



## **NIRB Uuktuutinga Ihivriughikhamut #125843**

### **Impacts of wastewater at Baker Lake, Nunavut**

**Uuktuutinga Qanurittuq:** New

**Havaap Qanurittunia:** Scientific Research

**Uuktuutinga Ublua:** 8/1/2023 6:26:24 PM

**Period of operation:** from 0001-01-01 to 0001-01-01

**Piumayaat Angirutinga:** from 0001-01-01 to 0001-01-01

**Havauhikhaq Ikayuuqtinga:** Rob Jamieson  
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Halifax Nova Scotia B3J 1Z1  
Canada  
Hivayautit Nampanga:: 9028801501, Kayumiktukkut Nampanga::

Operations Phase: from 2023-06-01 to 2026-06-02

## Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
Shoreline Baker Lake (near drinking water intake and treatment plant)	Sampling sites	Municipal	Shoreline of Baker Lake	No known archeological value	500 m
Input to Baker Lake (wastewater effluent enters here)	Sampling sites	Municipal	Municipal wastewater discharge location	No known archeological value	500 m
Airplane Lake outflow	Sampling sites	Municipal	Outflow from lake receiving municipal wastewater	No known archeological value	700 m
Upstream background site	Sampling sites	Municipal	Upstream of municipal wastewater lagoon and wetland treatment area	No known archeological value	800 m

### Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Qamaniittuaq	Sheldon Dorey	Hamlet of Baker Lake	2022-11-16

# Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

Kivalliq

## Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Iqalukhiurniqmut Tariuqmilu Kaanata	Authorization to collect fish samples	Applied, Decision Pending		

## Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Air		
Land		

## Project accomodation types

Nunauyuq

# Ihuaqutivaluin Atuqtauyukhan

Hanalrutit atuqtaunahuat (ukuallu ikuutat, pampiutainnik, tingmitinik, akhaluutunik, hunaluuniit)

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
boat	1	< 20'	A small boat would be used to carry sampling equipment, including samplers, to offshore sites.
passive samplers	9	20 cm diameter x 30 cm length	Passive water samplers will be deployed at sites for up to 3 weeks each, during the sampling season. These require no power to operate, and would be deployed by cable attached to fixed points on shore (e.g., poles or existing structures) or buoys if offshore. All equipment will be removed at the end of the field season.
primary productivity measures	9	1 m <sup>2</sup>	These consist of sealed bottles with known algal and nutrient compositions, and would be deployed on site to measure algal productivity. They would be removed after measurements are done.
current meters	6	10 cm	We will be measuring stream flow downstream of the existing wastewater treatment plant using portable current meters. Water level loggers (10 cm in size) will be deployed in the stream beds in-stream for the season, to monitor water flow continuously, and removed at the end of the summer.
Quadrats	1	1m x 1m	Quadrats will be used to characterize vegetation and wetland presence in the vicinity of the existing wastewater treatment system and reference site. This will involve transecting the tundra on foot, placing a temporary 1 m x 1 m PVC quadrat on the ground surface, and taking photographs, and at times collecting small soil samples (<500 g).
truck	1	standard size pickup truck	A pickup truck or similar vehicle would be used to carry sampling equipment to onshore sites.

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa

Diesel	fuel	1	50	50	Liters	Diesel fuel for the small boat listed above. Estimated maximum amount used for sampling work during the season.
Gasoline	fuel	1	100	100	Liters	Gasoline for the sampling truck listed above. Estimated maximum amount used for sampling work during the season.

#### Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
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# Iqqakuq

## Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtitarnirutikhan piyutin
Sampling sites	Other, Small amounts of packaging materials for sampling supplies.	Less than 1 kg	We will be taking all waste materials with our samples and equipment back with us to our respective universities.	No additional treatment procedures will be required as we will be removing all wastes.

### Avatiliriniqmut Ayurhautingit:

The proposed project will involve sampling of water, sediments, microorganisms and fish in a lagoon/wetland/stream system currently receiving municipal wastewater. Up to 10 fish/species/lake will be collected, humanely euthanized following conditions of our animal care license (cervical dislocation and swift blow to the head), and sampled for flesh, liver (contaminant concentrations), and otoliths (fish age).

# **Additional Information**

**SECTION A1: Project Info**

**SECTION A2: Allweather Road**

**SECTION A3: Winter Road**

**SECTION B1: Project Info**

**SECTION B2: Exploration Activity**

**SECTION B3: Geosciences**

**SECTION B4: Drilling**

**SECTION B5: Stripping**

**SECTION B6: Underground Activity**

**SECTION B7: Waste Rock**

**SECTION B8: Stockpiles**

**SECTION B9: Mine Development**

**SECTION B10: Geology**

**SECTION B11: Mine**

**SECTION B12: Mill**

**SECTION C1: Pits**

**SECTION D1: Facility**

**SECTION D2: Facility Construction**

**SECTION D3: Facility Operation**

**SECTION D4: Vessel Use**

**SECTION E1: Offshore Survey**

**SECTION E2: Nearshore Survey**

**SECTION E3: Vessel Use**



## **SECTION F1: Site Cleanup**

## **SECTION G1: Well Authorization**

## **SECTION G2: Onland Exploration**

## **SECTION G3: Offshore Exploration**

## **SECTION G4: Rig**

## **SECTION H1: Vessel Use**

## **SECTION H2: Disposal At Sea**

## **SECTION I1: Municipal Development**

### **Qanurittuq Ittunik Avatinga: Avatingalluanga**

The physical environment that will be studied includes the current municipal wastewater lagoon, treatment wetland and receiving environment.

### **Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga**

The current biological environment to be studied includes microorganisms, invertebrates and fish in the wastewater treatment system.

### **Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga**

The work will be conducted in the community of Baker Lake, Nunavut.

## **Miscellaneous Project Information**

### **Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit**

We do not anticipate any negative impacts.

### **Tamatkiumayunik Ihuikgutivaktunik**

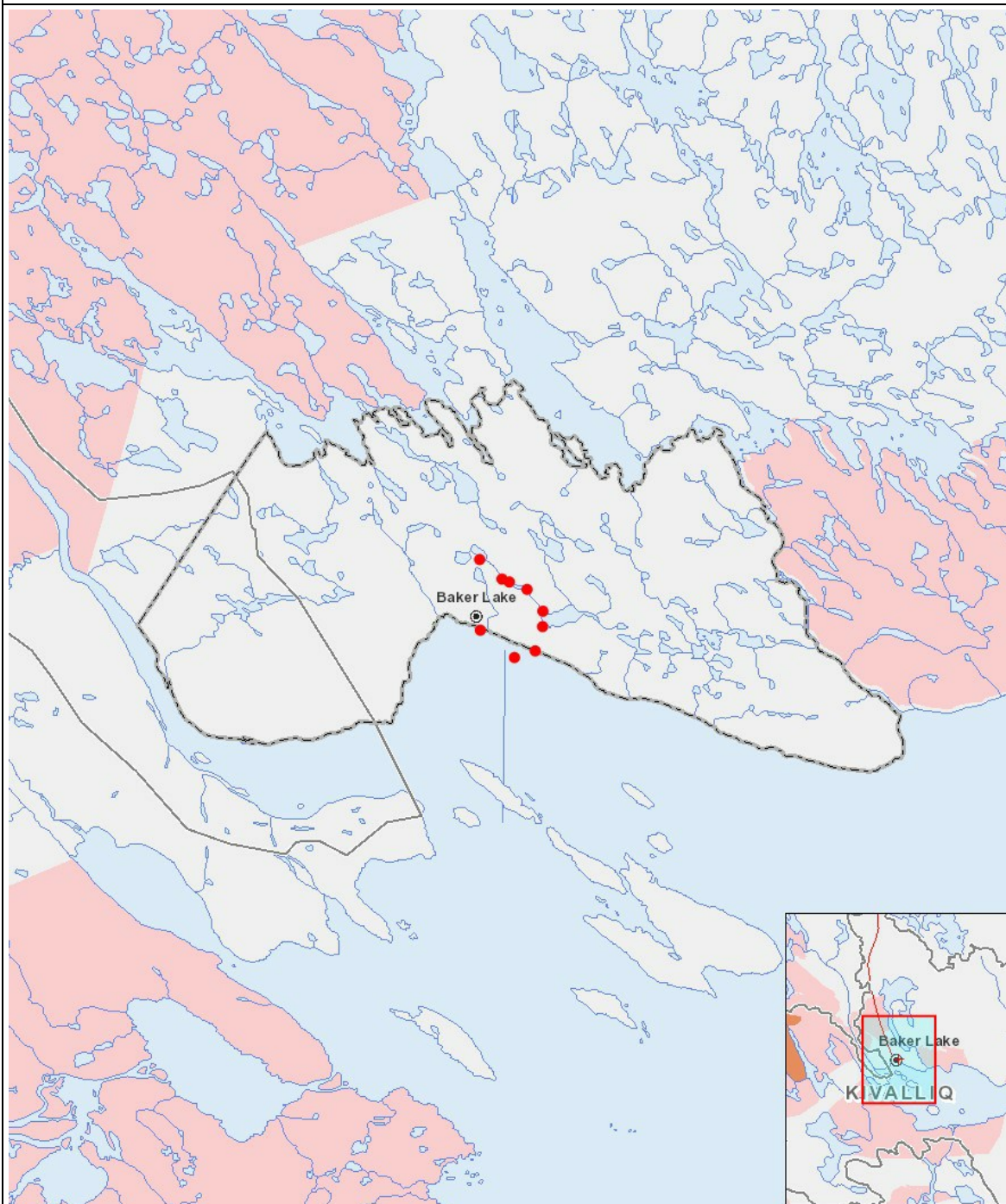
We do not anticipate any cumulative effects.

Impacts

Ilitariyauniq Avatiliriniqmut Ayurhautingit

		PHYSICAL	Designated environmental 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	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health	
Havakvinga																											
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Piiqtauniq																											
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(P = Nakuuyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyauyuq)



List of Project Geometries

- |   |       |   |
|---|-------|---|
| 1 | point | Shoreline Baker Lake (near drinking water intake and treatment plant) |
| 2 | point | Baker Lake offshore water   |
| 3 | point | Input to Baker Lake (wastewater effluent enters here)                 |
| 4 | point | Airplane Lake outflow   |
| 5 | point | Airplane Lake inflow  |
| 6 | point | Finger Lake outflow   |
| 7 | point | Finger Lake inflow  |
| 8 | point | Lagoon  |
| 9 | point | Upstream background site  |