

## **Executive Summary**

### **2007 Water License Annual Report**

Under Water License 3AM-IQA0611 (License), which was issued by the Nunavut Water Board in 2006, the City of Iqaluit (City):

- Extracts water from Lake Geraldine for municipal use,
- Manages its solid waste at the West 40 Landfill, and
- Manages its wastewater at the West 40 Wastewater Treatment Plant and backup Sewage Lagoon.

The Water Treatment Plant (WTP) receives raw water from Lake Geraldine and provides the residents of Iqaluit with potable water. In 2007, the City used 897,980 m<sup>3</sup> of water from Lake Geraldine, which is below the quantity of water not to be exceeded under the License (1,100,000 m<sup>3</sup>).

The Wastewater Treatment Plant (WWTP) provides the City with primary sewage treatment and the City manages its solid waste and sewage sludge at the West 40 Landfill. In 2007, Sewage Lift Station #1 upgrades were substantially completed. Also in 2007, the City had two reports completed on the treatment of landfill run-off: 1) Wetland Treatment Conceptual Design Report, and 2) Membrane Bioreactor Technology Report.

This 2007 Annual Report was completed in 2013, with the information available at the time. The City has made an effort to ensure that everything is included; however due to staff turn-over some information may be missing.

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Water License No. 3AM-IQA0611  
**2007 Annual Report**  
City of Iqaluit

In July of 2006, the City of Iqaluit was issued Water License number 3AM-IQA0611 by the Nunavut Water Board. This license was issued for a five year period commencing on May 15, 2006. A requirement of the license is an annual report due March 31 of each year summarizing activities governed by the license for the previous calendar year. In accordance with Schedule B of the Water License, this Annual Water License Report summarizes the activities conducted by the City of Iqaluit in 2007.

**A. The monthly and annual quantities in cubic meters of water obtained from Lake Geraldine**

Table 1 summarizes the monthly and annual quantities of water drawn from Lake Geraldine, the City of Iqaluit's raw water source. The total water usage for 2007 was 897,980 m<sup>3</sup>, which is within the allowed usage of 1,100,000 m<sup>3</sup>.

**Table 1. Raw Water Drawn  
from Lake Geraldine Reservoir (2007)**

Month	Volume (m <sup>3</sup> )
January	61,770
February	55,090
March	77,740
April	80,210
May	81,100
June	74,460
July	74,910
August	75,360
September	76,340
October	81,120
November	79,540
December	80,340
<b>Total</b>	<b>897,980</b>

**B. The monthly and annual quantities in cubic meters of discharge from the Wastewater Treatment Facility**

Table 2 summarizes the monthly and annual quantities of discharge from the City of Iqaluit's Wastewater Treatment Plant (WWTP) during 2010.

**Table 2. Discharge from the Wastewater Treatment Plant (2007)**

<b>Month</b>	<b>Volume (m<sup>3</sup>)</b>
January	61,770
February	55,090
March	77,740
April	80,210
May	81,100
June	74,460
July	74,910
August	75,360
September	76,340
October	81,120
November	79,540
December	80,340
<b>Total</b>	<b>897,980</b>

Although the City's operations staff normally records flow quantities at the WWTP, this data is currently not available for 2007. As such, the potable water production is assumed to be equivalent to the amount of wastewater treated. This is a reasonable approximation for systems which do not treat stormwater flow.

**C. The monthly and annual quantities in cubic meters of sludge removed from the Wastewater Treatment Facility**

Table 3 summarizes an estimate of the monthly and annual quantities of sewage sludge removed from the City of Iqaluit's WWTP and deposited at a designated area in the West 40 Landfill.

**Table 3. Sewage Sludge Removed from the Wastewater Treatment Facility and Deposited at the West 40 Landfill (2007)**

<b>Month</b>	<b>Volume (m<sup>3</sup>)</b>
January	27.2
February	23.8
March	25.5
April	25.5
May	27.2
June	25.5
July	25.5
August	27.2
September	25.5
October	25.5
November	25.5
December	27.2
<b>Total</b>	<b>311.1</b>

The sludge that is removed by the Salsnes Filter in the WWTP falls into a trailer in a room below the primary treatment room. The trailer that is used to catch the sludge from the Salsnes Filter has 3.4 cubic meters of storage and is approximately 50% full each time it is unloaded. The trailer is unloaded at the West 40 Landfill every second day including weekends and holidays. During shutdowns of the wastewater plant for maintenance, there is no sludge produced because the raw sewage was diverted to the lagoon.

- D. A summary report which includes all data and information generated under the Monitoring Program, including the QA/QC program, in an electronic and printed format acceptable to the Board**

The Monitoring Program was not completed in 2007.

Two samples of landfill run-off that were taken from the retention pond were analyzed for a variety of inorganic, metal and microbiological parameters. These results are provided in Appendix A.

- E. A summary of construction activities conducted**

**Sewage Lift Station #1**

In 2007, Sewage Lift Station #1 upgrade project was substantially completed. Please see Appendix B for related as-built drawings.

**Culvert Installation**

In 2007, the City completed a project to repair a collapsed culvert on Allanngua St. The repair consisted of removing the existing culverts, installing new culverts, reinstating the road. Daily turbidity analyses was completed for the duration of the project. Please see Appendix C for as-built drawings and inspection reports.

- F. A summary of any modification and/or major maintenance work and/or demolition work carried out and any associated structures**

There is no record of modifications or major maintenance work carried out in 2007.

- G. A summary of all work carried out under the Managements Plans in accordance with this License**

There is no record of work carried out under the Management Plans in 2007.

- H. A progress report and revisions to any studies requested by the Board that relate to waste management, water use or reclamation and a brief description of any future studies planned by the Licensee including an executive summary in terms understandable to the general public, translated into Inuktitut**

**City of Iqaluit Wetland Treatment Conceptual Design Report**

A report titled "Landfill Run-off - Wetland Treatment Conceptual Design Report" was completed for the City on February 21, 2007. See Appendix D for a copy of the report.

### **Landfill Surface Runoff Treatment - Membrane Bioreactor Technology**

A report titled "Landfill Surface Runoff Treatment – Membrane Bioreactor Technology" was completed for the City on April 24, 2007. See Appendix E for a copy of the report.

**I. Any addendums to the approved Contingency Plans and the approved Operation and Maintenance Manuals**

There is no record of addendums made to the approved Contingency Plans and Operation and Maintenance Manuals in 2007.

**J. A list and description of all spills and un-authorized discharges**

Table 4 provides a summary of all spills and un-authorized discharges that occurred in 2007, including volumes, Spill Report Line Identification Number and summaries of the follow-up actions taken. Copies of the spill reports can be found in Appendix F.

**Table 4. Summary of all spills and un-authorized discharges that occurred in 2007**

Spill Report ID No.	Date	Location	Description	Volume (m <sup>3</sup> )	Cause	Follow up Actions
2007021	January 23, 2007	Iqaluit	Diesel Fuel	0.08	Excavator tipped over	The contaminated snow was removed and disposed of at the landfill
2007036	February 4, 2007	Lift Station #1	Sewage	10	Power Failure and blizzard conditions	The road crew started the clean up on February 7, 2007. The contaminated snow was removed and disposed of at the sewage lagoon
2007037	February 5, 2007	Lift Station #2	Sewage	5	Power Failure and blizzard conditions	No cleanup occurred because it was dangerous at the time to put heavy equipment on the sea ice.
2007068	February 21, 2007	Lift Station #2	Sewage	2	Sewer line was blocked	The line was blasted and the roads crew cleaned up the site, removed the contaminated snow and disposed of it at the sewage lagoon.
2007259	June 9, 2007	Landfill	Landfill Run-off	45	Excessive rainfall and spring snow melt	A trench will be dug to allow pooled water to be drained and contained in the landfill drainage system.
2007268	June 14, 2007	Landfill	Landfill Run-off	10	Excessive rainfall	Granular material was used to temporarily fix the problem.
2007571	December 31, 2007	White Row Housing	Sewage	2	Sewer line was blocked	The sewer line was blasted to free the blockage. The road crew cleaned up the site and disposed of contaminated material at the sewage lagoon.



**K. Any revisions to approved Closure and Reclamation Plans**

There is no record of revisions made to approved Closure and Reclamation Plans in 2007

**L. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including and changes to implementation and scheduling.**

There is no record of closure and reclamation work undertaken in 2007.

**M. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector**

There is no record of an inspection conducted in 2007.

**N. Update on implementation of recommendations from any Dam Safety Inspection and/or Review**

There is no record of a Dam Safety Inspection undertaken in 2007. A Dam Safety Review was completed on December 11, 2006 there is no record of the work completed on these recommendations in 2007.

**O. A brief update on the implementation plan of all facilities within the scope of this License including projected implementation and status of Phase II of the Wastewater Treatment Plant**

There is no information available on implementation plan progress made in 2007.

**P. Any details on water use or waste disposal requested by the Board by November 1<sup>st</sup> of the year being reported**

There is no record of requests made by the Board after November 1, 2007.

## **Appendices**

Appendix A - Landfill Run-off Sampling Results

Appendix B - Sewage Lift Station #1 As-built Drawings

Appendix C - Culvert Installation As-built Drawings and Inspection Reports

Appendix D - City of Iqaluit Wetland Treatment Conceptual Design Report

Appendix E - Landfill Surface Runoff Treatment - Membrane Bioreactor Technology

Appendix F - Spill Reports