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16 December 2025

Re: 2025 Non-Technical Annual Report for Kivalliq-Baffin Connector Marine Survey – Nunavut Research Institute Licence No. 01 030 25N M

1. Project Overview

1.1. Background

Dynamic Ocean Consulting Ltd (Dynamic Ocean) has been retained by the Government of Nunavut – Department of Transportation and Infrastructure Nunavut (GN-TIN) as the regulatory specialist to support the permitting for the Kivalliq-Baffin Connector (KBC) Fibre Optic Cable Project (the KBC Fibre Project). The KBC Fibre Project is approximately 1,066 km in length and has four landings as below (depicted in Figure 1-1):

- Three landings on Baffin Island's southern coast (Iqaluit, Kimmirut, Kinngait | Qikiqtani Region).
- One Landing on Southampton Island (Coral Harbour [Salliq]| Kivalliq Region).

The KBC Fibre Project will connect to a Branching Unit (BU) in Nunavik waters, northwest of Salluit (Nunavik), which was completed as a component of Phase 2 of the Kativik Regional Government (KRG) Eastern Arctic Underwater Fibre Optic Network (EAUFON) Project (hereafter referred to as the KRG Project).

Prior to finalization of the detailed design phase of the KBC Fibre Project, a marine survey (the KBC Marine Survey) along the marine fibre cable route was completed.

The KBC Marine Survey was carried out by Seaforth Geosurveys Inc. (Seaforth). Environmental compliance for the KBC Marine Survey was supported by Edgewise Environmental (Edgewise) under the role of qualified Environmental Monitor (EM). Environmental compliance was supported by Dynamic Ocean under the role of Environmental Inspector (EI).

This letter provides the summary details for the 2025 field season to fulfill the annual requirements for the Nunavut Research Institute (NRI) post-Field Program reporting (license No. 01 030 25N M). A renewal for 2026 is expected to be required to facilitate future field programs. However, an amendment to the Nunavut Planning Commission (NPC) application (File no. 150741) is required due to the additional spatial coverage of the KBC Marine Survey. As such, the NRI licence renewal application will be submitted after NPC has decided on whether the Program will be referred to Nunavut Impact Review Board (NIRB) for additional screening, and until the revised NIRB Screening Decision Report (SDR) is issued (if required).

Table 1-1: Marine Survey Permits

Regulatory Authority	Permit Type	Permit / File No.
Nunavut Planning Commission (NPC)	Conformity Determination	150741
Nunavut Impact Review Board (NIRB)	Screening Decision Report (SDR)	25UN049
NRI	Research License	01 030 25N M
Department of Fisheries and Oceans (DFO)	License to Fish for Science	S-25/26-1056-NU
DFO- Fish and Fish Habitat Protection Program (FFHPP)	Letter of Advice (LoA)	25-HCAA-01309
Nunavik Marine Region Impact Review Board (NMRIRB)	SDR	125755

1.2. Program Name

KBC Marine Survey.

1.3. Program Location

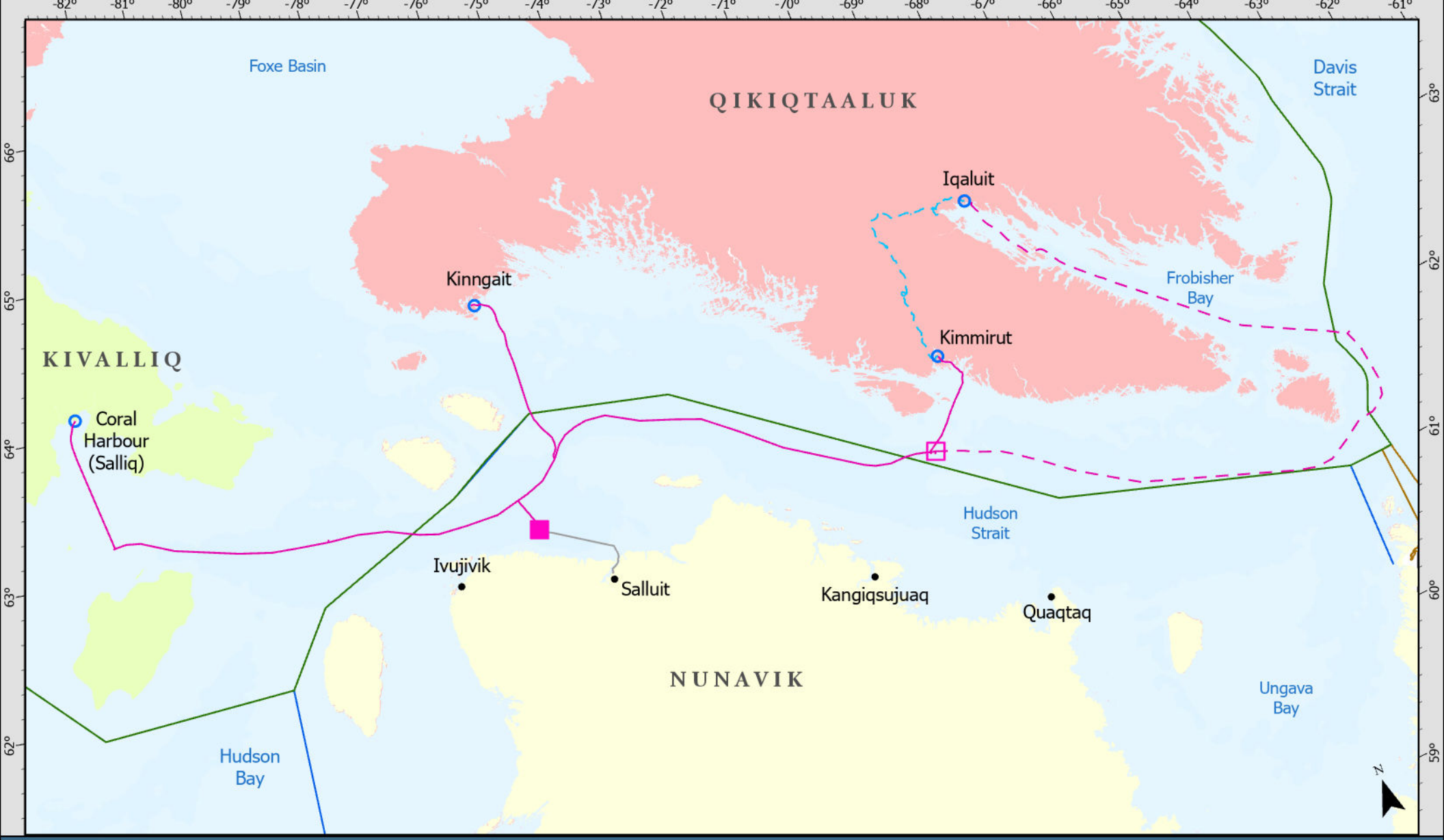
The KBC Marine Survey occurred in the waters of the Nunavut Settlement Area (NSA) and the Nunavik Marine Region (NMR), between the Qikiqtani and Kivalliq Regions on the south coast of Nunavut and the north coast of Nunavik (Figure 1-1, Table 1-2).

Table 1-2: Kivalliq-Baffin Connector Fibre Project Marine Landings in Nunavut

Location	Location Description	Punch-Out		Punch-In		Branching Unit Stub		Pertinent Water Bodies[3]	Hunter and Trappers Association / Organization
		Latitude	Longitude	Latitude	Longitude	Latitude	Longitude		
Nunavut Settlement Area									
Qikiqtani Region									
Kimmirut	Southern Baffin Island.	62° 50.4840'N	69° 51.6198'W	62° 50.5910'N	69° 52.1321'W	-		Hudson Strait, Glasgow Bay	Mayukalik Hunters and Trappers Organization (HTO), Hamel of Kimmirut.
Kinngait	Dorset Island on southwest coast of Baffin Island.	64° 14.3343'N	76° 32.8946'W	64° 14.1517'N	76° 32.5648'W	-		Foxe Basin, Hudson Strait	Aiviq HTO, Hamlet of Kinngait.
Iqaluit	Frobisher Bay on south end of Baffin Island.	63° 42.837'N	68° 27.789’W	63° 43.445'N	68° 26.778’W	-		Frobisher Bay, Davis Strait	Amaruq Hunters and Trappers Association (HTA). Hamlet of Iqaluit.
Kivaliq Region									
Salliq (Coral Harbour)	Southampton Island.	64° 06.2858 N	83° 13.6779'W	64° 06.8463'N	83° 12.5513'W	-		Hudson Bay	Aiviit HTO. Hamlet of Coral Harbour (Salliq).
Nunavik Marine Region									
Makivvik									
Salluit[1]	Northern coast of Quebec, Canada.	-				62° 38.8394'N	76° 30.5777'W	Hudson Strait, Sugluk Inlet	Anguvigaq Hunting, Fishing and Trapping Organization (HFTO).

Note:

1. There is limited construction activity for the Nunavik landing, as there is already a BU installed from the KRG Project



Legend

Project Components

- Cable Route
- Iqaluit (Option 1, Terrestrial)
- Iqaluit (Option 2, Marine)
- Cable Landing Station
- Branching Unit (BU) (Potential)
- BU (Confirmed)

EAUFON Project

- Existing Cable Route

- Nunavut Settlement Area
- Nunavik Marine Region
- Labrador Inuit Lands

Drawn: CL	Kivalliq-Baffin Connector Project
Edited: AW	Figure 1-1
Approved: VBC	**Fibre Optic Cable Route and Jurisdictional Boundaries**

Spatial Reference
GCS: GCS North American 1983
Datum: North American 1983
Projection: Albers
Map Units: Metre

0 20 40 80
km

Scale: 1:4,000,000

Project Location

2. Field Program

2.1. Program Scope

The intention of the KBC Marine Survey was to assess seabed conditions to support the detailed design phase of the KBC Fibre Project. The marine component sits within the NSA and the NMR.

The KBC Marine Survey was composed of three main survey types as summarized below, with the activities required outlined in Table 2-1.

- Geophysical surveys.
- Geotechnical surveys.
- Biological surveys.

Table 2-1: Kivalliq-Baffin Connector Marine Survey Activities

Activity Type	Description[2]	Surface Cable Lay Route	Buried Cable Route & HDD
Geophysical	• Swath bathymetry using a Multibeam Echosounder (MBES). • Side Scan Sonar (SSS). • Subbottom Profiler (SBP). • Magnetometer. • Sound Velocity Profiling (SVP).	✓	✓
Geotechnical	• Sediment sampler (vibracore). • Cone Penetration Tests (CPTs).	-	✓
Biological	• Drop Camera requirements to support regulatory requirements.	-	✓

Note:

1. For a detailed description of the marine survey activities see Section 2.3 (Table 2-3)

2.2. Study Areas

The footprint for the KBC Marine Survey encompassed the full extent of the marine cable route (Table 2-2). Depending on the survey type, the survey corridor ranged between 500 m to 900 m with the cable footprint as its centreline. A Study Area of 1 km lineal distance on both sides of the Project footprint (i.e., marine cable) has been defined based on the potential environmental effects that the KBC Marine Survey generated. The Nunavut landings are described by the location of the Horizontal Direction Drilling (HDD) entry point in the marine environment and exit point on land. The marine entry point is referred to as Punch Out (PO) and the land-based exit point is referred to as Punch In (PI). The Nunavik landing is described by the location of the BU stub, as there is no land-based construction associated with this location.

The location of the landings is provided in Table 1-2.

Table 2-2: Kivalliq-Baffin Connector Marine Survey Spatial Areas

Spatial Area	Definition
Project footprint	The Project footprint is considered the footprint of the marine cable.
Survey Corridor	Considered the 'swathe' distance required on either side of the Project footprint that was required during the survey for the Geophysical surveys. Using the Project footprint as the centreline, this distance ranged between 500 m to 900 m depending on survey type.
Study Area	The Project footprint plus a 1 km lineal distance on either side of it (thus 2 km total). The buffer extent is based on potential environmental effects resulting from the KBC Marine Survey.

2.3. Field Program Methods

A detailed description of the field activities required during the KBC Marine Survey, including their purpose and equipment requirements, is provided in Table 2-3.

Table 2-3: Methodology for the Field Program

Activity	Purpose	Description of Equipment	Description for Project	Interaction with Seabed	Potential for Anthropogenic Noise Contribution
Survey Vessel	A vessel capable of being able to support operation of the required equipment and provide accommodations for the contractor's crew and GN-TIN representatives.	The Mainport Geo was selected as the Survey Vessel to support the Project which is a multipurpose DP2. The Survey Vessel had the following specifications: • Length Overall: 50.0 m. • Draft at full load: 4.30 m. • Gross Tons: 1240 GT. • Diesel Fuel Capacity: 281 m^3. • Endurance: up to 30 days. The vessel was in compliance with all pertinent Transport Canada and International Convention for the Prevention of Pollution from Ships (Marine Pollution [MARPOL] Regulations).		No	Yes
Geophysical Program (Buried Cable, Surface Cable Lay)					
Swath Bathymetry Using MBES	Document depth along the survey route, which will be corrected for the speed of sound in seawater and recorded in metres.	• Measured water depth by emitting rapid pulses of sound toward the seabed and measured the sound reflected back. • Provided dimensional bathymetric mapping of the cable route corridor using multiple beams elongated in the across track direction to cover a fan-shaped sector (or swath). The across track beam is typically 150° to 160° Crocker and Fratantonio (2016).	• Hull or pole mounted swathe system that obtained continuous depth recordings along the survey route. • Surface Laid Route: 500 m when water depth < 250 m; Minimum of two times water depth (maximum water depth is 465 m) when water depth is > 250 m. • Buried Cable Route: 500 m. • Depth resolution and bathymetric accuracy of 1% (surface laid route) and 0.5% (buried cable route).	No	Yes
SVP	To measure the speed of sound at different water column depths.	• Sound velocity profiling is an important aspect for supporting sonar systems (e.g., MBES). • Sound velocity was measured via an SVP at the MBES system transducer	• Sound velocity profiles of the water column were collected a minimum four times a day and/or as required based on sonar data quality.	No	Yes

Activity	Purpose	Description of Equipment	Description for Project	Interaction with Seabed	Potential for Anthropogenic Noise Contribution
		head, as well as through a separate SVP tethered to the vessel and capable of collecting sound velocity profiles while the vessel is underway without requiring for surveys to halt operations.			
SSS	• Required to document all natural and anthropogenic seabed features, and specifically those that may cause design concerns. • Aid in identification of seafloor sediment, surficial bedrock outcrops and geomorphology mapping.	• High resolution and detailed two-dimensional imagery of the seabed. • Use of an acoustic beam to obtain an accurate image over a narrow area of seabed to either side of the instrument. • Generated high frequency acoustic pulses. • The intensity of the acoustic reflections from the seafloor was recorded in a series of cross-track images. When stitched together, these form a view of the seafloor within the swath of the beam. • Typically, an angle range of 50 m to 300 m on either side of the instrument.	• Was integrated with the MBES data. • The minimum operating frequency was 300 kHz (buried cable route).	No	Yes
SBP	• Determine the thickness and nature of substrate conditions below the seabed. • Identify subsurface seabed features, inclusive of type, texture, variability.	• The SBP was hull mounted. • Penetrated the seabed to a range of depths to identify changes in sediment or structures within the sediment.	• High-resolution SBP was required to determine the thickness and nature of the sediments. Details and resolution of sediments to 1 m greater than the target depth of burial is critical, but the system must be capable of determining the geology and structure of the underlying seabed.	No	Yes

Activity	Purpose	Description of Equipment	Description for Project	Interaction with Seabed	Potential for Anthropogenic Noise Contribution
	• Identify nature and density of subsurface seabed for up to 4 m below the seabed. • Investigate the upper layers of the seabed sediments for cable burial potential and installations risk from seabed obstructions (e.g. rock formations).	• Generated acoustic signal through impulsive physical processes of electrostatic discharge (e.g. sparkers).	• Utilized equipment that maximizes the identification of obstacles to cable burial. • Buried Cable Route: Details and resolution of sediments to 1 m greater than the target depth of burial is critical, but the system must be capable of determining the geology and structure of the underlying seabed.		
Magnetometer	• Identify anomalies or issues with collection of survey data. • Aid in collecting data to identify existing anthropogenic infrastructure (e.g. existing BU).	• Passive towed sensor used to measure magnetic field strength and to detect variations in the total magnetic field of the underlying seafloor. • Did not transmit any signals to the marine environment.	• Identified any anomalies or issues requiring further investigation that arise during the collection of any survey data along any of the survey lines.	No	No
Geotechnical Program (Buried Cable Route)					
Sediment Sampler	• Interpretations of the below seabed conditions, and to ground truth the SBP data.	• Equipment that supported obtaining sediment samples to further interpret seabed conditions. • Vibracore: Has a tripod frame for stability. Coring barrel liner likely to range from 90 mm to 120 mm, and up to 3 m in depth.	• The contractor determined the frequency of samples required, with a minimum interval of every 10 km (buried cable route only). • A sample was taken using a Vibracore at the HDD exit point, when the depth is greater than 15 m Chart Datum (CD). • The below seabed penetration was up to 3 m. • Cores were repeated for one of the following reasons a) refusal met before 4 m, b) within the	Yes	No

Activity	Purpose	Description of Equipment	Description for Project	Interaction with Seabed	Potential for Anthropogenic Noise Contribution
			core, there is less than 50% recovery, c) the recovered core is compromised / disturbed. A maximum of three attempts was made. If a core is considered unsuccessful, a grab sampler for the potential to recover a surface sediment sample (up to six inches) was attempted, unless SBP data indicates the substrate is hard (e.g. bedrock, boulder) (buried cable route).		Yes (Vibracore)
CPT	• To support determination of simultaneous laying and burial of the cable.	• A CPT is an instrument placed on the seabed; however, does not collect sediment, so much as measure the resistance to penetration to assess subsurface properties of substrate below the seabed.	• Interacted with the seabed but did not collect sediment. • Surface laid route: N/A not required. • Buried Cable Route: Required sampling allowance based on interval of approximately every 4 km.	Yes	Yes
Biological Program					
Drop Camera	• Visual observation of seabed conditions to support regulatory and environmental requirements.	• A drop camera, which is a device on a tether with a camera.	• Drop camera was deployed along buried cable route. • Data collection included substrate type and composition, algae species identification, relative abundance of marine invertebrates, and presence of sensitive habitat such as coral or sponges.	No	No

2.4. Field Activities Summary

Results of the KBC Marine Survey are summarized in this section. Further details can be provided to interested parties upon request and with approval from the GN-TIN. A summary of the KBC Marine Survey results will be shared with the relevant communities through ongoing consultation for the KBC Fibre Project.

2.4.1. Geophysical Survey

The geophysical field survey included several complementary methods (as described in Table 2-3) to characterize the seabed and subsurface conditions along the proposed KBC Marine Survey Study Area. Data collection included 38 days of swath bathymetry, 22 days of SVP, 14 days of SSS, 17 days of SBP, and a single deployment of the magnetometer.

The geophysical data are currently being assessed, and results are not available at the time of this report.

2.4.2. Geotechnical Survey

The geotechnical field survey included several complementary methods (as described in Table 2-3) to characterize the seabed and subsurface conditions along the proposed KBC Marine Survey Study Area. Data collection included five days of sediment samples, and six days of CPT.

The geotechnical data from the CPT and Sediment Sampler are currently being assessed and results are not available at the time of this report.

2.4.3. Biological Program

The biological field survey was undertaken to observe the seabed conditions and regulatory and environmental requirements along the proposed KBC Marine Survey Study Area. The drop camera was deployed on seven separate days through the KBC Marine Survey.

The biological data from the drop camera is currently being assessed and results are not available at the time of this report.

2.5. Community Consultation

Communities were engaged prior to the KBC Marine Survey activities. Engagement letters have been sent to community organizations listed in Table 2-4, outlining the background, activities, and environmental management measures of the KBC Marine Survey. Opportunities for local participation were also highlighted in the letters.

Table 2-4: Communities Engagement for the Kivalliq-Baffin Connector Marine Survey Program

Community	Associated Organizations	Reference
Coral Harbour (Salliq)	Aiviit HTO, Hamlet of Coral Harbour (Salliq)	Dynamic Ocean (2025a)
Kimmirut	Mayukalik HTO, Hamlet of Kimmirut	Dynamic Ocean (2025c)
Kinngait	Aiviq HTO, Hamlet of Kinngait	Dynamic Ocean (2025d)
Iqaluit	Amaruq HTA, City of Iqaluit	Dynamic Ocean (2025b)

3. 2026 Field Program

Additional marine survey work will be undertaken in 2026 to assess the marine cable route between Kinngait and Iqaluit. Survey work will be the same scope as 2025.

4. Summary and Closing

We trust this letter provides necessary details required for our annual summary. Any data collected over the course of the KBC Marine Survey will be available upon request for interested parties. If you require any further information, please do not hesitate to contact Victoria Burdett-Coutts (Table 4-1).

Table 4-1: Contact Information

Information Request	Details
Proponent: Government of Nunavut	
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5. References

Crocker, S. E., & Fratantonio, F. D. (2016). Characteristics of High-Frequency Sounds Emitted During High-Resolution Geophysical Surveys. OCS Study, BOEM 2016-44, NUWC-NPT Technical Report 12, 203pp

Dynamic Ocean. (2025a). Kivalliq-Baffin Connector Project Marine Survey and Horizontal Directional Drilling Feasibility Study - Community Consultation Letter. Doc No. LET-GN-02.3-Coral Harbour KBC Project 2025 and 2026 Field Programs-0003-25. 17 July 2025. Rev 1.

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