

TRAIL AREA DEPOSIT EXECUTIVE SUMMARY

Please find enclosed the City of Iqaluit's application for a Type "B" Water Licence for the development of an access road and operation of a new quarry which will be referred to as the Trail Area Deposit. The City of Iqaluit is proposing to hold the Type "B" Water Licence for a period of three years as opposed to a five year period as we are planning to roll the operation of the Trail Area Deposit into our Type "A" Water Licence (No. 3AM-IQA0611) prior to its expiration.

The City is currently faced with a tight schedule to access the Trail Area Deposit and to have it operational by June/July 2007. It is recognized that this is a very ambitious schedule due to the length of time required for regulatory bodies such as the Nunavut Water Board to review various applications and because of the current workload of the NWB. We do however request that our application for a Type "B" Water Licence for the Trail Area Deposit be expedited as much as possible and for the application to be reviewed within 30 days.

Background:

The need for the City of Iqaluit to access a new granular extraction site has come to the forefront during the last 12 month period as a result of several stakeholder meetings and a number of large scale projects occurring within the City. It has been identified that the North 40 Quarry is quickly becoming depleted of high quality granular material for these projects to go ahead and due to the myriad of contamination issues within the North 40.

The Trail Area Deposit was identified as a result of the Evaluation of the Northwest Iqaluit Aggregate Deposit which took place from June to October 2006. The Northwest Iqaluit area was first identified by Indian and Northern Affairs Canada (INAC) in the summer of 2005 when INAC completed a Ground Penetrating Radar (GPR) Survey of areas within a 5 km radius of the City of Iqaluit. During the preliminary evaluation the Northwest Iqaluit Aggregate deposit it was estimated that the site could contain reserves of over fourteen million cubic metres.

With the preliminary evaluation completed a more detailed evaluation of the Northwest Iqaluit Aggregate site was required. A formal evaluation of the site began in June of 2006. The individual aggregate deposits were outlined using a handheld GPS and downloaded and plotted in AutoCAD to produce a map of the aggregate area. During the evaluation of the Northwest Iqaluit Aggregate Site a search for aggregate for road building along the trail going to the Northwest Iqaluit Aggregate Site resulted in the discovery of the Trail Area Deposit site.

Trail Area Deposit:

The Trail Area Deposit is located in the valley between the North 40 gravel pit and the Northwest Iqaluit Aggregate site. A Ground Penetrating Radar Survey was completed by EBA please see attached report for further details as well as a report on the evaluation of the Northwest Iqaluit Aggregate Site.

The Trail Area Deposit site is approximately 1.3 kms north of Upper Base and should provide approximately 10 to 12 years of aggregate material for the City of Iqaluit based on a yearly

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consumption of 100,000 cubic metres. Sieve testing of the samples taken from the Trail Area indicate that approximately 85% of the aggregate material in the area consists of gravel.

There is one minor water crossing along the access road that will be addressed with the installation of a culvert. It is our understanding the water crossing is non fish bearing as it freezes through the course bed during the winter months. The Department of Fisheries & Oceans has been contacted to provide confirmation that this crossing is indeed non fish bearing waters. *Please refer to attached preliminary road design to see crossing.*

The topography is relatively gentle with approximately 100 ft elevation differences along the way. The Trail Area is well drained and contains no marshy or swampy areas. Drainage control measures around the perimeter of the quarry will be completed; *Trow Associates Inc is presently working on the design of Trail Area Deposit site.*

The vegetation of the area is typical of the arctic tundra, the aggregate is coarse and the vegetation is sparse. The thickest layer of vegetation and organic soil was measured at 3 inches. More commonly the vegetation and organic material is said to be an inch or less. The fauna in the area is thin over a 3 month period. It was stated by the INAC geologist undertaking the detailed evaluation of the Trail Area deposit that only 3 caribou, an arctic wolf, one vole and ravens were spotted.

Trail Area Deposit Operations:

The Trail Area Deposit is considered an interim (medium term) site as the Northwest Iqaluit Aggregate site is considered the long term source for aggregate for the City of Iqaluit. The Trail Area Deposit encompasses an area of approximately six to ten hectares. The Trail Area Deposit is said to be composed of gneissic, granitic and minor component of metasediments pebbles, cobbles and boulders. The metasediments are schists and limestone and are both intensely weathered. The limestone is generally found as piles of weathered limestone pieces and the schist is generally rusty and crumbles easily. In the Trail Area Deposit there is a significant amount of angular cobbles and boulders. The fine fractions of the aggregate (sand) tend, in general, to be dark brown in colour; 1.5 to 2.0 ft in depth with lighter sand beneath this depth.

Given the estimated size of the Trail Area Deposit site, location, time restraints and because the City of Iqaluit is responsible for the safe operation of the site, it is proposed that the processing and stockpiling of granular material will take place at an alternative location. An option the City of Iqaluit is exploring for the very short term is utilizing the North 40 site for processing and stockpiling only as contractor equipment is currently on site and it is a large enough area to accommodate the contractors; permission from the regulatory bodies will be sought to approve this option for a transition period of one year thus providing time to find alternative location for the equipment. Fairly dividing the Trail Area Deposit site amongst contractors is considered to be currently to difficult given the quality of material will vary and sand will likely only be found in one area thus not providing sufficient space for the safe operation of all contractor equipment.

$\gamma_{\sigma^q} \rho_{\delta^b}(\tau) \wedge \exists j \in \sigma^b \Delta^c \subseteq \Delta^j$

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GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT IMALIRIYIN KATIMAYINGI
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

WATER LICENCE APPLICATION FORM

Application for: (check one)

☒ **New** ☐ **Renewal** ☐ **Amendment** ☐ **Assignment** ☐ **Cancellation**

LICENCE NO:

(for NWB use only)

1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE

City of Iqaluit
P.O. Box 460
Iqaluit, NU X0A0H0

Phone: 867-975-8503
Fax: 867-975-8505
e-mail: c.jones@city.iqaluit.nu.ca

2. ADDRESS OF CORPORATE OFFICE IN CANADA (if applicable)

n/a

Phone: _____
Fax: _____
e-mail: _____

3. LOCATION OF UNDERTAKING (describe and attach a topographical map, indicating the main components of the Undertaking)

Main component is the extraction of granular material

Latitude: (63°48'50" N) Longitude: (68°30'48" W)
NTS Map Sheet No. _____ Scale: _____

4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)

The City of Iqaluit is planning to undertake the following as a part of accessing & operating a new granular site. Construction of an access road to new granular site which will be referred to as Trail Area Deposit as well as the development of the Trail Area Deposit for the extraction of granular material.

Please refer to preliminary design drawings for the access road to the Trail Area Deposit; the access road will be approximately 1.3 kms in length.

The Trail Area Deposit encompasses an area of approximately six to ten hectares. The Trail Area Deposit is said to be composed of gneissic, granitic and minor component of metasediments pebbles, cobbles and boulders. The metasediments are schists and limestone and are both intensely weathered. The limestone is generally found as piles of weathered limestone pieces and the schist is generally rusty and crumbles easily. In the Trail Area Deposit there is a significant amount of angular cobbles and boulders. The fine fractions of the aggregate (sand) tend, in general, to be dark brown in colour; 1.5 to 2.0 ft in depth with lighter sand beneath this depth.

It has been estimated that there is approximately that Trail Area Deposit should provide enough granular material for the City of Iqaluit for the next 10 to 12 years this is based on a yearly

consumption of 100,000 cubic metres.

Given the estimated size of the Trail Area Deposit site, location, time restraints and because the City of Iqaluit is responsible for the safe operation of the site, it is proposed that the processing and stockpiling of granular material will take place at an alternative location. An option the City of Iqaluit is exploring for the very short term is utilizing the North 40 site for processing and stockpiling only as contractor equipment is currently on site and it is a large enough area to accommodate the contractors; permission from the regulatory bodies will be sought to approve this option for a transition period of one year thus providing time to find alternative location for the equipment. Fairly dividing the Trail Area Deposit site amongst contractors is considered to be currently to difficult given the quality of material will vary and sand will likely only be found in one area thus not providing sufficient space for the safe operation of all contractor equipment.

5. **TYPE OF PRIMARY UNDERTAKING** (A supplementary questionnaire must be submitted with the application for undertakings listed in “**bold**”)

- | | |
|--|---|
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Agricultural |
| <input type="checkbox"/> Mining and Milling (includes exploration/drilling) | <input type="checkbox"/> Conservation |
| <input type="checkbox"/> Municipal (includes camps/lodges) | <input type="checkbox"/> Recreational |
| <input type="checkbox"/> Power | <input type="checkbox"/> Miscellaneous (describe below): |
| Other: Extraction of Granular Material | |

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings

6. **WATER USE**

- | | |
|---|---|
| <input type="checkbox"/> To obtain water | <input type="checkbox"/> Flood control |
| <input checked="" type="checkbox"/> To cross a watercourse | <input type="checkbox"/> To divert a watercourse |
| <input type="checkbox"/> To modify the bed or bank of a watercourse | <input type="checkbox"/> To alter the flow of , or store, water |
| <input checked="" type="checkbox"/> Other (describe): | |

To access the Trail Area Deposit there is one small creek crossing; within the Trail Area Deposit itself there are two water courses it is being proposed that they will be addressed with the installation of culverts and roadways, the flow of the water courses will not be changed.

7. **QUANTITY OF WATER INVOLVED** (cubic metres per day including both quantity to be used and quality to be returned to source)

Water use ☐ 100m³/day or less
☐ Greater than 100m³/day; if greater, indicate quantities to be used for each purpose (camp, drilling, etc.)

Water returned to source
_____ m³/day

8. **WASTE** (for each type of waste describe: composition, quantity (cubic metres per day), methods of treatment and disposal, etc.)

- | | |
|--------------------------------------|------------------------------------|
| <input type="checkbox"/> Sewage | <input type="checkbox"/> Waste oil |
| <input type="checkbox"/> Solid Waste | <input type="checkbox"/> Greywater |
| <input type="checkbox"/> Hazardous | <input type="checkbox"/> Sludges |

☐ Bulky Items/Scrap Metal

☐ Other describe):

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

Government of Nunavut
Community Government Services
Contact Person: Karen Haverstock
P.O.Box 1000 STN 700
Iqaluit, NU X0A0H0

Land Use Permit

DIAND

☐ Yes ☐ No If no, date expected _____

Regional Inuit Association

☐ Yes ☐ No If no, date expected _____

Commissioner

☒ Yes ☐ No If no, date expected _____

10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES (direct, indirect, cumulative impacts, etc.)

The access road does not require NIRB screening as it is considered Municipal Infrastructure (Please see attached letter)

The Land Use Permit for the Quarry Development has been submitted to Government of Nunavut who have passed the application on to NIRB for their review.

NIRB Screening ☒ Yes ☐ No If no, date expected _____

11. INUIT WATER RIGHTS

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement?
NO

If yes, has the applicant entered into an agreement with the Designated Inuit organization to pay compensation for any loss or damage that may be caused by the alteration. If no compensation agreement has been made, how will compensation be determined?

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

Trow Associates Inc
154 Colonnade Road South
Ottawa, ON K2E7J5

- Design, Tendering and Construction of Gravel Access Road To Trail Area Deposit
- Preparation of Quarry Management Plan
- Preparation of Spill Response Plan for Access Road & Trail Area Deposit
- Design of Drainage Control Measures for the Trail Area Deposit

13. STUDIES UNDERTAKEN TO DATE (list and attach copies of studies, reports, research, etc.)

Iqaluit Granular Source Investigation May, 2005 EBA
North West Iqaluit Granular Aggregate Evaluation March 2006 INAC
Evaluation of the Northwest Iqaluit and Trail Area Aggregate Deposits October, 2006 INAC
Iqaluit Granular Aggregate Evaluation Northwest Granular Area GPR Survey November, 2006 EBA
Preliminary Design of the Gravel Access Road to Trail Area Deposit -Trow Associates
Abandonment & Restoration Plan For Trail Area Deposit Quarry, February-07 City of Iqaluit
The following Reports Will Be Provided Upon Completion:

Quarry Management Plan
Spill Response Plan for Access Road & Trail Area Deposit
Design of Drainage Control Measures for the Trail Area Deposit

14. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN

Supplementary Questionnaire (where applicable: see section 5) ☐ Yes ☒ No If no, date expected _____

Inuktitut and/or Inuinnaqtun/English Summary of Project ☒ Yes ☐ No If no, date expected _____

Application fee of \$30.00 (Payee Receiver General for Canada) ☒ Yes ☐ No If no, date expected _____

Water Use fee of \$30.00 (unless otherwise indicated in Section 9 of the *NWT Waters Regulations*; Payee Receiver General for Canada)

☐ Yes ☒ No If no, date expected _____

15. PROPOSED TIME SCHEDULE (unless otherwise indicated, the NWT will consider the application for a five (5) year term)

☐ one year or less (or) ☒ Multi Year

Start Date: May 1, 2007 Completion Date: May 1, 2010

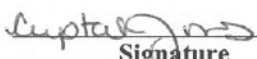
Crystal Jones

Engineering Project
Officer

March 20, 2007

Name (Print)

Title (Print)


Signature

Date

For Nunavut Water Board office use only

APPLICATION FEE Amount: \$ _____ Pay ID No.: _____

WATER USE DEPOSIT Amount: \$ _____ Pay ID No.: _____