



Gwich'in Land and Water Board

Box 2018 Inuvik NT X0E 0T0

PH 867 777 7960 FX 867 777 7970

WATER USE LICENCE

Pursuant to the Mackenzie Valley Resource Management Act and Regulations, the Gwich'in Land and Water Board, hereinafter referred to as the Board, hereby grants to

TOWN OF INUVIK

(Licensee)

PO Box 1160, # 2 FIRTH STREET, INUVIK, NT X0E 0T0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the Northwest Territories Waters Act and Regulations made thereunder and subject to and in accordance with the conditions specified in this Licence.

Licence Number: G06L3-001

Licence Type: "A" (RENEWAL)

Water Management Area: NORTHWEST TERRITORIES 03

Location: INUVIK, Northwest Territories
Latitude 68°22' N
Longitude 133°43' W

Purpose: WATER USE AND WASTE DISPOSAL

Description: MUNICIPAL UNDERTAKING

Quantity of Water Not to be Exceeded: 1,000,000 CUBIC METERS PER YEAR

Effective Date of Licence: JULY 1, 2006.

Expiry Date of Licence: JUNE 30, 2016

This Licence, issued and recorded at Inuvik NT, includes and is subject to the annexed conditions.

Signed the 2nd day of May, 2006 on behalf of the **GWICH'IN LAND AND WATER BOARD**

Witness

Chair

APPROVED BY

MINISTER OF INDIAN AND
NORTHERN AFFAIRS CANADA

PART A: SCOPE AND DEFINITIONS

1. Scope

- a) This Licence entitles the Town of Inuvik to use water and dispose of waste for municipal undertakings at the Town of Inuvik, Latitude 68°22' N and Longitude -133°43' W, Northwest Territories.
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this Licence: **G06L3-001**

“**Act**” means the *Northwest Territories Waters Act*;

“**Analyst**” means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

“**Average Concentration For Faecal Coliforms**” means the geometric mean of any four consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

“**Average Concentration For Biological Oxygen Demand & Suspended Solids**” means the arithmetic mean of any four consecutive analytical results, or if less than four analytical results collected, the arithmetic mean of the analytical results collected, and as submitted to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

“**Batch Decant**” means the intentional release of effluent from the Sewage Disposal Facilities, at a release rate exceeding that of the normal discharge, for the purpose of lowering the liquid level within the sewage lagoon;

“**Board**” means the Gwich'in Land and Water Board established under Part 3 of the *Mackenzie Valley Resource Management Act*;

“**Commercial Waste Water**” means water and associated waste generated by the operation of a commercial enterprise, but does not include toilet water or greywater;

“**Freeboard**” means the vertical distance between water line and the lowest elevation of the effective water containment crest on a dam or dyke's upstream slope;

“**Geotechnical Engineer**” means a civil or geotechnical engineer familiar with and experienced in geotechnical practices in arctic conditions, registered or licenced to practice in the Northwest Territories;

“**Greywater**” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“**Inspector**” means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

“**Licensee**” means the holder of this Licence;

“**Minister**” means the Minister of Indian and Northern Affairs Canada;

“**Modification**” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

“**Pumpout Sewage**” means all toilet wastes and/or greywater collected by means of a vacuum truck for disposal at an approved facility;

“**Regulations**” means Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*;

“**Sewage**” means all toilet wastes and greywater;

“**Sewage Disposal Facilities**” comprises the area and engineered structures designed to contain sewage as identified in Drawing Number E75D-20-101, 102, 103, 104, 105, and 106, titled “Government of the Northwest Territories – Inuvik, N.W.T. – Sewage Treatment Facility”, and dated October 1982;

“**Solid Waste Disposal Facilities**” comprises the area and associated structures designed to contain solid wastes as described in Drawings forming part of or appended to the Operation and Maintenance Manual, Solid Waste Disposal Facilities, Inuvik, N.W.T. (most recent edition);

“**Toilet Wastes**” means all human excreta and associated products, but does not include greywater;

“**Waste**” means waste as defined by Section 2 of the *Northwest Territories Waters Act*;

“**Waste Disposal Facilities**” mean all facilities designated for the disposal of waste, and includes the Sewage Disposal Facilities, Solid Waste Disposal Facilities, and Bagged Toilet Wastes Disposal Facilities;

“**Water Supply Facilities**” comprises the following: the intake structure, pumphouse, and associated infrastructure at Three Mile Lake (also known as Lake B); the overland raw water pipeline from Three Mile Lake to Hidden Lake; all of the area within the catchment of Hidden Lake; the Hidden Lake intake pumphouse and utilidor shown in drawing 49272-C1 (Reid Crowther, Feb. 1991); the winter intake pumphouse and associated infrastructure at East Channel; the overland raw water pipeline from East Channel to the East Channel water treatment plant shown in drawings E67C-20-101 through 105 inclusive (Associated Engineering, Jan. 1979); and the filter backwash discharge piping and chute from the East Channel water treatment to Duck Lake (also drawings E67C-20-101 through 105 inclusive).

“**Waters**” means any Waters as defined by Section 2 of the *Northwest Territories Waters Act*.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report with the Board in duplicate, with an additional copy to the inspector, not later than March 31st of the year following the calendar year reported, which shall contain the following information:
 - a) the monthly and annual quantities in cubic metres of fresh water obtained from all sources;
 - b) the monthly and annual quantities in cubic metres of each and all waste discharged;

- c) the monthly and annual quantities of Sewage solids removed from the Sewage Disposal Facilities for disposal;
- d) a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures;
- e) tabular summaries of all data generated under the “Surveillance Network Program”, as approved by the Board;
- f) tabular and graphic summaries of data generated for Parameters specified in Part D, Item 2 of this licence, as approved by the Board;
- g) a list of unauthorized discharges;
- h) an outline of any spill training and communications exercises carried out;
- i) a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
- j) a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
- k) a brief description of the annual review of the approved Operation and Maintenance Plans and any updates or revisions to these plans;
- l) a report of the inspection required under Part D, item 9 of this licence;
- m) any other details on water use or waste disposal requested by the Board by November 1st of the year being reported;
- n) a summary of the Quality Assurance/Quality Control audit results, as required under Part B, item 12 of this licence and
- o) a summary addressing the performance of the Sewage Disposal Facilities and, if applicable, an outline of necessary steps to achieve optimal performance.

2. The Licensee shall comply with the “Surveillance Network Program” annexed to this Licence, and any amendment to the said “Surveillance Network Program” as may be made from time to time, pursuant to the conditions of this Licence.

3. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
4. Meters, devices or other such methods used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
5. The Licensee shall, within sixty (60) days of the issuance of this Licence, post the necessary signs, where possible, to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.
6. The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate areas to inform the public of Water Supply and Waste Disposal Facilities. All postings shall be located and maintained to the satisfaction of an Inspector.
7. The Licensee shall immediately report to the 24 Hour Spill Report Line (867 920-8130) any spills of Waste, which are reported to or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.
8. The Licensee shall ensure a copy of this Licence is maintained at the municipal office at all times.
9. The Licensee shall, by November 1, 2006, submit to the Board for approval an engineering assessment of the Solid Waste Disposal Facilities. The assessment shall address hydrological and soil conditions, suitability for the current use, effectiveness of existing surveillance stations 0036-4 & 0036-5 to monitor runoff, and identification of possible locations for monitoring wells within the Solid Waste Disposal Facilities. The engineering assessment may be based on available mapping and past field investigations, provided that appropriate data are available. A copy of this assessment shall also be forwarded to the Inspector.
10. The Licensee shall, by July 1, 2009, submit to the Board an assessment of potential sewage treatment options. The assessment shall identify sewage

treatment options suitable to allow the Licensee to meet territorial and federal guidelines for the discharge of municipal wastewater. A copy of this assessment shall also be forwarded to the Inspector.

11. The Licensee shall, by July 1, 2011, submit to the Board a Sewage Management Plan. The plan shall address, in detail, how the Licensee intends to meet territorial and federal guidelines for the discharge of municipal wastewater by the end of the term of this licence. A copy of this plan shall also be forwarded to the Inspector.
12. The Licensee shall, by February 1, 2007, submit to the Board for approval a Quality Assurance/Quality Control program, as an appendix to the Operating & Maintenance Manuals or as a discreet document. The program shall address, but not be limited to, sample collection, data collection (including recording of ambient conditions when sampling) and retention, procedures to deal with missed samples and anomalous test results, water quality off oil/water separator; and include a procedure for an annual audit of the Quality Assurance/Quality Control program. A copy of the Quality Assurance/Quality Control program shall also be forwarded to the Inspector.
13. The Licensee shall conduct further studies and submit the findings to the Board, if requested by the Board to do so at any time during the term of this licence.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water from Hidden Lake, Lake B and the Mackenzie River using the Water Supply Facilities or as otherwise approved by the Board.
2. The annual quantity of water used for all purposes shall not exceed 1,000,000 cubic metres.
3. The water intake hose used on the water pumps shall be equipped with a screen, in accordance with the most current edition of the Freshwater Intake End-of-Pipe Screen Guideline.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall direct all piped and pumpout Sewage to the Sewage Disposal Facilities or as otherwise approved by the Board.
2. All Sewage effluent discharged from the Sewage Disposal Facilities at “Surveillance Network Program” Station Number 0036-3 shall meet the following effluent quality standards:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION
Suspended Solids	70 mg/L
BOD ₅ *	150 mg/L
Faecal Coliforms	1 x 10 ⁶ CFU/100mL

* In addition: The maximum concentration of any grab sample shall be 150 mg/L. The total mass of BOD discharged to the receiving water, on an annual basis, shall not be greater than 80 tonnes.

The Waste discharged shall have a pH between 6 and 9, and no visible sheen of oil and grease.

3. A Freeboard limit of 1.0 metre, or as recommended by a qualified geotechnical engineer and as approved by the Board, shall be maintained at all dykes and earthfill structures associated with the Sewage Disposal Facilities.
4. All bagged toilet wastes (honey bags) shall be disposed of at the Bagged Toilet Waste Disposal Facilities to the satisfaction of an Inspector.
5. The Licensee shall advise an Inspector at least ten (10) days prior to initiating the Batch Decant of the sewage lagoon.
6. The sewage lagoon shall be maintained and operated in such a manner as to prevent structural failure.
7. The Licensee shall maintain the Sewage Disposal Facilities to the satisfaction of an Inspector.

8. The Licensee shall dispose of all solid wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.
9. The dams, dykes and other engineered earth structures designed to contain waste within the Sewage Disposal Facilities shall be inspected annually by a geotechnical engineer to determine the stability of the structures.

PART E: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply and Waste Disposal Facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
 - a) the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
 - b) such modifications do not place the Licensee in contravention of either the Licence or the *Act*;
 - c) the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - d) the Board has not rejected the proposed modifications.
2. Modifications for which all of the conditions referred to in Part E, Item 1, have not been met, may be carried out only with written approval from the Board.
3. The Licensee shall provide to the Board as-built plans and drawings of the modifications referred to in this Licence within ninety (90) days of completion of the modifications. (except municipal)

PART F: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval an Abandonment and Restoration Plan at least six (6) months prior to abandoning any Waste Disposal Facilities. The Plan shall include, but not be limited to:
 - a) contaminated site remediation;
 - b) leachate prevention;
 - c) an implementation schedule
 - d) maps delineating all disturbed areas, borrow material locations, and site facilities;
 - e) consideration of altered drainage patterns;
 - f) type and source of cover materials;
 - g) future area use; and
 - h) hazardous wastes.

2. The Licensee shall implement the Plan specified in Part F, Item 1 as and when approved by the Board.

PART G: CONDITIONS APPLYING TO CONSTRUCTION

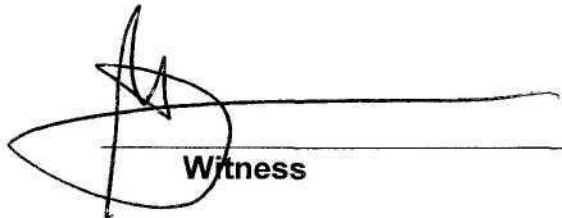
1. Prior to construction of any dams, dykes or structures intended to contain, withhold, divert or retain water or wastes, the Licensee shall submit to the Board for approval design drawings stamped by a qualified engineer registered in the Northwest Territories.

2. Construction of designed structures shall be carried out as approved by the Board.


3. As-built drawings of any changes from the original design, including rationale for the changes to any of the dams, dykes or structures referred to in Part G, Item 1 shall be submitted to the Board within ninety (90) days of completion of the construction.

PART H: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall operate and maintain the Waste Disposal Facilities in accordance with the approved Operation and Maintenance Plans.
2. The Licensee shall review, and amend as needed, the approved Operation and Maintenance Plans on an annual basis and shall advise the Board of the results of this annual review in accordance with Part B, Item 1 of this Licence.
3. The Licensee shall, by February 1, 2007, submit to the Board, as an appendix to the Operating & Maintenance Manual or as a discreet document, a runoff management plan for the Solid Waste Disposal Facilities.



Witness

GWICH'IN LAND AND WATER BOARD


Chair



Gwich'in Land and Water Board

Box 2018 Inuvik NT X0E 0T0

PH 867 777 7960 FX 867 777 7970

LICENSEE: Town of Inuvik
LICENCE NUMBER: G06L3-001
EFFECTIVE DATE OF LICENCE: July 1, 2006
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM (SNP): July 1, 2006

SURVEILLANCE NETWORK PROGRAM

A. Location of Surveillance Stations

<u>Station Number</u>	<u>Description</u>
0036 -1	The Mackenzie River pumphouse.
0036 -2	The Hidden Lake pumphouse.
0036 -3	The decant structure at the Sewage Disposal Facilities.
0036 -4	Run-off below the Solid Waste Disposal Facilities at 68°21'7" N, -133°41'1.3"W.
0036 -5	Run-off to two (2) tundra ponds located southwest of the Solid Waste Disposal Facilities.
0036 -6	Pond near the southwest corner of the Sewage Disposal Facilities at 68°21'52.5"N, -133°45'3.2"W.
0036 -7	Pond near the northwest corner of the Sewage Disposal Facilities at (exact location to be determined)

B. Sampling and Analysis Requirements

1. Water at Station Number 0036-3 shall be sampled monthly, and analyzed for the following parameters:

Ammonia Nitrogen	BOD ₅	Fecal Coliform
pH	Suspended Solids	

The period of time, between sampling, shall be no less than 15 days.

2. Water at Station Number 0036-3 shall be sampled 10 days before beginning a Batch Decant, once at the beginning of the decant, once in the middle of the decant, and once at the end of the decant and analyzed for the following parameters:

Ammonia Nitrogen	BOD ₅	Fecal Coliform
pH	Suspended Solids	

3. Water at Station Numbers 0036-6, 0036-7 and 0036-8 shall be sampled annually, during periods of flow, and analyzed for the following parameters:

Ammonia Nitrogen	BOD ₅	Fecal Coliform
pH	Suspended Solids	

4. Water at Station Numbers 0036-4 and 0036-5 shall be sampled monthly, during periods of flow, and analyzed for the following parameters:

pH	Suspended Solids	BOD ₅
Sodium	Total Phosphate	Magnesium
Sulphate	Conductivity	Potassium
Calcium	Total Phenols	Total Chromium
Total Lead	Total Iron	Total Nickel
Total Copper	Total Cadmium	Total Zinc
Total Mercury		

5. Water at Station Numbers 0036 -3, 0036 -4, and 0036 -5 shall be inspected monthly, during periods of flow, for the presence of an oil sheen. If an oil sheen is detected, the water shall be sampled immediately and analyzed for

the presence of Oil and Grease.

6. More frequent sample collection may be required at the request of an Inspector.
7. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standards Methods for the Examination of Water and Wastewater", or by such other methods approved by an Analyst.
8. All analyses shall be performed in a laboratory approved by an Analyst.

C. Flow and Volume Measurement Requirements

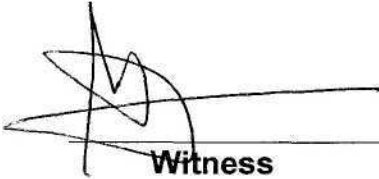
1. The monthly and annual quantities of water pumped from Surveillance Network Program Station Number 0036-1 and 0036-2 shall be measured and recorded in cubic metres.
2. The monthly and annual quantities of sewage solids removed from the sewage disposal facility shall be measured and recorded.

D. Reports


1. The Licensee shall submit quarterly reports for January through March, April through June, July through September, and October through December. These quarterly reports shall contain all of the information generated by parts A, B, and C of the "Surveillance Network Program" and shall be submitted within thirty (30) days of the end of the quarter being reported.
2. The Licensee shall, unless otherwise requested by an Inspector, include all of the data and information required by the "Surveillance Network Program" including the results of the approved quality assurance/quality control program in the Licensee's Annual Report, which Report shall be submitted to the Board on or before March 31st of the year following the calendar year being reported.

3. The Licensee shall, within fifteen (15) days of the completion of the decant operation, submit to the Board all the data and information required in the "Surveillance Network Program".

GWICH'IN LAND AND WATER BOARD



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