Project acronym: C-SLICR

Project title: Co-developing research to identify Storm impacts on Legacy Infrastructure Contaminant Release

Project leader: Louise Mercer, Northumbria University, United Kingdom

Discipline: Earth Sciences & Environment: Other - Environment

Station(s): Western Arctic Research Centre (WARC) (Canada)

This project will develop new environmental community-based research (CBR) to analyze how legacy of infrastructure is impacting waterborne contaminants in Tuktoyaktuk, NWT, Canada. Specifically, it will quantify the impact of rain and flood events on the mobilization and dispersion of heavy metals and relevant contaminants including PFAS from community-selected terrestrial legacy infrastructure source areas. The research will build on an evolving CBR program based on addressing threats to water quality from the legacy of terrestrial waste, industry and transportation infrastructure that will provide solutions based on more appropriate community-driven data collection, processing, and interpretation.
A pilot model for collaborative partnerships and two-way capacity sharing was conducted in August 2022 as part of the NUNA project (Canada-Inuit-Nunangat-United Kingdom program) that focused on developing appropriate sampling methods and initial data collection. The proposed research will build on community relationships and appropriate data sampling protocols to develop a complete community research workflow from data collection through to data-driven decision-making and mitigation. The pilot study identified that a primary community concern relates to contaminant threats posed by the legacy of infrastructure. Based on initial pilot study findings we have developed a new way of working to provide solutions based on more appropriate community-driven research that delivers desired community outcomes. Support from INTERACT will enable us to put into practice this community-based contaminant research and expand it to more sites surrounding the contaminant sources identified by the community including the landfill site and the proposed site for the new landfill location as a baseline dataset. Identifying what is there is important

to mitigating the problem and informing pollution mitigation designs. This will create new, more targeted, appropriate and sustainable datasets to address community-identified problems, ensuring results are translated into strategic decision-making, increasing equity of research outcomes.