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SCIENTIFIC RESEARCH LICENSE

LICENSE NUMBER 04 029 22N-A

ISSUED TO: K.P. Krishnan
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TITLE: Evaluation of multidrug-resistant bacteria in the Active soil layer, and Permafrost regions of the Canadian High Arctic

OBJECTIVES OF RESEARCH:
One of the most noticeable impacts of Arctic warming is the thawing of permafrost –which could potentially reactivate many of the dormant microorganisms that are preserved in the permafrost soils for centuries. Some of these microorganisms may be pathogenic and/or antibiotic-resistant bacteria (ARB) that can lead to the resurgence of zoonotic diseases. Besides, antibiotic resistance genes (ARG) can be transported to the Arctic environment through the migration and movement of humans and birds. Since ARGs are now widespread among microbial communities, whether the extensive diversity of ARGs and ARB in environmental reservoirs is the result of anthropogenic influence is controversial. Thus, in this proposal, we intend to perform a comprehensive survey of the tundra soil, active layer, and permafrost not only to evaluate the presence of potential ARG and ARB using a culture-dependent and independent approach but also to delineate potential sources-anthropogenic and/or ancient origins of ARGs and ARB in the Canadian high Arctic region. Thus, our proposed project will provide baseline data on the ARGs and ARB which could be utilized to demarcate the high-risk permafrost regions for the local population.

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.

DATA COLLECTION IN NU:
DATES: November 1,2022 to December 31,2022
LOCATION: North Cambridge Bay

Scientific Research License 04 029 22N-A expires on December 31,2022
Issued at Iqaluit, NU on September 27,2022

Jamal Shirley
Science Advisor

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