



መጀጀ ፈጀብ አጀብ የጀጀ ቁጥር #125475

## A survey of mercury levels within edible plants, fungi and soil in Iqaluit and surrounding areas

ርናም ቅርንጫሪ  
ኩል መልዕስ:

New

አድራሻ  
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Scientific Research

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ርናም ቅርንጫሪ:

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Period of operation: from 0001-01-01 to 0001-01-01  
ቤትና ማስተካከለሁ: from 0001-01-01 to 0001-01-01

አድራሻ:  
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‘בְּמַדֵּכְבָּרֶרֶת וְבְּמִשְׁמָרָה’

On a trip in 2017, researchers from Queen's University found elevated mercury levels within an edible mushroom species. In the summer of 2018, researchers assessed multiple plant species and fungal species for elevated mercury concentrations. The literature has shown that mushrooms, especially puffballs bioaccumulate mercury within their fruiting bodies and may transfer it to high trophic levels through consumption. The main objectives for my Masters of Environmental Studies research from Queen's University in 2019 are to sample different locations within Iqaluit over a 14 day period from July 31 to August 14, 2019 in order to: 1) sample additional plant species that were not collected in 2018 and identify their potential to accumulate mercury, 2) sample in depth fungi species with a focus on puffball species that were found to accumulate high levels of mercury from the 2018 sample collection, 3) collect corresponding fungal mycorrhiza and soil samples to determine if the mercury is being accumulated from the soil or the atmosphere. With help from the Nunavut Research Institute (NRI) and local community members taking the Environmental Sampling and Analysis Training Program offered by the Iqaluit Analytical Services Unit (IASU), direct mercury analyzers will be used to test the selected plant, fungi and soil samples for total mercury concentrations. Data will be compiled and statistically analyzed at Queen's University. Additionally, further insight into additional plant species, with a focus on edible fungi and corresponding soil samples will give insight into the impact this contamination may pose on the health of local human and wildlife population and the main source of this mercury contamination. Although this project is a continuation of the project from 2018, this is the first NPC application being completed because we require soil samples in this year's study. Previous years only required sampling plant species and therefore no NPC applications were required.

Au cours d'un voyage en 2017, des chercheurs de l'université de Queen's ont trouvé que des champignons comestibles avaient des niveaux de mercure élevée. Durant l'été de 2018, les enquêteurs ont étudié plusieurs espèces de plantes et fongus pour déterminer si elles avaient des niveaux de mercure élevées. Plusieurs études dans la littérature démontrent que les champignons, surtout les vesce-de-loup, bio-accumulent le mercure dans leurs fructifications. La consommation de ces fongus peut transférer le mercure à des niveaux trophiques plus élevées. L'objectif de ma maitrise en études environnementales à l'Université de Queens en 2019 est de procurer des échantillons environnementaux à Iqaluit au cours d'une période de 14 jours du 31 juillet au 14 aout, 2019 afin de : 1) Prendre plus d'échantillons d'espèces de plantes qui n'ont pas été étudier en 2018 et déterminé leur potentielle pour l'accumulation du mercure. 2) Procurer des échantillons de fongus davantage avec une emphase sur les espèces de vesce-de-loup qui avaient accumulé les taux les plus élevés de mercure durant la saison de 2018. 3) Collecter les mycorhizes fongiques et les échantillons de sol correspondant afin de déterminer si le mercure est dérivé de la terre ou de l'atmosphère. Avec l'aide de l'Institut de Recherche du Nunavut (IRN) et les membres de la communauté qui participent au programme d'entraînement en échantillonnage environnemental offert par le groupe de services analytiques de l'Iqaluit, des analyseurs de mercure directes seront utilisés pour tester les échantillons de plantes, fongus et sol afin de déterminer la concentration totale de mercure. Les données seront compilées et les analyses statistiques seront complétées à l'Université de Queens. Avec plus d'information à propos des nouvelles espèces de plantes et une plus grande emphase sur les fongus comestibles et du sol auxquelles ils poussent, il sera possible de déterminer la source de la contamination de mercure et l'impact qu'elle pourrait avoir sur la santé de la population locale humaine et de la faune. Alors que ce projet est une continuation du projet de 2018, cette demande de la Commission d'Aménagement du Nunavut (CAN) est la première à être rempli parce que, pour l'étude de cette année, on a besoin d'échantillons de sol. L'échantillonnage des années précédentes n'a pas requise une application CAN parce que les seuls échantillons collectés étaient les tissus de plantes.

Inuinnaqtun: This language does not apply to my project.

## Personnel

Personnel on site: 1

Days on site: 14

Total Person days: 14

Operations Phase: from 2019-07-31 to 2019-08-14

## Δεσμού ስራ አገልግሎት የሚያስፈልግ ስርዓት

አገልግሎት የሚያስፈልግ ስርዓት	የሚያስፈልግ ስርዓት	የሚያስፈልግ ስርዓት	የሚያስፈልግ ስርዓት	የሚያስፈልግ ስርዓት	የሚያስፈልግ ስርዓት
New project geometry	Researching	Municipal	N/A	N/A	Within several locations of Iqaluit, Nunavut

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Δεስም	Jamal Shirley	Nunavut Research Institute	2019-06-01

# ՀԱՅՈՒԹԻC ԱՐՑՎՈՒԹԻC ԳՐՈՒԹԻC

ԱՐԴՅՈՒՆԵԱԿԱՆ ՀԵՇԱԳՈՒՅԱԾՎԱԾՆԵՐԸ:

## South Baffin

## ՀԱՅՈՒԹԻՒՆ ԱՐԵՎՈՒՄ ԳՐԱԿԱՐԱՎՈՐԸ

## Project transportation types

Transportation Type	Distance Traveled	Length of Use
Land	Foot	

## Project accommodation types

◀ ↻ ⌂,

ՀԵՐԱԿԱՆ ՀՈՎՄԸՆ ԱՆԴՎԵՐԻՆ ԱՆԵԲՇՈՒՆԵՐԻ ՃՅԾԱԾ, ՐԱԴՐՈՒ, ԵԿԸՆԵՐԻՆ, ԱՐԴՎԸ ՋՐԻՆ

ፈፋይና ሌፋር ፈርማዎችና ኩልዎች	ከፋይ ፈርማዎች	ፈፋይና ፈርማዎች	የመረጃ ፈርማዎች
No equipment needed	0	0	All by foot

የመሬት	የመሬት ስርዓት	የመሬት የሚያስፈልግ ስርዓት				
No fuel needed	fuel	0	0	0	Cubic ft	No fuel needed
None	hazardous	0	0	0	Cubic ft	No chemicals needed

## ΔL ፭፻፲፭ CDL ፭፻፲፭

◀ b C d c

$\triangleleft^b C \dot{\triangleleft} \subset \cap \sigma \triangleleft^b \sigma^{-b}$

Minimal environmental impact. The only impact will be the removal of very minimal plant and fungi samples from several locations of Iqaluit and the removal of the corresponding soil (~10 grams) around the roots of these species. Holes will be filled in after.

# **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**

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Ł°a 44014< 'b'mΔcC< n>σ~ł: 4L< 'b'mΔc>σ~ł

Ł°a 44014< 'b'mΔcC< n>σ~ł: Δm< n>σ~łj~ł-Ł< n>σ~łj~ł

**Miscellaneous Project Information**

Ł°a 44014< 'b'mΔcC< n>σ~ł: 46C< 'b'mΔc>σ~ł

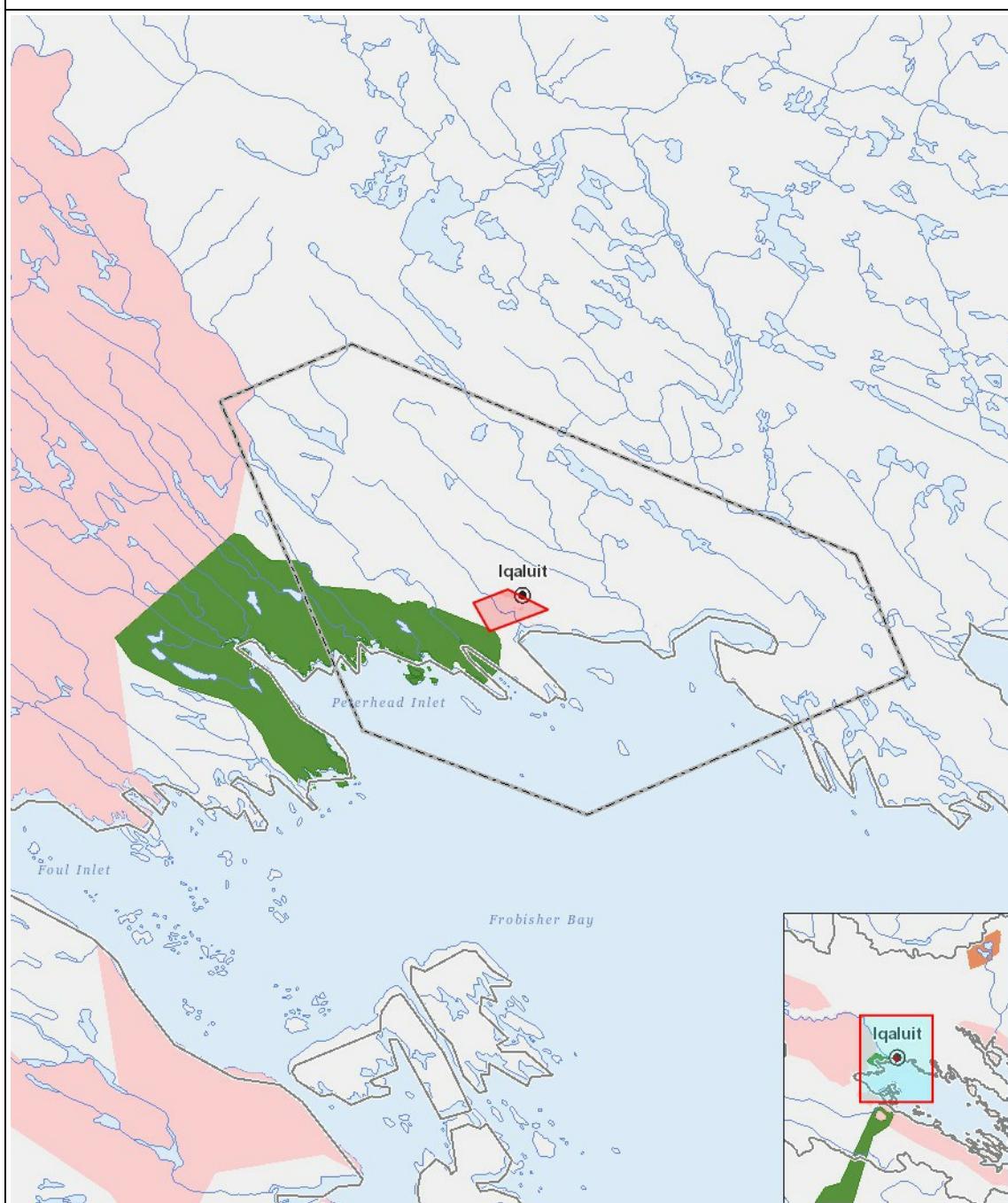
**Cumulative Effects**

# Impacts

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$$(P = \{b_1, b_2, b_3, b_4\}, N = \{b_1, b_2, b_3, b_4, b_5\}, C = \{b_1, b_2, b_3, b_4, b_5\}, M = \{b_1, b_2, b_3, b_4, b_5\}, U = \{b_1, b_2, b_3, b_4, b_5\})$$

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List of Project Geometries

1	polygon	New project geometry
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