P.O. Box 119
Gjoa Haven, Nunavut, X0B 1J0
Email: licensing@nunavutwaterboard.org
Fax: 867-360-6369

Letter: Request for use of water or deposit of waste without a license

Impacts of Melting Tidewater Glaciers on Marine Biogeochemical Cycles

(NPC File No: 149049; NIRB File No: 19YN020; NRI License No: 02 049 19N-M)

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In accordance with Guide 9, approval for use of water or deposit of waste without a license is requested for the research project 'Impacts of Melting Tidewater Glaciers on Marine Biogeochemical Cycles'. Activities pertaining to the project are carried out on in Jones Sound and on Devon Ice Cap, Nunavut by the University of Alberta's Molecular Biogeochemistry Research Group (P.I.: Maya Bhatia).

Timeframe: 2019 July 22 – August 20; Expected to continue through 2024.

Project Description: We are conducting coupled ice-based and marine-based measurements to understand how melting glaciers are exporting sediment and dissolved chemical species to the ocean and the impact of this material on downstream regional marine primary production and biogeochemistry. Our study area is focused in Jones Sound, specifically studying the termini of Sydkap and Jakeman Glaciers on Ellesmere Island and Sverdrup and Belcher Glaciers on Devon Island.

We access the region (Jones Sound and Devon Island) from Resolute Bay by PCSP Twin Otter to Grise Fiord. From there we use boats to do our marine work and a helicopter to access the glaciers. Instruments installed on or next to the ice will be removed at the end of the project. A detailed description of project undertakings is found in Box 7 of this application and our application letter for NRI and Supplemental Information submitted to NIRB is included for additional project-specific information.

Description of water use: Total water use for our four person field party is <0.05 cu m/day. Lake water, ice melt, or melted sea ice is used to provide water for domestic use (Guide 9, Classification of undertakings, item 8). Our camps are minimal with no permanent buildings or structures. To minimize the impacts of our research activities every effort is made to keep the camp clean, solid waste is backhauled to Resolute Bay and water consumption is reduced for example by washing dishes without water