



New

$\Delta^L L^S d\mu_{\leq n} \lesssim \delta^b$

6/26/2024 9:49:56 PM

from 2030-01-01 to 2070-12-12

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▷ ᐃᐱᓂᑦ: Énoncé du projet Kugaaruk La Société d'énergie Quллиq (SÉQ) est une société territoriale du gouvernement du Nunavut (GN). Exploitant 25 centrales électriques autonomes alimentées au diesel, la SÉQ est le seul fournisseur d'électricité à environ 15 000 comptes clients dans le territoire. La Société d'énergie Quллиq propose de construire et d'exploiter une nouvelle centrale électrique dans le hameau de Kugaaruk, situé dans la région de Kitikmeot, au Nunavut. Kugaaruk est une communauté où la demande en électricité est à la hausse, ce qui reflète sa

Δ<sub>δ</sub><sup>b</sup>Π<sub>δ</sub><sup>c</sup>:

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Inuinnaqtun: Kugaaruk Havaakhaq Titirarhimayuq Qulliq Auladjutiqhanut Kuapuraisinga (QEC) Nunavut Kavamanut (GN) ukiuqtaqtumi kuapuraisiuyuq. Aulapkaivaktut 25nik uqhurjuaqtuqtunik pauwaqarviinik, QEC-kut avallittut tuniuqhaijiujut alrujaqtuutikhanik imaattut amigaittunut 15,000 atuqtiujut aviktuqhimajumi. Qulliq Auladjutiqhanut Kuapuraisinga uuktuqtut nappaqtirilutik aulapkaillugitlu nutaamik pauwaqarviiviqhamik Hamlangganni Kugaarjukmi ittuq Kitikmeot Avikturvianni Nunavunmi (havaaqhaq). Kugaaruk nunalaangujuq anginirmik alrujaqtuutikharnik piqaqtukhauliqtuq, tamangnun inugiarjumiligami igluqaqtuni atauhirmi atuinaqtun pauwaktuutikharnik. Hadja pihimayuq pauwaqarviia nappaktauhimayuq 1974 mi tikiutigiplunilu igluqpaup atugaqhaatigut. Tamna pauwaqtuutivik utuqanguliqtumi nuutaangujungnaiqhunilu, ajungnautivalialiqtuq ihuaqhaijaangat, puawaktuutikhaq ajungnautigivalianiaqtuq. Atuguminaitun ingilrutikhat ajuqhaqtitihimaarniaqtuq tamangnun hamlaatmun pauwaikvikhangit aularjumirniatun hivutunirmik. Una tughiqtaujuq amigaitunun-ukiunun havaaqhaq ilaujuq nutaaq hitamanik-ingniqutiqaqtuq pauwaqtuut igluqpak iliuraqtauhimajuq aktilaanganik imaa 2,500 kilowattsmik, havagiikhimaniaqtuq auladjutikharnik avatqulugu 40nik ukiunik. Aulatitinaqtuq nuutaanik alrujaqtuutikharnik ihuarjumirutikharnik

atuguminaqtunik, ajurnaitumik , auladjutikharnik uminga qayangnairutikharnik aulatitihimaqtunun havaktinik. Avatiliqijitkut qajangnairutikharnik naunairutiqarniaqtuq naunaitkutitigun malrungnik hanigaiqarluni qataqjuangit, kivugarviqagumi uqhuqjuanik avaliqidjutikharnik angijumik piqaqtukhaq, ilikkut aulajukharnik mihingnautiqagtun ququurutitlu, allanik hunavalungnik piqarniaqtuq. Ilikkut aulajukharnik qaptiliqidjutikharnik piqarniaqtuq allaniklu qaptiliqidjutikharnik qajangnairutikharnik naunairutiqarniaqtun ilauniarhutiklu. Nuutaamik pauwaqtuutivikhaq naunairutiqarniaqtuq ajungnaitumik himautikharnik ingniqutikharnik, talvuuna aulatitijaangat hivunirmi angiklijumirutikharnik ihuaqhaidjutikharniklu. Alrujaqtuutikhangit iliguarvikhangit pauwaqtuutiqarvikharnik naunajainiaqtun ajungnaitumik auladjutikharnik hivunirmi atuqtakharnik taimaitunik anurimi hiniqinirmilu pauwaktuutikharnik, tapkuninga baatulikhat tutquqtirvikharnik. Pauwaqarvikhaq piqarniaqtuq imagiktumik imarmik qatarjunik anaqtautit qatarjumik, iglumi atuqhimaqtakharnik. Nappaktirinirmun ilaliutihimajuq urhuqjuaqarvigahaa malruk 90 litre urhuqjuaqarviik, urhuqjuamiklu-papautiqaqhuni igluqpak. QEC upalungaiqhimajut napaktiriami Quonset aqhaluutiqavikhanut, transformer mik tamayaqaqviqagluni, naparialgit tutquumiviqhainnik, kingiqtaq glycolmik qattaryuarmiklu tamayaqaqviqagluni iqqakuuqviqhaqagluni tuglianilu Qatarjuangit najugakhaanik kuviliatkutikhangit. Najugahait nuutiqtahimajut havaktinun hiniktarvigahait, umiakkut uhidjutit, parnallu ingniqut. Ihuaqhaidjutit atuqtaujuunun auladjutinun pijariaqarniaqtuq ataliqluni nutaamun pauwaqarvingmun. Uqhuarnik nuutirutikharnik tuqhuanik, naamavjaktuq 30-miitanik urhuqjuamun tughuanga havaktauniaqtuq ataliriangnai Urhuqjualiqlijiit Havagvianun (PPD) urhuqjuamik tutquumaviinun najugarmi. Tuqhuqjuangit ilaliutihimaniaqtait naunaitkutingnik munagidjutiqarluni kuhiqtaqtuqaqqan. Tukhikhimajuq nuutaaq nuna najugakhaa anginiqagtut taima 6,000 kikkariktut miitanik najugalik haniani PPDkut qatarjuangit najugaini. Najugaa tughiqtaujuq pauwaqarvighamun tikuaqtauhimajuq haamlatkunin havagvikjuanun nuna atugahaq. Uuktuutaa tuniyauyuq an'ngiqtaupluni Hamalatkunnit Kugaarukmi. Qiqaijalirvia 11, 2021, pijagiikhimaliqutun titiraqharnik hamlaatkutnin. Piqangittut huradjaq najugaanik, imarmiuniku, avikturviuvimi Kanadamilu min'nguivriinnik Inuit nunagijainnikluunniit hulaqutikpat pauwaqarvikhaannik najugakhanik. Ingilraarnitarnik nalvaaqhiutiit ajungnautiqagianganik ihivriudjutikharnik aulavakhimajuq Taaqhivaliavia 2021mi, piqangitun pitquhiliqinikkut ingilraarnitangnik najugaqangitun talvani najugakhaani. Havaktiqarnikkut mikhaatigun, qaffiuniit, 22 havaktit tikuaktauniaqtun ihariagijauniaqtut najugaani napaqtitirilugit. Aadjikkiilimaittut nampait havaktiqhanik nappaktiliqata. Kaantraaktitauyuq ihumaliurniaqtuq kaffiuyaaqhainnik havaktiqarniaqtuqhanik tikiutiyaami iniktirutaa havaaqhami. Katulaaktut pijaghaqarniaqtut pitqujaunirmun Inuinnarnik havaktitilutik tamainun napaqtitirirmun havaaghanun. QECkut havaktiqagtun Kugaarukmi munagihimaqtun ubluq tamaat auladjutikharnik talvani utuqangumik pauwaqarvingmi. Ilaliutilgitlu havainnaktumik Pauwaqaqviami Atan'nguyamik, malruungnik havakaffuktunik Ikayuqtiuyunik. Havaktut hadja nuutiqhun'nguyut nutaamun pauwaqaqviannut iniktiqqat. Nutaanik havaktiqalimaittut haffumunga havaakhamun. Amigaingniatigut nappaktirinirmun tamayait Havaaqhamut agyaqtauniaqtut umiakkut. Ilangit tamajait niuviktauniaqtun nunanganit agjaqtaulutikluunniit tingmitikkut naunairutilugit aktilaangit kaffiutilangillu. Kantraaktitauyuq munariyaqarniaqtuq naunaiqlugit tamayanik atuqtaqhanik nappaktiliqqat. Ilaliutiniagunnaqhiyuqlu aadlamik kaantraaktitauyuqhamik nunainnagiyauyumi in'ngilragutikkut tamayanik talvunggaqtitaulutikluunniit nunallaamun umiakkut. Una havaakhaq niriuktaujuq tunihiluni tamainun ikajuutinik Haamlanganun Kugaarukmi ihuatqiamik atungniranun urhuqjuanik mikhijuumiqrutijuqlu pujuqmik tingivralaaqtumik. Pipkainiaqtullu QEC-kunnut nakuuhivalladjutikhaanun pauwaqautikkut nunallaami, ikajuutikhanik amigaikpallianingut nunanganut, tikiutilugulu hivunikhaliuqtat qajangnaittumik, ihuaqtumik pauwakhainnik nunanganut kivgaqtuqhimaqtamingnut.

## Personnel

Personnel on site: 30

Days on site: 200

Total Person days: 6000

Operations Phase: from 2026-05-05 to 2029-11-11

Operations Phase: from 2030-01-01 to 2070-12-12

Post-Closure Phase: from to

Λ Γ Δ Ε Ζ Η Θ Ι Κ Λ Μ Ν Ξ Ο Π Ρ Σ Τ Υ Φ Χ Ψ Ω

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Kugaaruk New Plant Site	Equipment installation	Commissioners	Undeveloped land, designed as industrial by the municipality	None	Over 1 kilometre
Kugaaruk New Plant Site	Fuel and chemical storage	Commissioners	The proposed lot is within the Municipality of Kugaaruk and has been designated for industrial land use.	An archaeological impact assessment was carried out in Summer 2021 to determine if there are any archaeological sites are in potential conflict with the project. None were found. The Archaeological study was done by Golder/WSP, and it was reviewed by GN Culture and Heritage.	Within the Municipality of Kugaaruk, 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.

[illegible]

<b>ᓄᑦᕐᔪᖅ</b>	<b>ᐱᓂ</b>	<b>ᓃᑐ'ᐸᐳᕈᒋᖅ</b>	<b>ᖁᕐᓴ ᑐᙶᕈᕇᕛᕘᐲᐻᕐᓂ</b>
dŁŀ	Hamlet of Kugaaruk	Kugaaruk Hamlet Council Motion	2021-03-11
dŁŀ	Public Presentation at Kugaaruk July 29 2020	Hamlet of Kugaaruk	2020-07-29

$\mathbb{C} \Delta^{\text{a}} j^c \wedge J^{\text{a}} q \triangleright \dot{n} \triangleleft^{\text{a}} r^{\text{ab}} C \triangleright p L r^c$

### Project transportation types

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

### Project accomodation types

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<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>	<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>	<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>	<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>	<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>	<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>	<b>ᐱᕈᑦ ᓂᐸᐳᕐ</b>
Diesel	fuel	1	4000	4000	Liters	Diesel fuel for construction machinery (as listed above), during the two-year construction phase of the project. Construction will extend over two calendar years, with work proceeding during non-snow periods. The portable fuel tank, of approximate size 4,000 litres, as provided by the



						contractor, will have built-in secondary containment.
Diesel	fuel	2	90000	180000	Liters	This is the diesel fuel that will be powering the power plant's generators, once construction is complete. The fuel will be kept in two large (90,000 litres each, therefore 90 cubic metres each) double-walled steel tanks. This project will also include a pipeline from the local PPD tank farm, for fuel transfers which will occur roughly every six weeks.
Glycol coolant	hazardous	5	205	1025	Liters	Engine Coolant
Engine Lube Oil	hazardous	5	205	1025	Liters	Lubrication of Engines

**ΔL<sup>ϕb</sup> ◀<sup>ϕb</sup> C ▶<sup>i</sup> L<sup>ϕb</sup> ⋈<sup>ϕb</sup>**

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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 metres per day. No water license required.	Tank municipal water supply, with tanked sewage (honey truck, standard in communities throughout Nunavut).

$$\Delta^b C d_{\sigma} \Delta^c \sigma^c$$

<b>Aᑦᓕᓂᐱᒃᔭᐅᖁᓪᓴᑐᑦ Aᑦᓕᓂᐱᒃᔭᐅᓄᐳᑦᔨᓚ</b>	<b>ᖃᓄᐸᑩᓗ ᐰᑦᓇᑲᓛᓗ</b>	<b>ᖃᓄᓈᓯᓙ ᐰᑦᓇᑲᓛᓗ ኣᖃᓶᐳᓄᐳᑦᔨᓚᔭᐉᑦ</b>	<b>ᖃᓄᖃᓗ ᐰᑥᑦᓇᑲᓛᓄᐳᑦᔨᓚ</b>	<b>ኢᓵᑦᓴᖃᖃᐅᓈᓫᓡᖃᓄᐳᓄᐳᑦᔨᓚᓗᓬᓗ</b>
Other	ᐰᑥᑦᓇᑲᓛᓗ ᐿᓄᐳᓪᓴᓴᓴᓘᓗᖁᓪᓴᓚᖃᓗᓬᓗ	10 kilograms a month	These are standard non-hazardous wastes, including office paper, empty cardboard boxes, and other everyday wastes.	To be disposed of at standard municipal landfill.
Other	ᐰᑥᑦᓇᑲᓛᓗ ᐿᓄᐳᓪᓴᓴᓴᓘᓗᖁᓪᓴᓚᖃᓗᓬᓗ	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.
Equipment installation	ᐰᑥᑦᓇᑲᓛᓗ ᐿᓄᐳᓪᓴᓴᓴᓘᓗᖁᓪᓴᓚᖃᓗᓬᓗ	100 litres per year	Waste oil from construction machinery will be drummed and shipped out 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 other machinery-related liquids.
Equipment installation	ᐰᑥᑦᓇᑲᓛᓗ ᐿᓄᐳᓪᓴᓴᓴᓘᓗᖁᓪᓴᓚᖃᓗᓬᓗ	5 cubic metres	All construction projects generate leftover materials and other wastes (e.g. end cuts and other pieces). These wastes are harmless and can easily be disposed of in	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.).

			the municipal landfill. Any materials that can be reused or recycled will be reused or recycled to the extent possible.	
Other	ᓂᓄᓐᓕᓕᓐᓂᓐ	80 litres per day	Standard human waste (sewage) from toilet and sink, as used by staff.	Waste is stored in standard sewage tank and is pumped out at intervals by the local municipal pump-out truck. The sewage is treated in the lagoon by the municipality, as per standard procedure.

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Please refer to the Nontechnical Project Descriptions (provided in all four Nunavut official languages), as well as to the Additional Information Section. The operational impacts are described in comparison to the existing power plant. Here are a few overall points: - Noise and dust during construction will be mitigated by contractor keeping equipment in good working condition, by using water spray to control dust, and by working during normal daytime hours only. - Spill-capture equipment and double-walled fuel tanks will be in use, both during construction and operation. Our Contractor will be required to have a fuel-management plan and to be fully equipped with spill-containment equipment. Construction workers will be required to have training on spills prevention and spills management. - Our employees are extensively trained on spills prevention and spills cleanup. - Tanked water will be used at the plant, and sewage will be tanked. - Power plant will use the most modern engines for lowest emissions, and emissions controls will be included. This power plant will bring a net positive benefit to the community by ensuring less pollution than the old power plant that it replaces. Noise will also be greatly reduced, both because the engines are newer and because the plant is no longer downtown. Power supply will be more reliable as well. - QEC is designing all its new plants to accommodate future addition of renewable energy sources (e.g. wind and solar). This will further reduce the impacts of the burning of diesel fuel.

# **Additional Information**

**SECTION A1: Project Info**

**SECTION A2: Allweather Road**

**SECTION A3: Winter Road**

**SECTION B1: Project Info**

**SECTION B2: Exploration Activity**

**SECTION B3: Geosciences**

**SECTION B4: Drilling**

**SECTION B5: Stripping**

**SECTION B6: Underground Activity**

**SECTION B7: Waste Rock**

**SECTION B8: Stockpiles**

**SECTION B9: Mine Development**

**SECTION B10: Geology**

**SECTION B11: Mine**

**SECTION B12: Mill**

**SECTION C1: Pits**

**SECTION D1: Facility**

**SECTION D2: Facility Construction**

**SECTION D3: Facility Operation**

**SECTION D4: Vessel Use**

**SECTION E1: Offshore Survey**

**SECTION E2: Nearshore Survey**

**SECTION E3: Vessel Use**

## SECTION F1: Site Cleanup

## SECTION G1: Well Authorization

## SECTION G2: Onland Exploration

## SECTION G3: Offshore Exploration

## SECTION G4: Rig

## SECTION H1: Vessel Use

## SECTION H2: Disposal At Sea

## SECTION I1: Municipal Development

[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. •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.

[illegible]

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 image-stabilized telephoto lenses, and high-resolution digital single-lens-reflex cameras, or with other sophisticated optical imaging devices.

**L'e de d'end<sup>c</sup> f'mad<sup>c</sup> l'nab<sup>s</sup>: Δmruσ<sup>j</sup>l<sup>r</sup>-Λe<sup>c</sup>d<sup>r</sup>mruσ<sup>j</sup>l<sup>r</sup>**

The proposed power plant will be located about 1 kilometre from the centre of the hamlet, and it is not upwind of the hamlet. This alleviates concerns regarding noise and emissions. Also, the design of the plant incorporates the latest emissions-control technology (particulate filters with 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. No archaeological sites were found on the site nor within 200 metres of the site.
- 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. They will also be required to carry insurance in this regard.

## Miscellaneous Project Information

- The old power plant will be decommissioned within one year of the commissioning of the new power plant at Kugaaruk. Decommissioning of the old power plant is a separate project.
- The new site at Kugaaruk 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. We will be preparing such a plan for the Kugaaruk 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, during operation, includes two or three employees with regular hours.

## Environmental Impacts

- 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 Kugaaruk.

## Impacts

$\mathbb{A}^{\mathfrak{b}} \mathbb{C} \triangleright \sigma^{\mathfrak{a}} \mathfrak{r}^{\mathfrak{c}} \triangleleft \mathfrak{e} \mathfrak{n} \Gamma \triangleright \mathbb{C} \dot{\sigma}^{\mathfrak{c}} \mathbb{D}^{\mathfrak{c}} \triangleleft \mathfrak{b} \mathbb{D}^{\mathfrak{b}} \mathbb{C} \triangleright \mathfrak{l} \mathfrak{r}^{\mathfrak{c}}$

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

$$(P = \langle b \rangle_{\Delta} \cap \Gamma^a \cap \Gamma^b \cap \Gamma^c, N = \langle b \rangle_{\Delta} \cap \Gamma^a \cap \Gamma^b \cap \Gamma^c \cap \langle c \rangle_{\Delta} \cap \Gamma^a \cap \Gamma^b \cap \Gamma^c, M = \langle b \rangle_{\Delta} \cap \Gamma^a \cap \Gamma^b \cap \Gamma^c \cap \langle c \rangle_{\Delta} \cap \Gamma^a \cap \Gamma^b \cap \Gamma^c, U = \langle b \rangle_{\Delta} \cap \Gamma^a \cap \Gamma^b \cap \Gamma^c)$$

1	polygon	Kugaaruk New Plant Site
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