Demande de la CNER faisant l’objet d’un examen préalable #126185

Qikiqtarjuaq Marine Infrastructure Project

Type de demande : New

Type de projet: Coastal Infrastucture

Date de la demande : Monday, June 23, 2025

Period of operation: from 2030-07-01 to 2080-09-03

Promoteur du projet: Justin
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DÉTAILS

Description non technique de la proposition de projet

Anglais: The Government of Nunavut is planning to build a deep-water port facility in Qikiqtarjuaq Nunavut. The Project will be built in the Municipality of Qikiqtarjuaq, along the western shoreline of Broughton Island, south of the Qikiqtarjuaq Airport. The purpose of the project is to improve marine infrastructure in the community and provide facilities to support the fishing industry and marine traffic in the Davis Strait and Baffin Bay. This project will consist of a new wharf structure complete with modern equipment and tools to accommodate commercial, scientific, and tourist vessels. The Project will consist of the following components:•75 m long closed-face marginal wharf structure with armour stone protection•275 m access road connecting to existing municipal roads•Crane for offloading cargo•Wastewater receiving systems•VHF radio communications station•Freezer container facilities•Operations and security office•Power distributionConstruction will involve both land-based (e.g., site preparation, rock quarrying) and marine-based activities (e.g., harbour dredging, construction of wharf and armour stone protection). Rock and fill will be excavated from a new quarry within the municipality. A temporary camp will be established to accommodate workers during construction. Traffic between construction areas and the camp, quarry, and stockpile areas will make use of existing roads. A 275 m access road will be built to connect the new port facility to the existing municipal road.Approximately 25 to 30 personnel will be required during construction. Commercial accommodations in in the community may be limited, and if so, a temporary work camp will be required during construction. Construction personnel will be present during the open-water season and those that are not residents of Qikiqtarjuaq will depart for the winter.Construction equipment will include trucks and heavy equipment, such as excavators, front end loaders, compactor, bulldozer, grader, forklift, crane, pile driver or vibratory hammer, drilling rigs, and rock crusher. Tugs, work boats, scows, and a barge will be used for marine construction. Diesel will be the primary fuel used for the construction vehicles and equipment. Vehicles and equipment will be refuelled at designated areas that have spill prevention measures in place. Environmental mitigation measures, including spill prevention and emergency response, will be included in a Construction Environmental Management Plan. Construction will occur over four years from 2026 to 2029, with construction shut down over the winter seasons. Mobilization of equipment and materials, and potentially some site preparation works, will occur in 2026. The majority of construction will occur in 2027, 2028, and 2029. Operation of the port is expected to begin at the start of the open-water season in 2030.The project will bring potential benefits to the community. During construction, there will be economic benefits through direct local hiring, renting of community facilities, and local purchases. After the project is completed, benefits will include deepwater accommodation for commercial vessels, storage on site for commercial fishery, and more efficient offloading of goods for the community. The project overall will provide economic benefit to the community and the region by offering infrastructure necessary to develop commercial fisheries. Community engagement activities were conducted as part of feasibility studies in 2005 and 2020, and have continued during the design stage in 2023 and 2024. Meetings were held with the Council, the local Hunters and Trappers Association (HTA), the local QIA representatives, community members and knowledge holders.During the community consultation, Inuit Qaujimajatuqangit (IQ) was gathered through design workshops with the local HTA and with local Inuit hunters and fishers in Qikiqtarjuaq. Information was gathered on the state of the local environment, historical and current use, and community needs for a deep sea port. All IQ is considered to be the intellectual property of the Inuit knowledge holders. The IQ collected was considered in the design of project.IQ was used to evaluate the impact of construction activities on the environment. The environmental and safety concerns raised during the IQ workshops and community consultations are addressed through the design and planned mitigation measures.

Français: n/a

Inuktitut: ᓄᓇᕗᑦ ᑲᓇᒪᑯᖏᑦ ᓴᓇᔨᒪᔨᑦ ᐃᑎᔭᒥᑦ ᑐᓪᓕᖅᑲᖏᒥᑦ ᖃᑭᖅᑕᖅᓴᔨᐸᒥᑦ, ᓄᓇᕗᑦ. ᑕᕆᓇ ᐱᓕᓗᐊᖏᓴᖅ ᐃᓂᖅᓂᔨᐊᖅᑐᖅ ᖃᑭᖅᑕᖅᓴᔨᐊᑉ ᕿᐊᓰᒪᓐᓕᑦ, ᖃᑭᖅᑕᖅᓴᔨᐊᑉ ᓯᓴᖏᑕ ᐊᑭᕆᓇᖅᓯᓂ, ᖃᑭᖅᑕᖅᓴᔨᐊᑉ ᒥᑕᖅᓴᖏᑕ ᓂᒋᐊᓄᑦ. ᑐᕿᓗᓴᖏᒐ ᐱᓕᓗᐊᖏᓴᐅᑉ ᐱᐅᔪᒋᐊᖅᓯᔪᔪ ᐃᒪᖅᒥᐅᑕᓄᑦ ᒪᑭᐅᒪᐃᓕᕆᑎᖏᑦ ᓄᓇᓕᖅᒥ ᐱᑎᑦᑎᓗᑎᓪᓗ ᐅᑦᓚᖏᓂᖅ ᐃᑲᔪᖅᓯᐱᔪᓂᖅ ᐃᖅᑲᓕᓗᓂᓂᖅ ᐃᒪᓐᓇᐅᑕᓄᑦᓂᖅ ᐃᒪᒃᑎᑦᑕᓄᑦ ᐃᒪᖏᓕᐅᑕᓄᑦᓂᓗ ᐃᒪᓐᓇᐅᑕᓄᑦᓂᓗ ᐃᒪᖏᓕ

ᓴᐳᔨᓯᒪᓗᓂᓂ. • ᐊᖏᓂᒃ 275 ᒧᑕᕆᑦᑕ ᑕᑭᑎᓯᖅ ᐊᖏᓂᒃᑎᓂᓄᑦ ᐄᐊᒡᓕᑦᑕᓂᒃ ᐊᖏᓂᒃᑎᑎᑦᓂᓄᑦ. •ᐳᖏᑕᓂᕈᑕᑎ ᓂᐅᕆᐃᓂᓂᕐᓗᓂ ᐅᓂᔨᓴᓂᓂ. •ᑭᓇᓗᐃᑦ ᐱᓕᐅᖏᑕᖅᑐᐃᑦ.•VHF ᓇᓪᐅᑎᖏᖅᓴᐅ•ᖁᓂᐊᐅᓂᓇᓴ •ᐊᐅᓪᓪᑕᐅᓂᖅᓚ ᐊᒡᓗᒪ ᐊᑦᑕᖁᖅᑐᒥᑕᐃᓪᓂᖁᓕᑦ ᑎᑎᕆᖁᓇᑎᓄᑦ •ᐅᒡᒪᖅᓂᒃᑎᑎᕆᑕᓂᖅᓴᓇᓴᐅᔪᑦ ᐃᓪᖏᖁᓂᐅᖅ ᐅᓂᓇᖅᑐᑦ ᐅᓂᖅᑐᑦᑕᐃᓂᖅ ᐅᓂᖅᑐᑦᑕᐃᓂᖅ ᐱᓂᓇᓴᐅᔪᑦ ᐊᒡᓗᒪ ᐅᓂᖅᑐᑦᑕᐃᓂᖅ ᐊᒡᓗᒪ

Activités

Emplacement	Type d'activité	Statut des terres	Historique du site	Site à valeur archéologique ou paléontologique	Proximité des collectivités les plus proches et de toute zone protégée
Port Area	Offshore Infrastructure (port, break water, dock)	Municipal	The port area is frequently used by community members for target practice. Fuel offloading facility is situated to the north of the port area, trail and berry picking area to the east, and Broughton Channel to the west.	Archaeological field assessment found no evidence of archaeological features in the port study area.	The port area is within the municipal boundaries of Qikiqtarjuaq. The main residential area of Qikiqtarjuaq is approximately 2.5 km north of the port area.
Port Area	Access Road	Municipal	The port area is frequently used by community members for target practice. Fuel offloading facility is situated to the north of the port area, trail and berry picking area to the east, and Broughton Channel to the west.	Archaeological field assessment found no evidence of archaeological features in the port study area.	The port area is within the municipal boundaries of Qikiqtarjuaq. The main residential area of Qikiqtarjuaq is approximately 2.5 km north of the port area.
Quarry Area	Quarry/Borrow pit	Municipal	The proposed location of the new quarry is a popular picnic spot for locals who access it via a trail across the road from the fuel depot.	Eight archaeological sites were identified through archaeological field assessment. The sites contain hearths or possible inukshuks associated with the community picnicking area.	The proposed quarry area is within the municipal boundary, approximately 1 km from the main residential area.
Construction Camp Area	Camp	Municipal	Undeveloped land zoned for future residential development.	Archaeological field assessment found no evidence of archaeological features.	Within municipal boundaries, approximately 750 m from main residential area.

Engagement de la collectivité et avantages pour la région

Collectivité	Nom	Organisme	Date de la prise de

			contact
Qikiqtarjuaq	Daisy Arnaquq, Mayor	Hamlet of Qikiqtarjuaq	2023-12-12
Qikiqtarjuaq	Geela Kooneeliusie, SAO	Hamlet of Qikiqtarjuaq	2023-12-12
Qikiqtarjuaq	Geela Qiyuqtaq	HTO	2023-12-12
Qikiqtarjuaq	Jonah Audlakiak	HTO	2023-12-12
Qikiqtarjuaq	Tommy Atsanilk	HTO	2023-12-12
Qikiqtarjuaq	Lizzie Natsiapik	HTO	2023-12-12
Qikiqtarjuaq	Lucyanna Nookiguak	HTO	2023-12-12
Qikiqtarjuaq	Juilie Kuksiak	HTO	2023-12-12
Qikiqtarjuaq	Lootie Toomasie	Arctic Fisheries Alliance	2024-03-18
Qikiqtarjuaq	Dennis Nauyavik	Arctic Fisheries Alliance	2024-03-18
Pangnirtung	Chris Flanagan	Baffin Fisheries	2024-04-17

Autorisations

Indiquez les zones dans lesquelles le projet est situé:

Autorisations

Organisme de régulation	Description des autorisations	État actuel	Date de l'émission/de la demande	Date d'échéance
Pêches et Océans Canada	Fisheries Act Authorization	Not Yet Applied		
Transports Canada	Canadian Navigable Waters Act Approval	Not Yet Applied		
Office des eaux du Nunavut	Water Licence	Not Yet Applied		
Hamlets and Municipalities	Quarry Permit	Not Yet Applied		
Hamlets and Municipalities	Land Use Permit	Not Yet Applied		
Hamlets and Municipalities	Development Permit	Not Yet Applied		

Project transportation types

Transportation Type	Utilisation proposée	Length of Use
Air	Personnel required to construct the port will travel to Qikiqtarjuaq by air.	
Water	Equipment and materials to construct the port will be brought to Qikiqtarjuaq by ship/barge	

Project accomodation types

Temporary Camp

Utilisation de matériel

Équipement à utiliser (y compris les perceuses, les pompes, les aéronefs, les véhicules, etc.)

Type d'équipement	Quantité	Taille – Dimensions	Utilisation proposée
Drilling rig	2	5.5 x 2.3	Quarrying
Excavator	5	30 - 60 ton	Quarrying, material handling, excavating
Rock truck	5	11.1 x 4.2	Transporting quarried rock
Transport truck	2	40 tons	Transporting equipment and materials
Front end loader	3	7.5 x 2.5	Material loading and handling
Compactor	1	20 ton	Work surface and road compaction
Bulldozer	1	3.2 x 2.7	Work surface and road levelling
Grader	1	140 ton	Work surface and road grading
Spud barge/ derrick	1	20m x 50m deck with 150 ton crane	Dredging, transporting material and equipment
Material scow	2	500 cubic metre	Dredging and disposal of dredged material
Tug	1	1000 - 1500 horsepower	Transport and movement of marine equipment
Work boat	2	50 - 500 horsepower	Transport and movement of marine equipment and personnel
Pick-up truck	3	3/4 ton	Transport and movement of equipment and personnel
Fuel/service truck	1	10 ton	Transport fuel from Government of Nunavut Petroleum Products Division dispensers to mobile equipment
Water truck	1	10 ton	Transport water from municipal water to work camp and construction site
Wastewater truck	1	10 ton	Transport wastewater from work camp and construction site to municipal wastewater treatment facility
Telehandler/ forklift	1	5 ton	Material and equipment loading, handling, and movement
Rough terrain crane	1	250 ton	Material and equipment loading, handling, and movement
Rock Crusher for quarry	1	125 ton	Portable jaw crusher, cone and screening plant

			for the manufacturing of aggregate
Supply ship (Might Servant 2)	1	29,193 gross tonnage	Transporting concrete caissons site

Décrivez l'utilisation du carburant et des marchandises dangereuses

Décrivez l'utilisation de carburant :	Type de carburant	Nombre de conteneurs	Capacité du conteneur	Quantité totale	Unités	Utilisation proposée
Diesel	fuel	0	5700	0	Cubic Meters	Mobile equipment, remote generators and heaters. Fuel will be dispensed on a daily basis from existing facilities in Qikiqtarjuaq.
Gasoline	fuel	0	140	0	Cubic Meters	Small work boats, small generators and ATVs. Fuel will be dispensed on a daily basis from existing facilities in Qikiqtarjuaq.
Propane	fuel	10	100	1000	Lbs	Camp use (heating, cooking, refrigeration)
Other	fuel	20	4	80	Cubic Meters	Acetylene for metal cutting and welding torches
Oils and lubricants	hazardous	10	225	2250	Liters	Maintenance of mobile equipment
Paint	hazardous	10	5	50	Liters	Painting wharf hardware and miscellaneous components

Consommation d'eau

Quantité quotidienne (m3)	Méthodes de récupération de l'eau proposées	Emplacement de récupération de l'eau proposé
6	Brought to camp by municipal water truck from municipal water supply.	Municipal water supply

Déchets

Gestion des déchets

Activités du projet	Type des déchets	Quantité prévue	Méthode d'élimination	Procédures de traitement supplémentaires
Camp	Déchets combustibles	2 tonnes	Municipal landfill	n/a
Camp	Eaux grises	800 cubic metres	Collected by wastewater truck and transported to municipal wastewater treatment facility	n/a
Offshore Infrastructure (port, break water, dock)	Dangereux	100 litres	Packaged, sealed, and transported south in shipping containers for disposal according to applicable regulations	n/a
Camp	Déchets non combustibles	0.5 tonnes	Municipal landfill	n/a
Offshore Infrastructure (port, break water, dock)	Other, Dredge spoils	25000 cubic metres	Infilling, reuse, and/or land disposal	Dewatering
Quarry/Borrow pit	Mort-terrain (sol organique, déchets, résidus)	0 cubic metres (negligible)	Stockpiled at quarry	n/a
Camp	Eaux usées (matières de vidange)	1500 cubic metres	Collected by wastewater truck and transported to municipal wastewater treatment facility	n/a

Répercussions environnementales :

Measurable environmental effects of the Project have been identified for the following VCs: Atmospheric Environment - Air quality, ambient noise, ambient light. Terrestrial Environment - Permafrost, soils and terrain, vegetation, wildlife and wildlife habitat. Freshwater - Surface water resources (hydrology and water quality). Marine Environment - Tidal and bathymetry, marine water and sediments, marine fish and fish habitat, marine mammals, SAR and SoCC. Socio-economic Environment - Employment and business opportunities, community infrastructure, human health and safety, community wellness and traditional land uses, archaeological and cultural historic resources. The following VCs are not expected to experience measurable or significant environmental effects and are not evaluated further: Atmospheric Environment - Climate conditions. Terrestrial Environment - Ground stability, environmentally sensitive areas, SAR and SoCC. Freshwater - Freshwater fish and fish habitat.

Additional Information

SECTION A1: Project Info

The Project consists of the construction and operation of a 75 m long closed-face marginal wharf structure with 10 m depth at low tide and 18,000 m2 of laydown space. The port has been designed to accommodate ships up to 150 m in length and 9.9 m draft, which includes a wider range of vessels than are currently able to access Qikiqtarjuaq.

SECTION A2: Allweather Road

A short (275 m) access road will be constructed as part of the project to connect the port facilities to the existing 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

Rock and gravel required to construct the new port and access road will be sourced from a new quarry. The proposed quarry is approximately 2 km by road from the port site. The road that will be used to haul material from the quarry has been recently constructed by the municipality.

SECTION D1: Facility

The Project will consist of the following components:75 m long closed-face marginal wharf structure with armour stone protection275 m access road connecting to existing municipal roadsCrane for offloading cargoWastewater receiving systemsVHF radio communications stationFreezer container facilitiesOperations and security officePower distribution

SECTION D2: Facility Construction

Construction of the project will require the following:Quarrying operations (e.g., blasting, excavation) at a new quarry in QikiqtarjuaqTemporary materials stockpile areasTemporary staging/laydown areasTemporary camp to accommodate workers. Dredging and disposal of dredged material (may be used for construction)Utility installation (e.g., poles, lighting)The road that will be used to haul material from the quarry has been recently constructed by the municipality; a short (275 m) access road will be constructed as part of the Project to connect the port facilities to the newly constructed road. Infilling and excavation will be carried out to establish the port facilities and expand the upland area for the laydown area. Some dredging may be required to construct the new wharf. Disposal locations for dredged material have not yet been selected; it may be stockpiled on land for use by the community or reused at the Project site.

SECTION D3: Facility Operation

The Project will include an operations and security office, wastewater receiving systems, power transmission lines, and an approximately 275 m long access road connecting the facility to existing municipal roads. Equipment will include a mobile crane to offload cargo, VHF radio communications station, and services to allow for freezer containers. The port, as currently designed, will not provide fuel services.The facility has a design service life of 50 years with regular inspection, maintenance, and repairs. Some components, such as the wharf structure itself, may exceed this, but utilities and mobile equipment and tools will require infrequent replacement due to regular, unavoidable wear and tear.

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

Vessels that could be accommodated include commercial, scientific, and recreational boats, and even small cruise ships, but it is unknown what types of vessels may ultimately visit the port. Vessels will dock under their own power as the port will not employ tugboats or other docking aids.

SECTION H2: Disposal At Sea

Not currently expected

SECTION I1: Municipal Development

Description de l’environnement existant : Environnement physique

Qikiqtarjuaq is located in the Baffin Island Coastal Lowlands (Ecoregion 6) of Canada’s Arctic Cordillera ecozone. More specifically, it is located on Broughton Island, which is east of the much larger Baffin Island and separated from it by the 2 to 3 km wide Broughton Channel. Baffin Island is generally referred to as the “mainland” by residents of Qikiqtarjuaq. The Project Study Area is located on Broughton Channel on the western side of Broughton Island. It is not located in or near any designated ecologically or biologically significant areas. Auyuittuq National Park is located on Baffin Island approximately 30 km southwest of the study area. 5.1Atmospheric5.1.1Air QualityNo quantitative air quality studies have been done in Qikiqtarjuaq. Air quality is expected to be generally good and similar to other Arctic communities. There are no major industrial sources of emissions in the community. Emissions come largely from diesel power generation and vehicular exhaust. 5.1.2Ambient NoiseNoise monitoring was carried out from July 4 to 11, 2024, between 8:00 AM and 7:30 PM at seven locations in Qikiqtarjuaq. Results indicated noise levels of between 31 and 72 decibels (dB) in the community. This is consistent with the results of a Strategic Environmental Assessment prepared for the Baffin Bay/Davis Strait area (Nunami Stantec 2019), which measured typical airborne noise of 20 A-weighted decibels (dBA) in wilderness areas, 50 to 70 dBA in townsites, and isolated occurrences of greater than 120 dBA (e.g., during aircraft take off). Because the entire Project Study Area is located less than 1 km from the Qikiqtarjuaq Airport, it is expected to experience occasional noise >120 dBA. 5.1.3Ambient LightAs it is located above the Arctic Circle, Qikiqtarjuaq experiences 24 hours of daylight from late May to mid-July and 24-hours of darkness for most of December. No studies of ambient light have been conducted in the study area. The community of Qikiqtarjuaq has streetlights, other lighting infrastructure, and lights on buildings which are assumed to be the only artificial lights in the surrounding area. 5.2TerrestrialMore detailed information about terrestrial baseline studies can be found in the Qikiqtarjuak Marine Infrastructure Terrestrial Baseline Report (CBCL Limited 2024). 5.2.1Soils and TerrainThe Project Study area is on the west side of Broughton Island, which lies in the Davis Strait off the northern shore of Baffin Island. The island is part of the Arctic Cordillera mountain range and is generally a plateau which rises sharply from sea level to 200 m elevation with a maximum elevation of around 400 m. The community of Qikiqtarjuaq is located on the island’s only low-lying plain. The Project Study area is located on low slopes rising from sea level to approximately 100 m elevation. Permafrost underlies much of the study area.Geotechnical investigations were completed in 2024 by Adaptive Baseline Geotechnical Limited. Soils in the area around the proposed port consist primarily of sand, which is consistent with being located in a sandy beach shoreline community as determined through ecological land classification (ELC) (see Section 5.2.2). There is no submarine permafrost beneath the proposed wharf, but permafrost exists approximately 1.6 m below the surface in upland areas within the Project footprint. (Adaptive Baseline Geotechnical Limited 2024).5.3Freshwater5.3.1Surface Water ResourcesThere are no permanent surface water features in the Project Study Area. The largest drainage feature is an ephemeral stream to the east of the proposed work camp which runs adjacent to the existing quarry. The only other drainage features are gullies and rivulets which convey ephemeral flows during snowmelt and rainfall. Freshwater pooling occurs during and after snowmelt on flatlands around the community, but the Project footprint, including temporary work camp and staging/laydown areas, is located entirely on lands that do not experience seasonal pooling. 5.4Marine5.4.1Marine Water and SedimentsCBCL conducted a marine water quality survey in September of 2024. Water samples were taken at seven offshore locations in the Project Study Area. Marine water quality parameters were consistent across all sample locations and depth profiles with the exception of dissolved oxygen, but this was determined to reflect equipment error (CBCL Limited 2025b). Marine sediment sampling was conducted concurrently with water sampling. Sediment samples were collected from 10 offshore locations in the Project Study Area. Sediment was composed primarily of sand with some silt and gravel. Arsenic levels in excess of the Canadian Council of Ministers of the Environment (CCME) Interim Sediment Quality Guideline (ISQG) were detected at two locations but were still below the applicable Possible Effects Level (PEL).

Description de l’environnement existant : Environnement biologique

5.2TerrestrialMore detailed information about terrestrial baseline studies can be found in the Qikiqtarjuak Marine Infrastructure Terrestrial Baseline Report (CBCL Limited 2024). 5.2.2VegetationThe Project is located in bioclimate subzone C as defined by the Circumpolar Arctic Vegetation Map for the North American Arctic ecozone (CAVM Team 2003). This subzone is characterized by hemi-prostrate dwarf shrubs and sedges and supports between 75 and 100 vascular plant species. More specifically, the study area is located in Circumpolar Arctic Vegetation Unit P2 (prostrate/hemi-prostrate dwarf shrub tundra), which is characterized by shrubs less than 15 cm tall, particularly Arctic Bell-heather (Cassiope tetragona).Vegetation surveys by CBCL in 2024 documented 118 species in the Project Study Area, including 57 vascular plants, 53 lichens, seven mosses, and one liverwort. No species at risk or species of conservation concern were

identified, and all of the species recorded are native to the area. The most common vascular plant species were Arctic Bell-heather, willows (Salix spp.), sedges (Carex spp.), and Bog Bilberry. The most common non-vascular groundcover taxa were rock tripes (Umbilicaria spp.), reindeer lichens (Cladonia spp.), snow lichens (Flavocetraria spp.), peatmosses (Sphagnum spp.), and haircap mosses (Polytrichum spp.).CBCL conducted an ELC survey concurrently with vegetation surveys in 2024. Five unique vegetation communities were mapped in the study area: Rocky and Sandy Beach Shoreline (RSB), Dwarf Shrub Tundra (DST), Upland Rocky Slope (URS), Upland Bedrock (UPB), and Disturbed (DIS). None of these communities are considered to be rare or significant in Nunavut. The location of the proposed port overlaps with Rocky and Sandy Beach Shoreline and Disturbed communities; the quarry will be constructed on Upland Bedrock and Upland Rocky Slope communities. The project will make use primarily of existing roads, which are surrounded by Dwarf Shrub Tundra. Traditional knowledge identified parts of the Project Study Area as important for berry picking, which likely refers to Bog Bilberry, a common edible berry in the area.5.2.3Wildlife and HabitatAs indicated above, onshore areas of the proposed port overlap with Rocky and Sandy Beach Shoreline (RSB) and Disturbed (DIS) vegetation communities, and the quarry area overlaps with Upland Bedrock (UPB) and Upland Rocky Slope (URS) communities. These communities are of limited value to wildlife except as movement areas and potential habitat for birds that nest on bare ground. Intertidal areas provide foraging opportunities for marine birds and small mammals at low tide. CBCL conducted breeding bird surveys in July and September of 2024, which consisted of area searches in terrestrial habitats and visual surveys at five marine bird observation points. A total of 16 bird species were documented with three exhibiting breeding behaviour: American Pipit (Anthus rubescens), Horned Lark (Eremophila alpestris), and Snow Bunting (Plectrophenax nivalis). The only bird with confirmed breeding evidence was Horned Lark, which likely nested within or very close to the Project Study Area. None of the bird species observed are rare or at risk in Nunavut. CBCL did not directly observe any non-avian vertebrates (e.g., mammals) in the study area during field investigations in 2024. Scat was observed belonging to Arctic Hare (Lepus arcticus) and several unidentified mammals, indicating that small mammals travel through and potentially forage in the Project Study Area. Traditional knowledge verified that lemmings, Arctic Hare, and Ermine (Mustela ermine) likely occur in the Project Study Area. A whale carcass and caribou jawbone observed in the study area in 2024 indicate that hunters use the proposed port location as a site for processing game. Community members indicated that there are no caribou on Broughton Island, but that caribou have been harvested across the channel on the mainland (i.e., Baffin Island). 5.2.4Species at Risk and Species of Conservation ConcernSpecies at risk (SAR) receiving regulatory protection are listed as Special Concern, Threatened, Endangered, or Extirpated on Schedule 1 of the federal Species at Risk Act (SARA). Species of conservation concern (SoCC) include species not listed on Schedule 1 but assessed by COSEWIC as At Risk, and species with a conservation status of S3, S2, S1, or SH in Nunavut. Table 9 lists terrestrial SAR and SoCC (including marine and migratory birds) that could potentially be found within the Project Study Area. Sources consulted included field investigations, multiple desktop resources, traditional knowledge, SARA registry documents, land use planning documents (NPC 2021, 2023), eBird, iNaturalist, and NatureServe Explorer. Field investigations and community consultation determined that the Project Study Area generally contains low value habitat for SAR and does not contain critical habitat for any of the species in Table 9. No terrestrial SAR or SoCC were observed in the study area during field investigations in 2024, and traditional knowledge gathering did not identify the presence of any SAR or SoCC.5.3Freshwater5.3.2Freshwater Fish and Fish HabitatNo freshwater fish occur in the study area due to a lack of suitable freshwater features. Anadromous fish occur in marine waters in the study area but complete freshwater phases of their life cycle elsewhere. 5.4Marine5.4.2Marine Fish and Fish HabitatThe Project study area is located in the Broughton Channel which divides Broughton Island from Baffin Island and is part of the Davis Strait. Open water season typically spans from mid-July to mid-October. Benthic habitats in the Project Study Area are composed primarily of coarse sand with some silt and gravel. CBCL conducted marine surveys in early September of 2024 to characterize and describe fish and fish habitat and document the existing marine environment in the Broughton Channel, including the intertidal zone. The intertidal zone in the Project Study Area is relatively steep sloped and composed of coarse sand in the upper zone and fine sediments with cobbles and boulders in the lower zone. Loose bands of algal wrack occur in upper and mid intertidal levels. There are no existing human structures in the intertidal zone in the Project Study Area. Subtidal benthic habitats in the Project Study Area are quite uniform and dominated by fine sediments with scattered boulders. Marine flora in the intertidal and subtidal zones is scarce due to seasonal ice scour and a lack of rocky substrates. Some community members harvest kelp and other edible seaweeds from the general area, but only small amounts of edible seaweed occur in the Project Study Area. Marine fauna in the Project Study Area includes polychaete worms and other invertebrates. A dense population of soft-shelled clams (Mya truncata) occurs offshore adjacent to the community of Qikiqtarjuaq, but they are not abundant in the Project Study Area. The only abundant zooplankton species found during surveys was Pseudocalanus minutus, a copepod considered to be a key grazer on Arctic shelves (Hopcroft 2009). Copepods are important food for pelagic fish such as Arctic Char, but they do not occur in high enough abundance for the Project Study Area to be an important foraging area. At least six marine fish species

occur in the Broughton Channel, but only three were recorded in the Project Study Area during field investigations: Arctic Staghorn Sculpin (Gymnocanthus tricuspis), Fish Doctor (Gymnelus viridis), and Shorthorn Sculpin (Myxocephalus scoparius). None of these are considered rare or at risk in Nunavut. The community noted Arctic Char, sculpin, and soft-shelled clams as important species for fishing and harvesting during IQ workshops in 2023. But the Project Study Area was not identified as an important location for these activities.5.4.3Marine MammalsParts of the Davis Strait east of Broughton Island are mapped as moderate to high sensitivity areas for Bowhead Whale, Beluga, and other toothed whales by DFO, but these species are rarely sighted in the Broughton Channel. No whales were observed in the channel during field work in 2024, but remains of a whale processed by hunters was seen just north of the proposed port location.During consultation with Elders and the HTO in 2023, seal hunting was noted as an important cultural activity in Qikiqtarjuaq and concerns were raised that construction activities could deter seals from the area. However, they also indicated that the new port would provide improved facilities and long term net benefit for hunters. Mitigation measures to reduce the effects of construction activity on seals and other marine mammals are outlined in Section 7.4.4.5.4.4Species at Risk and Species of Conservation ConcernMarine SAR and SoCC are defined the same was as terrestrial species (see Section 5.2.4). Table 10 lists marine SAR and SoCC that could potentially be found within the Project Study Area based on sources including field investigations, desktop resources, traditional knowledge, SARA registry documents, land use planning documents, iNaturalist, and NatureServe Explorer. Field investigations and community consultation determined that the Project Study Area generally contains low value habitat for maritime SAR and does not contain critical habitat for any of the species in Table 10. No SAR or SoCC were observed in the study area during field investigations in 2024, but traditional knowledge gathering and background information determined that 3 SAR and 10 SoCC have potential to occur in the study area. The only SoCC confirmed to occur in the study area are Polar Bears (Ursus maritimus), which have been reported by residents in Qikiqtarjuaq and are known to occur on Baffin Island across the Broughton Channel from the study area.

Description de l’environnement existant : Environnement socio-économique

The Municipality of Qikiqtarjuaq includes all of Broughton Island and a portion of Baffin Island and the Davis Strait. The community is accessible year-round via air travel from Iqaluit and has an existing harbour on the Broughton Channel where locals launch small boats during the ice-free season. 6.1Population and LanguageAccording to Statistics Canada (2024), Qikiqtarjuaq had a population of 593 residents in 2021, most of whom were Inuit (93%). Nearly one-third of the population are children between 0 and 14, and nearly two-thirds are between the ages of 15 and 64; a very small percentage of the population is 65 or older. Over 94% of residents speak Inuktitut as their primary language but most are also fluent in English. 6.2Education and EmploymentIn 2021, less than one-quarter (23%) of residents over the age of 15 had a high school diploma or equivalent and only 12% had post-secondary education (Statistics Canada 2024). Unemployment is high in the community; in 2021, only 36% of residents over 15 claimed to be employed and only 49% were participating in the workforce. Of the working population, about one-third (30%) are employed in public administration and 20% in retail; the remaining workforce is in a mix of industries. Community engagement revealed that much of the population is involved in hunting, fishing, and other wage-based activities. The nearby Auyuittuq National Park provides income opportunities for some residents who provide wilderness guide services to tourists.6.3Housing and Community InfrastructureMost built-up areas, including all residential areas of Qikiqtarjuaq, are located about 2.5 km north of the proposed deep-water port location. In 2021, there were 193 private dwellings in the community of which 164 were permanently occupied (Statistics Canada 2024). The community has a school for Kindergarten to Grade 12, a community centre, health centre, police station, two grocery stores, and two hotels. The Qikiqtarjuaq Airport is located approximately 1 km to the southwest of the community and has year-round flights to and from Iqaluit. The Broughton Island North Warning System Radar Station is located 10 km to the east of the community near the highest point on the island. 6.4TransportationOver 15 km of regularly maintained gravel roads drivable by cars and trucks connect the community of Qikiqtarjuaq, the new port location, and the airport. Other parts of the island are accessible by ATV or snowmobile.6.5Archaeological and Cultural Historic ResourcesAn archaeological baseline study of the Project Study Area was conducted by ERM Consultants Canada Limited in 2024. Thirty-seven (37) archaeological sites were identified in the area, indicating Inuit and potentially Thule historical features. Hearths, inukshuks, and other archaeological features were identified. The footprints of the new port, access road, staging areas, and temporary work camp are all located more than 30 m away from archaeological sites. Eight sites were found in the area of the proposed quarry. These features will need to be avoided by excavation and stockpiling and protected from accidental damage during construction. 6.6Current and Traditional Land UseResidents of Qikiqtarjuaq use parts of the study area for a variety of cultural, traditional, and recreational activities (see Section 3). Residents currently launch boats from the existing harbour and travel to various locations in the Broughton

Channel, Baffin Island, or farther away to hunt, fish, collect clams and seaweed, and participate in other activities. An area just inland of the proposed port location is a popular spot for berry picking. The proposed location of the new quarry is a popular picnic spot for locals who access it via a trail across the road from the fuel depot. This location and the access trail will be closed during construction to ensure public safety. Community access will be restored after construction, but the area will look much different due to excavation of the quarry. Municipal council members are aware that the proposed quarry overlaps with this location.

Miscellaneous Project Information

The overall effects of the Project are expected to be positive and long-term, especially because of the significant benefits to community infrastructure and employment opportunities in Qikiqtarjuaq. Nonetheless, there may be residual negative effects on some aspects of the bio-physical environment as described below.8.1.1AtmosphericAlthough increases in ambient light will be mitigated to an extent, navigation lights and lighting around the port and access road will result in a net increase in ambient light during operation of the port. The potential effects of the predicted increase in ambient light on wildlife are expected to be negligible and there will be a significant positive effect on safety and security for the community.8.1.2TerrestrialThere will be a permanent loss of approximately 6,000 m2 of upland habitat within the footprint of the new port and access road. The quarry will result in a loss of some rocky upland habitat, but physiographic conditions in the quarry are expected to be generally similar to existing rocky upland habitat despite the change in local topography. The areas to be removed are not significant foraging, breeding, or movement areas for any wildlife, and no SAR or SoCC will be affected. The overall effect of the Project on the terrestrial environment of Broughton Island is expected to be negligible and there will be significant socio-economic benefits from the new deep-water port.8.1.3MarineThere will be a permanent loss of or change in approximately 28,000 m2 of marine habitat within the footprint of the new port. The areas to be removed are not identified as significant marine fish habitat, so the overall effect on marine life is expected to be negligible. The potential changes to marine habitat as a result of dredging are expected to be negligible within the context of the Broughton Channel as a whole. Installation of armour stone protection around the new port may increase the area of rocky marine habitat. 8.1.4Socio-economicThe effects of the Project on marine mammals in the Broughton Channel, which are hunted by local Inuit, was identified as a concern by Elders during consultation. While construction activities could disturb marine mammals if not mitigated (see Section 7.4.4), port operation is not expected to affect them, so no negative residual effects to traditional land use are anticipated. The new port will provide better facilities for local Inuit to harvest and process marine mammals, resulting in a net positive residual effect overall. Overall, the new deep-water port is expected to have significant positive residual effects on employment and business opportunities, community infrastructure, human health and safety, and traditional land use.

Identification des répercussions et mesures d’atténuation proposées

Project screening by NIRB is conducted to identify potential effects of the Project – including construction and operation – on elements of the biophysical, socioeconomic, and cultural environments. This section describes potential environmental effects and discusses mitigation measures that could be implemented to avoid or minimize effects. Table 11 summarizes the potential interactions between the Project and environmental Valued Components (VCs). Interactions may be positive or negative or, in some cases, both positive and negative. Negative interactions may be mitigable—resulting in no residual effects—but some are non-mitigable and are expected to result in unavoidable residual effects Measurable environmental effects of the Project have been identified for the following VCs:4Atmospheric Environment: Air quality, ambient noise, ambient light.4Terrestrial Environment: Permafrost, soils and terrain, vegetation, wildlife and wildlife habitat.4Freshwater: Surface water resources (hydrology and water quality).4Marine Environment: Tidal and bathymetry, marine water and sediments, marine fish and fish habitat, marine mammals, SAR and SoCC.4Socio-economic Environment: Employment and business opportunities, community infrastructure, human health and safety, community wellness and traditional land uses, archaeological and cultural historic resources.The following VCs are not expected to experience measurable or significant environmental effects and are not evaluated further:4Atmospheric Environment: Climate conditions.4Terrestrial Environment: Ground stability, environmentally sensitive areas, SAR and SoCC.4Freshwater: Freshwater fish and fish habitat.Mitigation measures have been recommended for the potential effects identified in Table 11. These include changes to project configuration, engineering, and construction approaches, as well as other specific measures. Mitigation measures will be included in a Construction Environmental Management Plan (CEMP) detailing environmental protection requirements during construction. The CEMP details the environmental protection requirements and mitigation measures that will be adhered to on the Project site

and provides a framework for the development and implementation of safe and environmentally responsible practices to reduce environmental effects of the Project. The CEMP provides an overall strategy and guidance for compliance and relevant environmental legislation and policies, as well as compliance with terms and conditions of permits and approval obtained. Construction personnel will be trained in the requirements of the CEMP and advised of the regulatory requirements and conditions for the Project construction. Mitigation measures are outlined in the following sections; however, further detail will be provided in the CEMP.

Répercussions cumulatives

The only other development project currently proposed in Qikiqtarjuaq is a new hospital, which is in the planning phase with an anticipated opening date of 2030, the same year as the new deep-water port. The Municipality of Qikiqtarjuaq is also considering upgrading the existing potable water supply to meet future demand. The coincident openings of these facilities will cumulatively be of significant socioeconomic benefit to the community. Cumulative effects on the biophysical environment are difficult to quantify, but as the new hospital will be located in the built-up part of the community it is not expected to result in a significant loss of terrestrial habitats or have residual effects on ambient light or other VCs. The upgraded water supply facility has not yet been designed, but is expected to be in the same or similar location as the existing facility. Past projects evaluated by the NIRB in the area are all scientific research projects involving no new construction. Between 2017 and 2014, the NIRB conducted a Strategic Environmental Impact Assessment of Baffin Bay and the Davis Straight to facilitate oil and gas exploration in the region, but no exploration projects are currently proposed in the area around Qikiqtarjuaq (Nunami Stantec 2019). A recent past activity was the construction of the new Qikiqtarjuaq Research Centre which is located in the built-up part of the community. The Project is expected to have overall net positive, long-term effects for the community of Qikiqtarjuaq, and may facilitate future projects of net benefit by expanding commercial access to the community.

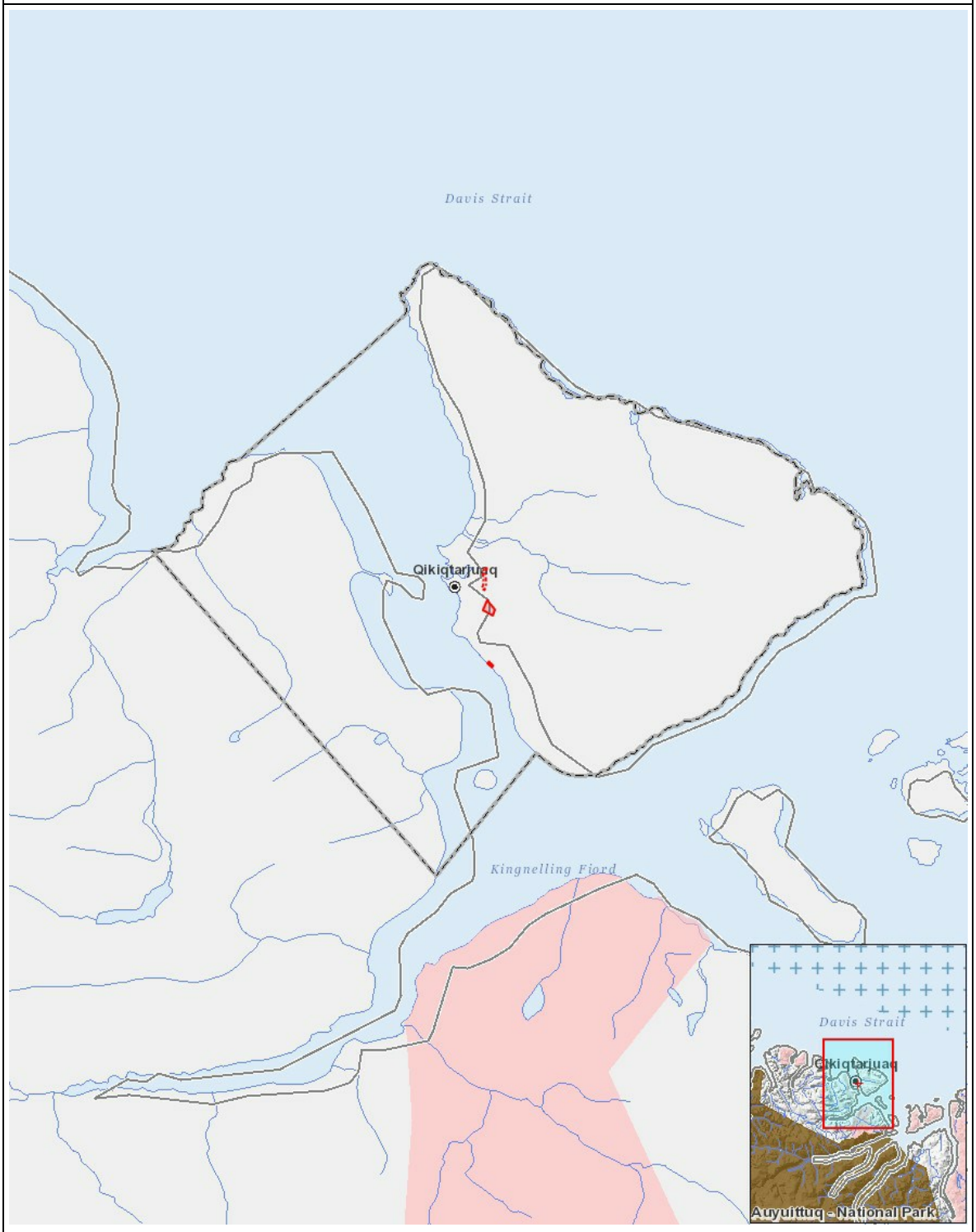
Impacts

Identification des répercussions environnementales

	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
Construction																									
Camp		-	-	-	-	-	-	-	-	M	-	M	M		N	M	-	-	-		-	P	-	P	M
Quarry/Borrow pit		-	M	M	-	M	-	-	N	M	-	M	M		N	M	M	-	-		M	P	-	-	M
Access Road		-	-	-	-	-	-	-	-	-	-	M	M		-	M	-	-	-		M	P	-	P	M
Offshore Infrastructure (port, break water, dock)		-	M	M	-	M	-	-	-	M	N	M	M		N	M	M	M	-		-	P	M	P	M
Exploitation																									
Access Road		-	-	-	-	-	-	-	-	-	-	M	-		-	M	-	-	-		-	-	-	-	M
Offshore Infrastructure (port, break water, dock)		-	-	-	-	-	-	-	-	-	-	M	M		-	M	-	M	-		-	P	P	-	M
Désaffectation																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Négative et non gérable, M = Négative et gérable, U = Inconnue)

Site du projet



Liste des géométries de projet

1	polygon	Port Area
2	polygon	Quarry Area
3	polyline	Construction Camp Area