimum horizontal distance of 1,500 metres from concentrations of birds. Flights to and from Hope Lake and Kugluktuk/Yellowknife will take place once or twice a week.

Camp Site

16. Describe all existing and proposed camp structures and infrastructure

Existing infrastructure at the site includes:
- **Kugluktuk Hunter's and Trapper's Organization Cabin (to be left as is)**
- **Fuel Tanks**
- **Drum Caches**
- **Abandoned Exploration Camps/Cabins**

Other then the Kugluktuk HTO Cabin, these structures will be demolished as part of the remedial activities

Proposed infrastructure (to support remedial activities) includes:
- **A temporary camp (including a sewage lagoon and incinerator)**

17. Describe the type of camp:
    a. Mobile
       - Yes, camp will consist of mobile camp units transported to site
    b. Temporary
       - Yes, camp facility will be removed upon project completion
    c. Seasonal
       - Yes, camp will operate during the summer of 2013 (June to September)
    d. Permanent
       - No
    e. Other
       - Not applicable

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

The maximum number of personnel expected to be on site is 32. Site activities will take place from June to September 2013. The number of people will fluctuate throughout the fieldwork and the plan is to have an average of 26 people on site.

Equipment

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

    The equipment required to complete the project includes:
    - **1 x Loader**
    - **2 x Dozers**
    - **6 x Deck Sleighs**
    - **2 x Fuel Sloops**
    - **2 x Snow-Cats**
    - **2 x Snowmobiles**
    - **1 x Excavator**
    - **1 x Rock Truck**
    - **2 x Kubota RTVs**
    - **6 x ATVs**
    - **1 x Pickup Truck**
    - **1 x Incinerator**

20. If possible, provide digital photos of equipment.

    Not available

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.

    Drinking water will be brought to site in bottles on the resupply flights. All other water will be sourced from the small lake north of the camp area (GPS Coordinates 67°26'14.60" N, 116°25'30.65"W) or from Hope Lake (GPS Coordinates 67°26'28.15" N, 116°27'49.85"W).

22. Describe the estimated rate of water consumption (m^3/day).

    Total water consumption is estimated to be a maximum of 10.0 cubic metres per day:
    - **150 litres per person x 32 people (max) = 4,800 litres**
    - **5,200 litres for miscellaneous activities (i.e. barrel and equipment washing)**

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

All camp grey water and black water will drain to lift-stations adjacent to the camp facilities. The lift-stations will be fitted with industrial grade submersible macerator lift-pumps controlled by level switches to start & stop the pump. From the lift-station the sewage will be pumped to the sewage lagoon system. The sewage lagoon system will consist of two separate lagoons adjacent to each other constructed to allow for 20 days capacity. The maximum fluid depth will not exceed one metre. The lagoons will be located a minimum of 100 metres from the camp and any drainage paths, and downwind of the camp (based on prevailing wind direction. Discharge criteria will be as follows:

- **Biological Oxygen Demand (BOD) – 80 mg/kg**
- **Total Suspended Solids – 100 mg/kg**
- **Fecal Colifirms – 1 x 10^4 CFU/100 mL**
- **pH – 6.0 to 9.0**
- **Oil and Grease – no visible sheen**

See appendix 5 for additional details on the sewage lagoons.

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

- Not applicable

Waste Water (Grey water, Sewage, Other)

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

The quantity of sewage (black water) that will be generated is estimated to be 960 litres per day:

- **30 litres/day x 32 people (max) = 960 litres/day**

The sewage will be directed into the sewage lagoon system (as described in #23 above).

- Camp grey water

The quantity of camp grey water that will be generated is estimated to be 3.6 cubic metres per day:

- **120 litres/day x 32 people (max) = 3,600 litres/day**

The camp grey water will be directed into the sewage lagoon system (as described in #23 above).

- Combustible solid waste

Combustible solid waste from camp operations will be incinerated in an on-site incinerator.

- Non-combustible solid waste, including bulky items/scrap metal

Non-combustible solid waste will be packaged and transported via CAT-Train to Kugluktuk in March/April 2014. From here it will be transported to a licensed disposal facility via barge/sealift in the summer/fall of 2014.

- Hazardous waste or oil

All hazardous wastes and oil will be packaged as per Transportation of Dangerous Goods (TDG) requirements and stored temporarily. These will be shipped south to a facility licenced to dispose of hazardous materials in 2014.

- Contaminated soils/snow

Contaminated soils will be packaged as per the Transportation of Dangerous Goods (TDG) requirements and stored temporarily. These will be shipped south to a facility licenced to dispose of contaminated soil in 2014.

- Empty barrels/ fuel drums

Empty barrels/fuel drums will cleaned, crushed, and transported south for recycling/disposal

- Any other waste produced

None identified at this time.

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.

None.

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.

The table below provides a summary of the fuel types, quantities, container types and storage methods that we anticipate using:

FUEL TYPE	QUANTITY (Estimated)	CONTAINER (Type / # / Capacity)	METHOD OF STORAGE
Aviation Fuel	4,100 litres	Drums / 20 / 205 litres	On pallets, 4 drums each, strapped
Gasoline	1,640 litres	Drums / 8 / 205 litres	On pallets, 4 drums each, strapped
Diesel Fuel	38,000 litres	Enviro-Tank / 1 / 30,000 litres Fuel Sloop / 1 / 13,200 litres	Tanks registered with Environment Canada Federal Registry for Storage Tank Systems. 27,000 litres will be put into the Enviro-Tank and 11,000 litres will remain in the fuel sloop. The diesel in the sloop will be used first.
Propane	500 pounds	Cylinders / 5 / 100 pounds	Cylinders will be transported/stored in a cage where they are strapped to prevent movement

The fuel will be stored near the camp but at least 100 metres from the camp and any water body.

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 fuel tanks and drums will be stored together. The storage area will be inspected daily. Drums that are in use will be stored in insta-berms (or similar) to contain any spills. Spill kits and empty drums or tanks will be kept in near the storage area so that any spills can be contained and cleaned up.

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

    An electric pump will be used to transfer fuel from the drums into the equipment or tank. All fuel transfers will be supervised and spill kits will be readily available to address any spills. Further information is provided in Appendix F of the Site Specific Health & Safety Plan (Appendix 10).

30. Describe spill control measures in place.

All fuel transfers will be supervised and spill kits will be readily available to address any spills. The exact location and contents of the spill kits will be determined by the contractor. Further information is provided in Appendix F of the Site Specific Health & Safety Plan (Appendix 10).

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.

    A small amount of oil and grease will be brought to site to complete the maintenance requirements for the equipment on site. These will be transported as per the requirements of the Transportation of Dangerous Goods (TDG) Act & Regulations. The oil and grease will be stored in the fuel storage area until used. Used oil and grease will be collected and shipped off site for disposal at a licenced disposal facility.

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

    The secondary containment that will be employed are insta-berms (or similar) for the products that are in use.

33. Describe the method of chemical transfer.

    Not applicable

34. Describe spill control measures in place.

    Spill kits will be readily available on all equipment and in areas that the oil and grease are being used. Further information is provided in Appendix F of the Site Specific Health & Safety Plan (Appendix 10).

Workforce and Human Resources/Socio-Economic Impacts

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

    The contract for remedial activities contains an Aboriginal Opportunities Considerations (AOC) clause that requires the contractor to maintain a target level of Inuit employment on the project (and applies a penalty if the contractor fails to meet the target level). The AOC for Hope Lake

guarentees an Inuit employment level of 75%. The AOC also guarentees a minimum of 80% Inuit subcontracting.

The contract also contains a training fund that will allow the contractor access to up to 2% of the contract value, to a maximum of $200,000, to provide training programs to local Inuit beneficiaries.

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

    The workforce will be mobilized to site from Kugluktuk via charter aircraft. Work will take place during June to September in 2013. Workers will work on a rotational schedule to be determined by the contractor.

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

    Not applicable

Public Involvement/ Traditional Knowledge

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

    This project is closest to Kugluktuk. Residents of Kugluktuk will be positively affected by this project and the employment/training opportunities it provides. The project will also remove hazardous materials from the environment; this will benefit human and environmental health in the area.

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

    A community consultation was held in Kugluktuk in January 2011 to discuss the draft Remedial Action Plan (RAP) prior to it being finalized. A meeting was also held with the Kitikmeot Inuit Association in Kugluktuk to inform them of the project plan. In July 2012, prior to the start of fieldwork, another community meeting was held in Kugluktuk to update residents on the project and inform them about upcoming employment and subcontracting opportunities.

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

    No concerns were raised during the community meeting in Kugluktuk.

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

During the Phase III Environmental Site Assessment a meeting was held with elders from Kugluktuk to gather knowledge about the site.

42. Discuss future consultation plans.

Another community meeting will be held in Kugluktuk upon the conclusion of the work in 2014. The purpose of the final meeting will be to let the community know the results of the work.

3. PROJECT SPECIFIC INFORMATION

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	Mineral Exploration	Section B-1 through Section B-4
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

A-1. Project Information

1. Describe any field investigations and the results of field investigations used in selecting the proposed route (e.g. geotechnical, snow pack)

   Not applicable. Only pre-existing roads/trails on site will be used.

2. Provide a conceptual plan of the road, including example road cross-sections and water crossings.

   Not applicable.

3. Discuss the type and volume of traffic using the road/trail (i.e. type of vehicles and cargo and number of trips annually).

The pre-existing roads/trails on site will be used during the field season (June-September).

4. Discuss public access to the road.

   Public access will not be permitted.

5. Describe maintenance procedures.

   Maintenance will be performed as required and include the addition of material, compaction, and culvert installation and replacement.

A-2. All-Weather Road/Access Trail

6. Discuss road design considerations for permafrost.

   Not applicable. Only pre-existing roads/trails on site will be used.

7. Describe the construction materials (type and sources for materials), and the acid rock drainage (ARD) and metal leaching characteristics of the construction materials.

   Not applicable. Only pre-existing roads/trails on site will be used.

8. Discuss construction techniques, including timing for construction activities.

   Not applicable. Only pre-existing roads/trails on site will be used.

9. Indicate on a map the locations of designated refuelling areas, water crossings, culverts, and quarries/borrow sources.

   See Appendix 5 - Site Maps and Drawings.

10. Identify the proposed traffic speed and measures employed to ensure public safety.

    Speed limit will be 30 kilometres per hour. No public access permitted.

11. Describe dust management procedures.

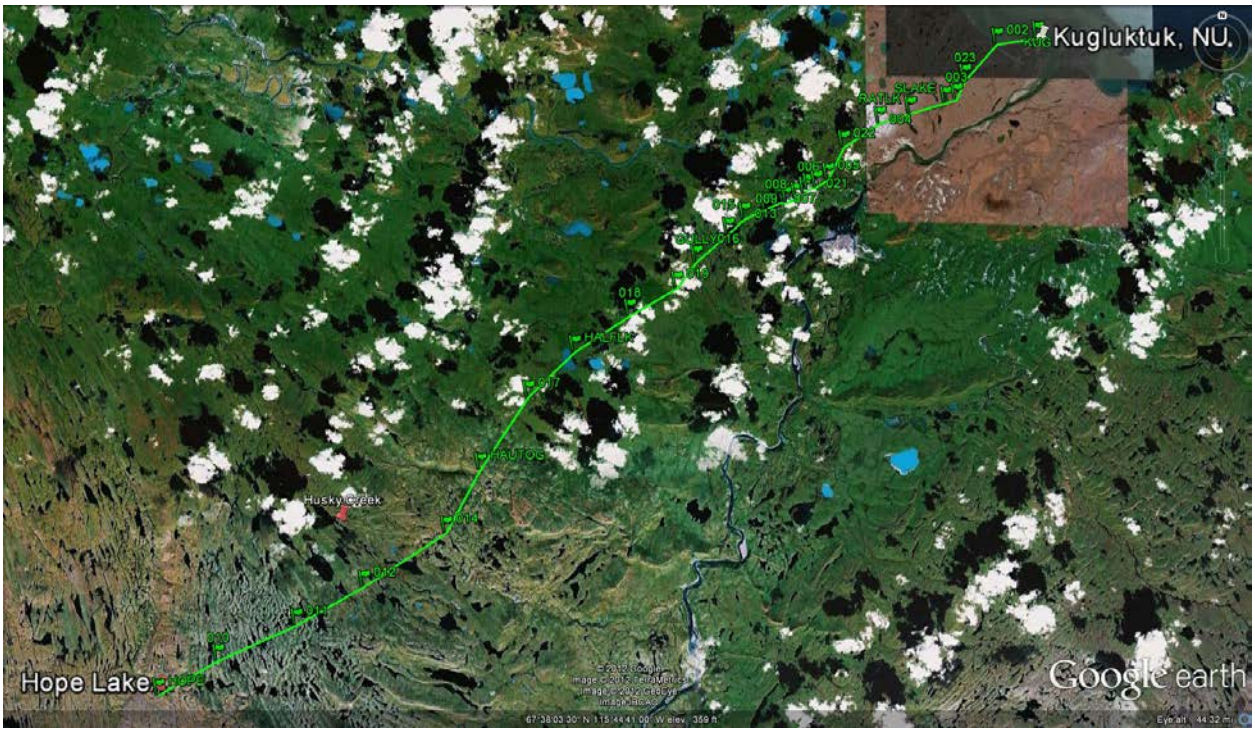
    None planned. If necessary, dust will be suppressed by adding water to the roads.

A-3. Winter Road/Trail

12. 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.

    A winter road will not be constructed. The CAT-Train transportation between Kugluktuk and Hope Lake will take place during March/April of 2013 and 2014. The route will be initially scouted via snowmobile and

snow-cat. The ice will be tested for all water body crossings to ensure it is of sufficient thickness. Once the route is finalized two snow-cats will be used to drag the entire route and complete snow fill construction of any creek crossings and lake shore ramps and ditches. The proposed route is outlined in the figure below:



13. Describe the operating time period.

    March/April 2013 and 2014.

14. Identify the proposed traffic speed and measures employed to ensure public safety.

    Not applicable. No public access.

15. Discuss whether the selected route traverses any fish-bearing water bodies.

    Some small fish-bearing water bodies may be crossed.

SECTION B: Mineral Exploration /Advanced Exploration /Development

B-5 Stripping/ Trenching/ Pit Excavation

1. Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other)

   Mechanical, excavations will be completed with an excavator.

2. Describe expected dimensions of excavation(s) including depth(s).

The dimensions of the borrow area that will be developed are indicated on the Site Maps & Drawings in Appendix 5.

3. Indicate the locations on a map.

   See Appendix 5 - Site Maps and Drawings.

4. Discuss the expected volume material to be removed.

   Estimates indicate that Borrow Area C contains between 5,000 and 10,000 cubic metres of material. This area will provide sufficient material to backfill any excavations and provide material for road/airstrip repairs and regrades.

5. Discuss methods used to determine acid rock drainage (ARD) and metal leaching potential and results.

   If the borrow material is suspected of having acid rock drainage and metal leaching potential then it will be sampled. This is unlikely as the material used will be from the surface/near surface and no blasting will occur.

SECTION C: Pits and Quarries

1. Describe all activities included in this project.
   - Pitting

     None.

   - Quarrying

     See Section B-5 above .

   - Overburden removal

     None.

   - Road use and/or construction (please complete Section A)

     See Section A above

   - Explosives transportation and storage

     None

   - Work within navigable waters

     None

- Blasting

  None

- Stockpiling

  None

- Crushing

  None

- Washing

  None

- Other

  None

2. Describe any field investigations and the results of field investigations used in determining new extraction sites.

   A geotechnical assessment was completed in 2010. The Remedial Action Plan (Appendix 4) summarizes the identified borrow areas.

3. Identify any carving stone deposits.

   None identified

4. Provide a conceptual design including footprint.

   See Appendix 5 - Site Maps and Drawings .

5. Describe the type and volume of material to be extracted.

   See Section B-5 above.

6. Describe the depth of overburden.

   Not applicable.

7. Describe any existing and potential for thermokarst development and any thermokarst prevention measures.

   Not applicable.

8. Describe any existing or potential for flooding and any flood control measures.

Not applicable.

9. Describe any existing or potential for erosion and any erosion control measures.

   Borrow areas will be re-graded and sloped to prevent erosion.

10. Describe any existing or potential for sedimentation and any sedimentation control measures.

    Not applicable.

11. Describe any existing or potential for slumping and any slump control measures.

    Not applicable.

12. Describe the moisture content of the ground.

    Well drained

13. Describe any evidence of ice lenses.

    None

14. If blasting, describe methods employed.

    Not applicable

15. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.

    Not applicable

16. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.

    If the borrow material is suspected of having acid rock drainage and metal leaching potential then it will be sampled. This is unlikely as the material used will be from the surface/near surface and no blasting will occur.

17. Discuss safety measures for the workforce and the public.

    A Site Specific Health and Safety Plan (SSHSP) has been developed it is provided in Appendix 10 of the application. Public access is prohibited.

SECTION F: Site Cleanup/Remediation

1. Describe the location, content, and condition of any existing landfills and dumps (indicate locations on a map).

   None.

2. Identify salvageable equipment, infrastructure and/or supplies.

   None

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.

   The contaminants to be cleaned up include:

   - **Hazardous materials**
     - **646 cubic metres (cylinders, items painted with lead-based paint, asbestos)**
     - **1,535 drums painted with lead-based paint**
     - **14,642 litres of organic liquids**
   - **Non-hazardous materials**
     - **588 cubic metres wood**
     - **503 cubic metres of miscellaneous debris and material**
     - **8,269 litres of aqueous liquids**
   - **Contaminated soils**
     - **101 cubic metres of metal contaminated soil**
     - **106 cubic metres of hydrocarbon contaminated soil**

   Maps delineating the contaminated areas can be found in the Remedial Action Plan (RAP) (Appendix 4) and the Site Maps and Drawings (Appendix 5).

4. Describe the degree of pollution/contamination, and list the contaminants and toxicity.

   The degree of pollution/contamination is low to moderate.

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.

   Only proven methods/technologies will be used. See the Remedial Action Plan (Appendix 4) for the clean-up plans.

6. Identify and describe all materials to be disposed of off site, including the proposed off site facilities, method of transport and containment measures.

   All hazardous and non-hazardous materials will be shipped off site to licensed disposal facilities (exact facilities to be determined). See the Remedial Action Plan (Appendix 4) for further details.

7. Discuss the viability of landfarming, given site specific climate and geographic conditions.

Not applicable.

8. Describe the explosive types, hazard classes, volumes, uses, location of storage (indicate on a map), and method of storage (if applicable).

   None.

9. If blasting, describe the methods employed.

   Not applicable.

10. Describe all methods of erosion control, dust suppression, and contouring and re-vegetation of lands.

    None required.

11. Describe **all** activities included in this project.
    - Excavation (please complete Section B-5)

      See Section B-5.

    - Road use and/or construction (please complete Section A)

      See Section A.

    - Airstrip use and/or construction

      See Part 2 – Transportation Questions 12-15.

    - Camp use and/or construction

      See Part 2 – Camp Site Transportation Questions 16-18.

    - Stockpiling of contaminated material

      Contaminated materials will be consolidated and packaged for transportation. They will be stored at a staging area until they are loaded for removal from site. Confirmatory samples will be taken from the staging area once the materials are removed to confirm that the area is not contaminated.

    - Pit and/or quarry (please complete Section C)

      See Section C.

    - Work within navigable waters (please complete Section H)

      Not applicable.

- Barrel crushing

  Empty barrels will be cleaned, crushed and transported south for recycling/disposal.

- Building Demolition

  Existing infrastructure at the site includes:
  - **Kugluktuk Hunter's and Trapper's Organization Cabin (to be left as is)**
  - **Fuel Tanks**
  - **Drum Caches**
  - **Abandoned Exploration Camps/Cabins**

  Other then the Kugluktuk HTO Cabin, these structures will be demolished as part of the remedial activities. See Appendix 4 for additional details.

- Other

  None

4. DESCRIPTION OF THE EXISTING ENVIRONMENT

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.

The existing environment is described in the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

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.

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.

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.

5. IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES

The identification of impacts and proposed mitigation measures are described in the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

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).

   See Table 1 below.

2. Discuss the impacts identified in the above table.

   See the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

3. Discuss potential socioeconomic impacts, including human health.

   See the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

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

   None

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.

   See the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

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

   See the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

6. CUMULATIVE EFFECTS

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

The cumulative effects of this project are discussed in the "Environmental Screening Assessment of the Proposed Remediation of the Hope Lake Sites Under the Nunavut Impact review Board Process" (March 2011) prepared by EBA. This report can be found in Appendix 6.

7. SUPPORTING DOCUMENTS

Where relevant, provide the following supporting documents:

- Abandonment and Decommissioning Plan

See Remedial Action Plan in Appendix 4.

- Existing site photos with descriptions

Not included. Site photos are available in the Phase III Environmental Site Assessment.

- Emergency Response Plan

A Site Specific Health and Safety Plan will be prepared prior to the start of site work.

- Comprehensive Spill Prevention/Plan (must consider hazardous waste and fuel handling, storage, disposal, spill prevention measures, staff training and emergency contacts)

A Spill Prevention/Response Plan is provided in Appendix 10.

- Waste Management Plan/Program

Not available, will be completed prior to mobilizing to site.

- Monitoring and Management Plans (e.g. water quality, air pollution, noise control and wildlife protection etc.)

Not available, will be completed prior to mobilizing to site.

- If project activities are located within Caribou Protection Areas or Schedule 1 Species at Risk known locations, please provide a Wildlife Mitigation and Monitoring Plan

Not applicable.

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.

See Remedial Action Plan in Appendix 4.

- Human Health Risk Assessment of the contaminants at the site.

Not available.

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

		ENVIRONMENTAL COMPONENTS	PHYSICAL	designated environmental areas (ie. Parks, Wildlife Protected areas)	ground stability	permafrost	hydrology/ limnology	water quality	climate conditions	eskers and other unique or fragile landscapes	surface and bedrock geology	sediment and soil quality	tidal processes and bathymetry	air quality	noise levels	other VEC: Archaeological	other VEC: Aesthetics	other VEC:	BIOLOGICAL	vegetation	wildlife, including habitat and migration patterns	birds, including habitat and migration patterns	aquatic species, incl. habitat and migration/spawning	wildlife protected areas	other VEC:	other VEC:	other VEC:	SOCIO-ECONOMIC	archaeological and cultural historic sites	employment	community wellness	community infrastructure	human health	other VSEC Land Use
PROJECT ACTIVITIES																																	
CONSTRUCTION	Site grading & borrow development				M			M						M							M	M	M										
	Site re-grading				P																												
	Facility demolition																				M	M											
OPERATION	Contaminated soil removal				M			P				P									P	P	P/M									P	
	Vehicle etc emissions													M																			
	Transportation of hazardous goods							M				M																					
	Camp operation				M			M				M																					
	General activities															M	P				M	M										P		M
DECOMMISSIONING																																	

Note: Please indicate in the matrix cell 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 please leave the cell blank