



Indigenous and
Northern Affairs Canada

Affaires autochtones
et du Nord Canada

Your file - Votre référence
1BR-IIA1518

December 28, 2016

Our file - Notre référence
IQALUIT-#1117822

Licensing Department
Nunavut Water Board
P.O. Box 119
GJOA HAVEN, NU, X0B 1J0

Sent via email: licensing@nwb-oen.ca

Re: Technical Review of Water Licence Amendment Application (No. 1BR-IIA1518) – Iqaluit International Airport Improvement Project (Arctic Infrastructure Limited Partnership)

To Whom It May Concern,

Thank you for the Nunavut Water Board's November 25, 2016 notice of the above mentioned water licence application.

A memorandum is provided for the Nunavut Water Board's consideration. Comments and recommendations have been provided pursuant to Indigenous and Northern Affairs Canada's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

Please do not hesitate to contact me by telephone at 867-975-3877 or email at Amanda.Winegardner@aandc-aadnc.gc.ca for further information.

Sincerely,

Amanda Winegardner
Water Management Specialist
Water Resources Division
Indigenous and Northern Affairs Canada
P.O. Box 100
Iqaluit, NU X0A 0H0

Encl.

Cc. Ian Parsons, A/Manager, Water Resources, INAC, Nunavut Regional Office (NRO)
Erik Allain, Manager, Field Operations, INAC, NRO

Memorandum

To: Licensing Department, Nunavut Water Board

From: Amanda Winegardner, Water Management Specialist, Indigenous and Northern Affairs Canada (INAC)

Cc: Ian Parsons, A/Manager, Water Resources, INAC
Erik Allain, Manager, Field Operations, INAC

Date: December 28, 2016

Re: Technical Review of Amendment Application No. 1BR-IIA1518 for Iqaluit International Airport Improvement Project

Applicant: Paul Hii, Arctic Infrastructure Limited Partnership
Project: Iqaluit International Airport Improvement Project
Region: Qikiqtani

Comments:

A. Background

Arctic Infrastructure Limited Partnership (the Licensee) currently holds a Type B Water Licence (1BR-IIA1518) to support the Iqaluit International Airport Improvement Project, including construction and remediation activities. Current construction activities are set to be finished in 2017 and include: management of impacted soil, re-alignment and improvement of drainage ditches, installation of landslide culverts and installation of a culvert bridge and other works in Carney Creek. The Licensee will also be responsible for operation and maintenance activities at the airport for 30 years after construction activities are completed. Water Licence 1BR-IIA1518 was issued for three years so that the Licensee could determine what activities would need to be included in a renewed Water Licence post-construction.

The current 1BR-IIA1518 includes authorization for waste disposal and water use of 94 m³ per day for construction activities, including dust suppression and the soaking of aggregates. Potable water for use at the temporary construction camp is sourced from the City of Iqaluit's municipal supply and is not included in this Water Licence. Water abstraction covered under this Water Licence is sourced from the Inner Field Ditch and the Backup Water Extraction Point. Concerns were raised during the initial licensing process regarding contamination of these water sources with glycols and other compounds associated with airport operations, particularly de-icing activities. As such, the Licensee was required to perform testing of these water sources prior to use each construction season to ensure that no contaminated water is being used for construction activities.

The Licensee's amendment application proposes a change in allowable water use from 94 m³ per day to 299 m³ per day to continue to support construction activities. Sources for water use will remain the same as in the current 1BR-IIA1518.

B. Results of review

On behalf of INAC's Water Resources Division, the following comments and recommendations are provided for the NWB's consideration:

1. Water sources

Source:

- 1) 1BR-IIA---- Appendix 2- Water Management Plan Rev002, Section 1: Water Management Objectives
- 2) 1BR-IIA1518 Application for Water Licence Amendment, Section 13: Quantity of Water Involved
- 3) 1BR-IIA---- AANDC Comments on New Application
- 4) 1BR-IIA1518 Email Water Sampling Results

Comment: Withdraw of water is currently authorized for two points within the Inner Field Ditch as well as a Backup Water Extraction Point. The amendment application proposes continual use of these sources but up to an amount of 299 m³ per day. During the initial licensing process, INAC commented on whether the Inner Field Ditch (originally proposed as the sole water source) would be able to support water abstraction once meltwater had subsided and whether alternative water sources would need to be considered. The Licensee responded to this concern by adding the Backup Water Extraction Point. It is unclear whether the current water sources have sufficient capacity to supply 299 m³ of water per day.

In an email from the Licensee to the NWB with the results of September 2015 monitoring results, the Licensee notes that a fourth water extraction point (beyond IIA-2, IIA-3, and IIA-4) was being tested for contaminants and that GPS coordinates for this point would be forwarded to the NWB. These coordinates do not appear to have been forwarded and the amendment application does not mention this additional water extraction point.

Recommendation 1: INAC recommends that the Licensee clarifies the capacity of their identified water sources and provides alternative water sources to be authorized under an amended Water Licence if insufficient water capacity is found for the existing sources. INAC also advises the Licensee that they extract water only from authorized points.

2. Monitoring results

Source:

- 1) 1BR-IIA1518 Water Sampling Results IQALUIT International Airport
- 2) 1BR-IIA1518 Email Water Sampling Results
- 3) 1BR-IIA1518 Analytical Results QE July 2016
- 4) 1BR-IIA1518 Analytical Results QE August 2016 and Water Sampling Map

Comment: The Licensee has submitted monitoring results for 2015 and 2016. The 2015 submission included results for monitoring stations IIA-2, IIA-3, IIA-4, IIA-5, IIA-6, IIA-7, IIA-8, IIA-9. Results for IIA-1, IIA-10, IIA-11, IIA-12 and IIA-13 could not be located. The Licensee notes in 2015 that some samples were flagged for having parameter values above the Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Aquatic Life (CCME) and that there

were issues with detection limits not being low enough to analyze properly to CCME in some cases. Additionally, the Licensee notes that parameter values in excess of the allowable limits under 1BR-IIA1518 were observed for:

- IIA-2 (exceeded Water Licence limits for five metals and two classes of Polycyclic Aromatic Hydrocarbons (PAHs))
- IIA-3 (exceeded Water Licence limits for three metals)

IIA-2 and IIA-3 are monitoring station locations for water extraction point 1 and 2 for the Inner Field Ditch. As such, the Inner Field Ditch appeared inappropriate for water use in 2015.

Results from 2016 are available for July and August, but only for IIA-2 and IIA-4. Additionally there are results presented for IIA-4.1 and IIA-4.2. IIA-4.1 is identified as Extraction Point 3 and IIA-4.2 is identified as Extraction Point 4. The 2016 results do not show any exceedance of the Water Licence requirements for monitoring stations IIA-2 and IIA-4, however the detection limits used in the analysis of lead, arsenic, benzene, toluene and ethylbenzene were higher than the criteria set in the Water Licence.

Recommendation 2: INAC recommends that the Licensee ensure that the laboratory completing the water quality analyses for the water samples use detection limits below the criteria set in the Water Licence; otherwise it is impossible to determine whether there are issues of non-compliance (and increases the risk of using water with contamination).

Recommendation 3: If water extraction points beyond the original IIA-2, IIA-3 and IIA-4 are approved under an amended Water Licence, then INAC recommends that these additional points be incorporated into the required monitoring program.

Recommendation 4: INAC recommends that the Licensee submit monitoring results for all the monitoring stations listed in the current Water Licence.

3. Submission of annual reports

Source:

- 1) 'Annual Report' folder on public registry

Comment: No annual reports were located on the public registry.

Recommendation 5: INAC recommends that the Licensee submit any outstanding annual reports to the NWB.

4. Updated management plans

Source:

- 1) 1BR-IIA---- Appendix 2- Water Management Plan Rev002
- 2) 1BR-IIA---- Appendix 7- Spill Contingency Plan Rev002

Comment: Since no annual reports appear available on the public registry, it is unclear whether any updates have occurred to the various plans corresponding to 1BR-IIA1518.

Recommendation 6: INAC recommends that the Licensee update their Water Management Plan to include any new water extraction points. Additionally, the Licensee should indicate any updates to their Spill Contingency Plan in their annual reports.