

Department of Geography & Environmental Studies 1125 Colonel By Drive Ottawa, ON K1S 5B6 Canada

Phyllis Beaulieu, Manager of Licencing Nunavut Water Board P.O. Box 119 Gjoa Haven, NU X0B 1J0 Tel: (867) 360-6338

May 31, 2016

Dear Ms Beaulieu;

I am writing to apply for Approval for the Use of Water or Deposit of Waste Without a Licence in accordance with your Regulations. I have attached a completed application that details our water use. Below, I provide a brief description of the undertaking in both English and Inuktitut. I have also attached documents from NPC that indicates conformity has been granted to this project.

If you have any comments or concerns, please don't hesitate to contact me.

Sincerely,

Derek Mueller Associate Professor

Deres Mueles

cc. Luke Copland encl.

Ice Dynamics and Cryospheric Changes in Northern Canada

Dr. Luke Copland (luke.copland@uottawa.ca)
Department of Geography, University of Ottawa

This research program will continue monitoring the characteristics, dynamics and recent changes of the glaciers, ice shelves and sea ice in the Canadian Arctic Archipelago. This includes topics such as measuring glacier motion using differential global positioning systems (dGPS), shallow ice coring to collect samples for chemical analysis, operation of timelapse cameras to monitor melt, measurement of glacier mass balance and installation of temporary weather stations to monitor ice-climate interactions. These measurements provide ground validation for satellite measurements, and provide information on how the ice cover of the Canadian Arctic is changing.

Fieldwork for this project started on the ice shelves of northern Ellesmere Island in 2008, and extended to cover the region around White Glacier, Axel Heiberg Island, in 2014. The current application is being submitted to request land use conformity for other glaciers on Axel Heiberg, Ellesmere and Devon Islands. This is primarily because it is planned that new dGPS systems, weather instruments and timelapse cameras will be installed on Trinity Glacier (77°57'N, 78°30'W), SE Ellesmere Island, in August 2016. However, measurements may also extend to other glaciers in this region as funding allows. Given the dynamic nature of glaciers and how rapidly they can change, the current request is for land use conformity for all glaciers in the study area so that we can avoid having to submit a new application every time we want to measure a different glacier.

$^{\prime}$ ለዕ $^{\prime}$ ና ውስ $^{\prime}$ ርና ላ $^{\prime}$ ር ላይ እርና የረባ ነነረና ላላን እና ውስ የርና የርፅ እርና አርፅ ነርና እርፅ ነርና እ

Dr. ڬీ ፟፟ៃ ሩ (luke.copland@uottawa.ca) ዾሲ ር የኦትኒቈቪር, ተርርጋኒናል የተፈጭ ፈጋጵ

ቼኮት\ናøኦላቴ ር'ለJሌ ለራሊላJና ለቦላሪኦቴጋቴ ለፅግር ቴዎስር ኦላቴኒው ቼናበርጋና የየምርሌታ 2008– Γ^c , ላተር ላልናጋቴ/ርተረርሷያኒኛ White Glacier Γ , ኦርዲልና ውኔና, 2014– Γ^c . Լቴሪኦተር ለተረታለበኦላቴ ጋታኑኦላቴ ውይና ላጋየኒታለበኦላቴ ልጋልልቴርኦዎቴኒውና ላግቴርኦታኒውና ላታዮናውና ላይነለበኦላቴ ጋዕቱ ኦርቲኒ ላይነ የምርጋላ ላተር ርተጋዮና ለታለበሰጋላቴርኒ ሩናልተር ውር ለውያይ, ለርዜታ ውር ላይነር ቴኦኦኒኮስና ላተር ላንትራኦና ላንትራኦሲቴናርቴጋቴ ላቴዮርኦርቴጋና Trinity ላይላልናጋናና (77°57'N, 78°30'W), ወርዜር ኦላቴኒው ቴኖስርጋና የምቴርጋላው, ላነ የተር 2016. የተላወር, ቴኦኦኒናኦላር ላግ የተወጋልቴሲላተር ላይነራኒ የተመሰረ ላይነራኒ የተመሰረ የተመሰረ