

**SCIENTIFIC RESEARCH LICENSE**

LICENSE NUMBER 03 011 22N-A

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TITLE: Water Resource Assessment for Coral Harbour

**OBJECTIVES OF RESEARCH:**

Water supply for Coral Harbour, Nunavut is sourced from a river-fed reservoir. There have been instances of high electrical conductivity, which raises concerns regarding saltwater intrusion from Hudson Bay. A team from the Dalhousie Coastal Hydrology Lab plans to conduct a reconnaissance field campaign to characterise the river hydrodynamics and to investigate potential sources and pathways for saltwater, including via the river, the shallow subsurface, and sea spray. The team will use non-invasive instruments to investigate the interactions between the bay and the river and to assess potential subsurface salinity dynamics. Loggers will be placed along the river to measure water level, salinity, and temperature, which will provide new understanding on coastal zone mixing in the river. Geophysical instruments will be used to measure the ground electrical resistivity to map where there are saltwater and freshwater zones. Surveys will be taken along the coastline and the riverbanks. Water samples will be collected to transport back to Halifax to assess the water chemistry and to fingerprint salt sources. Sensors may be used to measure total dissolved solids, dissolved oxygen, and other water quality parameters in the river. Collectively, these data will reveal the tidal dynamics in the river and help identify potential mechanisms for drinking water salinization.

**TERMS & CONDITIONS:**

The holder of the licence will be bound by the terms and conditions of the Nunavut Impact Review Board Screening Decision Report and the Department of Culture & Heritage archaeological sites terms and conditions. These terms and conditions will form part of this licence. These terms and conditions will form part of this license.

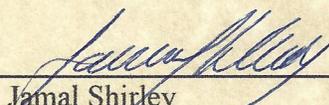
**DATA COLLECTION IN NU:**

DATES: July 5, 2022 to September 1, 2022

LOCATION: Coral Harbour

Scientific Research License 03 011 22N-A expires on December 31, 2022

Issued at Iqaluit, NU on July 13, 2022

  
Jamal Shirley  
Science Advisor

