Technical Summary of the Wastewater Treatment Facility of the Hamlet of Igloolik under the Water Licence # 3BM-IGL 1520

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Hamlet of Igloolik is located on Igloolik Island in the northwest region of the Foxe Basin within the Qikiqtani Region of Nunavut at Latitude 69°23'N and Longitude 81°46'W. Igloolik is located within a zone of continuous permafrost and the island is composed of dolomitic conglomerates, with sandstone, dolostone and siltstone. The island is at a very low elevation with numerous ponds and an extensive tidal foreshore. In 2015, the Hamlet of Igloolik has an estimated population of approximately 1784. Existing Water Use and Waste Disposal Facilities include a potable water source called South Lake, about 2km long freshwater intake pump, Water storage reservoir, truck fill station, a three cell sewage exfiltration lagoon system with a wetland, an older fourth sewage cell constructed prior to the three cell lagoon system, domestic landfill, and metallic waste landfill.

A three cell exfiltration lagoon is used to treat the entire wastewater produced annually in the Community. The older cell constructed prior to these three cells is still there and sometimes is used in case of emergency. The design for rehabilitation and improvement of the sewage lagoons is complete. A new cell for the capacity of 53,220 cubic meters has been designed considering impervious liner all through the bed in order to make it containment.

The existing three cells will be converted into two cells for the capacity of 71,000cubic meters and considering liner all through the bed to make them containment. The new cell and proposed rehabilitated cells can be used alternatively or in parallel throughout the year.

The emergency cell will be used for sludge storage purpose only and will be maintained as needed.

The construction is expected to be started in 2015. The new cell will be built first and it will be used during rehabilitation of the other two existing cells. The entire construction is expected to be completed in 2016.

The design life of these facilities is estimated for 20yrs considering 2016 as the base year.

The Community has sufficient granular material to complete construction of these lagoons.
The potential sources are identified for extracting granular materials needed for construction.

Design brief and Construction drawings are attached. The new O&M manual will be prepared once the construction is complete and will be submitted to the NWB along with the as built drawings of these facilities.