ᓄᓇᕗᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦᑎᒍᑦ ᑐᒃᓯᕋᖅᑑᑦ ᕿᒥᕐᕈᔭᒃᓴᖅ #125478

Microplastics in beach sediment: Collecting baseline data for microplastic contamination around Iqaluit, Nunavut, and developing tools for effective community-based monitoring

ᑐᒃᓯᕋᖅᑖᑕᐅᔪᖅ ᖃᓄᐃᑦᑑᓂᖓ:	New
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ᖃᓄᐃᑦᑐᑎᓂᓗ ᐱᓕᕆᔨᖃᑦᓂᐊᕆᔨᖏᓐᓂᓗ

ᖃᑦᑕᕐᓇᑎᑐᑦ: Marine plastic pollution is a significant global issue. Plastics do not biodegrade, yet many can breakup into smaller fragments and be easily transported in both water and air. Microplastics, which are defined as plastic particles less than five millimeters in diameter, can enter the environment through various different sources and are of particular interest as they can be ingested by many different organisms. Microplastics have become recognized as an environmental concern, however, data does not exist for many areas, and understanding how microplastics move around the environment is still a topic that needs to be investigated further. Furthermore, there remains a lack of standardized monitoring tools for plastics in the environment, and it is very important to standardize tools so that monitoring can occur all across Canada, including in the north. This study aims to answer two main research questions. First, what is the current concentration of microplastic contamination in beach sediment around Iqaluit, Nunavut? And second, are current methods for community-based monitoring of microplastics in sediment samples effective? The objectives for this study are: to collect and analyse beach sediment samples for microplastics in order to create a baseline dataset of microplastic pollution in beach sediment around Iqaluit, Nunavut; and to assess two current beach sediment sampling methods and develop tools for effective community-based monitoring of microplastics in beach sediment. Beach sediment samples will be collected in September 2019 during the Wildlife Contaminant Workshop in Iqaluit, NU in association with the Environmental Technology Program at the Nunavut Arctic College (September 23 – 27, 2019). Three replicates of approximately 500 g of sediment will be collected at each location where beach surveys will be conducted for plastic debris. Sample collection will replicate the methods used to collect previous beach sediment samples from Qikiqtarjuaq, NU, and Herschel Island, YT, and will involve filling glass jars with sediment using a metal spoon. The samples will be collected with the Environmental Technology Students at the Nunavut Arctic College as part of a week-long workshop on plastics. All of the students are Nunavut residents, and will participate in the sampling. We do not foresee any impacts on the environment, wildlife or people as a result of this study or the sample collection. We will not collect any sediment that is being used by wildlife, and if at any time there is a threat to disturbing wildlife, all sampling will stop. All data, including meta-data, will be archived on the Polar Data Catalogue and open for use. This way we can ensure the data is available for uses beyond this study. The following year, the results will be presented back to the class and the students who participated in the sample collection. The research results will also be shared at the ArcticNet meeting in December 2019, and research summaries will be shared with all participating communities, including Iqaluit.

ᐅᐃᐧᐸᑎᑐᑦ: La pollution des plastiques marins est un enjeu mondial. Les matières plastiques ne biodégradent pas, pourtant, plusieurs plastiques peuvent se décomposer en fragments plus petits qui peuvent être transportés facilement par l'eau et par l'air. Les microplastiques, qui sont définies comme les particules de plastiques inférieures à cinq millimètres de diamètre, peuvent pénétrer dans l'environnement à partir de plusieurs sources et ils présentent un intérêt particulier parce qu'ils peuvent être ingérés par divers organismes. Les microplastiques sont maintenant reconnus comme un souci environnemental, cependant, il existe un manque de données dans plusieurs régions ainsi qu'un manque de compréhension de comment les microplastiques se déplacent dans l'environnement. De plus, il manque encore des outils normalisés pour surveiller les niveaux de la pollution plastique dans l'environnement. Il est essentiel de standardiser ces outils pour qu'il puisse avoir de la surveillance à travers le Canada, y compris le Nord. Cette étude vise à répondre à deux questions principales.

Premièrement, quelles sont les niveaux de contamination des microplastiques dans les sédiments de plage autour d'Iqaluit, Nunavut? Et deuxièmement, est-ce que les méthodes actuelles de surveillance communautaires pour les microplastiques dans les sédiments de plage sont efficaces? Les objectifs de cette étude sont : de recueillir et d'analyser les échantillons de sédiment de plage pour créer une base de données pour la pollution des microplastiques autour d'Iqaluit, Nunavut, ainsi que d'évaluer deux méthodes actuelles d'échantillonnage des sédiments de plage et de développer les outils de surveillance communautaires efficaces.Les échantillons de sédiment de plage seront recueillis en septembre 2019 pendant l'atelier sur les contaminants des espèces sauvages à Iqaluit avec les étudiants du Programme des technologies environnementales du Collège de l'Arctique d'Iqaluit (le 23-27 septembre, 2019). Trois réplicas d'environ 500 grammes de sédiment seront recueillis à chaque endroit où les sondages sur la pollution plastique des plages auront lieu. L'échantillonnage suivra les méthodes précédentes de recueillir les sédiments de plage à Qikiqtarjuaq, Nunavut, et de l'Île Herschel, Yukon, qui comprendra remplir des bocaux en verre en utilisant une cuillère métallique. Les échantillons seront recueillis avec l'aide des étudiants du Programme des technologies environnementales du Collège de l'Arctique d'Iqaluit comme parti d'un atelier sur la pollution plastique dans l'environnement. Tous les étudiants sont des résidents de Nunavut et ils vont tous participés dans l'échantillonnage. Nous ne prévoyons aucun impact sur l'environnement, les espèces sauvages ou les peuples à la suite de cette étude. Nous ne recueillerons pas du sédiment qui est utilisé par les espèces sauvages et si jamais il y a un risque de déranger des espèces sauvages, l'échantillonnage s'arrêtera. Toutes les données, y compris les métadonnées, seront archivées sur le Polar Data Catalogue où ils seront ouverts à l'utilisation dans l'avenir. L'année prochaine, les résultats de l'étude seront présentés à la classe et aux étudiants qui ont participé dans l'échantillonnage. Les résultats seront aussi présentés à ArcticNet en décembre 2019 et des résumés de recherche seront partagés avec toutes les communautés participantes, y compris l'Iqaluit.

ᐃᓄᒃᑎᑐᑦ: ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᓯᕐᔭᒥ ᓯᐅᕋᔮᒦᑦᑐᑦ: ᓄᐊᑦᑎᕙᓪᓕᐊᓂᖅ ᑐᑭᓯᒥᐊᕈᑎᔅᓴᐅᔪᓂᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦᓱᕈᕐᓇᕐᓂᖅᒥᓐᓂᑦ ᖃᓂᒥᔭᖅᒥᓐᓃᑦᑐᓂᑦ ᐃᖃᓗᐃᑦ, ᓄᓇᕗᑦ, ᐊᒻᒪᓗ ᐸᕙᓪᓕᐊᑎᑦᑎᒍᑎᔅᓴᐃᑦ ᓈᒪᓈᖅᑐᒃᑯᑦ ᓄᓇᓕᓐᓂᙳᖅᑐᒥᑦ ᖃᐅᔨᓴᖅᑕᐅᒍᑎᖅᒥᑦ.ᑕᒪᓇ ᐃᒪᕕᒻᒥ ᕿᓪᓚᔪᑭᐊᖅᑲᓂᐅᕙᑦᑐᖅ ᓄᓇᕐᔪᐊᓕᒫᒥᑦ ᐊᑲᐅᙱᓕᐅᕋᑕᐅᕚᖅ. ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦᓄᖕᒍᑎᖅᐸᓪᓕᐊᓲᖕᒍᙱᒻᒪᑕ, ᑭᓯᐊᓂᓗ ᐊᒥᓱᐃᑦ ᒥᑭᔫᑕᕋᓚᑎᒍᑦ ᓯᖁᓪᓗᕈᓐᓇᖅᑯᑦ ᐊᒻᒪᓗ ᑕᒻᒃᑯᐊᑎᑭᐅᑎᑲᐅᑎᒋᒍᓐᓇᖅᑐᑎᑦ ᐃᒫᓄᑦ ᐊᒻᒪᓗ ᐊᓂᖅᓵᑦᑎᓐᓄᑦ. ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᑕᒻᒃᑯᐊ ᓇᔪᓇᐃᖅᑕᐅᔪᑦᕿᓪᓚᔪᑭᐊᑦ ᒥᑭᓂᖅᓴᐅᓕᕋᓐᓇᖅᑯᑦ 5 ᒥᓕᒦᑕᒥᑦ ᐊᒻᒪᓗᑭᑕᐅᖅᓚᔪᒃᑯᑦ, ᐊᕙᑎᑦᑎᓐᓄᑦ ᐊᑦᑐᐃᒍᓐᓇᖅᑐᑎᑦᖃᓄᑐᐃᓐᓇᕈᓃᔭᖅᑎᒍᑦ ᐊᒻᒪᓗ ᑕᒻᒃᑯᐊ ᐱᔭᐅᕙᓪᓕᐊᓕᖅᐸᑦᑐᑎᑦ ᐋᖅᑭᑕᐅᒍᓐᓇᕐᓂᖅᒥᓐᓄᑦᐊᔾᔨᒌᙱᒋᕈᓘᔭᖅᑐᓄᑦ ᐆᒪᔪᕐᓄᑦ. ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᐃᓕᓴᓇᔭᐅᓯᒪᓕᖅᑯᑦ ᐊᕙᑎᑦᑎᓐᓄᑦ ᐃᓱᒫᓘᑕᐅᓪᓗᑎᑦ,ᑭᓯᐊᓂᓗ, ᑐᑭᓯᒥᐊᕈᑎᔅᓴᐃᑦ ᐱᑕᖃᙱᒻᒪᑕ ᓱᓕ ᐊᒥᓱᓂᑦ ᐃᓂᖃᕐᕕᐅᔪᓂᑦ, ᐊᒻᒪᓗ ᖃᓄᖅᑐᑭᓯᐅᒪᒃᑲᓂᕈᑎᔅᓂᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᐃᖕᒥᕋᑲᑕᒃᑕᕐᓂᖅᒥᓂᑦ ᐊᕙᑎᑦᑎᓂᑦ ᑕᒪᓇ ᓱᓕᐅᖃᐅᓯᐅᔭᕆᐊᖃᖅᑯᖅ ᖃᐅᔨᓴᖅᑕᐅᑲᓂᕐᓗᓂ ᓄᓇᕐᔪᐊᓕᒫᒥ. ᐱᖃᓯᐅᑎᒃᑲᓂᖅᑐᒍ, ᑕᒻᒃᑯᐊᖃᐅᔨᓴᖅᑕᐅᒍᑎᔅᓴᕐᒥᓂᑦ ᓇᓗᓇᐃᖅᑐᖅᓯᒪᔪᓂᑦ ᐱᑕᖃᓗᐊᙱᒻᒪᑦ ᕿᓪᓚᔪᑭᐊᓄᑦ ᐊᕙᑎᑎᓃᑦᑐᓂᑦ,ᐊᒻᒪᓗ ᐱᒪᕆᐅᔪᖅ ᓇᓗᓇᐃᖅᑐᕈᑎᔅᖃᖅᑐᑦ ᑕᒪᓐᓇ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᖃᐅᔨᓴᕈᑕᐅᓐᓇᖅᑯᓪᓗᒍᑲᓇᑕᓕᒫᒥ, ᐱᖃᓯᐅᑎᓗᒍ ᐅᑭᐅᖅᑕᖅᑐᖅ.ᑕᒪᓐᓇ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᑐᕌᒐᖃᖅᑯᖅ ᑭᒍᑎᔅᓴᕐᒥᓂᑦ ᒪᕿᐃᓪᓗᐊᑖᓂᒃ ᖃᐅᔨᓴᕈᑎᐅᔪᒧᑦ ᐊᐱᖅᑯᑎᐅᔪᓂᑦ.ᓯᕗᓪᓕᖅᐹᒥ, ᑭᓱᕙ ᒫᓇᐅᔪᒥᑦ ᐃᓚᐅᖅᑐᕈᑎᕈᓃᔭᕐᒥᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᓱᕈᕐᓇᖅᑐᑦ ᓯᕐᔭᕐᒪᓂᑦ ᐃᒪᐅᕐᖃᓂᒥᔮᓂ ᐃᖃᓗᐃᑦ, ᓄᓇᕗᑦ? ᐊᒻᒪᓗ ᑭᖑᓪᓕᖅ, ᑕᒻᒃᑯᐊ ᒫᓇᐅᔪᒥᑦ ᖃᓄᐃᓕᕐᒪᓂᐅᔭᓇᐊᓃᑦ ᓄᓇᓕᓐᓂᑦᖃᐅᔨᓴᖅᑕᐅᒍᑎᔅᓴᕐᒥᓂᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᓯᐅᕋᔮᓂᑦ ᖃᐅᔨᓴᕈᑎᕐᒥᑦ ᓈᒪᓈᑦᑎᐊᖅᑲᑦ? ᑕᒪᓐᓇ ᑐᕌᒐᕐᒐᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᐱᔾᔪᑎᖃᖅᑯᖅ: ᓄᐊᑦᑎᓂᕐᒥᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᐃᓂᕐᒥᑦ ᓯᕐᔭᒥ ᓯᐅᕋᔮᓂᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᓂᑦᓴᖅᑭᑎᑦᑎᒍᓐᓇᖅᑯᓪᓗᒍ ᑐᙵᕕᔅᓴᕐᒪᓂᑦ ᖃᐅᔨᓴᕈᑎᖅᑲᕐᓂᕐᒧᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᐳᔪᕐᓗᕐᒥᑦ ᓯᕐᔭᕐᒪᓂᑦᐃᖅᑲᓗᐃᑦ, ᓄᓇᕗᑦ; ᐊᒻᒪᓗ ᖃᐅᔨᓴᓇᓱᓐᓂᖅᑲᕐᓗᑎᑦ ᒪᕿᙵᓂᒃ ᓯᓈᓂ ᖃᐅᔨᓴᕈᑏᑦᖃᓄᐃᓕᕐᒪᓂᓇᔭᓇᐊᓕᕐᒥᑎᒍᑦ ᐊᒻᒪᓗ ᐱᕙᓪᓕᐊᑎᑦᑎᓗᑎᑦ ᖃᓄᐃᓕᐅᕈᑎᔅᓴᓂᑦ ᓈᒪᓈᑦᑎᐊᖅᑐᑎᑦᓄᓇᓕᓐᓂᙳᖅᑐᒥᑦ ᖃᐅᔨᓴᖅᑕᐅᒍᑎᖅᒥᓂᑦ ᕿᓪᓚᔪᑭᐊᔅᓴᔭᐃᑦ ᐃᒪᐅᑉ ᓯᕐᔭᕐᒪᓂᑦ.ᐃᒪᐅᑉ ᓯᕐᔭᕐᒪᓂᑦ ᖃᐅᔨᓴᕈᑎᑦ ᓄᐊᑕᐅᓂᐊᖅᑯᑦ ᓯᑎᐱᓇ 2019 ᑕᐃᑲᓂ ᑲᑎᒪᓂᖅᑲᓕᖅᑲᑕ ᐆᒪᔪᐃᑦᓱᕈᕐᓇᖅᑐᓃᑦ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐃᖃᓗᐃᑦ, ᓄᓇᕗᑦ ᐱᖃᑎᖃᕐᓗᑎᑦ ᐊᕙᑎᓕᓴᓂᕐᒧᑦ

ᐃᓕᓐᓂᐊᕋᔅᓴᐅᔪᒥᑦ ᓄᓇᕗᑦ ᓯᓚᑦᑐᓴᕐᕕᒃ (ᓯᑎᐱᓇ 23-27, 2019). ᐱᖓᓱᑦ ᑲᔪᓯᑎᑕᐅᓂᐊᖅᑐᑦ ᐃᒪᓐᓇᐸᓗᒃ 500 gᐅᖅᑲᒪᐃᓐᓂᖅ ᓯᐅᕋᕘᑦ ᓄᐊᑕᐅᓗᑎᑦ ᐊᑐᓂ ᐃᓂᖅᑫᐱᐅᔪᓂᑦ ᑕᐃᒃᑯᓂᖓ ᓯᓈᓄᑦ ᐊᐱᖅᑯᑎᐅᓂᐊᖅᑯᑦᕿᓪᓚᔪᑭᐊᔅᓴᔮᐃᑦ ᑎᑦᑕᐅᓯᒪᔪᑦ. ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᓄᐊᑕᐅᔪᑦ ᑲᔪᓯᑎᑕᐅᓂᐊᖅᑯᑦᖃᓄᐃᓕᖓᓂᓇᔭᓇᐊᖅᑲᖅᑕᖏᑦ ᐊᑐᖅᑕᐅᓗᑎᑦ ᐊᓂᒍᖅᑐᓂᑦ ᓯᔾᔭᒥ ᖃᐅᔨᓴᕈᑕᐅᖃᑦᑕᖅᓯᒪᔪᓂᑦ ᑕᐃᑲᓂᕿᑭᖅᑕᕐᔪᐊᖅ ᓄᓇᕗᑦ, ᐊᒻᒪᓗ Hᐆᓯᕐ ᕿᑭᖅᑕᖅ, YT, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᐊᑐᕐᓂᐊᖅᑐᑎᑦ ᐊᓕᒍᕐᓂᑦᒪᑐᓕᓐᓂᑦ ᕉᖅᓯᕕᐅᖃᑦᑕᕐᓗᑎᑦ ᐊᑐᕐᓗᑎᑦ ᓴᕕᕋᔭᒻᒥᑦ ᐊᓅᑎᒥᒃ. ᑕᒪᒃᑯᐊ ᖃᐅᔨᓴᕆᑎᔅᓴᐃᑦᓄᐊᑕᐅᓂᐊᖅᑯᑦ ᐱᖃᑎᖃᕐᓗᑎᑦ ᐊᕙᑎᓕᓇᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᓇᐅᖅᓴᔪᓂᑦ ᑕᐃᑲᓂ ᓄᓇᕗᑦ ᓯᓚᑦᑐᓴᕐᕕᒃᑕᒪᓐᓇ ᐱᖃᐅᓯᔾᔭᐅᓯᒪᑎᓪᓗᒍ ᐱᓇᓯᐊᕆᓯᓕᓛᕐᒧᑦ ᐃᓕᓐᓂᐊᕐᓂᖅ ᕿᓪᓚᔪᑭᐊᔅᓴᔮᐃᑦ ᒥᔅᓵᓄᑦ. ᑖᒃᑯᐊᐃᓕᓐᓂᒻᒥᐊᖅᑎᓕᓚᑦ ᓄᓇᕗᒻᒦᙶᖅᓯᒪᔪᐃᓐᓇᐅᕗᑦ ᐊᒻᒪᓗ ᐱᖃᑕᐅᓂᐊᖅᑐᑎᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᑦ. ᓂᓇᐅᒥᔭᖃᙱᓚᒍᑦ ᐊᕙᑎᑦᑎᓐᓄᑦ ᐊᑐᐃᓂᐊᖅᑐᓂᑦ, ᐆᒪᔪᕐᓂᑦ ᐅᕝᕙᓅᓐᓃᑦ ᐃᓄᓐᓂᑦ ᑕᒪᔅᓯᒥᖓ ᖃᐅᔨᓴᕐᓂᖅᑲᖅᑎᓪᓗᑕ ᐅᕝᕙᓅᓐᓃᑦ ᖃᐅᔨᓴᕆᑎᔅᓴᓂᑦ ᓄᐊᑦᑎᕙᓪᓕᐊᑎᓪᓗᑕ. ᓄᐊᑦᑎᔾᔪᙱᓚᒍᑦ ᓯᐅᕋᔾᔪᕐᓂᑦ ᐊᑐᖅᑕᐅᖃᑦᑕᑐᐊᖅᑲᑕ ᐆᒪᔪᕐᓄᑦ, ᐊᒻᒪᓗ ᖃᖓᑐᐃᓐᓇᓕᒃᑯᑦ ᐊᑦᑕᓇᖅᑐᒦᓐᓂᐊᖅᑑᔫᖅᑲᑕ ᐆᒪᔪᐃᑦ, ᑕᒪᓐᓇ ᓄᖅᑲᖅᑎᑕᐅᑦᑕᐅᑎᒥᓂᐊᖅᑐᓂ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ.ᑕᒻᕐᒥᓕᒫᖅ ᑐᑭᓯᒥᐊᕈᑎᔅᓴᐃᑦ, ᐱᖃᓯᐅᑎᓪᓗᒥᑦ ᑐᖅᑯᖅᑕᐅᔪᑦ-ᑐᑭᓯᒥᐊᕈᑎᑦ, ᓄᐊᑕᐅᕙᓪᓕᐊᓂᐊᖅᑯᑦ ᑕᐃᑰᓇ ᕉᓗᕐ ᑐᑭᓯᒥᐊᕐᕕᒃ ᑎᑭᔮᔅᓴᖃᐅᑎᖓ ᐊᒻᒪᓗ ᒪᑐᐃᖓᕗᖅ ᐊᑐᖅᑕᐅᒍᓐᓇᖅᑐᑎᑦ. ᑕᐃᒪᐃᑎᓪᓗᒍ ᖃᐅᔨᓴᑦᑎᐊᕈᓐᓇᕋᑦᑕ ᑐᑭᓯᒥᐊᕈᑎᔅᓴᐃᑦ ᐊᑐᐃᓐᓇᐅᔪᐃᓐᓇᐅᓚᓗᐊᕐᒪᓖᑦ ᐊᑐᖅᑕᐅᓂᐊᕐᓂᕆᓐᓄᑦ ᑕᒻᓯᒨᖓ ᖃᐅᔨᓴᕐᓂᐅᔪᒧᑦ. ᐊᕐᕋᒎᓂᐊᖅᑐᒥᑦ, ᑕᒪᒃᑯᐊ ᓴᖅᑭᖅᑕᐅᔪᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᓴᖅᑭᖅᑕᐅᓕᕐᒥᓗᑎᑦ ᐊᒻᒪᓗ ᑕᐃᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓚᐅᖃᑕᐅᔪᒥᓃᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᑦ. ᑕᒪᒃᑯᐊᓗ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᓴᖅᑭᖅᑕᐅᕙᓪᓕᐊᔪᑦ ᑐᓐᓂᖁᑕᐅᓂᐊᓇᕗᑦ ArcticNet ᑲᑎᒪᓂᖓᓂᑦ ᑕᐃᑲᓂ ᑎᓯᐱᓇ 2019, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᓇᐃᓈᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᑐᓐᓂᖅᑯᑕᐅᓂᐊᓇᓪᓗᑎᑦ ᐃᓚᐅᖃᑕᐅᓚᐅᖅᑐᓕᓗᑦ ᓄᓇᓕᐅᔪᓄᑦ, ᐱᖃᓯᐅᑎᓪᓗᒍ ᐃᖃᓗᐃᑦ.

Inuinnaqtun: NA

Personnel

Personnel on site: 2

Days on site: 5

Total Person days: 10

Operations Phase: from 2019-09-23 to 2019-09-27

ᐱᓕᕆᐊᕆᔭᐅᓂᐊᖅᑐᑦ

ᓇᒥ	ᖃᓄᐃᑦᑑᒥᑦ ᐱᓕᕆᐊᕐᑲᓂᐊᖅᐸ	ᑭᒃᑯᑦ ᓄᓇᕐᑰᑖᓂ	ᑐᓴᐅᒪᔭᒃᓴᑦ ᓄᓇᐅᑉ ᖃᓄᖅ ᐊᑐᒐᐅᓚᐅᖅᓯᒪᔭᕆᐊᖕᒐᓐᓂᒃ	ᐃᑦᓴᕐᓂᑕᕐᑲᕐᐱᐅᕈᓚᐅᖅᐸ ᐃᓄᒃᓄᑦ ᓇᔪᖅᑕᐅᕐᑲᑦᑕᕐᓂᑰᕈᓗ ᑕᐃᑦᓯᒪᓂᑐᕐᑲᐅᓕᖅᑐᖅ	ᖃᓂᓐᓂᖅᑳᖅ ᓄᓇᓕᒥᔭᐅᔪᖅ ᐊᒻᒪᓗ ᓴᐳᒻᒥᒃᓰᐱᐅᕈᓗ ᓱᓇᓄᑦ
Site 1	Sampling sites	Municipal	NA	NA	Within Iqaluit
Site 2	Sampling sites	Municipal	NA	NA	Within Iqaluit
Site 3	Sampling sites	Municipal	NA	NA	Within Iqaluit
Site 4	Sampling sites	Municipal	NA	NA	Within Iqaluit
Site 5	Sampling sites	Municipal	NA	NA	Within Iqaluit

ᓄᓇᓕᐅᑉ ᐃᓚᐅᖃᑕᐅᓂᖓ ᓄᓇᓖᓐᓄ ᐊᕙᒃᑐᖅᓯᒪᐅᕐᓂᖓᓄᑦ ᐃᑲᔪᑕᐅᔪᓐᓇᖅᑐᑦ

ᓄᓇᓕᒥᔭᖅ	ᐊᑏᑦ	ᑲᑐᔾᔨᐊᖃᑎᒌᒥᔭᖅ	ᖃᖓᓗ ᑐᓴᖅᑎᑕᐅᓚᐅᕆᐊᖏᓐᓂᒃ
ᐃᖃᓗᐃᑦ	Jamal Shirley	Nunavut Research Institute	2018-11-01
ᐃᖃᓗᐃᑦ	Dan Martin	Nunavut Arctic College	2018-11-01
ᐃᖃᓗᐃᑦ	Jason Carpenter	Nunavut Arctic College	2018-11-01

ᓚᐃᓴᓐᓰᑦ ᐱᒧᖕᓇᐅᑏ ᐊᖕᒋᖅᑕᐅᓯᒪᔪᑦ

ᓇᒦᒋᐊᖕᒋᓐᓂᒃ ᐱᓕᕆᐊᕆᕝᕕᐅᓂᐊᖅᑐᑦ ᑎᑎᕋᕐᓗᒥᑦ:

South Baffin

ᓚᐃᓴᓐᓰᑦ ᐱᒧᖕᓇᐅᑏ ᐊᖕᒋᖅᑕᐅᓯᒪᔪᑦ

ᒐᕙᒪᒋᔭᐅᔫᑉ ᐊᕕᒃᑐᖅᓯᒪᐅᕐᓂᖅᒐᓐᓂ ᒪᓕᒐᕐᓅᖕᒐᔪᓂᒃ ᐱᕐᑯᔭᕐᓅᖕᒐᔪᓂᒡᓗ ᑲᒪᔩᑦ ᐱᔪᖕᓇᐅᑎᑖᕈᑎᓂᒃ ᓚᐃᓴᓐᓯᓄᓪᓗ ᑲᔪᓯᒃᑲᐃᔩᑦ	ᖃᓄᐃᑦᑐᓪᓚᓇᐅᕙ ᓚᐃᓴᓐᓯᑖᕈᑕᐅᔪᖅ ᐱᔪᖕᓇᐅᑎᑖᕈᑕᐅᔪᖅ ᐊᖕᒋᖅᑕᐅᔪᕐᓘᓐᓃᑦ	ᒫᓐᓇ ᖃᓄᐃᓕᖕᒐᕙ	ᐅᓪᓗᒥ ᑐᓂᔭᖅ/ ᑐᒃᓯᖅᑑᑕᐅᓚᐅᖅᓯᒪᔪᖅ	ᑭᒡᓕᖅᑲᕐᕕᖕᒐ
ᓄᓇᕗᒥ ᖃᐅᔨᓴᖅᑐᓕᕆᔨᒃᑯᑦ	Submitted application to NRI on July 15, 2019.	Applied, Decision Pending		

Project transportation types

Transportation Type	ᓱᓇᒧᑦ ᐊᑐᒐᐅᓂᐊᖅᐸ	Length of Use
Land	Access to the sampling sites will be by foot.	

Project accomodation types

ᓄᓇᓕᒋᔭᖅ

ᐊᓯᖕᒐ,

ᐊᑐᒐᐅᓂᐊᖅᑐᖅ

ᐱᕐᑯᑦ ᐊᖏᔪᖅ ᐊᑐᖅᑕᐅᓂᐅᓴᔪᖅ ᐃᓚᖃᓯᐅᑎᓗᒋᑦ ᐃᑰᑕᐃᑦ, ᒥᓪᓗᐊᕿᑏᑦ, ᖃᖓᑕᔫᖅ, ᓄᓇᓯᐅᑦ ᐊᓯᖏᓪᓗ

ᐊᖏᔪᖅ ᐱᕐᑯᑦ ᐊᑐᒐᐅᓂᐊᖅᑐᖅ ᖃᓄᐃᑦᑑᓂᖓ	ᖃᑦᓯᐅᕙᑦ	ᐊᖏᓂᖏᑦ - ᐳᖅᑐᓂᖏᑦ	ᓱᓇᒧᑦ ᐊᑐᒐᐅᓂᐊᖅᐸ
Metal kitchen spoon	2	4cm x 6cm	To scoop beach sediment into glass jars

ᑎᑎᕋᐅᓯᓇᓗᒍ ᐅᖅᓱᒃᓴᐃᑦ ᐊᑦᑕᓇᖅᑐᖅᑕᓖᓪᓗ ᐊᑐᖅᑕᐅᓂᐊᕐᓂᖏᑦ

ᓱᓇᒧᑦ ᐅᖅᓱᒃᓴᒡᒥᐊᖅ ᐊᑐᒐᐅᓂᐊᖅᐸ	ᖃᓄᐃᑦᑐᓪᓚᓇᐅᕙ ᐅᖅᓱᒃᓴᒡᒥᐊᖅ	ᖃᑦᓯᐅᕙᑦ ᐅᖅᓱᒃᓴᖅᑲᐅᑏᑦ	ᐴᒃᓴᐅᑉ ᐃᒪᖅᑲᖅᑎᒋᔪᓐᓇᕐᓂᖓ	ᑲᑎᓪᓗᒍ	ᐴᒃᓴᐃᑦ ᐊᒥᔫᓂᖏᑦ	ᓱᓇᒧᑦ ᐊᑐᒐᐅᓂᐊᖅᐸ
Glass jars	hazardous	10	1	10	Kg	Glass jars will be used to hold beach sediment samples. Only hazard from these is the unlikely event of a jar breaking. If a jar were to break all glass would be cleaned up and removed from the site. No chemicals will be used during sample collection. Number of jars includes spares.
Not applicable as no fuel will be used during sample collection.	fuel	0	0	0	Liters	No fuel will be used during sample collection

ᐃᒪᖅ ᐊᑐᖅᑕᐅᔪᒫᖅᑐᖅ

ᐅᓪᓗ ᑕᒫᖅ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᖅ	ᖃᓄᖅ ᐃᒥᖅᑕᖃᖅᑕᕐᓂᐊᖅᓯᑦ	ᓄᑭᑦ ᐃᒥᖅᑕᖃᖅᑕᕐᓂᐊᖅᓯᑦ
0	We will not be using, crossing, storing or diverting any water during sample collection. There will not be a camp onsite therefore we will not require any water for camp or municipal purposes.	Not applicable

ᐊᑲᑕᔪᑦ

ᐊᑲᑕᔪᓕᓂᐅᐊᖏᖅ

ᐱᓕᓇᐊᓇᔭᐅᔨᒪᔨᒧᑦ ᐱᓕᓇᐊᓇᔭᐅᓂᐊᖅᑐᖅ	ᖃᓄᐅᐃᑦᑐᖅ ᐊᑲᑕᔪᖅ	ᖃᓄᐅᑎᒋ ᐊᑲᑕᔪᑦ ᓴᖅᑭᐊᓂᐊᖅᑐᓇᔭᐅᔅᓴᑦ	ᖃᓄᐅᖅ ᐊᑲᑦᑕᐅᓂᐊᖅᓯ	ᓴᓗᒪᖅᓴᐅᑎᑲᑲᓐᓂᓂᐅᓂᐊᖅᑐᑦ
Sampling sites	ᐊᑦᑕᓇᖅᑐᖅᑕᓪᓕᑦ	We do not foresee producing any waste	We do not foresee any waste being produced during sample collection. Any equipment or material used during sample collection will be taken with the field members following sample collection. No equipment or material will be left onsite. If a glass jar for used to hold the sediment samples were to break, then all glass pieces would be cleaned up, taken away from the site and properly disposed of at a location safe to accept broken glass.	Not applicable

ᐊᔾᑎᒥᐅᑕᓂᑐᑦ ᐊᑲᑐᖅᑕᐅᓯᒪᔪᑦ

We do not foresee any impacts on the environment, wildlife or people as a result of this study or the sample collection. We will not collect any sediment that is being used by wildlife, and if at any time there is a threat to disturbing wildlife, all sampling will stop. No equipment or waste will be left on site, and access to the sampling locations will be by foot.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

ᐃᒡᓗ ᐊᕐᑎᐅᑦ ᖃᓄᐃᑦᑐᑦᓯᓇᐅᔪᖓ: ᓄᓇᐅᑦ ᖃᓄᐃᑦᑐᖓ

Samples will be collected from publicly accessible beaches in Iqaluit.

ᐃᒡᓗ ᐊᕐᑎᐅᑦ ᖃᓄᐃᑦᑐᑦᓯᓇᐅᔪᖓ: ᐅᒪᔨᖅᑕᖃᖅᖓ

NA

ᐃᒡᓗ ᐊᕐᑎᐅᑦ ᖃᓄᐃᑦᑐᑦᓯᓇᐅᔪᖓ: ᐃᓄᓕᓇᓂᖅᔩᖃᓚᑦ-ᐱᕐᓕᐊᔨᓕᓇᓂᖅᔩᖃᓚᑦ

Samples will be collected from publicly accessible beaches in Iqaluit.

Miscellaneous Project Information

NA

ᓇᓗᓇᐃᖅᑕᐅᓂᖅᑭᑦ ᐊᖏᑐᖅᑕᐅᓂᒪᓕᔨᑦ ᖃᓄᐃᑦᑐᓂᖅᑭᑦ ᕿᓚᐅᒥᔨᔪᖅᑕᐅᓂᐊᖅᓂᖅᑭᑦᓗ

We do not foresee any impacts on the environment, wildlife or people as a result of this study or the sample collection. We will not collect any sediment that is being used by wildlife, and if at any time there is a threat to disturbing wildlife, all sampling will stop.

Cumulative Effects

NA

Impacts

ᓄᓗᓄᐃᖅᑕᐅᓂᖅᑎᑦ ᐊᐸᑎᒥᐅᑕᓯᑦᑐᑦ ᐊᑲᑐᖅᑕᐅᓯᒪᔪᑦ

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
ʕᓄᓂᖅ																									
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ᐅᔾᕿᑲᑦᓂᖅ																									
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ᐃᑐᑦᑎᓄᖅ																									
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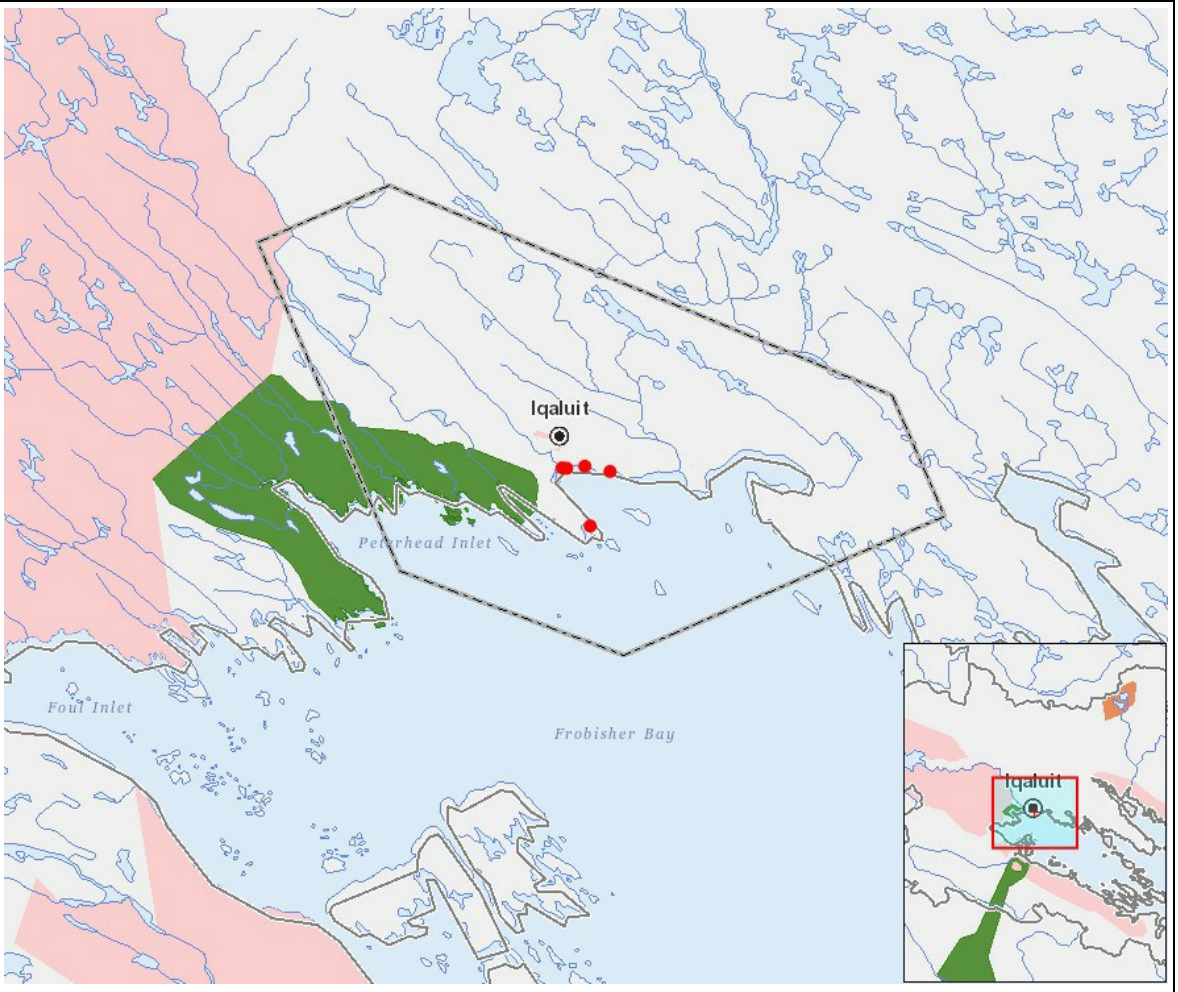
(P = ᐊᑲᐅᓴᕈᑎᔪᓐᓇᖅᑐᑦ, N = ᐊᑲᐅᖅᑭᔨᔪᑕᐅᔪᓐᓇᖅᑐᑦ ᕿᓚᐅᒻᔨᔪᓂᖅᑐᑕᐅᔪᓐᓇᖅᑭᑐᑎᓪᓗ, M = ᐊᑲᐅᖅᑭᔨᔪᑕᐅᔪᓐᓇᖅᑐᑦ ᕿᓚᐅᒻᔨᔪᓂᖅᑐᑕᐅᔪᓐᓇᖅᑐᑎᓪᓗ, U = ᖁᑲᐅᔨᒪᓐᓇᖅᑭᑐᖅ)

ᓇᒻᒪᖏᕆᖅ ᐱᓕᓇᐊᓇᓵᐅᐯᔪᖅ



List of Project Geometries

1	point	Site 1
2	point	Site 2
3	point	Site 3
4	point	Site 4
5	point	Site 5