Bathurst Inlet Port and Road Project

PROJECT DESCRIPTION

SUBMITTED TO: KITIKMEOT INUIT ASSOCIATION
INDIAN AND NORTHERN AFFAIRS CANADA
NUNAVUT WATER BOARD

BY: BATHURST INLET PORT AND ROAD JOINT VENTURE LTD.
MAY 2003

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EXECUTIVE SUMMARY

BATHURST INLET PORT AND ROAD PROJECT DESCRIPTION

This Project Description describes the construction and operation of the proposed Bathurst Inlet Port and Road Project and the interactions of the Project with the environment.

The Project consists of a port on Bathurst Inlet connected to the mines and mineral deposits in Nunavut and Northwest Territories by a new 211 km all-weather road to Contwoyto Lake, and the existing "Tibbitt to Contwoyto" winter road.

The Project proponents are the Kitikmeot Corporation and Nuna Logistics Limited, both Inuit owned companies, who have formed a Joint Venture Corporation to build and operate the Project. As a shareholder in Nuna Logistics, the Kitikmeot Corporation will own 62.75% of the Project. Kitikmeot Corporation is wholly owned by the Kitikmeot Inuit Association, a Designated Inuit Organization as defined in the Nunavut Land Claims Agreement.

This Project Description is submitted to the Kitikmeot Inuit Association and the Department of Indian and Northern Affairs, as the landowners in the Project area, and the Nunavut Water Board for an environmental review under the Nunavut Land Claims Agreement, Article 12 Part 5.

Background
In April 2002, the Proponent submitted a Project Description for a Project with a larger scope. This larger Project included an all-weather road from the existing Lupin gold mine to the Izok base metal deposit and a summer barge and winter ice road across Contwoyto Lake, connecting the Bathurst-Contwoyto road with the proposed Lupin-Izok road. The former Project also included a larger camp and larger fuel tank farm at the Bathurst Inlet Port Site.

The Nunavut Impact Review Board (NIRB) sent the Project to the Minister of Indian and Northern Affairs, Canada (INAC) on July 8, 2002 for a decision on the review process (Part 5 or Part 6) as required by the Nunavut Land Claims Agreement (NLCA). On November 27, 2002 the Proponent notified NIRB and INAC that the Izok Project had been put on hold, due to low base metal prices. As a result the Proponent reduced the Project scope to that described in this submission. This scope change recognizes the fact that, while metal concentrates from Izok will one day become an important source of revenue for the Project, the capital expense of construction of the Lupin to Izok road should be delayed until the road and related facilities are required.

On April 10, 2003 the Minister of INAC notified NIRB that the Project should be re-submitted with a revised Project Description. On April 14, 2003 NIRB requested the Proponent to re-submit a revised Project Description by May 12, 2003.

It is believed that the Izok Project will be re-activated in the future. Indeed, the construction of a road from Bathurst to Contwoyto will likely provide the catalyst required for it to come to a positive development decision. Thus, the Project described in this Project Description should be considered the first stage of a Bathurst to Izok road link. The second stage connecting this current Project to Izok will be deemed a separate project and will be submitted for approval at a later date.

The Project has received both political and financial support from the Government of Nunavut and from the Federal Government through Indian and Northern Affairs Canada.

Project Construction

The Project requires the use of Federal Crown Lands and Inuit Owned Lands. The port is located on Crown Land and requires 159 hectares and 270,000 cubic metres of quarried materials for construction. The port site will include:

- a wharf to serve large ice class vessels delivering fuel and bulk cargo to the port;
- a dock to handle barges serving the Kitikmeot communities of Kugluktuk, Bathurst Inlet, Cambridge Bay, Umingmaktok, Gjoa Haven and Taloyoak;
- a 150 person camp and services;
- a 180 million litre diesel fuel tank farm;
- a truck and trailer maintenance shop;
- a 1,200 metre airstrip.

As a result of the delays in 2003 the port construction will be delayed by one year. Port construction is now proposed to begin in September 2005 and be completed in January 2007.

The 211 km all-weather road passes over 82 km of Inuit Owned Land and 129 km of Crown Land. Road construction materials will be obtained from quarries adjacent to the roadway; 37 quarries are proposed, 18 on Inuit Owned Land and 19 on Crown Land.

Road construction will occur in two phases; at the port it will begin in January 2006 and work toward Contwoyto Lake. At Contwoyto Lake, road construction can begin in February 2005 and work toward the port. Road construction will be complete in December 2006. A 20-person camp and a truck parking area will be located at kilometre 211 on the southeast shore of the lake (Contwoyto Camp).

This Project will require road operation during the winter only, but the road will be constructed for all-weather use based on future usage for hauling concentrates and supplies.

Project Operations

The Project's annual operating schedule will reflect the seasons of the arctic environment. Marine shipping will be completed between mid-July and late October. During that period, six to eight round trips by ice class vessels up to 25,000 tonnes will bring in approximately 180,000 tonnes of fuel and supplies for the communities and operating mines served by the Project. Icebreaker support may be required as with other arctic projects, however, this shipping schedule can be accomplished without ice breaking to extend the normal shipping season. Marine barge operations will also supply fuel and general cargo to the Kitikmeot communities with three round trips by tug and barge from the port during the summer shipping season.

Road operations will also follow the arctic seasons. The road, although designed for all-weather will operate from January to April and connect with the existing Lupin winter road from Yellowknife to haul 161,000 tonnes of fuel and supplies to Ekati and Diavik Diamond Mines in the N.W.T. and Lupin and Jericho in Nunavut. Accommodation and meals for drivers will be provided by the camp at the port. No hauling will occur during the period from the end of April to late December. There will be some road maintenance work from mid-July to early September. This work is essential to carry out maintenance on the roadbed and stream crossings. Sand and gravel required for winter operations will be stockpiled during this summer maintenance period.

Project Interactions with the Environment

Project construction will require disturbance to approximately 512 hectares of terrestrial habitat, and 2.3 hectares of marine habitat at the port. The road alignment crosses111 streams, many of which are intermittent; 21 crossings are bridges that will not affect the normal stream channel; 88 crossings are arched culverts or rock fill fords. Support for the bridges will encroach into the stream channel at only two crossings. The effect of road construction on fish habitat will be negligible. On the land, animals will always have the right of way over traffic on the road. The most common animal in the Project area is caribou of the Bathurst caribou herd. During spring migration almost all of the animals in the herd could move through the Project area. The road will not operate between May and December so there will not be any interaction between traffic on the road and caribou during spring migration. The number of caribou along the road will be much less during the winter hauling seasons. There will be little or no interaction between caribou and road maintenance equipment from mid-July to early September. Hunting by Project workers along the road or at the port will not be permitted. Recreational fishing by workers will be guided by the recommendations in the West Kitikmeot Land Use Plan.

The Project will be built and will operate in a safe and environmentally sound manner. The Project will also develop effective plans to protect the environment and animals from the effects of accidents that might occur at the port and along the road.

Project Financing

The estimated capital construction cost of the Project is $164 million. The Project will be financed and developed as a Public Private Partnership (P3), where the cost and risks of the Project can be shared between the public and private sectors.

The Project is technically practical, economically sustainable and bankable under a P3 arrangement.

Economic Effects of the Project in the Kitikmeot Region

Project construction will occur over a 16-month period and create 2,800 man-months of employment and a payroll of $26.8 million. Project operations will create 31 seasonal jobs every year and produce a payroll of approximately $1.5 million. The services of contracted truck drivers will add an additional payroll of $9 million per year. Much of the new employment opportunities can go to the workforce resident in the Kitikmeot Region which currently has an unemployment rate of more than 25%; with aggressive training for the employment needs of the Project, most of the payroll money would stay in the region.

At current world fuel prices the cost of fuel landed in Cambridge Bay from the port in Bathurst Inlet could be reduced by at least 30% of the 2003 price of fuel from Hay River. The cost of freight from the south by truck to the port on winter road and barge to Cambridge Bay would be competitive with freight costs via Hay River and the goods would arrive in the community four to six weeks earlier; early in the construction season rather than at the end of summer. The freight cost of the same goods shipped to Cambridge Bay from eastern Canada via the port would be at least 30% cheaper than via Hay River. It is estimated that overall savings on fuel alone could be more than $3 million per year in the Kitikmeot region.

These savings show the potential for the Project to reduce the cost of fuel and supplies for any commercial venture in the Kitikmeot communities, especially a mine in the Project area. It is expected that the Project will reduce the cost of living in the region and stimulate new mineral exploration and production in the Kitikmeot Region of Nunavut and so create many new employment and business opportunities for the residents and businesses of the region.

In addition, economic studies have shown that any project in northern Canada has considerable spin-off effects in the south, in terms of indirect jobs and supply of materials.

ATANIIT NAITOLIOGAIT

KENGAOKMI UMIAKAKVIKHAK OVALO APKOTIKHAT OYAGAKHIOKVIKNOT

Hamna Oyagakhiokvikhap Onipkanga okaohikaktok nappaktiginiakhotik ovalo hananiaktot aolanialiktomik Kengaokmi Umiakakvikhak ovalo Apkotikhak Oyagakhjiokviknot tigvaoyukhanot ovalo oyagakhiokvik nunamot kanogilitjutiniaktok.

Hamna Hanayaoyukhak pikaktok umianot tolaktakvikha Kilohiktomi ova tahamangga apkohioklotik tigvanot oyagakhiokvikmot Nunavutmi ovalo Nunatiamot apkotiniklotik 211 km aoyak-okiok apkot atoktokhak Tahikyoamot, ovalo taya atoktot ovani "Tibbitt-mit Tahikyoamot" okiomi apkotikhak.

Hamna Havakhak oyagakhioktit apkohiogomayat havakniaktat Kitikmeot Corporatiohn okoalo Nuna Logistics Limited, tamakmik Inuit nanminiotait havakviit havakviit, Pikatigiiklotik Havaaginiaktat umiakakvilioklotik ovalo apkohioklotik ovalo Monagilogo. Okoa pikatigiikkamik pannagiiktot Nuna Logistics, okoalo Kitikmeot Corporation nanminiotiginiaktat 62.75% hamna Havakhak. Kitikmeot Corporation okoa piotigiloaktat okoat Kitikmeot Inuit Katimayiit, ona Piyaohimayut Inuit Katimayiit okaohikakto ovani Nunavut Nunatakvikmi Angigotmi.

Hamna Havakhak Okaohia tonihimayut okononga Kitikmeot Inuit Katimayiit ovalo Kavamatokat Itkilinot Okioktaktolikiot, okoa nunaotikaktot hamani Havakhami nunami, ovalo Nunavutmi Emaliokiot nunami ehivgiokhiniaktot ovani Nunavutmi Nunatakgotini Angigotini Nakatak 12 Elangani 5.

Oinggaiyaotait
Ovani April 2002, okoa Havagomayut tonihivaktot Havakhap Onipkangitnik titigani naonaitkotikhainik. Hamna naonaitkiak Havakhap elakaktot aoyak-okiok atoktokhamik apkotmik okiogalok-aoyak apkotikhamik ovanga Tahikyoamit oyakikivikmit omonga Izok Lake-mot ovalo aoyami umiat agyaktaktokhat tamayanik ova apkotikot tigvaolotik tamayalgiaktakniaktot Tahikyoamot, ema Kilohiktomit-Tahikyoamot apkot atoktokhak Lupin-mit Izok Lake-mot. Ona kanga Havakhak ovalo iglokakvioniaktok ovalo kattakyukakvikakloni ovani Kilohiktomi.

Ona Nunavutmi Nunalikiot Ehivgioktit Katimayiit (NIRB) aolaktihimayu tuyutaoyuk Havakhalikionot omonga Ministakmot Kavamatokani, Kanatami (INAC) ovani Julai 8, 2002 kanok ehomaliogakhat ehivgioklogo (Elanga 5 naliak Elanga 6) ehivgiogiakaktok atoklotik Nunavutmi Nunataagotikot Angigotikok (NLCA). Ovani Novepa 27, 2002 okoa Havagomayut onniotiyait NIRB okoalo INAC tamna Izok Havakhak nutkanganialikmat, havilgat akiit akighikmata. Emailiokmat ona Havagomayut apkohiokvikhat mighivaliktok Izok-mot haviit Izok-mi amogaktakhat kakogo akittokniakmata maniliogotikhakt Havakhat, ovalo apkohiokviha kakogoktaoyuk Lupin-mot ovalo hanavikhait kakogo havaktaoyavut.

Ovani April 10, 2003 ona Ministak ovani INAC onniotiyait NIRB ona Havakhak toniffakniaktok nutangokhoni Havakhak Onipkanga. Ovani April 14, 2003 NIRB-kot toghiktot okonanit Havagomayunit toniffakoiyut nutangoktomik Havakhamik Onipkanganik tikitpat May 12, 2003.

Ona ehomagiyat ona Izok Oyakikivikhak kakogo aolaliffakniaktok kakogo. Taima itpat, apkotmik havalikniktot Kilohiktomit Tahikyoamot ema nakooyumik aolalikniaktok maniliokviolikmiloni angmagomi. Emainiaktok ehomagiyat ona Izok Oyakikivikyhak ehomagilogo Kilohiktomit Izok-mot apkohiogomaktot. Onataok aipa apkot Havakvikmit Izokmot elikokloni havaagiyaoniaktok ovalo toniyaogomi angiktaoyukhak kakogo.

Ona Apkohiokvikhak onipkagiyaoyuk maligalioktinit ovalo manikhalo ekayuktaoniakhoni Nunavut Kavamanit ovalo Kanatap Kavamainit Itkililikionit Okioktaktolikionit.

Havakhak Apkohiolikniaktat
Ona Apkohiokvikhak atoklotik Kavamatokat Kanatami Nunaotait Nunat okoalo Inuit Nunaotaitni havakniaktat. Ona umiat tulaktakvikhat Kanatap Nunaotani Nunakaktok ovalo emakak 159 hectares ovalo 270,000 cubic meters oyagaliakmik apkohiogotikagiakaktok. Ona umiakakvikhak emaitokakniaktok:

- Umiakakvikhak umiat hikkolikiot atokniaktat oghokyoalgiaktokhat tamayalgiaktokhat;
- Umiakakvikhak umianik tamayalgiakniaktot Kitikmeot inukakniknot Kugluktuk, Kengaokmot, Ikaluktutiamot, Umingmaktok, Oghoktok ovalo Taloyoakmot;
- inugiaktiginiaktok150 iglokakvik ovalo havakvikmi;
- ona180 million litre oghokyoanik kattakyukakvikakniaktok;
- aghalutikakvikakloni ovalo makanikakvikakloni iglokpakmik;
- ema 1, 200 metre milvikakloni.

Ovani kakogoktaokmat apkotit 2003-mi umiakakvik hanayaoniaktok kakogo okiok ataohikmi tuleekloni. Umiakakvik hanayaolikniaktok havaktaolikloni aolalihalikak Saptaipa 2005 ovalo eniktaoniaktok Januali 2007.

Ona 211 km okiok-aoyak apkot nunakot 82 km ovani Inuit Nunataitigokniaktok ovalo 129 km Kavamatokat Nunaotaini. Apkot havaktaolikniaktok oyagagaliaktaklotik hanianit nunamit; 37 oyagaliaktakvikhat apikotaoyut, 18 ovani Inuit Nunaotainit ovalo 19 Kavamatokat nunaotanit.

Apkot havaktaoligomi aolalikniakto malgokot; ona umiakakvikhak havaktaolikloni Januali ovalo havaktaolikloni Tahikyoamot. Ovani Tahikyoami, apkot havaktaoniaktok aolalikloni Febyoali 2005 ovalo taononga tagiomot umiakakvikmot. Apkot havaktaolikniaktok eniktaoloni Desaipa 2006. Ema 20-nik inukakloni ovalo aghalutikakvikhat pikakniaktot ovani kilometre 211 talvani hinani hivogani tattip (Tahikyoami).

Ona Havak apkotmi aolaniaktok okionginakmik havaklotik, kihime apkot havaktaoniaktok aoyak-okiok apkotikhak kakogo atoktaoniakat oyagaknik agyaktakvikhak tagiomot tamayaniklo.

Havakhap Aolavikhat
Hamna Havakhak okiogalok aolaniaktok havakvikhait naonaiklotik homi aoyami okiomi aolaloni. Taggiomi umiat enikpakniakto aolayukhat kitkanit Julaimit okiakhak Aktobamot. Talvani aolanikmi, siksit eenmot umiat agyaktakniaktot hikkolikotit umiat atoktaolotik okomiatigiot 25,000 tonnes agyakpakianti okomaitonik 180,000 tonnes oghokyoanik ovalo tamayanik nunanot ovalo oyagakhiokviknotlo agyaklotik Oyagakhiokviknot. Hikkolikotit ekayuniaktot hikkoiyailotik umianot agyaktonot, kihime, okoa umiat aolaniaktot hikkoilaktitlgo aoyak hikkoititlogo. Taggimi umiat tamayalgianiaktot ogholgiaklotik ovalo tamayalgiaklotik Kitikmeonot ema pinggahoiktoklotik umiat tikitpakniaktot aoyami.

Apkot aolaniakntok hila kanogititlogo aghalutitogiami. Ona apkot, aoyak-okiok atokniaktomi aolaniaktok Janualimit April-mot ovalo apkohakniaktok Tahikyoamot okiomi Yelonaimit aghaklotit 161,000 tonnes ogholgiakloti Ekati ovongalo Diavik Diamond Mines N.W.T.mi ovalo ovonga Lupin-mot ovonga Jericho-mot Nunavutmi. Hinniktakvikakniaktot ovalo niggivikakltoik aghaluhikionot talvanga umiakakvikmit taggiop hinani. Aghalutitolimaitot okiomi tongolikat April ovonga nongolikat Desaipa. Talvani havakniaktot kihime apkotinik monagiot poalgikhoktit Julaimit Saptaipamot. Ona havakvikhat atokniaktat mongilogo apkot ovalo kukkani ekaktakviit. Hiogaliatlo oyagaliatko piagiakaktot okiomi atoktokhat ovalo katitiktokhat apkotip haniani aoyami apkotilikotikhat.

Havakhat Olavikhait Nuna Taotoklogo
Apkohioknik havalikniaktok nuna kayagilogo ongahiktligiokhak 512 hectares nuna mikakmik ahigotakniaktok, ovalo 2.3 hectares taggiomilo umiakakvikmi. Tamna apkot kukkani ekaktakvikakniaktok 111 kukani; 21 kugani ekakhaohikvikaklotik haviknik oval ahigotilimaitot halumaigotilotik emakmik; 88 okoa kugakaffoktot ekakviokataklotik ekakhaohikvikakniakata kugakvikaklotik atagot apkotit. Ekakhaohikviit kugani malgonginak pikakniatot. Ona apkot hanayaoyuk aghot ikalukaktonot kuganot ehoikpalalimaitok. Hamani nunami, hogat ekaktitaovakniaktot kugani apkotmi. Tabkoa hogat tahamani tuktut Kengaokmitat ehoilimaitot. Opingami tuktut oigoliaktot tahamoonakniaktot opingami okiokhaliktomilo. Apkot atoktaolimaitok May-mit Desaipamot tuktut oigolialikata homongaoyut; tuktut ekitot tahamaniiniaktot kihime apkotmi agyaktaktoni tamayanik ovalo poalgikhoktoni apkomik monagiot kitkanit-Julai Saptaipamot. Inuit Havakvikmiotat apkotmi naliak umiakakvikmi angoniaktitaolimaitot. Ikalukhioktot havaktit taotoktaoniaktot pitkoyaolotik Oalikmiot Kitikmeot Nunanik Atoktitiot Opalongaiyaktinit. are intermittent streams that will be crossed with arched culverts or rock fill fords.

Ona Apkohiokvikhak havakniaktat ovalo aolalotik kayagivakniaktot ovalo nunalo kayagivaklogo ahigoktiktaililogo. Ona Apkohioknik ehoaktonik opalongaikhimalotik nunanik kayagitjutikhakaklotik umiakakvikmi ovanilo apkotmi.

Apkohiogotip Manikhait
Onak akikakniagahogiyat Apkohioknik akitotigiloni ematot $164 million. Ona Apkohioknik manikhakakniaktok ovalo hanavikha Inuit Nanminikaktotlo Kavamatlo Pannagiklotik (P3), hamna akikha ovalo akiliktogakhaklo Apkohioknik kavamatlo nanminikaktolo akiliktoklogo.

Ona Apkohioknik kanok ehoaktomi, maniktoknaitomik havaktaoniaktok ovalo P3 manikhanik opalongaikhimaniaktot.

Maniliokvikhak ona Apkohioknik ovani Kitikmeot Nunaitni
Apkotikhak havaktaolikniaktok aolalikloni ovani 16 tatkikhiotini ovalo inuknik havaktitilikniaktok 2,800 inuit-havaktitiloni ovalo sakhakvikhak akitotigiok $26.8 miliatdalamik. Apkohioknik aolaniakto havaktitiltoik havaniktitiniaktok 31 aoyami aoyatoagaikpat ovalo maniliokviovakloni aktigiomik $1.5 million. Okoa havaktit kantolaktit aghaluhikiot maniliokniaktot maniktakvikhat $9 miliatdalak okiotoak. Havagiloakniaktait nutat havakvioloni havaktikhat Kitikmeotat Nunalgit inuit havakhailioktot amigaitmata 25%; ovalo elihaktitaoniaktot havakvikhamot ovani Apkohiokvikhami, inuit havaktit maniliogait kitikmeomot hiamayakniaktot.

Taya hamani oghokyoat akiit nunalihimayut Ikaluktutiamot umiakakvikit Kengaokmit akighiniaktot oghot emakak 30% ovani 2003 oghot akit Hayr Rivermit. Ona akiit tamayat hivoganingaktot aghalutiktot umiakakvikmot okiomi apkotikoktot ovalo umiakoktot Ikaluktutiamit akighiniaktot Hay River-mingakot siksinot inukaknikot tikinagikloti; ovalo hanatilogit nongolikat apkohionik Tamaya Ikaluktutiamingaktot akiit ahinit Kanatamit umiakoktot akikitkiyaoniaktotport 30% Hay River-koktot. Emakak ehomagiyat tamaya akikitkiyaoliklotik tikigakpakniakto oghokyoatlo emakak $3 miliatdalak okiotoak Kitikmeonot.

Okoa maniktoknaitot akighigomik ehoakhitiniaktok Apkotimot ema oghot akighigomik ovalo tamayatlo maniliogotikhat akighilotik Kitikmeotanot, ona oyagakhiokviit tamayait akighigomik. Ehomagiyat ona Apkohioknik tamayanik akighitiloni nunami ovalo akighikpata oyagakhioktit nalvakhiolakiniaktot ovalo Kitikmeot Nunait Nunavutmi ovalo havalakotilotik inuknik ovalo nanminikaktonik nunami.

Hamalo, maniliogotit elittogiyaoyut havakhat okioktaktomi Kanatami maniknik hiamayaotiniaktot nunaptingni taonongalo kablonakakniknot, havalakotilotik inuknik voalo tamayaniklo akighiliotilotik.

ᑐᓴᒐᒃᓴᖅ ᓇᐃᓈᖅᓯᒪᔪᖅ

ᕿᖓᐅᒻᒥ ᑐᓚᒃᑕᕕᖕᒥᒃ ᐊᒻᒪᓗ ᐊᖁᑎᒃᓴᒥᒃ ᐱᓕᕆᐊᒃᓴᓕᕆᓂᖅ

ᐅᓇ ᐱᓕᕆᐊᒃᓴᒥᒃ ᐱᔾᔪᑎᓕᒃ ᓴᓇᔭᐅᔾᔪᑎᒃᓴᖓᓄᑦ ᐊᐅᓚᑕᐅᔾᔪᑎᒃᓴᖓᓄᑦᓗ ᑐᒃᓯᕌᑉ ᕿᖓᐅᒻᒥ ᑐᓚᒃᑕᕕᒃᓴᒥᒃ ᐊᒻᒪᓗ ᐊᖁᑎᒃᓴᒥᒃ ᐊᒃᑐᐊᓂᖃᕝᕕᒋᒐᔭᖅᑕᖏᓐᓄᑦ ᐱᓕᕆᐊᒃᓴᐅᑉ ᐊᕙᑎᓕᕆᓂᕐᒧᑦᓗ.

ᐅᓇ ᐱᓕᕆᐊᒃᓴᓕᕆᓂᕐᒧᑦ ᐱᔪᖅ ᑐᓚᒃᑕᕕᒃᓴᒥᒃ ᕿᖓᐅᒻᒥ ᑎᑭᐅᑎᓯᒪᒪᒐᔭᖅᑐᒥᒃ ᐅᔭᖅᑲᒃᓴᓕᕆᕕᖕᒧᑦ ᐊᒻᒪᓗ ᐱᓕᕆᕕᖕᒥᒃ ᐅᔭᖅᑲᐃᑦ ᐋᔭᖅᑕᐅᕕᒋᒐᔭᖅᑕᖓᓂᒃ ᓄᓇᕗᑦᒥ ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᕐᒥ ᓄᑖᖅ ᐅᖓᓯᖕᓂᓕᒃ 211 ᑭᓕᒦᑕᓂᒃ ᐊᕐᕌᒍᓕᒫᖅ ᐊᖁᑦ ᑲᓐᑐᐊᐃᑑᑉ ᑕᓯᖓᓄᑦ Contwoyto Lake ᐊᒻᒪᓗ ᒫᓐᓇ ᓴᕿᐅᒪᔫᑉ “Tibbitt-ᒥᒃ ᑎᑭᐅᑎᓯᒪᓗᓂ ᑲᓐᑐᐊᑐᒧᑦ” ᐅᑭᐅᒥ ᐊᖁᑎᒃᓴᖅ.

ᐱᓕᕆᐊᒃᓴᒥᒃ ᓇᖕᒥᓂᓖᑦ ᕿᑎᕐᒥᐅᑦ ᑯᐊᐳᕖᓴᒃᑯᑦ ᐊᒻᒪᓗ ᓄᓇ ᓚᔾᔭᔅᑎᒃᑯᑦ ᓕᒥᑎᑦ, ᑕᒪᕐᒥᒃ ᐃᓄᖕᓄᑦ ᓇᖕᒥᓂᕆᔮᒃ ᑲᒻᐸᓂᐅᔫᒃ, ᐋᕿᒃᓯᒪᔫᒃ ᑲᑐᔾᔨᖅᑲᑎᒌᓐᓂᕐᒧᑦ ᑯᐊᐳᕆᓴᐅᔾᔪᑎᒃᑯᑦ ᓴᓇᔭᐅᓕᖅᐸᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᓕᖅᐸᑦ ᐱᓕᕆᕕᒃᓴᖅ. ᑲᑐᔾᔩᒃ ᑕᒪᕐᒥᒃ ᓄᓇ ᓚᔾᔭᔅᑎᒃᑯᑦ ᐊᒻᒪᓗ ᕿᑎᕐᒥᐅᑦ ᑯᐊᐳᕖᓴᒃᑯᑦ ᓇᖕᒥᓂᖅᑲᓐᓂᐊᖅᑑᒃ 62.75% ᐱᓕᕆᐊᒃᓴᓕᕆᓂᕐᒧᑦ. ᕿᑎᕐᒥᐅᑦ ᑯᐊᐳᕖᓴᓐᑯᑦ ᓇᖕᒥᓂᕆᔭᐅᖕᒪᑕ ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᖏᓐᓄᑦ, ᑎᒃᑯᐊᖅᑕᐅᓯᒪᔪᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᖕᒪᑦ ᑐᑭᖓ ᓄᓇᕗᑦᒥ ᓄᓇᑖᕈᑕᐅᓯᒪᔪᑦ ᐊᖏᕈᑎᖏᑦᑎᒍᑦ.

ᑕᒪᑐᒪ ᐱᓕᕆᐊᒃᓴᐅᑉ ᑐᑭᓕᐅᖅᓯᒪᒍᑎᖓ ᑐᓂᔭᐅᓯᒪᖕᒪᑦ ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᓄᑦ ᐊᒻᒪᓗ ᐃᓄᓕᕆᔨᑐᖅᑲᒃᑯᓐᓄᑦ, ᓇᖕᒥᓂᓕᖕᓄᑦ ᓄᓇᒥᒃ ᐱᓕᕆᐊᒃᓴᓕᕆᕕᒃᓴᒨᖓᓂᖓᓄᑦ, ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᐃᒪᓕᕇᑦ ᑲᑎᒪᔩᖏᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᕿᒥᕐᕈᔩᑦ ᒪᓕᒃᓯᑎᒃ ᓄᓇᕗᑦᒥ ᓄᓇᑖᕈᑕᐅᓯᒪᔪᑦ ᐊᖏᕈᑎᖏᑦᑎᒍᑦ, ᒪᓕᒐᓕᐊᖑᓯᒪᔪᖅ Article 12 Part 5-ᑯᑦ.

ᖃᓄᖅ ᐱᒋᐊᖅᑕᐅᒋᐊᖓᓂᕕᓂᖓ

ᐅᕙᓂ ᐄᐳᕈ 2002-ᒥ, ᓇᖕᒥᓂᓖᑦ ᑐᓂᓯᓯᒪᖕᒪᑕ ᐱᓕᕆᐊᒃᓴᐅᑉ ᑐᑭᐊᓂᒃ ᐊᑑᑕᐅᔪᒪᓂᐊ ᐱᓕᕆᐊᒃᓴᐅᑉ ᐊᖏᓂᖅᓴᒨᖓᑎᑦᓗᒍ ᐊᑑᑕᐅᔪᒪᓂᐊᓄᑦ. ᐊᖏᓂᖅᓴᖅ ᐱᓕᕆᐊᒃᓴᖅ ᐃᓚᖃᒻᒪᑦ ᖃᖓᓕᒫᖅ ᐊᖁᑎᒃᓴᒥᒃ ᐃᑯᖓᖓᔪᒥᒃ ᓘᐸᓐ ᒎᓗᓕᕆᕕᐊᓄᑦ ᐃᑯᖓ ᐊᐃᔫᒃᒧᑦ ᓴᕕᕋᔭᒃᓴᓕᕆᕕᖕᒧᑦ ᐊᒻᒪᓗ ᐊᐅᔭᒃᑯᑦ ᐅᓯᔨᓄᑦ ᐅᒥᐊᕐᔪᐊᓄᑦ ᐅᓯᖃᑦᑕᐅᑎᓄᑦ ᐊᒻᒪᓗ ᐅᑭᐅᒥ ᐊᖁᑎᒃᑯᑦ ᓯᑯᑯᑦ ᐊᖁᑦ ᐊᑭᐊᓂ ᑲᓐᑐᐊᐃᑐ ᑕᓯᐊᓄᑦ. ᐱᓕᕆᐊᒃᓴᓕᕆᕕᕕᓂᖅ ᐃᓚᒋᔭᐅᖕᒥᖕᒪᑦ ᐊᖏᓂᖅᓴᖅ ᓄᓇᒋᔭᐅᑲᐃᓐᓇᖅᑐᒧᑦ ᐊᒻᒪᓗ ᐊᖏᓂᖅᓴᐃᑦ ᐅᖅᓯᐊᓗᖃᐅᑏᑦ ᐃᑲᓂ ᕿᖓᐅᒻᒥ ᑐᓚᒃᑕᖅᕕᖃᓕᖅᐸᑦ.

ᓄᓇᕗᑦ ᐊᕙᑎᓕᕇᑦ ᑲᑎᒪᔨᖕᒥᑦ ᓇᑦᓯᐅᓯᔨᒪᖕᒪᑕ ᑐᑭᐊᓂᒃ ᐱᓕᕆᐊᒃᓴᐅᑉ ᐃᓄᓕᕆᔨᑐᖅᑲᒃᑯᑦ ᒥᓂᔅᑕᖓᓐᓄᑦ ᑲᓇᑕᒥ ᐅᕙᓂ ᔪᓚᐃ 8, 2002-ᒥ ᖃᓄᖅᑑᕈᑎᒃᓴᖅ ᕿᒥᕐᕈᔭᐅᔾᔪᑎᐊ (ᐃᓚᖓᓅᖓᔪᖅ 5 ᐅᕝᕙᓗᑭᐊᖅ ᐃᓚᖓᓅᖓᔪᖅ 6) ᑕᒪᓐᓇ ᐊᑑᑕᐅᖁᔭᐅᖕᒪᑦ ᓄᓇᕗᑦᒥ ᓄᓇᑖᕈᑕᐅᓯᒪᔪᑦ ᐊᖏᕈᑎᖏᑦᑎᒍᑦ. ᐅᕙᓂ ᓅᕙᐃᕝᕙ 27, 2002-ᒥ ᓇᖕᒥᓂᓖᑦ ᑐᓴᖅᑎᑦᓯᔪᖕᒪᑕ ᓄᓇᕗᑦ ᐊᕙᑎᓕᕇᑦ ᑲᑎᒪᔨᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐃᓄᓕᕆᔨᑐᖅᑲᒃᑯᓐᓂᒃ ᑲᓇᑕᒥ ᐊᐃᔫᒃᒥ ᐱᓕᕆᐊᒃᓴᒧᑦ ᕿᑲᖅᑎᑕᐅᖕᒪᑦ ᐅᑕᕿᑎᑕᐅᓪᓗᓂ ᑕᒪᓐᓇ, ᐊᒃᐸᓯᓗᐊᕐᓂᑯᖏᓐᓄᑦ ᓴᕕᕋᔭᒃᓴᑦ ᐊᑭᖏᑦ ᒫᓐᓇ. ᑕᐃᒪᐃᑎᑦᓗᒋᑦ ᓇᖕᒥᓂᓖᑦ ᐊᑭᑭᑦᓕᒋᐊᖅᑎᑦᓯᓯᒪᖕᒪᑕ ᐱᓕᕆᐊᒃᓴᓕᔾᔪᒻᒧᑦ ᐊᑑᑕᐅᔪᒪᔪᒧᑦ ᑕᒪᓐᓇ ᓇᓗᓇᐃᔭᖅᓯᒪᓂᖃᒻᒪᑦ ᐅᕘᓇ ᑐᓂᔭᐅᓯᒪᓂᐊᒍᑦ ᑐᑭᐊᑕ ᐱᓕᕆᐊᒃᓴᐅᑉ. ᐊᑑᑕᐅᔪᒪᓂᖓ ᑕᒪᑐᒧᖓᖓᔪᖅ ᐊᓯᕈᖅᓯᒪᖕᒪᑦ ᐃᓕᑕᕆᔭᐅᔾᔪ-

ᑎᐊᒍᑦ ᐃᒫᒃ, ᒫᓐᓇ ᓴᕕᕋᔭᒃᓴᔭᐃᑦ ᐃᑲᓃᑦᑐᑦ ᐊᐃᕚᒃᒥ ᖃᖓᑐᐃᓐᓇᖅ ᐊᑑᑎᓂᖃᓕᕐᓂᕐᐸᑕ ᐊᑭᖏᑦᑎᒍᑦ ᐋᔭᐃᔾᔪᑎᒃᑯᑦ ᐊᑭᖏᑦ ᐱᓕᕆᐊᒃᓴᐅᓂᖏᑦᑕ, ᐊᑭᑐᔪᓕᕆᔾᔪᑏᑦ ᑐᑭᖏᑦ ᓴᓇᔾᔪᑎᓄᑦ ᓘᐸᓐᒥ ᑎᑭᐅᑎᓗᒋᑦ ᐊᐃᕚᒃᒧᑦ ᐊᕐᑯᑖ ᑭᖑᓪᓕᐅᑎᓂᐊᕐᑐᖅ ᐊᒻᒪᓗ ᐊᒃᑐᐊᓂᖃᕝᕕᖏᑦ ᐱᓕᕆᕕᒃᓴᐅᑉ ᑕᕝᕗᐅᒋᐊᖃᓛᕐᑐᑦ.

ᐅᕙᓂ ᐋᐳᕈ 10, 2003-ᒥ ᒥᓂᔅᑕ ᑲᓇᑕᒥ ᐃᓄᓕᕆᔨᑐᖃᒃᑯᓐᓄᑦ ᑐᓴᖅᑎᑦᓯᓛᕐᒪᑦ ᓄᓇᕗᑦ ᐊᕙᑎᓕᕆᔩᑦ ᑲᑎᒪᔩᖏᓐᓂᒃ ᑕᒪᓐᓇ ᐱᓕᕆᐊᒃᓴᖅ ᑐᓂᔭᐅᒃᑲᓐᓂᓛᕐᒪᑦ ᐋᕐᑭᒋᐊᕐᑕᐅᓯᒪᓗᓂ ᑐᑭᐊ ᐱᓕᕆᐊᒃᓴᐅᓂᖓᑕ. ᐅᕙᓂ ᐋᐳᕈ 14, 2003-ᒥ ᓄᓇᕗᑦ ᐊᕙᑎᓕᕆᔩᑦ ᑲᑎᒪᔩᖏᑦ ᑐᒃᓯᕋᖅᓯᒪᖕᒪᑕ ᓇᖕᒥᓂᓕᖕᓂᒃ ᑐᓂᓯᒃᑲᓐᓂᖁᔨᓪᓗᑎᒃ ᑐᑭᖏᓐᓂᒃ ᐋᕐᑭᒋᐊᖅᓯᒪᑎᓪᓗᒋᑦ ᐱᓕᕆᐊᒃᓴᓕᕆᓂᕐᒧᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᓂᖏᑦ ᐅᕙᓂ ᒪᐃ 12, 2003-ᒥ.

ᐅᒃᐱᕆᔭᐅᖕᒪᑕ ᐅᑯᐊ ᐊᐃᕚᒃ ᐱᓕᕆᐊᒃᓴᖃᕝᕕᐊ ᐊᐅᓚᔾᔭᒃᑲᓐᓂᓛᕐᒪᑦ ᖃᖓᐅᓕᑉᐸᑦ. ᓲᖃᐃᒻᒪ, ᓴᓇᔭᐅᓂᐊ ᐊᕐᑯᑎᒃᓴᐅᑉ ᕿᖓᐅᒻᒥᒃ ᑲᓐᑐᐊᐃᑐᒧᑦ ᐊᑐᐃᓐᓇᐅᒋᐊᖃᕋᔭᕐᒪᑕ ᐃᓚᒍᑕᒃᓴᔭᑦ ᐊᑑᑎᓇᔭᖅᑐᑦ ᐊᑐᐃᓐᓇᕈᕈᑎᖏᓐᓄᑦ ᓈᒻᒪᓈᕈᑏᑦ ᐱᕙᓪᓕᐊᑎᑦᓯᓂᕐᒧᑦ ᖃᓄᖅᑑᕈᑏᑦ. ᐱᓕᕆᐊᒃᓴᓕᕆᓂᐅᑉ ᑐᑭᖏᑦ ᐅᕙᓂ ᐅᓂᒃᑳᑦ ᐱᓕᕆᐊᒃᓴᓕᕆᔾᔪᑎᓕᕆᓂᕐᒨᖓᔪᓂᒃ ᓯᕗᓪᓕᐅᑎᑕᐅᖄᕆᐊᖃᒻᒪᑦ ᐱᕙᓪᓕᐊᔭᐅᓂᐊᓄᑦ ᕿᖓᐅᒻᒥ ᑎᑭᐅᑎᓯᒪᔪᖅ ᐊᐃᕚᒃᑯᑦ ᐊᕐᑯᑦ. ᐊᐃᑉᐹ ᐱᕙᓪᓗᐊᔭᐅᓂᖓᓅᖓᔪᖅ ᐊᒃᑐᐊᓂᖃᒻᒪᑦ ᐅᕗᖓ ᒫᓐᓇᓯᐅᒻᒧᑦ ᐱᓕᕆᐊᒃᓴᓕᕆᔾᔪᒧᑦ ᐊᐃᕚᒃᑯᑦ ᐃᖕᒥᒃᑰᓕᖓᒐᔭᕐᓯᓂ ᑐᑭᐊ ᐱᓕᕆᐊᒃᓴᐅᓂᖓᑕ ᑐᓂᔭᐅᒋᐊᖃᒻᒪᑦ ᐊᒻᒪᓗ ᐊᖏᖅᑕᐅᒋᐊᖃᓕᖅᐸᑦ ᑭᖑᖓᒍᑦ.

ᐱᓕᕆᐊᒃᓴᓕᕆᓂᕐᒨᖓᔫᒃ ᑕᒪᕐᒥᒃ ᐊᑐᐊᒐᓕᕆᔾᔪᑎᒃᑯᑦ ᐱᕐᑯᓴᕐᑎᒍᑦ ᐊᒻᒪᓗ ᑮᓇᐅᔭᓕᕆᔾᔪᑎᓄᑦ ᓴᐳᑎᒍᑎᑦ ᐱᔪᑦ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᖏᓐᓂᒃ ᐊᒻᒪᓗ ᑲᓇᑕᐅᑉ ᒐᕙᒪᒃᑯᖏᓐᓂᒃ ᐊᕐᑯᑎᒋᓪᓗᒋᑦ ᑲᓇᑕᒥ ᐃᓄᓕᕆᔨᑐᖃᒃᑯᑦ.

ᓴᓇᔭᐅᓕᖅᐸᑦ ᐱᓕᕆᐊᒃᓴᖃᕝᕕᒃ

ᐱᓕᕆᐊᒃᓴᓕᕆᓂᖅ ᐊᑑᑕᐅᔭᕆᐊᖃᒻᒪᑦ ᐊᑐᕐᓗᑎᒃ ᒐᕙᒪᒃᑯᑦ ᑲᓇᑕᒥ ᓄᓇᖁᑖᓂᒃ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᓇᖕᒥᓂᖏᓐᓂᒃ ᓄᓇᓂᒃ. ᑐᓚᒃᑕᕝᕕᒃᓴᖅ ᑲᓇᑕᐅᑉ ᓄᓇᖁᑖᓃᒻᒪᑦ ᐊᒻᒪᓗ ᐊᖏᓂᖃᓛᖅᓯᓂ ᓄᓇ 159 hectares-ᓂᒃ ᐊᒻᒪᓗ 270,000 cubic meters-ᓂᒃ ᖄᖅᑎᑦᓯᔪᖅᖃᑦᑕᕐᓗᓂ ᐅᔭᖃᓂᒃ ᓴᓇᔮᖅᑐᑦ.

- ᑐᓚᒃᑕᖅᕕᒃ ᐃᓂᖓ ᒪᑯᓂᖓ ᐃᓚᖃᓪᑐᓂ:
- ᑐᓚᒃᑕᖅᕕᖕᒥ ᓂᐅᕋᐃᕕᒃ ᐅᓯᔭᓄᑦ ᐅᖅᓱᐊᓗᖕᓄᑦ ᐊᒻᒪᓗ ᐅᓯᔭᓄᑦ ᐊᓯᖏᓐᓄᑦ ᑐᓚᒃᑕᖅᕕᖕᒧᑦ;
- ᑐᓚᒃᑕᖅᕕᒃ ᐅᓯᖃᑦᑕᐅᑎᓄᑦ ᓇᓪᓕᐊᓐᓄᑐᐃᓐᓇᖅ ᕿᑎᕐᒥᐅᓄᑦ ᖁᓪᓗᖅᑑᖅ, ᐃᖃᓗᒃᑑᑦᑎᐊᖅ
- ᕿᖓᐅᑦ, ᐅᒥᖕᒪᒃᑑᖅ, ᐅᕐᓱᖅᑑᖅ, ᑕᓗᕐᔪᐊᒧᓪᓗ;
- ᐃᓄᖃᕈᓐᓇᕐᓗᓂ 150-ᓂᒃ ᓄᓇᒋᔭᐅᑲᐃᓐᓇᕐᑐᖅ ᐊᒻᒪᓗ ᐱᓕᕆᕕᐅᓗᓂ;
- 180 million litre-ᓂᒃ ᐃᒃᑕᕆᓐᓂᓕᖕᒥᒃ ᐅᖅᓱᐊᓗᖃᐅᑦ ᐊᐅᓚᐅᑎᓯᐅᑎᓄᑦ ᐃᓂᖓᑦ;
- ᐊᒃᓴᓅᑎᑦ ᐱᓕᕆᔾᔪᑎᑦ ᐊᒻᒪᓗ ᓴᓐᓇᕕᒃ ᐃᒡᓗᕋᔮᖅ;
- ᑕᑭᓂᓕᒃ 1,200 ᒦᑕᓂᒃ ᒥᑦᑕᖅᕕᒃ ᖃᖓᑕᔫᓄᑦ

ᑭᖑᕙᕈᑏᑦ ᐅᕙᓂ 2003-ᒥ ᑐᓚᒃᑕᖅᕕᓕᕆᓂᕐᒧᑦ ᓴᓇᔭᒃᓴᓄᑦ ᐊᕐᕿᒍᓕᒫᒥᒃ ᑭᖑᕙᕐᓂᖃᓐᓂᐊᕐᑐᖅ. ᑐᓚᒃᑕᖅᕕᒃᒥᒃ ᓴᓇᓂᖅ ᒫᓐᓇ ᑐᒃᓯᕌᖑᓯᒪᓕᖅᑐᖅ ᐱᒋᐊᕋᔭᕐᒪᑦ ᓯᑎᕝᕖᕆ 2005-ᒥ ᐊᒻᒪᓗ ᐱᔭᕇᓪᓗᓂ ᔭᓐᓄᐊᕆ 2007-ᒥ.

ᐅᖓᓯᒃᓂᓕᒃ 211 km-ᓂᒃ ᖃᖓᓕᒫᖅ ᐊᕐᑯᑕᐅᔪᓐᓇᕐᑐᖅ ᐅᖓᑕᓅᖓᓗᓂ 80 km ᐅᖓᓯᖕᓂᖓ

ᐃᓄᐃᑦ ᓄᓇᖁᑖᓂᒃ ᐊᒻᒪᓗ 129 km ᑲᓇᑕᐅᑉ ᓄᓇᖁᑖ. ᐊᖁᑎᒃᓴᓕᕆᔾᔪᑎᒃᓴᑦ ᐅᔭᖃᑦ ᖄᖅᑎᑕᒐᑦ; 37 ᐅᔭᖃᓂᒃ ᖄᖅᑎᑦᓯᕕᒃ ᓯᖃᓪᓕᔭᓂᒃ ᑐᒃᓯᕌᖅ, 18 ᐃᓄᐃᑦ ᓄᓇᖁᑖ ᐊᒻᒪᓗ 19 ᑲᓇᑕᐅᑉ ᓄᓇᖁᑖ.

ᐊᖁᑎᒃᓴᒥᒃ ᓴᓇᓂᖅ ᐊᑑᑕᐅᓖᖅᑐᖅ ᒪᖀᓕᖓᓗᓂ ᑐᑭᐊ; ᑐᓚᒃᑕᖅᕕᒃ ᐱᑎᐊᕐᑕᐅᓗᓂ January 2006-ᒥ ᐊᒻᒪᓗ ᐱᑎᐊᕐᑕᐅᓗᓂ ᑎᑭᐅᑎᓯᒪᔪᖅ ᑲᓐᑐᐊᐃᑐ ᑕᓯᖓᓄᑦ, ᐊᖁᑦ ᓴᓇᔭᐅᓗᓂ ᐱᑎᐊᖅᑕᐅᓗᓂ February 2005-ᒥ ᐊᒻᒪᓗ ᓴᓇᕙᓪᓕᐊᓗᒍ ᑐᕌᓐᓂᖓ ᑐᓚᒃᑕᖅᕕᒃᓴᒧᑦ. ᐊᖁᑎᓕᐅᕐᓂᖅ ᐱᔭᕇᖅᑕᐅᓗᓂ December 2006-ᒥ. ᐊᐅᓪᓛᖅᓯᒪᕕᒃ ᐃᓄᖃᕈᓐᓇᖅᑐᖅ 20-ᓂᒃ ᐊᒻᒪᓗ ᓄᓇᓯᐅᑎᒃᑯᕕᒃ ᐱᓕᕆᔾᔪᑎᓄᑦ ᐃᒪᐃᓪᓗᐊᕐᓗᓂ 21 ᑭᓗᒦᑕᐃᑦ ᐅᖓᓯᖕᓂᖓ ᐅᐊᖕᓇᖓᓅᖓᔪᖅ ᓄᓇᐅᑉ ᓯᓈ ᑲᓐᑐᐊᐃᑑᑉ ᑕᓯᖓ.

ᐅᕗᖓ ᐱᓕᕆᐊᒃᓴᒨᖓᖅ ᐊᖁᑦ ᐊᑐᖅᑕᐅᖃᑦᑕᕋᔭᕐᒪᑦ ᐅᑭᐅᒥ ᑭᓯᒥᐊᓂ, ᐊᖁᑦ ᓴᓇᔭᐅᓯᒪᓖᖅᑐᖅ ᖃᖓᓕᒫᖅᓯᐅᑎᑎᑐᑦ ᐊᑑᑎᒍᒫᕐᓂᐊᕐᓂᖃᓐᓂᐊᕐᒥᖕᒪᑦ ᓯᕗᓂᒃᓴᑎᓐᓅᖓᔪᓄᑦ ᐅᓯᔭᐅᖃᑦᑕᕋᔭᕐᒪᑕ ᓴᕕᕋᔭᒃᓴᑦ ᐊᒻᒪᓗ ᓱᓇᒃᑯᑖᑦ ᐱᓕᕆᔾᔪᑏᑦ ᑕᒡᕗᓇ.

ᐱᓕᕆᕕᒃᒥ ᐊᐅᓚᑦᓯᔾᔪᑎᑦ

ᐱᓕᕆᐊᒃᓴᓕᕆᔾᔪᑏᑦ ᐊᖀᒍᑕᒫᑦ ᐊᐅᓚᑕᐅᕙᓖᖅᑐᑦ ᒪᓕᒡᓗᑎᒃ ᓯᓚᖑᓂᒃ ᐅᑭᐅᖅᑕᖅᑑᑉ. ᐅᒥᐊᕐᔪᐊᒃᑯᑦ ᐅᓯᔭᒃᓴᑦ ᐃᓱᓕᖃᑦᑕᕐᓗᑎᒃ ᕿᑎᖓᓂ ᔪᓚᐃ ᐊᒻᒪᓗ ᓄᖑᐊᓂ ᐆᒃᑑᕝ. ᐅᓯᖃᑦᑖᕐᒪᑕ ᐅᑎᖅᑕᖃᑦᑕᕐᓗᑎᒃ 6-ᓲᖃᓪᓗᑎᒃ ᐅᕝᕙᓗᑭᐊᖅ 8-ᖃᓪᓗᑎᒃ ᓯᑯᒃᑯᑦ ᐅᒥᐊᕐᔪᐊᒃᑯᑦ ᐅᓯᔭᐅᕙᓖᖅᑐᑦ ᐅᖁᒪᐃᓐᓖᑦ ᑎᑭᐅᑎᓯᒪᔪᓂᒃ 25,000 tonnes-ᓂᒃ ᐅᓯᔭᑦ ᑕᒪᐃᑕ ᒥᒃᓴᐅᓴᓪᓗᑎᒃ 180,000 tonnes ᐅᖅᓱᐊᓗᐃᓪᓗ ᐊᒻᒪᓗ ᐊᓯᖏᑦ ᐊᑑᑎᔪᑦ ᓄᓇᓕᖕᓄᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᔾᔪᑎᓄᑦ ᐅᔭᖃᒃᓴᕐᓯᐅᕐᕕᖕᒥ ᐱᓕᕆᐊᒃᓴᓕᕆᓂᕐᒧᑦ. ᓯᑯᓯᐅᑦ ᐊᑑᑕᐅᖃᑦᑕᑐᐃᓐᓇᓇᐊᓂᒃ ᐊᓯᖏᓐᓄᑦ ᐅᑭᐅᖅᑕᖅᑐᓯᐅᑎᓄᑦ ᐱᓕᕆᐊᒃᓴᓕᕆᔾᔪᑎᓄᑦ, ᑕᒪᑐᒪ ᑐᑭᐊ ᐅᓯᔪᓄᑦ ᖃᖓᒃᑯᑦ ᐊᑑᑕᐅᒍᓐᓇᖃᑦᑖᖅᑐᖅ ᖃᖓᒃᑯᑦ ᐃᑕᖁᓯᖅᓯᕐᓗᑎᒃ ᐊᐅᓚᔾᔪᑎᑭᕙᕐᒪᒍᑦ ᐱᕐᓴᐊᕐᑎᖃᑦᑕᕐᑐᓂ ᓇᓪᓕᐊᓐᓄᑐᐃᓐᓇᖅ ᐊᐅᔭᒃᑯᑦ.

ᐊᖁᑎᒃᑯᑦ ᐊᐅᓚᑕᑦ ᒪᓕᖃᑦᑖᕐᒥᔪᑦ ᐅᑭᐅᖃᑦᑖᖅᑐᒥᐅᑦ ᐃᑕᖁᓯᖓᓐᓂᒃ ᖃᐅᑕᒫᑦ ᐊᕐᕌᒍᓗᒃᑖᖅ. ᐊᖁᑦ ᓴᓇᔭᐅᓯᒪᓖᕋᓱᐊᖅᑎᓪᓗᒍ ᓯᑕᒥᒃ ᒪᑕᒃᑐᒥᒃ ᖃᓄᓕᒫᖅᑐᒥᒃ ᐊᑑᑎᖃᖅᑐᒥᒃ ᐊᐅᓚᖃᑦᑖᕐᒪᑕ ᐱᑎᐊᕐᓗᑎᒃ ᔭᖕᓄᐊᕆᒥᒃ ᑎᑭᓪᓗᒍ ᐃᐳᐊᕆᒥᒃ ᐊᒻᒪᓗ ᒫᓐᓇ ᐊᖁᑕᐅᕙᒃᑐᖅ ᓘᐸᓐᒧᑦ ᐅᑭᐅᒥ ᐊᐅᓚᓇᖅᑐᓂᒥᒃ ᐅᓯᕙᒃᑐᑦ ᐅᖁᒪᐃᓐᓂᓕᖕᓂᒃ 161,000 tonnes-ᓂᒃ ᐅᖅᓱᐊᓗᖕᓂᒃ ᐊᒻᒪᓗ ᐊᓯᖏᓐᓂᒃ ᐊᑑᑎᔪᒃᓴᓂᒃ ᖃᓄᑐᐃᓐᓇᖅ ᐃᑳᑎᒧᑦ ᐊᒻᒪᓗ ᓯᑎᑖᓂᒃ ᐅᔭᖅᑕᖅᕕᐊᓐᓄᑦ ᑕᐃᕕᒃᒥ ᓄᓇᑦᓯᐊᕐᒥ ᐊᒻᒪᓗ ᓘᐸᓐ ᐊᒻᒪᓗ ᐋᐅᓇᑯᒃᑯᓐᓄᑦ ᓄᓇᕗᒻᒥ. ᓯᓂᒃᕕᐅᕙᒃᑐᑦ ᐃᒡᓗᐃᑦ ᐊᒻᒪᓗ ᓂᕆᕕᐅᕙᒃᓯᑎᒃ ᐊᖁᑎᓄᑦ ᐊᑐᐃᓐᓇᐅᓂᐊᕐᑐᑦ ᐊᐅᓪᓛᖅᓯᒪᕕᑦ ᑐᓚᒃᑕᖅᕕᒃᑕᓕᖕᒥ. ᐊᖁᑎᒃᑯᑦ ᐅᓯᔭᖃᑦᑖᕐᑎᑦᑐᑦ ᑲᓕᑕᓂᒃ ᓄᖑᐊᓂ ᐄᐳᕈ ᓄᖑᐊᓂ ᑎᓯᒻᕙᓇ. ᐊᖁᒪᒥᒃ ᐋᕿᕆᐊᖅᓯᖃᑦᑕᕐᓗᑎᒃ ᐊᒻᒪᓗ ᐃᑳᖅᐸᓪᓗᑎᑦ ᑯᓗᐃᑦ. ᓯᐅᖅᐃᑦ ᑐᐊᐸᐃᓪᓗ ᐅᑭᐅᒥ ᐊᐅᓚᑦᓯᔪᓂᑦ ᐊᑐᐃᓐᓇᐅᑎᑦᓯᕙᒃᑐᑦ ᐊᐅᔭᒃᑯᑦ ᓄᐊᑕᕕᓂᑦ.

ᐱᓕᕆᐊᒃᓴᓕᕆᓂᕐᒧᔪᑦ ᐊᒃᑐᐊᔪᑦ ᐊᕙᑎᑦᑎᓐᓄᑦ

ᓴᓇᔭᐅᑎᓪᓗᒍ ᐱᓕᕆᐊᒃᓴᓕᕆᕕᒃ ᑐᓴᖅᓴᐅᕙᓖᕐᒪᑦ ᐃᒫᒃ ᐅᖓᓯᖕᓂᓕᖕᓄᑦ ᓄᓇᒥ 512 hectares ᓄᓇᒥ ᓂᕐᔪᑎᑕᓕᖕᒥ, ᐊᒻᒪᓗ 2.3 hectares ᐃᒪᕐᒥᐅᑕᓄᑦ ᑐᓚᒃᑕᖅᕕᖕᒥ. ᐊᖁᑎᒃᑯᑦ ᐃᑳᖅᓯᒪᖃᑦᑖᖅᑐᑦ 111 ᑰᓗᑖᖅᑕᑕᖕᓂ; 21 ᐃᑳᖅᕖᑦ ᓯᖃᐃᔮᖏᑦᑐᑦ ᐃᑕᖁᓯᖏᓐᓂᒃ ᑰᒃᑐᑦ; 88 ᑯᓗᑖᓂ ᓄᖃᖅᕕᐅᕙᒃᐸᑎᒃ ᐃᑳᖅᕕᐅᖃᑦᑕᕐᓗᑎᒃ ᓱᓪᓗᓕᒃᑕᑦᑖᓪ ᑰᒃᕕᖕᓂᒃ ᐅᕝᕙᓗᑭᐊ ᐅᔭᖃᓂᒃ ᐋᖀᒃᓯᒪᔭᓂᒃ. ᐃᑳᖅᕕᓕᐊᖑᓯᒪᔪᑦ ᒪᓕᒃᓴᖅᑐᓂᒃ ᐃᑕᖁᓯᖓᓂᒃ ᑰᑦ ᑭᓯᐊᓂ ᒪᖀᓪᓚᓇᓖᖅᑐᒃ ᐃᑳᖅᕖᒃ. ᐊᖁᑎᓕᐅᕐᓂᖅ ᐃᖃᓗᓕᖕᓂ

ᐊᑲᐅᓈᖅᓯᒪᔭᐅᒐᓱᐊᕐᓗᓂ ᐋᕐᑭᒃᓯᒪᓂᖏᑦ. ᓄᓇᒥ ᓂᕐᔪᑎᑕᓕᖕᒥ ᐊᕐᑯᑏᑦ ᐊᕝᕙᐊᖅᑎᑕᐅᓛᖏᓐᓄᑦ ᓂᕐᔪᑎᓂᒃ. ᑕᑯᔭᐅᒐᔪᒃᑐᑦ ᓂᕐᔪᑏᑦ ᐱᓕᕆᕕᒃᓴᒥ ᑐᒃᑐᐃᑦ ᕐᑭᖓᐅᑦ ᑐᒃᑐᖏᑦ. ᐅᐱᖕᒫᒥ ᐸᓚᖅᑎᕐᓯᖅᑲᑦᑕᓛᖅᑐᑦ ᐱᔾᔪᑎᒋᓪᓗᒋᑦ ᐆᒪᔪᓕᒫᑦ ᐊᕐᑰᓴᕐᓂᐅᓴᔪᑦ ᐱᓕᕆᐊᒃᓴᓕᕆᕕᒃᑯᑦ. ᐊᕐᑯᑦ ᐊᑐᖅᑕᐅᕙᓛᖏᑦᑐᖅ ᐊᑯᖓᓐᓂ ᒪᐃ ᐊᒻᒪᓗ ᑎᓯᕝᕖᕆ, ᐅᐱᖕᒫᒥ ᐊᐅᓚᑎᓪᓗᒋᑦ ᑕᒫᓂ ᑐᒃᑐᐃᑦ ᐱᓱᓕᖅᐃᐸᑕ; ᐅᑭᐅᒥ ᑐᒃᑐᐃᑦ ᖅᑲᑦᓯᒎᓇᐅᕙᒃᑐᑦ ᐊᕐᑯᑎᒃᑰᖅᐸᒃᑐᑦ ᐅᑭᐅᒥ ᐅᓯᔮᑦ ᑕᒪᐅᓈᖅᑲᑦᑕᕐᑎᓪᓗᒋᑦ. ᐊᒻᒪᓗ, ᑐᒃᑐᖅᑲᓗᐊᔾᔮᖏᑦᑐᖅ ᐊᕐᑯᒻᒥ ᓴᓇᔪᖅᑲᑦᑎᓪᓗᒍ ᐱᒋᐊᕐᓗᑎᒃ ᕐᑭᑎᖕᒐᓂ ᔪᓚᐃ ᑎᑭᓪᓗᒍ ᓄᑖᖑᑎᓪᓗᒍ ᓴᑉᑕᒻᐸ. ᐱᓕᕆᓃᑦ ᐱᓕᕆᕕᖕᒥ ᐊᖑᒐᓱᒃᑎᑕᐅᔾᔮᖏᑦᑐᑦ ᐊᕐᑯᒻᒧᖕᒐᔪᓂᒃ ᐊᒻᒪᓗ ᑐᓚᒃᑕᖅᕕᖕᒥ. ᐃᓛᓐᓂᒃᑯᑦ ᐃᖅᑲᓪᓕᐊᕈᒪᔪᑦ ᐱᓕᕆᓃᑦ ᒪᓕᖅᑲᑦᑕᕆᐊᖅᑲᓛᖅᑐᑦ ᒪᓕᒃᑕᐅᕐᑯᔭᓂᒃ ᐋᑐᑎᓕᕐᑯᔭᐅᓯᒪᔪᑎᒍᑦ ᐅᐊᓕᓂᐊᓂᒥᐅᓄᑦ ᕐᑭᑎᕐᒥᐅᑦ ᓄᓇᓕᕆᔾᑯᖏᑦᑕ.

ᐱᓕᕆᐊᒃᓴᖅᕕᒃ ᓴᓇᔭᐅᓯᒪᓛᖅᑐᖅ ᐊᐅᓚᑕᐅᓂᖅᑲᓪᓗᓂᓗ ᐊᑦᑕᓈᕐᑭᒍᑕᐅᔪᒫᕐᓂᐊᖏᑦᑐᓂᒃ ᐊᒻᒪᓗ ᐊᕙᒻᒨᖓᕙᔪᑎᒍᑦ ᐅᔾᔨᑐᑦᓯᐊᕈᑎᓂᒃ ᐃᓕᕐᑯᓯᖅᑲᓪᓗᑎᒃ. ᐱᓕᕆᐊᒃᓴᖅᕕᐅᑉ ᐱᕙᓪᓕᐊᔭᐅᓯᒪᓂᖓ ᐋᕐᑭᒃᓱᐃᔾᔪᑎᒃᑯᑦ ᒪᓕᒡᓗᑎᒃ ᓴᐳᔾᔨᒍᑎᓂᒃ ᐊᕙᑎᑦᑎᓐᓃᑦᑐᓂᒃ ᐊᒻᒪᓗ ᐆᒪᔪᓂᒃ ᐱᑳᓪᓚᑕᐃᓕᔾᔪᑎᓂᒃ ᐅᔾᔨᕐᑐᕈᑎᓂᒃ ᒪᓕᒡᓗᑎᒃ ᑐᓚᒃᑕᖅᕕᖕᒥ ᐊᒻᒪᓗ ᐊᕐᑯᒻᒨᖓᕙᔪᓄᑦ.

ᐱᓕᕆᐊᒃᒨᖓᕙᔪᑦ ᑮᓇᐅᔭᓕᕆᔾᔪᑎᑦ

ᒥᒃᓴᐅᓴᒃᑐᑦ ᐊᑭᑐᔪᓕᕆᔾᔪᑎᑦ ᓴᓇᔾᔪᑎᑦ ᐊᑭᒃᓴᖏᑦ ᐱᓕᕆᐊᒃᓴᒧᑦ $164 ᒥᓕᐊᓐ ᑖᓚᐃᑦ. ᐱᓕᕆᐊᒃᓴᒧᑦ ᑮᓇᐅᔭᓕᕆᔾᔪᑏᑦ ᑐᑭᖏᑦ ᐊᒻᒪᓗ ᐱᕙᓪᓕᐊᑎᕐᓯᔾᔪᑏᑦ ᑐᑭᖏᑦ ᑭᒃᑯᓕᒫᓅᖓᔪᓄᑦ ᓇᖕᒥᓂᓛᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᒃᓯᐅᑎᒃᑯᑦ (P3) P-ᒎᖅ ᐱᖓᓱᑦ ᑐᑭᐊᑦ ᖅᑲᓪᓗᓈᑎᑐᑦ, ᖅᑲᑦᓯᕌᑦᑐᑦ ᑐᑭᖏᑦ ᐊᒻᒪᓗ ᐊᑲᐅᓈᖅᑐᖅᑲᓐᓂᖏᑉᐸᑦ ᐱᓕᕆᐊᒃᓴᒨᖓᔪᑦ ᑲᑐᔾᔭᐅᒐᔭᖅᑐᑦ ᑕᒪᒃᑮᓐᓄᑦ ᑭᒃᑯᓕᒫᓅᖓᔪᓄᑦ ᐊᒻᒪᓗ ᓇᖕᒥᓂᖕᓄᑦ.

ᐱᓕᕆᐊᒃᓴᓕᕆᔾᔪᑦ ᑕᒪᐃᓐᓅᖓᓂᖕᓂᖓ ᑐᑭᓕᐅᖅᓯᒪᓂᐊ ᒥᒃᓯᖅᑲᓯᐊᖅᑐᖅ, ᑮᓇᐅᔾᔭᒃᓴᐅᑎᓅᖓᔪᓄᑦ ᒪᑭᒪᔾᔪᑕᐅᔪᓇᕐᒪᑦ ᐊᒻᒪᓗ ᐅᑎᕈᒦᕐᓂᐊᖅᑐᓄᑦ ᑐᑭᓕᐅᖅᓯᒪᔪᑎᒍᑦ ᐋᕐᑭᒃᓯᒪᔾᔪᑎᑦ ᐅᑯᑎᒎᓇ (P3-ᑯᑦ).

ᒪᑭᒪᔾᔪᑎᒃᓴᓅᖓᓂᖏᑦ ᐱᓕᕆᐊᒃᓴᖅᕕᐅᑉ ᕐᑭᑎᕐᒥᐅᓄᑦ

ᐱᓕᕆᐊᒃᓴᖅᕕᒃ ᐋᕐᑭᒃᓯᒪᔭᐅᓛᕐᒪᑦ ᐅᖓᑖᓅᖓᔪᓄᑦ 16 ᑕᕐᑮᑦ ᐊᒻᒪᓗ 2,800-ᓅᖓᔪᓂᒃ ᐱᓕᕆᐊᖅᑲᓐ ᓂᕐᒧᑦ ᑕᕐᑭᖅ ᐊᑕᐅᓯᖅ ᐃᖅᑲᓇᐃᔭᖅᑎᕐᓯᒍᑎᑎᒍᑦ ᐊᒻᒪᓗ ᐊᑭᓕᖅᑐᒐᖅᑭᑎᒃᑯᑦ ᖅᑲᑦᓯᐅᓂᖏᑦ $26.8 ᒥᓕᐊᓐ ᑖᓚᐃᑦ. ᐱᓕᕆᕕᖕᒥ ᐊᐅᓚᑦᓯᔾᔪᑎᑦ ᓴᕐᑮᔮᕐᒪᑕ 31-ᓂᒃ ᓈᒻᒪᒃᓯᒐᐃᑉᐸᑦ ᖅᑲᖕᒐᒃᑯᑦ ᐱᓕᕆᓐᓇᖅ ᓴᓇᔭᒃᓴᖅᑲᑦᑎᕐᓯᓂᖅ ᐊᕐᕌᒍᑕᒫᑦ ᐊᒻᒪᓗ ᓴᕐᑭᓐᓂᖅᑲᑦᑕᓛᕐᒪᑕ ᐊᑭᓕᖅᑐᒐᖅᑭᑎᒃᑯᑦ ᒥᒃᓴᐅᓴᒃᑐᓄᑦ $1.5 ᒥᓕᐊᓐ ᑖᓚᓂᒃ. ᐱᓕᕆᑎᕐᓯᒍᑏᑦ ᑲᓐᑐᕌᒃᑎᕐᓯᒍᑏᑦ ᐊᕐᑯᑎᓂᒃ ᐱᓕᕆᔾᔪᑎᓄᑦ ᐊᒃᓵᑎᒃᑯᑦ ᐃᓚᒋᓕᐅᑎᓂᐊᕐᒥᖕᒪᑕ ᐊᑭᓕᖅᑐᒐᖅᑲᓐᓂᕐᒧᑦ $9 ᒥᓕᐊᓐ ᑖᓚᐃᑦ ᐊᕐᕌᒍᖅ ᐊᑕᐅᓯᖅ. ᐱᓕᕆᐊᒃᓴᓪᓗ ᓄᑖᑦ ᐊᑐᐃᓐᓇᕈᕈᓐᓇᖅᑲᑦᑕᕐᓂᐊᕐᒪᑕ ᐱᓕᕆᐊᒃᓴᓕᕆᔾᑯᖏᑦᑎᒍᑦ ᕐᑭᑎᕐᒥᐅᑦ ᒫᓐᓇ ᐊᑐᐃᓐᓇᖅᑲᖏᑦᑐᓄᑦ ᐱᓕᕆᐊᒃᓴᓂᒃ ᐊᖏᓂᖅᓴᓅᖓᔪᓄᑦ ᑐᑭᓕᐅᕈᑎᖏᑦᑎᒍᑦ 25%; ᓴᓇᒋᐅᖅᓴᕈᑏᑦ ᐊᒃᓯᕉᑕᐅᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖅᕈᓇᕐᑯᓪᓗᒋᑦ ᐱᓕᕆᐊᒃᓴᖅᕕᖕᒥ, ᐊᑭᓕᖅᑐᖅᑎᒎᖓᔪᑦ ᑮᓇᐅᔭᑦ ᕐᑭᑎᕐᒥᐅᓅᖓᓗᑎᒃ.

ᒫᓐᓇ ᓯᓚᕐᔪᐊᒥ ᐅᖅᓱᐊᓘᑉ ᐊᑭᒋᕙᒃᑕᖏᑦ ᖅᑲᑦᓯᕌᓐᓂᕆᕙᒃᑕᖏᑦ ᑎᑭᐅᑎᒐᐃᒻᒪᑕ ᐃᖅᑲᓗᒃᑑᑦᑎᐊᒧᑦ ᐱᔪᑦ ᑐᓚᒃᑕᖅᕕᖕᒐᓂᒃ ᕐᑭᖓᐅᒻᒥᒃ ᐊᑭᑭᓐᓂᖅᓴᐅᓕᖅᓴᖅᑐᑦ ᑎᑭᐅᑎᓯᒪᔪᓄᑦ 30%-ᒥᒃ ᒫᓐᓇ ᐊᑭᐅᕙᒃᑐᑦ 2003-ᒥ ᖅᑲᑦᓯᕌᓐᓂᕆᕙᒃᑕᖏᑦ ᐅᖅᓱᐊᓗᐃᑦ ᐱᔪᑦ Hay River-ᒥᒃ. ᖅᑲᑦᓯᕌᓐᓂᕆᕙᒃᑕᖏᓪᓗ ᐅᓯᔭᑦ ᖅᑲᓪᓗᓈᑦ ᓄᓇᖕᒐᓐᓂᒃ ᐅᓯᔭᐅᓗᑎᒃ ᓄᓇᓯᐅᑎᒃᑯᑦ ᑐᓚᒃᑕᖅᕕᒃᑕᓕᖕᒨᖅᑕᐅᒃᐸᑕ ᐊᕐᑯᑎᒃᑯᑦ ᐅᑭᐅᒥ

ᐊᒻᒪᓗ ᐅᓯᔨᒃᑯᑦ ᐃᒫᒍᑦ ᐅᒥᐊᕐᔪᐊᒃᑯᑦ ᐃᖃᓗᒃᑑᑦᑎᐊᒍᑦ ᐊᔾᔨᒋᒍᓐᓃᕋᔭᕐᒪᒍ ᐊᑭᑕᐅᒐᔭᕐᒪᑕ ᐅᓯᔭᐅᕙᒃᑐᑦ Hay River-ᑯᑦ ᐊᒻᒪᓗ ᓱᓇᑐᐃᓐᓇᐃᑦ ᑎᑭᓵᑦ ᑎᑭᖃᑦᑕᕋᔭᕐᒪᑕ ᓄᓇᓕᖕᓄᑦ ᕿᓚᒥᐅᓂᖅᓴᖅ ᐱᓇᓱᐊᕈᓰᑦ ᓯᑕᒪᑦ ᐱᖓᓲᔪᖅᑐᓪᓗᑭᐊᖅ ᓯᕗᕙᖅᓯᒪᓂᖅᓴᐅᖃᑦᑕᓕᕐᓗᑎᒃ; ᐅᐱᖔᒥ ᓴᓇᓐᓇᐅᕙᒃᑐᖅ ᓈᒻᒪᒃᓯᒐᐃᒻᒪᑦ ᐃᒡᓗᓕᐅᖅᑎᓄᑦ ᐊᑑᑕᐅᖔᖅᐸᓕᕐᓗᓂ ᑕᐃᒪᓐᓇ ᐊᐅᔭᑐᖃᐅᓕᖅᑎᓐᓇᒍ. ᐅᓯᔭᒃ ᐊᑭᒋᕙᒃᑕᖏᑦ ᑕᒪᒃᑯᐊ ᓱᓇᑐᐃᓐᓇᐃᑦ ᓂᐅᕕᐊᒃᓴᐅᕙᒃᑐᑦ ᑎᑭᑎᑕᐅᕙᒃᑐᑦ ᐃᖃᓗᒃᑑᑦᑎᐊᒍᑦ ᐱᔪᑦ ᐅᖁᐊᓂᒃ ᑲᓇᑕᐅᑉ ᑐᓚᒃᑕᕕᖕᒧᑦᐃᒫᒃ ᐊᑭᑭᓐᓂᖅᓴᐅᓕᕋᔭᖅᑐᑦ 30%-ᒥᒃ ᐅᕘᓇᓕ ᑎᑭᑉᐸᖕᒪᑕ Hay River-ᑯᑦ. ᒥᒃᓴᐅᓴᒃᑯᑦ ᑕᒪᕐᒥᒃ ᐊᑕᖏᖅᑎᓪᓗᒋᑦ ᐊᒥᐊᒃᑯᓂᖅᓴᐅᕙᒐᔭᕐᒪᑕ ᐅᖅᓱᐊᓗᖕᒧᑦ ᐱᓗᐊᖅᑐ5 ᐊᖏᓂᖅᓴᐅᒐᔭᖅᑐᑦ $3 ᒥᓕᐊᓐᓂᒃ ᐊᕐᕌᒍᑕᒫᑦ ᕿᑎᕐᒥᐅᓄᑦ.

ᑕᒪᒃᑯᐊ ᐱᕚᓪᓕᕈᑕᐅᒐᔭᖅᑐᑦ ᐊᒥᐊᒃᑯᐃᑦ ᓴᕿᐅᒪᓂᖃᒻᒪᑕ ᑕᒪᓐᓇ ᐊᑑᑎᓂᖃᓪᓚᕆᒍᓐᓇᕐᒪᑦ ᐱᓕᕆᐊᒃᓴᖅ ᐊᑭᑭᓐᓂᖅᓴᐅᓕᕋᔭᕐᒪᑕ ᐅᖅᓱᐊᓗᐃᑦ ᐊᒻᒪᓗ ᓂᐅᕕᐊᒃᓴᑦ ᑐᕌᖅᑐᑦ ᓂᐅᕕᖅᕕᖁᑎᓕᖕᓄᑦ ᕿᑎᕐᒥᐅᑦ ᓄᓇᓕᖏᓐᓂ, ᐱᓗᐊᖅᑐᒥᒃ ᐱᓕᕆᐊᒃᓴᖃᕝᕕᐅᑉ ᓴᓂᐊᓃᑦᑐᓄᑦ. ᓂᕆᐅᓇᕐᑐᖅ ᑕᒪᓐᓇ ᐱᓕᕆᐊᒃᓴᒧᑦ ᐱᔾᔪᑕᐅᔪᖅ ᐃᒫᓪᓚᕆᒃ ᐊᑭᑭᓐᓂᖅᓴᐅᑎᑦᓯᓕᕋᔭᕐᒪᑦ ᐊᒃᑐᐊᔪᓄᑦ ᐃᓄᓯᕆᔭᕐᓄᑦ ᕿᑎᕐᒥᐅᑎᒍᑦ ᐊᒻᒪᓗ ᐆᒻᒪᕈᑕᐅᓪᓚᕆᒐᔭᖅᓯᓂ ᐊᑑᑎᓂᖓ ᓄᑖᓄᑦ ᐊᑑᑎᔪᒃᓴᓂᒃ ᐅᔭᖅᓴᓂᒃ ᐊᐅᓚᑦᓯᓂᖅ ᐱᒋᐊᓖᕐᑎᓪᓗᒋᑦ ᓇᓂᓯᒐᓱᐊᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓴᕿᐊᑎᕆᔾᔪᑎᖏᓐᓄᑦ ᕿᑎᕐᒥᐅᓂ ᓄᓇᕗᑦᒥ ᐊᒻᒪᓗ ᓴᕿᐊᒐᔭᕐᒪᑕ ᐊᒥᓱᑦ ᓄᑖᑦ ᐱᓕᕆᐊᒃᓴᐃᑦ ᓴᓇᔭᒃᓴᐃᑦ ᓄᓇᓕᖕᓄᑦ ᐱᓕᕆᕝᕕᖁᑎᓕᖕᓄᓪᓗ ᑖᒪᓂ ᓄᓇᒥ ᐊᕙᒃᑐᖅᓯᒪᓂᐊᒍᑦ.

ᐃᓚᒋᓕᐅᑎᓪᓗᑎᒡᓗ, ᑮᓇᐅᔭᒃᓴᐅᑎᓅᖓᔪᑦ ᒪᑭᒪᔾᔪᑎᑦ ᑐᑭᖏᓐᓂᒃ ᖃᐅᔨᓴᕐᓂᖅ ᓱᖁᐃᔭᐃᓂᖅ ᓯᕗᖓᒍᑦ ᓴᕿᐅᒪᓂᖃᓕᕐᒪᑕ ᖃᓄᑐᐃᓐᓇᖅ ᐱᓕᕆᐊᒃᓴᓕᕆᓂᖏᑦ ᑕᒪᑐᒥᖓ ᑲᓇᖕᓇᖓᓂ ᑲᓇᑕᐅᑉ ᐃᒫᓪᓚᕆᒃ ᓱᕐᕋᐃᓴᒪᕐᒪᑦ ᐊᒃᑐᐃᓂᖓ ᐱᔪᓂᒃ ᖃᓪᓗᓈᖑᓂᒃ, ᐊᑐᐃᓐᓇᐅᕙᖕᒋᖅᑐᑦ ᑖᕙᓂ ᐃᓐᓇᖅ ᓴᓇᔭᐃᓐᓇᖅ ᐊᒻᒪᓗ ᓂᐅᕕᐊᒃᓴᑦ ᑭᓱᑐᐃᓐᓇᐃᑦ ᐊᑐᐃᓐᓇᐃᑦ ᐊᑑᑎᔭᒃᓴᑦ.

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1.0 INTRODUCTION

This Project Description for the Bathurst Inlet Port and Road Project is prepared as prescribed in Appendix B: Nunavut Impact Review Board (NIRB) General Requirements for a Project Description (NIRB, 1997). The format and sequence set out by NIRB has been adjusted to the extent required to avoid repetition. This Project Description along with related applications for land and water use are submitted for the purposes of Project screening by NIRB and also for developing guidelines for the benefit of the Project's proponent when preparing a Project Environmental Impact Statement (EIS) pursuant to the Nunavut Land Claims Agreement (NLCA) Article 12, Parts 4 and 5. A final Project Description will be submitted following the preparation of the Bathurst Inlet Port and Road Project EIS that meets the requirements of the guidelines issued by NIRB. The final Project Description will reflect any changes in the Project that may result from field conditions discovered in the field studies yet to be completed to meet the requirements of the EIS Guidelines. The scope and scale of the Project however, is not expected to change.

1.1 BACKGROUND INFORMATION

The Government of Nunavut has developed a detailed plan for Nunavut with the help of the people and organizations in Nunavut. This plan was finalized by Cabinet in Bathurst Inlet in August 1999 and became known as the "Bathurst Mandate". The plan sets out the priorities for Nunavut, outlining specific objectives for the first five years but also looks to the future, creating a vision of Nunavut in the year 2020.

The Nunavut priorities are:

- Healthy Communities
- Simplicity and Unity
- Self Reliance
- Continued Learning

Some of the underlying principles of these priorities include:

- People come first;
- Nunavut needs to provide options and opportunities which build the strengths of individuals, families and communities;
- Building the capacity of communities will strengthen Nunavut;
- Traditional activities and values will be incorporated into new strategies to participate actively in the development of economic resources.

The vision for 2020 includes the following:

- Well informed individuals and communities have the capacity and exercise responsibility for decision making; Nunavummiut own and manage a strong mixed economy where residents have productive choices for economic participation;
- Strong transportation and communication links exist between communities and southern Canada, and increase communities' land and water access;
- Create and maintain an *Economic Strategy* for Nunavut;
- Nunavummiut are active in taking up an increasing number of economic opportunities and have low levels of dependency on government.

Furthermore, the Government of Nunavut has developed a *Transportation Strategy* with a vision for transportation in Nunavut to the year 2021. Part of the vision for Land Transportation includes *"…important new surface transportation routes…between the Kitikmeot region mining properties and Bathurst Inlet. These are all-weather routes where resource development projects are able to contribute substantially to the required funding"*.

In addition, the Nunavut Planning Commission together with the people of the Kitikmeot have been developing a Draft West Kitikmeot Regional Land Use Plan. This Plan has been developed with a recognition that development of transportation infrastructure with resulting increased development of mineral resources is important to the future social and economic development of the region. The Plan envisions, in 15 to 20 years, a region where: *"Mines are operating and more are being considered. Skilled local people are working at the mines or for local businesses providing support services to those mines. A well-planned, environmentally sensitive transportation network exists to provide access to the mineral resources, southern market and the communities"*.

In all of the above, "Transportation Infrastructure" is the keystone for a sustainable future.

In their *"Nunavut Economic Outlook, 2001"*, the Conference Board of Canada states:

> ***"The state of infrastructure in Nunavut is a serious problem that is affecting both the economic and social development of the territory."***

A major issue facing all Nunavut communities is the lack of transportation infrastructure. In southern Canada, governments have generally provided transportation infrastructure such as roads and ports. In the north, during the last 20 years or so, where specific projects or regions required major transportation infrastructure, there has been a general reluctance for governments to become involved. Most of the existing infrastructure supporting the economic and social development of northern Canada was installed by or in direct response to resource development. In most cases, when mineral production was initiated in a new region of northern Canada it was associated with or preceded by new energy and /or transportation infrastructure: Con Mine at Yellowknife, in 1930 required both an airstrip and improved barge services on Great Slave Lake setting the stage for Giant Mine 15 years later; Con Mine also developed Bluefish Hydro and a power line corridor to Yellowknife and Discovery Mine; hydro power on the Taltson River was developed and a railroad was built from Alberta to serve the Pine Point Mine; Tundra Mine developed an airstrip and pioneered winter road development; Echo Bay Mines developed a winter road system and jet strip for Lupin Mine; the MV Arctic, a Canadian ice breaking cargo ship was built by the Canadian Government to service Nanisivik Mine; the Ekati™ mine, Diavik and Snap Lake diamond projects depend on the Lupin winter road developed by Echo Bay.

The vast area of Nunavut, with relatively small isolated communities, is a major obstacle to the development of roads. There is also an absence of marine infrastructure in Nunavut, even with the strong reliance on marine transport for supplies during the short summer shipping season.

The only non-municipal road transportation infrastructure developed within the Kitikmeot region has been the winter road from Yellowknife to Lupin Mine, now also servicing the Ekati™ Mine, Diavik Mine and other developing diamond projects in the Northwest Territories. The winter road capacity is limited by weather and by the additional trucking requirements for the new diamond projects south of the Nunavut border. Transporting fuel and supplies through a port at Bathurst Inlet could provide reductions in operating costs and increased security of supply for these mines also.

The Kitikmeot Inuit Association and the Kitikmeot Development Corporation have taken the lead to provide much needed transportation infrastructure for resource development in their region through the Bathurst Inlet Port and Road Project. By forming a partnership with industry and governments they have been able to raise the funds to begin moving this exciting project forward through the feasibility and into environmental assessment stages.

Prior to June 2000, approximately $4 million of preparatory work had already been undertaken to advance the Project. This preparatory work included, hydro-graphic studies to assess the most appropriate shipping channels and location of the port; proposed routing for the road network; preliminary economic studies of the project capital and operating costs; and modeling to assess the economic performance of the port and road project. This work was supported by the Kitikmeot Corporation, KIA, GNWT, DFO and industry.

In June 2000, following a meeting in Cambridge Bay, a Technical Committee was formed to move the Project forward. The Committee is comprised of representatives from the Kitikmeot Inuit Association, Kitikmeot Corporation, Nuna Logistics Limited, Inmet Mining Corporation, Hamlet of Kugluktuk, Government of Nunavut (DSD and CG&T) and since November 2002 a representative from Bathurst Inlet.

A Feasibility Study was completed in 2002 (Nishi-Khon/SNC-Lavalin and Kitikmeot Geosciences). The environmental baseline studies were completed in April 2003 (Rescan Environmental Services Ltd. and Kugluktuk HTO). All of these studies were under the supervision of the Project Technical Committee.

The costs and field support to complete the feasibility study and undertake field work for environmental and engineering studies were provided by cash and "in kind" contributions from: Billiton-BHP, Canadian Coast Guard, Diavik Diamonds, Echo Bay Mines, Fednav Limited, Government of Nunavut, Hope Bay Joint Venture, INAC, Inmet Mining Corp., Kinross Gold Corp., Northern Transportation Company Limited (NTCL), Nuna Logistics Limited, and Tahera Corporation.

The original Feasibility Study was based on an all-weather road from Bathurst Inlet to the Izok Project, linked by a summer barge or winter ice road on Contwoyto Lake. The Study has been revised to cover the reduced scope of this Project, which includes a port site on Bathurst Inlet, an all-weather road to Contwoyto Lake and a small camp at Contwoyto.

Findings of the revised feasibility study include:

- fuel and bulk cargo supplied via the Bathurst Inlet Port and Road Project can be landed at the Ekati and Diavik diamond mines in the N.W.T. at the same or lower costs, and potentially on a more reliable schedule than is now possible from Edmonton via Yellowknife on the Lupin winter road. The Project will provide increased certainty and security of supply;

- fuel supplied via the port proposed by this Project can be delivered to Lupin and Jericho, at lower costs than via the current Lupin winter road;

- fuel from the port in Bathurst Inlet can be landed in Kitikmeot communities at a significantly lower cost than is presently the case via barge from Hay River, NWT;

- supplies delivered to the port via Yellowknife and the Lupin winter road can be shipped to Kitikmeot communities for a lower cost than the current barge network via Hay River and Tuktoyaktuk;

- supplies for Kitikmeot communities from suppliers in eastern Canada could be landed in Cambridge Bay for significantly less freight costs than via barge from Hay River or via the Lupin winter road;

- goods by barge from the port in Bathurst Inlet could be landed in Kitikmeot communities 4 - 6 weeks earlier than is now the case. This provides a potential to increase the summer construction season by the same amount.

The primary benefits of the Port and Road Project will be:

- ***A reduction in the cost of fuel and supplies for Kitikmeot communities.*** Nunavut communities to be serviced by the Project will include Kugluktuk, Cambridge Bay, Umingmaktok, Bathurst Inlet, Taloyoak and Gjoa Haven. Fuel and supplies will be transported into Bathurst Inlet and shipped by barge to the communities, with significant cost savings.

- ***Reduced capital and operating costs for mineral exploration, mine development and operations in the northern portion of the Slave Geological Province resulting in more exploration activity.*** A large number of other mineral deposits have been identified within this region. Advanced projects in the region include Izok, George Lake, Goose Lake, Ulu, Hope Bay gold deposits and the Tahera diamond project. A new road system connecting to an arctic port will stimulate further exploration and increase the value of existing deposits leading to a greater probability of mine development.

  The abundant mineral endowment of the Slave Geological Province (SGP) has been known for several decades. The SGP has produced minerals continuously since the 1930's. However, the full potential of this area has yet to be realized due, for the most part, to the lack of transportation infrastructure.

- ***Increased employment, training, business development and the resulting social benefits in the region.*** Nunavut has the youngest population in Canada, approximately 60% of the population is under 25 years of age. The unemployment rate for the Inuit in Nunavut was 35.8% in 1999, with the 15 – 24 age group averaging 48.1%. The mining industry has the greatest potential for employment in the future. The Kitikmeot communities rely on mixed economies blending wage employment, resource harvesting and government transfer payments and will benefit considerably from the increase in local employment and investment that the Project will provide.

- ***Increased economic activity and taxation revenues to Nunavut and Canada.*** While the Project is based in the Kitikmeot and substantive and sustainable benefits are expected for the Kitikmeot communities, the Project will also benefit the rest of Nunavut, the Northwest Territories and Canada through a stronger economy and tax revenues.

The findings of the Project feasibility study have shown that the Project as proposed is much more than a transport system for mines in the Slave Geological Province. It is rather, infrastructure that is commonplace in southern Canada as essential public facilities; infrastructure that will facilitate a diversity of economic opportunities for the Kitikmeot communities plus provide improved transportation services to current diamond and gold mines, and prospective gold and base metal mines in the Kitikmeot Region of Nunavut.

The Project will provide lower costs for fuel, supplies and power (diesel fuel) resulting in a higher standard of living for Kitikmeot residents.

The establishment of a marine port on Canada's Arctic coast, even though connected to the rest of Canada by road for only 100 days per year, will provide a significant boost to the security and sovereignty of the Arctic and Arctic waters. This is especially true considering the closure of Polaris and Nanisivik mines and the future reclamation of these sites.

This Project Description describes the physical configuration of the Project, the environmental setting of the Project area, schedules for Project construction and operations, and the interactions of the Project with the environment, as examined in the Project feasibility study. Figure 1 shows the locations of the port site and road alignment that were identified during the course of feasibility study field work in the summer of 2001.

1.2 PROPONENT IDENTIFICATION INFORMATION

The proponent for the Bathurst Inlet Port and Road Project is the **Bathurst Inlet Port and Road Joint Venture Ltd.** Bathurst Inlet Port and Road Joint Venture Ltd. will be owned (50% each) by Kitikmeot Corporation and Nuna Logistics Limited. Kitikmeot Corporation is wholly owned by the Kitikmeot Inuit Association. Nuna Logistics is an Inuit owned company with 51% owned by Kitikmeot Corporation and Nunasi Corporation (25.5% each) and the balance owned by Nuna Logistics management. By combining its direct and indirect interests in the joint venture, Kitikmeot Corporation will own 62.75% of the Project.

The stated purposes of Kitikmeot Corporation follow:

Our Vision A vibrant economic climate in the Kitikmeot Region of Nunavut.

Our Mission To create a strong, viable and stable financial base for our businesses, for Inuit entrepreneurs and for employment opportunities for Kitikmeot beneficiaries of the Nunavut Land Claims Agreement.

Our Mandate To be the Kitikmeot Inuit Association's economic development organization that develops businesses profiting Inuit of the Kitikmeot Region.

Develop a business climate in which Inuit entrepreneurs and employees can benefit economically.

Our Objectives Grow Kitikmeot Corporation's businesses and Joint Ventures to become the largest company in the Kitikmeot Region.

Assist Inuit entrepreneurs start and grow their businesses.

Provide opportunities for Inuit to find rewarding employment.

Provide assistance for Inuit training to take advantage of business and employment opportunities.

1.3 APPROVAL AGENCIES AND REQUIRED APPROVALS, LICENSES, AND PERMITS

Project construction is entirely in Nunavut and will develop a marine port, and 211 km of all-weather road. Project operations will include:

- annual re-supply of Kitikmeot communities with fuels and other bulk cargo;
- annual re-supply of fuel and other bulk cargo for the Lupin and Jericho mines, in the West Kitikmeot region of Nunavut;
- annual re-supply of diesel fuel and some bulk operating supplies to Ekati™ and Diavik diamond mines in N.W.T.

All new development in Nunavut is subject to the review process set out in the NLCA. It is expected that on examination, the Project will be found to pose "...significant impact potential..." (NLCA 12.4.1) and that an environmental review under the NLCA will be required. The permits, licenses, and approvals required by the Project throughout its operating life and for its closure are enumerated below for each of the Project stages: construction, operations, and abandonment. All of the approvals required for each stage of the Project fall within the mandate of the NLCA and federal agencies in Nunavut. The applications to the Kitikmeot Inuit Association (land use), Nunavut Water Board (water use), and DIAND (land use), for land and water use required for Project construction and operations are included in this Project Description as Appendix 4 or were submitted earlier with the previous application. It is expected that these regulators will refer this Project Proposal, and in time the Project EIS, to the Nunavut Impact Review Board (NIRB) for review under NLCA Article 12.

The existing Lupin winter road is an essential element to the operations of this Project. However, all new construction and all incremental interactions with the environment proposed by the Project lie entirely within Nunavut. The environmental review is expected to be conducted by NIRB under NLCA Article 12 Part 5, (see Appendix 5).

1.3.1 Construction Phase: Project Proposal, Environmental Screening, and Project Review

- **Nunavut Planning Commission**
  Robert Lyall, Chairman
  Tel. 867 983 2730

  Review Project for compliance with regional land use plan pursuant to NLCA Article 11 and 12.

  The West Kitikmeot Regional Land Use Plan is in draft form and has been reviewed by the Project. The Project as proposed is configured to the extent possible to be in compliance with the Draft Plan. In the absence of an approved plan, the Project will not be reviewed by the Nunavut Planning Commission. (NLCA 12.3.5; 13.4.6)

- **Nunavut Water Board**
  Thomas Kudloo, Chairman
  Tel. 867 360 6338

Project review and Water Use License pursuant to NLCA Article 13.

Water use and waste disposal by Project operations including the camps are subject to terms and conditions of a license issued by the Nunavut Water Board (NWB) which also reviews civil works such as bridges that may encroach on water and water ways in Nunavut. A Water Use Application for the Project is included in Appendix 4 of this Project Description. NLCA 13.4.6 requires that the application and Project Description be referred to NIRB for screening to "determine whether it has significant impact potential".

- **Kitikmeot Inuit Association**
  Charlie Evalik, President
  Tel. 867 983 2458

  Land use license pursuant to NLCA Article 21 for commercial access, developing and operating quarries, and building roads on Inuit Owned Land (IOL).

  Surface lease pursuant to NLCA Article 21 for exclusive use of IOL for developing a camp at Contwoyto Lake.

  Negotiating an Inuit Impact and Benefit Agreement (IIBA) pursuant to NLCA Article 26.

  Significant areas of IOL are affected by the Project as proposed. IOL is needed for pits and quarries, right-of-way for the road, and the camp at Contwoyto Lake. On receipt of the application (please see Appendix 4) to use IOL for Project purposes, it is expected that the application and Project Description will be referred to NIRB for screening. An IIBA between the Proponent and KIA will be required before any of the approvals for Project construction are valid (NLCA Article 26).

- **Indian and Northern Affairs Canada (INAC)**
  Wilf Attwood, Regional Director General
  Tel. 867 979 4501

  Land use permit pursuant to Territorial Lands Act (Canada) for access to, and building roads on Federal Crown Land.

  Quarry leases and/or permits to develop and operate quarries on Federal Crown land.

  The port and about 60% of the proposed road alignment is on Federal Crown Land. Permits will be required for pit and quarry development; a lease, or perhaps outright purchase, will be required for the port, and a land use permit is needed for working along the alignment to build the road. The relevant applications are included in Appendix 4. It is expected that INAC will forward the applications for the permits and leases, and this Project Description to NIRB for screening.

- **Nunavut Impact Review Board**
  Elizabeth Copland, Chairman
  Tel. 867 983 2691

  Project screening, EIS Guidelines, and Project Certificate pursuant to NLCA Article 12 Part 5.

  The Project screening and review by NIRB can be done only at the request of parties such as KIA, INAC, and the NWB. NIRB would then conduct a screening and report its findings to the Minister of

INAC. Included in those findings will be the NIRB view on the potential impact and the need for a review by NIRB (12.5) or by a Federal Panel (12.6). If NIRB finds that the Project should be reviewed by NIRB under Part 5, and the Minister concurs, NIRB would issue guidelines to the proponent for the preparation of the Project EIS (NLCA 12.5.2).

The proponent will review the Project in the context of completed baseline studies and preparation of the Project EIS. It is expected that the Project Description will be refined to reflect findings in the EIS. On refinement, the Project Description will be resubmitted to NIRB for final review and report of findings to the Minister. The Minster will advise NIRB of his concurrence, or otherwise, of the Project review report. On advice from the Minister, and completion of the process described in the NLCA (12.5.1 to 12.5.11) NIRB will issue a project certificate approving the Project including the terms and conditions that have been accepted or varied by the Minister (12.5.12).

- **Fisheries and Oceans Canada (Iqaluit)**
  Bert Hunt, District Manager
  Tel. 867 979 8009

  Authorization for works affecting fish habitat pursuant to the Fisheries Act (Canada).

  Approval to construct water crossings for road route pursuant to the Navigable Waters Protection Act (Canada).

  The primary concern of the Department is expected to be the effects of the Project construction and operations on fish habitat. Interactions between the Project and fish habitat will be at water crossings. A photographic record of each proposed water crossing and the crossing design type will be developed and submitted as supplementary information to this Project description.

1.3.2 Operations Phase: Required Operating Licenses and Permits

- **Kitikmeot Inuit Association**
  Charlie Evalik, President
  Tel. 867 983 2458

  Land use license pursuant to NLCA Article 21 for operating roads, quarries, and a camp.

  Surface leases on Inuit Owned Lands pursuant to NLCA Article 21 for exclusive use to operate a camp.

  Implement IIBA pursuant to NLCA Article 26.

  The permits and licenses obtained for Project construction will be renewed for long-term application to Project operations.

- **Nunavut Water Board**
  Thomas Kudloo, Chairman
  Tel. 867 360 6338

  Water Use License for camp needs and general Project purposes pursuant to NLCA Article 13.

The water use licenses obtained for Project construction will be renewed for long-term operations.

- **Indian and Northern Affairs Canada (INAC)**
  Wilf Attwood, Regional Director General
  Tel. 867 979 4501

  Land use permit pursuant to Territorial Lands Act (Canada) for operating a toll road over Federal Crown Land.

  Surface leases pursuant to Territorial Lands Act (Canada) for exclusive use of crown lands to develop and operate a camp fuel tank farm.

  Quarry leases and/or permits to operate quarries on Federal Crown Land.

  The licenses and permits obtained for construction will be renewed for operations including a mechanism for the long-term occupation of crown land for a toll road right-of-way.

1.3.3 Closure and Abandonment: Approvals

- **Nunavut Impact Review Board**
  Elizabeth Copland, Chairman
  Tel. 780 890 8760

  Approval for closure and abandonment plan as it affects lands and waters in Nunavut.
- **Nunavut Water Board**
  Thomas Kudloo, Chairman
  Tel. 867 360 6338

  Approval for closure and abandonment plan as these affect water in Nunavut.

- **Kitikmeot Inuit Association**
  Charlie Evalik, President
  Tel. 867 983 2458

  Approval for closure and abandonment plan for installations on IOL.

- **Indian and Northern Affairs Canada (INAC)**
  Wilf Attwood, Regional Director General
  Tel. 867 979 4501

  Approval for closure and abandonment plan for installations on Federal Crown land.

1.4 PREVIOUS ENVIRONMENTAL ASSESSMENTS

No previous environmental assessments have been completed for this Project. A broad scoping study of a transportation corridor through the SGP was completed for the Department of Transportation, Government of the Northwest Territories (Ferguson Simek Clark, 1999).

Elements of this Project Description were originally developed in the Izok Project Environmental Evaluation by Metall Mining Corporation in 1993; the materials included in this Preliminary Project Description derived from that Project will be cited as "Metall 1993". Metall Mining has since been renamed and is now called Inmet Mining Corporation. Inmet is an active participant in the Project Technical Committee.

2.0 PROJECT DESCRIPTION

2.1 PROJECT TITLE

Bathurst Inlet Port and Road Project

2.2 TYPE OF ACTIVITY

A new all-weather road connecting the Tibbitt to Contwoyto Winter Road with a marine shipping terminal on Bathurst Inlet is proposed. The marine shipping routes for this Project would use existing shipping lanes from the eastern arctic that have served Polaris Mine on Barrow Strait since 1980. The route from Barrow Strait will be south through Peel Sound (Chart #7575), Franklin Strait (Chart #7573), Victoria Strait (Chart # 7784), cross Queen Maud Gulf, pass through Dease Strait, and enter Bathurst Inlet (Figure 37). The portion of the route from Barrow Strait to Queen Maude Gulf, a distance of approximately 650 km, is currently not a regular shipping route but has been used by summer tourist cruise ships and other vessels "sailing the Northwest Passage". The remainder of the eastern shipping route, through Queen Maud Gulf, Dease Strait and into Bathurst Inlet, is used annually for the sealift re-supply of Gjoa Haven and Taloyoak to the east, and Umingmaktok and Bathurst Inlet in Bathurst Inlet. The final 40 km of the route south of Bathurst Inlet community is also new but has been charted (Canadian Hydrographic Service charts # 7781, 7793). Shipping to Kugluktuk would follow the route that has been used for marine barge operations by Northern Transportation Company Limited for many years in annual re-supply to Kitikmeot communities.

The proposed land route, an all-weather road, from Bathurst Inlet to the northeast shore of Contwoyto Lake crosses 211 km of tundra. A 69 km winter road will cross Contwoyto Lake to Lupin. (Figure 1)

The all-weather road will have a single lane 8 m wide running surface with a 12 m wide passing turnout at 1 km intervals.

Winter road operations as proposed would include re-supplying the diesel fuel and specific bulk cargo needs to Ekati™ and Diavik diamond mines south of Contwoyto Lake and to Lupin and Jericho to the north using the exiting winter road. Winter road operations may also include shipments of general cargo from the south destined for Kitikmeot communities by way of a Bathurst Inlet based summer barge service. The summer barge operations will also ship fuel to Kitikmeot communities from the port in Bathurst Inlet.

2.3 ALTERNATIVE AND PREFERRED OPTIONS

Previous studies have examined several road alignments from the Slave Geological Province to a marine shipping terminal on Bathurst Inlet. The Izok Project investigated a port site 20 km east of Kugluktuk and a 270 km all-season road to the Izok Project base metal deposit (Metall Mining, 1993). Figure 2 shows the locations of these routes and road alignments. The rationale for the current Project configuration is its reduced construction and operating costs; also, flatter topography over the length of the present road alignment will require less terrain disturbance for construction due to reduced borrow and quarry material needs. These factors also contribute to reduced capital costs for construction. The proposed Project alignment is also amenable to serving more sites currently active in Nunavut. It is also better aligned to serve other mineral deposits whose economic potential may be enhanced by the lower development and operating

costs as a direct result of the Project. Also, the landed cost of diesel fuel at Ekati™ and Diavik diamond mines in the Northwest Territories from Bathurst Inlet, by way of the Lupin winter road south of Contwoyto Lake, will be less than the current supply out of Edmonton via Yellowknife. Similarly, the freight cost of general cargo into Kitikmeot communities procured in eastern Canada and brought in through the Bathurst Inlet Port is estimated to considerably less than the current transportation system based out of Edmonton and shipped via barge from Hay River.

This Project description addresses the issues raised in the draft West Kitikmeot Regional Land Use Plan by the Nunavut Planning Commission (1997) with respect to route selection for a transportation corridor (draft West Kitikmeot Regional Land Use Plan Appendix 6) and guidelines for developing a transportation corridor (draft West Kitikmeot Regional Land Use Plan Appendix 7).

No new and/or untried design and construction methods, or transportation techniques are contemplated for any aspect of the Bathurst Inlet Port and Road Project.

2.4 PROJECT LOCATION AND LAND STATUS

All the elements of the Bathurst Inlet Port and Road Project are situated entirely within Nunavut. Figure 3, and Table 1 show the location and describe the areas of land ownership affected by the different elements of the Bathurst Inlet Port and Road Project, respectively. The Project and related infrastructure proposed will be located on Inuit Owned Lands (IOL) owned by the Kitikmeot Inuit Association and on Federal Crown land.

Facilities on IOL include:

- Contwoyto camp 1.5 ha
- 82.3 km of road, 140.5 ha (including 18 quarries)

Facilities planned for Federal Crown land include:

- the Bathurst Inlet port site including camp and airstrip - 159 ha
- 128.9 km of road, 211.2 ha (including 19 quarries and pits)

The locations of the proposed gravel pits and quarry sites for road construction materials are shown on Figure 4.

The design and construction technologies for all alternatives examined to date are similar with the exception that a Nuna Logistics proposal had a narrower running surface. In every case a route alignment has been proposed for an all-weather road built with local gravel and/or crushed rock overlying undisturbed tundra. The selection of the alignment and placement of materials would protect the underlying permafrost from thermal degradation. The road alignment connects a tidewater marine shipping port with inland mining locations. The port would handle incoming bulk materials, primarily diesel fuel, explosives, and grinding media. The road would enable the movement of these bulk commodities from tidewater by conventional highway tractor/trailer haul units. The port would be re-supplied with marine shipments of bulk goods on a shipping schedule determined by marine ice conditions, community concerns, and environmental considerations.

The preferred options for the Project were set by the Technical Committee to include specific criteria for the port site, and the road alignment.

Port site selection criteria for the Project included the following:

- the port site should have a steep shoreline to 15-metre water depth to accommodate large ice class vessels. The dock site has been designed to handle 50,000 tonne vessels carrying fuel, mineral concentrate and general bulk cargo. Vessels of this capacity would be required only when a base metal project is brought into production. It is estimated that this Project will require vessels up to 25,000 tonnes;
- the port site ocean floor marine geotechnical conditions should support a closed cell sheet pile rock filled wharf;
- port site shoreline should provide rock foundations for shore side structures;
- the port should have an ice-free season of 100 - 110 days per annum;
- shoreline features should provide a free vessel turning distance of 1,400 metres, allowing ships to operate without tug support;
- the port site should also accommodate marine tug and barge units for community re-supply;
- the port site should be close to local source of rock and granular construction materials;
- the site should have a nearby site that offers suitable conditions for a 1,200 metre airstrip;
- the site should include room for future expansion.

Road route selection criteria included:

- the route should be accessible by current and potential mines;
- the route should have terrain slopes less than 8% to minimize “cut and fill” sites;
- the route should be in close proximity to rock and granular construction materials to keep construction haul distances under 10 km;
- the route should maximize surface and near-surface rock road base to reduce drainage pattern alteration;
- the route should minimize the number of water crossings to reduce construction costs and minimize interference with fish and fish habitat.

Table 1. Land status of port, road alignment, and Contwoyto camp site

Facility	Location	Land ownership	Disturbed Area (ha)		Total		Sub Surface Interests*
			Road	Quarry/Pit	IOL	Federal	
Port, camp and airstrip	km 0	Federal Crown				**159.0**	Wheaton River Nunavut Ltd.
Port to Contwoyto	km 0 – 2.4	Federal Crown	3.2	2.0		5.2	Wheaton River Nunavut Ltd.
Lake Road	km 2.4 – 20.2	IOL: BB-27/76 J**	23.5	10.0	33.5		
	km 20.2 – 29.1	Federal Crown	11.7	4.0		15.7	
	km 29.1 – 34.5	IOL: BB-16/76 G, J**	7.1	4.0	11.1		
	km 34.5 – 56.6	Federal Crown	29.1	10.0		39.1	
	km 56.6 – 59.7	IOL: BB-16/76 G, J**	4.1	2.0	6.1		
	km 59.7 – 62.0	Federal Crown	3.0	0		3.0	
	km 62.0 – 66.4	Federal Crown	5.8	0		5.8	974143 N.W.T.Ltd.
	km 66.4 – 67.3	Federal Crown	1.2	2.0		3.2	
	km 67.3 – 70.7	IOL: 16/76 G, J**	4.5	2.0	6.5		
	km 70.7 – 75.3	Federal Crown	6.1	2.0		8.1	
	km 77.3 – 85.1	Federal Crown	12.9	6.0		18.9	Pinnacle Resources Ltd.
	km 85.1 – 89.1	Federal Crown	5.3	2.0		7.3	
	km 89.1 – 90.6	Federal Crown	2.0	0		2.0	
	km 90.6 – 92.9	Federal Crown	3.0	0		3.0	
	km 92.9 - 93.2	Federal Crown	0.4	0		0.4	Echo Bay Mines Ltd.
	km 93.2 – 94.6	Federal Crown	1.8	0		1.8	C. Ronaghan
	km 94.6 – 95.1	Federal Crown	0.7	0		0.7	Echo Bay Mines Ltd.
	km 95.1 – 100.9	Federal Crown	7.6	0		7.6	C. Ronaghan
	km 100.9 – 114.5	IOL: BB 04/76 F**	17.9	4.0	21.9		C. Ronaghan
	km 114.5 – 126.6	Federal Crown	16.0	4.0		20.0	C. Ronaghan
	km 126.6 – 149.0	IOL: BB 05/76 F**	29.5	6.0	35.5		C. Ronaghan
	km 148.5 – 155.7	Federal Crown	8.8	2.0		10.8	
	km 155.7 – 164.8	IOL: BB 17/76 F**	12.0	2.0	14.0		
	km 164.8 – 200.6	Federal Crown	47.2	8.0		55.2	Kennecott Cad. Exploration Ltd.
	km 200.6 – 203.1	Federal Crown	3.3	0		3.3	
	km 203.1 – 203.2	Federal Crown	0.1	0		0.1	TeckCominco
	km 203.2 – 210.7	IOL: CO-12/76/E **	9.9	2.0	11.9		Aber Resources Ltd
Sub-total			**277.7**	**74.0**	**140.5**	**211.2**	
Contwoyto Camp	km 210.7	IOL: CO-12/76/E			1.5		Aber Resources
Inuit Owned Land	± 82.3 km						
Federal Land	± 128.9 km						
Totals			**277.7**	**74.0**	**142.0**	**370.2**	

* indicates parties with mineral claims along segment of proposed Project road alignment

** IOL = Inuit Owned Land; alphanumeric code is the specific block of IOL affected

2.5 SITE ACCESS AND TRANSPORTATION METHODS

2.5.1 Marine Access

Marine access to the proposed port site from the northeast will use existing shipping lanes that have served Polaris Mine near Barrow Strait since 1980. From Barrow Strait the route will be south through Peel Sound, Franklin Strait, Victoria Strait, cross Queen Maud Gulf, pass through Dease Strait, and enter Bathurst Inlet. The portion of the route from Barrow Strait to Queen Maude Gulf, a distance of approximately 650 km, is currently not a regular shipping route but has been used by summer cruise ships and other vessels. The remainder of the shipping route, through Queen Maud Gulf, Dease Strait and into Bathurst Inlet, is used annually for the sealift re-supply of Gjoa Haven and Taloyoak to the east, and Umingmaktok and the Bathurst Inlet community. The final 40 km of the marine route south of Bathurst Inlet community is new. Barging to the communities will follow commercial shipping lanes used annually by Northern Transportation Company Limited (NTCL) in the annual marine re-supply of the coastal communities of Nunavut.

2.5.2 Overland Access

The transportation network proposed by the Project interconnects with the current Lupin winter road on Contwoyto Lake. The winter ice road on Contwoyto Lake is part of the current winter road between Yellowknife and Lupin Mine (Tibbitt to Contwoyto). (Figure 1)

2.6 PROJECT CONSTRUCTION

All Project construction activities will be based at, or serviced from camps at the Bathurst Inlet Port site and Contwoyto Camp. The road will be built in two "spreads", the initial spread from the Contwoyto camp site east and north; the second spread from the port site south and west towards Contwoyto Lake to meet up with the initial spread. The overall construction schedule will proceed in a sequence that includes:

- Port site development — late summer 2005 to winter 2006/2007;
- Road from km 0 (port) to km 126 — winter of 2005 through to the fall/ winter of 2006;
- Road from Contwoyto to km 126 — February 2005 to late fall 2006
- Contwoyto camp — January / February 2006

Figure 5 provides a schematic overview of this schedule; a more detailed Project construction schedule is provided in Appendix 3.

The initial shipment to start Project construction in September 2005 will include equipment and supplies for both port and road construction.

Mobile equipment	Equipment	Supplies
1 -150T crane 1 -50 T crane 1 -Fuel tanker 2 -Fuel trucks	1 maintenance shop 1 spill abatement equipment trailer 4 power generators 2 heat recovery units switch gear	7 rolls geo-textile 8 HDPE liner rolls with deploy equipment Sheet piling

3 -CAT D 8 dozer 4 -CAT 988 loader 1 -25T fork lift 1 -5 T fork lift 1 -boat with motor 1 -Hiab truck 2 -Excavator 2 -Sand/plow trucks 2 -CAT 14G graders 1 -CAT 14H grader 1 -CAT 16H grader 4 -CAT 777 trucks 2 -CAT 769 trucks 1 -100T float and tractor 2 -Tandem dump trucks 2 -Water trucks 1 -mechanics truck 1 -tractor with low bed trailer 2 -crew cab p/u trucks 1 -Ambulance 1 -Fire suppression unit 1 -12 passenger van 2 -Service trucks 1 -15 passenger van 2 -38 passenger bus 4 -Air track with compressor 1 -Tank drill 1 -CAT D 10 dozers 1 -CAT D 9 dozers 2 -CAT 992 front end loaders 2 -Agitator cement trucks	1 portable crushing and screening plant 1 Portable cement plant 1 -100 person camp for port 1 -60 person mobile camp with power plant, water treatment, and sewage treatment.	Steel for tanks Cement Bridges and decking 4 M litres diesel fuel

2.6.1 Port Construction

The first shipment of materials for construction at the Bathurst Inlet port site (shown above) will be shipped by marine barge from Hay River via Tuktoyaktuk to a staging site adjacent to the wharf site in the late summer of 2005. Functional accommodations and mess facilities for initial site work will be part of the barge shipment and will stay on site until the fall of 2006. Included in the initial shipment will be the camp, the construction equipment, construction materials for the dock, fuel and other bulk consumables for the first year of camp, airstrip and port and road construction. The fuel will be stored in a NTCL fuel barge that will be "tied up" and allowed to "freeze in" at the port site cargo staging area.

Construction for the major components of the port site is proposed to proceed as follows:

- Fall 2005 -site development
-install water supply
- Fall 2005 -150 person construction camp, potable water supply, and sewage treatment
-install first 4 fuel tanks;
-install permanent power supply;

- Winter 2005/06 -install fuel dispensing system;
- Winter/summer 2006 -construct wharf;
- Summer/fall 2006 -install remaining 6 fuel tanks;
- Winter 2006/07 -site development complete and in operation.

The facilities at the port site will be built following standard construction methods for tundra terrain. Development sites will be levelled by regular earth moving construction equipment laying down successive layers of gravel and crushed rock; in all cases care will be taken to ensure that permafrost integrity is not compromised, especially under built -up structures such as the airstrip, camp buildings, and tank farm. Overall fill requirements for port construction are estimated to be 270,000 cu m of quarried rock. The fill requirements for all site development at the port are in balance with the volume of quarried materials that must be removed for preparing the area at tidewater for the wharf. Rock for base course construction will be quarried using a standard drill, blast, and haul sequence. Rock for intermediate course and top dressing will be crushed to predetermined sizes and stockpiled for use as required.

The tank farm will be designed to include a perimeter berm and interior sumps to serve as the first line of protection in case of a large fuel spill. Also, the port site surfaces will be sloped so that all run off will pass through sedimentation ponds that can be controlled. In the event of an uncontrolled release of bulk materials that could be deleterious to marine environments, the run off would be trapped and the water treated before discharge - see Figure 6 for the configuration of the port site and related facilities. Final grades and drainage patterns will prevent site-specific surface erosion on or adjacent to the port site and associated facilities.

The sheet pile for the wharf will be driven from the ice in the spring of 2006. On completion of the sheet pile installation, rock fill will be placed in the space between the shoreline and the sheet piling. The rock fill will compact the marine clay sediment, but it is possible however, that the rock fill will displace the marine clay in which case it will have to be excavated and hauled to a spoil pile which will be located near the beach opposite km 2.5 of the road.

2.6.2 Port to Contwoyto Lake Road Construction

The road will be built using standard road building methods for tundra terrain - pushing quarried rock and granular materials over the tundra laid down by "end dump" mine trucks. In all cases the quarries and borrow pits will be developed immediately adjacent to the road alignment (Figure 4). The road base, 1 - 2 metres thick, will consist of quarried rock produced by drill, blast, load, and haul methods. This rock for the road base will be in the 600 - 900 mm size range. It will be covered with quarried crushed rock produced the same way but in the 100 mm size range. Road construction will run continuously with two shifts working 24 hours per day, 7 days per week. Road bed construction is expected to proceed at a rate of 10 km per month at each work camp; with two camps working (Port and Contwoyto camps) the rate of progress will be 20 km / month. Overall material needs for road construction from the Port to Contwoyto Lake are estimated to be 2.9 million cubic metres.

Please see Figure 7 for a typical cross section of the road.

Road construction from the port to Contwoyto Lake will proceed as follows:

- Winter 2005 -rough grade construction km 0 - 42 including bridge at km 2.5;
- Winter 2005/06 -mobilize camp and construction fleet to Contwoyto Lake;
- Winter /spring 2006 -rough grade construction km 42 -68;
- Spring/summer 2006 -intermediate grade km 2.5 - 65;
  -dress km 2.5 - 65;
- Spring/summer 2006 -rough grade km 68 – 126;
- Summer/fall 2006 -intermediate grade and dress km 65 – 126;
- Winter/spring 2006 -rough grade construction km 211 - 149;
- Spring 2006 -rough grade construction km 149 – 126
- Spring/summer/2006 -place intermediate grade and dress km 211 - 126;
- Summer/fall 2006 -complete intermediate grade to km 126;
- Fall/winter 2006 -road to Contwoyto complete and demobilize.

The equipment fleet above will be supplemented with an additional road construction fleet that will begin work from Contwoyto Lake toward the port. It will be mobilized from Yellowknife on the Lupin winter road in February 2005 and consist of:

Mobile equipment	**Equipment**	**Supplies**
1- 50T crane 1 -Fuel tanker 2 -Fuel trucks 2 -Service trucks 1 -Cat 14G grader 1 -CAT 16H grader 7 -CAT 777 trucks 2 -CAT 769 trucks 1 -100T float with tractor 1 -CAT D 6 wide pad 2 -Water trucks 2 -Sand/snow plough trucks 2 -Crew cab p/u trucks 1 -Boat with motor 2 -15 passenger van 1 -38 passenger bus 4 -Air tracks c/w compressors 1 -Tank drill 2 -CAT D 10 dozers 2 -CAT D 9 dozers	2 - 500,000 fuel tanks 1 -spill abatement equipment trailer 1 -portable crushing and screening plant 1 -60 person mobile camp with power plant, water treatment, and sewage treatment.	2 M litres diesel fuel cement bridge and deck

2 -CAT D 8 dozers 2 -CAT 992 loaders 1 -CAT 988 loader 1 -CAT 350 excavator		

Road construction workers will be based in two 60-person camps. They will be self-contained with a skid mounted sewage treatment plant and will be moved in response to progress in construction. Table 2 provides the details for a typical road construction crew required to operate two 12-hour shifts.

Table 2. Road construction crew

Job	Quantity
Site supervisor	1
Road foreman	2
Quarry/pit foreman	1
Drill/blast crew	5
Crusher crew	3
Dozer/loader/grader operators	21
Truck drivers	13
Servicemen/labourers	6
Camp/catering	5
Total	**57**

Road construction will begin with drilling and blasting rock at the quarry. The drilling/blasting pattern will be adjusted for the optimum size of blast rock required. Broken rock up to 900 mm size will be loaded into 90T trucks for hauling to the end of the road and dumping the rock for final placement by dozers pushing the rock to advance the road's base course. A portable crushing and screening plant operating in the quarry will produce the -100 mm size crushed rock road material for the top course. The crushers will not operate in the coldest months (December through February).

The rate of advance of the road is estimated to be 10 km / month and it is expected that the drills and crushers will be move every 30 days to reduce the haul distances for laying down the select granular base course of rock. Quarrying, hauling, and placing rock at the end of the road will have continuous construction activity occupy a linear distance of up to 20 km with the mobile camp located up to 20 km behind the active quarry.

2.6.3 Contwoyto Camp

Construction of the permanent Contwoyto camp will commence during the winter of 2006 as soon as the Lupin winter road from Yellowknife is operational. The campsite will be built with coarse and crushed rock on the same site development principles as the road.

2.6.4 Construction Labour Force

The construction labour needs identified in the Project feasibility study are provided in Table 3.

Table 3: Construction labour force requirements (man months)

Month/Year	2005		2006		2007	
	Port	Road	Port	Road	Port	Road
January			50	77	0	0
February			68	154	0	0
March			68	141	0	0
April			46	153	0	0
May			58	157	0	0
June			61	167	0	0
July	38		72	176	0	0
August	54		82	132	0	0
September	181		80	138	0	0
October	185	33	80	77	0	0
November	104	57	0	0	0	0
December	60	77	0	0	0	0
Sub-total	622	167	665	1372	0	0
Total Overall						**2826**

2.7 PROJECT OPERATIONS

Project operations will have a rhythm dictated by the seasons of the annual Arctic cycle. The shipping season may be variable from year to year but is expected to last approximately 110 days per year beginning as early as mid-July and running into late October. Fuel and selected cargo materials are expected to be delivered in ice class double hull tankers or OBO vessels (oil, bulk, ore). Summer shipping will also include barges from the port to Kitikmeot communities with fuel and general cargo. Table 4 shows the estimated volumes of cargo that is expected to be handled through the port in a typical year during the first 10 years of Project operations.

Table 4. Estimate of annual volume of cargo passing through the port in years 1 - 10

Destination/Source	Imports		Exports	
	Fuel (000's L)	Supplies (t)	Fuel (000's L)	Supplies (t)
Lupin	14,030	4,700		
Ekati	72,300	20,000		
Diavik	53,800	9,400		
Jericho	8,640	2,660		
Hope Bay	7,200		7,200	
Gjoa Haven	4,840	80	4,840	80
Cambridge Bay	9,360	150	9,360	250
Kugluktuk	4,800	110	4,800	150
Taloyoak	3,180	60	3,180	80
Bathurst Inlet	50		50	
Umingmaktok	60		60	
Total	**178,260**	**37,160**	**29,490**	**560**

2.7.1 Port Operations

A typical year of operations at the port will see 178 million litres of fuel delivered in six to eight voyages (round trips) through the Inlet. The time required to unload each vessel will be about 48 hours. Marine barges will load 22 million litres of fuel and 560 tonnes of general cargo for delivery to Kitikmeot communities in 3 barge movements.

As soon as marine ice conditions permit, expected to be mid-July to early August, the vessels will begin to arrive at the port in Bathurst Inlet. The shipping season is expected to last 110 days per year and six to eight voyages per shipping season are planned to deliver fuel and supplies before the end of October. In-bound freight will also include other bulk goods such as lubricants, cement, reagents, and explosives for the various mining operations served by the Project. The Camp at the Port will have accommodations for 150; 31 employees will provide the port's work force to unload fuel tankers, load the trailers hauling other bulk goods to the sites served by the Project, and maintain and manage the port and road. The remaining camp capacity will be required for the contract drivers for the trucks hauling between the port and mine sites served by the Project. Port maintenance will involve site management services such as water, sewage, garbage, and roadwork including snow removal in winter and dust suppression in summer. Basic truck and trailer maintenance services will be provided by a local team of mechanics and service personnel.

2.7.2 Road Operations

Road operations will consist of two separate activities, road maintenance by Project personnel and hauling by trucks and drivers contracted directly by the mining company requiring their services. Road maintenance crews based at the port will maintain the road to Contwoyto Lake. The crew based at the Contwoyto camp will service the southerly portion of the Contwoyto Lake ice road crossing and supplement the road maintenance towards Bathurst Inlet.

The road will operate during the 100-day winter ice road season from mid-January to late April. All trucks and drivers for fuel and cargo will be supplied by contract truckers. The Project will control and monitor traffic via radio communications and GPS tracking. Load and speed restrictions will be regulated by Project "highway patrols". Loads will be split at Contwoyto Lake for travel on the winter road.

Road operations will deliver fuel and other bulk supplies from storage at the port to Lupin, Jericho, Ekati™ and Diavik. Haulage will be by B-trains (90 tonnes) traveling up to 60 km/hr. Hauling on the Contwoyto Lake ice road will be restricted to single trailers traveling at a maximum speed of 40 km/hr. The Contwoyto Lake parking area will be a temporary parking location for trailers. All road haul operations will be winter only. Up to 45 tanker units will be required to disperse the 150 million litres of diesel to the participating mines. It is expected that the majority of the tanker fleet will be active seasonally, arriving from Yellowknife when the Lupin winter road opens and return at the end of its operating season. It is expected that fuel tanker units will operate 24 hours per day during the winter ice road season until all of the fuel and supplies are delivered. Drivers off shift will use accommodations in the main camp at the port.

Priority will be given to Inuit businesses to become involved in the trucking, this will include Inuit owner/operators.

Road maintenance will consist of snow removal where required, and sanding icy portions. Sand and crushed rock for road maintenance will be taken from borrow pits adjacent to the road alignment. Please see Figure 4

for borrow site locations. Camp size at the Contwoyto Lake camp site is expected to be 20 persons for road maintenance and emergency services.

There will be some road maintenance in summer, including bridge and culvert maintenance. The sand and gravel for winter sanding operations will be stockpiled at strategic points during the summer.

2.7.3 Contwoyto Lake Winter Ice Road Operations

The ice road will be built by crews and equipment based both at Contwoyto and Lupin. The main route running the length of Contwoyto Lake is well established; the spur to the Contwoyto road terminal will be similar. Initial snow clearing over the 30 m wide ice road is expected to begin in mid-December with the minimum ice thickness of 1.5 m for light loads being achieved by late December. Full loads are not expected to cross Contwoyto Lake until mid-January. Load and speed restrictions will be regulated by Project "highway patrols". Load and speed restrictions on the ice road of Contwoyto Lake will require that only 45 tonne single trailer loads be hauled at speeds not exceeding 40 km/hr.

2.7.4 Operations Labour Force Requirements

The work force required to operate the port and road is shown in Table 5.

Table 5: Bathurst Inlet Port and Road operations work force* requirements

Function	Quantity		Location
	Summer	Winter	
Project General manager	1	1	Cambridge Bay
Controller	1 (part time)	1	Cambridge Bay
Purchasing agent	1	0	Cambridge Bay
Accountant	1	0	Cambridge Bay
Secretary/clerk	1	1	Cambridge Bay
Personnel/Safety	1	0	Cambridge Bay
Site manager	1	1	Port
Equipment operators	2	2	Port
Labourers	2	2	Port
Catering	3	3	Port
Security/Emergency measures/coms	2	1	Port
Road maintenance operators	0	3	Port
Drivers	0	8	Port
Labourers	0	1	Port
Port maintenance mechanic	1	1	Port
Port serviceman	0	1	Port
Electrician	1	1	Port
Instrument tech.	0	0	Port
Haul truck mechanic	0	3	Port
Haul truck serviceman	0	1	Port
Total	**17**	**31**	

* work force on site on a daily basis

The project operations work force in the field will have a "fly in/out" work rotation of 21 days on and 7 days off. The total annual payroll for the operations workforce is estimated to be $1.5 million (2002 dollars). An

additional $ 9 million will be paid for contract services of drivers for contracted trucks hauling bulk supplies and fuel for a total estimated annual operating payroll of $10.5 million.

2.8 PROJECT SCHEDULE: DECOMMISSIONING

2.8.1 Quarries

Quarries and pits will be developed at locations that allow drainage and so should remain dry. Quarries that are not required for maintaining the road during operations will be contoured and abandoned on completion of road construction. At no time during the construction or operations of the Project will active erosion of any terrain on or adjacent to the port and road and associated lands be allowed to proceed unchecked of alter drainage patterns in adjacent lands.

2.8.2 Port Sites

It is expected that the project will be in use for many generations in the future, nevertheless, the Project proponents acknowledge that non-renewable resources are finite and that some day the road and associated facilities may no longer be required. Closure and abandonment will include removal of all imported materials and structures, treating all contaminated soils, contouring all surfaces to reduce the possibility of erosion, and to enhance the natural vegetation of all terrestrial surfaces disturbed or altered by the Project.

2.8.3 Road

It is expected that the project will be in use for many generations in the future, nevertheless, the Project proponents acknowledge that non-renewable resources are finite and that some day the road and associated facilities may no longer be required. Closure and abandonment will include removal of all imported materials and structures, treating all contaminated soils, contouring all surfaces to reduce the possibility of erosion, and to enhance the natural vegetation of all terrestrial surfaces disturbed or altered by the Project.

2.9 ENVIRONMENTAL PROTECTION AND CONTINGENCY PLANS

The major components of the Project from construction, through operations, and into decommissioning will have direct interactions with the environment. The effects of construction on the tundra terrain will be observable for many years. Under normal operating conditions, there will be no further long-term environmental effects. There is, however, always the chance for accident and human error, which may pose risk of negative environmental effect to the Project sites and adjacent lands and waters. Table 6 provides an overview of the environmental management system (EMS) that will be developed by the Project in preparation for obtaining Project approvals. The EMS will implement the overall Bathurst Inlet Road and Port Project Environment Policy, which is provided Appendix 1.

Table 6 Project/environment interactions and related features of the Bathurst Port and Road Project Environmental Management System

Project Activity	Interaction	Risk	Project EMS Response
marine shipping	marine passage	loss of cargo, i.e. fuel, lubricants, explosives	-compliance with AWPPA.*
camp operations	-waste water discharge -garbage disposal	-contamination and erosion; -attract scavengers	-water treatment and controlled release; -incinerate all non-effluent waste and bury the ashes; -Project operations EMS.
unloading ship cargo	coastal habitats	fuel spill, cargo spill	-port site marine spill contingency and response plan.
pit/quarry development	terrain disturbance	erosion and slumping	-avoid ice rich sites; -protect ground thermal regime ; -contour final grades and surfaces; -construction operations EMS.
port site development	-terrain disturbance/ shoreline disturbance	erosion and slumping/ alter fish habitat	-avoid ice rich sites; -protect ground thermal regime ; -contour final grades and surfaces; -alter minimal area of coastal habitat; -construction operations EMS.
road construction	terrain disturbance water crossings acid rock drainage	erosion and slumping alter fish habitat change water quality	-avoid ice rich sites; -protect ground thermal regime; -contour final grades and surfaces; -construction operations EMS; -protect flow regime in water crossing design and construction. -construction operations EMS; -avoid high sulphide content rock for road construction; -blend low sulphide content rock with neutralizing rock.
port operations	terrestrial/aquatic environments	-spills	-spill contingency and response plan.
haul road operations	-road traffic	-dust -spills of fuel, cargo, -wildlife road kills	-dust suppression; -spill contingency and response plans; -spill equipment stationed along road route and on all trucks. -wildlife has right-of-way instructions to all drivers; -Project operations EMS.
loading barge cargo	coastal habitats	cargo spill	-port site marine concentrate spill contingency and response plan.

* AWPPA = Arctic Waters Pollution Prevention Act (Canada).

A comprehensive suite of contingency plans will be submitted in support of the Project EIS.

3.0 DESCRIPTION OF THE ENVIRONMENT

3.1 TERRAIN AND GEOLOGY

The landscape of the region is low relief tundra. The road alignment rises to 400 m above sea level (asl) near km 10 and remains in the 400 - 450 m asl range all the way to Contwoyto Lake. The elevation of Contwoyto Lake is 445 m+/- (see NTS 76E).

The bedrock and surficial geology of the Project region is typical of the Precambrian shield; bedrock outcrops are common, glacial landforms such as eskers and drumlins are common with shallow lakes everywhere in sight. Examination of the lakes and other land forms along the alignment suggests that none of the lakes along the route are of great depth; similarly, the frozen tundra soils overlying the bedrock are a mere few metres thick for most of the alignment except in the area of the port where marine sediments of greater depth are expected in the first five kilometres of the route (Nishi-Khon/SNC-Lavalin and Kitikmeot Geosciences, 2002).

The chemical composition of the rock types along the road alignment was investigated to assess the potential for acid generation (Rescan 2003a). Acid generation occurs when naturally occurring sulphur in the form of sulphide in native rock is exposed to, and combines with, oxygen from the air. The run off from an area of rock with high sulphide content is usually mildly acidic. Acidic run off from man made structures of native rock can be mitigated by blending acid generating rock with basic rock so that the acidic run off is neutralized. A more satisfactory mitigation strategy would be to avoid using road-building materials that show acid generation potential. The occurrence of rock with sulphide content that has the potential to produce acid drainage was noted along the road alignment at km 99 - 104 on the Port/Contwoyto road.

Further to the field studies, acid base accounting (ABA) analysis was conducted on rock samples collected along the route. Although the samples collected from km 99-104 were not proven to be acid generating through ABA analysis, it should be noted that the samples came from a highly weathered shear zone, and that the potential exists for sulphides in the unweathered rock below the surface. ABA analysis indicated an uncertain potential to generate net acidity in an additional two areas other than those determined in the field. These sample locations are at km 65.7 and 194.5.

The risk of earthquake hazard in the Project area is rated in the lowest risk category projected on a Canada wide scale (Adams et al. 1999).

3.2 CLIMATE AND PERMAFROST

The climate of the Project area is characterized by short cool summers and long cold winters. Weather records from the Project area have been collected continuously since 1956 when a weather station was established on Contwoyto Lake. This weather station was shut down and records for the region were collected at Lupin since 1983. Figures 10 to 20 summarize the climate data collected at Contwoyto Lake, Lupin, and other locations in the Kitikmeot region.

Permafrost is a direct function of the prevailing climate over a long time. The presence of continuous permafrost in the terrain throughout the land portion of the Project shows the negative annual solar energy

budget in the region with a mean annual temperature of -11 deg. C. The depth of permafrost generally in the Project region is estimated to exceed 300 m (National Atlas of Canada). The maximum depth of thawed soils at surface in the late summer will vary depending on the type of surface cover; on bare granular sites the depth of thaw can reach 2 m (Metall, 1993) while on moss covered sites the depth of thaw will be much less. Also, permafrost is expected to be absent under large bodies of water like Contwoyto Lake and from land immediately adjacent to, and under the port site at Bathurst Inlet.

Climate records (Environment Canada) for Cambridge Bay, Jenny Lind Island, and Kugluktuk are summarized in Figures 14 to 20. Marine ice thickness analyses for Cambridge Bay and Kugluktuk were prepared for the earlier Izok Project study Metall, 1993, (Figures 21 and 22), the Cambridge Bay chart has been updated to 2003. The ice regime of the shipping route is further described in Figures 23 to 25, which show the mean ice fracture dates, mid-September open water distribution, and early winter ice consolidation dates for the shipping route from Barrow Strait near Polaris Mine to Bathurst Inlet. Observations of spring ice conditions by residents of Bathurst Inlet community show that the marine ice cover recedes from mid-June to early July with the Inlet being clear of ice by mid-July. In the fall the marine ice cover may reach 10 cm by late October. This is significant in that a 10 cm ice cover is adequate for both a snowmobile and caribou to cross the Inlet (Sam Kapolak, Bathurst Inlet resident).

A project specific climate-monitoring program began in late August 2001 with the installation of an automated meteorological station at the proposed Port site. The station uses an automatic data logger to record measurements of climatological elements. The design of the station was based on Environmental Canada guidelines.

3.3 AIR QUALITY

Data sets showing predevelopment air quality for the Project area are not available but will be developed as required for the Port site as well as the road. The prevailing winds for the area are north to northwest; air quality monitoring devices would be set up in appropriate locations to reflect the wind regime in relation to site configuration.

3.4 HYDROLOGY

Mean annual precipitation throughout the Project region is 250 mm with roughly equal amounts as rain in summer and snow in winter (please see Figure 11 for precipitation records for Contwoyto Lake: 1956 to 1982). Despite these low, desert-like annual precipitation rates, the low topographic relief throughout the Project area combined with the presence of permafrost provide conditions for numerous tundra lakes and ponds in the region. The tundra hydrologic regime is characterized by moisture accumulation throughout the winter in the form of snow, rapid melt and run off in June, and significant evaporation and transpiration throughout the short cool summer that is accompanied by light showers and rain. It is not unusual for tundra streams to dry up for periods following spring run off. The annual stream flow profile for small basins typical of the Project area can be represented by the Gordon River basin (1,530 km^2) as shown in Figure 26; it flows into Bathurst Inlet from the southeast. This basin was monitored by Environment Canada beginning in 1977 (Environment Canada, 1992). The data show zero flow for the months of January, February, March and April; very low flow in May and peak flows in June dropping off sharply in July and returning to zero flow by December. The extreme flow events recorded for the Gordon River shows that maximum instantaneous, and maximum daily flows (both recorded in June) are five times the mean daily flow for June. Mean annual water yield from run off for the entire basin for the Gordon River was 163 mm.

It is typical that summer evaporation and transpiration from tundra environments is roughly equal to summer precipitation, in the range of 100 - 150 mm (Environment Canada, 1978; UNESCO, 1976).

Detailed terrain analyses of the road alignment shows that 111 stream crossings will be required along its entire length. Figure 32 shows the road alignment in relation to drainage basins that would be bisected by the road.

3.5 VEGETATION AND WILDLIFE HABITAT

The terrestrial habitat of the Project region is typical of sub-arctic tundra. The soils of the area are of glacial origin and are for the most part well drained, supporting numerous herb and shrub species including dwarf birch and arctic willow. Low lying areas support lush wetlands with sedges and cotton grass.

Several rare plant species have been reported for the sub-arctic region generally, and are listed in Table 9. Their presence and distribution was a primary focus of the plant and vegetation study of the Project area. None of the species indicated in Table 9 were noted in the 2001 field studies of the road alignment.

Table 9 Rare plant species recorded within or near the Izok Lake-Bathurst Inlet Transportation Link

Scientific Name	Common Name	Habitat	Nearest Location
Braya glabella	Braya	mineral soil, damp tundra	near Bathurst Inlet area
Carex morrisseyi	Sedge	minerotrophic *Larix* fens	near the study area and towards Great Bear Lake and Hudson's Bay
Gentiana tendella	Gentian	local on sandy beaches and gravelly mud flats along the Arctic coast	near Bathurst Inlet
Mertensia drummondi	Drummond's Lungwort	sandy banks and eskers; not a seashore species	west of Bathurst Inlet near coast
Ranunculus pallasii	Pallas Buttercup	wet brackish meadow and slough, *i.e.* mainly along seacoast and estuaries.	near Bathurst Inlet and to west on coast

Source: GNWT 1999 in JWEL 2001

3.6 FISH AND WILDLIFE

The Project area supports a complete assemblage of Arctic fish and wildlife species. Lists enumerating marine and terrestrial species of fish, birds, and mammals reported for the Project region indicating their preferred habitats, abundance, and distribution are provided in Tables 10-15. None of the populations of wildlife species that are likely to interact with any aspect of the Project are currently listed as "at risk" in Nunavut (Government of Nunavut, 2000; unpublished).

3.6.1 Fish - Marine

The distribution of marine fish in Canada's arctic marine environments was documented in the Project scoping study (JWEL, 2001). Table 10 summarizes those findings on the species that may be present along the marine shipping route. Species appearing in **bold print** were confirmed to occupy the Project region in collections made during 2001 field studies (Rescan 2002a).

Table 10 Marine fish species, their habitat and economic status, along the marine shipping routes serving the Bathurst Inlet Port

Species	Habitat	Economic Status
Arctic cod *Boreogadus saida*	marine, demersal	subsistence
Polar cod *Arctogadus glacialis*	marine, bathypelagic	subsistence
Toothed cod *Arctogadus borisovi*	marine, demersal	subsistence
Saffron cod *Eleginus gracilus*	marine, demersal	subsistence
Greenland cod (Ogac) *Gadus ogac*	marine, demersal	subsistence
Arctic charr *Salvelinus alpinus*	anadromous, benthopelagic	subsistence and commercial
Lake trout *Salvelinus namaycush*	freshwater/brackish, benthopelagic	subsistence and commercial
Arctic Grayling *Thymallus arcticus*	freshwater/brackish, benthopelagic	recreational use
Lake whitefish *Coregonus clupeaformis*	freshwater, brackish, demersal	subsistence
Broad Whitefish *Coregonus nasus*	freshwater, brackish, demersal	subsistence
Inconnu *Stenodus leucicthys*	inshore anadromous	subsistence
Pacific herring *Clupea harengus pallasi*	Marine, pelagic	subsistence
Arctic cisco *Coregonus autumnalis*	anadromous, pelagic	subsistence
Least cisco *Coregonus sardinella*	anadromous, pelagic	subsistence

Capelin *Mallotus villosus*	marine, pelagic	subsistence
Rainbow smelt *Osmerus mordax*	anadromous, pelagic	subsistence
Longnose sucker *Catostomus catostomus*	freshwater, inshore	subsistence
Eelpouts - 9 species *Zoarcidae sp.*	marine, demersal	
Berring wolffish *Anarhichas orientalis*	marine, demersal	
Pricklebacks - 6 species *Sticheidae*	marine, demersal/benthopelagic	
Northern sand lance *Ammodytes dubuis*	marine, pelagic	
Stout sand lance *Ammodytes hexapterus*	marine, pelagic	
Ninespine stickleback *Pungitius pungitius*	freshwater/brackish, pelagic	
Fourhorn sculpin *Myoxocephalus quadricornis*	marine, demersal	
Arctic alligatorfish *Aspidophoroides oirko*	marine, demersal	
Atlantic poacher *Leptogonus decagonus*	marine, demersal	
Leatherfin lumpsucker *Eumicrotreus derjugini*	marine, demersal	
Atlantic spiny lumpsucker *Eumicrotremus spinosis*	marine, demersal	
Gelatinous snailfish *Liparis fabricii*	marine, bathydemersal	
Dusky snailfish *Liparis gibbus*	marine, demersal	
Kelp snailfish *Liparus tunicatus*	marine, demersal	
Arctic flounder *Liopsetta glacialis*	marine, demersal	

Starry flounder *Platichthys stellatus*	marine, demersal	
Longhead dab *Limanda proboscidea*	marine, demersal	
Twohorn sculpin *Icelus bicornis*	marine, demersal	
Spatulate sculpin *Icelus spatula*	marine, demersal	
Arctic staghorn sculpin *Gymnocanthus tricuspis*	marine, demersal	
Ribbed sculpin *Triglops pingelii*	marine, demersal	
Round whitefish *Prosopium cylindraceum*	freshwater/brackish, benthopelagic	
Shorthorn sculpin *Myoxocephalus scorpius*	marine, demersal	
Sea tadpole *Careproctus reinhardti*	marine, bathydemersal	
Slimy sculpin *Cottus cognatus*	freshwater/brackish, demersal	
Bigeye sculpin *Triglops nybelini*	marine, demersal	
Bering flounder *Hippoglossoides robustus*	marine, demersal	

The conservation status of marine fish in Nunavut has not been assessed (Government of Nunavut, unpublished). Fish and fish habitat in Canada are protected under the Fisheries Act (Canada). Notes on the biology and economic status of marine fishes were taken from Stewart et al (1993) and Froese and Pauly (2003).

3.6.2 Fish - Freshwater

Numerous studies of the lakes and streams in the Slave Geological Province have provided information on the distribution of freshwater fish species there (Metall, 1993; JWEL, 2001). These reports were supplemented with information from Scott and Crossman (1973, Freshwater Fishes of Canada) for preparing the freshwater species list of fishes in the Project area. Studies by the Project have refined the information on the distribution and abundance of species in the drainage basins bisected by the road (Rescan 2002b, 2003b). These data will be reported in support of the Project EIS.

The river basins bisected by the road alignment include the Burnside and Back (Contwoyto Lake drains into both), Mara/ Burnside, and the upper reaches of the Western river. Numerous freshwater and anadromous

fish species are known to occupy the region. Table 11 summarizes the species that may be present in the lakes, ponds, and streams adjacent to the road alignment. While there are currently no commercial or tourist operations that are located in the immediate vicinity of the Project's proposed facilities, some of the fish species in the region offer recreational opportunity for new commercial ventures that may arise in the future as a result of the Project.

None of the fish populations of the species in the region are listed as endangered or threatened (Government of Nunavut, 2000; unpublished). Species appearing in **bold print** were confirmed to occupy the Project region in collections made during 2001 and 2002 field studies (Rescan 2002b, 2003b).

Table 11 Freshwater fish species reported for the Project area and their conservation and economic status.

Species	Habitat/ Abundance	Conservation Status *	Economic Status/ Potential
Northern pike *Esox lucius*	lake and stream uncommon	secure	subsistence and recreational use
Longnose sucker *Catostomus catostomus*	lake	undetermined	subsistence use
Round whitefish *Prosopium cylindraceum*	lake and stream	undetermined	subsistence use
Lake cisco *Coregonus artedii*	lake and stream	secure	
Least cisco *Coregonus sardinella*	lakes and streams, anadromous	sensitive	
Arctic cisco Coregonus autumnalis	lakes and streams	sensitive	
Arctic charr *Salvelinus alpinus*	lake and stream, anadromous, common	sensitive	subsistence and recreational use
Lake trout *Salvelinus namaycush*	lake and stream, anadromous, common	secure	subsistence and recreational use
Arctic grayling *Thymallus arcticus*	lake and stream, common	sensitive	recreational use
Burbot *Lota lota*	lakes and stream, common	secure	
Ninespine stickleback *Pungitius pungitius*	lakes and streams, common	secure	

Slimy sculpin *Cottus cognatus*	lakes and streams, common	undetermined	

* the conservation status of freshwater fish in Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

3.6.3 Birds

The bird species of the Project region include migratory and non-migratory species. Migratory birds may or may not be covered by the Migratory Birds Convention Act (Canada). Most raptor species are migratory and are not protected by the federal legislation but are covered by the Wildlife Act (Nunavut). This territorial statue is administered by the Government of Nunavut Department of Sustainable Development. The Migratory Birds Convention Act (Canada) is administered by Environment Canada. Tables 12 and 13 enumerate species that are covered by territorial and federal statute respectively; providing as well some notes on distribution and economic value. The information in these tables was gleaned from Tahera (2001) and supplemented with information from Godfrey (1966, Birds of Canada). Most bird species resident in the region are summer visitors with no particular significance to the domestic economy of the communities in the region; those that do, however, are so indicated.

None of the bird species known to breed in the Project area are listed as endangered or threatened (Government of Nunavut, 2000; unpublished; GNWT, 2000).

Table 12 Birds of the Project area protected by the Wildlife Act (Nunavut)

Species*	Distribution	Conservation Status**	Economic Status
Golden eagle *Aquila chrysaetos*	terrestrial; summer resident	sensitive	
Bald eagle *Haliaeetus leucocephalus*	terrestrial ; summer resident and migratory	accidental/vagrant	
Northern harrier *Circus cyaneus*	terrestrial; summer resident and migratory	sensitive	
Gyrfalcon *Falco rusticolus*	terrestrial; summer resident and migratory	secure	
Peregrine falcon *Falco peregrinus tundrius*	terrestrial; summer resident and migratory	may be at risk	
Rough-legged hawk *Buteo lagopus*	terrestrial; summer resident and migratory	secure	
Willow ptarmigan *Lagopus lagopus*	terrestrial; summer resident and migratory	secure	recreational and subsistence use
Rock ptarmigan *Lagopus mutus*	terrestrial; summer resident and migratory	sensitive	recreational and subsistence use

Raven *Corvus corax*	terrestrial year round resident	secure	
Snowy owl *Nyctea scandiaca*	terrestrial; summer resident and migratory	secure	
Short-eared owl *Asio flameus*	terrestrial; summer resident and migratory	sensitive	

* species appearing in **bold print** have been confirmed to breed in at least one location in the Project region

** the conservation status of birds Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

Table 13 Birds of the Project area protected by the Migratory Birds Convention Act (Canada)

Species*	Distribution	Conservation Status**	Economic Status
Red-throated loon *Gavia stellata*	summer resident	secure	
Arctic loon *Gavia arctica*	summer resident	secure	
Yellow-billed loon *Gavia adamsii (Gray)*	summer resident	secure	
Tundra swan *Cygnus columbianus*	summer resident	secure	
White-fronted goose *Anser albifrons*	summer resident	secure	recreational and subsistence use
Canada goose *Branta canadensis*	summer resident	secure	recreational and subsistence use
Brant *Branta bernicla*	summer resident	secure	recreational and subsistence use
Green-winged teal *Anas crecca*	summer resident	undetermined	recreational and subsistence use
Northern pintail *Anas acuta*	summer resident	sensitive	recreational and subsistence use
Canvasback *Athya valisineria*	summer resident		recreational and subsistence use
Greater Scaup *Aythya marila*	summer resident	undetermined	recreational and subsistence use
Oldsquaw *Clangula hyemalis*	summer resident	secure	recreational and subsistence use
Common eider *Somateria mollissima*	summer resident	sensitive	recreational and subsistence use

King eider *Somateria spectabilis*	summer resident	sensitive	recreational and subsistence use
White winged scoter *Melanitta fusca*	summer resident	undetermined	recreational and subsistence use
Black scoter *Melanitta nigra*	summer resident		recreational and subsistence use
Surf scoter *Melanitta perspicillata*	summer resident		recreational and subsistence use
Red-breasted merganser *Mergus serrator*	summer resident	secure	
Common merganser *Mergus merganser*	summer resident		
Sandhill crane *Grus canadensis*	summer migrant	secure	
Lesser golden plover *Pluvialus dominica*	summer resident	secure	
Semipalmated plover *Charadrius semipalmatus*	summer resident	undetermined	
Lesser yellowlegs *Tringa flavipes*	summer resident	undetermined	
Ruddy turnstone *Arenaria interpres*	summer resident	secure	
Sanderling *Calidris alba*	summer resident	secure	
Semipalmated sandpiper *Calidris pusilla*	summer resident	sensitive	
Least sandpiper *Calidris minutilla*	summer resident	sensitive	
White-rumped sandpiper *Calidris fuscicollis*	summer resident	secure	
Baird's sandpiper *Calidris bairdii*	summer resident	secure	
Pectoral sandpiper *Calidris melanotos*	summer resident	secure	
Stilt sandpiper *Calidris himantopus*	summer resident	undetermined	
Common snipe *Gallinago gallinago*	summer resident	sensitive	

Red-necked phalarope *Phalaropus lobatus*	summer resident	sensitive	
Northern phalarope *Lobipes lobatus*	summer resident		
Pomarine jaeger *Stercorarius pomarinus*	summer resident	secure	
Parasitic jaeger *Stercorarius parasiticus*	summer resident	secure	
Long-tailed jaeger *Stercorarius longicaudus*	summer resident	secure	
Glaucous gull *Larus hyperboreus*	summer resident; colonial nesting on coastal cliffs and islands	secure	eggs are gathered
Thayer's gull *Larus thayeri*	summer resident; nesting on coastal cliffs and islands	not assessed	
Herring gull *Larus argentatus*	summer resident; colonial nesting on coastal cliffs and islands	secure	eggs are gathered
Sabine's gull *Xema sabini*	summer resident	secure	
Arctic tern *Sterna paradisaea*	summer resident	secure	
Common nighthawk *Chordeiles minor*	summer resident		
Horned lark *Eremophila alpestris*	summer resident	sensitive	
Cliff swallow *Hirundo pyrrhonota*	summer resident	secure	
Bank swallow *Riparia riparia*	summer resident		
Northern wheatear *Oenanthe oenanthe*	summer resident	undetermined	
Gray-cheeked thrush *Catharus minimus*	summer resident	secure	
American robin *Turdus migratorius*	summer resident	secure	
Water pipit *Anthus spinoletta*	summer resident	sensitive	

Yellow warbler *Dendroica petechia*	summer resident	undetermined	
Yellow-rumped warbler *Dendroica coronata*	summer resident	undetermined	
Blackpoll warbler *Dendroica striata*	summer resident	may be at risk	
American tree sparrow *Spizella arborea*	summer resident	sensitive	
Savannah sparrow *Passerculus sandwichensis*	summer resident	secure	
White-crowned sparrow *Zonotrichia leucophrys*	summer resident	sensitive	
Harris's sparrow *Zonotrichia querula*	summer resident	sensitive	
Lapland longspur *Calcarius lapponicus*	summer resident	secure	
Smith's longspur *Calcarius pictus*	summer resident	secure	
Snow bunting *Plectrophenaz nivalis*	summer resident	sensitive	
Common redpoll *Carduelis flammea*	summer resident	secure	
Hoary redpoll *Carduelis hornamanni*	summer resident	secure	

* species appearing in **bold print** have been confirmed to breed in at least one location in the Project region .

** the conservation status of birds in Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

3.6.4 Mammals - Terrestrial

All terrestrial mammals in Nunavut, including polar bear, are protected by the Wildlife Act (Nunavut). This territorial statute is administered by the Government of Nunavut Department of Sustainable Development. The distribution and economic status of mammals in the Project area is summarized in Table 14.

Table 14 Terrestrial mammals reported to occupy the Project area.

Species	Habitat and Distribution	Conservation Status*	Economic Status
Masked Shrew *Sorex cinereus*	expected throughout Project area	not assessed	

Arctic hare *Lepus arcticus*	expected throughout Project area	secure	recreational and subsistence use
Arctic ground squirrel *Spermophilus parryii*	expected throughout Project area; inactive in winter	secure	occasional subsistence use
Tundra redback vole *Clethrionomys rutilus*	expected throughout Project area	undetermined	
Brown lemming *Lemmus sibiricus*	expected throughout Project area	secure	
Greenland collared lemming *Dicrostonyx torquatus*	expected throughout Project area		
Tundra vole *Microtus oeconomus*	expected throughout Project area	not assessed	
Wolf *Canis lupus*	expected throughout Project area	sensitive	recreational, subsistence and economic value
Arctic fox *Alopex lagopus*	expected throughout Project area	secure	economic value
Red fox *Vulpes vulpes*	expected throughout Project area	secure	economic value
Grizzly bear *Ursus horribilis*	expected throughout Project area; inactive in winter	sensitive	recreational, and economic value
Short-tailed weasel *Mustela erminea*	expected throughout Project area	secure	
Least Weasel *Mustela nivalis*	expected throughout Project area	not assessed	
Wolverine *Gulo luscus*	expected throughout Project area	sensitive	recreational, subsistence and economic value
Barren-ground caribou *Rangifer tarandus*	migratory; historic calving ground in Project area	secure	recreational, subsistence and economic value
Muskox *Ovibos moschatos*	expected throughout Project area	secure	recreational, subsistence and economic value

* the conservation status of terrestrial mammals in Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

3.6.5 Mammals - Marine

Marine mammals in the Project shipping lanes include the same species that the current marine shipping would encounter in Lancaster Sound and Coronation Gulf; seals, whales and walruses (Chapman and Feldhamer, 1982; JWEL 2001). These species are protected by the Fisheries Act (Canada) which is administered by the Federal Department of Fisheries and Oceans. Table 15 enumerates the species that are

reported for the shipping route and for Bathurst Inlet and also indicates their conservation and economic status in the northern economy.

Table 15 Marine mammals reported for the shipping lanes serving the Bathurst Inlet port.

Species*	Distribution	Conservation Status**	Economic Status
Ringed seal *Phoca hispida*	throughout marine east and west shipping routes	secure	important subsistence use in coastal communities
Bearded seal *Erignathus barbatus*	throughout marine east and west shipping routes	secure	important subsistence use in coastal communities
Bowhead whale *Balaena mysticetus*	western route to Amundsen Gulf and eastern route to Lancaster Sound; endangered species	at risk	harvest in Nunavut by special permit of the Minister for DFO
Beluga *Delphinapterus leucas*	western route and eastern route in Lancaster Sound	sensitive	important subsistence use in coastal communities
Narwhal *Monodon monocerus*	eastern route in Lancaster Sound	secure	important subsistence use in coastal communities
Walrus *Odobenus rosmarus*	western route to Amundsen Gulf and eastern route to Barrow Strait	secure	important subsistence use in coastal communities

* species known to be resident in Bathurst Inlet are shown in **bold print**

** the conservation status of marine mammals in Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

3.7 TRADITIONAL KNOWLEDGE

The Project area has been occupied by Inuit for many generations as shown by archaeological remains on the land. Inuit families living in Kitikmeot communities today lived at various locations in the Project area within the past 50 years and have an intimate knowledge of the land, the waters, and the fish and wildlife that they harvested. Two different projects have undertaken to document the traditional knowledge of elders in the region. The Naonaiyaotit Traditional Knowledge Project (NTKP) documented responses by elders from the West Kitikmeot Region of Nunavut to a set of 145 questions on 10 specific land based themes. The Tuktu Nogak Project focused on traditional knowledge of caribou. In both projects the resulting information was compiled in geographic referenced databases. Access to the NTKP database remains proprietary until the necessary verification of the data sets are completed. When both traditional knowledge data bases are accessible, the information that is relevant to the Project development sites and road alignment will be extracted and examined to ensure that Project plans are, or can be made to be, compatible with important features like burial sites and traditional carnivore dens that may be at risk of disturbance in the present alignment and site configurations. This information will be submitted in support of the Project EIS.

3.8 HERITAGE RESOURCES

Survey of heritage resources and archaeological sites along the proposed road alignment beginning at Contwoyto Lake and terminating at the port site on Bathurst Inlet was completed in July and August 2001,

and August 2002. In 2001 the survey area included the entire Project area, which focused on sites that showed high potential in a preparatory study of landforms and other terrestrial features of the general area of the road and port, as well as previous archeological studies in the region. Specific objectives of the 2001 fieldwork included confirming the location and condition of known sites in the Project area as well as recording new, previously unrecorded sites. This field work included an aerial overview of the project area, foot traverses and visual inspections of areas with high potential, and shovel testing for the presence of artifacts and other evidence of human occupation (Fedirchuk McCullough & Associates, 2001; unpublished).

Additional survey was completed in 2002 at the Bathurst Inlet port site and the proposed bridge crossing at Amagok Creek, along with further study of a stone feature site near George Lake (FMA Heritage Resources Consultants Inc, 2003; unpublished). The 2002 field study was included in a work plan based on the results of the 2001 field study and approved by the Nunavut Chief Archaeologist.

Due to the heritage resources survey in 2001 and 2002, an inventory of 69 heritage resources sites in the Project area was developed including:

- 37 precontact artifacts scatters
- 15 precontact stone feature sites
- 13 precontact isolated finds
- 2 historical/traditional sites
- 1 precontact campsite
- 1 mixed type sites

Please see Figure 27 for the locations and distributions of known heritage sites in the Project area.

Presentation of the results of the heritage resources survey took place during public meetings with members of the local Inuit communities in January to April of 2002. Additional meetings with the elders of Kugluktuk and Cambridge Bay were conducted separately in May 2002, to present the survey results and discuss any concerns regarding the preservation and/or mitigation of heritage resources sites relative to the Project.

While survey of all Project areas is now complete, mitigation of the port facility on Bathurst inlet remains to be conducted. Further study and mitigation of the port site heritage resources will be included in future work plans, as will elder and community consultation regarding the port site heritage resources sites. The combined data of survey, consultation and mitigation will be used for impact assessment and to develop a heritage sites mitigation plan for use during project construction.

3.9 SOCIAL AND ECONOMIC SETTING

A social and economic profile of the Kitikmeot Region of Nunavut is provided in the Draft West Kitikmeot Regional Land Use Plan (1997). The traditional land use areas of each of the West Kitikmeot communities - Kugluktuk, Bathurst Inlet, Umingmaktok, and Cambridge Bay - were provided by the Nunavut Planning Commission and are shown in Figures 28 to 31 in relation to the proposed Project.

Census Canada data (collected in 2001) for the region showed a population of 4,816 with 4,334 Inuit comprising 90% of the overall population of the region. The largest communities in the West Kitikmeot Region are Cambridge Bay (population of 1,310 in 2001), and Kugluktuk (population 1,215 in 2001). The populations of each community were in periods of rapid growth, in that both will double in size within a generation. The population projections for Cambridge Bay and Kugluktuk for 2005 are 1,581 and 1,556 respectively (Dillon, 2001). In both communities more than 50% of the population was less than 25 years of

age and at the current rate of growth, that characteristic is unlikely to change. The social and economic profile of the region will be updated in the Project EIS based on the full 2001 Census Canada data.

The draft West Kitikmeot Regional Land Use Plan emphasized the importance of traditional land based activities to the economy of the West Kitikmeot. The overall labour force of Cambridge Bay and Kugluktuk showed an unemployment rate of 23%. Both communities showed a significant number of adults with less than Grade 9 education.

Tables 16, 17, and 18 provide social and economic profiles prepared in a study of Kitikmeot communities for the Hope Bay Joint Venture (Hornal 2000; courtesy of Miramar Mining Corporation) and updated with some data from the 2001 Canada Census.

A more comprehensive description of the social and economic setting of the region is in preparation and will be submitted in support of the Project EIS. This will include an assessment of the capacity of the labour force and businesses in the region to participate in the construction and ongoing operations of the Project.

Table 16 Demographic Profile of Kitikmeot Communities

	Kugluktuk	Cambridge Bay	Bathurst Inlet	Umingmaktok	Gjoa Haven	Taloyoak	Kugaaruk	Kitikmeot Region
Population[1,2,3,4,7]								
2001	1,215	1,310	5	5	960	720	605	4,816
1998	1,267	1,413	15 [5]	51	957	729	539	4,971
1996	1,201	1,351	18	51	876	648	496	4,641
1991	1,059	1,116	18	53	783	580	409	4,018
Percent Change								
1996-2001	0.9	-3.1	-72.2	-90.2	9.2	11.1	22.0	3.7
1996-1998	5	5	0	0	8.5	11	8.5	7.1
1991-1996	13.4	21	0	-4	12	12	2.1	15.5
Age of Pop. (2001)[7]								
Under 15 years	425	435	N/A	N/A	385	290	275	1,820
15 to 64	740	845	N/A	N/A	535	420	315	2,865
65 +	50	30	N/A	N/A	20	10	10	130
Ethnicity (1996) [6]								
% Aboriginal	92.0	79	100	100	96	94	95	90
% Non Aboriginal	8.0	21	0	0	4	6	5	10
Gender (1996)[4]								
Female	590	640	N/A	N/A	460	350	290	2,345
Male	625	670	N/A	N/A	495	370	310	2,475

1. GNWT Bureau of Statistics, 1999a. *(Numbers may not add due to rounding.)*
2. GNWT Bureau of Statistics, 1999b.
3. GNWT Bureau of Statistics, 1999c.
4. GNWT Bureau of Statistics, 1997.
5. R. Homal, Pers. Comm. 1999.
6. GNT Bureau of Statistics, 1999b
7. 2001 Census *(Numbers may not add due to rounding.)*

N/A = Not available

Source: R. Hornal 2000 (except 2001 data)

Table 17 Profile of working aged adults in Kitikmeot communities

	Kugluktuk	Cambridge Bay	Bathurst Inlet	Umingmaktok	Gjoa Haven	Taloyoak	Kugaaruk	Kitikmeot Region
Population 15 yrs. & older (2001)[4]	790	870	N/A	35	*510*	375	280	3,080
Level of Education of Working Age Population (2001) (Percent)[1]								
Less than Grade 9	38.3	23.0	N/A	N/A	46.1	45.3	55.4	38.3
High School W/O Certificate	19.5	18.4	N/A	N/A	16.7	18.7	14.3	17.9
High School Diploma	2.0	5.2	N/A	0	2.0	2.7	0	2.8
Trade or Other Certificate	31.5	39.7	N/A	N/A	30.4	25.3	21.4	32.0
University Without Degree	2.0	5.2	N/A	0	2.0	4.0	3.6	3.1
University Degree	6.7	8.6	N/A	0	3.9	4.0	3.6	5.8
Employment by Industry (1996) (Percent)[1]								
Goods Producing	15.7	16.0	N/A	N/A	4.1	4.5	6.7	13.0
Retail & Wholesale	11.2	12.0	N/A	N/A	16.3	25.0	20.0	14.9
Gov't., Education & Health	48.3	43.2	N/A	N/A	40.8	40.9	46.7	43.8
Other Services	24.7	30.4	N/A	N/A	34.7	18.2	33.3	28.1
Income Support (1998/99)[2]								
# of Cases in fiscal year 1998-99	1,437	1,246	2	96	1,828	1,113	830	6,550
Average $ Amount/Case/month	$590	$541	$826	$447	$628	$721	$725	$629
Income Support (1995/96)[3]								
# of Cases in fiscal year 1995-96	1,131	808	22	120	1,856	1,417	887	6,241
Average $Amount/Case/month	$550	$508	$676	$635	$730	$696	$726	$659
Number Tax Returns Filed in 2001[4]	560	695	N/A	N/A	390	315	205	2,230
Average Income in 2001[4]	$25,502	$31,494	N/A	N/A	$19,014	$18,306	$18,887	$24,449

1. GNT Bureau of Statistics, 1999b.
2. Ecklund, L., Pers. Comm., 2000.
3. GNWT Dept of Education, Culture & Employment, 1996.
4. 2001 Census

N/A = Not available

Source: R. Hornal 2000 (except 2001 data)

Table 18 Labour force activity in Kitikmeot communities

	Kugluktuk	Cambridge Bay	Bathurst Inlet	Umingmaktok	Gjoa Haven	Taloyoak	Kugaaruk	Kitikmeot Region
Persons 15 yrs. & over in 1999 [1]	821	935	N/A	N/A	539	416	324	3,035
Labour Force (I 999)	476	728	N/A	N/A	308	290	204	2,006
Employment Rate	42%	67.1%	N/A	N/A	34.9%	59.1%	48.8%	78%
Unemployment Rate	27.5%	13.9%	N/A	N/A	39%	15.2%	22.5%	22%
Participation Rate	58%	77.9%	N/A	N/A	57.1%	69.7%	63.0%	66.1%
Persons 15 yrs. & over in 1996 [2]	745	865	N/A	35	*505*	375	275	3,080
Labour Force (I996)	470	635	N/A	20	275	230	155	1,960
Employment Rate	53.0%	67.1%	N/A	42.9%	38.6%	49.3%	43.6%	33.9%
Unemployment Rate	14.9%	7.9%	N/A	N/A	29.1%	19.6%	22.6%	15.1%
Participation Rate	63.1%	73.4%	N/A	57.1%	54.5%	61.3%	56.4%	63.6%
Persons 15 yrs. & over Involved in Traditional Activities (1994)[4]								
% Hunted & Fished	56.1	28.3	N/A	38.2	60.6	86.2	96.5	57.8
% Made Crafts	30.7	15.1	N/A	29.4	20.1	39	5.8	23.8
% Trapped	7.3	7.1	N/A	32.4	9.6	13.3	15.8	9.8
Number of Working Age Residents Not Working But Wanting Work (I 999)[1, 3]								
	250	183	N/A	N/A	179	118	106	836
Number of Working Age Residents Not Working But Wanting Work (I 994)[4]								
	292	141	N/A	9	195	167	125	929
Employment Rate (1994) (% Employed)[4]								
% Aboriginal	30	54	N/A	32	37	41	42	41
% Non Aboriginal	80	94	N/A	N/A	88	72	100	87
% Female	29	63	N/A	19	31	41	40	43
% Male	45	68	N/A	44	47	45	46	57

1. GNT Bureau of Statistics, 1999a.
2. GNT Bureau of Statistics, 1999b.
3. GNWT Bureau of Statistics, 1999d.
4. GNWT Bureau of Statistics, 1994.

N/A Not available

Source: R. Hornal 2000

4.0 PUBLIC CONSULTATION PROCESS

The process of developing this Project has its roots in the Kitikmeot Region of Nunavut. The overall Community Advisory Committee to the Project is chaired by Mr. Charlie Evalik, President of KIA and includes representatives of the Kitikmeot communities, the HTO's, and Government of Nunavut. The details and technical aspects of the Project were developed under the supervision of the Project's Technical Committee described above. The Technical Committee has been active in consulting in the Kitikmeot Region and on May 6 and 7, 2001 met with the mayors and municipal councils in both Kugluktuk and Cambridge Bay respectively. Also, elders from each of these communities visited heritage sites along the road alignment in July 30, 2001 and July 2002 as part of the Project's heritage resources study.

This Project Description was developed under the direction of the Project Technical Committee. The original Project was reviewed in public meetings in Kugluktuk and Cambridge Bay in January and Gjoa Haven, Taloyoak, and Kugaaruk in March. A special meeting was held on January 15, 2002 in Cambridge Bay to review the Project with persons from Bathurst Inlet and to discuss concerns related to Project operations. A meeting was held in Bathurst Inlet on July 20, 2002 with most of the summer residents present. A similar consultation process will attend the development of the Project EIS expected for late 2003. In these consultations, special emphasis has been placed on confirming local knowledge of the Project area, and also on community and local work force preparations for Project construction and operations.

Meetings were also held with the Yellowknife City Council and various GNWT Departments in November 2002. A public "open house" was held for Yellowknife residents on November 19, 2002.

It is understood that ongoing consultations and reporting social, economic and environmental performance will be a feature of Project operations and that these activities may be requirements of an Inuit Impact Benefit Agreement between the Project and the Kitikmeot Inuit Association.

5.0 PROJECT ENVIRONMENTAL EFFECTS

Interactions between the Project and the environment will occur during both construction and operations. Potential interactions during Project construction will span the full length of the Project, a distance of 211 km. Similarly, potential interactions during operations span the full length of the road.

A comprehensive suite of environmental baseline studies was initiated in 2001 and completed in 2002. The studies include water quality, sediment quality, vegetation, meteorology, ecosystem mapping, fish habitat, fish populations, bird populations, small mammals, carnivores, and caribou and muskox. These studies will be used to prepare the Project EIS.

5.1 PORT CONSTRUCTION

Port construction and operations will involve both the marine and terrestrial environment. The wharf will be a sheet pile rock filled structure extending into Bathurst Inlet. The terrestrial elements of the port include a 150-person camp, a 180 million litre tank farm, a maintenance facility, diesel power plant and an airstrip (Figure 6).

Construction at the site will begin as soon as the construction fleet is delivered by barge in the late summer of 2005. Construction will be completed 16 months later in the winter of 2006. Construction will require quarrying 270,000 m^3 of local rock. The rock will be removed by drill, blast, haul sequence and will be used to develop the structures and roads at the port site. Much of the rock will be crushed to various sizes as required for site development.

Construction workers will be based at the 150-person camp at the port and a 20-person camp at Contwoyto Lake. These bases will support two mobile construction camps working on specific spreads of road between the port and Contwoyto Lake. Mobile construction camps will typically house 60 workers. Mobile camps will relocate every 60 days. All combustible camp waste will be incinerated in a mobile industrial incinerator that will be moved with the camp. Sewage will be treated in a skid mounted sewage treatment plant prior to release onto the tundra. Non-combustible waste will be returned to the base camps for permanent disposal.

5.1.1 Air Quality Effects

Air quality at the port will be affected by several primary activities. Construction equipment exhaust contains greenhouse gasses. Quarrying, crushing, hauling, and placing rock produces dust.

5.1.2 Marine and Freshwater Effects

5.1.2.1 Marine

The wharf will extend into the marine environment 140 metres along approximately 160 metres of shoreline; 22,000 m^2 of seabed will be covered by crushed rock required to fill the sheet pile wharf. The sheet pile will be placed by driving it from the surface of the ice in the spring of 2006. The surface of the wharf will be 5 m above water level. A small crushed rock jetty will also be built to serve barge traffic between the port and Kitikmeot communities (Figure 6). It will extend 100 m into the marine environment to the three-metre water

depth and cover about 4,400 m^2 of seabed. Environmental sampling at the port in August 2001 showed that 11 species of fish occur in the marine environment of the area (see Table 10 for marine fish species in the Project area). These data will be reported in support of the Project EIS.

5.1.2.2 Freshwater

Port construction does not encroach on any freshwater streams or water bodies. Potable water for camp needs will be produced by desalination. Port construction will not affect any freshwater fish populations.

5.1.2.3 Terrain

The port site is a well-drained tundra upland that is covered in dry land tundra plants. Studies in 2001 included a terrain analysis for ecosystem mapping. The resulting maps will be used for designing and planning the environmental management system for the port area.

Facilities at the port will require tundra terrain alteration by placing blasted and crushed rock for road and site development. Areas affected will be:

- 150 person camp, truck stop and power house sewage treat plant: 7.0 ha
- cargo lay down and service road and ammonium nitrate storage: 63.0 ha
- fuel tank farm and fuel dispensing and load out station: 53.0 ha
- airstrip and heliport 28.0 ha

The total area of altered terrestrial terrain at the port will be 151.0 ha

The wharf area occupies an additional 8 ha.

5.1.2.4 Birds

The port area is habitat for migratory upland tundra breeding birds as well as ptarmigan and raptors (see Tables 12 and 13 for birds of the area). Preliminary surveys of the area in 2001 showed no concentration of breeding birds in the area nor any evidence of species designated for special conservation status. Raptor nesting at the port was not reported from 2001 studies. Further surveys are planned for the area. A full review of data and information from related literature will be developed and submitted in support of the Project EIS.

5.1.2.5 Mammals

The upland habitat of the port is suitable for lemmings, voles, ground squirrels and arctic hare, all of which should be expected there. Site construction therefore will change habitat used by rodents and hare in the port area. One wolverine and one grizzly were observed at the port area in 2001 (Rescan 2003c).

Studies in 2001 did not identify any carnivore dens in the port area. The Project area is within the normal range of foxes, wolves, wolverine and grizzly bear. All should be expected in the area at any time of year other than grizzly in winter.

The port area is muskox range and they should be expected in all seasons. One small herd was observed south of the port area in 2001 (Rescan 2003c).

Historic data on the distribution of the Bathurst caribou herd calving grounds show that the port site and adjacent lands were occupied for caribou calving of "medium density" in 1986. This was the only calving activity noted in the vicinity of the port area in fourteen surveys reported in the 1965 to 1996 period (Sutherland and Gunn, 1996). Bathurst herd calving grounds since 1996 have been 100 km or more to the west of the port site. Monitoring caribou use during the calving season of traditional calving grounds near the Prudhoe Bay oil development in Alaska showed that calving grounds continued to be used following initial

oil field infrastructure (roads and pipelines) development on the calving ground (Dau and Cameron, 1986; LGL, 1994; Murphy and Lawhead, 2000).

5.2 PORT OPERATIONS

Annual activity cycles at the port will be determined by marine shipping conditions and the Contwoyto Lake winter road. The estimated mean annual volumes that are planned to be handled at the port every year for the first 10 years of operations are in Table 19.

Table 19 Estimate of annual volume of cargo passing through the port in years 1 - 10.

	Imports		Exports	
Destination/Source	**Fuel (000's L)**	**Supplies (t)**	**Fuel (000's L)**	**Supplies (t)**
Lupin	14,030	4,700		
Ekati	72,300	20,000		
Diavik	53,800	9,400		
Jericho	8,640	2,660		
Hope Bay	7,200		7,200	
Gjoa Haven	4,840	80	4,840	80
Cambridge Bay	9,360	150	9,360	250
Kugluktuk	4,800	110	4,800	110
Taloyoak	3,180	60	3,180	80
Bathurst Inlet	50		50	
Umingmaktok	60		60	
Total	**178,260**	**37,160**	**29,490**	**560**

The number of barge trips for each of the Kitikmeot communities served by the barge from Bathurst Inlet is estimated to be one for Taloyoak, two Gjoa Haven and Kugluktuk, and three for Cambridge Bay**.**

The year round labour force of 17 to 31 for port operations will be based at the camp. The camp usage at the port will increase in response to cargo volumes on the road and may reach 150 in winter when the major fuel haul to all participating sites is under way.

5.2.1 Air Quality Effects

The dominant environmental effect of the land-based activities at the port will be dust, noise, and exhaust emissions. Dust will be managed by an ongoing surface watering effort. Noise will be addressed initially by placement of buildings and roads so that port activities do not unduly disturb workers "off shift" who are sleeping. Exhaust emissions will be reduced by an overall fuel conservation effort including residual heat recovery in the powerhouse for space heating.

5.2.2 Marine and Aquatic Interactions

5.2.2.1 Marine

Marine shipping activities will be completed within the normal "open water" period - usually up to 110 days beginning mid-July. The arrival date of the first vessel for the season will usually be dependent on ice conditions in Victoria Strait northeast of Queen Maude Gulf. Inbound cargo will include 37,000 tonnes of dry

cargo (explosives, mining reagents, and grinding media) and 178 million litres of diesel fuel. Fuel will be transferred from ship to tank farm by two 12" diameter pipelines with a capacity of 5,600 litres/min. Outbound cargo will consist of fuel and supplies for Kitikmeot communities. Re-supply for the communities will require three barge movements from the port. The normal turn around time for a ship will be about 48 hours. The last ship movement to/from the port will occur in late October. All shipping will be completed without the assistance of an icebreaker to extend the shipping season. The environmental interactions will be similar to those of the annual barge re-supply to the communities of the Kitikmeot region of Nunavut, or the occasional cruise ship that has passed through the Northwest Passage in recent years. As with other developments in the Arctic, the Project will rely on icebreaker support to some degree during the shipping season, but the Project is not based on extending the normal shipping season.

Late season shipping is a concern raised by a hunter from Bathurst Inlet. A marine ice cover of four inches is sufficient to support both caribou and snowmobiles. Such conditions can be achieved in late October in some years. Concern is that if a ship were to make a transit through such ice and a snowfall obscure the track before the former ice thickness were to be re-established, caribou crossing Bathurst Inlet could be lost through the thinner snow covered ice (Sam Kapolak, Bathurst Inlet).

Interaction with marine life will be the same as with any other form of shipping in arctic water. No concentration of marine wildlife is expected along the route that is not now exposed to arctic marine traffic.

5.2.2.2 Aquatic interactions

Port operations will not encroach on any freshwater streams or water bodies. Potable water for camp needs will be produced by desalination at a rate of 40,000 litres/day. Sewage will be treated by extended aeration, with effluent discharged directly to Bathurst Inlet in compliance with guidelines for marine sewage disposal.

Port operation will not have any significant interactions with the freshwater environment or fish populations of the port area.

5.2.3 Terrestrial Interactions

All land-based activities at the port will be contained to the 159 ha of the site development. The dominant activity will be truck traffic from the road to the fuel depot during winter. It is expected that most of the fuel will be moved out in the January - April when the Contwoyto ice road is in place. No cargo will be moving in either direction during the period that the ice road is impassable, expected to be late April to mid-January. Dust management for port site road operations will be practiced.

5.2.3.1 Birds

The port area is habitat for migratory upland tundra breeding birds as well as ptarmigan and raptors (see Tables 12 and 13 for birds of the area). Preliminary surveys of the area in 2001 showed no concentration of breeding birds in the area nor any evidence of species designated for special conservation status. No occupied raptor nest sites at the port were reported from the 2001 studies (Rescan 2003c). Further surveys are planned for the area. A full review of data and information from related literature will be developed and submitted in support of the Project EIS.

Interactions of port operations with birds will be passive with no effects that are incremental to those of habitat alteration during construction.

5.2.3.2 Mammals

The upland habitat of the port is suitable for lemmings, voles, ground squirrels and arctic hare, all of which should be expected there.

Studies in 2001 did not identify any carnivore dens in the port area. The area is within the normal range of foxes, wolves, wolverine and grizzly bear. All should be expected in the area at any time of year other than grizzly in winter.

The port area is muskox range and they should be expected in all seasons.

Historic data on the distribution of the Bathurst caribou herd calving grounds show that the port site and adjacent lands were occupied for caribou calving of "medium density" in 1986. This was the only calving activity noted in the vicinity of the port area in fourteen surveys reported in the 1965 to 1996 period (Sutherland and Gunn, 1996). Bathurst herd calving grounds since 1996 have been 100 km or more to the west of the port site. Monitoring caribou use during the calving season of traditional calving grounds near the Prudhoe Bay oil development in Alaska showed that calving grounds continued to be used following initial oil field infrastructure (roads and pipelines) development on the calving ground (Dau and Cameron, 1986; LGL, 1994; Murphy and Lawhead, 2000).

Interactions of port operations with mammals will be passive with no effects that are incremental to those of habitat alteration during construction.

5.3 ENVIRONMENTAL EFFECTS OF ROAD AND CONTWOYTO CAMP CONSTRUCTION

The total length of the proposed road will be 211 km. It will be built in two sections; from the port (km 0) to km 126, and from Contwoyto Lake (km 211) to km 126. Km 211 - km 126 will be built in the January 2005 to October 2005 period starting from Contwoyto Lake as soon as the 2005 Lupin winter road allows mobilizing the construction equipment to Contwoyto Lake.

5.3.1 Air Quality

The dominant environmental effect of road construction will be dust, noise, and exhaust emissions. Construction noise will be mitigated by use of appropriate personal protective equipment. Dust will be produced from rock crushing and road construction. The working environment effects of dust, like noise, will be mitigated by use of appropriate personal protective equipment. Exhaust emissions will be reduced by an overall fuel conservation effort.

5.3.2 Aquatic Environments

Field studies in 2001 and 2002 (Rescan 2002b, 2003b) found nine species in the streams that cross the road alignment (see Table 12 for species of freshwater fish in the Project area).

The road alignment is such that construction will not encroach on any lakes. Numerous drainage basins, however, will be bisected by the road (Figure 32). The road alignment requires 111 water crossings.

The overall prerequisite in the preliminary design of each of the required water crossings was to avoid encroaching on the stream channel (other than during extreme flows) in streams known and expected to be fish bearing and so avoid disturbing potential fish habitat. The design for such crossings is either single span bridges or arched culverts. For crossings at intermittent streams that are not fish bearing, rock fords are proposed. These designs meet the above prerequisite for 109 of the 111 crossings. In stream abutments or double span bridges may be required at two locations: km 126.5 crossing the Mara River and km 165.5 on the port to Contwoyto road. Table 20 summarizes the location and preliminary design of each of the proposed water crossings for the alignment. Also, Figures 33, 34, and 35 provide photographs and drawings of streams that show an example of each design type of water crossing proposed.

Water crossings of a rock ford design (70) will be built in winter when no flow is expected. Likewise, site development for crossings requiring bridges (23) and arch culverts (18) will be completed in late winter when working conditions improve but before stream flow is expected.

The environmental effects of water crossings along the road on aquatic life and particularly fish populations will be negligible. All data from field studies will be reported in support of the Project EIS.

Recreational angling is expected to occur by workers living at the camps at the port and at Contwoyto Lake. Angling destinations by persons at the port are likely to be marine destinations on Bathurst Inlet. Contwoyto Lake will be used by anglers based at the Contwoyto camp. It is expected that the species of choice by anglers will be lake trout and arctic charr. The draft West Kitikmeot Regional Land Use Plan recommends that recreational angling at resource development sites be restricted in a 5 km area "around the development site". The Project will develop a strategy so that employees and contractors will be in compliance with the plan.

Table 20 Location, watershed, and fish habitat characteristics for water crossings

From Bathurst Inlet to Contwoyto Lake							
Final Road Chainage km	**Watershed Area km^2**	**Habitat Quality Rating***	**Estimated Stream Depth Design 1:25 yr m**	**Estimated Streamflow Design 1:25 yr m^3/s**	**Crossing Type/Length Rock Fill**	**Arch**	**Bridge**
					m	**m**	**m**
2.5	66.4	High	0.45	16.38			20
3.0	1.1	Low		0.63	X		
7.7	6.8	Low		2.68		X	
14.3	75.3	Low	0.83	18.09			10
18.7	1.7	Low		0.89	X		
21.5	1143.1	High	0.98	156.68			50
23.2	N/A	Nil		N/A	X		
24.8	0.7	Nil		0.44	X		
25.3	0.5	Nil		0.34	X		
28.5	3.4	Nil		1.55	X		
30.2	N/A	Nil		N/A	X		
31.5	0.3	Nil		0.23		X	
31.8	N/A	Medium		N/A		X	
31.9	42.7	Low	0.35	11.54			30
32.9	60.5	Medium	0.39	15.21			30
33.9	43.0	Medium	0.32	11.60			30
36.3	0.2	Nil		0.16	X		
36.9	0.4	Medium		0.28	X		
37.6	N/A	Nil		N/A	X		
38.6	2.6	Nil		1.25	X		
39.5	N/A	Nil		N/A	X		
40.2	9.5	Medium	0.22	3.50			20
41.5	6.1	Nil		2.46	X		
42.8	2.0	Medium		1.02		X	
45.5	2.5	Nil		1.21	X		
48.0	9.9	Medium		3.62		X	
50.5	46.3	Nil	0.59	12.30			20
52.4	3.6	Nil		1.62	X		
54.0	0.7	Nil		0.44	X		

Final Road Chainage km	Watershed Area km^2	Habitat Quality Rating*	Estimated Stream Depth Design - 1:25 yr m	Estimated Streamflow Design - 1:25 yr m^3/s	Crossing Type/Length Rock Fill	Arch	Bridge
56.8	5.2	Medium		2.17		X	
60.5	0.5	Low		0.34	X		
61.6	0.2	Nil		0.16	X		
66.5	0.5	Nil		0.34	X		
67.5	6.2	High		2.49		X	
67.8	N/A	Medium		N/A		X	
68.2	2.3	Medium		1.14	X		
70.3	39.8	High	0.46	10.91			20
72.2	3.9	Low		1.73	X		
72.4	N/A	Low		N/A	X		
73.2	1.6	Low		0.85	X		
74.0	16.0	High	0.42	5.29			10
75.1	6.3	Low		2.53	X		
76.6	N/A	Nil		N/A	X		
76.7	N/A	Nil		N/A	X		
77.0	0.5	Nil		0.34	X		
78.5	2.4	Low		1.17	X		
79.6	N/A	Nil		N/A	X		
81.7	1.6	Nil		0.85	X		
82.1	81.0	High	0.41	19.17			30
83.0	5.0	Low		2.10	X		
88.2	2.6	Low		1.25	X		
89.1	0.5	Nil		0.34	X		
89.3	1.0	Low		0.59	X		
91.3	2.2	Low		1.10	X		
92.0	4.2	Low		1.83	X		
95.5	4.4	High		1.89	X		
96.8	0.4	Nil		0.28	X		
98.3	1.2	Nil		0.68	X		
100.9	3.9	Low		1.73	X		
101.1	2.6	High		1.25		X	
104.3	13.4	High	0.23	4.60			30
110.8	23.8	Nil	0.34	7.25			20

Final Road Chainage km	Watershed Area km^2	Habitat Quality Rating*	Estimated Stream Depth Design - 1:25 yr m	Estimated Streamflow Design - 1:25 yr m^3/s	Crossing Type/Length Rock Fill	Arch	Bridge
111.5	1.4	High	0.14	0.77			20
112.8	18.1	Medium	0.33	5.84			20
115.0	5.0	Low		2.10	X		
116.9	1.3	Nil		0.72	X		
121.0	0.8	Nil		0.49	X		
121.3	1.2	Medium		0.68	X		
123.0	23.8	Nil		7.25	X		
126.5	1825.6	High	1.70	227.19			60
132.0	71.0	High	0.43	17.27			30
134.1	0.7	Nil		0.44	X		
141.8	1.9	Nil		0.98	X		
144.0	2.3	Nil		1.14	X		
144.9	1.0	Low		0.59	X		
147.1	2.7	Nil		1.29	X		
149.0	28.8	Nil	0.42	8.44			20
149.8	N/A	Nil		N/A	X		
153.0	0.6	Nil		0.39	X		
155.7	0.3	Low		0.23	X		
156.3	N/A	Nil		N/A	X		
156.7	N/A	Nil		N/A	X		
157.0	0.7	Low		0.44	X		
157.2	0.8	Nil		0.49	X		
158.3	15.8	High	0.33	5.24		X	
164.0	N/A	Low		N/A	X		
165.1	4.2	Medium		1.83	X		
165.2	N/A	Medium		N/A		X	
165.5	66.9	High	0.26	16.47			60
165.9	N/A	Nil		N/A	X		
166.4	0.1	Nil		0.09	X		
166.6	0.7	Medium		0.44		X	
167.7	13.5	High		4.63		X	
170.2	9.8	High		3.59		X	
174.1	8.7	Nil		3.26	X		
178.2	352.5	High	1.03	61.60			30

Final Road Chainage km	Watershed Area km^2	Habitat Quality Rating*	Estimated Stream Depth Design - 1:25 yr m	Estimated Streamflow Design - 1:25 yr m^3/s	Crossing Type/Length Rock Fill	Arch	Bridge
179.5	N/A	Low		N/A	X		
180.5	4.1	High		1.80	X		
183.4	0.6	Nil		0.40	X		
186.0	4.4	Low	0.32	1.89		3	
189.3	11.3	Medium	0.55	4.02		3	
190.8	0.8	Nil		0.49	X		
193.4	1.8	High		0.93	X		
194.0	N/A	Low		N/A	X		
195.3	0.3	Nil		0.23	X		
198.7	65.6	High	0.69	16.22			20
199.7	34.4	High	0.40	9.71			20
201.2	1.0	Medium		0.59		X	
203.7	12.4	High	0.26	4.32			10
205.2	1.5	Medium	0.20	0.81		3	
208.0	2.1	Nil		1.06	X		

* Rescan (2003)
Nil = no channel, no water (46)
Low = flow present but not fish (26)
Medium = fish present but low-valued (slimy sculpin or ninespine stickleback) (17)
High = high-valued fish present (Arctic grayling, burbot, lake trout, round white fish, Arctic cisco, Arctic char or longnose sucker) (22)

5.3.3 Terrestrial Environment Interactions

Road construction will involve developing a series of granular pits and quarries (37 in total) along the entire road alignment as shown in Figure 4. Each pit or quarry will alter approximately 2 ha of tundra terrain and habitat. A total of 2.9 million m^3 of rock and granular materials will be removed from these pits and quarries and placed on the right-of-way to build the road. Building the road with passing pullouts every 1,000 metres will cover 277.7 ha +/- of tundra habitat. The total terrain alteration along the alignment including quarries will be approximately 351.7 ha +/-. Studies in 2001 included a terrain analysis for ecosystem mapping. The resulting maps will be used for designing and planning the environmental management system for the road right-of way.

The rough base course of rock for the alignment will be laid down in winter and so reduce thaw penetration the following summer. The additional course of -100 mm is expected to ensure that the permafrost profile migrates into the base of the road to ensure terrain stability to the roadbed.

5.3.3.1 Birds

The road alignment is habitat for migratory upland tundra breeding birds as well as ptarmigan and raptors (see Tables 12 and 13 for birds of the area). Preliminary surveys of the area in 2001 showed no concentration of breeding birds in the area nor any evidence of species designated for special conservation status. Raptor nesting along the road alignment was observed between km 7 and km 35 in 2001 (Rescan 2003c). Further surveys are planned for the area. A full review of data and information from related literature will be developed and submitted in support of the Project EIS.

Neither the roadbed nor any of the pits or quarries encroaches on water bodies and so no shoreline waterfowl-nesting habitat is at risk. Quarry and pit development, and roadbed construction may displace upland nesting birds.

5.3.3.2 Mammals

The habitats along the road and at the pits and quarries are occupied by lemmings, voles, ground squirrels and arctic hare, all of which were observed in the Project area during studies in 2001.

The Project area is within the normal range of foxes, wolves, wolverine and grizzly bear. All should be expected at any point along the alignment at any time of year except grizzly in winter.

Muskox occupy the tundra traversed by the proposed road alignment and are present the whole year.

Caribou of at least two herds occupy the area of the road alignment for part of the year. The Bathurst herd will migrate across the road alignment during the calving migration of the cows in April and May and the spring migration by the non-calving portion of the herd will occur a month later. Post calving aggregations ranging in size up to tens of thousands of cows with calves may spend brief periods in the vicinity of the alignment during the later part of June and into July. Small bands of mixed herds should be expected for the remainder of the summer until late August when most of the Bathurst herd is usually on ranges further south. The likelihood of interactions with the Bathurst herd for the remainder of the year, from the fall through the winter, is low. Figures 36 a - f show the distribution of Bathurst caribou for 1996 - 2000 as shown by satellite telemetry data courtesy of the West Kitikmeot Slave Study, and Dr. Ann Gunn and her colleagues in the Government of the Northwest Territories Department of Resources, Wildlife and Economic Development.

The area of the alignment near Nose Lake and vicinity was also shown to be part of the Queen Maud Gulf caribou herd range (Gunn et al, 2000). Unlike the Bathurst herd, the Queen Maud Gulf herd does not migrate

south for the winter and telemetry locations from animals in that herd showed that the area east of Contwoyto Lake was occupied by animals of this herd in the summer of 1996 and 1997 and the winter of 1997.

Construction activities will generally be concentrated on specific portions of road, 20 - 30 km stretches accessible from the particular quarries that are active. Interactions of road construction operations with mammals generally will be passive with no significant effects on the animals. Interactions with caribou may be such that construction work will temporarily halted to allow the caribou to pass through the construction zone. This will likely be the case during the calving and spring migrations. The "invasion" of a post-calving aggregation would make road construction impossible for a period of 12 - 36 hours if the animals decided to "settle in for a feed and a rest".

5.4 ENVIRONMENTAL EFFECTS OF ROAD OPERATIONS

Road operations will be winter only. The winter traffic estimated for the first ten years of road operations is summarized by Table 21.

Table 21 Seasonal road traffic to sites serviced by the Bathurst Inlet Port and Road Project in years 1- 10

Destination	Total Trucks
Lupin	500
Ekati™	2,400
Diavik	1,600
Jericho	300
Total	**4,800**

Road maintenance crews will be based at the port and the Contwoyto Camp. Systematic maintenance activities will involve snow removal, sanding and grading as required in winter. Summer maintenance work which will include operating several quarries along the road and crushing rock to produce the -50 mm materials for surface dressing will be carried out in late July and August.

5.4.1 Air Quality

Truck and barge operations will produce exhaust emissions. Exhaust emissions will be reduced by an overall fuel conservation effort.

5.4.2 Aquatic Environment

There will be no direct interaction between the road and the aquatic environment. The flow at non-intermittent stream crossings will reach the level of the bridge or culvert abutments only at very high flows. Water will be required for camp needs at the Contwoyto camp.

The camp at Contwoyto Lake will require 6,000 litres water/day for potable needs and emergency fire fighting. It will be drawn from Contwoyto Lake. Standard intake screens will be in place to prevent fish from entering the water intake. Sewage treatment will be by extended aeration with effluent discharged on the tundra "field".

5.4.3 Terrestrial Environment Interactions

There will be no interaction between road traffic and the elements of the terrestrial environment.

5.4.3.1 Birds

The interactions with birds during road operations will be passive and no incremental effects to those of the construction phase are expected.

5.4.3.2 Mammals

The interactions with mammals during road operations will be passive and no incremental effects to those of the construction phase are expected. It is expected that the interactions will be considerably reduced in that the road will operate in winter only.

The road will be operated between January and April. No caribou will be in the Project area at that time of the year (Figure 9). Summer maintenance work will begin when the spring migration and calving season is over and most caribou have moved south.

In the N.W.T. and Nunavut, the Lupin winter road cuts through the winter range of the Bathurst herd and crosses spring migration routes. In the period of winter road operations (1982 to the present) the herd has increased from estimates of 100 - 120,000 in 1979 to 360,000 in 2001 (GNWT).

The effects of road operations on caribou populations will be negligible. Hunting by Project personnel and the personnel of contractors will not be permitted. Figures 9a and 9b show the herd in March and June respectively and Figures 36 (a-f) show the distribution of the Bathurst herd from 1996 - 2000 as shown by telemetry data.

5.5 LUPIN WINTER ROAD

The Lupin winter road will continue to operate into the Project area and freight originating in Yellowknife will include non-bulk freight destined to all the sites served by the Bathurst Port Road including cargo destined for Kitikmeot communities hauled to the port.

5.6 BATHURST INLET PORT AND ROAD OPERATIONS EFFECTS ON THE SOCIAL AND ECONOMIC ENVIRONMENT OF KITIKMEOT

The Project construction phase and operations provide a significant potential for jobs to workers in the region. Project construction will create 2826 man-months of work over a 16 month period with a payroll of $26.8 M. Operations will create up to 31 jobs (both seasonal and full time) with an annual payroll of $1.5 M. Payroll for contract drivers will create an additional annual payroll of $9 M.

Diesel fuel costs for each of the Kitikmeot communities served by the Project could be reduced by up to one third the current price. The costs of general cargo from Yellowknife via the port will be competitive compared with current freight costs via Hay River. The cost of freight on general cargo out of eastern Canada is estimated to be at least 30% less than current freight costs via Hay River.

5.7 EFFECTS OF THE OPERATION OF THE BATHURST INLET PORT AND ROAD PROJECT ON THE SOCIAL AND ECONOMIC ENVIRONMENT OF THE N.W.T.

It is expected that much of the seasonal hauling capacity required for the winter fuel haul from the port will be provided by a contracted fleet based outside of Nunavut that would roll through Yellowknife every January en route to the port. The tanker units would likely be loaded, discharge their cargo at a tank farm en route and travel the remaining distance to the port empty. There is one aspect of the effects of the Project on the western Canadian economy that can be measured quite directly. All the cargo imported through the port destined for existing operations (Lupin, Ekati™, and Diavik) is cargo currently transported through Yellowknife. Cargo destined to the port for export to Kitikmeot communities would continue to be procured in western Canada but pass through Yellowknife instead of being routed to Hay River. Table 22 summarizes the estimated volume of Project current cargo that would be rerouted as a result of the Project.

Table 22 Estimate of current annual cargo volumes re-routed through Project facilities

Destination	Loads Re-routed Through Project	Contents
Lupin and Jericho	(800)	22.7 M L fuel; 7,360 tonnes supplies
Ekati™	(2,400)	72.3 M L fuel; 20,000 tonnes supplies
Diavik	(1,600)	53.8 M L fuel; 9,400 tonnes supplies
Kitikmeot communities	20	560 tonnes supplies
Net change	**(4,780) loads***	

* = loads re-routed away from current Lupin winter road

5.8 ENVIRONMENTAL EFFECTS ON PUBLIC HEALTH

No aspect of the Project construction phase or the operations phase touches directly on the public health of any communities in Nunavut or the N.W.T. Public health and industrial workplace health and safety needs at the camps and facilities operated by the Project will served by an industrial health professional "on site" at all times. This will complement the capacity that will be on site at Diavik, Ekati™ and Lupin to deal with emergencies anywhere in the Project's transportation network. Also, the camps and all related facilities will be operated in compliance with all public health standards in Nunavut.

6.0 CUMULATIVE ENVIRONMENTAL EFFECTS

Cumulative environmental effects will be addressed in the Project EIS. The sites and related activities in the region assessed for cumulative environmental effects will include ongoing operations and those proposed projects that have been submitted to agencies for environmental review. These include: Lupin Mine and the Jericho Diamond Project in Nunavut; the Ekati™ Diamond Mine, and the Diavik Diamonds Project in N.W.T. Non mining activities that will be included in the review of cumulative effects will include traditional harvesting and tourism (including outfitting) in Nunavut.

The overall incremental environmental effect of this Project will be building and operating a port and an all-weather road between Bathurst Inlet and Contwoyto Lake connecting via a winter road to the mines in Nunavut and N.W.T. The roads will operate in winter only. Serving mine sites increases the volume of the cargo on the Project's road but does not increase the environmental effects of the Project in that it directs existing cargo volumes to their destinations by way of a shorter and more economical route.

Ekati™
By supplying bulk goods, including fuel, to Ekati the Project will reduce the number of loads on the southern portion of the Lupin winter road by 2,400.

No new or additional environmental effects on the environment of either the West Kitikmeot region of Nunavut or the North Slave region of the N.W.T. should be introduced by moving these goods by a different route.

Diavik
The Diavik diamond mine is re-supplied by the Lupin winter road.

The effect of this Project supplying bulk goods, including fuel, to Diavik will reduce the number of loads on the southern portion of the Lupin winter road by 1,600. No new or additional environmental effects on the environment of either the West Kitikmeot region of Nunavut or the North Slave region of the N.W.T. should be introduced by way of sourcing these goods by way of a different route.

Lupin
Lupin Mine has been producing gold since 1982. The effect of this Project supplying bulk goods, including fuel, to Lupin will reduce the number of loads on the southern portion of the Lupin winter road by 500.

No new or additional environmental effects on the environment of the West Kitikmeot region of Nunavut will be introduced by way of sourcing these goods by way of a different route.

Jericho
The Jericho Diamonds Project is located 3.5 km west of Contwoyto Lake 20 km northwest of Lupin. It is currently at the project review stage. It is proposed that the Jericho site would be served by a 32.5 km extension of the Lupin winter road. The configuration of this Project would not introduce any changes to the Jericho Project. Operationally, the Jericho Project may have access to the winter road over a slightly longer period each winter compared to the current Lupin winter road season. The proposed volumes for annual re-supply to the Jericho Project are estimated to be from 157 to 312 loads annually for an 8 year period (Tahera Corporation, 2001).

The social and economic effects of the Project on the Kitikmeot region include an infusion of employment and contracting opportunities for its residents. The construction phase is expected to create 2,826 man-months of employment over a 16 month period. The payroll for construction will be an estimated $26.8 M.

Project operations will create 31 jobs every year with an annual payroll of $1.5 M. The services for contracted drivers hauling on the road will add $9 M for a total estimated annual payroll of $10.5 M. The creation of new opportunities close to the traditional community of Bathurst Inlet may see a return to the community of family members who moved out in recent years due to lack of opportunity there (Page Burt, Naturalist at Bathurst Inlet Lodge, personal communications).

It is possible that a significant portion of the Project payroll can be retained by the region. In a study of potential social and economic effects of a gold mine in the Keewatin, it was estimated that in addition to the direct payroll to the region, government would benefit by $22,469 for every new job created in the region that was filled by a previously unemployed person. These benefits are a combination of tax revenue and saving in social program costs (Nexus, 1997).

The Project will provide lower costs for fuel, supplies and power (diesel fuel) resulting in a higher standard of living for Kitikmeot residents. Annual savings on fuel alone are estimated as being at least $3 million.

The cumulative effects assessment in the Project EIS will describe expected effects of the Project in concert with existing and prospective activities indicated above, with traditional and historic activities on major VECs, and social, cultural and economic make-up of the Kitikmeot region of Nunavut. It will also review the expected effects on the winter road traffic between Yellowknife and the mining sites that have traditionally been re-supplied entirely by the Lupin winter road

7.0 MITIGATION MEASURES AND RESIDUAL IMPACTS

The risk of environmental effects from Project construction and operations relate to the direct interactions between the Project and elements in the environment. The interactions and related environmental risk outlined in Table 7 above will be elaborated on here.

The overall mitigation measures that will be practiced are the product of a high level of environmental care and diligence by the proponent in all Project activities. Notwithstanding the best practice, and successful mitigation measures, some interactions between the Project and the environment will have residual impacts which are described for the relevant Project activity.

7.1 AIR QUALITY

Combustion of diesel and other hydrocarbon fuels will produce greenhouse gasses which cannot be avoided. The amount can be reduced by an aggressive energy conservation effort. The residual environmental effects of burning hydrocarbons are debatable but may include global warming.

7.2 MARINE SHIPPING

Marine shipping associated with the Project will take the form of vessels up to 25,000 tonnes and barges serving Kitikmeot communities. All shipping will be done by commercial carriers operating in compliance with the relevant Canadian laws and regulations.

The Project will go beyond the specifics of the law in mitigating the effects of shipping through the Kitikmeot Region. The shipping season will be planned so that no ship movement is required during the time of potential early winter ice cover on Dease Strait and so avoid the risk of interfering with caribou migration from Victoria Island to the Kent Peninsula. Also, no ship movement will be planned for the spring when caribou return to Victoria Island. The first ship of the season is planned for an open water arrival and so Project shipping will not interfere with human travel on the spring ice either.

No residual impacts of marine shipping are expected.

7.3 CAMP OPERATIONS

Interactions with the environment at Project camps will involve water quality, waste management, and wildlife. Sewage from the camps will be treated to meet waste water quality standards prior to discharge. All combustible waste will be incinerated on a regular basis so not to attract scavengers; non-combustible waste will be disposed of either at a solid inert waste site or be shipped out. All hazardous wastes that cannot be disposed of by the Project (i.e. used oil can be destroyed on site by a waste oil burner) will be shipped out.

A “Bear Alert” program will be used at all camps to advise personnel when grizzly bear are sighted at or near a camp.

Project employees will probably engage in recreational angling but hunting by Project personnel will be prohibited. The policy on recreational angling by Project workers will be in compliance with the West Kitikmeot Regional Land Use Plan (when approved).

No residual impacts are expected to water quality, fish populations or wildlife populations as a result of camp operations. The remains of a solid inert waste site could be visible for many generations.

7.4 UNLOADING SHIP CARGO

Handling marine bulk cargos has the attendant risk of spills with associated potential effects on coastal habitats. The first defense will be a code of best practice that will be followed by the commercial carriers and their staff. Next, the Project will adopt contingency plans that employ the best practice available for Arctic conditions.

No residual impacts are expected from normal port operations. Effective contingency plans and equipment with trained personnel will be in place to reduce the risk of residual impacts from accidents.

7.5 PIT /QUARRY DEVELOPMENT

Pits and quarries will alter an estimated 2 ha of tundra terrain at each site for a total of ± 74 ha at approximately ± 37 sites. Sites for pits and quarries will be selected with care so that the terrain disturbance can be contained in as small an area as possible. Quarries in sulphide bearing rock with a risk of acid generation in the quarry or by the rock on the road will be avoided. During operations, effective contingency plans will be in place to ensure that accidents do not result in residual impacts. On closure quarry and pit walls will be sloped to avoid progressive terrain alteration, but the visual effect of the pit and quarry will remain.

7.6 PORT SITE DEVELOPMENT

Port site development, like quarry and pit development will involve terrain alteration on a large scale. It is estimated that the cumulative area of all the development at the port will involve approximately 159 ha. , including the dock site. A Project environmental management system will be in place to reduce the risk of environmental effects from normal operations. Contingency plans will be in place to ensure that accidents do not cause long term impacts.

The residual impacts of port development will be the visual and inert. These effects of terrain alteration will be evident on the tundra for many years.

7.7 ROAD CONSTRUCTION

Road construction will affect a total estimated 277.7 ha with a further 74 ha for quarries. The alignment has been selected for its benign effects on drainage basins and terrain features like eskers. Road construction like pit and quarry development will be governed by rigorous attention to good practice and effective contingency plans to reduce the risk of long term environmental effects from accidents.

The presence of the road will not have any long term negative impacts on water, vegetation, or wildlife. Water crossings will be designed to avoid the stream channel in fish bearing streams during normal flows. Caribou will use the road as insect relief during periods of heavy insect infestation. The presence of the road, like the presence of an esker, will be visible for many generations.

The residual impacts of the road construction will be visual and inert. These effects of terrain alteration will be evident on the tundra for many years.

7.8 CONTWOYTO CAMP DEVELOPMENT

The Contwoyto Camp site development will occupy 1.5 ha. Like the road, Camp construction will be completed with care and diligence. The Contwoyto parking area and push outs, like the road, will be areas used by caribou as insect relief during periods of heavy insect infestation. The gentle terrain of the sites is such that the risk of progressive erosion is negligible.

The residual impacts of Contwoyto Camp construction will be visual and inert. These effects of terrain alteration will be evident on the tundra for many years.

7.9 PORT SITE OPERATIONS

Road operations at the port will produce dust in summer which will be subject to dust suppression by watering the surfaces. Contingency plans will address the risk of spills. Sedimentation ponds will be used as a back-up for spills that could affect the quality of run off water. These ponds will be located to collect run off so that it can be tested and held for treatment, if necessary, before entering Bathurst Inlet. No freshwater systems are at risk from port site run off.

No residual impacts are expected from normal port operations; effective contingency plans and equipment with trained personnel will be in place to handle accidents.

7.10 ROAD OPERATIONS

All trucks operating on the road will be required to carry a basic spill kit to handle incidental spills. A contingency plan and a mobile spill kit will be on standby at all times to handle accidental spills like a truck roll over. The road environmental management plan will show the drainage pattern for both sides of the road for the entire right of way so that effective cleanup measures can be initiated with full knowledge of the natural lay of the land.

Wildlife will always have the right of way; in the event of continuous caribou movement across the road, travel may be suspended.

No residual impacts are expected from normal road operations; effective contingency plans and equipment with trained personnel will be in place to handle accidents.

7.11 LOADING BARGE CARGO

The commercial carriers will be expected to employ best practices for fuel and cargo handling. The experience of Polaris and Nanisivik will be used in developing handling procedures and for related spill contingency plans.

Loading barges with deck cargo and fuel in holds will follow standard practice.

The port will be equipped with a full complement of spill containment and clean-up equipment.

No residual impacts are expected from normal port loading operations; effective contingency plans and equipment with trained personnel will be in place to handle accidents.

7.12 CONTINGENCY PLANS

Contingency plans that are specific to potential risks inherent in Project construction and operations will be submitted with the Project EIS. Included will be contingency plans for:

- discharging fuel from ship to tank farm
- tank farm operations and management
- unloading bulk materials at the port
- storage of hazardous materials at the port

8.0 ABANDONMENT/DECOMMISSIONING PLANS

It is expected that the Project as examined in the feasibility study (Nishi-Khon SNC and Kitikmeot Geosciences, 2002) will enhance the economics of resource development in the West Kitikmeot in a very significant way for the long term. Decommissioning the Project is therefore not foreseen. It is accepted however that elements of the Project will change and that selective decommissioning will be required from time to time.

8.1 QUARRIES

Quarries not required for maintaining the road way during operations will be contoured and abandoned on completion of road construction. At no time during the construction or operations of the Project will active erosion of any terrain on or adjacent to the port and road and associated lands be allowed to proceed unchecked or alter natural drainage patterns in adjacent lands.

8.2 ROAD

It is expected that the road will be in use for many generations in the future, nevertheless, the Project proponents acknowledge that non-renewable resources are finite and that some day in the future sections of the road and associated facilities may no longer be required. Closure and abandonment will include removal of all imported materials and structures, treating all contaminated soils, contouring all surfaces to reduce the possibility of erosion and to enhance the natural re-vegetation of all terrestrial surfaces disturbed or altered by the Project.

8.3 SEASONAL SHUTDOWN

The road and port operations are seasonal, road in the winter, port in the summer.

The Project's operations plan will include seasonal, temporary, and permanent closure procedures.

There will be some road maintenance in summer. Equipment used for building and operating the winter ice road on Contwoyto Lake will be laid up for the summer.

Temporary suspension of all operations might be associated with global economic factors that force the suspension of operations at all participating sites. One such factor could be a price increase of fuel oil to levels that make all mining in remote regions uneconomic. Contingency plans for such factors arising will be developed and submitted in support of the Final Project Description and Project EIS.

9.0 MONITORING AND MAINTENANCE PLANS

The Project will undertake environmental quality and public health monitoring programs as required by the Project's "license to operate" for both the construction and operating phases. Monitoring programs are expected to be prescribed by the Project's environmental regulators for water quality generally and for public health issues specifically. Furthermore, the Project would explore collaboration with other industry parties and government in the event that long term wildlife monitoring programs were to be initiated in the Kitikmeot region of Nunavut.

The Project permitting approvals requirements includes that an Inuit Impact and Benefit Agreement be negotiated with the Kitikmeot Inuit Association. It is expected that compliance and monitoring functions will be included in that agreement.

10.0 LIST OF INFORMATION SOURCES

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Page Burt, naturalist at Bathurst Inlet Lodge for 20+ years and principal investigator 2001 field studies of plants and vegetation in Project area.

Sam Kapolak, resident, community of Bathurst Inlet.

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FIGURES

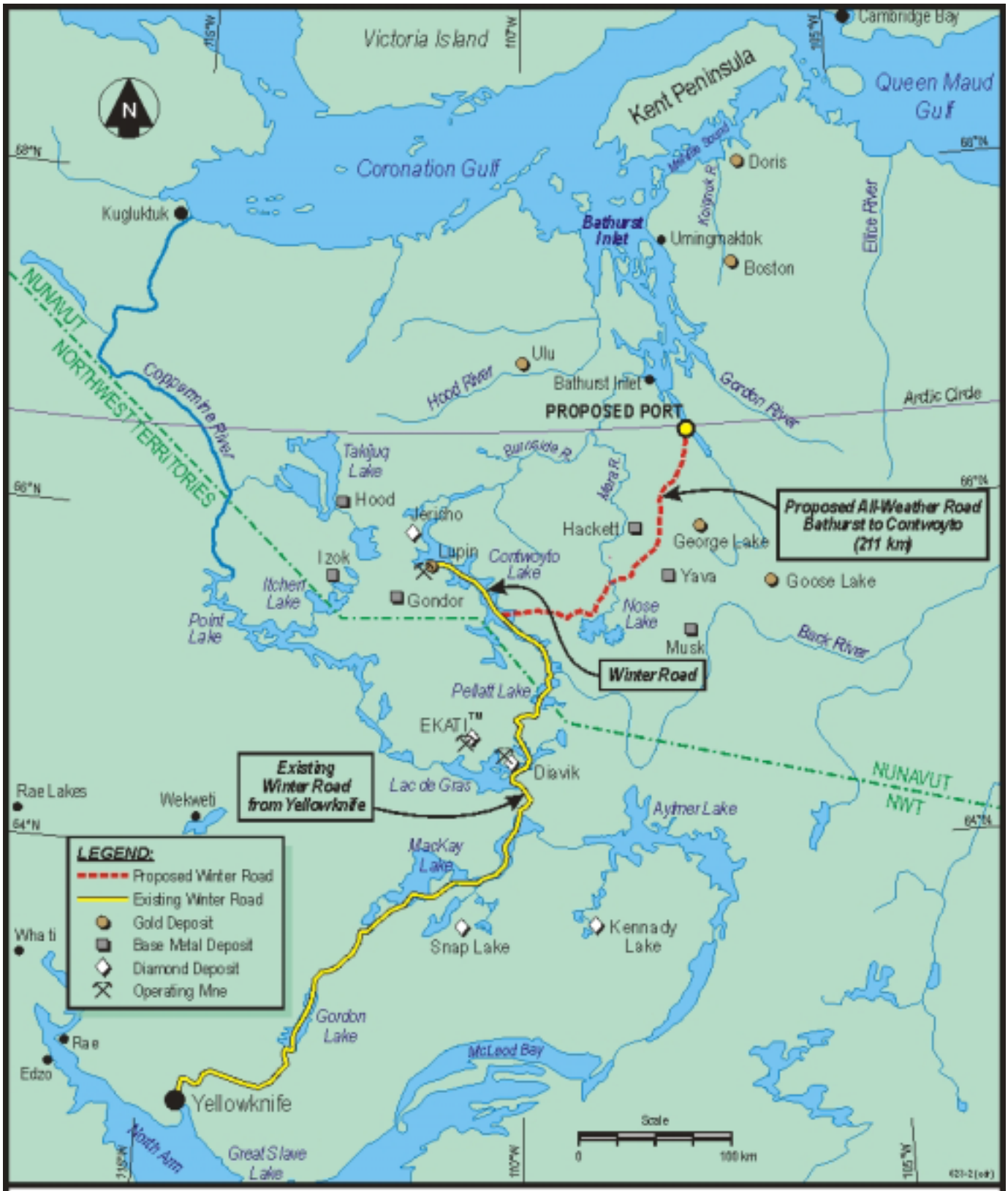
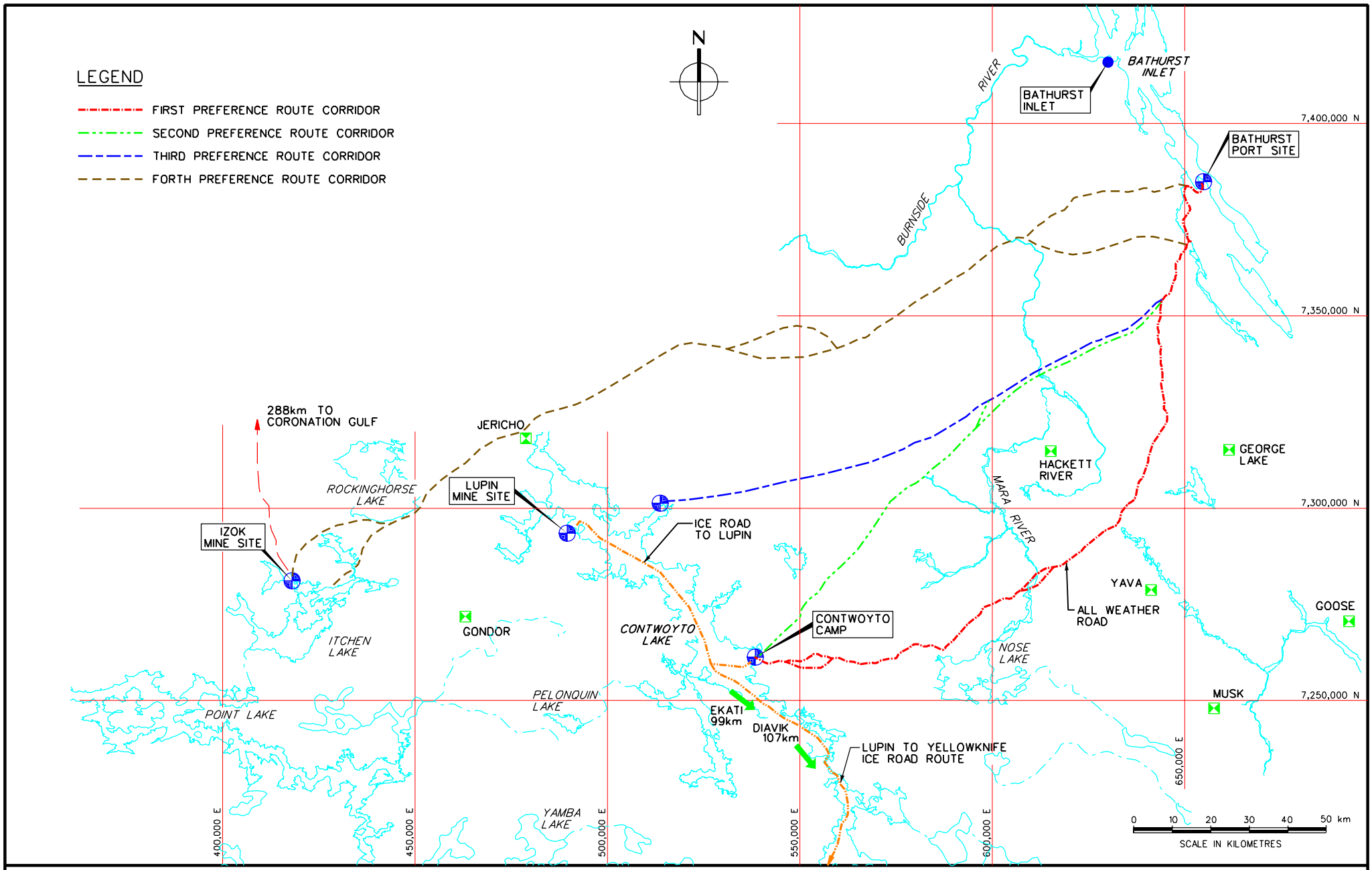


FIGURE 1

Bathurst Inlet Port and Road Project - Location Map



BATHURST INLET PORT & ROAD PROJECT

ROUTE ALTERNATIVES REVIEWED SHOWING LUPIN WINTER ROAD ROUTE IN PROJECT AREA

FIGURE 2

the BATHURST INLET PORT AND ROAD PROJECT

NOTES:

1. MAPPING FROM GEOWEST ENVIRONMENTAL CONSULTANTS.
2. ZONE 12 UTM GRID SHOWN.
3. ALL WEATHER ROAD LAND OWNERSHIP JURISDICTION TABLE:

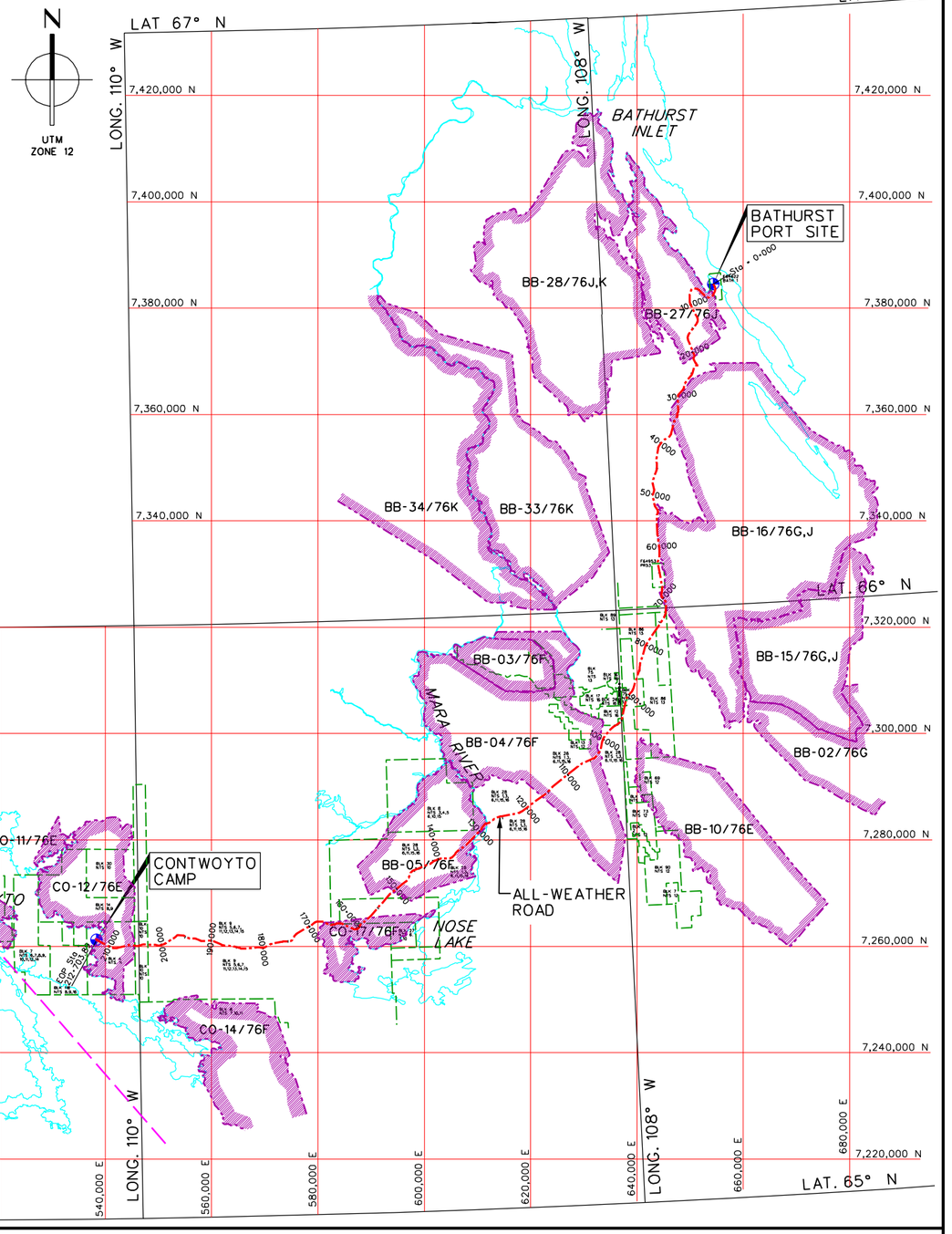
ROAD LENGTH (km)	ROAD LENGTH PERCENTAGE (%)	LAND OWNERSHIP
147.7	51.0	INUIT OWNED LAND
141.6	49.0	FEDERAL CROWN LAND

LEGEND:

- INUIT OWNED LAND
- MINERAL CLAIMS

0 10 20 30 40 50 km

SCALE IN KILOMETRES

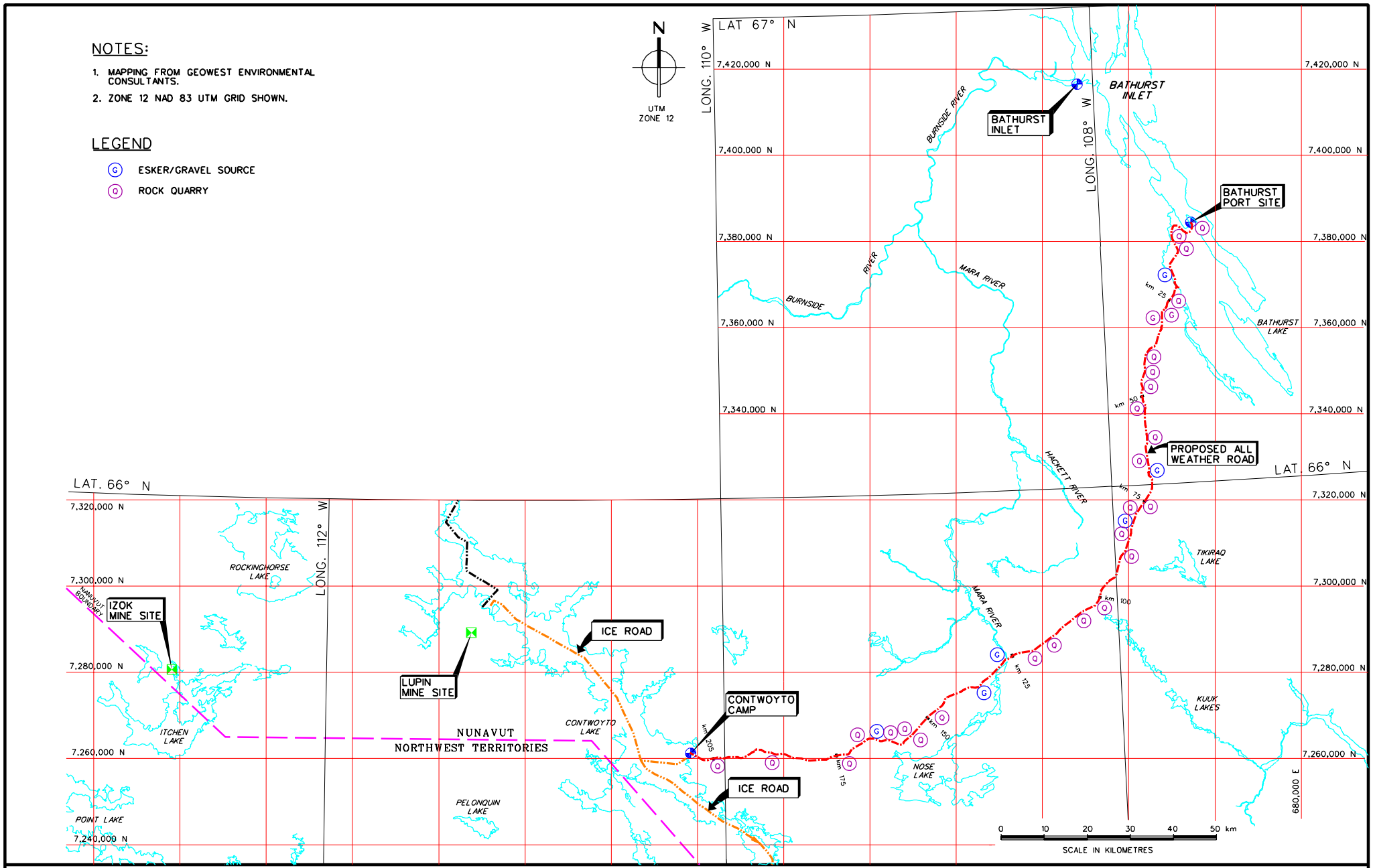


BATHURST INLET PORT & ROAD PROJECT

LAND USE AND OWNERSHIP OF ROAD ALIGNMENT

FIGURE 3

the BATHURST INLET PORT AND ROAD PROJECT

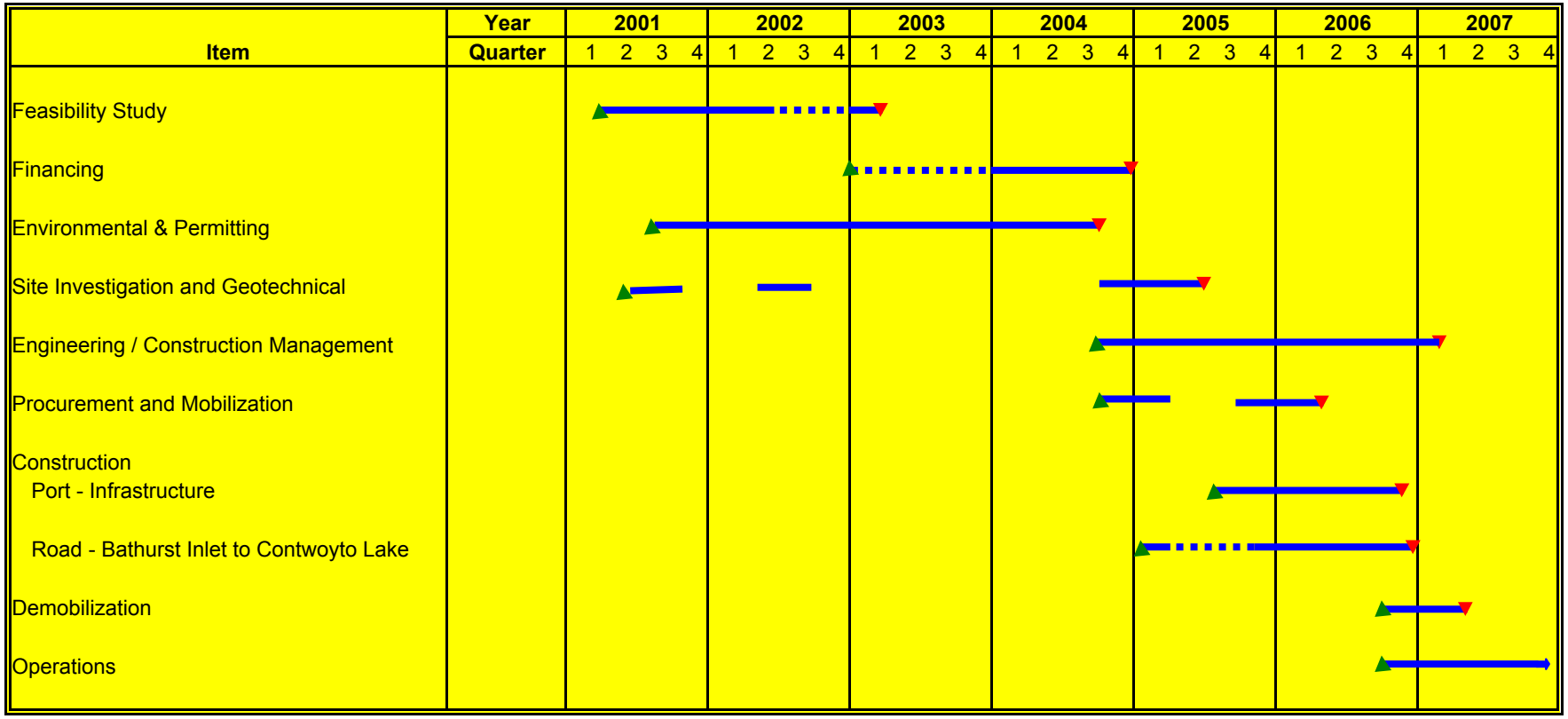


BATHURST INLET PORT & ROAD PROJECT

QUARRY AND BORROW PIT LOCATIONS FOR PROJECT CONSTRUCTION

FIGURE 4

the BATHURST INLET PORT AND ROAD PROJECT

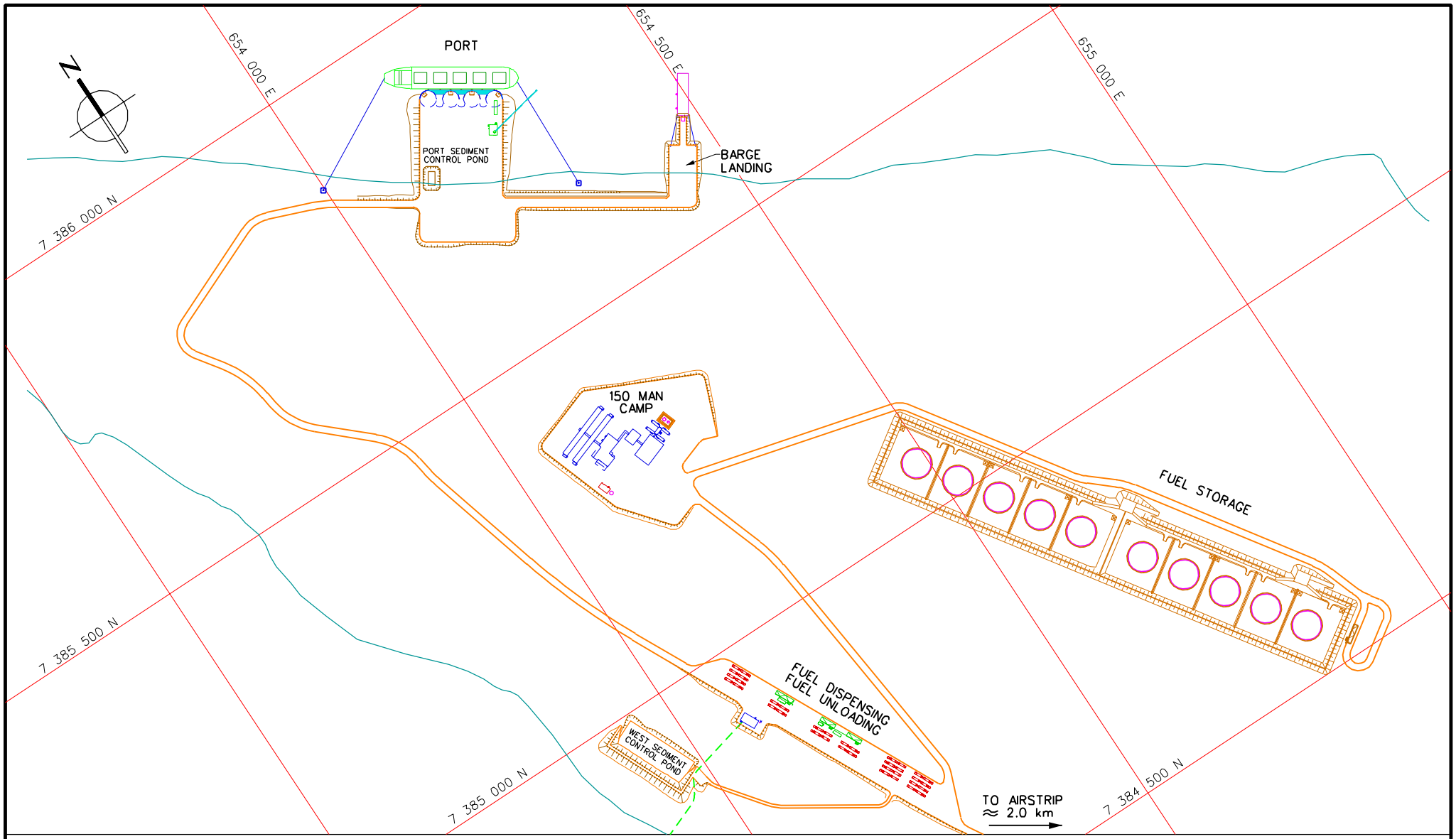


BATHURST INLET
PORT & ROAD FEASIBILITY STUDY

OVERALL PROJECT SCHEDULE

FIGURE 5
(Revised April/03)

the BATHURST INLET PORT AND ROAD PROJECT

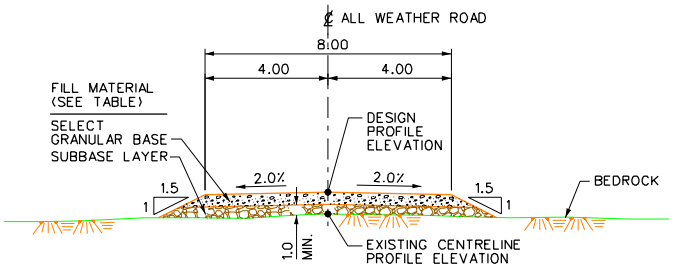


BATHURST INLET PORT & ROAD PROJECT

PORT LAYOUT

FIGURE 6

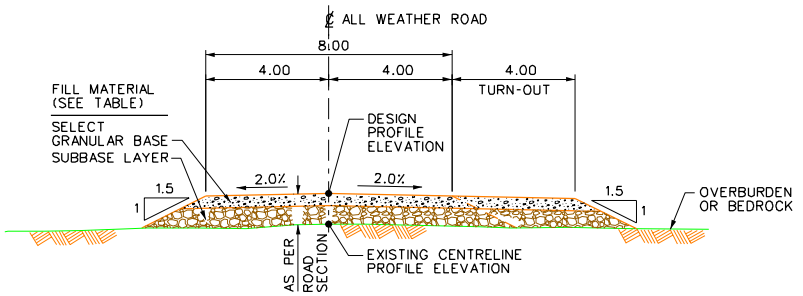
the BATHURST INLET PORT AND ROAD PROJECT



TYPICAL ALL WEATHER ROAD SECTION
ON BEDROCK OR WELL-DRAINED GRANULAR SOILS

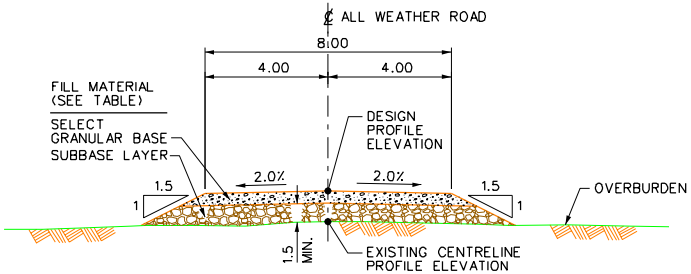
NTS

LAYER	THK.	MATERIAL DESCRIPTION
ALL WEATHER ROAD		
SELECT GRANULAR BASE	300mm	100mm CRUSHED ROCK
SUBBASE	0.6m TO 1.6m	600/900mm ROCK FILL



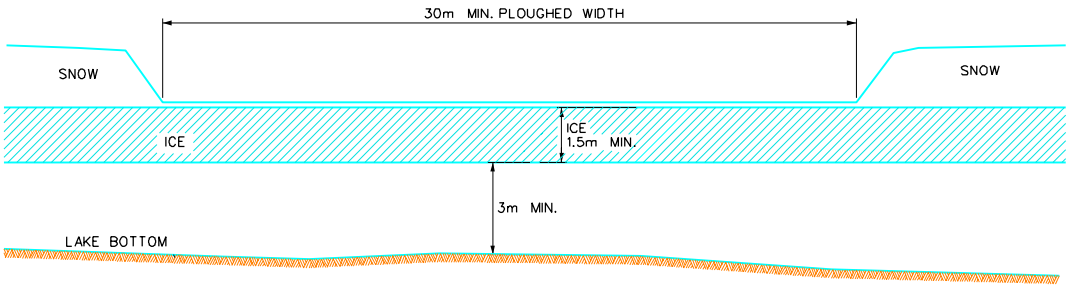
TYPICAL ALL WEATHER ROAD WITH TURN-OUT

NTS



TYPICAL ALL WEATHER ROAD SECTION
ON ICE-RICH SOILS

NTS



ICE ROAD SECTION

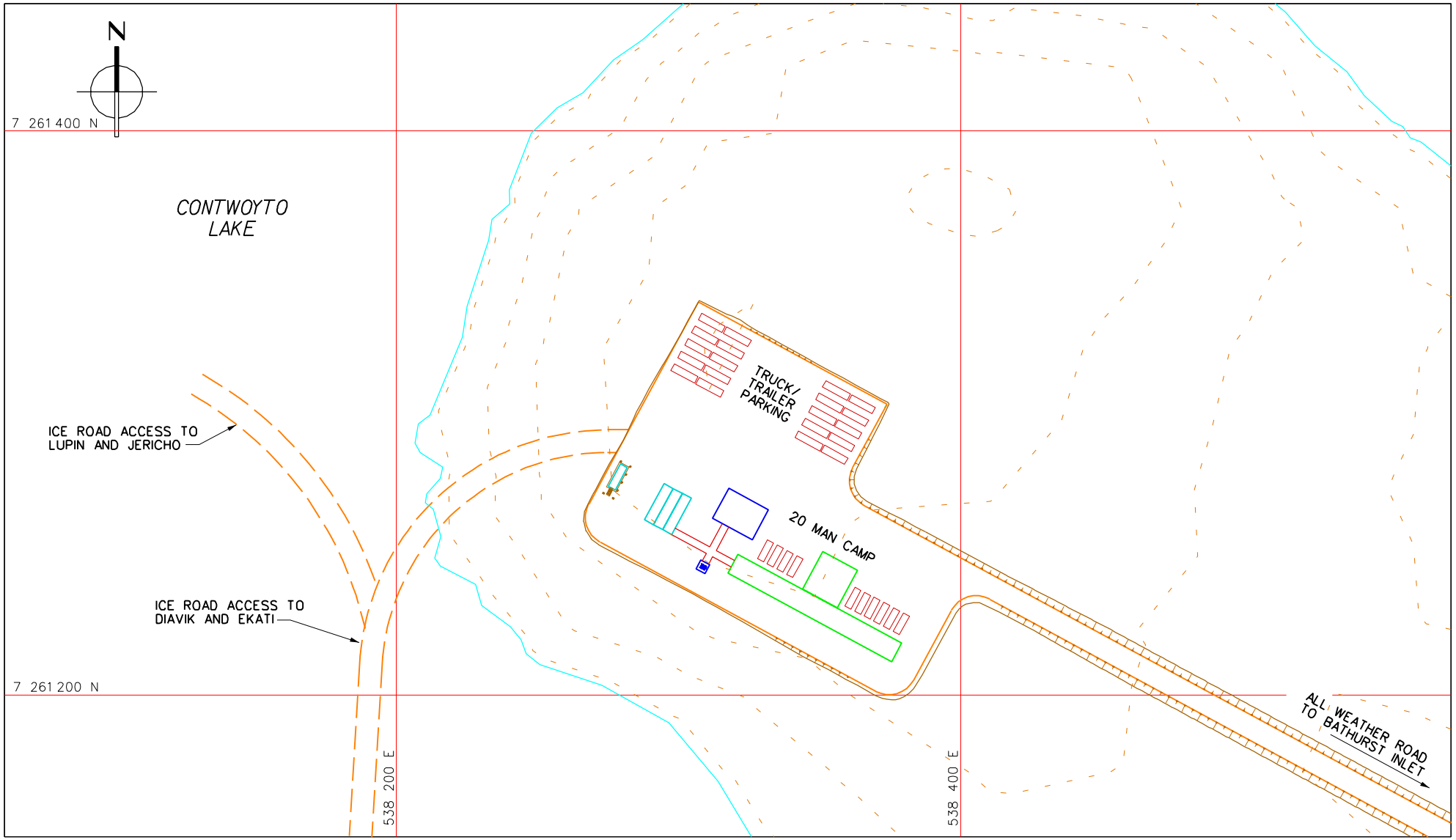
NTS

BATHURST INLET
PORT & ROAD PROJECT

TYPICAL CROSS SECTION OF
ALL WEATHER ROAD & ICE ROAD

FIGURE 7

the BATHURST INLET PORT AND ROAD PROJECT



BATHURST INLET PORT & ROAD PROJECT

CONTWOYTO CAMP LAYOUT

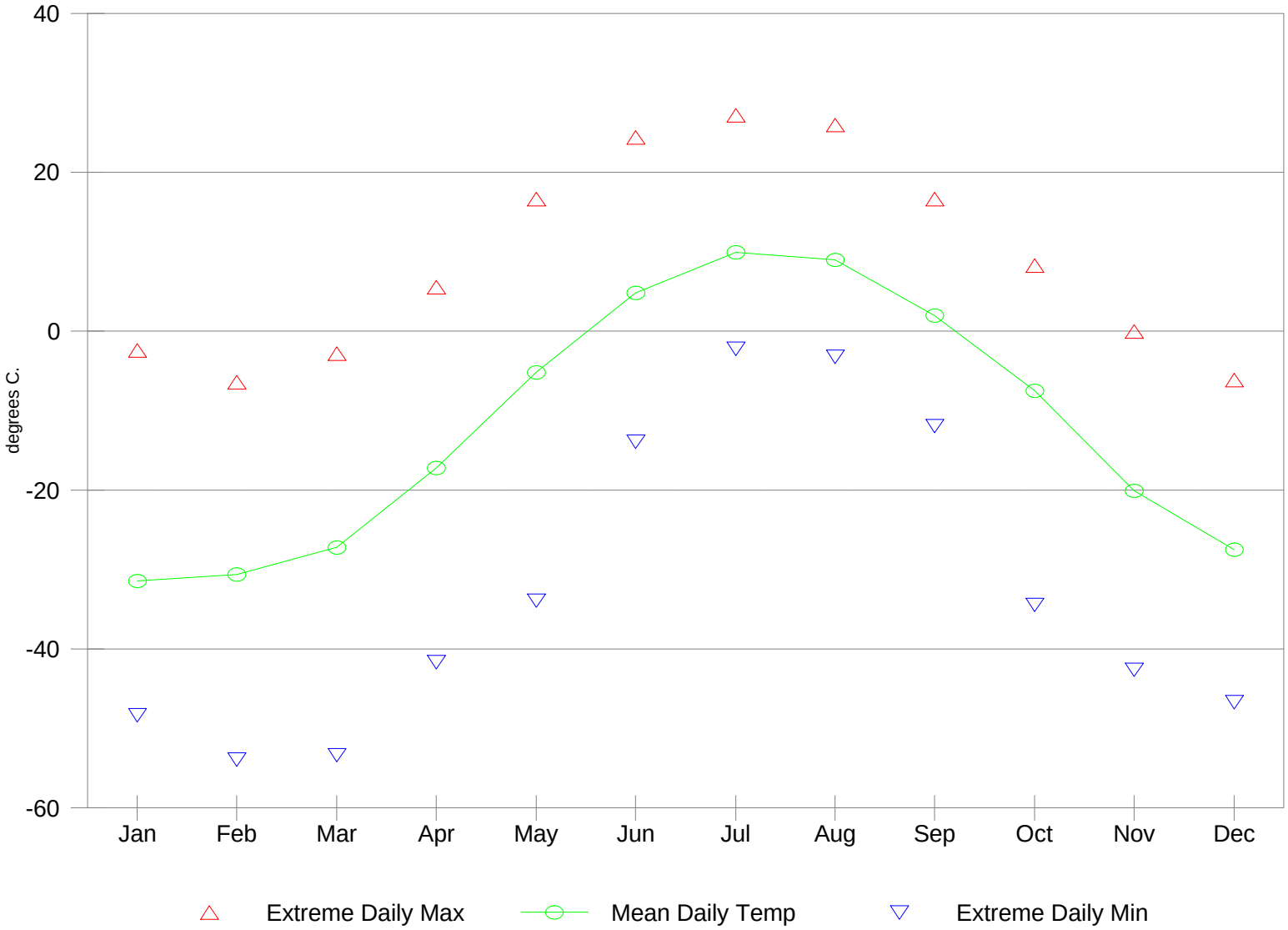
FIGURE 8

the BATHURST INLET PORT AND ROAD PROJECT


UMINGMAKTOK
BATHURST INLET
KUGLUKTUK
BAKER LAKE
NUNAVUT
Proposed All-Weather Road Bathurst to Contwoyto (211 km)
Sahtu Settlement Area
NORTHWEST TERRITORIES
South Slave Region
North Slave Region
RELIANCE
WHA TI
FORT RAE EDZO
YELLOWKNIFE
DETTAH
NDILO
Deh Cho Region
FORT RESOLUTION
HAY RIVER
SASKATCHEWAN
FORT SMITH
FITZGERALD
WBNP
ENTERPRISE
Source: GNWT/RWED
Bathurst Caribou Herd
Scale 1:6,000,000
Mar-29
FIGURE 9A

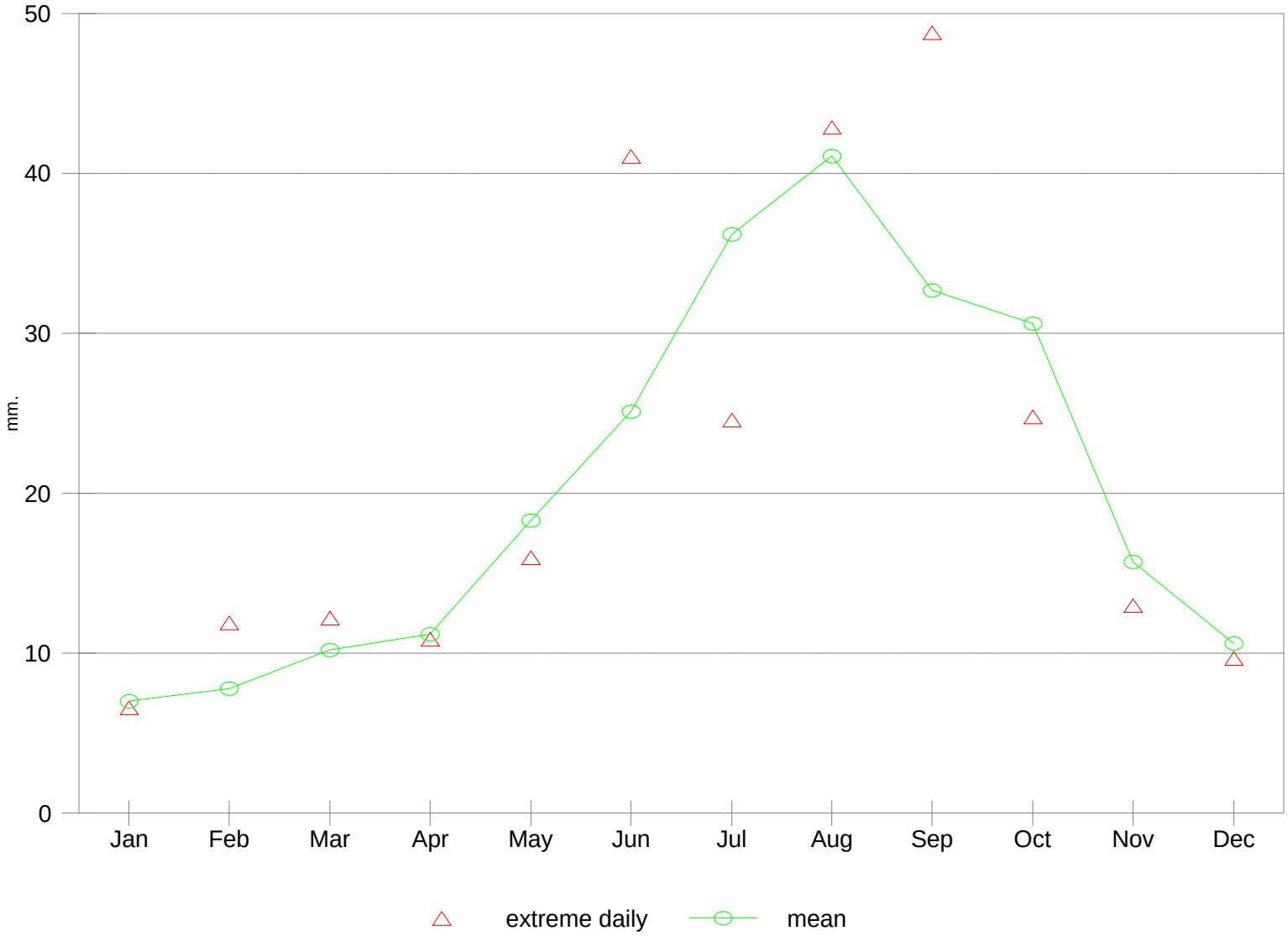

BATHURST INLET
Proposed All-Weather Road Bathurst to Contwoyto (211 km)
NUNAVUT
Sahtu Settlement Area
NORTHWEST TERRITORIES
South Slave Region
North Slave Region
Deh Cho Region
Source: GNWT/RWED
Bathurst Caribou Herd
Scale 1:6,000,000
Jun-09
SASKATCHEWAN
WBNP
FIGURE 9B

Figure 10. Contwoyto Lake Annual Temperature Profile: 1956 - 1982



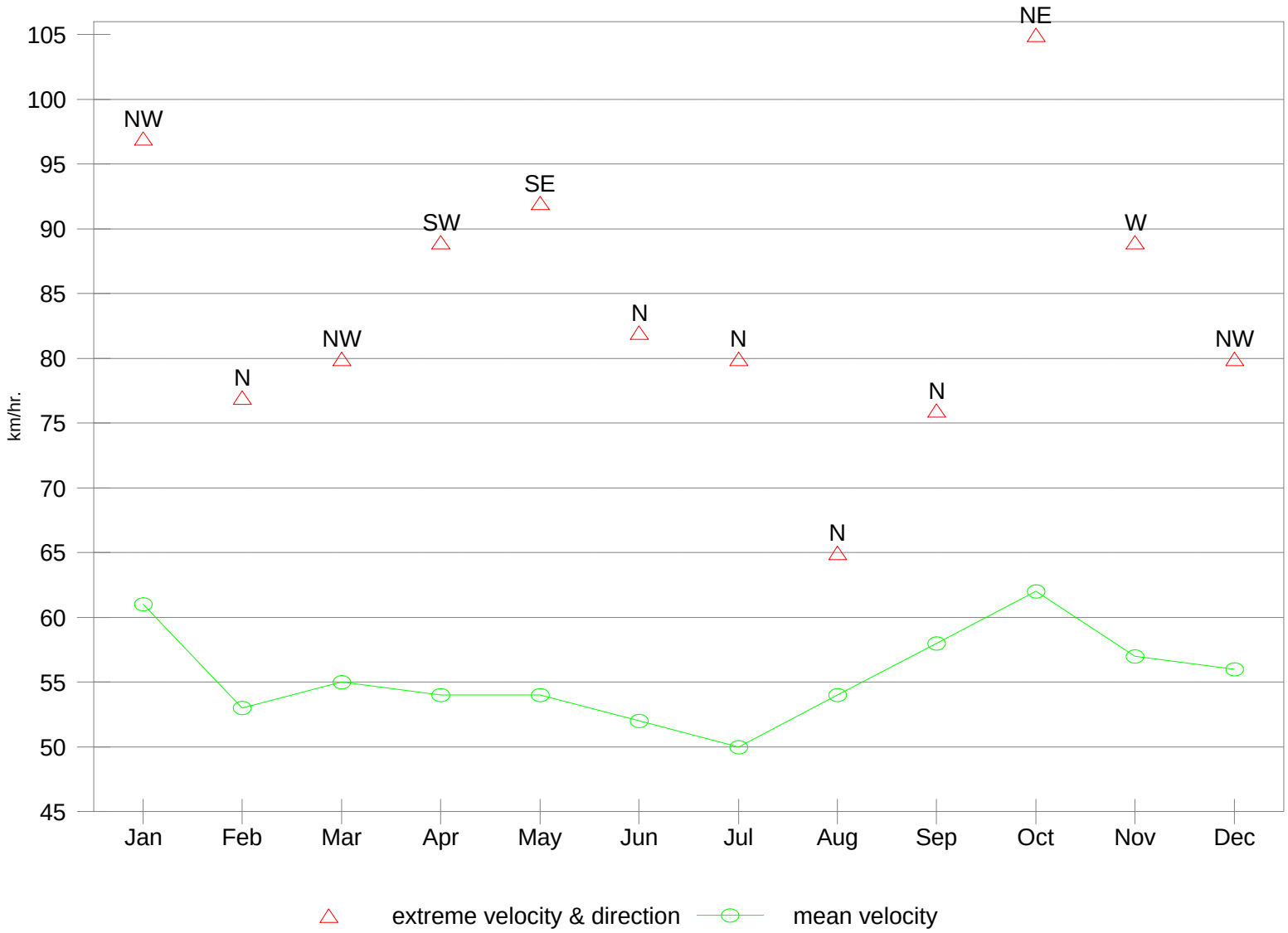
Source: Environment Canada 1994. Canadian Climate Data

Figure 11. Contwoyto Lake Annual Precipitation Profile: 1956 - 1982



Source: Environment Canada 1994. Canadian Climate Data

Figure 12. Contwoyto Lake Annual Wind Profile: 1956 - 1982

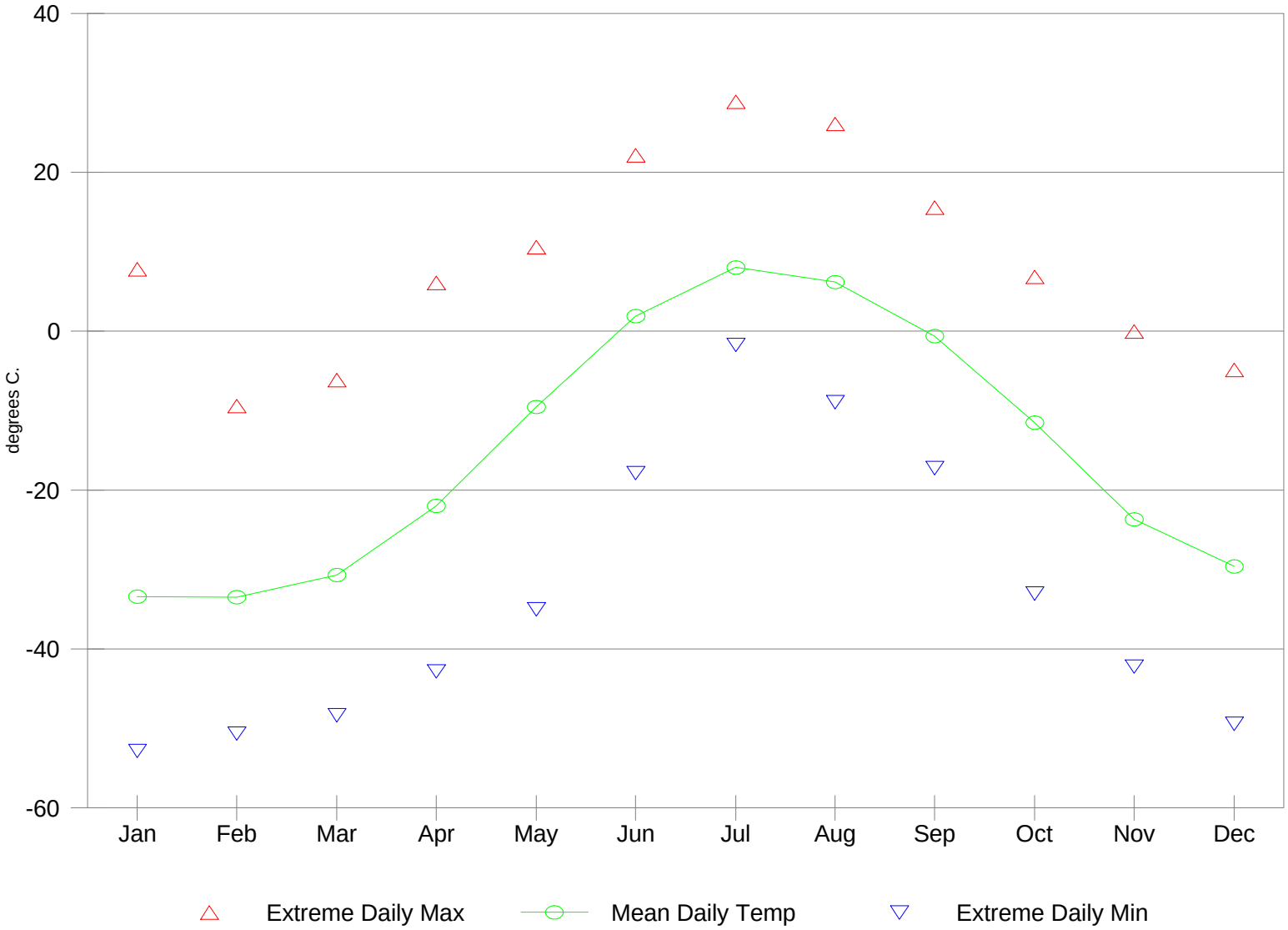


Source: Environment Canada 1994. Canadian Climate Data

Figure 13. Lupin Annual Temperature Profile: 1983 - 2001

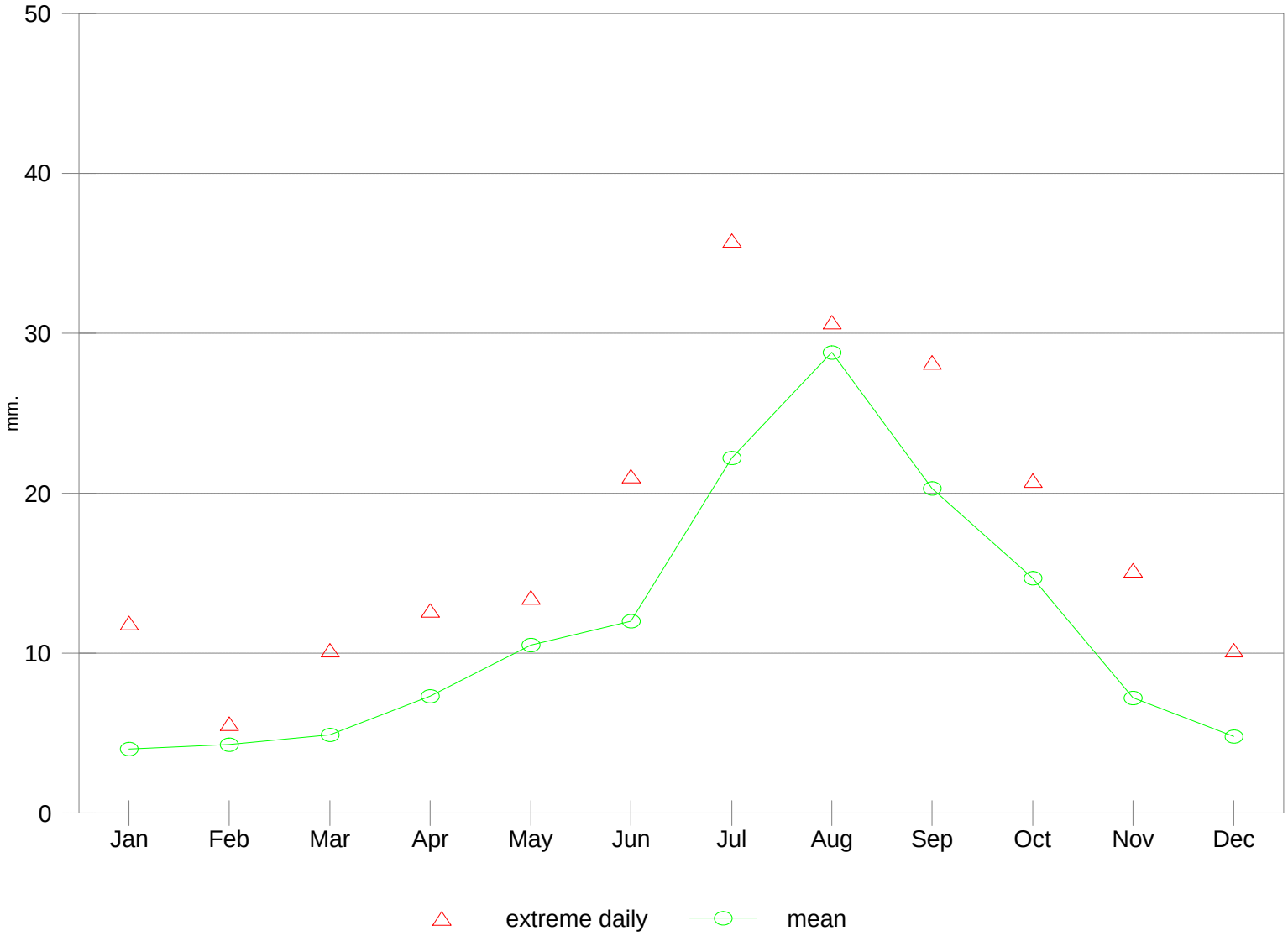
Source: SNC-Lavalin, 2001

Figure 14. Cambridge Bay Annual Temperature Profile: 1927 - 1993



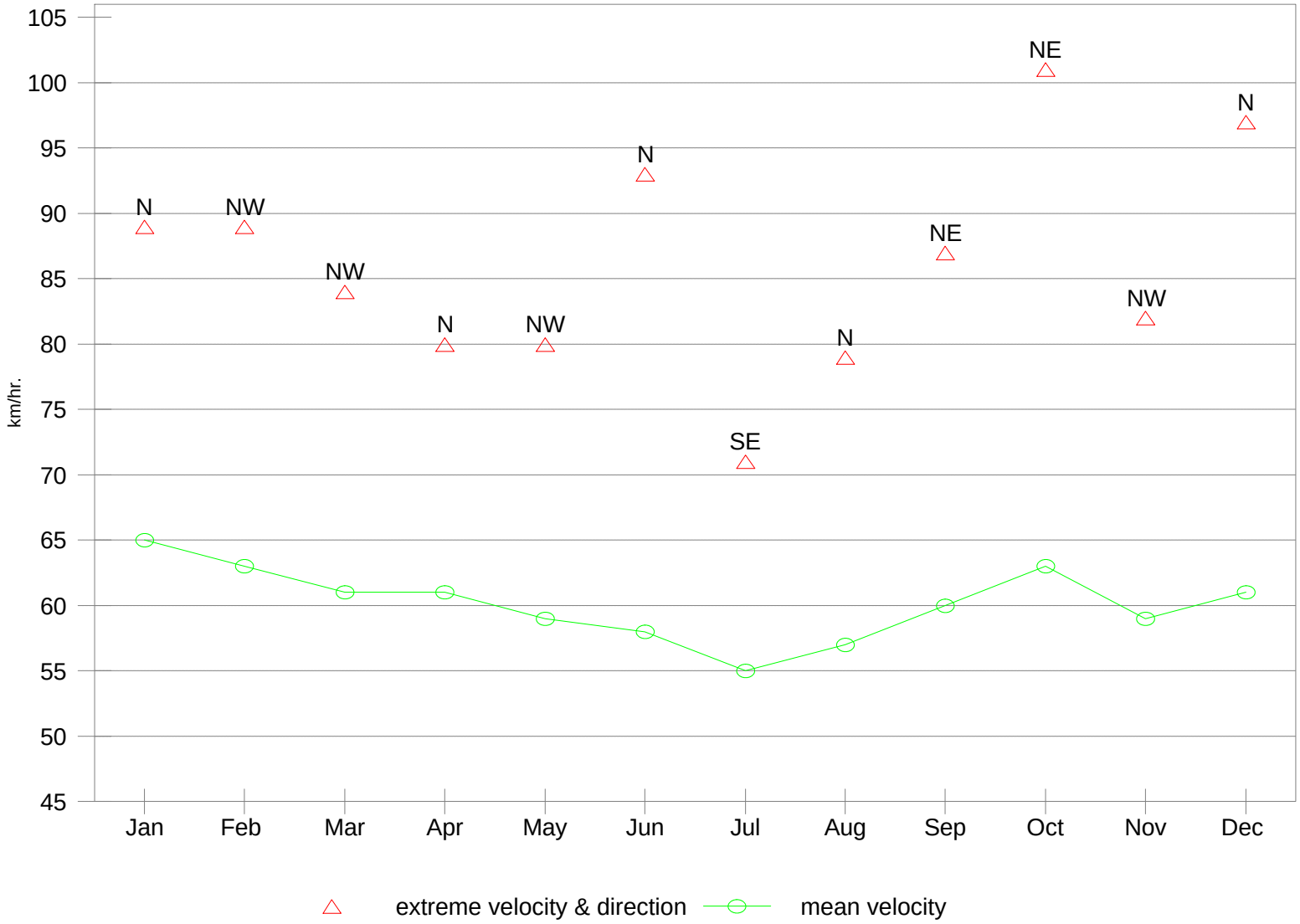
Source: Environment Canada 1994. Canadian Climate Data

Figure 15. Cambridge Bay Annual Precipitation Profile: 1927 - 1993



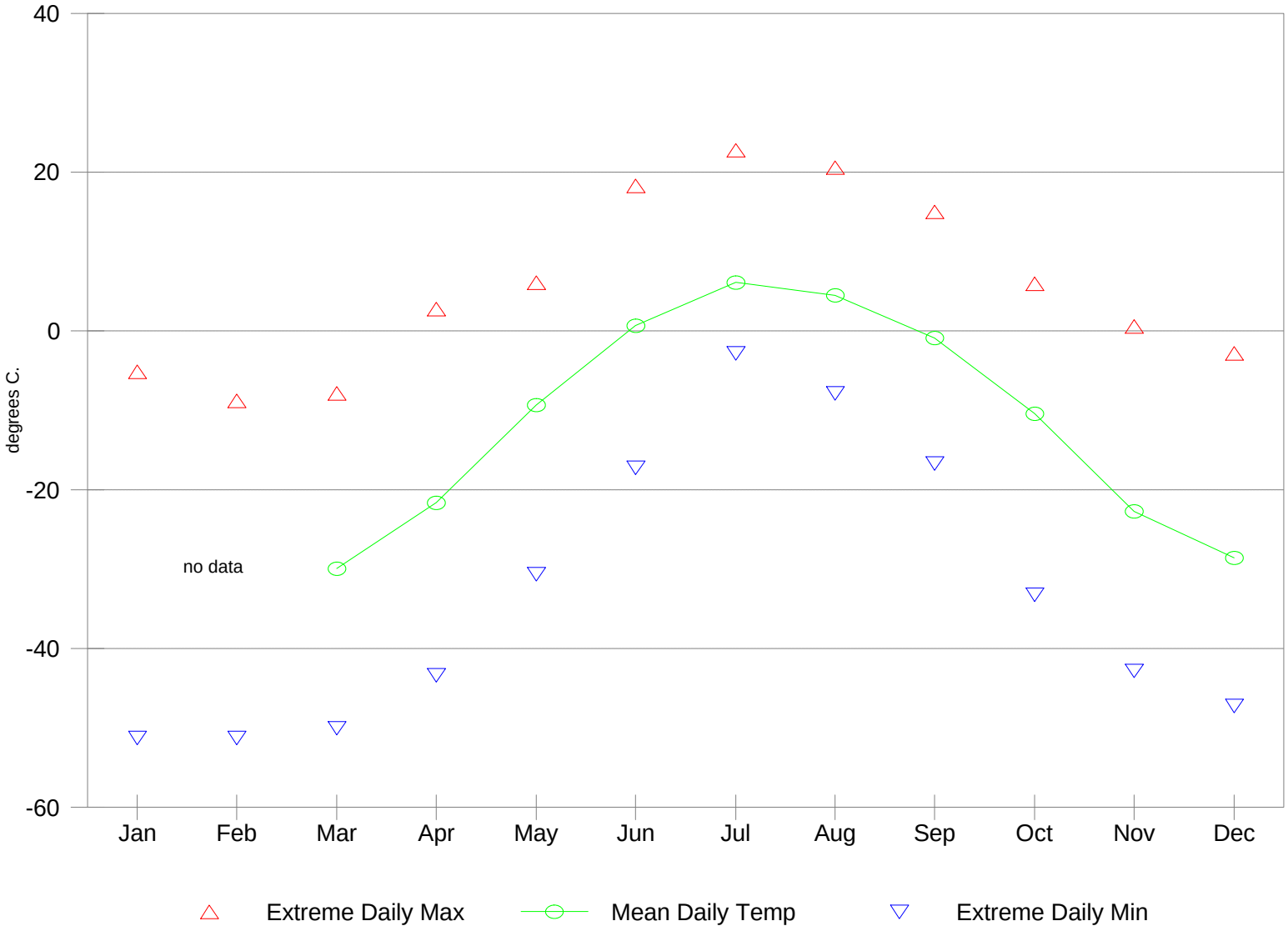
Source: Environment Canada 1994. Canadian Climate Data

Figure 16. Cambridge Bay Annual Wind Profile: 1927 - 1993



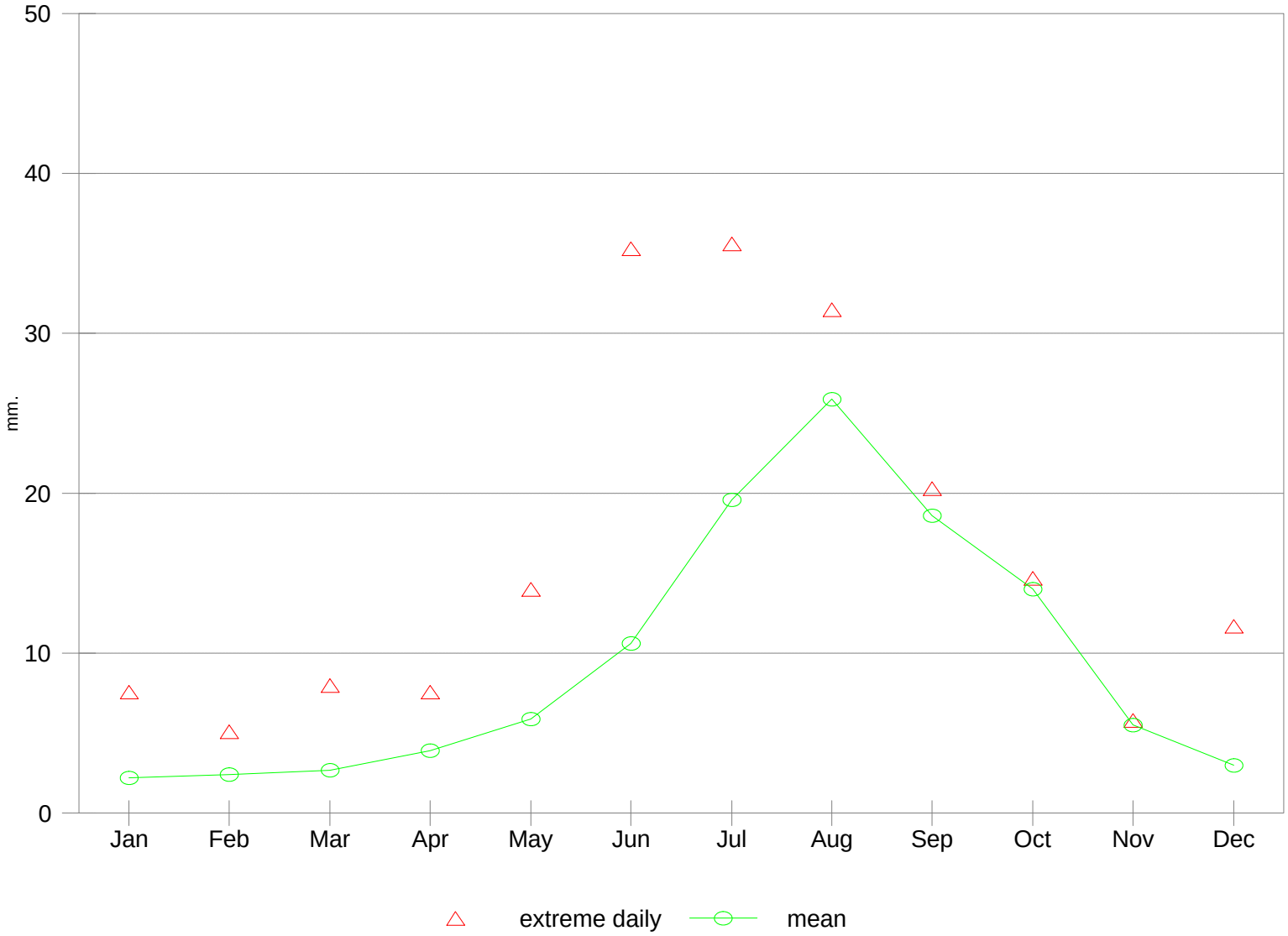
Source: Environment Canada 1994. Canadian Climate Data

Figure 17. Jenny Lind Island Annual Temperature Profile: 1955 - 1993



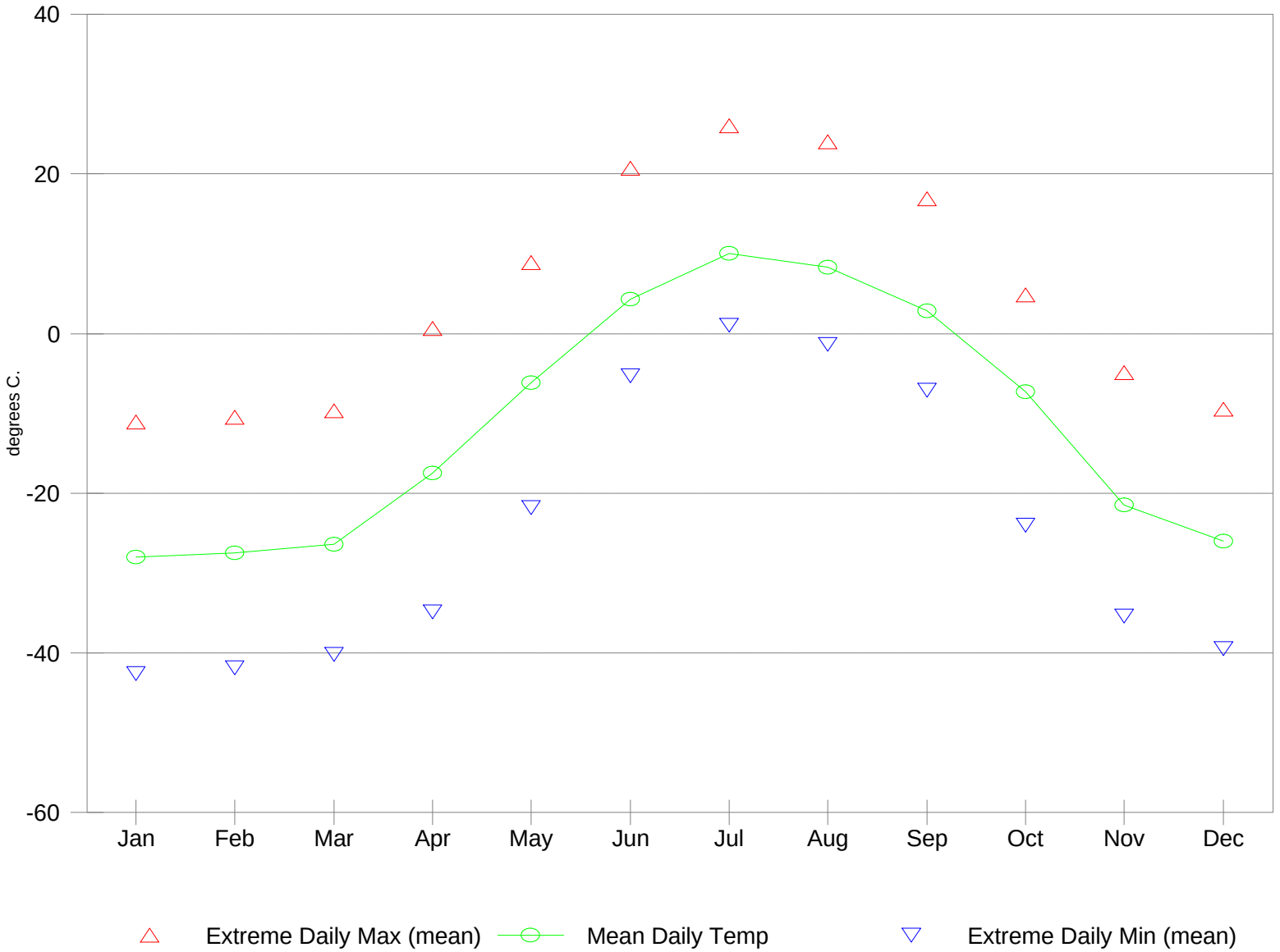
Source: Environment Canada 1994. Canadian Climate Data

Figure 18. Jenny Lind Island Annual Precipitation Profile: 1955 - 1993



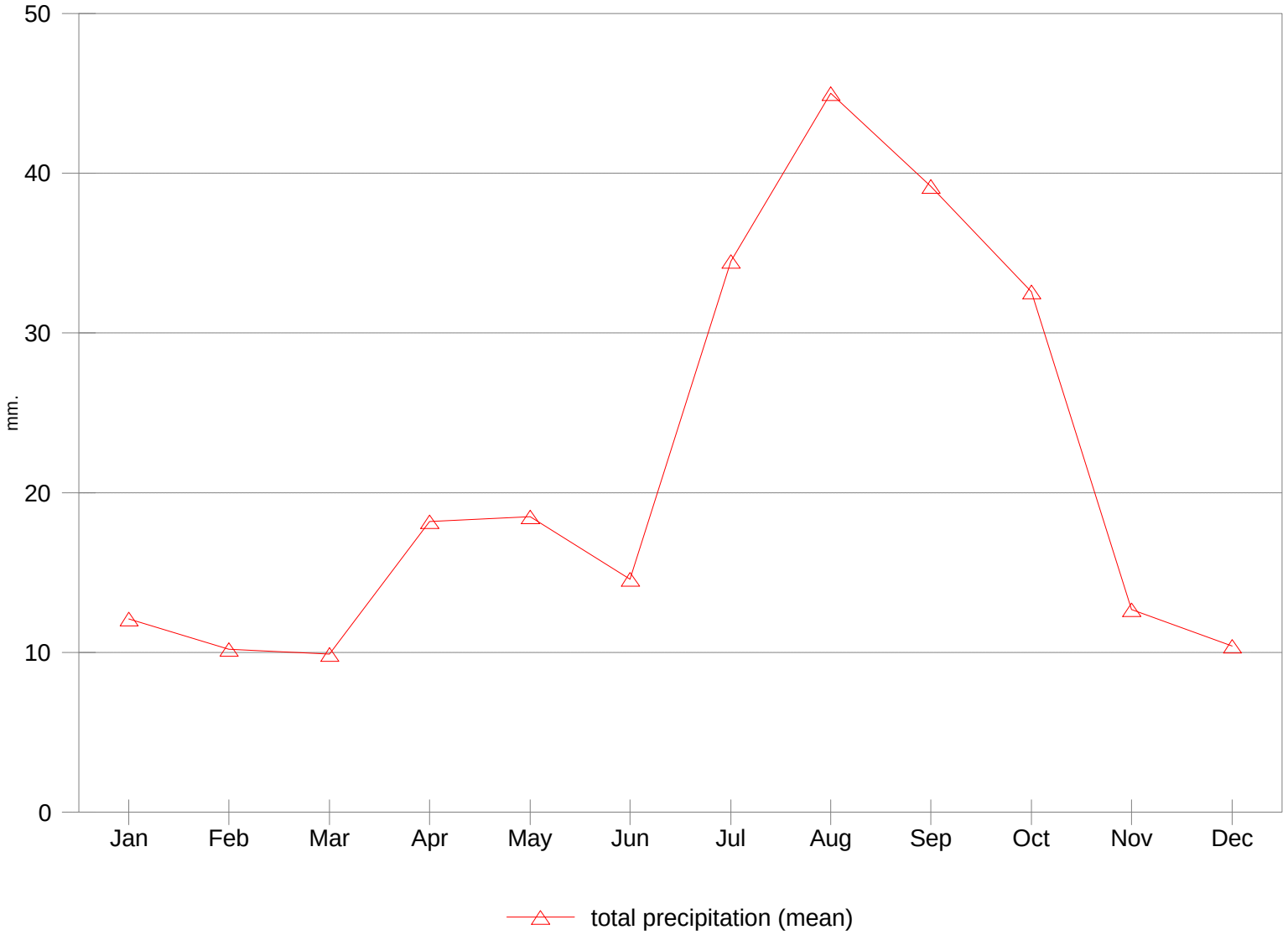
Source: Environment Canada 1994. Canadian Climate Data

Figure 19. Kugluktuk Annual Temperature Profile: 1977 - 1993



Source: Environment Canada 1994. Canadian Climate Data

Figure 20. Kugluktuk Annual Precipitation Profile: 1977 - 1993



Source: Environment Canada 1994. Canadian Climate Data

Figure 21. **Ice Thickness - Cambridge Bay, Calculated Weekly (1959-2003) (Enfotec, 2003)**

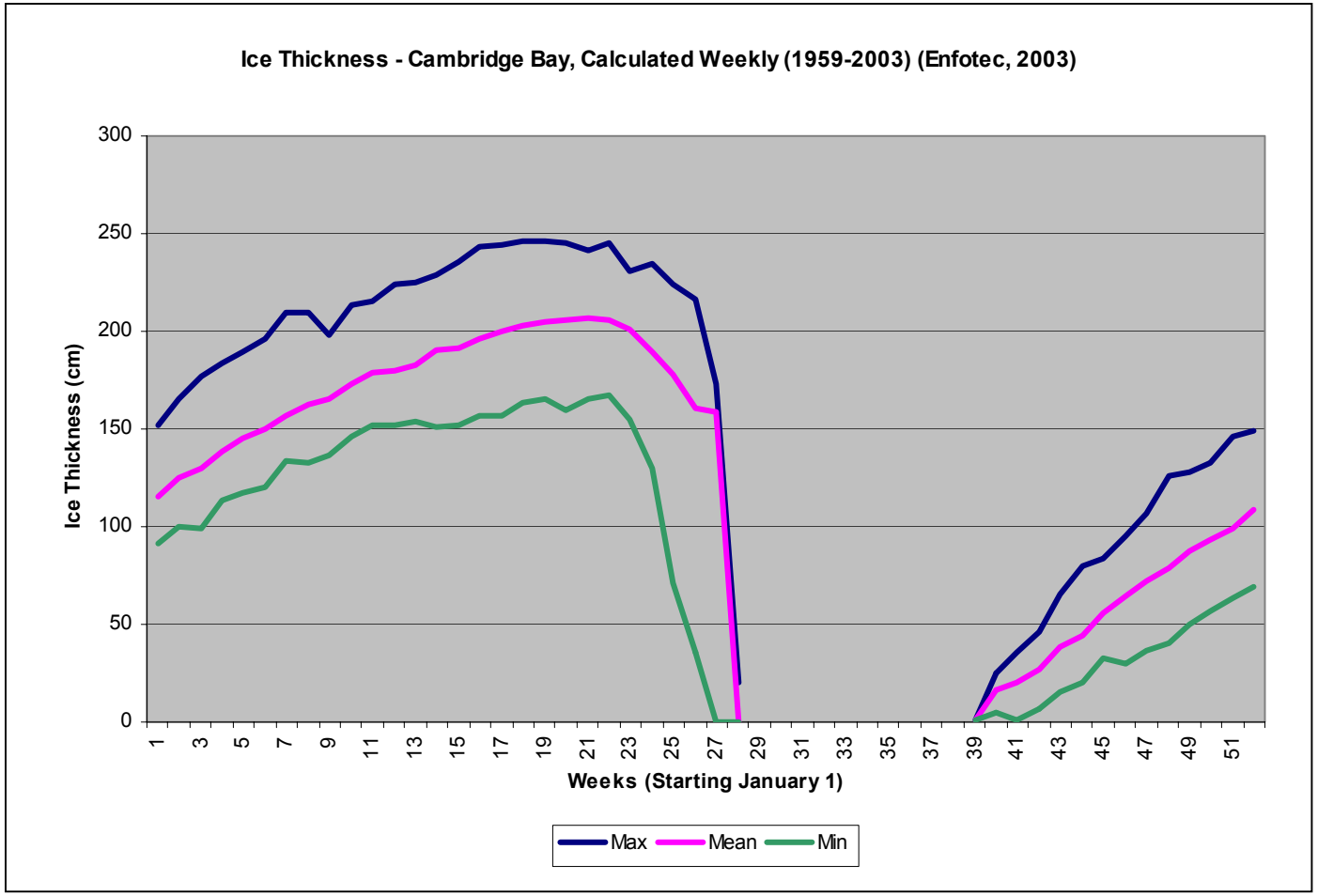


Figure 22. Ice Thickness - Kugluktuk, Calculated Weekly (1958 - 1988) (Canarctic 1993a in Metall Mining Corporation 1993)

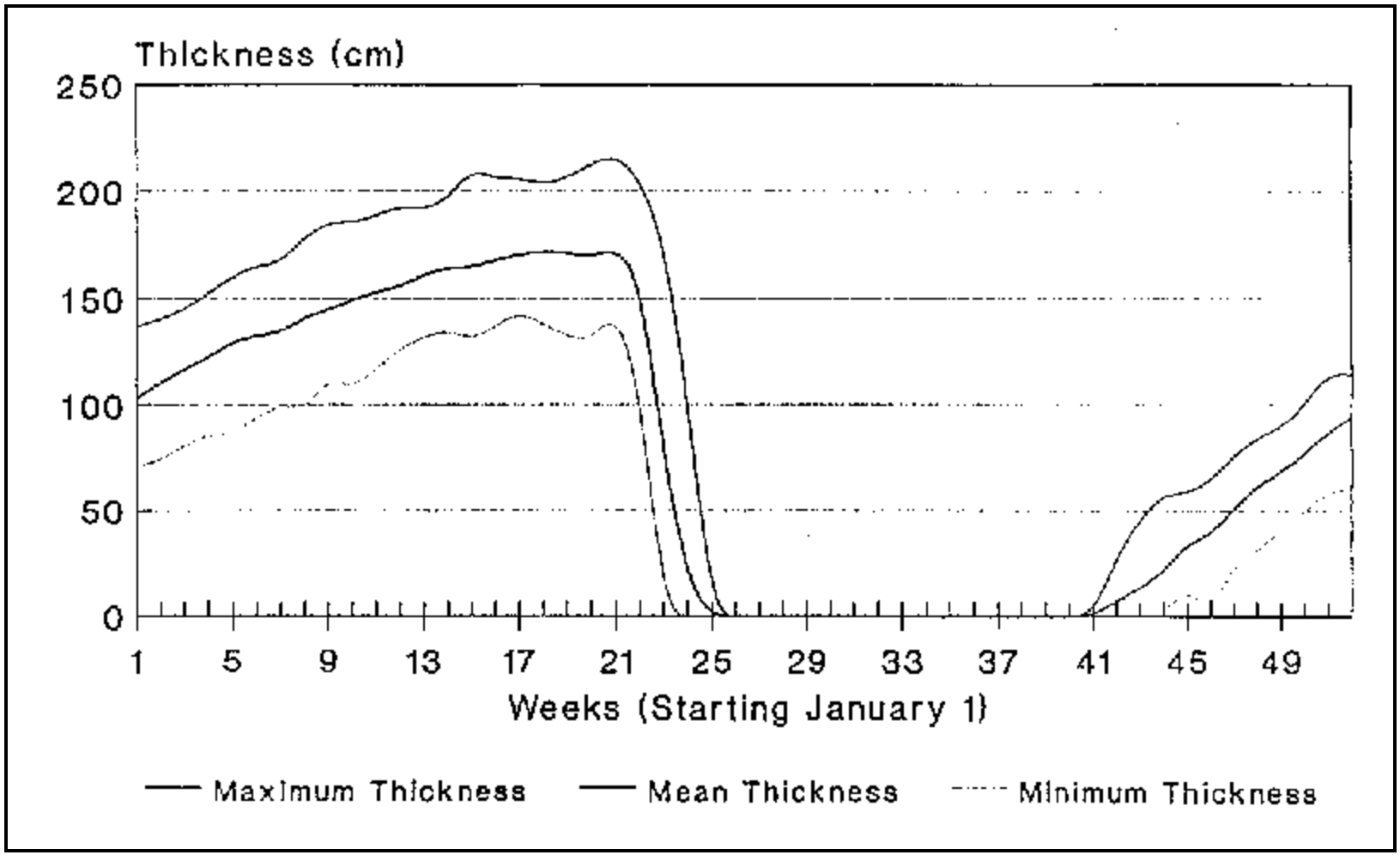


Figure 23. Annual average ice cover at minimum conditions during the mid-September period for the study region (Markham 1981 from Canarctic 1993a in Metall Mining Corporation, 1993

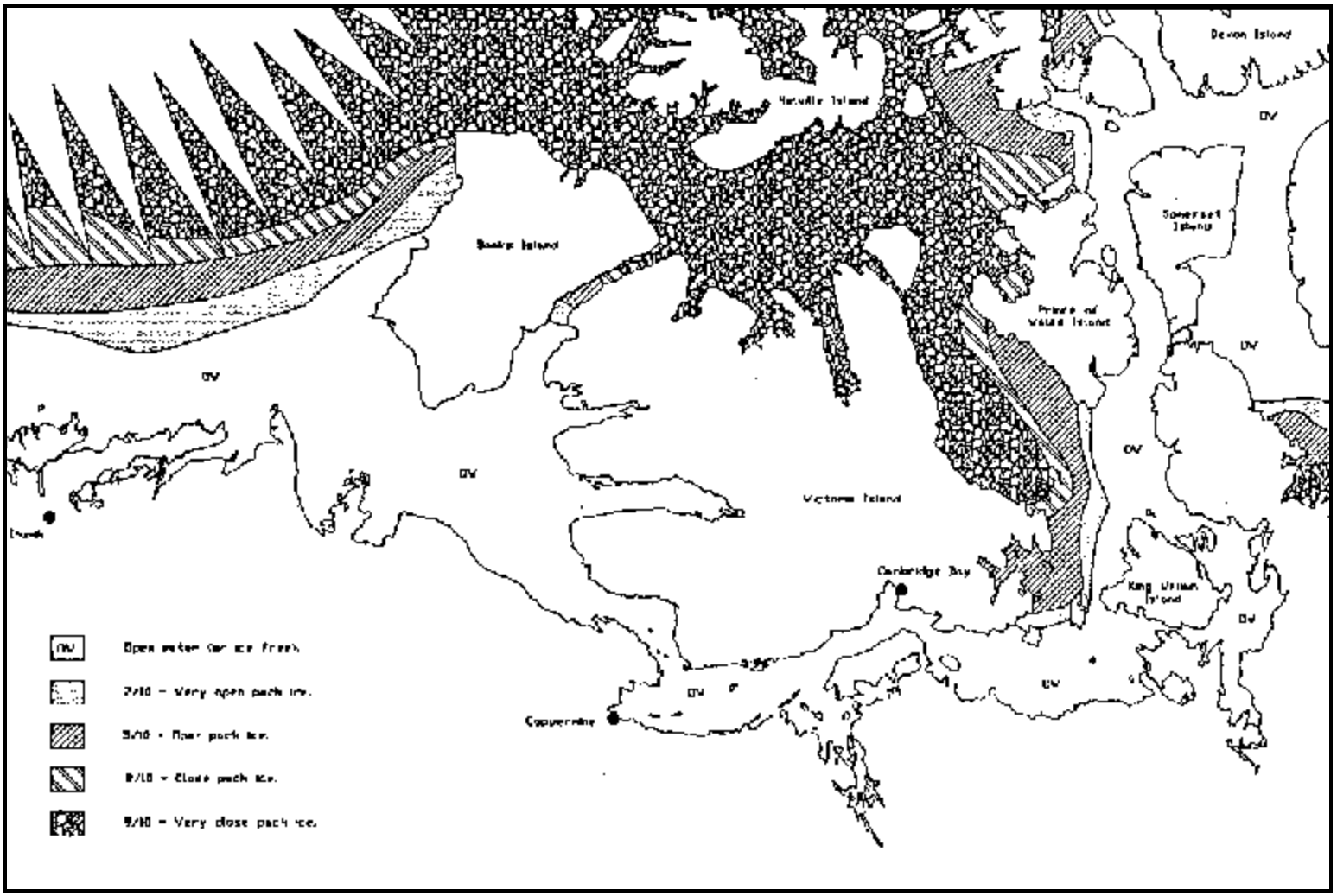


Figure 24. Fracture Sequence for Coronation Gulf Region (Enfotec, 2003)

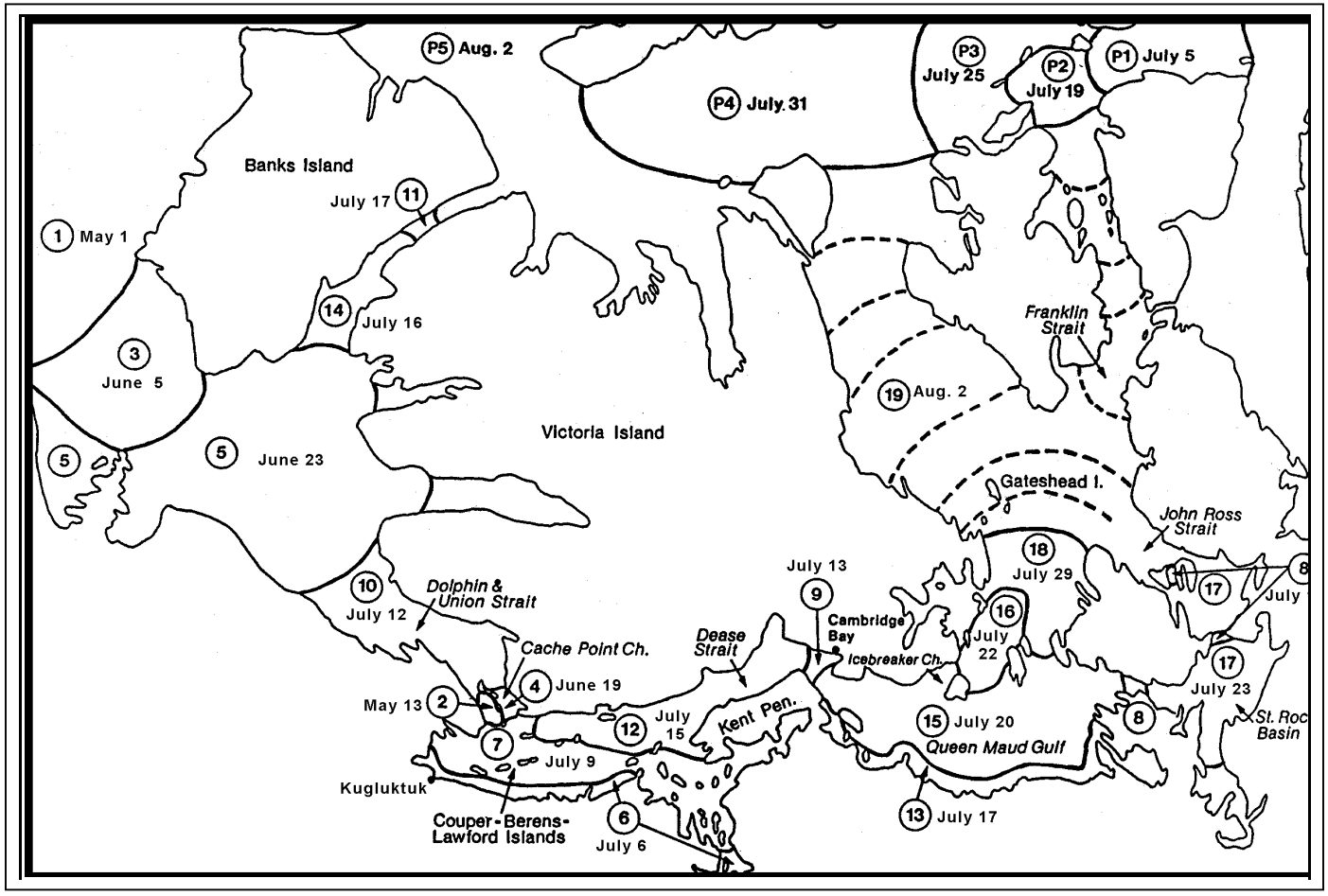


Table 7. Fracture Sequence for the Coronation Gulf Region 1975-2002

Event	Average Date of Occurrence	Earliest	Latest
1. Cape Bathurst Polynya	May 1	April 3 (84,75)	May 25 (80)
2. Lambert Channel Polynya	May 13 [1]	March 24 (91)	June 16 (92)
3. Fracture of Western Amundsen Gulf	June 5 [2]	May 4 (77)	June 27 (79)
4. Fracture of Cache Point	June 19 [3]	May 2 (98)	July 5 (90)
5. Fracture of Eastern Amundsen Gulf	June 23 [4]	May 12 (95)	July 15 (79,82)
6. Shore Lead Southern Coronation Gulf/Bathurst Inlet	July 6	June 27 (84,98)	August 8 (78)
7. Fracture/Melt of Western Coronation Gulf	July 9	June 30 (84,96)	August 8 (78)
8. Melt out of Simpson Rae and James Ross Straits	July 12	July 2 (84)	July 30 (86,92)
9. Fracture of Eastern Dease Strait	July 13	June 27 (75)	August 5 (78)
10. Fracture of Dolphin and Union Strait	July 12	July 2 (88,96)	August 5 (78)
11. Fracture of Central Prince of Wales Strait	July 17	July 2 (89,98)	August 4 (86,92)
12. Fracture of Eastern Coronation Gulf and Dease Strait	July 15	July 1 (84)	August 28 (78)
13. Shore Melt, Southern Queen Maud Gulf	July 17	July 3 (84)	August 5 (78)
14. Fracture of Southern Prince of Wales Strait	July 16	July 3 (93,98)	August 4 (86)
15. Fracture of Queen Maud Gulf	July 20	July 7 (96)	August 5 (78)
16. Fracture of Victoria Strait	July 22	July 7 (96)	August 22 (78)
17. Fracture of St. Roch and Rasmussen Basins	July 23	July 11 (94)	August 12 (78,86)
18. Fracture of Northern Victoria Strait	July 29	July 15 (96)	August 28 (78)
19. Fracture of Peel and Larsen Sounds and M'Clintock Channel	August 2	July 20 (81)	August 28 (78)

[1] Did not consolidate in the winters of 1990/91, 1987/88, 1981/82, and 1980/81.
[2] Did not consolidate in the winters of 2000/01, 1999/2000, 1998/99, 1997/98, 1996/97, 1995/96, 1993/94, 1992/93, 1991/92, 1990/91, 1987/88, 1986/87, 1984/85, 1982/83, 1980/81, and 1977/78.
[3] Did not consolidate in the winter of 1987/88.
[4] Did not consolidate in the winters of 2000/01, 1998/99, 1997/98, 1995/96, 1993/94, 1992/93, 1991/92, 1987/88, 1980/81, and 1977/78.

Figure 25. Consolidation Sequence for Coronation Gulf Region (Enfotec, 2003)

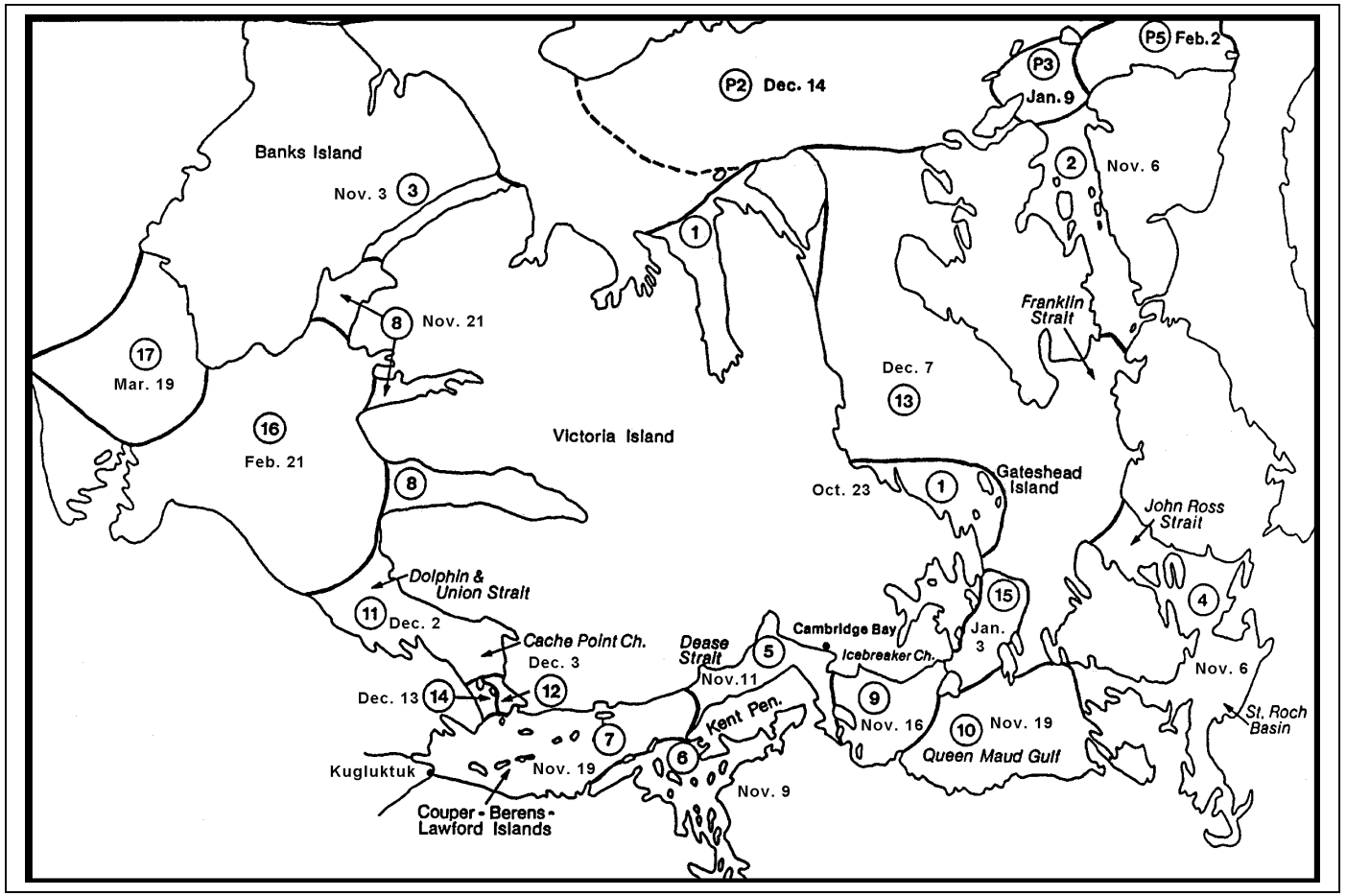
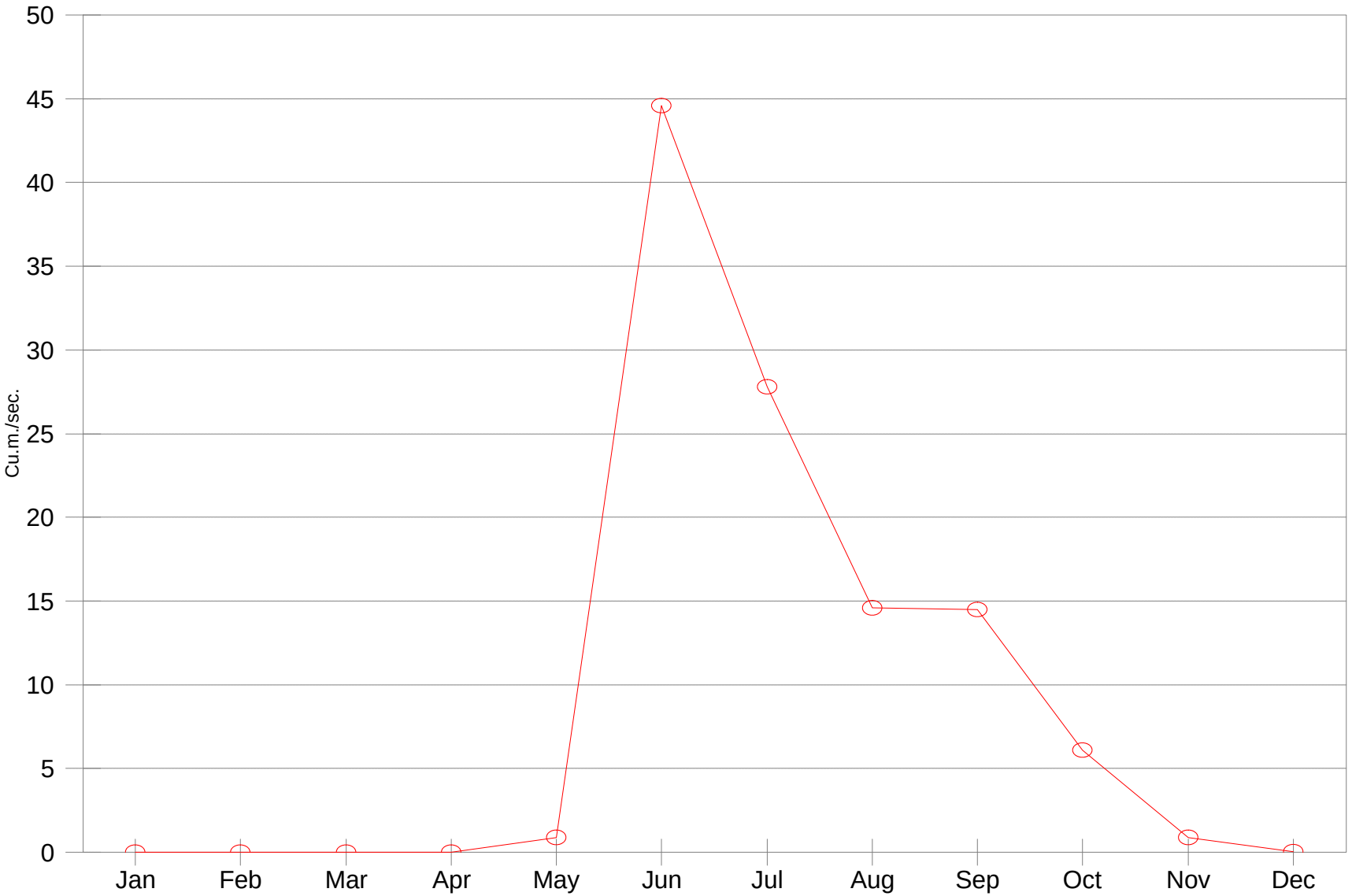


Table 8. Consolidation Sequence for the Coronation Gulf Region 1975-2003

Event	Average Date of Occurrence	Earliest	Latest
1. Shore-fast Ice along Western M'Clintock	October 23	October 10 (76)	November 10 (83)
2. Consolidation of Peel Sound	November 6	October 10 (80,76)	December 8 (98)
3. Consolidation of Central Prince of Wales Strait	November 3	October 12 (91)	December 2 (92)
4. Consolidation of St. Roch and Rasmussen Basins	November 6	October 12 (79)	November 27 (98)
5. Consolidation of Dease Strait	November 11	October 18 (78)	December 10 (88)
6. Consolidation of Bathurst Inlet	November 9	October 22 (86,78)	November 20 (75,00)
7. Consolidation of Coronation Gulf	November 19	November 2 (78)	January 5 (99)
8. Consolidation of Southern Prince of Wales Strait	November 21	October 19 (79)	December 16 (80)
9. Consolidation of Western Queen Maud Gulf	November 16	October 22 (78)	December 11 (79)
10. Consolidation of Eastern Queen Maud Gulf	November 19	October 21 (86,78)	December 11 (79)
11. Consolidation of Dolphin and Union Strait	December 2	November 12 (90)	January 12 (84)
12. Consolidation of Cache Point Channel	December 3 [1]	November 17 (90,84)	January 12 (84)
13. Consolidation of Larsen Sound and M'Clintock Channel	December 7	October 23 (78)	January 3 (84,03)
14. Consolidation of Lambert Channel	December 13 [2]	November 17 (84)	February 1 (89)
15. Consolidation of Victoria Strait	January 3	November 28 (78)	March 4 (00)
16. Consolidation of Eastern Amundsen Gulf	February 21 [3]	December 2 (79)	May 4 (96)
17. Consolidation of Western Amundsen Gulf	March 19 [4]	February 14 (03)	April 30 (77)

[1] Did not consolidate in the winter of 1987/88.
[2] Did not consolidate in the winters of 1990/91, 1987/88, 1981/82, and 1980/81.
[3] Did not consolidate in the winters of 2000/01, 1998/99, 1997/98, 1995/96, 1993/94, 1992/93, 1991/92, 1987/88, 1980/81, and 1977/78.
[4] Did not consolidate in the winters of 2000/01, 1999/2000, 1998/99, 1997/98, 1996/97, 1995/96, 1993/94, 1992/93, 1991/92, 1990/91, 1987/88, 1986/87, 1984/85, 1982/83, 1980/81, and 1977/78.

Figure 26. Mean Discharges (cu.m./sec) or the Gordon River, Nunavut (1977-1992)



Location: Lat 66 48 31 N. Long 107 06 13 W.

Drainage area 1530 sq.km.

Environment Canada. 1992. Historical Streamflow Summary Northwest Territorries. Inland Waters and Lands Western and Northern Region p.94

LEGEND

- 1 - ARCHEOLOGICAL SITE
- 2-4 - ARCHEOLOGICAL SITES
- 5-8 - ARCHEOLOGICAL SITES

N

UTM ZONE 12

BATHURST PORT SITE

km 0

BATHURST INLET

km 10

km 20

km 30

km 40

7,350,000 N

km 50

km 60

km 70

km 80

km 90

km 100

km 110

km 120

km 130

km 140

km 150

km 160

km 170

km 180

km 190

km 200

km 210

km 217

END OF ROAD

ALL-WEATHER ROAD

MARA RIVER

NOSE LAKE

CONTWOYTO CAMP

CONTWOYTO LAKE

ICE ROAD

LUPIN MINE SITE

IZOK MINE SITE

ROCKINGHORSE LAKE

ITCHEN LAKE

POINT LAKE

ICE ROAD TO EKATI AND DIAVIK

7,300,000 N

7,250,000 N

450,000 E

500,000 E

550,000 E

600,000 E

650,000 E

0 10 20 30 40 50 km

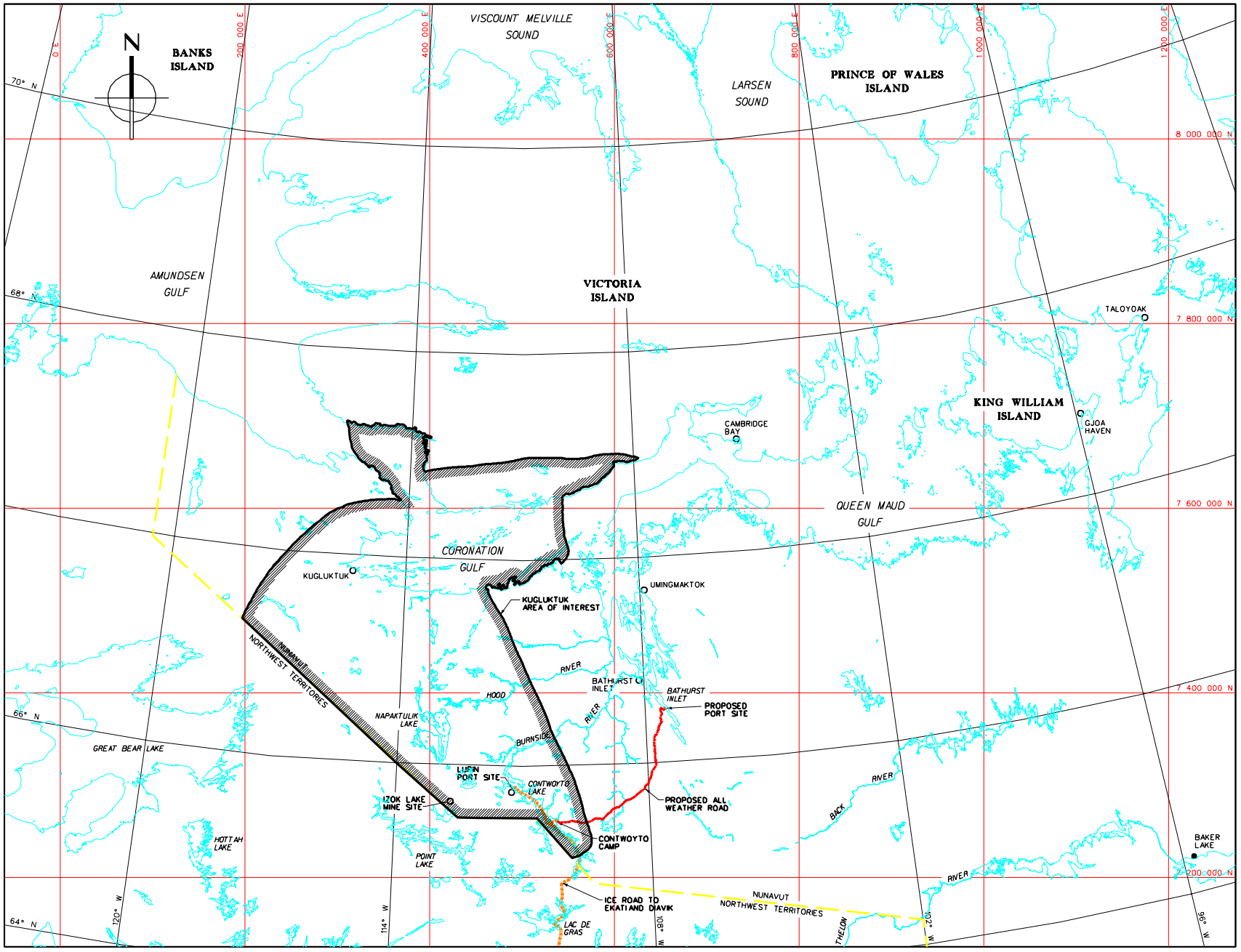
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

HERITAGE SITE LOCATIONS ALONG ROAD ALIGNMENT

FIGURE 27

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

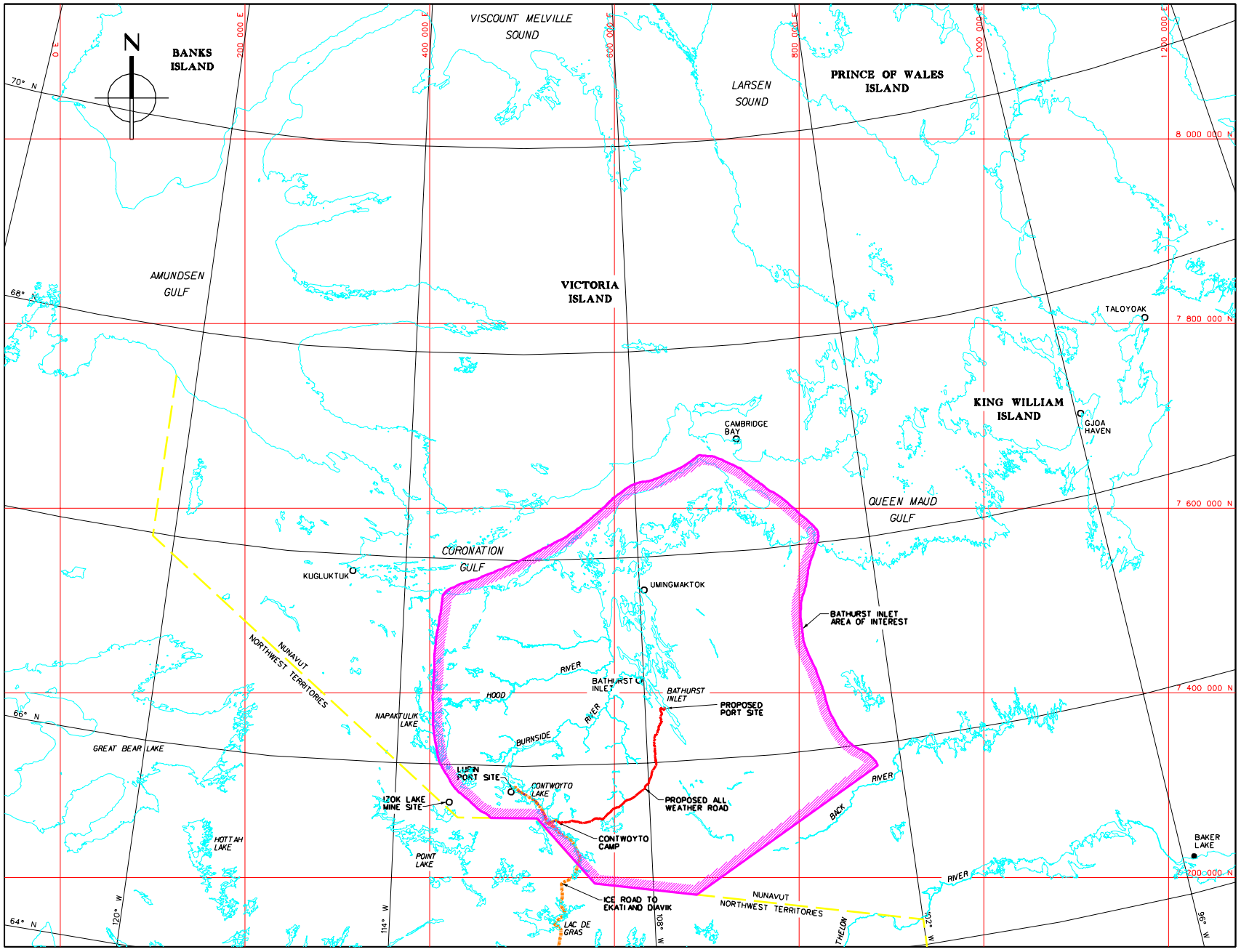
1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

BATHURST INLET PORT & ROAD PROJECT

KUGLUKTUK AREA OF INTEREST
(COURTESY NUNAVUT PLANNING COMMISSION)

FIGURE 28

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

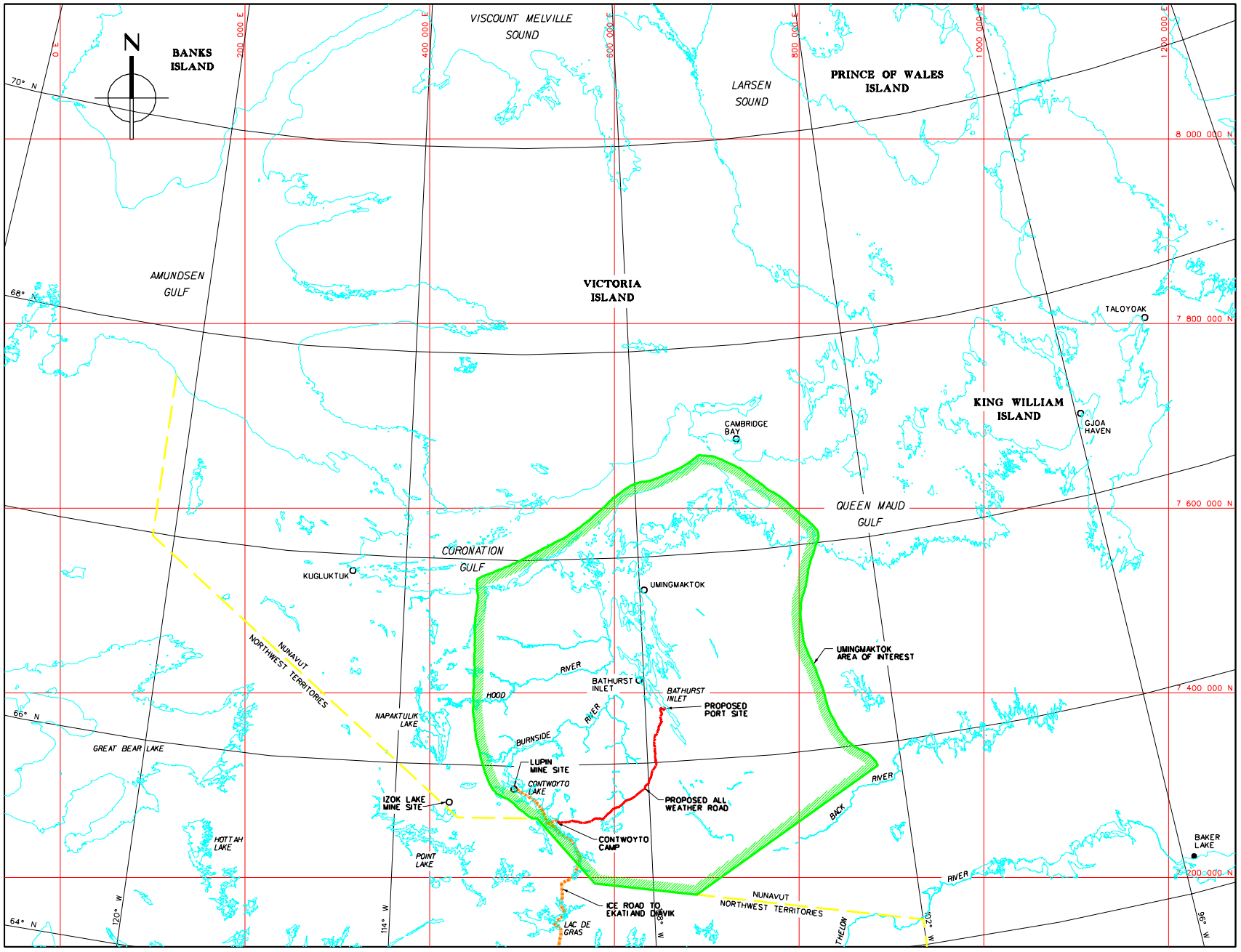
1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

BATHURST INLET PORT & ROAD PROJECT

BATHURST INLET AREA OF INTEREST
(COURTESY OF NUNAVUT PLANNING COMMISSION)

FIGURE 29

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

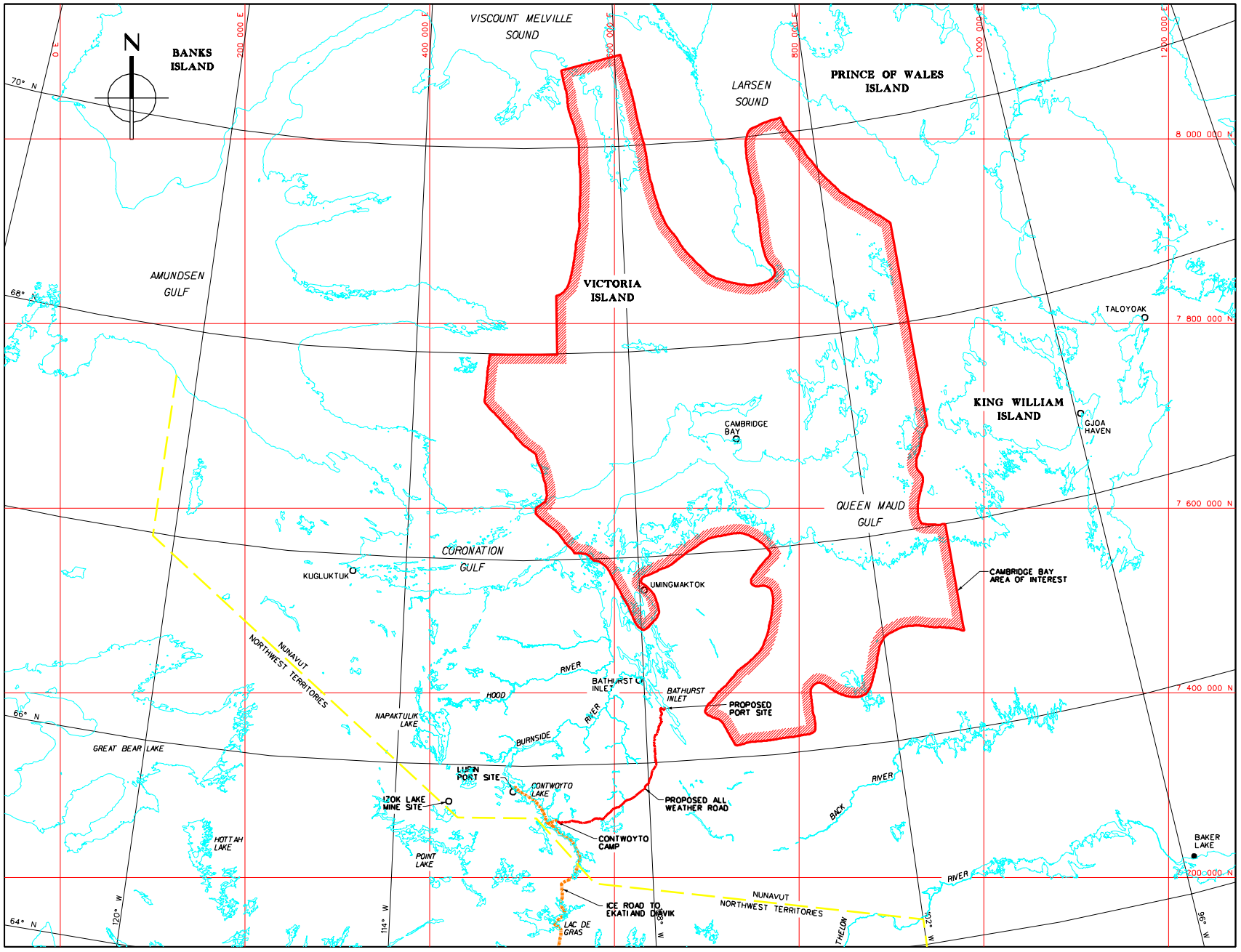
1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

BATHURST INLET PORT & ROAD PROJECT

UMINGMAKTOK AREA OF INTEREST
(COURTESY NUNAVUT PLANNING COMMISSION)

FIGURE 30

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

0 50 100 150 200 250

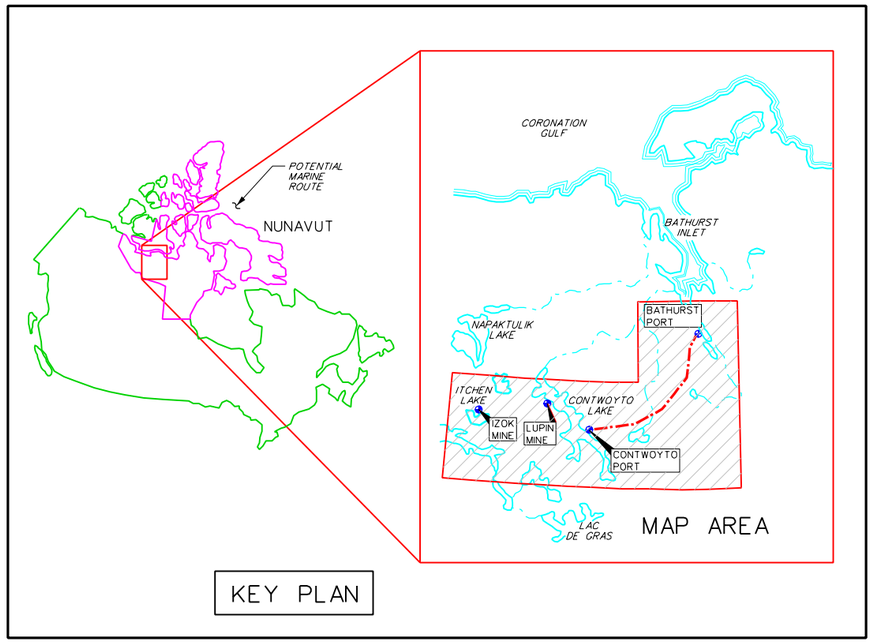
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

CAMBRIDGE BAY AREA OF INTEREST

FIGURE 31

the BATHURST INLET PORT AND ROAD PROJECT

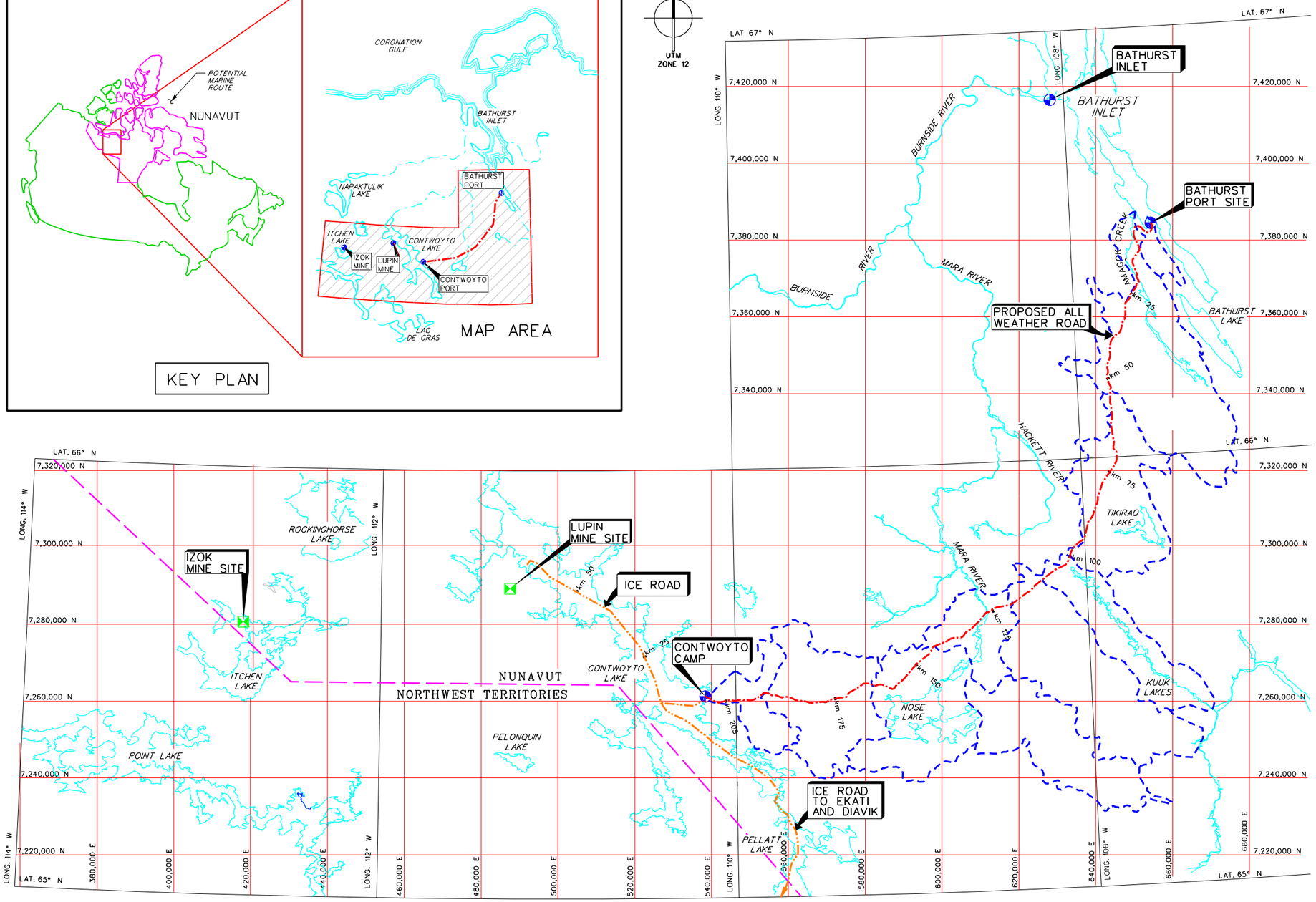


NOTES:

1. MAPPING FROM GEOWEST ENVIRONMENTAL CONSULTANTS.
2. ZONE 12 NAD 83 UTM GRID SHOWN.

LEGEND:

DRAINAGE BASIN OUTLINE

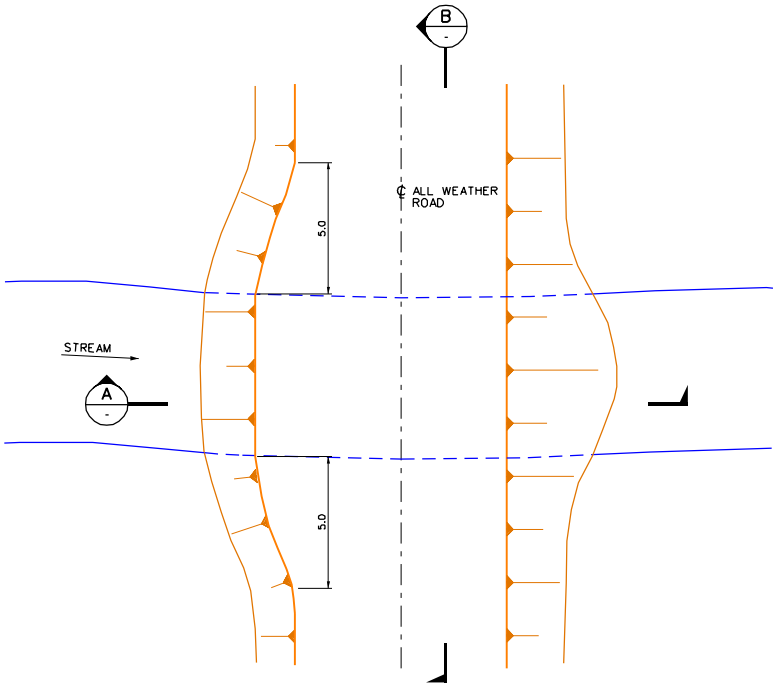


BATHURST INLET PORT & ROAD PROJECT

DRAINAGE BASINS BISECTED BY THE ROAD

FIGURE 32

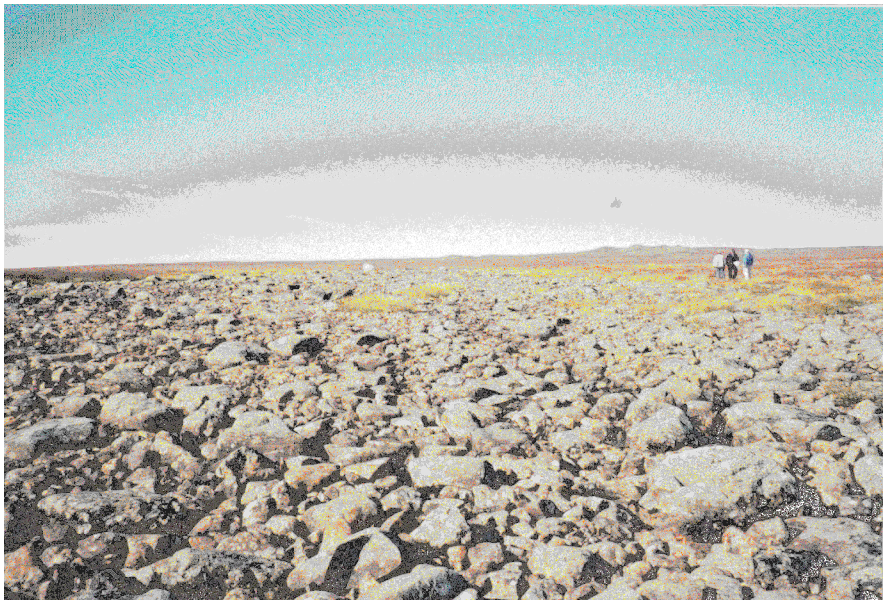
the BATHURST INLET PORT AND ROAD PROJECT



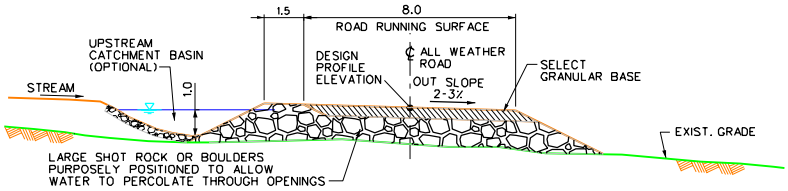
TYPICAL MINOR STREAM FORD CROSSING

N.T.S.

CATCHMENT AREA > 5 km²

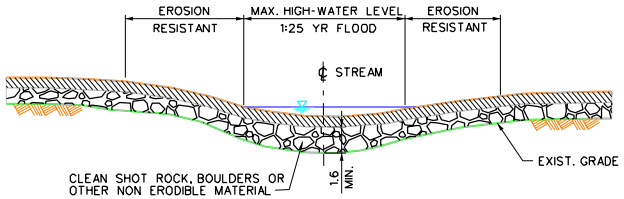


TYPICAL LOCATION FOR A MINOR STREAM FORD CROSSING



SECTION A

N.T.S.



SECTION B

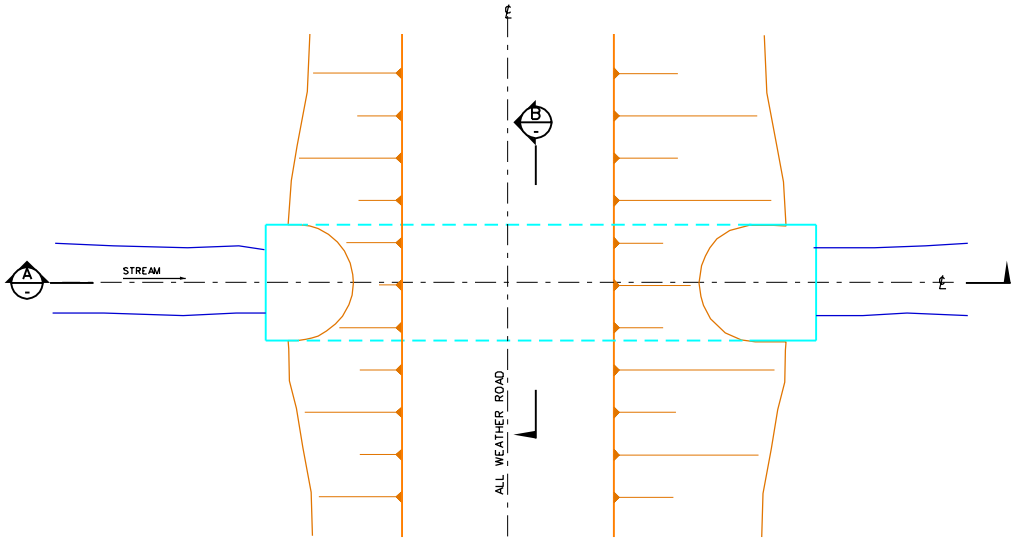
N.T.S.

BATHURST INLET PORT & ROAD PROJECT

ROCK FORD WATER CROSSING

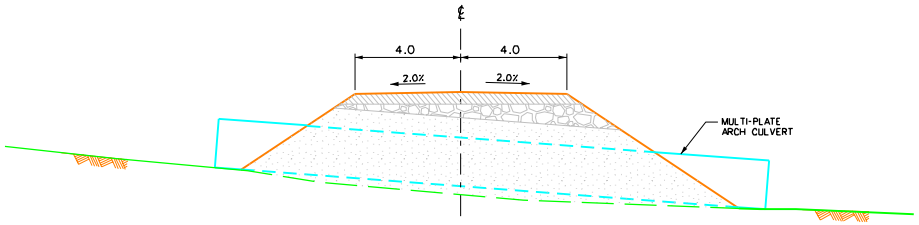
FIGURE 33

the BATHURST INLET PORT AND ROAD PROJECT

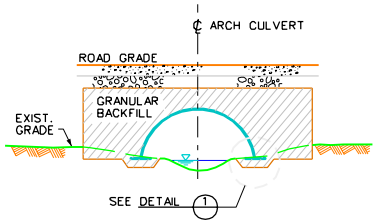


PLAN

TYPICAL STREAM FOR ARCHED CULVERT CROSSING



SECTION A
NTS



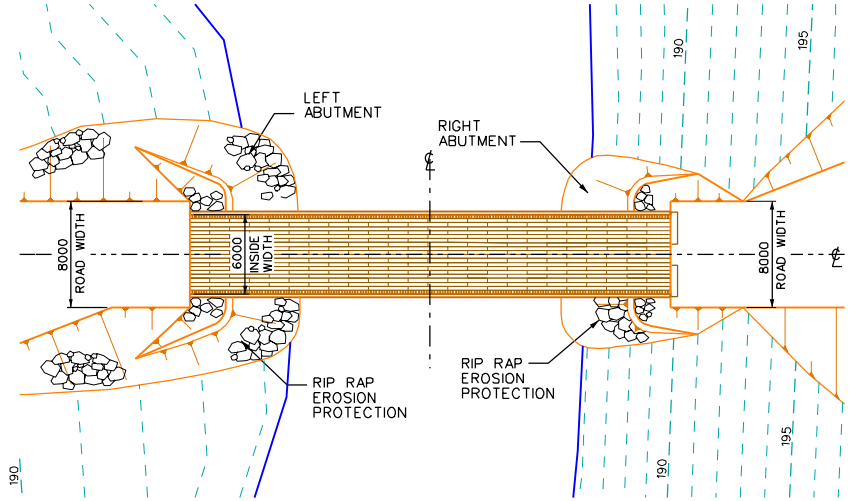
SECTION B
NTS

BATHURST INLET PORT & ROAD PROJECT

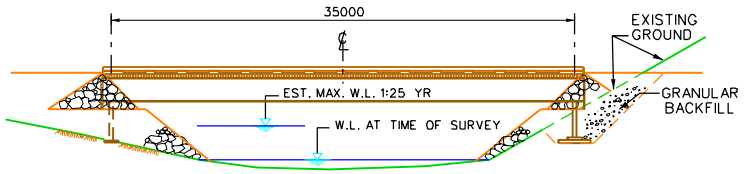
ARCH CULVERT WATER CROSSING

FIGURE 34

the BATHURST INLET PORT AND ROAD PROJECT

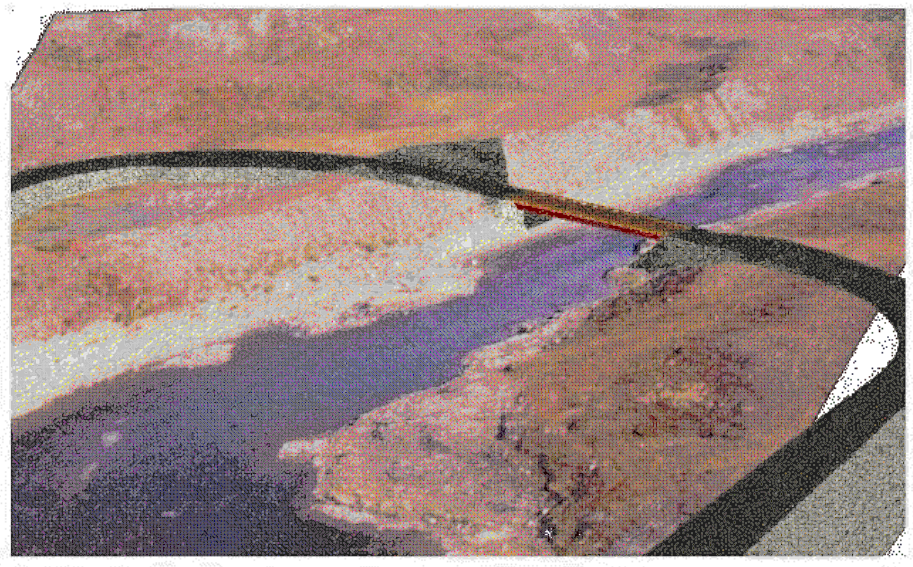


PLAN

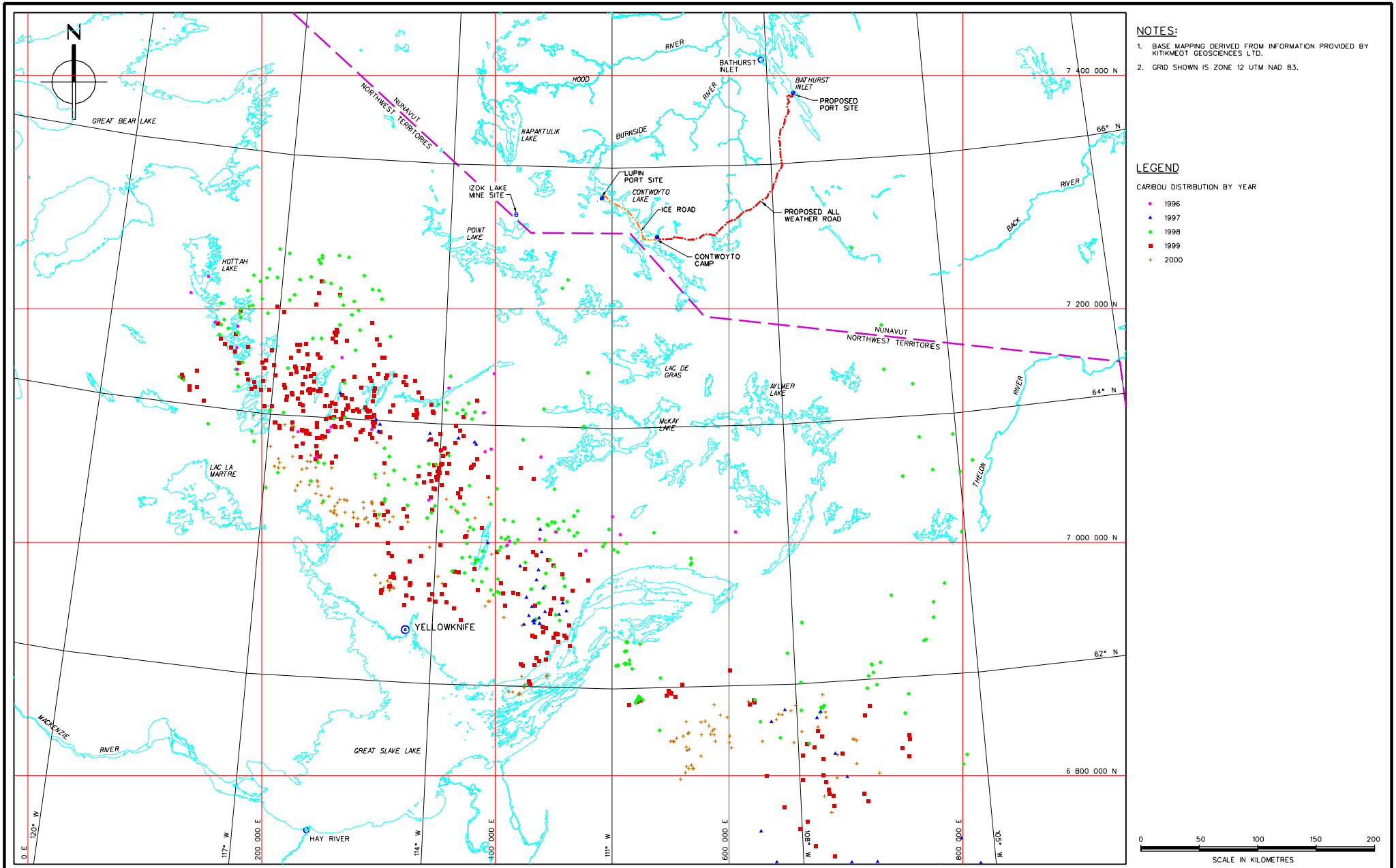


ELEVATION

SINGLE SPAN BRIDGE WATER CROSSING
TYPICAL DETAILS



SINGLE SPAN BRIDGE WATER CROSSING
TYPICAL LOCATION



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

LEGEND

CARIBOU DISTRIBUTION BY YEAR

- 1996
- 1997
- 1998
- 1999
- 2000

0 50 100 150 200

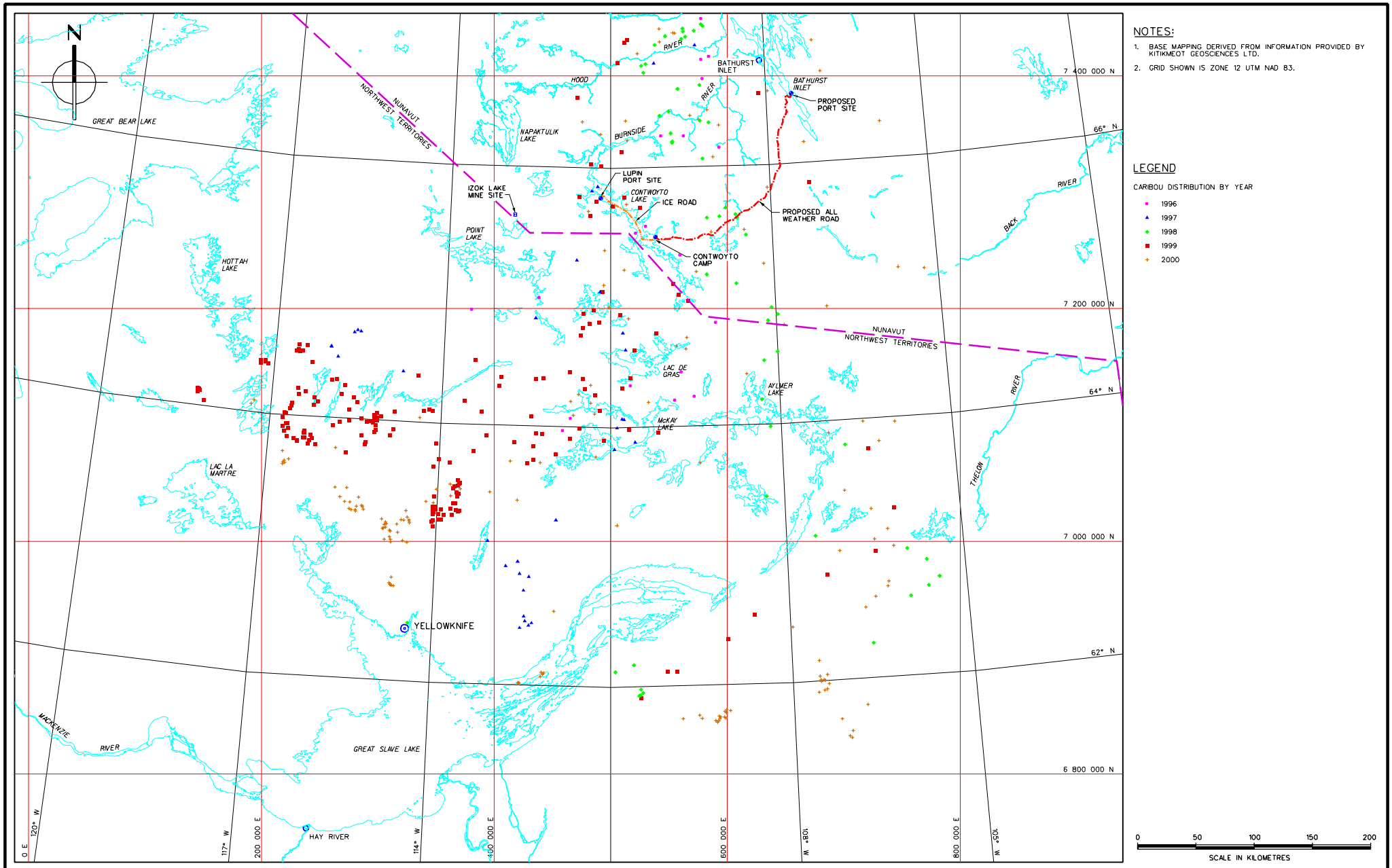
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

BATHURST CARIBOU HERD
WINTER DISTRIBUTION 1996 – 2000

FIGURE 36A

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

LEGEND

CARIBOU DISTRIBUTION BY YEAR

- 1996
- 1997
- 1998
- 1999
- 2000

0 50 100 150 200

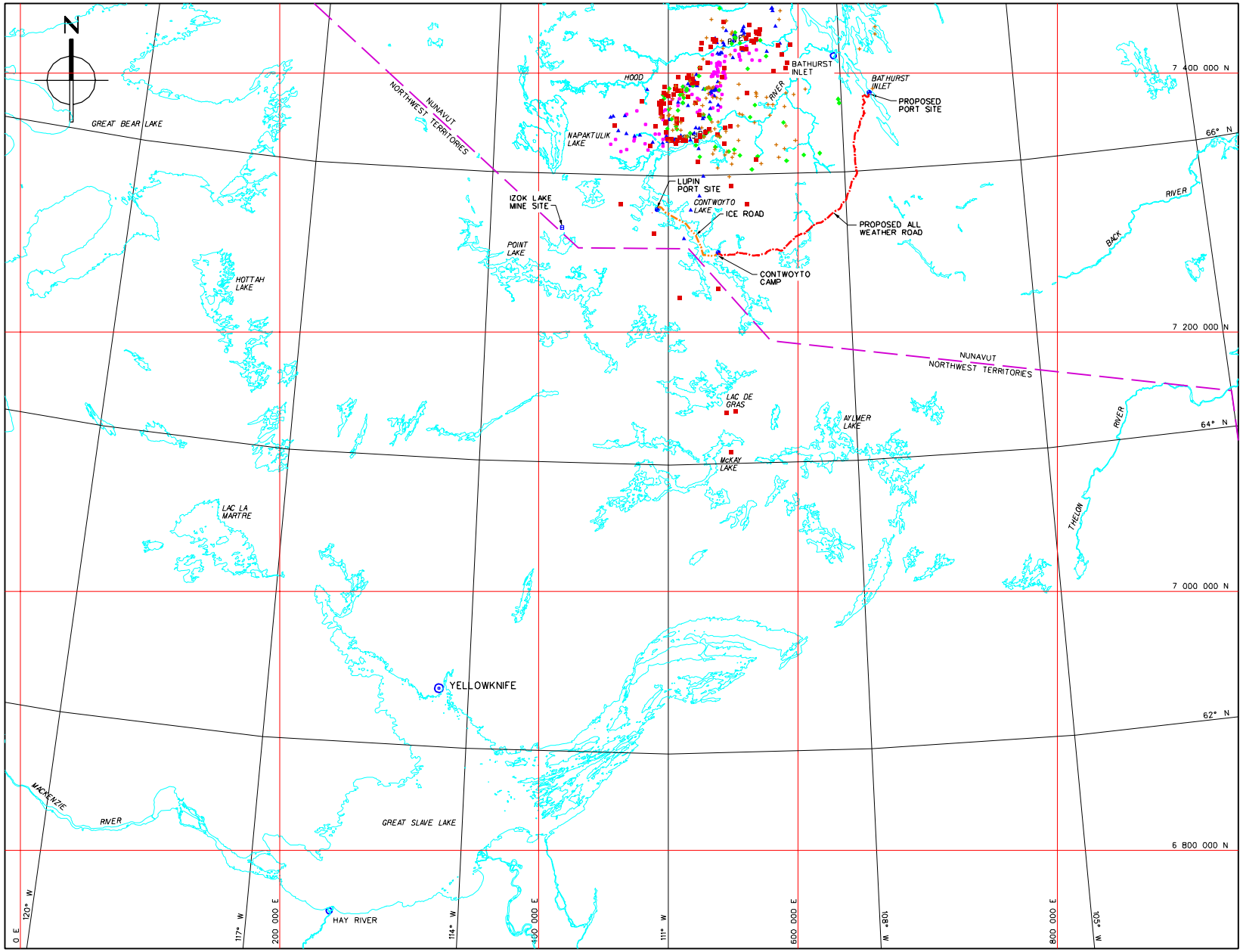
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

BATHURST CARIBOU HERD
SPRING MIGRATION 1996 – 2000

FIGURE 36B

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

LEGEND

CARIBOU DISTRIBUTION BY YEAR

- 1996
- 1997
- 1998
- 1999
- 2000

0 50 100 150 200

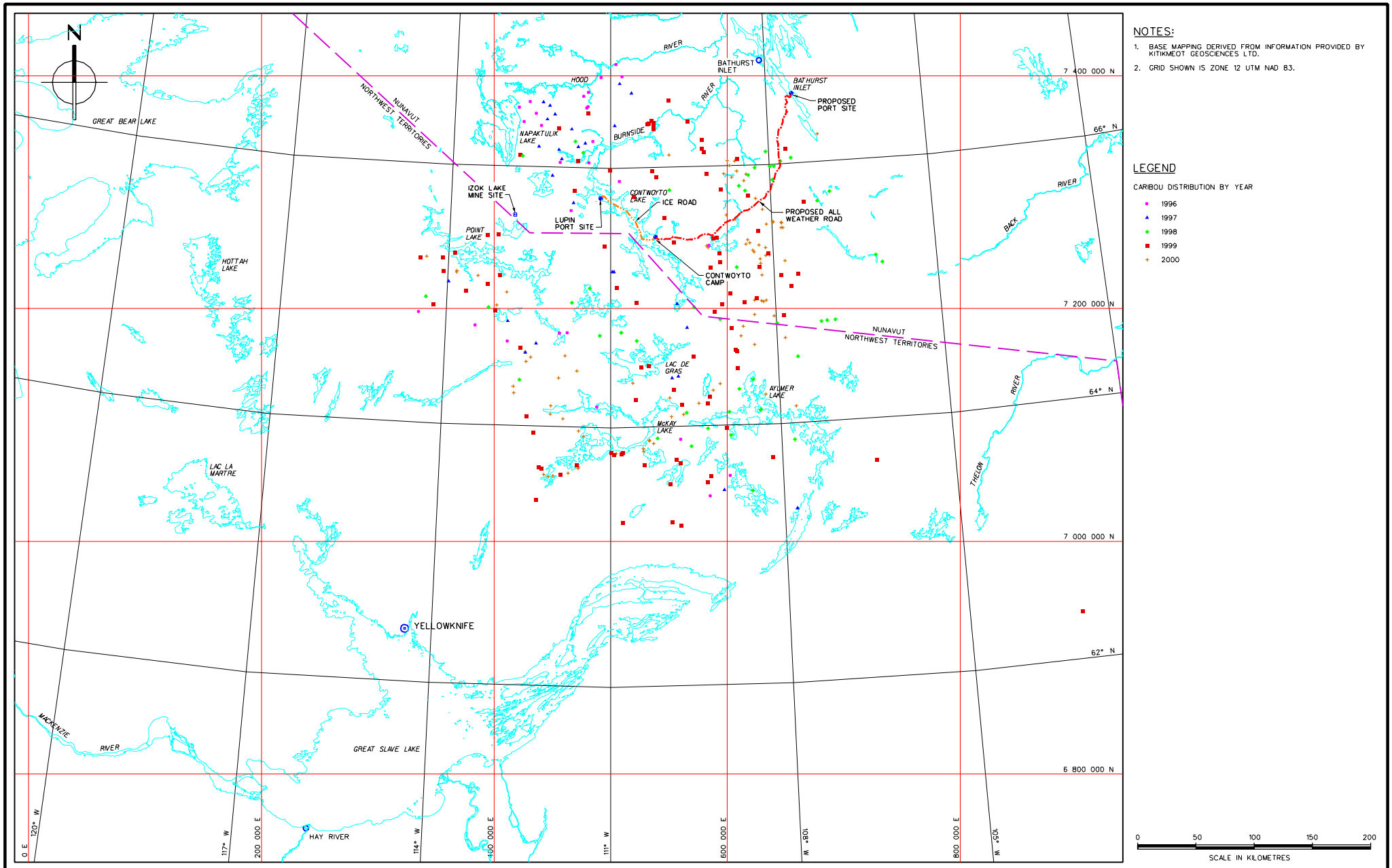
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

BATHURST CARIBOU HERD
CALVING DISTRIBUTION 1996 – 2000

FIGURE 36C

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

LEGEND

CARIBOU DISTRIBUTION BY YEAR

- 1996
- 1997
- 1998
- 1999
- 2000

0 50 100 150 200

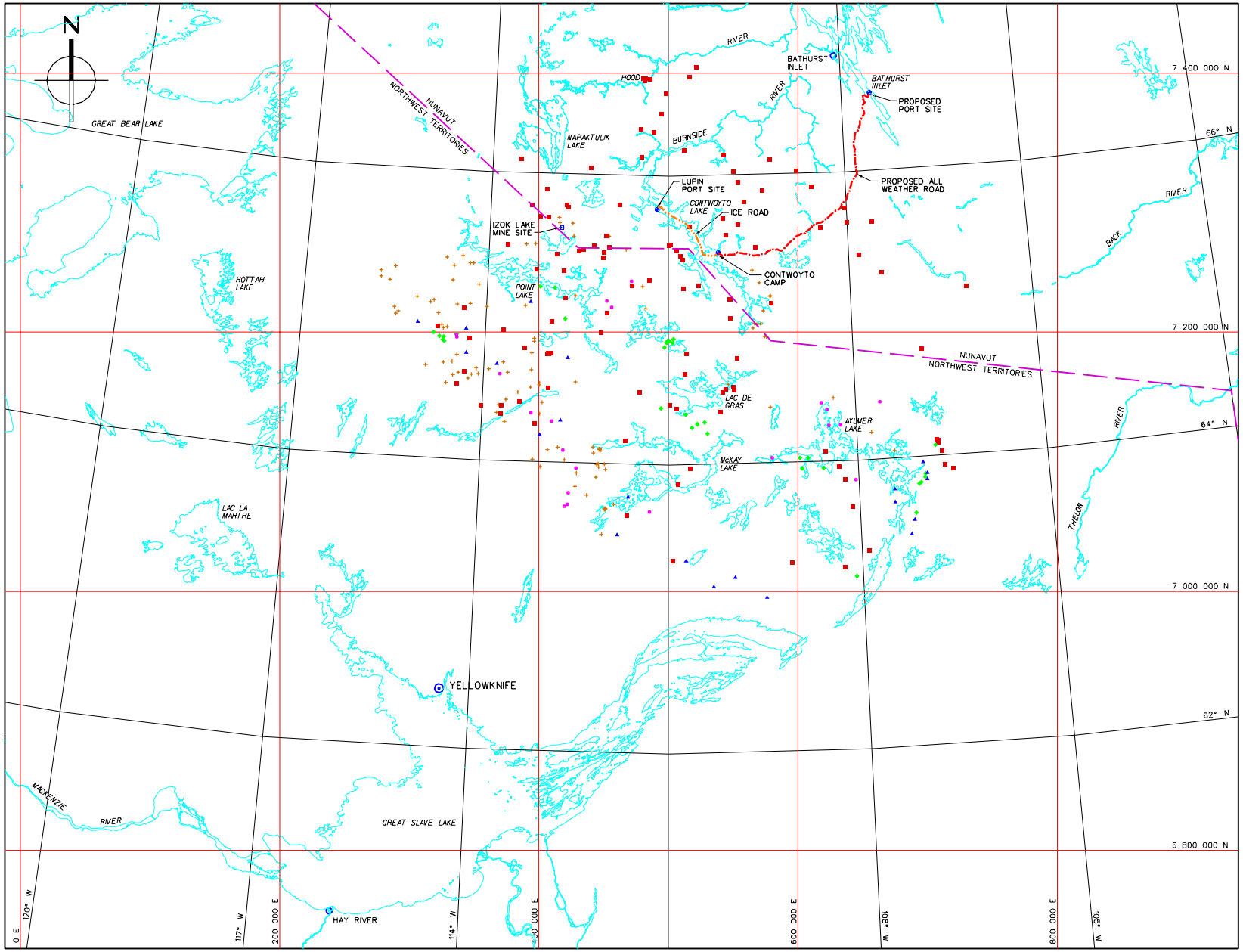
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

BATHURST CARIBOU HERD
POST CALVING DISTRIBUTION 1996 – 2000

FIGURE 36D

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

LEGEND

CARIBOU DISTRIBUTION BY YEAR

- 1996
- 1997
- 1998
- 1999
- 2000

0 50 100 150 200

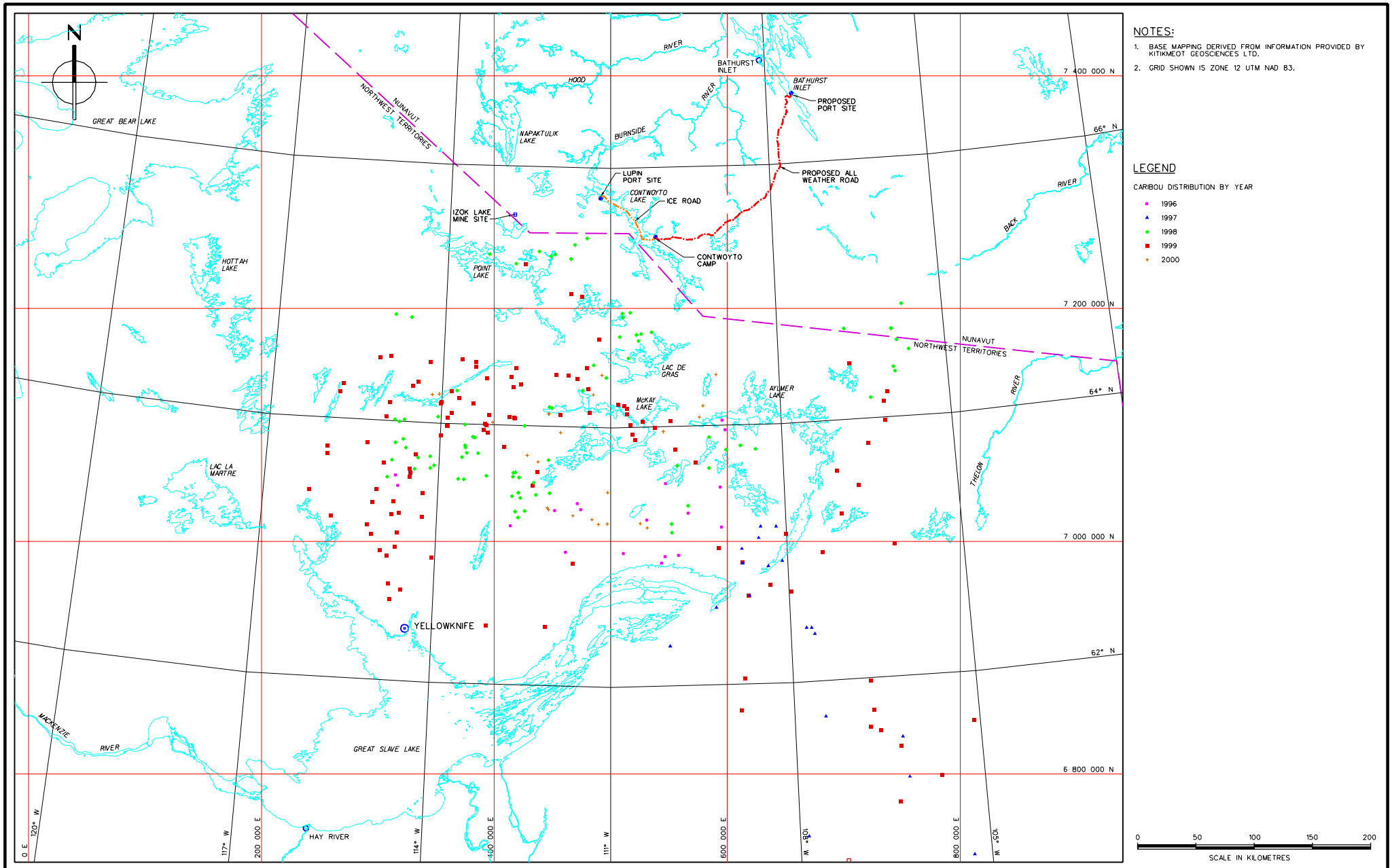
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

BATHURST CARIBOU HERD
LATE SUMMER DISTRIBUTION 1996 – 2000

FIGURE 36E

the BATHURST INLET PORT AND ROAD PROJECT



NOTES:

1. BASE MAPPING DERIVED FROM INFORMATION PROVIDED BY KITIKMEOT GEOSCIENCES LTD.
2. GRID SHOWN IS ZONE 12 UTM NAD 83.

LEGEND

CARIBOU DISTRIBUTION BY YEAR

- 1996
- 1997
- 1998
- 1999
- 2000

0 50 100 150 200

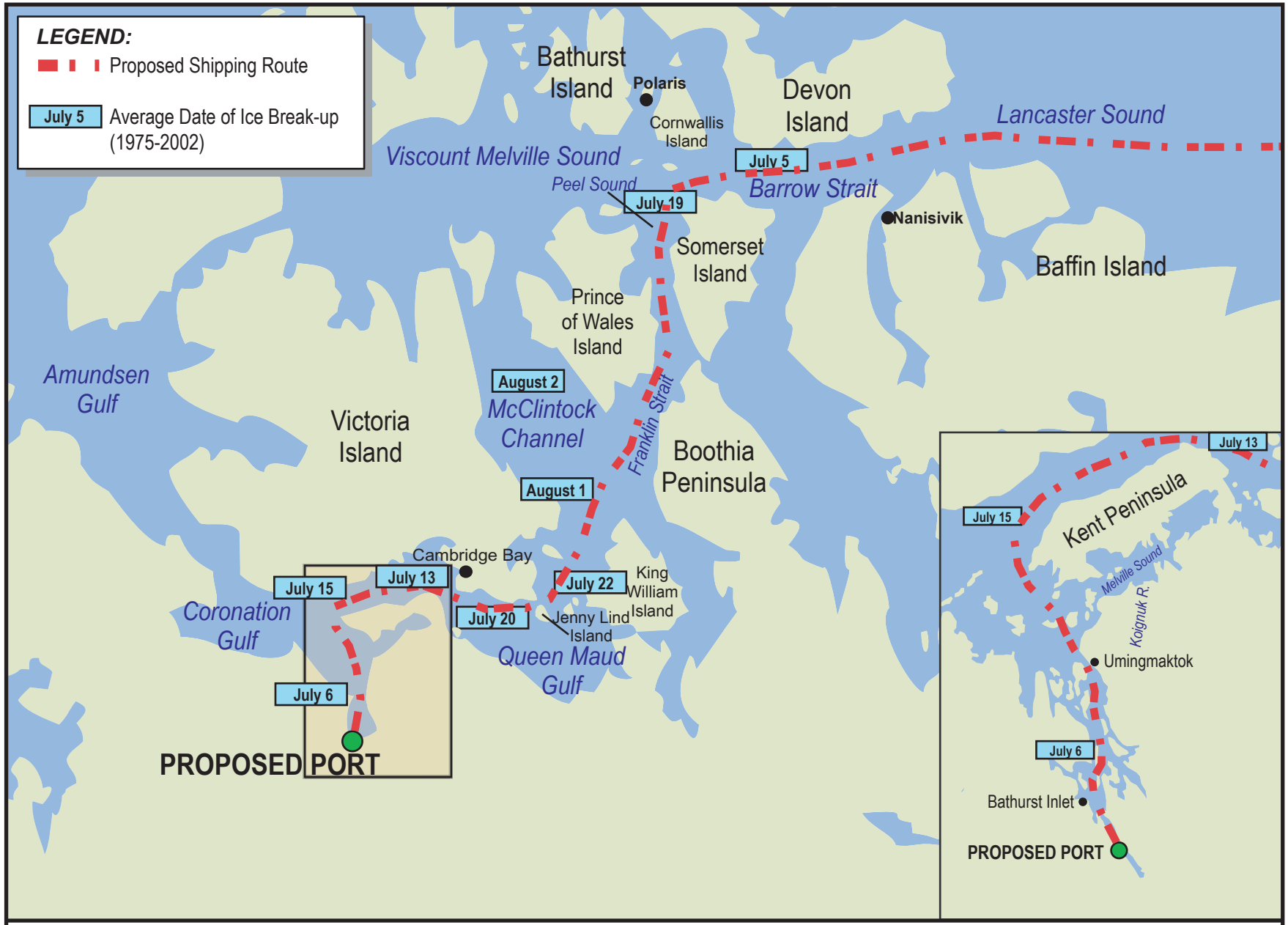
SCALE IN KILOMETRES

BATHURST INLET PORT & ROAD PROJECT

BATHURST CARIBOU HERD
FALL MIGRATION AND RUT DISTRIBUTION 1996 – 2000

FIGURE 36F

the BATHURST INLET PORT AND ROAD PROJECT



the Bathurst Inlet Port and Road Project

Shipping Route and Average Date of Ice Break-up

FIGURE 37

Rescan™

APPENDIX 1
DRAFT ENVIRONMENT POLICY

APPENDIX 1.

BATHURST INLET PORT AND ROAD JOINT VENTURE

Draft Environmental Policy

The purpose of the Bathurst Inlet Port and Road Project is to build and operate a transportation network in the West Kitikmeot Region of Nunavut to enhance the economic feasibility of resource development in the region for the benefit of the Inuit residents there. Port and road construction and operations will be conducted in a manner that protects the long term integrity of the tundra environment and the fish and wildlife populations it sustains. Every person and company that uses the Project's transportation network and facilities will be required to adhere to the Code of Good Conduct for Land Users in the region established by the Nunavut Planning Commission (1997).

Code of Good Conduct for Land Users*

1. The landscape of each camp and other land use sites will be restored to its original condition to the greatest degree possible. Water quality will be preserved and no substances that will impair water quality will be dumped in water bodies. When possible, and feasible, old sites will be restored to the natural state.
2. All land users shall assist communities and government(s) in identifying and protecting archaeological sites and carving stone sites.
3. As a general rule, low-level flights by aircraft at less than 300 meters should not occur where they will disturb wildlife or people. Where possible scheduled low-level flights will only take place after consultation with the appropriate communities. All land users are responsible for reporting to the appropriate authorities any illegal or questionable low level flight.
4. All activities on the land will be conducted in such a fashion that the renewable resources of the area in question are conserved.
5. Whenever practicable, and consistent with sound procurement management, non-resident land users will follow the practice of local purchase of supplies and services.
6. Non-resident land users will establish working relationships with local communities and respect the traditional uses of the land.
7. During the caribou calving, post-calving, and migrating season, land use activities should be restricted to avoid disturbing caribou, in general, and more specifically will be governed by caribou protection measures.
8. Artifacts must be left where they are found. All land users are responsible for reporting to the appropriate authorities the location of, or any removal or disturbance of artifacts.

* Source: Nunavut Planning Commission, 1997. West Kitikmeot Regional Land Use Plan (draft).

APPENDIX 2

GENERAL REQUIREMENTS FOR A PROJECT DESCRIPTION (NIRB, 1997)

APPENDIX B

NUNAVUT IMPACT REVIEW BOARD
GENERAL REQUIREMENTS FOR A PROJECT DESCRIPTION

Although the level of detail will vary with the scope of the project a description of the following elements should be included with a project proposal application.

In making its determination NIRB uses both traditional Inuit knowledge and recongized scientific methods. Throughout the document please cite whether information was gathered through Inuit knowledge or by recognized scientific methods.

1. BACKGROUND INFORMATION

- **Proponent Identification Information**
  - company name and mailing address;
  - phone and fax number;
  - contact person; and
  - field supervisor, phone number and/or radio phone number.

- **The Name of the Lead Authorising Agency and List of all Approvals, Permits and Licenses Required**
  - list the approvals, permits and licenses required (regulatory agency, contact name, address, phone number)

- A List of Previous Environmental Assessments
  - describe all prior relevant environmental assessments of the project (proponent name, type of operation, year operation began)

2. PROJECT DESCRIPTION

This section should describe in sufficient detail all aspects of the planning, designing, construction, operation, ongoing restoration activities, decommissioning, and post-decommissioning phases of the proposal including:

- **Title of Project**
- **Type of Activity**
- **Summary of Operation (purpose, nature of all activities)**
- **Preferred Option(s)**
  - include supporting rationale; and
  - evaluate any and describe any *alternatives* to the project and to the project components eg. alternative routes, alternative technologies.

- **Project Location**
  - indicate the ownership of land(s) that the project would be using (whether the project requires the use of Inuit Owned Lands, Crown land, Commissioner's land, or combination thereof);
  - a general location map and a map of adjacent area (1:1,000,000 or 1:4,000,000); and
  - a location map of activities, facilities and camp(s), including off-site facilities such as roads, airstrips, camps and staging areas (include NTS maps at 1:250,000 and at 1:50,000 scale; provide latitude and longitude of primary activities).
- **Schedule**
  - timetable of activities including:
    - construction, operation and decommissioning schedules; and
    - the length of time of each activity.
- **Operations Plan**
  - site facilities and associated infrastructure (during all phases of project)
  - methods and processes involved;
  - technology to be used (including drills, pumps, chemicals, transportation, etc.)
  - detailed description of any new technology;
  - waste (describe all types, volumes, handling, disposal methods and alternatives including: garbage, sanitary and sewage wastes, brush and vegetation, overburden, waste rock, tailings);
  - water (sources, amounts and composition at different stages in the process);
  - energy (sources, amounts and alternatives) (e.g. types of fuels to be used and amounts; associated infrastructure (bermed tanks, etc.));
  - camp facilities; and
  - workforce.
- **Site Access and Transportation Methods**
  - existing or new access (land, air or sea);
  - staging areas; and
  - volumes, frequency, type and weight of vehicles.
- **Environmental Protection and Contingency Plans**
  - describe the types, volumes, handling, storage and disposal of all toxic substances;
  - describe types of pollution control systems and procedures, including safety systems and procedures, and the environmental and safety standards to be met by proponent;
  - describe any environmental management plans (such as acid rock drainage (ARD) control, erosion control, air and water quality control, wildlife management);
  - provide a spill contingency plan that outlines the response procedures to be followed and any onsite equipment to be used for emergency situations such as spills, fire, floods or other acts of nature.

3. DESCRIPTION OF THE ENVIRONMENT

The descriptions should encompass both scientific and traditional ecological knowledge.

- **Description of the Biophysical Environment**
  - site location, topography and geology, including: soils; geologic hazards: earthquakes, landslides, erosion, permafrost, acid rock drainage potential;
  - hydrology - drainage region and watershed, name of nearest creek, river or lake system; water quality and flow characteristics;
  - ecology -important flora and fauna, their habitats, distribution, migration routes and relationships to other species; rare and endangered species; ecological succession; existing environmental stresses;
  - a list of the *Valued Ecosystem Components*, including a list of all globally, nationally, provincially or locally rare, sensitive or protected species found in the project environment, and their significance;
  - climate -daily and monthly averages and extremes of temperature, humidity, wind speed and direction, precipitation and storms, violent weather; noise
  - an overview of traditional knowledge of the environment;
  - land use -traditional use areas; special land designation, commercial, industrial, residential, recreational; land capability; transportation routes and corridors (road, water, air); utilities and transmission lines; water resources; and
  - other imminent plans that will affect land use.

- **Description of the Social, Cultural and Economic Environments**
  - elements and features considered to be unique to the area and/or its inhabitants and their quality of life
  - list the affected communities, outpost camps, traditional use areas, camps an tourist facilities;
  - socio-economic conditions (including lifestyle and types of employment)
  - historical, scenic, cultural and natural landmarks -registries of historical places; archaeological surveys

4. DESCRIPTION OF PUBLIC CONSULTATION PROCESS

- provide a summary of pre-submission consultation including;
  - organization(s) and person(s) consulted;
  - the response of the public to the project;
  - a description of the issues and concerns raised and the proponent's response to these concerns.
  - a list of the Valued Ecosystem and Valued Socio-Economic Components (VECs, VSCs) that were identified during consultation;
  - how the consultation has affected project design;
  - an outline of existing and planned information materials such as news releases, reports, bulletins, newsletters, brochures, audio-visual materials, other print and electronic advertisements or displays; and
  - any plans for future consultation activities and their timing.

◊ An "Executive Summary" document should be provided to the affected communities and to NIRB written in the each community's preferred language (Inuktitut or Innuinaqtun).

N.B. An Inuktitut / Innuinaqtun speaking community liaison person may be beneficial to the public consultation process.

5. IDENTIFICATION OF ENVIRONMENTAL EFFECTS

This is a key section in which predicted environmental, social, cultural and economic effects of the project are summarized and discussed using both traditional and scientific knowledge. The potential effects should be identified in terms of existing environmental, social, cultural and economic values.

◊ **Identification of Biophysical Environmental Effects**
◊ describe potential effects on environment and resources
  ◊ terrain
  ◊ water (fresh water and marine)
  ◊ vegetation
  ◊ fisheries
  ◊ wildlife
  ◊ marine mammals
  ◊ environmental health
  ◊ heritage resources
  ◊ other land uses/land users
◊ describe the potential effects of the environment on the project (eg. floods, permafrost)

◊ **Identification of Social, Cultural and Economic Effects**
◊ describe potential effects on communities, outpost camps, tourist facilities;
◊ describe potential effects on the social, cultural and economic environments(eg. impacts on traditional land use and hunting, trapping or fishing);
◊ describe impacts on women, men, children, elders, families;
◊ describe impacts on aesthetics;
◊ estimate the amount and type of labour required, over how long, and how this is to be met for all stages of the project cycle, including construction and operation of the project;
◊ describe plans to hire and train northerners, and specifically the Inuit;
◊ describe plans to contract local or Inuit owned companies to provide services or / and products to your operation;
◊ if applicable, indicate whether an Inuit Impact Benefit Agreement is in process or has been completed;
◊ describe expected requirements for local facilities and services (electricity, water, sewage, schools, health services, housing, roads, transportation, air traffic, weather forecasting and monitoring etc.);
◊ describe potential effects on cultural landmarks; and
◊ list benefits and drawbacks associated with the project

6. IDENTIFICATION OF CUMULATIVE ENVIRONMENTAL EFFECTS

- identify past, present and imminent projects and / or activities occurring in the area; and
- describe the impacts of past and present projects / activities in combination with the potential impacts of other imminent projects.

7. IDENTIFICATION OF MITIGATION MEASURES AND RESIDUAL IMPACTS

- Describe the measures which will be used to minimize or mitigate any identified harmful environmental, social, economic, cultural and cumulative impacts and enhance any beneficial effects.

8. ABANDONMENT/DECOMMISSIONING PLANS

- Describe the options for temporary, seasonal and final closure.

N.B. NIRB will uphold a "pack-it-in" - "pack-it-out" philosophy.

9. MONITORING AND MAINTENANCE PLANS

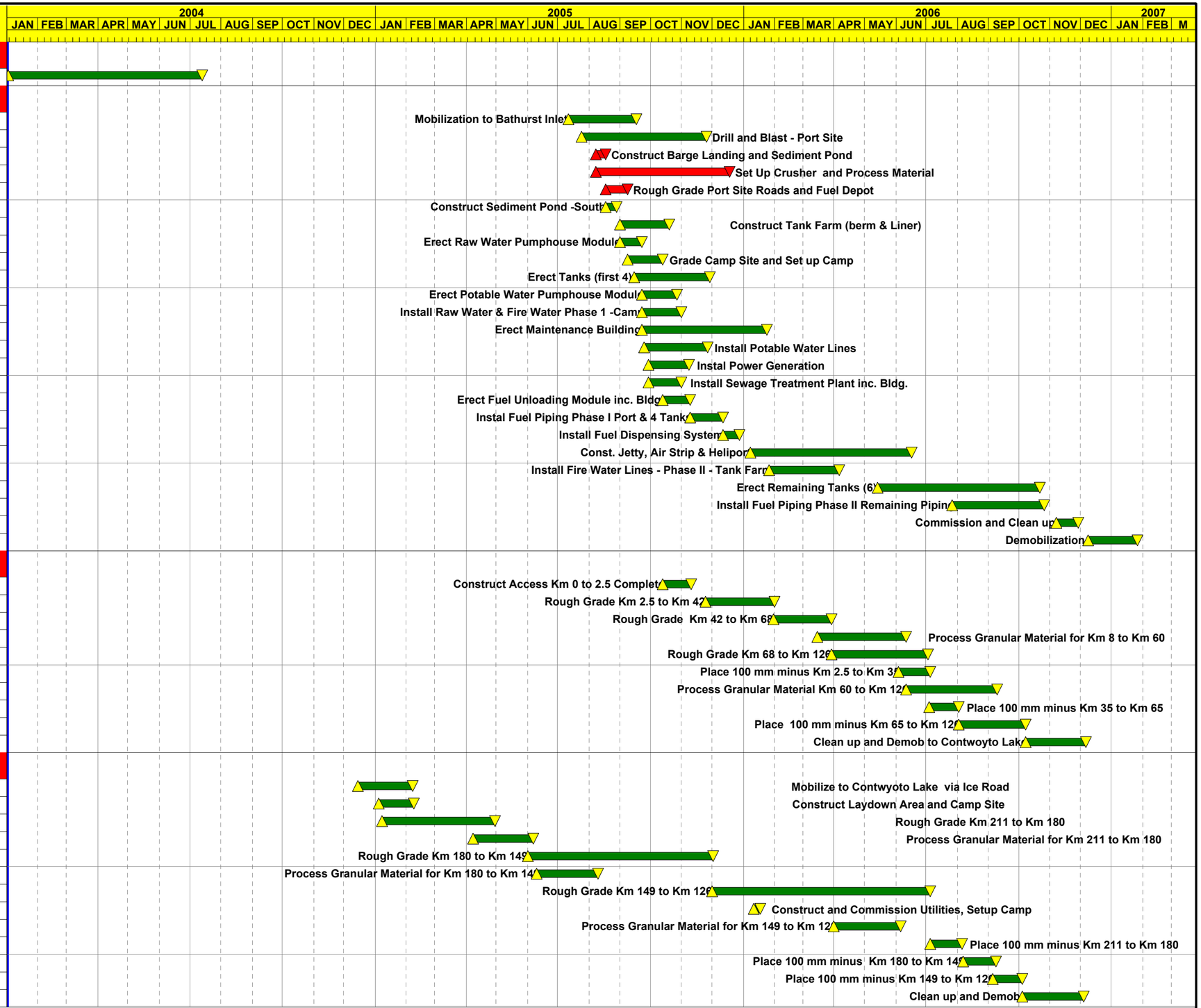
- Describe any monitoring plans and the schedule for submitting these monitoring reports to NIRB.

10. LIST INFORMATION SOURCES

- list all information sources used in the preparation of the project description; and
- list any available documentation on any baseline data that has been collected.

APPENDIX 3
DETAILED PROJECT SCHEDULE

Activity ID	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish
Engineering					
1000	Project Development	191	191	03JAN04	12JUL04
Port Site Development					
2001	Mobilization to Bathurst Inlet	68	68	11JUL05*	16SEP05
2002	Drill and Blast - Port Site	124	124	25JUL05*	25NOV05
2003	Construct Barge Landing and Sediment Pond	10	10	08AUG05	17AUG05
2019	Set Up Crusher and Process Material	132	132	08AUG05	17DEC05
2005	Rough Grade Port Site Roads and Fuel Depot	21	21	18AUG05	07SEP05
2011	Construct Sediment Pond -South	10	10	18AUG05	27AUG05
2007	Construct Tank Farm (berm & Liner)	48	48	01SEP05	18OCT05
2013	Erect Raw Water Pumphouse Module	21	21	01SEP05	21SEP05
2006	Grade Camp Site and Set up Camp	35	35	08SEP05	12OCT05
2008	Erect Tanks (first 4)	75	75	15SEP05	28NOV05
2014	Erect Potable Water Pumphouse Module	35	35	22SEP05	26OCT05
2017	Install Raw Water & Fire Water Phase 1 -Camp	40	40	22SEP05	31OCT05
2021	Erect Maintenance Building	120	120	22SEP05*	23JAN06
2018	Install Potable Water Lines	63	63	25SEP05	26NOV05
2009	Instal Power Generation	40	40	29SEP05	07NOV05
2010	Install Sewage Treatment Plant inc. Bldg.	33	33	29SEP05	31OCT05
2012	Erect Fuel Unloading Module inc. Bldg.	27	27	13OCT05	08NOV05
2016	Instal Fuel Piping Phase I Port & 4 Tanks	33	33	09NOV05	11DEC05
2020	Install Fuel Dispensing System	14	14	12DEC05	27DEC05
2004	Const. Jetty, Air Strip & Heliport	160	160	08JAN06*	16JUN06
2025	Install Fire Water Lines - Phase II - Tank Farm	70	70	26JAN06	05APR06
2015	Erect Remaining Tanks (6)	160	160	14MAY06	21OCT06
2024	Install Fuel Piping Phase II Remaining Piping	91	91	27JUL06	25OCT06
2026	Commission and Clean up	22	22	07NOV06*	28NOV06
2027	Demobilization	45	45	09DEC06	26JAN07
Access Road - Port to Km 126					
3001	Construct Access Km 0 to 2.5 Complete	28	28	13OCT05	09NOV05
3003	Rough Grade Km 2.5 to Km 42	65	65	24NOV05	31JAN06
3005	Rough Grade Km 42 to Km 68	57	57	31JAN06	28MAR06
3004	Process Granular Material for Km 8 to Km 60	88	88	15MAR06	10JUN06
3006	Rough Grade Km 68 to Km 126	95	95	29MAR06	02JUL06
3013	Place 100 mm minus Km 2.5 to Km 35	30	30	04JUN06	04JUL06
3007	Process Granular Material Km 60 to Km 126	90	90	11JUN06	09SEP06
3009	Place 100 mm minus Km 35 to Km 65	30	30	04JUL06	02AUG06
3011	Place 100 mm minus Km 65 to Km 126	66	66	03AUG06	07OCT06
3015	Clean up and Demob to Contwoyto Lake	60	60	08OCT06	06DEC06
Access Road - Contwyoto Lake to Km 126					
3100	Mobilize to Contwyoto Lake via Ice Road	50	50	15DEC04*	06FEB05
3200	Construct Laydown Area and Camp Site	35	35	04JAN05*	07FEB05
3102	Rough Grade Km 211 to Km 180	112	112	08JAN05*	29APR05
3103	Process Granular Material for Km 211 to Km 180	60	60	08APR05*	06JUN05
3104	Rough Grade Km 180 to Km 149	183	183	01JUN05	01DEC05
3106	Process Granular Material for Km 180 to Km 149	60	60	10JUN05	09AUG05
3108	Rough Grade Km 149 to Km 126	211	211	01DEC05	04JUL06
3201	Construct and Commission Utilities, Setup Camp	7	7	11JAN06*	17JAN06
3110	Process Granular Material for Km 149 to Km 126	66	66	01APR06	05JUN06
3105	Place 100 mm minus Km 211 to Km 180	32	32	05JUL06	05AUG06
3109	Place 100 mm minus Km 180 to Km 149	32	32	07AUG06	07SEP06
3112	Place 100 mm minus Km 149 to Km 126	30	30	05SEP06	04OCT06
3114	Clean up and Demob	60	60	05OCT06	03DEC06



Start Date	02JAN04
Finish Date	26JAN08
Data Date	02JAN04
Run Date	09MAY03 14:35

Early Bar
Progress Bar
Critical Activity

BAT2

Sheet 1 of 1

Nuna Logistics

Bathurst Inlet Port and Road

Classic Schedule Layout

Date	Revision	Checked	Approved

APPENDIX 4
LAND USE AND WATER USE APPLICATIONS

NUNAVUT WATER BOARD
LICENCE APPLICATION FORM

Application for licence, amendment to licence, or renewal of licence

APPLICATION/LICENCE NO:
(Amendment or renewal only)

1. NAME AND MAILING ADDRESS OF APPLICANT

Bathurst Inlet Port and Road
Joint Venture Ltd.
c/o 666 Burrard Street, Suite 340
Vancouver, BC V6C 2X8

Phone: (604) 682-4667
Fax: (604) 682-4473

2. ADDRESS OF HEAD OFFICE IN CANADA IF INCORPORATED

9839 31 Avenue
Edmonton, AB T6N 1C5

3. LOCATION OF UNDERTAKING (describe and attach a map, including watercourse and location of any proposed waste deposits)

Bathurst Inlet to Contwoyto Lake.
Please see Project Description attached.

4. DESCRIPTION OF UNDERTAKING (describe and attach plans)

Build and operate a commercial port and toll road.
Please see Project Description attached.

5. TYPE OF UNDERTAKING

- √ Industrial
- □ Mining and Milling
- □ Municipal
- □ Power
- □ Other (describe):
- □ Conservation
- □ Agricultural
- □ Recreation

6. WATER USE

- √ To obtain water
- √ To cross a watercourse
- □ To modify the bed or bank of water
- □ Other (describe):
- □ Flood control
- □ To divert water
- □ To alter the flow of, or store, water

7. WASTE DEPOSIT (quantity, quality, treatment and disposal)

Port (Construction and Operations)

At port potable water will be by desalination; sewage will be treated prior to discharge to land field above Bathurst Inlet; all other water uses will take marine water from Bathurst Inlet.

Road Construction

Road construction will be from 60 person mobile camps with a 16,000 litre per day water demand with sewage treated prior to discharge onto tundra field.

Contwoyto Lake Operations

At Contwoyto Lake, 20 person camp requirements will be an estimated 6,000 litres per day with sewage treated prior to discharge onto tundra field.

8. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name mailing address and location; attach if necessary)

The Project will require the use of Inuit Owned Land and Federal Crown Land. No current and ongoing local or subsistence land uses have been noted in the course of field investigations to date. The Project Description provides locations of known heritage sites along the proposed road alignment.

9. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION

Please see Project Description provided.

10. CONTRACTORS AND SUB-CONTRACTORS (name, address and functions)

11. STUDIES UNDERTAKEN TO DATE (attach if necessary)

Please see Project Description provided; Project EIS to be submitted that meets requirements of NIRB. Guidelines requested.

12. PROPOSED TIME SCHEDULE

Start Date: September 2005 Completion Date: December 2006

A. J. Keen, P.Eng.

Name (Print)

Project Manager

Title (Print)

Signature

_____
Application No./N° de la demande

APPLICATION FOR AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
DEMANDE D'AUTORISATION POUR DES OUVRAGES OU ENTREPRISES MODIFIANT L'HABITAT DU POISSON

I, the undersigned, hereby request authorization to carry out the works or undertakings described on this application form. I understand that the approval of this application, if granted, is from the Minister of Fisheries and Oceans standpoint only and does not release me from my obligation to obtain permission from other concerned regulatory agencies.

If an authorization is granted as a result of this application, I hereby agree to carry out all activities relating to the project within the designated time frames and conditions specified in the authorization.

Je soussigné, demande par les présentes l'autorisation d'exploiter les ouvrages ou entreprises décrits dans la formule. Je comprends que l'approbation de cette demande, le cas échéant, porte sur ce qui relève du ministre des Pêches et des Océans et ne me dispense pas d'obtenir la permission d'autres organismes réglementaires concernés.

Si la demande est approuvée, je consens par les présentes à exécuter tous les travaux relatifs à ce projet selon les modalités et dans le laps de temps prescrits dans l'autorisation.

Applicant's Name (Please Print) Bathurst Inlet Port and Road Joint Venture Ltd Nom du requérant (lettres moulées)

Applicant's Business Address c/o Nuna Logistics Adresse d'affaires du requérant

666 Burrard Street, Suite 340

Vancouver, BC V6C 2X8

Applicant's Telephone No./ N° de téléphone du requérant 604 682 4667 Date May 12, 2003

I solemnly declare that the information provided and facts set out in this application are true, complete and correct, and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath. This declaration applies to all material submitted as part of this application.

Je déclare solennellement que les renseignements fournis et les faits énoncés dans cette demande sont véridiques, complets et exacts, et je fais cette déclaration solennelle, la croyant consciencieusement vraie et sachant qu'elle a la même force et le même effet que si elle était faite sous serment. Cette déclaration s'applique à tout document qui est présenté dans le cadre de cette demande.

"A.J.Keen"

Applicant's Signature (and corporate seal)

Signature du requérant (et sceau de la société)

Name of watercourse or waterbody (give coordinates)
Cours d'eau ou plan d'eau (donner les coordonnées) Please see schedule attached.

This watercourse is a tributary of (where applicable)
Cours d'eau tributaire de (le cas échéant) Please see schedule attached.

Nearest community Localité la plus proche	County Comté	Province Province
Bathurst Inlet	Kitikmeot	Nunavut

Application No./N° de la demande

APPLICATION FOR AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
DEMANDE D'AUTORISATION POUR DES OUVRAGES OU ENTREPRISES MODIFIANT L'HABITAT DU POISSON

Type of Activity/Genre d'activité

[**X**] Bridge Pont	[ ] Stream Realignment Alignement de cours d'eau	[ ] Gravel Removal Enlèvement du gravier	[**X**] Stream Traverse Traversée de cours d'eau
[**X**] Culvert Ponceau	[ ] Channelization Canalisation	[ ] Obstruction Removal - Bypass Enlèvement ou contournement d'obstacle	[ ] Seismic Survey Levé sismique
[ ] Dam Barrage	[**X**] Wharf - Break water Quai - Brise-lames	[ ] Stream Utilization - Recreation Utilisation récréative du cours d'eau	[ ] Agriculture
[ ] Stream Diversion Dérivation de cours d'eau	[ ] Dewatering Assèchement	[ ] Erosion Control Lutte contre l'érosion	[ ] Other (specify) Autres (préciser)
[ ] Mining Activité minière	[ ] Aquaculture	[ ] Flood Protection Protection contre les inondations	

List of Agencies (Federal, Provincial or Municipal) contacted or notified, or who have initiated contact with the applicant.
Liste des organismes (fédéraux, provinciaux ou municipaux) contactés ou qui ont pris contact avec le requérant.

Kitikmeot Inuit Association – Cambridge Bay and Kugluktuk

Indian and Northern Affairs Canada - Iqaluit

Nunavut Water Board – Gjoa Haven

PROVIDE DETAILS OF PROPOSED ACTIVITY INCLUDING REASONS FOR THE PROJECT AND TYPES OF EQUIPMENT TO BE USED
DONNER DES PRÉCISIONS SUR LES TRAVAUX PROJETÉS, Y COMPRIS LA JUSTIFICATION DU PROJET ET LE TYPE D'ÉQUIPEMENT À UTILISER

Please see Project Description attached.

- the proposed sheet pile wharf and barge dock at the port on Bathurst Inlet will cover approx. 26,000m² near shore ocean floor in Bathurst Inlet;

- water crossings of known fish bearing streams will not encroach on the stream bed. (Table 20).

APPLICATION FOR AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
DEMANDE D'AUTORISATION POUR DES OUVRAGES OR ENTREPRISES MODIFIANT L'HABITAT DU POISSON

SCHEDULE/CALENDRIER

	D/J	M/M	Y/A
Proposed Starting Date Date prévue du début des travaux	01	09	2005
Proposed Completion Date Date prévue de l'achèvement des travaux	31	12	2006

Approximate Timing of Work in shoreline, foreshore, tidal zone, or underwater areas.
Période approximative des travaux sur le rivage et les estrans ainsi que dans les zones à marées et les zones sous-marines.

	D/J	M/M	Y/A		D/J	M/M	Y/A
From/De	_____	_____	_____	To/À	_____	_____	_____

Please see detailed Project Schedule in Appendix 3 of Project Description.

The following documents will assist in assessing your application and help expedite its approval. Please check which documents you have attached.		**Les documents suivants faciliteront l'évaluation de votre demande et permettront d'accélérer son approbation. Veuillez cochez les documents vous avez joints à votre demande.**
Map indicating location of project	[**X**]	Carte indiquant l'emplacement du projet
Engineering Specifications **(preliminary)**	[**X**]	Spécifications techniques
Scale Drawings	[**X**]	Dessins à l'échelle
Dimensional Drawings	[**X**]	Plans cotés
Assessment of Existing Fish Habitat Characteristics	[**X**]	Évaluation des caractéristiques existantes de l'habitat du poisson
Assessment of Potential Effects of Project on Fish Habitat	[**X**]	Évaluation des répercussions possibles sur l'habitat du poisson
Measures Proposed to Offset Potential Damage to Fish Habitat • **to be developed in consultation with DFO and KIA**	[ ]	Mesures proposées pour compenser les éventuels dommages à l'habitat du poisson
Other	[ ]	Atres

ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS CONSIDERATIONS

NOTE: All applications pursuant to section 35 of the Fisheries Act will be assessed in acordance with applicable federal environmental assessment requirements.

CONSIDÉRATIONS CONCERNANT LE PROCESSUS D'ÉVALUATION ET D'EXAMEN EN MATIÈRE D'ENVIRONNEMENT

REMARQUE : Toute demande en vertu l'article 35 de la Loi sur les pêches sera soumise aux exigences fédérales applicables à l'évaluation environnementale.

_____
Application No./N° de la demande

APPLICATION FOR AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT
DEMANDE D'AUTORISATION POUR DES OUVRAGES OU ENTRIPRISES MODIFIANT L'HABITAT DU POISSON

COMPLETE ONLY IF USE OF EXPLOSIVES IS INTENDED
À REMPLIR SEULEMENT EN CAS D'UTILISATION D'EXPLOSIFS

EXPLOSIVES CONTRACTOR (IF DIFFERENT FROM APPLICANT)/RESPONSABLE DES EXPLOSIFS (SI AUTRE QUE LE REQUÉRANT)

Name/Nom : _____

Address/Adresse : _____

_____

Telephone No./N° de téléphone : _____

	D/J	M/M	Y/A		D/J	M/M	Y/Y
Anticipated Starting Date Date prévue du début des travaux	_____	_____	_____	Completion Date Date d'achèvement	_____	_____	_____

DETAILS OF EXPLOSIVES/PRÉCISIONS SUR LES EXPLOSIFS

Type (including trade name)
Genre (y compris la marque)

Weight and configuration (where applicable)
Poids et forme (le cas échéant)

Weight of individual shots and shot pattern where multiple charges are used
Poids des coups individuels et déploiement des coups, en cas de charges multiples

Detonation depth (in the rock; note also the depth of water, if applicable)
Profondeur de détonation (dans le roc; indiquer aussi la profondeur de l'eau, s'il y a lieu)

Method of detonation
Méthode de détonation

Table 20 Location, watershed, and fish habitat characteristics for water crossings

From Bathurst Inlet to Contwoyto Lake							
Final Road Chainage km	**Watershed Area km^2**	**Habitat Quality Rating***	**Estimated Stream Depth Design 1:25 yr m**	**Estimated Streamflow Design 1:25 yr m^3/s**	**Crossing Type/Length Rock Fill m**	**Arch m**	**Bridge m**
2.5	66.4	High	0.45	16.38			20
3.0	1.1	Low		0.63	X		
7.7	6.8	Low		2.68		X	
14.3	75.3	Low	0.83	18.09			10
18.7	1.7	Low		0.89	X		
21.5	1143.1	High	0.98	156.68			50
23.2	N/A	Nil		N/A	X		
24.8	0.7	Nil		0.44	X		
25.3	0.5	Nil		0.34	X		
28.5	3.4	Nil		1.55	X		
30.2	N/A	Nil		N/A	X		
31.5	0.3	Nil		0.23		X	
31.8	N/A	Medium		N/A		X	
31.9	42.7	Low	0.35	11.54			30
32.9	60.5	Medium	0.39	15.21			30
33.9	43.0	Medium	0.32	11.60			30
36.3	0.2	Nil		0.16	X		
36.9	0.4	Medium		0.28	X		
37.6	N/A	Nil		N/A	X		
38.6	2.6	Nil		1.25	X		
39.5	N/A	Nil		N/A	X		
40.2	9.5	Medium	0.22	3.50			20
41.5	6.1	Nil		2.46	X		
42.8	2.0	Medium		1.02		X	
45.5	2.5	Nil		1.21	X		
48.0	9.9	Medium		3.62		X	
50.5	46.3	Nil	0.59	12.30			20
52.4	3.6	Nil		1.62	X		
54.0	0.7	Nil		0.44	X		

Final Road Chainage km	Watershed Area km^2	Habitat Quality Rating*	Estimated Stream Depth Design - 1:25 yr m	Estimated Streamflow Design - 1:25 yr m^3/s	Crossing Type/Length Rock Fill	Arch	Bridge
56.8	5.2	Medium		2.17		X	
60.5	0.5	Low		0.34	X		
61.6	0.2	Nil		0.16	X		
66.5	0.5	Nil		0.34	X		
67.5	6.2	High		2.49		X	
67.8	N/A	Medium		N/A		X	
68.2	2.3	Medium		1.14	X		
70.3	39.8	High	0.46	10.91			20
72.2	3.9	Low		1.73	X		
72.4	N/A	Low		N/A	X		
73.2	1.6	Low		0.85	X		
74.0	16.0	High	0.42	5.29			10
75.1	6.3	Low		2.53	X		
76.6	N/A	Nil		N/A	X		
76.7	N/A	Nil		N/A	X		
77.0	0.5	Nil		0.34	X		
78.5	2.4	Low		1.17	X		
79.6	N/A	Nil		N/A	X		
81.7	1.6	Nil		0.85	X		
82.1	81.0	High	0.41	19.17			30
83.0	5.0	Low		2.10	X		
88.2	2.6	Low		1.25	X		
89.1	0.5	Nil		0.34	X		
89.3	1.0	Low		0.59	X		
91.3	2.2	Low		1.10	X		
92.0	4.2	Low		1.83	X		
95.5	4.4	High		1.89	X		
96.8	0.4	Nil		0.28	X		
98.3	1.2	Nil		0.68	X		
100.9	3.9	Low		1.73	X		
101.1	2.6	High		1.25		X	
104.3	13.4	High	0.23	4.60			30
110.8	23.8	Nil	0.34	7.25			20

Final Road Chainage km	Watershed Area km^2	Habitat Quality Rating*	Estimated Stream Depth Design - 1:25 yr m	Estimated Streamflow Design - 1:25 yr m^3/s	Crossing Type/Length		
					Rock Fill	Arch	Bridge
111.5	1.4	High	0.14	0.77			20
112.8	18.1	Medium	0.33	5.84			20
115.0	5.0	Low		2.10	X		
116.9	1.3	Nil		0.72	X		
121.0	0.8	Nil		0.49	X		
121.3	1.2	Medium		0.68	X		
123.0	23.8	Nil		7.25	X		
126.5	1825.6	High	1.70	227.19			60
132.0	71.0	High	0.43	17.27			30
134.1	0.7	Nil		0.44	X		
141.8	1.9	Nil		0.98	X		
144.0	2.3	Nil		1.14	X		
144.9	1.0	Low		0.59	X		
147.1	2.7	Nil		1.29	X		
149.0	28.8	Nil	0.42	8.44			20
149.8	N/A	Nil		N/A	X		
153.0	0.6	Nil		0.39	X		
155.7	0.3	Low		0.23	X		
156.3	N/A	Nil		N/A	X		
156.7	N/A	Nil		N/A	X		
157.0	0.7	Low		0.44	X		
157.2	0.8	Nil		0.49	X		
158.3	15.8	High	0.33	5.24		X	
164.0	N/A	Low		N/A	X		
165.1	4.2	Medium		1.83	X		
165.2	N/A	Medium		N/A		X	
165.5	66.9	High	0.26	16.47			60
165.9	N/A	Nil		N/A	X		
166.4	0.1	Nil		0.09	X		
166.6	0.7	Medium		0.44		X	
167.7	13.5	High		4.63		X	
170.2	9.8	High		3.59		X	
174.1	8.7	Nil		3.26	X		
178.2	352.5	High	1.03	61.60			30

Final Road Chainage km	Watershed Area km^2	Habitat Quality Rating*	Estimated Stream Depth Design - 1:25 yr m	Estimated Streamflow Design - 1:25 yr m^3/s	Crossing Type/Length		
					Rock Fill	Arch	Bridge
179.5	N/A	Low		N/A	X		
180.5	4.1	High		1.80	X		
183.4	0.6	Nil		0.40	X		
186.0	4.4	Low	0.32	1.89		3	
189.3	11.3	Medium	0.55	4.02		3	
190.8	0.8	Nil		0.49	X		
193.4	1.8	High		0.93	X		
194.0	N/A	Low		N/A	X		
195.3	0.3	Nil		0.23	X		
198.7	65.6	High	0.69	16.22			20
199.7	34.4	High	0.40	9.71			20
201.2	1.0	Medium		0.59		X	
203.7	12.4	High	0.26	4.32			10
205.2	1.5	Medium	0.20	0.81		3	
208.0	2.1	Nil		1.06	X		

* Rescan (2003)

Nil = no channel, no water (46)

Low = flow present but not fish (26)

Medium = fish present but low-valued (slimy sculpin or ninespine stickleback) (17)

High = high-valued fish present (Arctic grayling, burbot, lake trout, round white fish, Arctic cisco, Arctic char or longnose sucker) (22)

KITIKMEOT INUIT ASSOCIATION
LANDS DIVISION
APPLICATION FOR ACCESS TO INUIT OWNED LAND

Office use only			
Category	Application No:	Accepted By:	Date Accepted:

To be completed by all applicants

1. Applicant's name and mailing address (Full name, no initials or abbreviations) **Bathurst Inlet Port and Road Joint Venture Ltd.**	**Fax no** **604-682-4473** **Telephone no.** **604-682-4667**
2. Head Office address **9839 31 Ave. Edmonton AB, T6N 1C5**	Fax no. **1-800-734-5770** Telephone no. **1-800-434-9434**
3. Field supervisor and address if different from above **A.J.Keen, P.Eng, c/o Nuna Logistics Limited, Suite 340, 666 Burrard St. Vancouver BC V6C 2X8**	Telephone no**.** **604-682-4667**

4. Other personnel list (Subcontractors or contractors to be used)

Total no. of personnel: No. of person days:

5. Location of activities by map coordinates. Attach **ORIGINAL** maps and sketches. **Please see Project maps and drawings attached.**

MAX Lat Min	MIN Lat Deg	MIN Lat Min	MAX Lat Deg
MAX Long Min	MIN Long Deg	MIN Long Min	MAX Long Deg

Map Sheet No: Inuit Land Parcel No:

Coordinate of camp (if applicable) Lat. Long.

6. Periods of operation including periods of seasonal shut down and periods of restoration.

Please see the Project Description attached including Appendix Three, the detailed Project construction schedule.

7. Period of access required (up to one or two years for licenses, depending on license level, up to five years for residential/recreational leases and level I and II commercial leases)	Start date **September 2005**	Completion Date **December 2006**

8. Other rights, licenses, permits or leases related to this application. Provide proof of rights or indicate if in the process of applying for rights.

☐	NTI Subsurface Right	☐	NRI Research License	☐	CWS Permit
☐	DIAND Subsurface Right	☐	RWED Tourism License	☐	Other – Please Specify
X	**NWB Water License**	☐	Explosives Permit	☐	_____
					_____

Please see copies of applications to NWB and DIAND in Appendix Four of the Project Description

9. TYPE OF LAND USE ACTIVITY

Check off the appropriate land use activities.

Mining/Oil & Gas		***Construction:***		***Tourism:***	
☐	staking and prospecting	**X**	**quarrying**	☐	tourism facility
☐	exploration (geophys-grd/air)			☐	outfitting
☐	drilling (diamond/ice, etc.)			☐	other:
☐	bulk sampling				_____
☐	mine (open pit, undergrd, etc.)				
☐	bulk fuel storage				
☐	other: _____				

Municipality		***Research***		***Other***	
☐	bulk storage of fue	☐	wildlife/fish/birds/marine	☐	commercial harvest
☐	residential building	☐	survey (grd/aerial/collars)	☐	recreational camp
☐	commercial building	☐	collection of species	☐	_____
☐	other: _____	☐	research station	☐	_____
		☐	other: _____		

10. On a separate page, provide a NON-TECHNICAL project summary. This should include a non-technical description of the project proposal, no more than 300 words, in English and Inuktituk (Inuinaktun, in the West Kitikmeot). The project description should outline the project activities and their necessity, method of transportation, any structures that will be erected, expected duration of activity and alternatives considered. If the proposed activity fits into any long-term developments, please describe the projected outcome of the development for the area and its timeline.

Attached please find the Executive Summary to the Project Description in English, Inuinaktun, and Inuktitut.

11. Attach a detailed project description as outlined in APPENDIX A. Please see Project Description attached. This document follows the guidelines prepared by NIRB for Project Descriptions in Nunavut.

12. The proposed uses for these Inuit Owned lands are:
18 quarries/borrow pits on Inuit Owned Lands are proposed and applied for.

The volume of materials proposed for extractions from pits and quarries on Inuit Owned Lands is shown in Table 1.

Table 1. Volumes of rock and granular materials proposed for extraction rom Inuit Owned Land.

Location	IOL Block	Material	Proposed Quantity
Port to Contwoyto Lake			
km 6	BB-27	rock	76,000 cu.m
6.0	BB-27	rock/granular	67,000 cu.m
7.5	BB-27	rock	17,000 cu.m
12	BB-27	rock	119,000 cu.m
17.5	BB-27	rock/granular	98,000 cu.m
19.5	BB-27	granular	40,000 cu.m
28.8	BB-16	rock	28,000 cu.m
32	BB-16	granular/rock	67,000 cu.m
34	BB-16	rock	24,000 cu.m
59.5	BB-16	granular/rock	90,000 cu.m
68.5	BB-16	rock	45,000 cu.m
106	BB-04	granular/rock	116,000 cu.m
127	BB-05	rock	66,000 cu.m
135	BB-05	granular	97,000 cu.m
149	BB-05	rock/granular	126,000 cu.m
158	C0-17	rock	47,000 cu.m
165	C0-17	granular	51,000 cu.m
208	C0-12	rock/granular	127,000 cu.m

Total volume to be extracted from Inuit Owned Lands 1,301,000 cu.m

Each quarry site is estimated to be 2 ha in area for a potential 36 ha for the 18 quarries on IOL.

Land use fees: # of hectares used @ $50.00/hectare =

Note: The land use fee is for the amount of land used on an annual basis.

13. a) The Applicant requests a Certificate of Exemption
OR
b) The Applicant agrees to be bound by terms and conditions to be attached to the Inuit Land Use License or Lease.

For Bathurst Inlet Port and Road Joint Venture Ltd.

Sign name in full: _____ May 8, 2003
A.J. Keen (Signature) (Date)

APPENDIX A

All applicants must provide a detailed project description that includes ALL of the following:

1. Outline project activities, their necessity, their expected duration and alternatives considered. If the proposed activity fits into any long-term developments, describe the projected outcome of the development for the area and its timeline.

2. Schedule of activities including both operations and shutdowns

3. Provide a preliminary plan showing the location of the lands proposed to be used and an estimate of their area in hectares. The preliminary plan should show the approximate location of all:

   i. existing or new lines, trails, rights-of-way and cleared areas proposed to be used in the exercise of the Right;

   Please see Bathurst Inlet Port and Road Project Description

   ii. buildings, campsites, air landing strips, air navigation aids, fuel and supply storage sites, waste disposal sites, excavations, ponds, reservoirs and other works and places proposed to be constructed or used during the exercise of the Right;

   Please see Bathurst Inlet Port and Road Project Description

   iii. manmade structures and works, including bridges, dams, ditches, highways, roads, transmission lines, pipelines, survey lines and monuments, air landing strips; all topographical and natural features, including eskers, rivers, streams, lakes, inland seas and ponds; and all areas of biological interest, including wildlife and fish habitat, specifically, calving, denning, spawning or nesting areas, identified in consultation with the NWMB, RWO, or HTO, as appropriate, that may be affected by the exercise of the Right; and

   Please see Bathurst Inlet Port and Road Project Description

   iv. the accurate location of all carving stone, archaeological sites, and archaeological specimens.

   Please see Project Description for locations of known heritage sites along the proposed road alignment; locations of carving stone deposits will be reported as and when these are found.

4. Provide a list of structures that will be erected.

   Please see Bathurst Inlet Port and Road Project Description

5. Equipment to be used, indicating type and number, size and ground pressure and proposed use. Include all drills, pumps, vehicles etc.

   Please see Bathurst Inlet Port and Road Project Description

6. Fuels to be used, capacity of containers and number of litres. Include diesel, gasoline, aviation fuel, propane and other fuel types. Describe method of fuel transfer.

   Please see Bathurst Inlet Port and Road Project Description

7. Provide a copy of fuel spill contingency plan

   Project contingency plans are in preparation and will be submitted with Project EIS.

8. Proposed disposal methods for garbage, sewage, grey water, overburden (organic soil, waste material, tailings etc.), hazardous waste and other waste products. Describe the acid rock drainage potential of waste rock materiel and testing methods, if applicable. List the type, estimated quantities and storage methods of any hazardous materials that are going to be stored on the property.

    Please see Bathurst Inlet Port and Road Project Description

9. Describe the methods of transportation.

    Please see Bathurst Inlet Port and Road Project Description

10. Indicate the components of the environment that are near the project area, as applicable. Include the type of species, the important habitat area (calving, staging, denning, migratory pathways, spawning, nesting etc.) and the critical time periods (calving, post-calving, spawning, nesting, breeding etc.). Also include information on eskers, communities and historical/archaeological sites.

    Please see Bathurst Inlet Port and Road Project Description

11. Summary of potential environmental, wildlife and resource impacts and mitigation measures to be used. Describe the effects of the proposed program on lands, water, flora and fauna.

    Please see Bathurst Inlet Port and Road Project Description

12. Reclamation cost analysis for advanced exploration activities.

    To be developed in consultation with Kitikmeot Inuit Association.

13. Proposed reclamation plan, that includes, but is not limited to the proposed methods and procedures for the progressive:

    i) removal of all structures, equipment, and other manmade debris;

    ii) rehabilitation of the area to its previous standard of human utilization and natural productivity;

    iii) replacement of overburden and soil;

    iv) grading of the area back to is natural contours; and

    v) re-establishment, to the extent possible, of flora.

    Include information about on going site remediation throughout the duration of the project.

    Please see Bathurst Inlet Port and Road Project Description

14. Provide information on the socio-economic aspects of these activities. In particular, please provide details on:

    i) How much money will be spent on this work?

    Please see Bathurst Inlet Port and Road Project Description

    ii) What percentage will go to Inuit firms or employees?

    Please see Bathurst Inlet Port and Road Project Description

    iii) How many jobs are available through this activity?

    Please see Bathurst Inlet Port and Road Project Description

iv) How many Inuit employees will be hired?

Please see Bathurst Inlet Port and Road Project Description

v) What type of training opportunities for Inuit will be offered?

Please see Bathurst Inlet Port and Road Project Description

In addition to the above requirements, COMMERCIAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- Describe the type of commercial use.

In addition to the above requirements, RESIDENTIAL/RECREATIONAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- For what purposes will the land be used? Describe any buildings or improvements on this land. What is the value of the improvements on the land and who is the owner of the improvements.
- Provide a list of improvements planned for construction, the value of these improvements and within how many months of the effective date of the lease these improvements be finished.

In addition to the above requirements, QUARRY LICENSE or QUARRY CONCESSION AGREEMENT applicants must provide the following information:

- A description by meters and bounds of the land applied for;
- The name of the specified substances that the applicant desires to remove from the area; and
- A sketch showing clearly the position of the parcel in relation to a survey monument, prominent topographical feature or other known point and shown in its margin, copies of the markings on the posts or cairns.
- If for commercial use, the description shall contain an affidavit sworn by the applicant setting forth:
  - that the land contains material of the kind applied for in merchantable quantities;
  - that the volume of specified substances are required for a project that has been approved by the appropriate level of government; and
  - that the applicant has obtained a contract for the delivery of those Specified Substances.

Please prepare this project description on a separate sheet of paper and attach it to your application form marked as APPENDIX A. Return the original, signed and dated application form, with attached APPENDICES A and B and all ORIGINAL maps of the area to the KIA Lands Office at Box 315, Kugluktuk, NT, X0B 0E0.

KITIKMEOT INUIT ASSOCIATION
LANDS DIVISION
APPLICATION FOR ACCESS TO INUIT OWNED LAND

Office use only			
Category	Application No:	Accepted By:	Date Accepted:

To be completed by all applicants

1. Applicant's name and mailing address (Full name, no initials or abbreviations) **Bathurst Inlet Port and Road Joint Venture Ltd.**	**Fax no** **604-682-4473** Telephone no. **604-682-4667**
2. Head Office address **9839 31 Avenue, Edmonton, AB, T6N 1C5.**	Fax no. **1-800-734-5770** Telephone no. **1-800-434-9434**
3. Field supervisor and address if different from above **A.J. Keen P.Eng, c/o Nuna Logistics Limited, Suite 340, 666 Burrard St. Vancouver, BC, V6C 2X8**	Telephone no. **604-682-4667**

4. Other personnel list (Subcontractors or contractors to be used)

Total no. of personnel: No. of person days:

5. Location of activities by map coordinates. Attach **ORIGINAL** maps and sketches. **See maps and table attached.**

MAX Lat Min	MIN Lat Deg	MIN Lat Min	MAX Lat Deg
MAX Long Min	MIN Long Deg	MIN Long Min	MAX Long Deg

Map Sheet No: **76E** Inuit Land Parcel No**: CO-12/76E**

Coordinate of camp (if applicable) **Lat.** **N 65 ^{o} 28'** **Long.** **W 110 ^{o} 10'**

6. Periods of operation including periods of seasonal shut down and periods for restoration.

See Project Description, including Schedule in Appendix 3.

7. Period of access required (up to one or two years for licenses, depending on license level, up to five years for residential/recreational leases and level I and II commercial leases, and up to forty years for level III commercial leases)	Start date **Jan 2005**	Completion Date **Sept 2006**

8. Other rights, licenses, permits or leases related to this application. Provide proof of rights or indicate if in the process of applying for rights.

- ☐ NTI Subsurface Right
- ☐ DIAND Subsurface Right
- **X NWB Water License**
- ☐ NRI Research License
- ☐ RWED Tourism License
- ☐ Explosives Permit
- ☐ CWS Permit
- ☐ Other – Please Specify

_____

_____

9. TYPE OF LAND USE ACTIVITY

Check off the appropriate land use activities.

Mining/Oil & Gas
- ☐ staking and prospecting
- ☐ exploration (geophys-grd/air)
- ☐ drilling (diamond/ice, etc.)
- ☐ bulk sampling
- ☐ mine (open pit, undergrd, etc.)
- ☐ bulk fuel storage
- ☐ other: _____

Construction:
- **X camp**
- **X bulk fuel storage**

Tourism:
- ☐ tourism facility
- ☐ outfitting
- ☐ other: _____

Municipality:
- ☐ bulk storage of fuel
- ☐ residential building
- ☐ commercial building
- ☐ other: _____

Research:
- ☐ wildlife/fish/birds/marine
- ☐ survey (grd/aerial/collars)
- ☐ collection of species
- ☐ research station
- ☐ other: _____

Other:
- ☐ commercial harvest
- ☐ recreational camp
- ☐ _____
- ☐ _____

10. On a separate page, provide a NON-TECHNICAL project summary. This should include a non-technical description of the project proposal, no more than 300 words, in English and Inuktitut (Inuinaktun, in the West Kitikmeot). The project description should outline the project activities and their necessity, method of transportation, any structures that will be erected, expected duration of activity and alternatives considered. If the proposed activity fits into any long-term developments, please describe the projected outcome of the development for the area and its timeline.

11. Attach a detailed project description as outlined in APPENDIX A.

See Executive Summary in Project Description.

12. Application Fees:

- ☐ Land use license I -
  - Inuit - $ 0
  - Non-Inuit - $100
- ☐ Land use license II - $250
- **X Land use license III- $500**
- ☐ Residential/Recreational Lease — Inuit - $ 0, Non-Inuit - $250
- ☐ Exemption Certificate
- ☐ Commercial Lease I - $ 500
- ☐ Commercial Lease II - $1000
- ☐ Commercial Lease III - $5000

Land use fees: # of hectares used @ $50.00/hectare = $_____

Note: The land use fee is for the amount of land used on an annual basis.

---

13. a) The Applicant requests a Certificate of Exemption ☐

OR

b) The Applicant agrees to be bound by terms and conditions to be attached to the Inuit Land Use License or Lease.

Sign name in full: " A.J.Keen" _____ May 12, 2003_____
Signature Date

APPENDIX A

All applicants must provide a detailed project description that includes ALL of the following:

1. Outline project activities, their necessity, their expected duration and alternatives considered. If the proposed activity fits into any long-term developments, describe the projected outcome of the development for the area and its timeline.

2. Schedule of activities including both operations and shutdowns

3. Provide a preliminary plan showing the location of the lands proposed to be used and an estimate of their area in hectares. The preliminary plan should show the approximate location of all:

   i) existing or new lines, trails, rights-of-way and cleared areas proposed to be used in the exercise of the Right;

   ii) buildings, campsites, air landing strips, air navigation aids, fuel and supply storage sites, waste disposal sites, excavations, ponds, reservoirs and other works and places proposed to be constructed or used during the exercise of the Right;

   iii) manmade structures and works, including bridges, dams, ditches, highways, roads, transmission lines, pipelines, survey lines and monuments, air landing strips; all topographical and natural features, including eskers, rivers, streams, lakes, inland seas and ponds; and all areas of biological interest, including wildlife and fish habitat, specifically, calving, denning, spawning or nesting areas, identified in consultation with the NWMB, RWO, or HTO, as appropriate, that may be affected by the exercise of the Right; and

   iv) the accurate location of all carving stone, archaeological sites, and archaeological specimens

4. Provide a list of structures that will be erected.

5. Equipment to be used, indicating type and number, size and ground pressure and proposed use. Include all drills, pumps, vehicles etc.

6. Fuels to be used, capacity of containers and number of litres. Include diesel, gasoline, aviation fuel, propane and other fuel types. Describe method of fuel transfer.

7. Provide a copy of fuel spill contingency plan

8. Proposed disposal methods for garbage, sewage, grey water, overburden (organic soil, waste material, tailings etc.), hazardous waste and other waste products. Describe the acid rock drainage potential of waste rock materiel and testing methods, if applicable. List the type, estimated quantities and storage methods of any hazardous materials that are going to be stored on the property.

9. Describe the methods of transportation.

10. Indicate the components of the environment that are near the project area, as applicable. Include the type of species, the important habitat area (calving, staging, denning, migratory pathways, spawning, nesting etc.) and the critical time periods (calving, post-calving, spawning, nesting, breeding etc.). Also include information on eskers, communities and historical/archaeological sites.

11. Summary of potential environmental, wildlife and resource impacts and mitigation measures to be used. Describe the effects of the proposed program on lands, water, flora and fauna.

12. Reclamation cost analysis for advanced exploration activities.

13. Proposed reclamation plan, that includes, but is not limited to the proposed methods and procedures for the progressive:

    i) removal of all structures, equipment, and other manmade debris;

    ii) rehabilitation of the area to its previous standard of human utilization and natural productivity;

    iii) replacement of overburden and soil;

    iv) grading of the area back to is natural contours; and

    v) re-establishment, to the extent possible, of flora.

    Include information about on going site remediation throughout the duration of the project.

14. Provide information on the socio-economic aspects of these activities. In particular, please provide details on:

    i) How much money will be spent on this work?

    ii) What percentage will go to Inuit firms or employees?

    iii) How many jobs are available through this activity?

    iv) How many Inuit employees will be hired?

    v) What type of training opportunities for Inuit will be offered?

In addition to the above requirements, COMMERCIAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- Describe the type of commercial use.

In addition to the above requirements, RESIDENTIAL/RECREATIONAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- For what purposes will the land be used? Describe any buildings or improvements on this land. What is the value of the improvements on the land and who is the owner of the improvements.
- Provide a list of improvements planned for construction, the value of these improvements and within how many months of the effective date of the lease these improvements be finished.

In addition to the above requirements, QUARRY LICENSE or QUARRY CONCESSION AGREEMENT applicants must provide the following information:

- A description by meters and bounds of the land applied for;
- The name of the specified substances that the applicant desires to remove from the area; and
- A sketch showing clearly the position of the parcel in relation to a survey monument, prominent topographical feature or other known point and shown in its margin, copies of the markings on the posts or cairns.
- If for commercial use, the description shall contain an affidavit sworn by the applicant setting forth:
  - i) that the land contains material of the kind applied for in merchantable quantities;
  - ii) that the volume of specified substances are required for a project that has been approved by the appropriate level of government; and
  - iii) that the applicant has obtained a contract for the delivery of those Specified Substances.

Please prepare this project description on a separate sheet of paper and attach it to your application form marked as APPENDIX A. Return the original, signed and dated application form, with attached APPENDICES A and B and all ORIGINAL maps of the area to the KIA Lands Office at Box 315, Kugluktuk, NT, X0B 0E0.

KITIKMEOT INUIT ASSOCIATION
LANDS DIVISION
APPLICATION FOR ACCESS TO INUIT OWNED LAND

Office use only			
Category	Application No:	Accepted By:	Date Accepted:

To be completed by all applicants

1. Applicant's name and mailing address (Full name, no initials or abbreviations) **Bathurst Inlet Port and Road Joint Venture Ltd.**	Fax no **604-682-4473** Telephone no. **604-682-4667**
2. Head Office address **9839 31 Avenue, Edmonton, AB, T6N 1C5.**	Fax no. **1-800-734-5770** Telephone no. **1-800-434-9434**
3. Field supervisor and address if different from above **A.J. Keen P.Eng, c/o Nuna Logistics Limited, Suite 340, 666 Burrard St. Vancouver, BC, V6C 2X8**	Telephone no. **604-682-4667**

4. Other personnel list (Subcontractors or contractors to be used)

Total no. of personnel: No. of person days:

5. Location of activities by map coordinates. Attach **ORIGINAL** maps and sketches. **See maps and table attached.**

MAX Lat Min	MIN Lat Deg	MIN Lat Min	MAX Lat Deg
MAX Long Min	MIN Long Deg	MIN Long Min	MAX Long Deg

Map Sheet No: **See 1:50,000 scale maps attached** Inuit Land Parcel No:

Coordinate of camp (if applicable) Lat/Long.———

6. Periods of operation including periods of seasonal shut down and periods for restoration.

Please see Project Description, including Schedule in Appendix 3.

7. Period of access required (up to one or two years for licenses, depending on license level, up to five years for residential/recreational leases and level I and II commercial leases, and up to forty years for level III commercial leases)	Start date **January 2005**	Completion Date **December 2006**

8. Other rights, licenses, permits or leases related to this application. Provide proof of rights or indicate if in the process of applying for rights.

- ☐ NTI Subsurface Right
- ☐ DIAND Subsurface Right
- **X NWB Water License**
- ☐ NRI Research License
- ☐ RWED Tourism License
- ☐ Explosives Permit
- ☐ CWS Permit
- ☐ Other – Please Specify

_____

_____

9. TYPE OF LAND USE ACTIVITY

Check off the appropriate land use activities.

Mining/Oil & Gas
- ☐ staking and prospecting
- ☐ exploration (geophys-grd/air)
- ☐ drilling (diamond/ice, etc.)
- ☐ bulk sampling
- ☐ mine (open pit, undergrd, etc.)
- ☐ bulk fuel storage
- ☐ other: _____

Construction:
- **X all-season road**

Tourism:
- ☐ tourism facility
- ☐ outfitting
- ☐ other: _____

Municipality:
- ☐ bulk storage of fuel
- ☐ residential building
- ☐ commercial building
- ☐ other: _____

Research:
- ☐ wildlife/fish/birds/marine
- ☐ survey (grd/aerial/collars)
- ☐ collection of species
- ☐ research station
- ☐ other: _____

Other:
- ☐ commercial harvest
- ☐ recreational camp
- ☐ _____
- ☐ _____

10. On a separate page, provide a NON-TECHNICAL project summary. This should include a non-technical description of the project proposal, no more than 300 words, in English and Inuktitut (Inuinaktun, in the West Kitikmeot). The project description should outline the project activities and their necessity, method of transportation, any structures that will be erected, expected duration of activity and alternatives considered. If the proposed activity fits into any long-term developments, please describe the projected outcome of the development for the area and its timeline.

11. Attach a detailed project description as outlined in APPENDIX A.

See Project description for Executive Summary in English, Inuinaktun and Inuktitut.

12. Application Fees:

- ☐ Land use license I -
  - Inuit - $ 0
  - Non-Inuit - $100
- ☐ Land use license II - $250
- **X Land use license III- $500**

- ☐ Commercial Lease I - $ 500
- ☐ Commercial Lease II - $1000
- ☐ Commercial Lease III - $5000

- ☐ Residential/Recreational Lease — Inuit - $ 0; Non-Inuit - $250
- ☐ Exemption Certificate

Land use fees: # of hectares used @ $50.00/hectare = $_____

Note: The land use fee is for the amount of land used on an annual basis.

---

13. a) The Applicant requests a Certificate of Exemption ☐

OR

b) The Applicant agrees to be bound by terms and conditions to be attached to the Inuit Land Use License or Lease.

Sign name in full: "A.J.Keen" _____ May 12, 2003 _____

Signature Date

APPENDIX A

All applicants must provide a detailed project description that includes ALL of the following:

1. Outline project activities, their necessity, their expected duration and alternatives considered. If the proposed activity fits into any long-term developments, describe the projected outcome of the development for the area and its timeline.

2. Schedule of activities including both operations and shutdowns

3. Provide a preliminary plan showing the location of the lands proposed to be used and an estimate of their area in hectares. The preliminary plan should show the approximate location of all:

   i) existing or new lines, trails, rights-of-way and cleared areas proposed to be used in the exercise of the Right;

   ii) buildings, campsites, air landing strips, air navigation aids, fuel and supply storage sites, waste disposal sites, excavations, ponds, reservoirs and other works and places proposed to be constructed or used during the exercise of the Right;

   iii) manmade structures and works, including bridges, dams, ditches, highways, roads, transmission lines, pipelines, survey lines and monuments, air landing strips; all topographical and natural features, including eskers, rivers, streams, lakes, inland seas and ponds; and all areas of biological interest, including wildlife and fish habitat, specifically, calving, denning, spawning or nesting areas, identified in consultation with the NWMB, RWO, or HTO, as appropriate, that may be affected by the exercise of the Right; and

   iv) the accurate location of all carving stone, archaeological sites, and archaeological specimens

4. Provide a list of structures that will be erected.

5. Equipment to be used, indicating type and number, size and ground pressure and proposed use. Include all drills, pumps, vehicles etc.

6. Fuels to be used, capacity of containers and number of litres. Include diesel, gasoline, aviation fuel, propane and other fuel types. Describe method of fuel transfer.

7. Provide a copy of fuel spill contingency plan

8. Proposed disposal methods for garbage, sewage, grey water, overburden (organic soil, waste material, tailings etc.), hazardous waste and other waste products. Describe the acid rock drainage potential of waste rock materiel and testing methods, if applicable. List the type, estimated quantities and storage methods of any hazardous materials that are going to be stored on the property.

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11. Summary of potential environmental, wildlife and resource impacts and mitigation measures to be used. Describe the effects of the proposed program on lands, water, flora and fauna.

12. Reclamation cost analysis for advanced exploration activities.

13. Proposed reclamation plan, that includes, but is not limited to the proposed methods and procedures for the progressive:

    i) removal of all structures, equipment, and other manmade debris;

    ii) rehabilitation of the area to its previous standard of human utilization and natural productivity;

    iii) replacement of overburden and soil;

    iv) grading of the area back to is natural contours; and

    v) re-establishment, to the extent possible, of flora.

    Include information about on going site remediation throughout the duration of the project.

14. Provide information on the socio-economic aspects of these activities. In particular, please provide details on:

    i) How much money will be spent on this work?

    ii) What percentage will go to Inuit firms or employees?

    iii) How many jobs are available through this activity?

    iv) How many Inuit employees will be hired?

    v) What type of training opportunities for Inuit will be offered?

In addition to the above requirements, COMMERCIAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- Describe the type of commercial use.

In addition to the above requirements, RESIDENTIAL/RECREATIONAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- For what purposes will the land be used? Describe any buildings or improvements on this land. What is the value of the improvements on the land and who is the owner of the improvements.
- Provide a list of improvements planned for construction, the value of these improvements and within how many months of the effective date of the lease these improvements be finished.

In addition to the above requirements, QUARRY LICENSE or QUARRY CONCESSION AGREEMENT applicants must provide the following information:

- A description by meters and bounds of the land applied for;
- The name of the specified substances that the applicant desires to remove from the area; and
- A sketch showing clearly the position of the parcel in relation to a survey monument, prominent topographical feature or other known point and shown in its margin, copies of the markings on the posts or cairns.
- If for commercial use, the description shall contain an affidavit sworn by the applicant setting forth:
  - i) that the land contains material of the kind applied for in merchantable quantities;
  - ii) that the volume of specified substances are required for a project that has been approved by the appropriate level of government; and
  - iii) that the applicant has obtained a contract for the delivery of those Specified Substances.

Please prepare this project description on a separate sheet of paper and attach it to your application form marked as APPENDIX A. Return the original, signed and dated application form, with attached APPENDICES A and B and all ORIGINAL maps of the area to the KIA Lands Office at Box 315, Kugluktuk, NT, X0B 0E0.

REVISED MAY 12/03

(A)

Indian and Northern Affairs Canada — Affaires indiennes et du Nord Canada

Application for Crown Land

Office Use Only: Application Number

Note to the Applicant

This form is the first step in your application for Federal Crown Lands.

Applications are reviewed by government agencies responsible for land use and the regulation of activity in the NWT. This form is intended to help both you and government. It is not a legal document but a means of providing the people who have to deal with your application information needed to consider the application. Most importantly, in filling out the form you will better understand some of the steps that have to be taken in planning and carrying out a successful enterprise.

You are advised to read the entire application form before you begin to fill it out. The amount of space provided for each question suggests the level of detail expected. However, you may be asked to supply further additional information. This is an application only and in no way implies the granting of an approval to the applicant.

A. Information on Applicant

Name in Full: ANTHONY J. KEEN | Legal Age:

Address: c/o SUITE 340, 666 BURRARD ST. VANCOUVER BC V6C 2X8

Telephone Number (H): 604-682-4667 | Occupation: PROJECT MANAGER

Telephone Number (W): | Employer: BIPR PROJECT

Name of Spouse: | Occupation: | Employer:

Information on Company, Corporation or Association:

Name of Company or Association: BATHURST INLET PORT & ROAD JOINT VENTURE LTD

Address: 9839 31 AVE EDMONTON AB T6N 1C5

Are you registered at the ~~NWT~~ NUNAVUT Companies Registry: Yes ✓ No ☐

Telephone Number: 604-682-4667 | Type of Business: CONSTRUCTION & PROJECT OPERATION | Date & Place of Incorporation: CANADA MAY 1, 2002

Name and Address of person to whom inquiries related to this application should be addressed:

Name: A.J. KEEN P.ENG. | Telephone Number: 604-682-4667

Address: SUITE 340, 666 BURRARD ST, VANCOUVER BC V6C 2X8

I hereby make application to: Lease ✓ Purchase ☐ Lease with Purchase Option ☐ Reserve (Govt. Only) ☐ Transfer (Govt. Only) ☐

If two or more persons are applying for this land please signify the type of Tenancy desired: Joint Tenancy ☐ Tenancy in Common ☐

Definition:

Joint Tenancy - The primary purpose of Joint Tenancy is the right of survivorship, upon the death of one joint tenant, their interest passes to the other joint tenant automatically, and at length to the last survivor.

Tenancy in Common - A form of ownership whereby each tenant (Owner or Lessee) holds an undivided interest in property. Upon the death of one of the individuals their property interest passes to their heirs.

Purpose the land is to be used for:

Commercial ☐ Industrial ✓ Residential ☐ Other (specify) ☐

B. COMMERCIAL/INDUSTRIAL APPLICATIONS

Commercial applications may require approvals from the GNWT (Economic Development & Tourism) prior to this Department issuing any approvals of this application.

Type of industrial or commercial use (describe in detail):

BATHURST INLET DOCK SITE – WATER LOT

Canada

Are there any waste products produced by this use? YES: ☐ NO: ☑

If YES describe the type of waste, the volume of waste and the disposal method(s) to be used:

Are there any hazardous materials to be stored other than consumer goods? (Fuel, etc.) YES: ☐ NO: ☑

If YES please list the type, estimated quantities and storage method(s).

*(Hazardous materials as defined in the Transportation of Dangerous Goods Act and Regulations of the Workplace Hazardous Material Information System).

C. PARCEL DESCRIPTIONS:

General Description of Parcel (Hilly or Flat, Tree Cover, Soil Type) (if surveyed, state lot and block or group number. If unsurveyed, state size of parcel and general area).

WATER LOT, 8 HA, UNSURVEYED.

Project Description:

Briefly describe your general purpose and goals. This is your chance to explain in your own words, your plans and objectives.

THIS LEASE WILL INCLUDE THE OFF-SHORE AREA OCCUPIED BY THE VESSEL AND BARGE DOCKS.

(SEE PROJECT DESCRIPTION)

Project Location:

Provide an NTS map on a 1:50,000 scale indicating:

- Approximate boundaries of land area under application in metres/feet or milepost or road, as applicable
- Nearby water bodies
- Distance to nearest community
- Existing access if any
- Proposed new access routes
- Use of adjacent land
- Co-ordinates

Indicate approximate area of land under application in hectares: 8

Standard NTS Map Co-ordinates:		Latitude:	66° 33'
Map Sheet Number:	76J	Longitude:	107° 31'

D. CONSTRUCTION PLANS:

Briefly describe any existing building and/or construction of facilities that you plan. Use your sketch for illustration.

- NONE EXISTING.
- SHEET PILE DOCK, FILLED WITH ROCK.

Value of improvements already on the land: NONE

Name of owner of improvements: N/A.

Canada

Describe briefly your planned construction methods and materials:

INSTALL SHEET PILING FROM ICE IN WINTER.
BACKFILL WITH QUARRIED ROCK.

Outline your time schedule for your construction program. Indicate approximate starting, construction stage and completion times:

JANUARY 2006 TO JUNE 2006.

Describe existing and proposed methods of access, and transportation for your project:

EXISTING: BOAT & HELICOPTER.
PROPOSED: BOAT, ROAD & AIRSTRIP.

E. WATER:

Do you plan to use water at your facility(s)? If so, estimate the volume to be used per day:

N/A.

Does your plan involve the alteration of any water course? (ie: construction of dams or diverting natural water flows) If so, describe the proposed changes:

N/A.

How do you plan to dispose of:

Liquid Waste: N/A

Solid Waste: N/A

If you have specific waste treatment equipment in mind, please describe it:

F. OPERATIONS:

Is your use: Year-round ☐ Or: Seasonal ☑

If seasonal, give details: MID-JULY TO LATE OCTOBER EACH YEAR.

How many year round residents will be living at the site: NONE

G. RESOURCE CAPABILITY:

What other general resource activities are taking place on or near your proposed project area, e.g., does the area involve a trapline or any mining activity? Is it an access point for resident anglers, hunters, campers, etc. Is there a registered mineral claim on the project area?

NONE

Do you see any activity listed in your answer to the above affecting your operation, or is your operation a conflict to them? If so, how?

N/A.

Do you plan on using your facilities for other than the applied for purposes? If yes, briefly describe alternate use.

No.

H. FINANCIAL CONSIDERATIONS:

Provide a brief description of the capital costs for your project: #16 MILLION

Site Preparation:	#5 MILLION
Materials for initial construction:	#7 MILLION
Construction Costs:	#4 MILLION

Provide a time framework within which these capital costs will be incurred, ie: estimate costs per phase on your construction schedule (section D)

JULY 2005 TO JULY 2006

Is there any additional information you wish to include:

SEE PROJECT DESCRIPTION

I. FEES:

Land Application Fee ($150.00) (except Government Agencies):	$
GST for all applications ($10.50) (except "Residential"):	$
TOTAL FEES SUBMITTED with this application:	$

PLEASE MAKE CHEQUE/MONEY ORDER PAYABLE TO: "RECEIVER GENERAL FOR CANADA"

I hereby acknowledge and confirm that the filing of this application does not grant me any rights to take, occupy or use the land for which I have applied.

I certify that the information I have given in this application is correct, to the best of my knowledge.

Signature of Applicant:	[signature]	Date: May 12/03.
Signature of Joint Applicant:		Date:

AFFIX COMPANY SEAL, IF APPLICABLE:

Canada

REVISED MAY 12/03

(B)

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Application for Crown Land:	Office Use Only: Application Number:	

Note to the Applicant:

This form is the first step in your application for Federal Crown Lands.

Applications are reviewed by government agencies responsible for land use, and the regulation of activity in the NWT. This form is intended to help both you and government. It is not a legal document, but a means of providing the people who have to deal with your application information needed to decide on the application's merit. Most importantly, in filling out the form you will better understand some of the steps that have to be taken in planning and carrying out a successful enterprise.

You are advised to read the entire application form before you begin to fill it out. The amount of space provided for each question suggests the level of detail expected. However, you may be asked to supply further additional information. This is an application only, and in no way implies the granting of an approval to the applicant.

A. Information on Applicant:

Name in Full:	ANTHONY J. KEEN	Legal Age:	
Address:	C/O SUITE 340, 666 BURRARD ST. VANCOUVER BC V6C 2X8		
Telephone Number: (h)	604-682-4667	Occupation:	PROJECT MANAGER
Telephone Number: (b)		Employer:	BIPR PROJECT
Name of Spouse:		Occupation:	
		Employer:	

Information on Company, Corporation or Association:

Name of Company or Association:	BATHURST INLET PORT & ROAD JOINT VENTURE LTD		
Address:	9839 31 AVE EDMONTON AB T6N 1C5		
Are you registered at the NWT/NUNAVUT Companies Registry:	Yes: ✓ No: ☐		
Telephone Number:	604-682-4667	Type of Business:	CONSTRUCTION & PROJECT OPERATION
Date & Place of Incorporation:	CANADA MAY 1, 2002		

Name and Address of person to whom inquiries related to this application should be addressed:

Name:	A.J. KEEN P.ENG.	Telephone Number:	604-682-4667
Address:	SUITE 340, 666 BURRARD ST, VANCOUVER BC V6C 2X8		

I hereby make application for: Lease: ✓ Purchase: ☐

Lease with Purchase Option: ☐ Reserve (Govt. Only): ☐

Transfer (Govt. Only): ☐

If two or more persons are applying for this land please signify the type of Tenancy desired:

Joint Tenancy: ☐ Tenancy in Common: ☐

Definition:

Joint Tenancy - The primary purpose of Joint Tenancy is the right of survivorship, upon the death of one joint tenant, their interest passes to the other joint tenant automatically, and at length to the last survivor.

Tenancy in Common - A form of ownership whereby each tenant (Owner or Lessee) holds an undivided interest in property. Upon the death of one of the individuals their property interest passes to their heirs.

Purpose the land is to be used for:

Commercial: ☐ Industrial: ✓ Residential: ☐ Other (specify): ☐

B. COMMERCIAL/INDUSTRIAL APPLICATIONS:

Commercial applications may require approvals from the GNWT (Economic Development & Tourism), prior to this Department's issuing any approvals of this application.

Type of industrial or commercial use (describe in detail)

BATHURST INLET DOCK AREA – LAND PORTION

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Are there any waste products produced by this use? YES: ☐ NO: ☑

If YES describe the type of waste, the volume of waste and the disposal method(s) to be used:

Are there any hazardous materials to be stored other than consumer goods? (Fuel, etc.) YES: ☑ NO: ☐

If YES please list the type, estimated quantities and storage method(s).

LUBRICANTS, EXPLOSIVES, CEMENT (QUANTITIES UNKNOWN)

*(Hazardous materials as defined in the Transportation of Dangerous Goods Act and Regulations of the Workplace Hazardous Material Information System).

C. PARCEL DESCRIPTIONS:

General Description of Parcel (Hilly or Flat, Tree Cover, Soil Type) (if surveyed, state lot and block or group number. If unsurveyed, state size of parcel and general area).

HILLSIDE SLOPING TO INLET. UNSURVEYED.
SIZE OF PARCEL 6.3 HA.

Project Description:

Briefly describe your general purpose and goals. This is your chance to explain in your own words, your plans and objectives.

LAND BASED PORTION OF DOCK SITE.

Project Location:

Provide an NTS map on a 1:50,000 scale indicating:

- Approximate boundaries of land area under application in metres/feet or milepost or road, is applicable
- Nearby water bodies
- Distance to nearest community
- Existing access if any
- Proposed new access routes
- Use of adjacent land
- Co-ordinates

Indicate approximate area of land under application in hectares:		6.3 HA.	
Standard NTS Map Co-ordinates:	APPROX.	Latitude:	66° 33'
Map Sheet Number:	76 J	Longitude:	107° 31'

D. CONSTRUCTION PLANS:

Briefly describe any existing building and/or construction of facilities that you plan. Use your sketch for illustration.

NO EXISTING BUILDINGS
NO BUILDINGS PLANNED - ACCESS AND STORAGE ONLY.

Value of improvements already on the land: N/A.

Name of owner of improvements: N/A.

Canada

Describe briefly your planned construction methods and materials:

EXCAVATION OF ROCK FOR DOCK & ROADS.

Outline your time schedule for your construction program. Indicate approximate starting, construction stage and completion times:

AUGUST 2005 TO DECEMBER 2006

Describe existing and proposed methods of access, and transportation for your project:

EXISTING: BOAT & HELICOPTER

PROPOSED: BOAT, ROAD & AIRSTRIP

E. WATER:

Do you plan to use water at your facility(s)? If so, estimate the volume to be used per day:

N/A

Does your plan involve the alteration of any water course? (ie: construction of dams or diverting natural water flows) If so, describe the proposed changes:

No.

How do you plan to dispose of:

Liquid Waste: N/A

Solid Waste: N/A

If you have specific waste treatment equipment in mind, please describe it:

F. OPERATIONS:

Is your use: Year-round ☑ Or: Seasonal ☐

If seasonal, give details:

How many year round residents will be living at the site: NONE

G. RESOURCE CAPABILITY:

What other general resource activities are taking place on or near your proposed project area, e.g., does the area involve a trapline or any mining activity? Is it an access point for resident anglers, hunters, campers, etc. Is there a registered mineral claim on the project area?

NONE KNOWN.

Do you see any activity listed in your answer to the above affecting your operation, or is your operation a conflict to them? If so, how?
NO.
Do you plan on using your facilities for other than the applied for purposes? If yes, briefly describe alternate use.
NO.
H. FINANCIAL CONSIDERATIONS:
Provide a brief description of the capital costs for your project: APPROX $/MILLION.
Site Preparation: INCLUDED IN COST OF DOCK.
Materials for initial construction:
Construction Costs: $/MILLION.
Provide a time framework within which these capital costs will be incurred, ie: estimate costs per phase on your construction schedule (section D)
SEE PROJECT DESCRIPTION
Is there any additional information you wish to include:
I. FEES:

Land Application Fee ($150.00) (except Government Agencies):	$
GST for all applications ($10.50) (except "Residential"):	$
TOTAL FEES SUBMITTED with this application:	$

PLEASE MAKE CHEQUE/MONEY ORDER PAYABLE TO: "RECEIVER GENERAL FOR CANADA"

I hereby acknowledge and confirm that the filing of this application does not grant me any rights to take, occupy or use the land for which I have applied.

I certify that the information I have given in this application is correct, to the best of my knowledge.

Signature of Applicant:	[signature]	Date: May 12/03.
Signature of Joint Applicant:		Date:

AFFIX COMPANY SEAL, IF APPLICABLE:

Canada

REVISED MAY 12/03

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

(2)

Application for Crown Land:	Office Use Only Application Number:

Note to the Applicant:

This form is the first step in your application for federal Crown Lands.

Applications are reviewed by government agencies responsible for land use and the regulation of activity in the NWT. This form is intended to help both you and government. It is not a legal document, but a means of providing the people who have to deal with your application information needed to decide on the application's merit. Most importantly, in filling out the form you will better understand some of the things that have to be taken in planning and carrying out a successful enterprise.

You are advised to read the entire application form before you begin to fill it out. The amount of space provided for each question suggests the level of detail expected. However, you may be asked to supply further and more information. This is an application only and in no way implies the granting of land tenure to the applicant.

A. Information on Applicant:

Name in Full	ANTHONY J. KEEN	Legal Age:	
Address	C/O SUITE 340, 666 BURRARD ST. VANCOUVER BC V6C 2X8		
Telephone Number (H)	604-682-4667	Occupation	PROJECT MANAGER
Telephone Number (W)		Employer	BIPR PROJECT
Name of Spouse		Occupation	
		Employer	

Information on Company, Corporation or Association:

Name of Company or Association	BATHURST INLET PORT & ROAD JOINT VENTURE LTD		
Address	9839 31 AVE EDMONTON AB T6N 1C5		
Are you registered in the ~~NWT~~ NUNAVUT Companies Registry	Yes ✓ No ☐		
Telephone Number	604-682-4667	Type of Business	CONSTRUCTION & PROJECT OPERATION
Date & Place of Incorporation	CANADA MAY 1, 2002		

Name and Address of person to whom inquiries related to this application should be addressed:

Name	A.J. KEEN P.ENG.	Telephone Number	604-682-4667
Address	SUITE 340, 666 BURRARD ST, VANCOUVER BC V6C 2X8		

I hereby make application to: Lease ✓ Purchase ☐
Lease with Purchase Option ☐ Reserve (Govt. Only) ☐
Transfer (Govt. Only) ☐

If two or more persons are applying for this land please signify the type of Tenancy desired:
Joint Tenancy ☐ Tenancy in Common ☐

Definition:

Joint Tenancy - The primary purpose of Joint Tenancy is the right of survivorship. Upon the death of one joint tenant, their interest passes to the other joint tenant automatically and at length to the last survivor.

Tenancy in Common - A form of ownership whereby each tenant (Owner or Lessee) holds an undivided interest in property. Upon the death of one of the individuals their property interest passes to their heirs.

Purpose the land is to be used for:
Commercial ☐ Industrial ✓ Residential ☐ Other (specify) ☐

B. COMMERCIAL/INDUSTRIAL APPLICATIONS:

Commercial applications may require approvals from the GNWT (Economic Development & Tourism) prior to this Department's issuing any approvals of this application.

Type of industrial or commercial use (describe in detail):

MAIN CAMP AREA, INCLUDING MAINTENANCE SHOP AND DIESEL POWER PLANT AND SEWAGE TREATMENT PLANT.

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Are there any waste products produced by this use? YES: ☑ NO: ☐

If YES describe the type of waste, the volume of waste and the disposal methods) to be used:

1. SEWAGE FROM CAMP – TO BE TREATED PRIOR TO DISPOSAL
2. WASTE OIL – TO BE CONSUMED IN WASTE OIL BURNER.
3. GARBAGE – TO BE INCINERATED & LANDFILLED.

Are there any hazardous materials to be stored other than consumer goods? (Fuel, etc.) YES: ☑ NO: ☐

If YES please list the type, estimated quantities and storage method(s).

FUEL & LUBRICANTS – SMALL QUANTITIES (DAY TANKS)

*(Hazardous materials as defined in the Transportation of Dangerous Goods Act and Regulations of the Workplace Hazardous Material Information System).

C. PARCEL DESCRIPTIONS:

General Description of Parcel (Hilly or Flat, Tree Cover, Soil Type) (If surveyed state lot and block or group number. If unsurveyed, state size of parcel and general area).

FLAT TUNDRA, SLOPING TO INLET. UNSURVEYED
PARCEL SIZE 7HA.

Project Description:

Briefly describe your general purpose and goals. This is your chance to explain in your own words, your plans and objectives.

CAMP ACCOMMODATION FOR 150 SEASONAL WORKERS.
EQUIPMENT REPAIR SHOP
DIESEL POWER PLANT.

Project Location:

Provide an NTS map on a 1:50,000 scale indicating:

- Approximate boundaries of land area under application in metres/feet or m/depost or road, is applicable
- Nearby water bodies
- Distance to nearest community
- Existing access if any
- Proposed new access routes
- Use of adjacent land
- Co-ordinates

Indicate approximate area of land under application in hectares: 7HA.

Standard NTS Map Co-ordinates:	APPROX.	Latitude:	66° 33'
Map Sheet Number:	76 J	Longitude:	107° 32'

D. CONSTRUCTION PLANS:

Briefly describe any existing building and/or construction of facilities that you plan. Use your sketch for illustration.

NONE EXISTING
CAMP, MAINTENANCE SHOP, POWER PLANT, SEWAGE PLANT.

Value of improvements already on the land: NONE

Name of owner of improvements: N/A

Canada

Describe briefly your planned construction methods and materials:

STANDARD MODULAR CONSTRUCTION FOR CAMP.
SHOP PRE-FAB, STEEL BUILDING. CONTAINERIZED POWER PLANT.

Outline your time schedule for your construction program. Indicate approximate starting, construction stage and completion times:

AUGUST 2005 TO DECEMBER 2006.

Describe existing and proposed methods of access, and transportation for your project:

EXISTING: BOAT & HELICOPTER
PROPOSED: BOAT, ROAD & AIRSTRIP.

E. WATER:

Do you plan to use water at your facility(s)? If so, estimate the volume to be used per day:

WATER WILL BE PROVIDED BY A DE-SALINATION PLANT

Does your plan involve the alteration of any water course? (ie: construction of dams or diverting natural water flows) If so, describe the proposed changes:

No.

How do you plan to dispose of:

Liquid Waste: SEWAGE TREATMENT PLANT

Solid Waste: COMBUSTIBLE BY INCINERATION, BALANCE EXPORTED.

If you have specific waste treatment equipment in mind, please describe it:

INDUSTRIAL INCINERATOR FOR GARBAGE; WASTE OIL BURNER FOR USED ENGINE OIL & LUBRICANTS.

F. OPERATIONS:

Is your use: Year-round ☑ Or: Seasonal ☐

If seasonal, give details:

How many year round residents will be living at the site: 17-150

G. RESOURCE CAPABILITY:

What other general resource activities are taking place on or near your proposed project area, e.g., does the area involve a trapline or any mining activity? Is it an access point for resident anglers, hunters, campers, etc. Is there a registered mineral claim on the project area?

NONE KNOWN.

Do you see any activity listed in your answer to the above affecting your operation, or is your operation a conflict to them? If so, how?
NO.
Do you plan on using your facilities for other than the applied for purposes? If yes, briefly describe alternate use.
NO.
H. FINANCIAL CONSIDERATIONS:
Provide a brief description of the capital costs for your project: $25 MILLION
Site Preparation: $1 MILLION
Materials for initial construction: $20 MILLION
Construction Costs: $5 MILLION
Provide a time framework within which these capital costs will be incurred, ie: estimate costs per phase on your construction schedule (section D)
AUGUST 2005 TO DECEMBER 2006.
Is there any additional information you wish to include:
SEE PROJECT DESCRIPTION.
L. FEES:

Land Application Fee ($150.00) (except Government Agencies):	$
GST for all applications ($10.50) (except "Residential"):	$
TOTAL FEES SUBMITTED with this application:	$

PLEASE MAKE CHEQUE/MONEY ORDER PAYABLE TO: "RECEIVER GENERAL FOR CANADA"

I hereby acknowledge and confirm that the filing of this application does not grant me any rights to take, occupy or use the land for which I have applied.

I certify that the information I have given in this application is correct, to the best of my knowledge.

Signature of Applicant:	[signature]	Date: May 12/03.
Signature of Joint Applicant:		Date:

AFFIX COMPANY SEAL, IF APPLICABLE:

Canada

REVISED MAY 12/03

(5)

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Application for Crown Land:	Office Use Only: Application Number:

Note to the Applicant:

This form is the first step in your application for Federal Crown Lands.

Applications are reviewed by government agencies responsible for land use, and the regulation of activity in the NWT. This form is intended to help both you and government. It is not a 'legal' document, but a means of providing the people who have to deal with your application information needed to decide on the application's merit. Most importantly, in filling out this form you will better understand some of the steps that have to be taken in planning and carrying out a successful enterprise.

You are advised to read the entire application form before you begin to fill it out. The amount of space provided for each question suggests the level of detail expected. However, you may be asked to supply further additional information. This is an application only, and in no way implies the granting of an approval to the applicant.

A. Information on Applicant:

Name in Full:	ANTHONY J. KEEN	Legal Age:	
Address:	C/O SUITE 340, 666 BURRARD ST. VANCOUVER BC V6C 2X8		
Telephone Number: (H)	604-682-4667	Occupation:	PROJECT MANAGER
Telephone Number: (W)		Employer:	BIPR PROJECT
Name of Spouse:		Occupation:	+
		Employer:	-

Information on Company, Corporation or Association:

Name of Company or Association:	BATHURST INLET PORT & ROAD JOINT VENTURE LTD				
Address:	9839 31 AVE EDMONTON AB T6N 1C5				
Are you registered at the NWT/NUNAVUT Companies Registry:	Yes: ☑	No: ☐			
Telephone Number:	604-682-4667	Type of Business:	CONSTRUCTION & PROJECT OPERATION	Date & Place of Incorporation:	CANADA MAY 1, 2002

Name and Address of person to whom inquiries related to this application should be addressed:

Name:	A.J. KEEN P.ENG.	Telephone Number:	604-682-4667
Address:	SUITE 340, 666 BURRARD ST, VANCOUVER BC V6C 2X8		

I hereby make application to: Lease: ☑ Purchase: ☐
Lease with Purchase Option: ☐ Reserve (Govt. Only): ☐
Transfer (Govt. Only): ☐

If two or more persons are applying for this land please signify the type of Tenancy desired:
Joint Tenancy: ☐ Tenancy in Common: ☐

Definition:

Joint Tenancy - The primary purpose of Joint Tenancy is the right of survivorship, upon the death of one joint tenant, their interest passes to the other joint tenant automatically, and at length to the last survivor.

Tenancy in Common - A form of ownership whereby each tenant (Owner or Lessee) holds an undivided interest in property. Upon the death of one of the individuals their property interest passes to their heirs.

Purpose the land is to be used for:
Commercial: ☐ Industrial: ☑ Residential: ☐ Other (specify): ☐

B. COMMERCIAL/INDUSTRIAL APPLICATIONS:

Commercial applications may require approvals from the GNWT (Economic Development & Tourism), prior to this Department's issuing any approvals of this application.

Type of industrial or commercial use (describe in detail)

FUEL STORAGE TANK FARM
FUEL TRANSPORT TRUCK LOADING SYSTEM

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Are there any waste products produced by this use? YES: ☑ NO: ☐

If YES describe the type of waste, the volume of waste and the disposal method(s) to be used:

FUEL OIL DRIPS/SPILLS INSIDE BERM
INCINERATOR / WASTE OIL BURNER

Are there any hazardous materials to be stored other than consumer goods? (Fuel, etc.) YES: ☑ NO: ☐

If YES please list the type, estimated quantities and storage method(s).

DIESEL FUEL - APROX. 180 MILLION LITRES MAX.

*Hazardous materials as defined in the Transportation of Dangerous Goods Act and Regulations of the Workplace Hazardous Material Information System).

C. PARCEL DESCRIPTIONS:

General Description of Parcel (Hilly or Flat, Tree Cover, Soil Type) (if surveyed, state lot and block or group number. If unsurveyed, state size of parcel and general area).

FLAT TUNDRA - TOP OF HILL
PARCEL SIZE - 53 HA. UNSURVEYED.

Project Description:

Briefly describe your general purpose and goals. This is your chance to explain in your own words, your plans and objectives.

FUEL STORAGE FOR DELIVERY BY TRUCKS TO MINES & BARGES TO COMMUNITIES.

Project Location:

Provide an NTS map on a 1:50,000 scale indicating:

- Approximate boundaries of land area under application in metres/feet or infepost or road, is applicable
- Nearby water bodies
- Distance to nearest community
- Existing access if any
- Proposed new access routes
- Use of adjacent land
- Co-ordinates

Indicate approximate area of land under application in hectares:			
Standard NTS Map Co-ordinates:		Latitude:	66° 32'
Map Sheet Number:	76J	Longitude:	107° 31'

D. CONSTRUCTION PLANS:

Briefly describe any existing building and/or construction of facilities that you plan. Use your sketch for illustration.

NONE EXISITING
10 FUEL TANKS, PIPING & BERMS.

Value of improvements already on the land: NONE

Name of owner of improvements: N/A

Canada

Describe briefly your planned construction methods and materials:

FUEL TANKS WILL BE STEEL WELDED CONSTRUCTION ERECTED ON SITE.

Outline your time schedule for your construction program, indicate approximate starting, construction stage and completion times:

SEPTEMBER 2005 TO DECEMBER 2006

Describe existing and proposed methods of access, and transportation for your project:

EXISTING: BOAT & HELICOPTER
PROPOSED: SEA, ROAD & AIRSTRIP.

E. WATER:

Do you plan to use water at your facility(s)? If so, estimate the volume to be used per day:

NO.

Does your plan involve the alteration of any water course? (ie; construction of dams or diverting natural water flows) If so, describe the proposed changes:

NO.

How do you plan to dispose of:

Liquid Waste:

Solid Waste:

If you have specific waste treatment equipment in mind, please describe it:

OIL SPILLS OR CONTAMINATED SOILS WILL BE BURNT IN A WASTE OIL BURNER. LARGE SPILLS MUST BE CONTAINED AND REMOVED FROM SITE.

F. OPERATIONS:

Is your use: Year-round ☑ Or: Seasonal ☐

If seasonal, give details:

How many year round residents will be living at the site: NONE.

G. RESOURCE CAPABILITY:

What other general resource activities are taking place on or near your proposed project area, e.g., does the area involve a trapline or any mining activity? Is it an access point for resident anglers, hunters, campers, etc. Is there a registered mineral claim on the project area?

NONE KNOWN.

Canada

Do you see any activity listed in your answer to the above affecting your operation ... (partly illegible)

NO.

Do you plan on using your facilities for other than the applied for purposes? If yes, briefly describe alternate use.

NO.

H. FINANCIAL CONSIDERATIONS:

Provide a brief description of the capital costs for your project:	$42 MILLION
Site Preparation:	$0.5 MILLION
Materials for initial construction:	$33 MILLION
Construction Costs:	$8.5 MILLION

Provide a time framework within which these capital costs will be incurred (ie. estimate costs per phase of your construction schedule (Section D))

SEPTEMBER 2005 TO DECEMBER 2006

Is there any additional information you wish to include.

SEE PROJECT DESCRIPTION.

I. FEES

Land Application Fee ($150.00) (except Government Agencies)	$
GST for all applications ($10.50) (except "Residential")	$
TOTAL FEES SUBMITTED with this application:	$

PLEASE MAKE CHEQUE/MONEY ORDER PAYABLE TO: "RECEIVER GENERAL FOR CANADA"

I hereby acknowledge and confirm that the filing of this application does not grant me any rights to use, occupy or use the land for which I have applied.

I certify that the information I have given in this application is correct, to the best of my knowledge.

Signature of Applicant:	[signature]	Date: May 12/03.
Signature of Joint Applicant:		Date:

AFFIX COMPANY SEAL, IF APPLICABLE:

Canada

REVISED MAY 12/03

(2)

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

Application for Crown Land:	Office Use Only Application Number:	

Note to the Applicant:

This form is the first step in your application for Federal Crown Lands.

Applications are reviewed by government agencies responsible for land use and the regulation of activity in the NWT. This form is intended to help both you and government. It is not a legal document, but a means of providing the people who have to deal with your application information needed to decide on the application's merit. Most importantly, in filling out the form you will better understand some of the steps that have to be taken in planning and carrying out a successful enterprise.

You are advised to read the entire application form before you begin to fill it out. The amount of space provided for each question suggests the level of detail expected. However, you may be asked to supply further additional information. This is an application only, and in no way implies the granting of an approval to the applicant.

A. Information on Applicant:

Name in Full	ANTHONY J. KEEN	Legal Age	
Address	c/o SUITE 340, 666 BURRARD ST. VANCOUVER BC V6C 2X8		
Telephone Number (h)	604-682-4667	Occupation	PROJECT MANAGER
Telephone Number (o)		Employer	BIPR PROJECT
Name of Spouse		Occupation	
		Employer	

Information on Company, Corporation or Association:

Name of Company or Association	BATHURST INLET PORT & ROAD JOINT VENTURE LTD				
Address	9839 31 AVE EDMONTON AB T6N 1C5				
Are you registered at the ~~NWT~~ NUNAVUT Companies Registry	Yes ✓ No ☐				
Telephone Number	604-682-4667	Type of Business	CONSTRUCTION & PROJECT OPERATION	Date & Place of Incorporation	CANADA MAY 1, 2002

Name and Address of person to whom inquiries related to this application should be addressed:

Name	A.T. KEEN P.ENG.	Telephone Number	604-682-4667
Address	SUITE 340, 666 BURRARD ST, VANCOUVER BC V6C 2X8		

I hereby make application to: Lease ✓ Purchase ☐

Lease with Purchase Option ☐ Reserve (Govt. Only) ☐

Transfer (Govt. Only) ☐

If two or more persons are applying for this land please signify the type of Tenancy desired

Joint Tenancy ☐ Tenancy in Common ☐

Definition:

Joint Tenancy - The primary purpose of Joint Tenancy is the right of survivorship: upon the death of one joint tenant, the interest passes to the other joint tenant automatically, and at length to the last survivor.

Tenancy in Common - A form of ownership whereby each tenant (Owner or Lessee) holds an undivided interest in property. Upon the death of one of the individuals their property interest passes to their heirs.

Purpose the land is to be used for:

Commercial ☐ Industrial ✓ Residential ☐ Other (specify) ☐

B. COMMERCIAL/INDUSTRIAL APPLICATIONS

Commercial applications may require approvals from the GNWT (Economic Development & Tourism), prior to this Department's issuing any approvals of this application.

- Type of industrial or commercial use (describe in detail)

AIRSTRIP TO SERVICE INDUSTRIAL SITE.

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Are there any waste products produced by this use? YES ☐ NO ✓

If YES describe the type of waste, the volume of waste and the disposal method(s) to be used:

Are there any hazardous materials to be stored other than consumer goods? (Fuel, etc.) YES ☐ NO ✓

If YES please list the type, estimated quantities and storage method(s):

*Hazardous materials as defined in the Transportation of Dangerous Goods Act and Regulations or the Workplace Hazardous Materials Information System

C. PARCEL DESCRIPTIONS:

General Description of Parcel (Hilly or Flat, Tree Cover, Soil Type) If surveyed, state lot, plan and parcel number. If unsurveyed, state size of parcel and general area:

FLAT TUNDRA
PARCEL SIZE 28 HA UNSURVEYED

Project Description

Briefly describe your general purpose and goals. This is your chance to explain in your own words, your plans and objectives.

AIRSTRIP FOR SMALL PLANES, 1,200m LONG.

Project Location:

Provide an NTS map on a 1:50,000 scale indicating:

- Approximate boundaries of land area under application in metres/feet or milepost or road, is applicable
- Nearby water bodies
- Distance to nearest community
- Existing access if any
- Proposed new access routes
- Use of adjacent land
- Co-ordinates

Indicate approximate area of land under application in hectares:

Standard NTS Map Co-ordinates		Latitude	66° 32′
Map Sheet Number	76T	Longitude	107° 29′

D. CONSTRUCTION PLANS.

Briefly describe any existing building and/or construction of facilities that you plan. Use your sketch for illustration.

NONE EXISTING
NONE PROPOSED.

Value of improvements already on the land: NONE

Name of owner of improvements: N/A

Canada

Describe briefly your planned construction methods and materials:

QUARRIED ROCK AND GRANULAR SURFACE.

Outline your time schedule for your construction program. Indicate approximate starting, construction stages and completion times.

SEPTEMBER 2005 TO DECEMBER 2006

Describe existing and proposed methods of access, and transportation for your project.

EXISTING: SEA & HELICOPTER

PROPOSED: SEA, ROAD & AIRSTRIP

E. WATER

Do you plan to use water at your facility(s)? If so, estimate the volume to be used per day.

No.

Does your plan involve the alteration of any water course? (i.e. construction of dams or diverting natural water flows) If so, describe the proposed changes.

No.

How do you plan to dispose of:

Liquid Waste:

Solid Waste:

If you have specific waste treatment equipment in mind, please describe it:

N/A.

F. OPERATIONS:

Is your use: Year-round ☑ Or Seasonal ☐

If seasonal, give details.

How many year round residents will be living at the site. NONE

G. RESOURCE CAPABILITY:

What other general resource activities are taking place on or near your proposed project area, e.g., does the area involve a trapline or any mining activity? Is it an access point for resident anglers, hunters, campers, etc. Is there a registered mineral claim on the project area?

NON KNOWN.

Do you see any activity listed in your answer to the above affecting your operation, or is your operation a conflict to them? If so, how?

NO.

Do you plan on using your facilities for other than the applied for purposes? If yes, briefly describe alternate use.

NO.

H. FINANCIAL CONSIDERATIONS:

Provide a brief description of the capital costs for your project. $1 MILLION.

Site Preparation

Materials for initial construction

Construction Costs

Provide a time framework within which these capital costs will be incurred (ie. estimate costs per phase on your construction schedule (section D)

SEPTEMBER 2005 TO DECEMBER 2006

Is there any additional information you wish to include.

SEE PROJECT DESCRIPTION.

L. FEES:

Land Application Fee ($150.00) (except Government Agencies):	$
GST for all applications ($10.50) (except "Residential"):	$
TOTAL FEES SUBMITTED with this application	$

PLEASE MAKE CHEQUE/MONEY ORDER PAYABLE TO: "RECEIVER GENERAL FOR CANADA"

I hereby acknowledge and confirm that the filing of this application does not grant me any rights to take possession or use the land for which I have applied.

I certify that the information I have given in this application is correct to the best of my knowledge.

Signature of Applicant		Date: May/12/03.
Signature of Joint Applicant		Date:

AFFIX COMPANY SEAL IF APPLICABLE

Canada

REVISED MAY 12/03

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

(F)

Application for Crown Land:	Office Use Only: Application Number:	

Note to the Applicant:

This form is the first step in your application for Federal Crown Lands.

Applications are reviewed by government agencies responsible for land use, and the regulation of activity in the NWT. This form is intended to help both you and government. It is not a legal document, but a means of providing the people who have to deal with your application information needed to decide on the application's merit. Most importantly, in filling out the form you will better understand some of the steps that have to be taken in planning and carrying out a successful enterprise.

You are advised to read the entire application form before you begin to fill it out. The amount of space provided for each question suggests the level of detail expected. However, you may be asked to supply further additional information. This is an application only, and in no way implies the granting of an approval to the applicant.

A. Information on Applicant:

Name in Full:	ANTHONY J. KEEN	Legal Age:	
Address:	C/O SUITE 340, 666 BURRARD ST. VANCOUVER BC V6C 2X8		
Telephone Number: (h)	604-682-4667	Occupation:	PROJECT MANAGER
Telephone Number: (w)		Employer:	BIPR PROJECT
Name of Spouse:		Occupation:	
		Employer:	

Information on Company, Corporation or Association:

Name of Company or Association:	BATHURST INLET PORT & ROAD JOINT VENTURE LTD				
Address:	9839 31 AVE EDMONTON AB T6N 1C5				
Are you registered at the NWT/NUNAVUT Companies Registry:	Yes: ☑	No: ☐			
Telephone Number:	604-682-4667	Type of Business:	CONSTRUCTION & PROJECT MANAGEMENT	Date & Place of Incorporation:	CANADA MAY 1, 2002

Name and Address of person to whom inquiries related to this application should be addressed:

Name:	A.J. KEEN P.ENG.	Telephone Number:	604-682-4667
Address:	SUITE 340, 666 BURRARD ST, VANCOUVER BC V6C 2X8		

I hereby make application to: Lease: ☑ Purchase: ☐

Lease with Purchase Option: ☐ Reserve (Govt. Only): ☐

Transfer (Govt. Only): ☐

If two or more persons are applying for this land please signify the type of Tenancy desired:

Joint Tenancy: ☐ Tenancy in Common: ☐

Definition:

Joint Tenancy - The primary purpose of Joint Tenancy is the right of survivorship, upon the death of one joint tenant, their interest passes to the other joint tenant automatically, and at length to the last survivor.

Tenancy in Common - A form of ownership whereby each tenant (Owner or Lessee) holds an undivided interest in property. Upon the death of one of the individuals their property interest passes to their heirs.

Purpose the land is to be used for:

Commercial: ☐ Industrial: ☑ Residential: ☐ Other (specify): ☐

B. COMMERCIAL/INDUSTRIAL APPLICATIONS:

Commercial applications may require approvals from the GNWT (Economic Development & Tourism), prior to this Department's issuing any approvals of this application.

Type of industrial or commercial use (describe in detail)

ALL-WEATHER ROAD - BATHURST INLET TO CONTWOYTO LAKE.

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Are there any waste products produced by this use? YES: ☐ NO: ☑

If YES describe the type of waste, the volume of waste and the disposal method(s) to be used:

Are there any hazardous materials to be stored other than consumer goods? (Fuel, etc.) YES: ☐ NO: ☑

If YES please list the type, estimated quantities and storage method(s).

*(Hazardous materials as defined in the Transportation of Dangerous Goods Act and Regulations of the Workplace Hazardous Material Information System).

C. PARCEL DESCRIPTIONS:

General Description of Parcel (Hilly or Flat, Tree Cover, Soil Type) (If surveyed, state lot and block or group number. If unsurveyed, state size of parcel and general area).

MIXED ROLLING TUNDRA

SIZE OF PARCEL 211.2 HA. UNSURVEYED

Project Description:

Briefly describe your general purpose and goals. This is your chance to explain in your own words, your plans and objectives.

CONSTRUCTION OF A ROCK/GRANULAR ALL-WEATHER ROAD FROM THE BATHURST INLET PORT SITE TO CONTWOYTO LAKE.

Project Location:

Provide an NTS map on a 1:50,000 scale indicating:

- Approximate boundaries of land area under application in metres/feet or milepost or road, is applicable
- Nearby water bodies
- Distance to nearest community
- Existing access if any
- Proposed new access routes
- Use of adjacent land
- Co-ordinates

Indicate approximate area of land under application in hectares: 211.2			
Standard NTS Map Co-ordinates:		Latitude:	66° 32' TO 65° 28'
Map Sheet Number:	76, E, F, G, J.	Longitude:	107° 31' TO 110° 10'

D. CONSTRUCTION PLANS:

Briefly describe any existing building and/or construction of facilities that you plan. Use your sketch for illustration.

NONE EXISTING.

NONE PLANNED (ROADS & QUARRIES ONLY)

Value of improvements already on the land: NONE

Name of owner of improvements: N/A.

Canada

Describe briefly your planned construction methods and materials:

QUARRY AND CRUSH ROCK.
CONSTRUCT ROAD USING LARGE MINING EQUIPMENT.
(SEE PROJECT DESCRIPTION)

Outline your time schedule for your construction programs. Indicate approximate starting, construction stage and completion times:

SEPTEMBER 2005 TO DECEMBER 2006

Describe existing and proposed methods of access, and transportation for your project:

EXISTING: SEA, HELICOPTER, ICE ROAD
PROPOSED: SEA, AIRSTRIP, ICE ROAD.

E. WATER:

Do you plan to use water at your facility(s)? If so, estimate the volume to be used per day:

No.

Does your plan involve the alteration of any water course? (ie: construction of dams or diverting natural water flows) If so, describe the proposed changes:

No.

How do you plan to dispose of:

Liquid Waste:

Solid Waste:

If you have specific waste treatment equipment in mind, please describe it:

N/A.

F. OPERATIONS:

Is your use: Year-round ☐ Or Seasonal ☑

If seasonal, give details: CONSTRUCTION: JANUARY – APRIL / AUGUST TO DECEMBER
OPERATIONS: JANUARY TO APRIL
MAINTENANCE: JULY – AUGUST.

How many year round residents will be living at the site: NONE

G. RESOURCE CAPABILITY:

What other general resource activities are taking place on or near your proposed project area, e.g., does the area involve a trapline or any mining activity? Is it an access point for resident anglers, hunters, campers, etc. Is there a registered mineral claim on the project area?

NONE KNOWN.

Do you see any activity listed in your answer to the above affecting your operation, or is your operation a conflict to them? If so, how?

No.

Do you plan on using your facilities for other than the applied for purposes? If yes, briefly describe alternate use.

No.

H. FINANCIAL CONSIDERATIONS:

Provide a brief description of the capital costs for your project: $80 MILLION

Site Preparation:	
Materials for initial construction:	
Construction Costs:	

Provide a time framework within which these capital costs will be incurred, ie; estimate costs per phase on your construction schedule (section D)

SEPTEMBER 2005 TO DECEMBER 2006

Is there any additional information you wish to include:

SEE PROJECT DESCRIPTION.

L. FEES:

Land Application Fee ($150.00) (except Government Agencies):	$
GST for all applications ($10.50) (except "Residential"):	$
TOTAL FEES SUBMITTED with the application:	$

PLEASE MAKE CHEQUE/MONEY ORDER PAYABLE TO: "RECEIVER GENERAL FOR CANADA"

I hereby acknowledge and confirm that the filing of this application does not grant me any rights to take, occupy or use the land for which I have applied.

I certify that the information I have given in this application is correct, to the best of my knowledge.

Signature of Applicant:	[signature]	Date: May 12/03.
Signature of Joint Applicant:		Date:

AFFIX COMPANY SEAL, IF APPLICABLE:

Canada

APPENDIX 5
LEGAL OPINION, PART 5 vs. PART 6

Fasken Martineau DuMoulin LLP
Barristers and Solicitors
Patent and Trade-mark Agents
Vancouver

FASKEN MARTINEAU

MEMORANDUM OF LAW

To: Tony Keen

Date: May 8, 2003

From: David H. Searle, C.M., Q.C.

File/Matter No.: BAT00114

Client: Bathurst Inlet Port and Road Project Proposal

You have forwarded to me, among other things, a letter dated April 10, 2003 from the Honourable Robert D. Nault, Minister of Indian Affairs and Northern Development, directed to Ms. Elizabeth Copland, Chair, Nunavut Impact Review Board ("NIRB") as well as a letter dated April 14, 2003, from Stephanie Briscoe, Executive Director, of NIRB direct to Mr. Charlie Lyall and Mr. Mervyn Hempenstall, on behalf of the Bathurst Inlet Port and Road Project. The letter from NIRB asks for your response on or before May 12, 2003 in respect of two matters. The information requested by NIRB is designed to assist them in re-screening the project by receiving from you a revised project proposal plus any new information that you might have that would fall within Article 12.5.2(i) to (j) and 12.5.5 of the Nunavut Land Claim Agreement ("NLCA").

The Minister's request for a re-screening is seemingly justified by the proponent having formally notified NIRB and various regulators in November, 2002 of changes to certain components of the project.

Legal Issue

The underlying legal issue, simply put, is whether NIRB's requested review should proceed under Part 5 or under Part 6 of the NLCA?

The issue arises in the following way. Pursuant to Article 12.4.4, upon receipt of a project proposal, NIRB is required to screen the proposal and to indicate to the Minister in writing whether the proposal should proceed without a review, or whether the proposal requires a review under Part 5 or 6. In this case, NIRB has decided that a review is required and so recommended to the Minister, stating as they are required to do, that the proposal requires review under Part 5 or 6.

This then takes us to Article 12.4.7 of the NCLA, which provides that where NIRB indicates to the Minister that a proposal requires review, the Minister shall "**where required, by law or otherwise**, refer the proposal to the Minister of the environment for review by a federal environmental assessment panel…". That is the review contemplated pursuant to Part 6.

Further, where a proposal is not to be reviewed by a federal environmental assessment panel, then the Minister is required to refer the proposal to NIRB for a review, which is a Part 5 review.

In our view, the keywords are "**where required, by law or otherwise**". Simply put, we know of no law that requires the Minister, in these circumstances, to refer the proposal to the Minister of the environment for review by a federal environmental assessment panel. This position is ably stated in a letter dated March 18, 2003, directed to the Honourable Robert Nault from Kathy Towtongie, President, Nunavut Tunngavik Inc. In coming to this conclusion, we have reviewed the *Canadian Environmental Assessment Act* ("CEAA") and we particularly considered the applicability of Section 48(1)(b) of CEAA. We have concluded, however, that Section 48(1)(b) does not apply because the reference there to the "Minister" is not to the Minister of Indian Affairs and Northern Development but rather to the Minister of the Environment. That distinction, in our opinion, is sufficient to make that section inapplicable. Hence the only appropriate review is a Part 5 review by NIRB.