

NPC 151295: Environmental Behavior of Ammunition Constituents in Arctic Conditions

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Proposal Status: Conformity Determination Issued

[Overview Documents](#)

[Project Overview](#)

Type of application: Amendment

Proponent name:

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Proponent company:

DCC

Project Description:

The Canadian Armed Forces (CAF) are planning to increase training activities in the Canadian Arctic and sub-Arctic regions. As such, the CAF must effectively manage their live-fire training activities in the High North, relying on scientific data to predict and evaluate the potential environmental effects of their use of munitions in a relatively pristine environment. The project aims to assess the environmental fate and ecological impact of munitions constituents (MC) under environmental conditions specific to Northern Canada. One of CAF austere range is located near Cambridge Bay and is of interest due to its regular usage, its relative proximity to the community, its hydrogeological context coupled with its diverse local flora and fauna. During the site visit, hydrogeochemical parameters will be collected using a multiparameter digital water quality meter and an XRF. Site fauna and flora will be surveyed and UVA and UVB light will be measured. This research will generate results needed to better provide advice and recommendation on training with munitions in the High North, to develop monitoring tools and incite new range design.

[Project Schedule](#)

Start Date:

2026-09-01

End Date:

2029-09-30

[Project Map](#)

List of project geometries:

Id

Geometry

Location Name

[22695](#)

polygon

NPC Planning regions:

North Baffin

[Project Land Use and Authorizations](#)

Project Land Use:

Scientific Research

Bulk Sample

Licensing Agencies:

Nunavut Water Board

Government of Nunavut - Department of Environment

Nunavut Research Institute

Government of Nunavut - Community and Government Services

Nunavut Impact Review Board

[Material Use](#)

Equipment:

Type

Quantity

Type

Use

vehicles

4x4

For movements between CHARS and the site.

XRF

1

(LxWxH): 27 cm x 9 cm x 30 cm

A portable X-ray fluorescence (XRF) spectrometer for non destructive direct soil analysis, elemental analysis of mineral and alloy material identification

YSI

1

8.3 cm width x 21.6 cm length x 5.6 cm depth

The YSI (digital sampling system) is a portable water quality multiparameter instrument for the measurement of several critical parameters - dissolved oxygen, total algae, turbidity, pH, ORP, conductivity, specific conductance, salinity, TDS, resistivity, TSS, ammonium, ammonia, chloride, nitrate, depth, temperature and GPS coordinates.

UV AB light meter

1

7.32 x 27 x 26.67 cm

Direct measurement of UVA and UVB light.

ARA405 Drone, EN EVO Drone and Mavic 2 Pro Zoom Drone.

1

See document TAB

Equipment used in this project will consist mostly of two quads that will allow for the transportation of personnel on site. Overall, the main objective of this project is to collect small soil/water samples throughout the specified work area. Therefore, equipment will be limited to a few manual tools, bottles, and plastic bags. There is also a possibility that an aerial survey may be conducted in the area covered by this survey. For this reason, the technical manual for the equipment associate

Fuel Use:

Type

Container

Capacity

Use

Gasoline

2

25

Container Capacity Gas use for this project will be limited to the gas requirement to allow for the good functioning of the two quads. Work should be ongoing for not more than a week. Therefore, two 25-liter plastic containers should be sufficient

Hazardous Material and Chemical Use:

Type

Container

Capacity

Use

Alconox

1

1

Concentrated, anionic detergent for manual cleaning of instruments.

Water Consumption:

Daily Amount (m²)

Retrieval Method

Retrieval Location

0

Waste and Impacts

Environmental Impacts:

No production of waste nor detrimental impact on the environment is anticipated regarding this proposal. As previously mentioned, the main objective of this project is to collect small

soil/water samples throughout the specified work area. So, no waste will be left in place. The sample collected will be recovered and flown out to the Defense Research and Development Canada research centers in Valcartier (DRDC) infrastructure.

Waste Management:

Waste Type

Quantity Generated

Treatment Method

Disposal Method

No data found