

▷ᵇᶜ▷ᵀᶜ: 8679797579, ᵀᵇᶜᵀᶜ:

Qulliq Energy Corporation (QEC) is a Government of Nunavut territorial corporation. Through the operation of 25 stand-alone diesel power plants, QEC is the sole provider of electricity to approximately 15,000 customers in the territory. Qulliq Energy Corporation is proposing to construct and operate a new power plant in the Hamlet of Chesterfield Inlet. This will replace the existing power plant, which was constructed in 1975 and which has exceeded its design life. As the facility continues to age and become more outdated, it has become more difficult to maintain, and thus reliability is declining. Without reliable equipment, QEC's customers are at risk of system failure. This proposed multi-year project will include a new four-engine power generation facility with installed capacity of 1,270 kilowatts. It is designed for a lifespan exceeding 40 years, and it will incorporate new technology to improve reliability, efficiency, and safety. Construction will include a fuel-storage system consisting of two 90,000 litre horizontal fuel tanks, and fuel-pumping facilities. QEC also plans to construct a Quonset garage, as well as storage facilities for transformers, utility poles, oil, and glycol. Space will be allocated for transient staff accommodations, sea cans for storage, and a back-up emergency generator. Upgrades to the existing distribution system will also be required to connect to the new power plant. An approximately 250-metre fuel pipeline will be constructed to connect to the Petroleum Products Division (PPD) bulk fuel facility located to the southwest. The pipeline will be a combination of aboveground and underground construction. The new plant will be capable of integrating renewable energy sources. The proposed new lot is approximately 6,200 square metres located on unsurveyed, untitled municipal land off of Crescent 1A, and is located 250 metres northeast of the PPD bulk fuel facility. The area proposed for the power plant has been designated by the Hamlet for industrial land use. A QEC land application was approved by the Hamlet of Chesterfield Inlet on September 3, 2020. The Nunavut Water Board has confirmed that our plant will not affect any water bodies. There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit-owned lands in conflict with the power plant location. An archaeological impact assessment was carried out in July 2021, and 30-metre buffer zones were established. Construction fencing will be used to ensure that heavy machinery does not enter the buffer zone. The anticipated project schedule is shown below.

Task	Time
Choosing the site and doing the studies	March 2021 to March 2022 (already done)
Detailed Engineering Design	April 2023 to March 2024
We hire a Contractor	April 2024 to March 2025
Contractor builds the new plant	April 2025 to December 2026 (seasonal)
Testing the new plant	January 2027 to March 2027
Plant Handover to QEC Staff	March/April 2027
Operations (power production)	2027 to 2067 and beyond

On average, 21 workers are estimated to be required on-site for the duration of construction. This will vary based on the construction phase. The contractor awarded the construction tender will determine the required labour force to meet project requirements. Contractors will be obligated to meet mandatory Inuit labour levels for all construction work. QEC has staff in Chesterfield Inlet who take care of the daily operation of the existing power plant. This includes a full-time Plant Superintendent and two part-time Assistant Operators. Existing staff will transition over to the new power plant once it has been constructed and commissioned. No new staffing is anticipated to be required as a result of this project. The majority of construction materials for the project will be delivered by annual sealift. Some materials may be sourced locally or delivered via cargo plane depending on size and quantity. The contractor will be responsible for sourcing construction equipment. This may include subcontracting locally available equipment or bringing equipment to the community through the annual sealift. This project is anticipated to provide an overall benefit to the Hamlet of Chesterfield Inlet with more efficient use of diesel fuel and the reduction of greenhouse-gas emissions. It will also enable QEC to improve power generation infrastructure in the community, support future growth, and achieve its mandate for the provision of safe, reliable electrical power to the communities that it serves. (Note: This

power plant will run for more than 40 years. However, the software that runs this NIRB website is unable to accept dates past calendar year 2049. The actual plant lifetime will extend beyond the year 2067.)

La Société d'énergie Qulliq (« la Société ») est une entreprise territoriale publique du gouvernement du Nunavut. Celle-ci opère 25 centrales électriques autonomes, ce qui fait d'elle l'unique fournisseur d'électricité pour quelque 15 000 clients dans le territoire. La Société soumet un projet pour la construction et l'exploitation d'une nouvelle centrale électrique dans le hameau de Chesterfield Inlet. Celle-ci viendrait remplacer l'actuelle centrale, qui est en service depuis sa construction en 1975, et dont la durée de vie est dépassée. En effet, la centrale actuelle est désuète et continue à prendre de l'âge, ce qui complique son entretien et diminue sa fiabilité. L'absence d'équipement fiable expose la clientèle de la Société à un risque de défaillance du système. Ce projet pluriannuel comporte une nouvelle installation à quadrimoteur pour la production d'énergie électrique puissance installée de 1 270 kilowatts. Il est conçu pour dépasser 40 années de vie, et incorpore de nouvelles technologies qui améliorent la fiabilité, l'efficacité et la sécurité. Il prévoit également la construction d'un système de stockage de carburant qui consiste en deux réservoirs horizontaux de 90 000 litres, et en installations de pompage. En outre, le projet comporte un garage préfabriqué en tôle ondulée et des espaces d'entreposage pour transformateurs, poteaux électriques, mazout et glycol. Un espace sera réservé pour l'hébergement du personnel de passage et l'entreposage de conteneurs maritimes et d'une génératrice de secours supplémentaire. Par ailleurs, le système actuel de distribution devra être mis à niveau avant d'être branché à la nouvelle centrale électrique. Le chantier comporte l'ajout d'un oléoduc d'environ 250 mètres reliant celle-ci à l'installation de combustible en vrac de la Division des produits pétroliers située dans le secteur sud-ouest. L'oléoduc sera en partie à ciel ouvert et en partie souterrain. Il sera possible d'intégrer des sources d'énergies renouvelables à la nouvelle centrale. Le site proposé pour ce projet couvre environ 6 200 mètres carrés et est situé sur un terrain municipal non arpenté et sans titre de propriété en retrait du Croissant 1A, à 250 mètres au nord-est de l'installation de combustible en vrac de la Division des produits pétroliers. Ce terrain a été désigné site à utilisation industrielle par le hameau. Une demande de terre faite par la Société d'énergie Qulliq a été approuvée par le hameau de Chesterfield Inlet le 3 septembre 2020. L'Office des eaux du Nunavut atteste que cette centrale n'aura de répercussion sur aucun plan d'eau. De plus, son emplacement ne menace aucune aire désignée comme réserve d'espèces sauvages, aire marine protégée, terre d'appartenance inuite, ou parc territorial ou national quels qu'ils soient. En juillet 2021, une évaluation des incidences de ce projet sur le plan archéologique a été menée, et une zone tampon de 30 mètres a été établie. Le chantier sera clôturé pour éviter le passage de la machinerie lourde dans cette zone. Le calendrier de projet proposé figure ci-dessous.

Calendrier du projet de centrale électrique de Chesterfield Inlet
Tâche
Échéancier
Sélection du site et réalisation d'études
De mars 2021 à mars 2022 (déjà fait)
Étude détaillée
D'avril 2023 à mars 2024
Choix de l'entrepreneur
D'avril 2024 à mars 2025
Construction de la nouvelle centrale électrique par l'entrepreneur
D'avril 2025 à décembre 2026 (activité saisonnière)
Mise à l'épreuve de la nouvelle centrale
De janvier 2027 à mars 2027
Livraison de la centrale au personnel de la Société d'énergie Qulliq
En mars-avril 2027
Mise en service (production d'énergie électrique)
De 2027 à 2067 et au-delà

En moyenne, le nombre d'effectifs requis sur les lieux pendant le chantier est estimé à 21 personnes. Ce nombre variera en fonction de la phase de construction. L'entrepreneur qui se verra accorder ce contrat établira le nombre d'effectifs requis en fonction des exigences du projet. Il lui incombera de répondre aux exigences en matière de main-d'œuvre inuite pour toutes les phases de la construction. La Société a du personnel à Chesterfield Inlet qui veille à l'exploitation quotidienne de la centrale existante. Cette équipe comporte une personne responsable à temps plein et deux autres postes à temps partiel pour l'exploitation. Le personnel en place migrera vers la nouvelle centrale une fois celle-ci mise en service. On ne prévoit pas que ce projet nécessitera l'embauche d'autres effectifs. La majorité des matériaux de construction pour le projet sera expédiée par transport maritime annuel. Certains matériaux pourraient toutefois être fournis par des entreprises locales ou

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Inuinnaqtun: Qulliq Alrujaqtuqtunik Ikumadjuitiit(QEC) Navamtkut Nunavutmi (GN) aviktuqhimajumi kuapaliisit. Aulapkaivaktut 25nik uqhurjuaqtuqtunik pauwaqarviinik, QEC-kut avalittut tuniuhaijiujut alrujaqtuutikhanik imaattut amigaittunut 15,000 atuqtiujut aviktuqhimajumi. Qulliq Auladjutiqhanut Kuapaliisinga uuktuqtut nappaqtirilutik aulapkailugitlu nutaamik pauwaqarviaviqhamik Hamlanganni Igluligaarjukmi. Una himautiginiaqtaa atuqtaujuup pauwaqarviup, kitu havaktauhimajuq uvani 1975mi kitu idjuhia utuqanguqtuq. Igluqpak utuqanguqpaliajuq, ajungnaqhiblunilu ihuaqhaqataariami, ihuarniralu ihuiqpaliabluni. Piqangitumik ihuaqtumik tamajanik, QECkunun akiliqtuijut qajangnautiaqtut auladjutit nutqarniranun.Una tughiqtaujuq amigaitunun-ukiunun havaaghaq ilaujuq nutaaq hitamanik-ingniqtuqtauqtuq pauwaqtuut igluqpak iliuraqtauhimajuq aktilaanganik imaa 1,270 kilowattsmik. Havaktauhimajuq auladjutaa hivutuniqauqtuq avatqulugu 40 ukiutlt, piqarniaqturlu nutaamik ihuaqhijuumirutijuq ihuarnira qajangnautaallu. Nappaktirinirmun ilaliutihimajuq urhuqjuaqarvighaa malruk 90,000 litre urhuqjuaqarviik, urhuqjuamiklu-papautiaqhuni igluqpak. QECkut upalungaiqhimaqut napaqtirilutik uuminga Quonset aghaluutiqarvingmik, tamajaqarvighallu alruyaqtuutunik, napanianik, urhuqjuamik, haffumingalu, glycolmik. Najugahait nuutiqtauhimaqut havaktinun hiniktarvigahait, umiakktu uhidjutit, parnallu ingniqqut. Ihuaqhaidjutit atuqtaujunun auladjutinun pijariaqarniaqtuq ataliqluni nutaamun pauwaqarvingmun. Naamavjaktuq 250-miitanik urhuqjuamun tughuanga havaktauniaqtuq ataliriangnai Urhuqjualiqiqiit Havagvianun urhuqjuamik tutquumaviinun hivuraata kivataanii. Turhuat qaanganiiniaqtut nunami ataanilu havaktaulutik. Nutaaq pauwaqarviqhaq pidjuttitaahun'nguyuuq pidjuttitaariami atutqiqtaaffaaqtunik auladjutihatigut. Tughiqtaujuq nutaaq najugahaa naamavjaktuq 6200 kikariktuuq metresmik najugaqauqtuq naunaijaqtauhimangitumi, atiqangituuq haamlatkut nunaa hamani Crescent 1A, najugaa 250 metres tunungani hivuraani PPDkut urhuqjuaqarviiani. Najugaa tughiqtaujuq pauwaqarvighamun tikuaqtauhimajuq haamlatkunin havagvikjuanun nuna atugahaq. QECkut nunamik uuktuutaat angiqtauhimajuq Haamlanganin Igluligaarjungmi uvani Apitilirvia 3, 2020.Nunavut Imalirinirmut Katimayiit tutqighaqhimajaat tamna pauwaqavik hulaqutilimaituuq aujaginarimun imaqarnirmun. Piqangittuuq huradjat najugaanik, imakullu munarijaujunik najugaani, aviktuqhimaup kanadamiluuniin min'nguiqhiviinun Inuit-nanminirijainunluuniin nunat ihuiguuhtuqangitut pauwaqarvigahap najugahaani. Ingilgaarnitiginirmun hulaqutait havaktauhimaqut uvani Taaqhivalirvia 2021, unalu 30-metremik kiklighait havaktauhimaqut. Havaktauhimaqut happutigahq atuqtauniaqtuq uqangijut aghaluutit itilimaitaangini kikliinun.Niriuktaujuq havaaghaq naunaitkutaa takunaqtuq ataani.Naunaitkutaa haffuma Igluligaarjuup Pauwaqarvighaanun HavaaghaqHavaktakhaqUpluqhiutaaNaunaijaqlugit najugahait ihivriuqlugilluQiqailruq 2021 hamunga Qiqailruq 2022 (iniriiqtut)Naunaijattiaqhimaqut titiraujakhimajut Idjuhighaa Qitiqqautijuuq 2023 talvunga Qiqailruq 2024Havaktitiluta KatulaaqauqtunikQitiqqautijuuq 2024 hamunga Qiqailruq 2025Katulaaktup napaqtiliqlugu nutaaq pauwaqarvigahqQitiqqautijuuq 2025 talvunga Ubluirvia 2026 (ukiumi ilangani)Uuktuutait nutaap pauwaqarviupUbluqtuhivia 2027 talvunga Qiqailruq 2027Pauwaqarviqhaq tunijauniaqtuq QECkut havaktiinnutQiqailruq/Qitiqqautijuuq 2027Auladjutit (aulaliqluni)2027 hamunga 2067 hivumutQaffiuniit, 21 havaktit tiqungniaqtaujuut ihariagijauniaqtut najugaani napaqtitirtilugit. Una aalanganiaqtuq pihimalugu napaqtitirnimun hivitunianun. Katulaangmik tunijauniaqtuq naunaitkutatigut ihumaliuqlutik pijaghat havaktut havagianganii havaaghamun pijaghat. Katulaaktut pijaghaqarniaqtut pitqujaunirmun Inuinnarnik havaktitilutik tamainun napaqtitirnimun havaaghamun. QECkut havaktiit Igluligaarjungmi kitut munaqhijut ubluni auldjutainik atuqtaujumun pauwaqarvingmik. Una ilaujuq havagaanginaqtughaq Pauwaqarvingmun Atangujaq malruklu havakaffuktuk Ikajuqtik Auladjutinun. Havaktut hadja nuutiqhun'nguyut nutaamun pauwaqarviannut iniktiqqat. Nutaanik havaktiqalimaittut haffumunga havaaghamun. Amigaingniatigut nappaktirinirmun tamajait Havaaqhamut agjaqtauniaqtut umiakktut. Ilangit tamajait niuviktauniaqtun nunanganit agjaqtaulutikluunniit

tingmitikkut naunairutilugit aktilaangit kaffiutilangillu. Kantraaktitaujuq munarijaqarniaqtuq atuqtitilutik nappaqtirutikhanik ingilrutinik. Una ilauniaqtuq aalamik katulaaqaqtumik nunamingnik piinarialingmik tamajanik agidjijughamikluuniin nunallaamun umiakkut. Una havaaghaq niriuktaujuq tunihiluni tamainun ikajuutinik Haamlanganun Igluligaarjuk ihuatqiamik atungniranun urhuqjuanik mighijuumiqrutijuqlu pujuqmik tingivralaaqtumik. Pipkainiaqtut QECkunun ihuaqhijuumirnirmun auladjutinun igluqpak nunallaami, ikajuqlutiklu hivnuniptingni angiklijuuminirmik, pilugulu pitqujaujuq iluani qajangnaitkutit, ihuaqtut alrujaqtuutit nunallaamun kivgaqtuqtamingnun.

Personnel

Personnel on site: 30

Days on site: 200

Total Person days: 6000

Operations Phase: from 2025-04-04 to 2026-12-12

Operations Phase: from 2027-01-01 to 2049-12-12

Post-Closure Phase: from to

$$\Lambda \subset \mathbb{N} \triangleleft \mathbb{N} \xrightarrow{\sigma} \mathbb{N} \xrightarrow{\sigma^b} \mathbb{N}^c$$

E					
New project geometry	Equipment installation	Commissioners	Undeveloped land, designed as industrial by the municipality	None	Over 1 kilometres
New project geometry	Fuel and chemical storage	Commissioners	The proposed lot is within the Municipalityof Chesterfield Inlet and has been designated for industrial land use.	An archaeological impact assessment was carried out in Summer 2021 to determine if archaeological sites are in potentialconflict with the project and identifyany necessary avoidance or mitigation measures. The new power plant site has been laid out and planned so that it does not intrude on the buffer zones around the nearest grave sites. We have attached a copy of the Archaeological Study for the Chesterfield Inlet site as reference. The Archaeologist is Patrick Young.	Within the Municipality of Chesterfield Inlet, east of the community, and outside of the core community area. There are no designated wildlife areas, marine protected areas, territorial or national parks, or Inuit Owned Lands in conflict with the proposed power plant location. Regarding a nearby drainage ditch/creek that is roughly to the south of the proposed power plant property, we have already discussed this with the Nunavut Water Board (NWB). We are not taking any water from this

					ditch/c
New project geometry	Other	Municipal	The Municipality of Chesterfield Inlet has already designated this area as being for industrial land use.	An archaeological impact assessment was carried out in Summer 2021 to determine if archaeological sites are in potential conflict with the project and identify any necessary avoidance or mitigation measures. The new power plant site has been laid out and planned so that it does not intrude on the buffer zones around the nearest grave sites. We have attached a copy of the Archaeological Study for the Chesterfield Inlet site as reference. The Archaeologist is Patrick Young.	Regarding a nearby drainage ditch/creek that is roughly to the south of the proposed power plant property, we have already discussed this with the Nunavut Water Board (NWB). We are not taking any water from this ditch/creek, nor are we discharging any waste to it. And, we are not building any in-stream works in it either. Therefore, we do not need to apply for authorizations for our power-plant construction or operations.

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ᓄᓇᓕᓯᓪᓐ	Hamlet of Chesterfield Inlet, Douglas Aggark (letter of approval)	Qulliq Energy Corporation	2020-09-03
ᓄᓇᓕᓯᓪᓐ	Public Presentation to Hamlet Council, August 17, 2020	Hamlet of Chesterfield Inlet	2020-08-17

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ᐱᕐᑲᕐᓴᕐᓴᕐᓴᕐᓴᕐ	NavCanada Aeronautical Assessment	Active		
ᐱᕐᑲᕐᓴᕐᓴᕐᓴᕐᓴᕐ	Nunavut Airports Aeronautical Assessment	Active		
Government of Nunavut, Community Government & Services	Lease agreement for new lot for our new power plant	Active		
Hamlets and Municipalities	Land Application and Lease Agreement	Active		
ᐱᕐᑲᕐᓴᕐᓴᕐᓴᕐᓴᕐ ᐱᕐᑲᕐᓴᕐᓴᕐᓴᕐᓴᕐ	Water for hydrostatic test (type B) for new fuel tanks, after installation has been done. This would be applied for by the Contractor, in time for the tanks to be installed.	Not Yet Applied		

Project transportation types

Transportation Type	Transportation Description	Length of Use
Water	Sealift of materials for building new power plant	
Land	Trucks from sealift area to the power plant site	

Project accomodation types

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Construction equipment	10	5 metres	Standard construction equipment pieces including backhoes, excavations, loaders, forklifts, boom cranes, graders, tele-handlers, welders, concrete mixers, dump trucks, bulldozers.
Diesel generators for power generation	5	8 metres	Power generation plant (once constructed). Includes four main generators and one backup generator.
Other pieces of of construction equipment	10	20	Construction equipment including portable cranes, portable gensets, air compressors, excavation machines, compactors, articulated trucks, and other common pieces of construction equipment, as are found at all types of construction sites. Sizes will vary with the equipment. Equipment details to be determined by Contractor
Building components	100	20	Building materials including steel beams, concrete, steel roofing, steel siding, and all the other components that comprise a typical building that will house generators and electrical switchgear and associated pieces of equipment
Electrical wiring switchgear, transformers, and wiring	50	10	Electrical wiring and switchgear cabinets, to enable power to be routed to its destination, and also to be stepped up to local power-grid voltages. (Transformers enable us to swap

			current for voltage. Higher voltage means less line losses, since resistive losses in lines increase with the square of the current.)
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Diesel	fuel	2	90	180	Cubic Meters	Diesel fuel for construction purposes, will be kept in double-walled portable tank. This is for the construction of the power plant itself. The completed power plant will have two large 90-cubic-metre fuel tanks, double-walled and with continuous electronic monitoring. There will also be small day tanks inside the power plant.
Diesel	fuel	2	4	8	Cubic Meters	Day tanks inside the power plant (Note: 1 cubic metre = 1000 litres)
Diesel	fuel	3	2	6	Cubic Meters	Temporary portable double-walled fuel tanks for construction machinery, as will be provided by Contractor during the

						construction phase of the project
Varsol solvent	hazardous	4	205	820	Liters	Used in cleaning machinery during generator maintenance. Varsol is a petroleum distillate and thus is fundamentally very similar to diesel fuel.
Engine oil for diesel engines	hazardous	16	205	3280	Liters	Crankcase oil for diesel engines, for regular oil changes. We use high-quality 15W40 engine oil. Used oil is saved and placed into drums for shipping-out via sealift to a re-refiner, where it gets recycled.
Propylene Glycol	hazardous	2	1	2	Cubic Meters	Glycol is mixed with water in a 50-50 ratio, for use as engine coolant and thus for heat transfer. Propylene glycol is non-toxic and is in fact used in cosmetics.

ΔL^{9b} ΔD^{9b} CD^{9b} ΔL^{9b} ΔD^{9b}

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0	Because this plant uses radiators for cooling, the only use of water is for domestic use of employees on site. Estimated at 0.1 cubic	Tanked municipal water supply, with tanked sewage (honey truck, standard in communities throughout Nunavut).

metres per day. No water license required.	
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$\triangleleft^b C d^c$
$$\Delta^b C d_c n_\sigma \Delta^a \sigma^a$$

ᐱᓕᓕᑦᑲᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐱᓕᓕᑦᑲᓄᓂᑦ ᐸᓄᓂᑦ	ᖃᓄᐸᑦᑲ ᐸᓄᓂᑦ	ᖃᓄᐸᑦ ᐸᓄᓂᑦ ᖃᓄᐸᑦ ᐸᓄᓂᑦ	ᖃᓄᐸᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ	ᖃᓄᐸᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ
Equipment installation	ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ	100 litres per year	Waste oil from construction machinery will be drummed for disposal by the Contractor in charge of construction work.	Waste will be shipped out via sealift in drums, as per standard procedure for waste engine oil and simple machinery-related liquids.
Other	ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ	1000 litres per year	All wastes from engines (e.g. waste engine oil, waste coolant) will be drummed and stored in specially lined sea-cans. At annual intervals, the drums are shipped out (strapped to pallets) via the annual sea-lift. In this way, the waste fluids are disposed of in southern Canada.	Waste engine oil is re-refined into new-oil by a re-refiner such as Safety-Kleen in Breslau, Ontario.
Other	ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ	10 kilograms a month	These are standard non-hazardous wastes include office paper, empty cardboard boxes, and other everyday wastes.	To be disposed of at standard municipal landfill.
Equipment installation	ᐸᓄᓂᑦ ᐸᓄᓂᑦ ᐸᓄᓂᑦ	5 cubic metres	All construction projects generate leftover materials and other wastes (e.g. end cuts and other	We reuse and recycle as much as possible. Extra materials are also kept at the plant for future repairs (e.g. spare paint, extra sheets of siding, etc.).

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 11: Municipal Development

[illegible]

•The area proposed for the power plant has been designated by the Hamlet as industrial land use and was the location previously identified by the Hamlet for the power plant. This implies that the Hamlet is interested in or is willing to consider some form of development in this area. •Surrounding development in this area is industrial in nature (e.g., PPD bulk fuel facility). •Given that the proposed power plant will be on an existing road and in close proximity to the PPD bulk fuel facility, community members or wildlife using this area will already be accustomed to traffic activity in the area. •The location selected for the power plant is generally flat terrain and is geologically amenable to construction. •Regarding a small creek that is located about 50 metres from our site, we have received confirmation from the Nunavut Water Board that no special procedures are required, given that our plant does not entail any water-takings, nor in-stream works, nor any discharge of waste to these small water features. We note that our use of diesel generators uses radiators to air for cooling. Our domestic water usage the plant will entail a freshwater tank along with a sewage tank, both serviced via truck. Construction activities will also entail tanked water, with portable toilets for employees. The contractor will also be required to ensure that surface disturbance (e.g. disrupted soils) are not able to run off the site. For this purpose, standard silt fences are anticipated to be used. •There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location.

$\dot{L}^{\infty}_t \nabla \rho \cap L^{\infty}_t \nabla^2 \rho \subset L^{\infty}_t \nabla^2 \sigma$; $\dot{L}^{\infty}_t \nabla^2 C^{\infty} \sigma$

• There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location. The land is designated industrial and does not constitute special-value habitat for birds or other wildlife. That being said, it is acknowledged that terrestrial and marine wildlife may be observed in the general surrounding area, especially by observers equipped with tripod-mounted spotting scopes, high-powered telephoto lenses, and high-resolution digital single-lens-reflex cameras, or with other sophisticated optical imaging devices.

L^a d'el ND^c b'm Δ^c c n d σ^bl; Δ m c n σ^ji^b l^c-Λ e^c c d l c n σ^ji^b l^c

•The proposed power plant will be located about 1 kilometre from the centre of the hamlet, and it will also be downwind of the hamlet. This alleviates concerns regarding noise and emissions. Also, the design of the plant incorporates the latest emissions-control technology (dry oxidation catalysts) with modern diesel technology that minimizes fuel consumption and minimizes emissions. The exhaust systems will include mufflers (also known as silencers) that are of “hospital-grade” for the greatest possible attenuation of sound throughout the frequency range typical of reciprocating internal

combustion engines of the compression-ignition type. • An archaeological impact assessment was carried out in the summer of 2021 in order to determine if archaeological sites are in potential conflict with the project and identify any necessary avoidance or mitigation measures. Several graves were found near (but not on) the proposed power-plant site. We have planned the property boundaries of the proposed Chesterfield Inlet power plant in order to satisfy the 30-metre buffer zone requirement (i.e. 30 metres from the property boundary). To ensure that construction equipment remains well away from the grave sites, well-marked physical barriers will be erected and flagged, and the construction crew will be notified and all equipment operators will be briefed on these aspects. • In the event that latent cultural or archaeological artifacts are encountered during the construction at the site, construction activity will stop and the Government of Nunavut Department of Culture and Heritage will be contacted. • During the construction work (estimated to take place over two summers), the contractors will be required to maintain equipment in good working order to reduce noise generation, and to avoid spills of fluids. • Construction will occur during typical working hours (e.g., 10 to 12-hour shift). • Dust suppression (e.g., water) will be used on-site during construction as required. • Other development in the surrounding area is industrial in nature. With this in mind, it is likely that community members nearby are already accustomed to some level of dust and noise emanating from this general area, due to the combination of the existing gravel roads and the general industrial and other activities that take place here. • Contractors will be required to have a spill response plan as well as spill response equipment and materials available in the event of a leak or spill. • In the event of a spill or leak, contaminated soil will be collected for disposal at an approved facility. • Contractors will be required to have a fuel management plan in place that includes refueling procedures and proper bulk storage if applicable.

•The old power plant will be decommissioned within one year of the commissioning of the new power plant at Chesterfield Inlet. Decommissioning of the old power plant is a separate project. •The new site at Chesterfield Inlet is an open lot and is readily viewable in Google Maps. •For emergencies pertaining to spills of fuels and other liquids, QEC has site-specific spill response plans for each of our 25 power plants, as well as a common spill plan that lays out detailed cleanup measures. We will be preparing such a plan for the Chesterfield Inlet new power plant when construction of the new plant has been completed. •During the construction work, the construction firm will follow its own environmental management plan. This will include features such as double-walled fuel tanks for storing equipment for construction equipment, as well as having spill-clean-up equipment readily available. •All of QEC's power plants in this size range have dual-walled fuel tanks that have leak-detection monitoring via interstitial vacuums. Additional electronic leak-detection systems are present throughout the fuel system, thereby providing coverage of the tanks outside the building as well as the day tanks inside the building. These systems also interface electronically with the engines, which themselves keeping a running log of the fuel that they have consumed. Therefore, our operators are kept up-to-date on the remaining fuel levels in the tanks, as a function of fuel fillings and daily consumption. •Filling of the tanks can be done via tanker truck or by pipeline direct from the PPD tank farm. Various spill-containment and monitoring devices are present throughout the entire process. •Waste fluids are stored in drums that will be kept in sea-cans with their own built-in containment linings and berms. •The entire plant will be surrounded by a chain-link fence with a gate, to provide physical security. The plant itself will also have its own electronic security, in addition to a variety of security features including sensors and cameras with remote monitoring and automatic summoning of emergency response. •This comprehensive approach to security is to ensure reliable power and to defend against intrusions via physical and non-physical means. •Staff on site includes three employees on rotating shifts.

•During the construction phase, contractors will be required to have a spill response plan as well as spill response equipment and materials available in the event of a leak or spill. •In the event of a spill or leak, contaminated soil will be collected for disposal at an approved facility •Contractors will be required to have a fuel management plan in place that includes refueling procedures and proper bulk storage if applicable. •During the operation phase, •In the event of a spill or leak, contaminated soil will be

collected for disposal at an approved facility. Contractors will be required to have a fuel management plan in place that includes refueling procedures and proper bulk storage if applicable.

Cumulative Effects

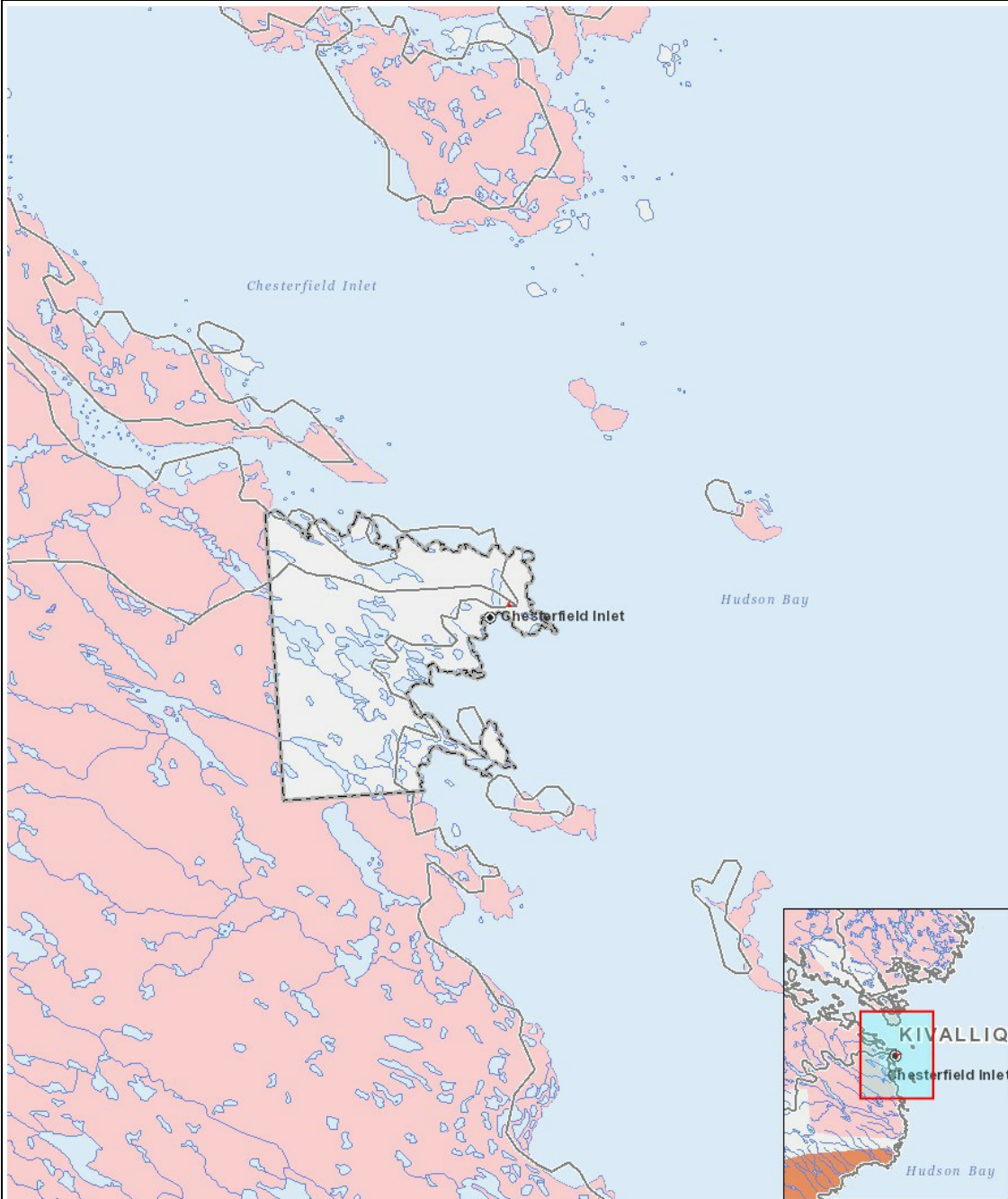
For all of the reasons described in the preceding sections, the cumulative effects of this power plant are expected to be smaller than those of the existing in-town power plant at Chesterfield Inlet.

Impacts

$\omega \rightarrow \omega \Delta^{\epsilon_b} C D \sigma^{\epsilon_b} \Gamma^C$ $\Delta \epsilon \cap \Gamma D C \dot{\sigma}^C \mathcal{D}^C$ $\Delta^b \mathcal{D}^{\epsilon_b} C D \Gamma L \mathcal{L}^C$

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																

$$(P = \langle b \rangle \Delta_P \cap \langle a \rangle^c)^c, N = \langle b \rangle \Delta_P \setminus \langle D \rangle \langle a \rangle^c \langle b \rangle^c \langle \langle D \rangle \setminus \langle P \rangle \rangle^c \langle D \rangle \langle a \rangle^c \langle P \rangle^c)^c, M = \langle b \rangle \Delta_P \setminus \langle D \rangle \langle a \rangle^c \langle b \rangle^c \langle \langle D \rangle \setminus \langle P \rangle \rangle^c \langle D \rangle \setminus \langle P \rangle \rangle^c \langle D \rangle \langle a \rangle^c \langle b \rangle^c)^c, U = \langle b \rangle \Delta_P \setminus \langle D \rangle \langle a \rangle^c \langle P \rangle^c \langle b \rangle)$$



List of Project Geometries

1	polyline	New project geometry
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