

## ANNUAL REPORT-2017

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**YEAR BEING REPORTED: 2017**

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence **3BM-KUG1520** issued to **Kugluktuk**.

- 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 Fluid Manager 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 |
|---------------------|--|-------------------------------------|
| January             | 5,535,759.10   |                                     |
| February            | 4,943,586.10   |                                     |
| March               | 5,578,098.80   |                                     |
| April               | 5,201,906.80   |                                     |
| May                 | 5,317,098.80   |                                     |
| June                | 5,065,329.50   |                                     |
| July                | 5,279,728.40   |                                     |
| August              | 5,449,650.90   |                                     |
| September           | 5,542,099.30   |                                     |
| October             | 5,744,558.90   |                                     |
| November            | 5,331,092.20   |                                     |
| December            | 5,103,056.10   |                                     |
| <b>ANNUAL TOTAL</b> | <b>64,091,964.90</b>                                 |                                     |

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- 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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### **Water Supply:**

- The new treatment plant substantially completed in Dec 31<sup>st</sup>, and started operation.
- Connection and activation of UV system will be mainly between the new treated water tank and old two tanks recirculation line is expecting completion by next July 2018.
- The new treatment process comprises Roughing Sand filtration, Slow Sand filtration and Flocculation (as needed when turbidity in water) to refine the turbidity in 3-Logs process followed by Chlorination before the truckfill
- Two new truckfill facilities at the new plant added. The existing old truckfill facility at the old plant still exists as the old plant still working as a backup but will be decommissioned once the full integration of old components to the new treatment facility completed.
- **Intake though mobile shack:** Upgrading to the line and a new mobile shake with pump for ice water intake at the point of reachable distance from the shoreline when high salt wedge in river bed water is completed. This system will be useful mostly during Nov-May before the ice breaks. Water normally collected from a depth of 3-4 m of ice surface to a distance available with no salt or less salt wedges. This intake water also has less turbidity then the river bed intake, thus reduces the load on filters for the treatment plant.
- No maintenance and upgrading carried to intake pump houses during this period. Water intakes from the higher depth using twin lines are mostly useful in summer and fall. These two pump houses are the main water intake system of permanent structures.
- Storage reservoir uses mostly for diverting intake water through a temporary storing and Allow the natural settling of salt wedge and larger suspended particles before sending to the treatment plant. Reservoir bed was cleaned and pumped out sludge during this period.

### **Sewage and Solid waste:**

- Sewage leak prevention and berm protection measure buttress construction completed.
- Repair to bubbles on liner could not be eliminated, but not posing a threat to lagoon containment or capacity since annual decanting makes room for new candidate sewage
- Erosion protection measure carried at sewage drop-off pad by placing couple of salvaged RCC sections horizontally on ground supported by about 6 RCC sections by bore-holes. Similarly, the truck turn around at the sewage drop-off right edge protection by placing salvaged RCC sections and concrete blocks.
- Intensive improvement on solid waste area carried with sand gravel grading and packing and pushing down loose waste materials. The waste facility operation remains active and monitors by dump segregation and control burning to loose papers.

- v. **a list of unauthorized discharges and summary of follow-up action taken;**
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The Licensee is monitoring the ongoing leak issue at the east side where buttress construction

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completed but could not stop leak fully, but some improvement observed.

Annual decanting of sewage water onto wetland using a pump took place during the summer as part of annual monitoring of the lagoon. Effluent samples were taken from lagoon at the decant point to verify the requirement of BOD, E. coli, TSS and other basic parameters as identified in the licence. AANDC inspector was consulted for approval before the decanting s

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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- No abandonment of water supply, treatment, waste management or sewage facility this year.
- Improvement restoration to berm protection at the east side leak affected area, localized slumping, ponding and depression areas were completed by using locally collected materials by the contract.

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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- AANDC inspector has indicated a concern of continuous leak of the lagoon although the buttress construction almost completed, but not effective in leak stop. Also, noticeable cracks on the newly built buttress slope.
- Huge numbers of used oil drums waiting at the dump either for incineration or needs to ship out. Waste batteries are on open areas inside the dump site, which normally be stored inside wooden box with plastic wrap and be secured inside a C-can.
- The land farm facility is over borne by excess soils than its capacity and be secured on a lined cell.
- Monitoring station sign is not visible for KUG-2, and KUG -5

The inspector has recommended for a removal plan of waste oil drums, batteries and excess soils

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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No specific requests for submission of report or plan, but to plan and implement those requirements for sewage management, effluent containment and waste reduction from facilities. Uncontrolled bubbles at the sewage lagoon required a remediation or removal plan.

ix.

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**Updates or revisions to the approved Operation and Maintenance Plans**

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New Water Treatment Plant has been completed, but O&M manual yet to be received and reviewed. The old Water treatment plant still remains active as a backup for new plant, and therefore the existing O&M manual has not changed.

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### **ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:**

Water Treatment Plant operators training arranged by GN CGS hired trainer under the Water Treatment project for the hamlet operators to help getting their Level of certification and carry out the plant operation works. Module of the training comprises both theoretical, video and in hand in different sessions. A group of 3-6 operators are attending in this training session.

### **FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:**

The AANDC inspector has indicated huge numbers of cartage filters coming out from the existing old treatment process and dumps at the solid waste facility.

The new Water treatment plant will not be required cartage filters and therefore, a big savings is expected for the Hamlet in terms of filters and thus no dump at the solid waste facility.

HDPE containers set up at the solid waste site to burn the waste oil slowly and in control. This will reduce the waste oil issue at the waste dump site and assist the loose papers burning as well.