

**ANNUAL REPORT
FOR THE HAMLET OF PANGNIRTUNG- 2015**

YEAR BEING REPORTED: 2015

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water License # NWB 3- PAN 0810 issued to the Hamlet of Pangnirtung.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used.

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged (Estimated)
January 2015	4,075,526.00	Same
February 2015	4,341,298.00	Same
March 2015	4,706,664.60	Same
April 2015	4,012,763.30	Same
May 2015	4,346,078.20	Same
June 2015	4,273,597.77	Same
July 2015	4,431,836.80	Same
August 2015	4,188,041.00	Same
September 2015	4,283,451.27	Same
October 2015	4,326,656.79	Same
November 2015	4,028,480.79	Same
December 2015	4,203,222.70	Same
ANNUAL TOTAL	51,217,617.22	51,217,617.22

Note: The monthly water consumption volume is considered equal to the discharge

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volume because there is no meter at the end of the discharge pipe. The old accumulator in the Water Truck Fill Station is not recording water extraction volume correctly.

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
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WWTP: An extensive upgrade and optimization of the Wastewater Treatment Plant in Pangnirtung was substantially complete as of December 2014. The Final certification of completion was also issued in 2016.

The upgraded Pangnirtung Wastewater Treatment Plant (WWTP) is a secondary mechanical treatment plant based on the activated sludge process with maximum capacity of 300m³/day. Specifically, the plant is a two trained ZeeWeed 500d membrane bioreactor (MBR) sewage treatment system based on the activated sludge process. The Plant is utilizing submerged hollow fiber style membranes to provide a high quality effluent. The system is designed to treat residential sewage and wastewater from a local fish processing facility for the Hamlet of Pangnirtung. Wastewater is trucked to the WWTP where contaminants including Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and ammonia-nitrogen (NH₃-N) are reduced to below the National Performance Standards (NPS) prior to discharge to a marine environment (North Atlantic Ocean). The plant was commissioned and is currently functioning to the satisfaction. Hamlet has engaged three local operators who were trained by the consultant to manage this plant operation. After care support consultant is expected soon to further train these three local operators and assist them for smooth operation of this plant and keep record on regular basis.

WTFS: The Construction of the New Truckfill station is underway. The new facility will be ready for commissioning at the end of summer 2016. The new facility will be treating water better prior to distribution.

Hamlet is planning to build a station at the Duval River to use an electric pump to fill the water reservoir in each summer. This process will avoid using any diesel pump to extract water from the Duval River to fill the reservoir.

Waste management site (Land fill): No modification or major maintenance work was carried out for this facility during this reporting period. Hamlet is depositing Bulky metal in a separate site located at the right side of the access road just opposite to the existing Landfill site.

- v. a list of unauthorized discharges and summary of follow-up action taken;
During construction period of the WWTP, raw screened sewage from the WWTP was
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directly bypassed into the Fiord several times with the consultation with the regulators. The Plant might be shut down during maintenance or repairs in future. Therefore, Hamlet is planning for a contingency Plan to satisfy the regulators for prevention of the future expected spill.

- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
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The so called natural lagoon will be abandoned and restored because all liquid wastes of the Community are expected to be treated by WWTP.

The existing WTFS will be planned to decommission once new one is built and commissioned, which is expected in late summer of 2016.

- vii. 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;
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The studies on solid waste management were completed by Arktis Solutions Inc. A new guideline has been developed and accepted by CGS. The consultant exp Services Inc. has done some researches on alternative waste management processes like gasification, incineration etc. The Project is still on hold due to funding. Hamlet is still working on segregation of wastes in summer 2016.

- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
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Wastes management in the Community are the major concerns of the Nunavut Water Board and INAC. During the last summer inspection, INAC inspector suggested to clean the ditches next to the metal dump to stop overflowing and Hamlet carried out that instruction.

- ix. updates or revisions to the approved Operation and Maintenance Plans.
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The O&M manual of the Water Truck fill station will be updated once the new facility is built and commissioned.

The O&M manual of the WWTP was undated and is ready for distribution.

The O&M manual of the existing non-engineered waste management facility (Land Fill site) was prepared and submitted to NWB. Once the new waste management

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Facility is built and commissioned; the new O&M manual will be prepared accordingly.

x. **ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:**

Hamlet received a new water Licence for 3 yrs. period. Hamlet has started extended sampling and testing program on water, wastewater and leachate. WWTP has a new Lab where several tests on waste water quality like Ammonia, TSS, DO, COD, VSS etc. is monitored on daily basis. Also for QA/QC, samples are tested in Caduecon lab in Ottawa on monthly basis. The optimized WWTP is operated by a SCADA system. Baffin Regional office of CGS has a remote monitoring mechanism of the WWTP operation using Team Viewer 11 through SCADA.

At the end of summer 2016, Hamlet will have an upgraded WTFS built to treat and to supply better quality of drinking water to the residents.

xi. **FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:**

Hamlet is working closely with Water Licence Compliance Group (WLCG) for Hamlet water licence compliancy. They will be updating the Plan for Compliance based on the current situation. Hamlet is submitting 2015 Annual report in time.

The Lab test Results for 2015 are submitted in a separate document. The results are presented soon after full commissioning the plant.