Environment Canada Environnement Canada

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NWB File: 3AM-ARV1015

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Via email : licensingadmin@nunavutwaterboard.org

RE: 3AM-ARV1015 Old Sewage Lagoons Abandonment and Restoration Plan
3AM-ARV1015 Solid Waste Management Report
3AM-ARV1015 Sewage Disposal Facility Report

Environment Canada (EC) has reviewed the above-mentioned plan and reports submitted to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Nuna Burnside Engineering and Environmental Ltd, on behalf of the Hamlet of Arviat, has submitted to the NWB an Old Sewage Lagoons Abandonment and Restoration (A&R) Plan, a Solid Waste Management Report, and a Sewage Disposal Facility Report as requirements of Water License 3AM-ARV1015. Upon review of the plan and reports, EC provides the following comments:

Old Sewage Lagoons A&R Plan

- The report emphasizes the need to "control the discharge" so as not to cause erosion in the wetland. EC would recommend including explicit instructions regarding the removal of the berm material in such a way that the berm material does not wash out into the wetland, compromising its use for sewage treatment. Also, the flow should be kept low to reduce wash out of the berm and channeling in the wetland. This would require a little more time and attention by Hamlet staff, but reduce erosion and channeling in the wetland.

Sewage Disposal Facility Report

- Section 3.0, Sewage Disposal Facility: Qualitative descriptions of water levels in the lagoon system are helpful for understanding the seasonal differences in "working" capacity of the sewage lagoon. It has been identified that the water level is highest during the period of spring melt. It is likely that permafrost impedes exfiltration of the sewage during some of the winter months, at which time the water and ice volume increases beyond the average working capacity water lines. Planning for lagoon capacity and retention time in the system should take careful consideration of the zero-outflow months during which time the working capacity will exceed 43,000m3 and no natural outflow will be occurring.

- Section 6.2.1 Biotoxicity Monitoring and Section 7.1 Environmental Monitoring Program: The reference to ARV-4 in this document is confusing and misleading. In section 6.2.1, the author identifies this point to be just outside of the discharge point of the lagoon, before the wetland. In section 7.1, ARV-4 is identified as the pond immediately outside of the lagoon discharge point before effluent enters the wetland. The licence identifies ARV-4 to be effluent from the discharge point of the Sewage Disposal Facility (end of Wetland). The author should carefully explain and identify whether the point ARV-4 which is used in this document is meant to be the specific ARV-4 point as required for sampling in the Water Licence.

If there are any changes to the plan or the reports EC should be notified as further review may be necessary. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca.

Yours truly,

Paula C. Smith
Environmental Assessment Coordinator

cc: Mary Kelly (Project Officer, EPO, EC, Yellowknife, NT)
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