

April 10, 2018

Our Reference
60547247 (432)

Rick Campbell
Director of Public Works
Town of Inuvik
Box 1160, #2 Firth Street
Inuvik NT X0E 0T0

Town of Inuvik - Municipal Solid Waste Disposal Facility (MSWDF) Operations and Maintenance Manual - Review Comments

Dear Mr. Campbell:

In accordance with Water Licence G17L3-001 Part E, an updated Operations and Maintenance (O&M) Plan (prepared by AECOM Canada Ltd.; AECOM) for its Municipal Solid Waste Disposal Facilities (MSWDF) in Inuvik, was submitted to the Gwich'in Land and Water Board for approval. Comments were received from the following Stakeholders as part of that review:

- Environment and Climate Change Canada (ECCC)
- Government of Northwest Territories (GWT) – Environment and Natural Resources (GNWT-ENR)
- Gwich'in Tribal Council - Department of Cultural Heritage (GTC-DCH)
- Gwich'in Tribal Council - Lands and Resources (GTC-LR)

This letter seeks to summarize and address concerns brought forward by the Stakeholders. AECOM would like to take this opportunity to thank the Stakeholders for reviewing the document and providing their insights.

1. ECCC

Comments received from the ECCC are summarized below:

Comment: The management of surface water runoff and leachate within the footprint of the solid waste facility is unclear. Section 3.14 indicates that runoff will be sampled monthly during periods of flow under the Surveillance Network Program (SNP). Section 9.9 goes on to state that all water accumulated on site will be tested prior to discharge. Based on Figure 1, which indicates the locations of SNP sampling stations, there appears to be no SNP sampling stations within the facility footprint. In addition, there is no description of how water is collected and tested within the site footprint prior to any discharge.

Recommendation: ECCC recommends that the Town of Inuvik (the Proponent) clarify the management of surface water and leachate. To do so, the Proponent should, at a minimum, describe controls in place to prevent runoff from the surrounding area from entering the solid waste facility and how any surface water and leachate present within the site footprint is collected, tested and discharged.

AECOM's response is as follows:

The facility relies on surface water naturally draining away from the landfill (refer to Figure 2 in the Operations and Maintenance (O&M) plan). The current Licence for the facility does not require a landfill liner or an engineered stormwater system. Runoff from the solid waste site is sampled monthly during periods of flow under the Surveillance Network Program.

The portion of text in Section 9.9 referring to ponding water is an error. This section will be revised to reflect actual site conditions by removing reference to sampling ponding water onsite.

2. GNWT-ENR

Comment: The 2016 ENR Inspection Report specifies (p. 6 of 19) that bears remain a nuisance at the Solid Waste Disposal Facility (SWDF) causing salvaging restrictions by the Town of Inuvik in recent years. As such, ENR Renewable Resources Officers are responding to many bear calls in the summer season to deter nuisance bears at the SWDF. ENR notes that the MVLWB municipal template for SWDF's requires in Section 13, details on strategies (other than cover placement and fencing) used to manage wildlife at the facility. While Section 3.15.7 of the current Town of Inuvik Solid Waste Disposal Facilities Operations and Maintenance Plan (the Plan) specifies that the presence of bears, or other animals at the site, shall be reported to the MSM and to the GNWT (ENR local Inuvik office); however, no detailed management strategies to prevent or reduce bear or wildlife intrusions to the SWDF were provided in the Plan.

Recommendation: ENR recommends that clear strategies to address bear, or other wildlife, nuisance issues at the SWDF be created, implemented and included within the Plan.

AECOM's response is as follows:

Issues with wildlife inside landfills, specifically bears, are a common safety and ecological issue throughout Canada. In an effort to address the concern above, the following additional measures (beyond those currently included in the O&M manual) have been discussed with the Town and shall be incorporated into the O&M Manual.

1. The Town is currently in the process of completing a Solid Waste Disposal Fencing Plan (as required in Water Licence G17L3-001 by July 1, 2019). It is planned to have this fencing installed (complete with electrified bear fence component) once the plan and design are completed.
2. The Town has approximately five motion triggered auditory deterrents (commonly referred to as "bear screamers"). These are mobile units that will be set-up around the active area of the landfill and activated at the end of the workday to deter scavenging animals with a motion triggered siren.

3. GTC-DCH

The GTC-DCH indicated that the reviewer had no issues or concerns at this time.

4. GTC-LR

The GTC-LR comments were submitted after the due date and as such will not be considered by the GLWB. However, AECOM appreciates the perspective and would like to try and address the comments. The comments are as follows:

Comment: The comments and concerns of the Gwich'in Tribal Council's (GTC) Lands & Resources Dept. will mainly concentrate on the initial document and will exclude most of the Appendix areas. After reviewing the document in its entirety, it feels like this manual highlights the important aspects of the municipal solid waste disposal facility and all the actions needed to properly manage this essential town service. Also it should be noted that this document is easy to understand with an emphasis on 'plain language' in most parts.

- i. (A) Please further explain the comment "The landfill cell has no liner system and the facility relies on natural attenuation for landfill leachate management" (p.6). Would you be able to replace the word 'Attenuation' (the reduction of the force, effect, or value of something) with something more 'plain language'?
(B) Also what are the requirements in regards to landfills having no liner systems within larger populated areas in the NWT?
(C) Lastly is there any relationship between a liner system and the permafrost (I.e. Climate Change).
- ii. What is the initiative for wider range of recycling? Can we do more to further recycle scrap tires, white goods, and C&D debris?
- iii. What is the statistics for Honey Bag disposal? Is there a decline/rise in the amount of honey bags? Where do most of these bags come from? Are there new ways to addressing disposal pits and covering?
- iv. With the estimated 5,816 tonnes/yearly of waste (5.04 kg/capita/day) entering the landfill, would there be other estimated statistics to see the total amount of waste when stricter recycling and waste management are in place? Would we see a difference in the amount of waste if there were services that addressed food waste, recycling tin and other materials? What would be an estimated cost to further waste management initiatives?
- v. When it's explained that the space needed for the next 10 years is 193,873 cubic metres, would you be able to showcase that in map form. It's hard to get a sense of the scope when it's just a number. Also when it's mentioned that the overall capacity of the landfill is 480,000 m² and this exceeds the estimated space available for the next 10 years, having a map to illustrate this scope would be beneficial.
- vi. How many vehicles are deposits in the landfill yearly?
- vii. Does the odor from the landfill ever become too much? And are there times when it's reached the community?
- viii. There is a concern that the 'Climate Change Preparation and Adaption' section (p.28) is very limited and much work should/could be done to address current climate change trends. There is basically only one paragraph on this issue.

Recommendation: Overall the document is easily accessible and its points are easy to understand. This manual showcases the daily activities done within the landfill with background information from the City of Inuvik. There is much to learn about the local Inuvik landfill but also there are areas that should be explored more.

Recycling initiatives could be explored more in ways to combat the amount of trash dumped into the area and help extend the life of the current landfill range. Also the document does lack and emphasis on Climate Change whereas it feels like nothing is being addressed on current climate change information.

AECOM's response is as follows:

The majority of these inquiries/comments deal with subjects outside the scope of an Operations and Maintenance (O&M) Plan. Despite many of these being valuable questions, the O&M Plan is meant to deal with the day to day operations of the facility and serve as a reference for facility staff. These questions might be more suited for a Water Licence application process.

Responses are numbered / lettered to correspond to the comments above.

- i. (A) This statement means that leachate freely enters the environment unimpeded by any engineered barrier; therefore the facility relies on naturally occurring physical, chemical and biological processes/factors present in the environment to lessen offsite impacts whether it be through slowing the travel of contaminants or to diminish their strength.
(B) AECOM would be happy to provide a "plain language" definition in brackets beside attenuation within the document. This will be as follows.
...attenuation ("the natural ability of the receiving environment to breakdown, dilute and/or otherwise slow the spread of contaminants and thereby lessening their impact")
(C) **This is outside of the scope of the O&M Manual.**
The current requirements in NWT do not require lined landfill systems. Based on presence/absence of a barrier layer (natural or otherwise) monitoring can be required, but no specific requirement applies when in proximity to populated areas such as Inuvik. However; general siting requirements apply for the landfill (540 metres (m) from housing, 90 m from public roads, drainage away from drinking water, outside floodplain, etc.).
- ii. Currently surface water samples are collected to monitor offsite impacts to surface water from two downstream locations (SNP0036-4 and SP0036-5). The addition of an upstream sample location (SNP0036-9) at Boot Creek is pending. Samples at these locations are taken monthly during period of flow (according to current Licence) to monitor impacts.
- iii. **This is outside of the scope of the O&M Manual.**
- iv. **This is outside of the scope of the O&M Manual.**
- v. **This is outside of the scope of the O&M Manual.**
A separate study would be performed to determine what reductions can theoretically be achieved via diversion.
- vi. **This is outside of the scope of the O&M Manual.**
Waste capacity and phasing are addressed in other plans. The O&M Manual is meant to address day to day operations and serve as a resource for operations staff.

The O&M manual states there is 480,000 cubic metres (m³) of capacity (volume) available at the site and that over the next 10 years an estimated 193,873 m³ of that available capacity (volume) will be consumed (filled with waste over those 10 years). To illustrate this consumption relative to the capacity, I've provided **Figure 1**.

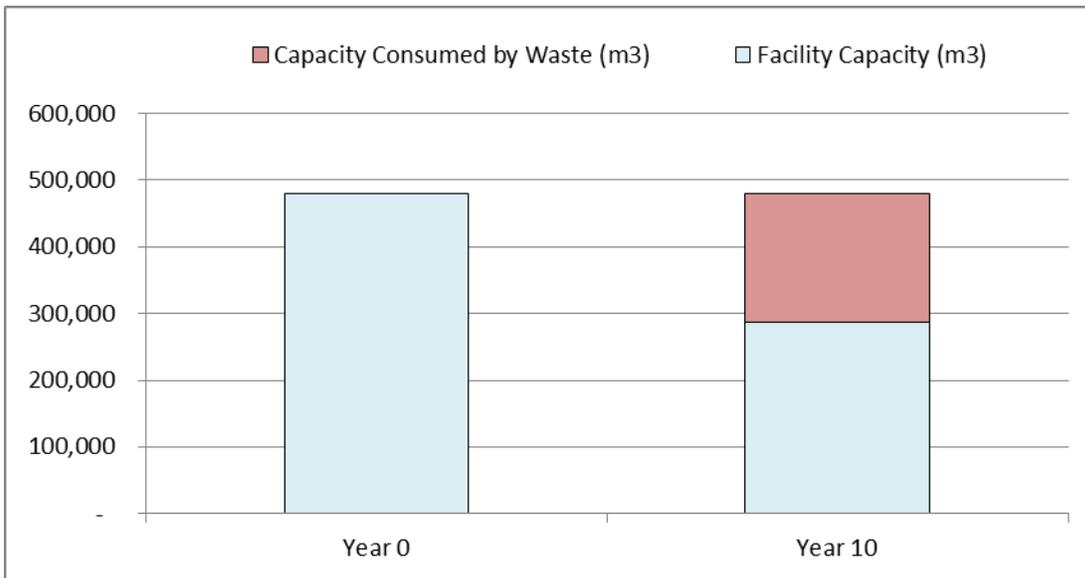


Figure 1: Solid Waste Facility Capacity (O&M Manual)

- vii. **This is outside of the scope of the O&M Manual.**
Records on the number of vehicles receive at the facility are not readily available.
- viii. The nearest residence is approximately 610 m from the site (more than guidelines' 540 m). To my knowledge, there has been no record of odour complaints against the solid waste facility (after the practice of burning waste was stopped). The waste material is routinely covered to reduce offsite odours.
- ix. **This is outside of the scope of the O&M Manual.**
Climate Change preparation and adaptation is an important consideration for the facility in general; however, beyond those items listed within the O&M Manual there aren't any additional measures for climate change preparation and adaptation being contemplated for the landfill site. A separate study on a community climate change preparation and adaption plan would be required as these considerations are beyond the scope of an O&M plan.

Yours sincerely,

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