No.	Topic	Reviewer Comment	Reviewer Recommendation	LWB/GNWT Guideline Development Team Response
Environment and Climate Change Canada (ECCC) - Eva Walker				
1	Definitions - Discharge	ECCC suggests that the definition of Discharge could be clarified by deleting "Water" or "Receiving Environment", or if both are intended, add "or".		The definition was missing the word "in". The definition has been updated to align with that of the Draft Waste and Wastewater Management Policy.
2	2.2 Sludge Accumulation in Passive Sewage Treatment Systems	ECCC recommends that the sentence "...it is important to maintain a minimum volume of liquid sewage above the sludge level for treatment." should be clarified to state "maintain enough operational volume (or capacity) above the sludge for wastewater to be treated. The wording implies that a small volume of wastewater must be maintained, when what is intended is for capacity to be maintained.		Noted; changed as suggested.
3	Table 1 - Sludge Management Plan Requirements	The Plan is to describe the treatment method; however, In many cases only dewatering is done and no treatment.	ECCC suggests that the Item name could be revised to "Handling / Treatment". ECCC also recommends that this section include testing/characterizing the sludge coming out of the lagoon for the purposes of identifying treatment requirements, and future use planning.	The working group suggests that "management" is handling/treatment. Noted; testing and characterizing was added to Table 1.
4	Section 4.0 How is Sludge Monitored? Figure 4 - Decision Matrix for Monitoring Sludge and Assessing Sewage Waste Treatment Figure 10 Development of a Sludge Management Plan	Figure 4 provides a flow chart which leads to the action of developing a sludge management plan, as a result of sludge depth impeding system function, with poor effluent quality due to sludge accumulation. ECCC notes that this is a reactive approach, and could be more proactive with the final action being "Implement the Sludge Management Plan". ECCC recommends that the Plan be developed ahead of time, and include the monitoring of sludge depth and/or tracking of trends in effluent quality leading up to actioning the management. Similarly, Section 4 references developing the plan AFTER the problem occurs. ECCC recommends this section be revised to developing the plan before the problem occurs. The flow chart in Figure 10 leads to "Submit Sludge Management Plan for Regulatory Approval" ECCC notes that several years may typically be needed to implement sludge removal, due to cost planning, information gathering, and logistical challenges. Having the front end already planned and approved could reduce the time that poor quality effluent is being discharged.		Requiring a Sludge Management Plan from a community year ahead of time is not practical; a municipality often doesn't know what the plan will be for sludge until they have to manage it, and sludge is often monitored for years before it needs to be removed. Typically the Sewage Treatment System Operation and Maintenance Plans require details on the monitoring of sludge, and annual water licence reports require the reporting of results, trends and plans for management. The results would lead to the community making plans to remove/manage sludge from the system, and developing their Sludge Management Plan at that time.
5	Section 5.2 Sludge Treatment	ECCC notes there is no mention of how treatment might be done (just dewatering).	ECCC recommends the board list relevant methods if possible/applicable.	MVLWB staff followed up with ECCC, as they regulate the discharge of municipal wastewater and were not participants on the working group. MVLWB asked if any guidance for sludge management in the north is available. The methods discussed in the two ECCC documents (referenced in the guideline) are generally not applicable for passive northern systems. ECCC suggested that the guideline at least convey that for "higher-quality" end-use, a higher degree of sludge treatment must be used. ECCC also wanted to include that further characterization of the sludge would be required and plans submitted for approval for higher-quality end-uses. Because there are no specific design standards or requirements for passive dewatering/treatment of sludge available, the guideline will suggest possible methods for managing sludge but will not list them out nor prescribe them.

6	Appendix B: Instructions for Using a Sludge Judge	The section on "Weather Conditions" states that "Sludge depth measurements should be taken during optimal weather conditions after the sewage lagoon has completely thawed. Depth measurements should be taken during the summer, after the lagoon has completely thawed." ECCC notes that for lagoons that use batch decant, it may be appropriate to specify that measurements should be done at the same timing relative to decant, (i.e. before) if the maximum operating volume above the sludge is to be measured. If just the sludge depth is being measured, the volume of wastewater above the sludge would not matter.		The information regarding the timing of monitoring is sufficient. Instructions already refer to monitoring post-thaw, which in itself is a narrow season. Communities are also somewhat limited by the availbility of qualified staff to conduct the monitoring. No edits made.
No.	**Topic**	**Reviewer Comment**	**Reviewer Recommendation**	**Proponent Response**
GNWT-ENR - EAM (Environmental Assessment and Monitoring) - Erin Goose				
1	Cover Letter	Comment Letter	N/A	Noted.
No.	**Topic**	**Reviewer Comment**	**Reviewer Recommendation**	**Proponent Response**
SLWB - Bonnie Bergsma				
1	Figure 10	The boxes are too dark to read the text and the figure could be larger for readability	make the boxes lighter and text larger	Flowcharts have been updated.
2	Figure 10	This figure presents two processes that would be better split into two figures	Make Figure 10 a) for the process from identify need to submit plan and figure 1b) for the process after submitting the plan to approval	Figure 10 has been updated.
3	Figure 10a - dark green boxes	Equipment needs box 1 - include a section in 5.x that describes the common types of equipment used to remove sludge. Viable options to Treat Sludge Box 2 - refer to section 5.2. Criteria for re-use Box 3 - refer to section 5.3	for each of the 3 boxes add a reference to the section of the report that addresses these needs.	Flowcharts have been updated.
4	section 5.2 - 1st para	At the end of the first sentence... there are a variety of ways this can be done.. provide a hyperlink or refer to reference section Appendix 1or create another appendix with pictures that show the various methods described in the second paragraph.	For each of the methods for treating sludge it would be helpful to add approximate costs for each method and perhaps even pros and cons for each method as geotubes while the best are also the most expensive. This could assist municipality on deciding on the most appropriate method based on a variety of factors.	Costing information is not available, and costs are ever-changing. Guidelines of this nature issued by the LWBs and GNWT do not generally cover costing.
5	section 5.2 - 2nd para	revise the first and second sentences to better identify that this paragraph is describing the variety of ways (*methods*) sludge treatment can be done.	First sentence - One of the primary goals of all sludge management treatment methods is to dewater.... Second sentence - This can be accomplished by using various techniques (**methods**) such as...	Noted; changed "techniques" to "methods".
6	section 5.2 - third para	clarify first sentence - if required the level of treatment... Level refers to the criteria for re-use under section 5.3.	change the word level to method. The chosen method can be part of pros and cons referred to in comment 7.	Noted; added "and method" to first sentence. A method can deliver varying levels of treatment based on time and conditions, etc.