

### Review Comment Table

<b>Board:</b>	GLWB
<b>Review Item:</b>	Tsiigehtchic - Type "B" Municipal WL Renewal (G16L3-001)
<b>File(s):</b>	<a href="#">G16L3-002</a>
<b>Proponent:</b>	Charter Community of Tsiigehtchic
<b>Document(s):</b>	<a href="#">1.0 Application and Introduction</a> (1 MB) <a href="#">2.0 Municipal Water Supply</a> (1 MB) <a href="#">3.0 Wastewater Treatment System</a> (4 MB) <a href="#">4.0 Soild Waste Facility</a> (3 MB) <a href="#">5.0 SNP</a> (1 MB) <a href="#">6.0 Spill Plan</a> (2 MB) <a href="#">7.0 Public Engagement</a> (119 KB) <a href="#">8.0 Works Cited</a> (83 KB)
<b>Item For Review Distributed On:</b>	
<b>Reviewer Comments Due By:</b>	Oct 19, 2016
<b>Item Description:</b>	The Charter Community of Tsiigehtchic has submitted an application for a renewal of Type B Water Licence G99L3-004, for the purpose of municipal water use and the deposit of waste. The Community's current Licence expires on October 31, 2016, and a ten year renewal term has been requested. The Gwich'in Land and Water Board is considering this application, and appreciates any comments or recommendations from reviewing organizations.
<b>General Reviewer Information:</b>	Reviewers are invited to submit questions, comments and recommendations on the application using the Online Review System (ORS) by <b>Wednesday October 19, 2016</b> . Note that all documents that have been uploaded to this review are also available on our public registry. If you have questions or require assistance with the ORS, please contact Board staff identified below.
<b>Contact Information:</b>	AlecSandra Macdonald 867-777-4954

### Comment Summary

Charter Community of Tsiigehtchic (Proponent)				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) Revised Figure 4. Wastewater Treatment System <b>Recommendation</b>		
2	General File	<b>Comment</b> ( <a href="#">doc</a> ) Updated Contact List for Spill Contingency Plan <b>Recommendation</b>		
Environment and Climate Change Canada: Melissa Pinto				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) ECCC Cover Letter <b>Recommendation</b>		
2	Sludge management	<b>Comment</b> Section 8 of the Wastewater Treatment System Operation and Maintenance Plan indicates that sludge has never been removed for disposal. It also indicates that sludge levels are not checked on an annual basis. <b>Recommendation</b> ECCC recommends the licensee review their sludge management to include monitoring of sludge levels which will help determine if sludge requires dredging to optimize operation of the sewage lagoon.	<b>Oct 21:</b> Section 3.5.3 Sludge monitoring The amount of freeboard and the accumulation of sludge in E-Lake Lagoon should be monitored annually to determine if sludge is accumulating that may require dredging. The sewage lagoon sludge should be fine but periodic monitoring will inform Tsiigehtchic about management needs. In each case, consultation with a professional engineer with expertise in lagoon wastewater treatment may determine if sludge removal may be warranted. The eutrophication and sedimentation buildup in Ponds B/C are of more immediate need of attention	

3	Litter and leachate control	<p><b>Comment</b> Section 4.3 Site Visit 2016 July 29 of the application indicates that waste has not been covered for an extended period of time.</p> <p><b>Recommendation</b> ECCC recommends the licensee compact and cover the landfill on a more frequent basis to help control litter and leachate generation.</p>	<p><b>Oct 21:</b> Section 4.5.4 There is a problem of dumping outside the designated footprint of the SWF plus the inevitable windblown debris. Wind-blown debris can be reduced by (a) early and frequent cover of the recently deposited waste and (b) a shelterbelt (Figures 13, 14 15). Cover material should be stockpiled in advance and arranged to partition the new “cell” to receive waste material. The equipment should be able to stay on site to make it easier and more likely that recently deposited waste will be covered early and frequently.</p>	
4	Solid waste management	<p><b>Comment</b> Section 5 Facility Design of the Solid Waste Facility Operation &amp; Maintenance Plan states that the facility relies solely on natural attenuation of landfill leachate. That is, there is no landfill liner or leachate management system associated with the landfill. In the absence of both a landfill liner and a leachate management system, the importance of minimizing the volume and toxicity of leachate generated is stressed to the greatest extent possible. Snow, rain, runoff and site drainage should be diverted away from the landfill in order to minimize the volume of leachate that is generated. Segregating hazardous wastes, using secondary containment, performing on-going maintenance, and monitoring for spills/releases are important elements in reducing the strength and toxicity of the leachate generated.</p> <p><b>Recommendation</b> ECCC recommends the</p>	<p><b>Oct 21:</b> Section 4.5.3 The southeast quadrant is an inadequately designed hazardous waste storage (HZW) area. This was recommended in each of the two previous consultant reports for this water licence. A new, properly constructed area about 25 m by 25 m (635 m<sup>2</sup>) can be established to the south and west of the existing HZW that will be lined with a suitable liner (geomembrane of 60 mil HDPE or PVC) laid within a containment dike that provides 60 cm of freeboard. The landfill is higher than surrounding lands and therefore diverting water away does not "minimize the volume of leachate". A perimeter ditch and collection basin may be appropriate. However, exfiltration will still occur and the question becomes one of diffuse attenuation with the non-engineered solution as is or of a concentration of surface runoff contaminants at a collection basin</p>	

		<p>licencee describe the solid waste management methods employed at the landfill, including at the hazardous waste storage site, to minimize: (i) contact water, (ii) leachate volume, and (iii) leachate strength. Annual reporting should provide on-going updates for hazardous waste management.</p>		
5	<p>Management of refrigerants and fluids - appliances and vehicles</p>	<p><b>Comment</b> The Solid Waste Facility Operation &amp; Maintenance Plan does not indicate that appliances and vehicles are routinely and properly drained of fluids before being scrapped.</p> <p><b>Recommendation</b> ECCC recommends the licencee use best practices to responsibly manage refrigerants and fluids from discarded appliances and scrap vehicles. Fluids should be removed and sent to an appropriate facility for disposal.</p>	<p><b>Oct 21:</b> Section 6.0 Staff must be provided with adequate training and recurrent workshops for: (a) to ensure a thorough understanding of environmental policy and regulations; (b) a recognition of roles and responsibilities of staff and the interrelationships of the Community and the regulatory bodies; (c) the adequacy and frequency of training of staff for both on the scene actions and for all necessary reporting and forms completion; (d) best practices for the handling of fuels and hazardous fluids should be provided to municipal staff; for instance, that drip pans should be utilized when refuelling equipment and, (e) Standard First Aid, CPR, WHMIS, Transport of Hazardous Goods, spill containment, hazardous waste handling, personal safety, emergency preparedness). Section 4.6.2 Certification for refrigerant handling is included as a resource to encourage staff training.</p>	
6	<p>Sampling and Data</p>	<p><b>Comment</b> The application indicates that there was no net discharge (as reported by AECOM) from the lagoon into Mackenzie River and that effluent is likely exfiltrating into the receiving environment. Sampling</p>	<p><b>Oct 21:</b> Section 5.3 Compliance with the requirements of the SNP has been a problem and is principally a matter of scheduling and delegation of responsibility. To address this, four</p>	

		<p>is inconsistent, as shown by the Surveillance Network Program (SNP) data in Section 5 of the application.</p> <p><b>Recommendation</b> ECCC recommends that sampling of the lagoon outflow (1557-4) and flow to Mackenzie River (1557-5) be completed monthly May through October. Both sites should be sampled to verify the treatment efficacy of the wetland.</p>	<p>recommendations are proposed: (1) trail grooming and access improvements to facilitate water sampling, (2) regular refresher training on sampling protocol, (3) distribution of copies of a reminder chart to ensure regular compliance with data collection and reporting, and (4) an annual order of sample bottles.</p>	
7	Maps and Figures	<p><b>Comment</b> The maps and figures in the application are confusing and not labelled with all appropriate parts of the wastewater treatment system/area, including all wetlands and ponds.</p> <p><b>Recommendation</b> ECCC recommends the licensee update the maps and figures to include all appropriate labels (i.e. Wetlands and Ponds). This would allow readers to better understand the text presented in the application.</p>	<p><b>Oct 21:</b> Sections 3.2 and 3.3 Components of the WWTS are labelled and follow the labels assigned in each of the two previous applications. Figure 4 has been revised, attached. The elements are: Wastewater Chute, E-Lake Lagoon, Wetland A, Pond A, Wetland B, Pond B, Wetland C, Pond C and Discharge channel to Mackenzie River. Pond A may not be in the flow path of wastewater although it provides a dilution and flushing effect. Ponds B and C and Wetlands B and C form one unit.</p>	
8	Off-site resources	<p><b>Comment</b> The Spill Contingency Plan lists ECCC Environmental Emergencies with an incorrect contact number (867-669-4752) as an off-site resource.</p> <p><b>Recommendation</b> In the case of a spill or emergency, the 24 Hour Northwest Territories Spill Report Line should be contacted first by the Proponent, who will then involve ECCC Emergencies when appropriate. For information relating to the environmental enforcement and reporting requirements under the Canadian Environmental Protection Act and the</p>	<p><b>Oct 21:</b> Section 6.1.1 Contacts List, revised, attached.</p>	

		Fisheries Act please contact ECCC Environmental Enforcement at 867-669-4730. The ECCC National Environmental Emergencies Centre (NEEC) will provide technical and scientific environmental advice and assistance to the lead agency, in the event of an environmental emergency. A lead agency is described as the governmental authority that regulates or has authority over the activity from which the emergency originated. NEEC can be contacted at 1-866-283-2333.		
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**Fisheries and Oceans Canada: Triage Group Fisheries Protection Program**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
2	General File	<b>Comment</b> ( <a href="#">doc</a> ) DFO Letter <b>Recommendation</b>		
1	DFO - Comments	<b>Comment</b> The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received the renewal of the Municipal Water Licence for the Charter Community of Tsiigehtchic on September 28, 2016. Based on the information provided, the proposal has been identified as a project where a Fisheries Act authorization is not required given that serious harm to fish can be avoided by following standard measures. The project as proposed is not considered to need an authorization from the Program under the Fisheries Act in order to proceed. <b>Recommendation</b> In order to comply with the Act, it is recommended that the proponent follow our guidance tools which can be found at the following	<b>Oct 21:</b> Please forward copy of the letter of July 20 2015 providing advice. The guidance tools posted at the listed website have been reviewed and this application does not cause harm to fish or to fisheries. There have been no changes to the plans and therefore this application does not require a site specific review.	

		<p>website (<a href="http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html</a>). It is also recommended to follow DFO's previous advice sent July 20, 2015. It remains the proponent's responsibility to meet the other requirements of federal, territorial and municipal agencies. Should the plans change or if the proponent omitted some information in the proposal such that the proposal meets the criteria for a site specific review, as described on our website (<a href="http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html</a>), they should complete and submit the request for review form that is also available on the website. Please be advised that it is also the proponents Duty to Notify DFO if it has caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery.</p>		
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**GNWT - ENR: Central Email GNWT**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
22	General File	<b>Comment</b> ( <a href="#">doc</a> ) ENR Letter with Comments and Recommendations <b>Recommendation</b>		
1	Topic 1: SNP Monitoring Deficiencies	<b>Comment</b> As noted by the Water Resource Officer in his 2016 inspection, the community has not been collecting the required SNP compliance samples. ENR acknowledges the communities effort in creating a SNP protocol that was submitted with this application, but reminds the Community to ensure SNP samples are collected as required by the	<b>Oct 21:</b> Concur.	

		<p>Water Licence. The Water Licence currently requires for SNP monitoring activities occur twice a year: once immediately after breakup, and, once prior to freeze up. ENR notes that results from sampling at SNP 1557-4 were submitted with this Water Licence renewal application package. Only 5 sampling events occurred, specifically on September 15, 1991, October 12, 2006, June 27, 2007, June 15, 2010 and June 7, 2016. ENR would like to remind the Hamlet that effluent sampling of their waste management activities is required twice a year.</p> <p><b>Recommendation</b> 1) The Charter Community of Tsiigehtchic should collect all required SNP samples to remain in compliance with the Water Licence.</p>		
2	Topic 2: SNP Monitoring Deficiencies	<p><b>Comment</b> Table 19b of the SNP document also reports a TSS EQC exceedance for SNP 1557-4 (970 mg/L reported; EQC of 180 mg/L). It isn't clear if the Community notified the Board or the Inspector of the exceedance.</p> <p><b>Recommendation</b> 1) Annual Reports should indicate what actions were taken following elevated SNP results, including when they were reported to the Board or the Inspector. Any actions taken to identify the source of the elevated levels as well as the steps taken to prevent future exceedances should also be included.</p>	<p><b>Oct 21:</b> The TSS of 970 was not flagged as an exceedance but is highlighted in Section 5.4.1 in the Table 19b and in Section 5.5.2. One explanation is that such a value is the result of turbulence at the point of sampling and this is the rationale for the recommendations in Section 5.3.1 and 5.3.2. The sample location of 1557-4 could be the north side of the boardwalk (higher TSS), the south side of the boardwalk (lower TSS) or at the open water of Wetland A (lowest TSS with good sampling technique) and where it should be as that is the "lagoon decant point." This relates to Section 5.4.2 in which the MVLWB policy indicates that the end of the treatment system is not</p>	

			necessarily the lagoon decant point and that the effluent quality criteria should apply to the end of the water treatment system at SNP 1557-5 where wastewater enters the receiving environment.	
3	Topic 3: Annual Reporting	<p><b>Comment</b> ENR notes that there were no Annual Reports submitted with the current Water Licence application and none are posted on the Gwich'in Land and Water Board's Public Registry. Annual reporting is an important requirement of the Water Licence. It also serves as an important tracking tool for reviewers and also for the community and community members.</p> <p><b>Recommendation</b> 1) ENR recommends that all past Annual Reports be submitted to the Gwich'in Land and Water Board and posted on the GLWB Public Registry, and on an annual basis as per their Water Licence and requirements for all documents to be posted on the Public Registry.</p>	<p><b>Oct 21:</b> Section 5.4 is the Annual Report for 2015 and 2016, to date. Previous Annual Reports are post at the GLWB Registry in Section 5, Reports and Studies. The Registry includes a complete Annual Report for 2006, 2007, 2008, 2009 and 2010.</p>	
4	Topic 4: EQC Compliance Point	<p><b>Comment</b> The SNP document, submitted to support the Water Licence application, has requested the Condition for the water quality parameters stipulated for Station 1557-4 at the discharge of the E-Lake Lagoon be assigned to Station 1557-5 at the final discharge point where the treated wastewater leaves the treatment system and enters the receiving environment of the Mackenzie River. ENR assumes this request may be due to SNP Station 1557-4 reporting TSS concentrations of 970 mg/L, an exceedance of the Licence by five times</p>	<p><b>Oct 21:</b> he TSS of 970 was not flagged as an exceedance but is highlighted in Section 5.4.1 in the Table 19b and in Section 5.5.2. One explanation is that such a value is the result of turbulence at the point of sampling and this is the rationale for the recommendations in Section 5.3.1 and 5.3.2. The sample location of 1557-4 could be the north side of the boardwalk (higher TSS), the south side of the boardwalk (lower TSS) or at the open water of Wetland A (lowest TSS with good sampling technique) and where it</p>	

		<p>(EQC of 180 mg/L), while the downstream SNP station (1557-5) has a concentration of only 6 mg/L. However, it is not clear to ENR if the Community is requesting that the EQCs be removed from the current compliance point (SNP 1557-4) or if the request is for adding EQCs to both SNP stations (SNP 1557-4 &amp; 5). Additional sampling and monitoring is required to examine the performance of the lagoon and ensure the proper location for the applying the EQC's is selected. It is not clear to ENR if the 970 mg/L was a sampling or laboratory error. It seems to be the only result with such a large concentration. As such, it is ENR's opinion that the existing sample record is not sufficient to capture the potential scale and scope of waste releases from the lagoon.</p> <p><b>Recommendation</b> 1) ENR requires additional supporting information on the natural conditions of the discharge point of Nagwichoojik (Mackenzie River) to support applying the Water Licence EQCs of SNP 1557-4 to SNP 1557-5.</p>	<p>should be as that is the "lagoon decant point." This relates to Section 5.4.2 in which the MVLWB policy indicates that the end of the treatment system is not necessarily the lagoon decant point and that the effluent quality criteria should apply to the end of the water treatment system at SNP 1557-5 where wastewater enters the receiving environment. The assumption is incorrect; it is to apply the logic of the MVLWB policy about parameter thresholds applicable to treated wastewater versus a lagoon decant point. ENR asks for information on the natural conditions of the discharge point. This is not the question at hand; rather it is that the wastewater treatment system is a system with inputs (wastewater chute to E-Lake Lagoon), processes (anaerobic and aerobic digestion throughout E-Lake Lagoon, the wetlands (A, B, C) and the ponds (A, B, C), and finally, the output of treated wastewater at the discharge point (Figures 4 and 5f).</p>	
5	<p>Topic 5: Changes to Part A - Scope and Definitions of Tsiigehtchic Water Licence</p>	<p><b>Comment</b> The Board should consider including the recommended definitions in the Tsiigehtchic Water Licence to provide further clarity and consistency within the Water Licence and with other Boards.</p> <p><b>Recommendation</b> 1) It is recommended the GLWB consider insertion or adjustment of the following (or similar) conditions within Part A - Scope and Definitions of Tsiigehtchic Water Licence:      A definition for Modification,</p>	<p><b>Oct 21:</b> Concur. Regulations means Regulations promulgated pursuant to section 63 of the Act. ... name of Act missing.</p>	

		<p>Municipal, Professional Engineer, Reclamation, Regulations, Sewage Sludge Treatment Facility, Spill Contingency Plan, Surveillance Network Program and Unauthorized discharge. The following suggested definitions are currently used by other Boards in other jurisdictions and may be considered by the GLWB:</p> <p>Modification means a change, other than an expansion, that does not alter the purpose or function of that structure.</p> <p>Municipal Sewage Sludge is a mixture of water and non-stabilized solids separated from various types of wastewater as a result of a natural or artificial process.</p> <p>Professional Engineer means a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists to practice as a Professional Engineer in the Northwest Territories in accordance with the Engineering and Geoscience Professions Act, S.N.W.T. 2006, V.16, or amendments, and whose principal field of specialization is appropriate to address the components of the undertaking at hand.</p> <p>Reclamation means activities which facilitate the return of areas affected by the Waste Disposal Facilities to a viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and surrounding environment. Regulations means Regulations promulgated pursuant to section 63 of the Act. Sewage Sludge Treatment Facility comprises the area and</p>		
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		<p>engineered structures designed to treat Sewage sludge. Spill Contingency Plan means a document, developed in accordance with Indian and Northern Affairs Canada's April 2007 Guidelines for Spill Contingency Planning, that describes the set of procedures to be implemented to prevent and minimize the effects of a spill. Surveillance Network Program means a monitoring program established to define environmental sampling and analysis requirements, as detailed in Annex A of this Licence, to collect Water quality data, and to assess discharge quality, Licence compliance, and potential for impacts to the environment. Unauthorized discharge means a release or discharge of any Water or Waste not authorized under this Licence.</p>		
6	Topic 6: Changes to Part B "General Conditions"	<p><b>Comment</b> The Board should consider adding the following (or similar) conditions under Part B, Item 1 of Tsiigehtchic Water Licence which will ensure consistency with other municipal Water Licences in the NWT.</p> <p><b>Recommendation</b> 1) ENR recommends that the following (or similar) conditions be added under Part B, Item 1 of Tsiigehtchic Water Licence: " A summary of Modifications and/or major maintenance work carried out on the Waste Disposal Facilities, including all associated structures; A list of unauthorized discharges; An outline of any spill training and</p>	Oct 21: Concur.	

		communications exercises carried out; The monthly and annual quantities of sludge removed from the Sewage Disposal Facilities;		
7	None	<p><b>Comment</b> None</p> <p><b>Recommendation</b> 2) Additionally, ENR recommends addition of the following (or similar) conditions to be included in the Water Licence: a) The Licencee shall operate in accordance with the plans and programs approved pursuant to the conditions of this Licence and with any revisions to the plans and programs as may be made pursuant to the conditions of this Licence and as approved by the Board. If any plan is not approved by the Board, the Licencee shall revise the plan as requested by the Board. b) The Licencee shall, within 60 days if the issuance of this Licence, post the necessary signs, where possible, to identify the stations of the Surveillance Network Program. All postings shall be located and maintained to the satisfaction of an Inspector. c) The Licencee shall, within 60 days of issuance of this Licence, post signs in the appropriate areas to inform the public of Water Supply and Waste Disposal Facilities. All postings shall be located and maintained to the satisfaction of an Inspector. d) Conditions relating to the reporting of spill such as B.5 should be transferred to a section within the Water Licence specific to spill</p>	<p><b>Oct 21:</b> Concur.</p>	

		contingency planning (see below comment on SCP).	
8	Topic 7: Part D “Conditions Applying to Waste Disposal	<p><b>Comment</b> The Board should consider adding the following conditions to the Tsiigehtchic Water Licence to ensure the necessary provision and clarity towards waste disposal practices.</p> <p><b>Recommendation</b> 1) ENR recommends that the following (or similar) conditions be added Part D “Conditions Applying to Waste Disposal. Note that for clarification purposes for the Licencee, the Board may regroup and identify condition under Sewage and Solid Waste (see approved Water Licence for the Village of Fort Simpson). e) The Licencee shall ensure that any unauthorized Wastes associated with this undertaking do not enter any Waters. f) The Licencee shall immediately notify an Inspector of the exceedance of any effluent quality criterion. g) A freeboard of one metre, or as recommended by a qualified geotechnical engineer and as approved by the Board, shall be maintained at all dykes and earthfill structures associated with the Sewage Disposal Facilities. h) An EQC for Total Petroleum Hydrocarbons (TPH) of 5 mg/L.</p>	<p><b>Oct 21:</b> e) The Licencee shall ensure that any unauthorized Wastes associated with this undertaking do not enter any Waters. Concur. f) The Licencee shall immediately notify an Inspector of the exceedance of any effluent quality criterion. Concur. g) A freeboard of one metre, or as recommended by a qualified geotechnical engineer and as approved by the Board, shall be maintained at all dykes and earthfill structures associated with the Sewage Disposal Facilities. There are no dykes or earthfill structures associated with either the SWF or the WWTS at Tsiigehtchic. h) An EQC for Total Petroleum Hydrocarbons (TPH) of 5 mg/L. CCME Guidelines deal with oil contaminated soils. Is the 5 mg/L a standard for wastewater? Guidance for site-specific criteria support applying one of several approaches: (a) background level plus two standard deviations calculated for both open water and ice cover conditions, (b) monthly means of background plus two standard deviations, or (c) a percentile (e.g. 95th). What is the source to set TPH at 5 mg/L? Taiga Water Sample Request form indicates that both extractable hydrocarbons and BTEX/Purgeable Hydrocarbon samples are required to obtain TPH using Taiga Laboratories; therefore, should GLWB direct TPH, the EQC parameter list should</p>

			specify both of these parameters to ensure the required measurement (TPH).	
9	Topic 8: Conditions Applying to Spill Contingency Planning	<p><b>Comment</b> There is currently no provision in Tsiigehtchic Water Licence to ensure that the necessary planning is in place to prevent and/or quickly respond to all accidental spills that may occur at the hamlet Waste Management Facilities or elsewhere in the community. Spill Contingency Planning is a crucial step in protecting the community groundwater and surrounding water bodies from impacts of waste management activities. Therefore, the Board should consider addition a Section to the Water Licence for Spill Contingency Planning to ensure necessary provisions exist in the Water Licence for planning and response to spills.</p> <p><b>Recommendation</b> 1) ENR recommends that a section be added to Water Licence to include full Spill Contingency Planning, and to ensure consistency with other Water Licences currently issued by other Boards. It should include the following items: a) The Licencee shall submit to the Board, within 6 months of the issuance of this Water Licence, a Spill Contingency Plan in accordance with the Guidelines for Spill Contingency Planning, April 2007 developed by INAC - Water Resources Division. b) The Licencee shall act in accordance with the approved Spill Contingency Plan, and shall annually review the Plan and made the necessary revisions to reflect changes in operations,</p>	<p><b>Oct 21:</b> The Water Licence Part G 1 h already requires that the OMP for Waste Disposal Facilities include an updated spill contingency planning. This has been prepared as part of this application and is found in Section 6 which includes the MVLWB OMP Spill Contingency Plan (November 2015). Section 6.1.1 It is the policy of Tsiigehtchic Charter Community to comply with existing regulations, to provide such protection of the environment as is technically feasible and economically practical, to cooperate with other groups and agencies on the protection of the environment, to keep employees, government officials and the public informed. Tsiigehtchic SAO will be the Responsible Person for the Spill Contingency Response Plan and will coordinate with the GNWT Responsible Person in accordance with the regulatory oversight and investigation by the Department of Environment and Natural Resources (ENR-GNWT).</p>	

		<p>technology, chemicals or fuels, or as directed by the Board. Revised Plans shall include a brief summary of the changes made, and shall be submitted to the Board, for approval, at least sixty (60) days prior to any proposed changes to the requirements I the approved Plan. c) If, during the term of this Licence, a spill or an Unauthorized Discharge of Waste occurs or is foreseeable, the Licencee shall:         Implement the Spill Contingency Planning         Report the incident immediately via the 24-hour NWT Spill Report Line at (867) 920-8130 in accordance with the instructions contained in the Spill Report Form NWT;         Submit to an inspector a detailed report on each occurrence not later than 30 days after initially reporting the event. d) All spills and Unauthorized Discharges of Water or Waste shall be reclaimed to the satisfaction of an inspector.</p>		
10	Topic 9: Part G – Conditions Applying Operation and Maintenance	<p><b>Comment</b> The Operations and Maintenance Plan (O&amp;M) requires a number of improvements to be acceptable and consistent.  <b>Recommendation</b> 1) ENR recommends that the Water Licence include a provision for the O&amp;M to be updated and remain current to adequately demonstrate actual waste management activities employed at their facilities.</p>	<p><b>Oct 21:</b> It is not needed to revise the O&amp;M but rather to implement the plan. The SWF plan is satisfactory but site supervision and controls are absent.</p>	
11	None	<p><b>Comment</b> None  <b>Recommendation</b> 2) ENR recommends that the Board consider including a</p>	<p><b>Oct 21:</b> This is not needed until recommended by a professional engineer as described in Section 3.5.3.sludge in</p>	

		<p>Sewage O&amp;M Plan as a requirement of the Water Licence. The Plan should outline sludge management activities to help ensure the proper operation and performance of the sewage waste handling facilities.</p>	<p>consultation with a professional engineer with expertise in lagoon wastewater treatment may determine if sludge removal may be warranted. Accumulated solids reduce the detention time of the pond and a thickness of &gt; 45 cm or where total suspended solids exceed allowable limits may signal a need for sludge removal. A sludge removal and sludge handling plan will be required and permissions obtained from the regulatory bodies.</p>	
12	None	<p><b>Comment</b> None  <b>Recommendation</b> 3) ENR recommends that the section relating to "Conditions Applying to Operation and Maintenance" include a condition that requires a regular and annual review of the O&amp;M to reflect changes in operations, technology, and the results from research and other studies, or changes included and as directed by the Board.</p>	<p><b>Oct 21:</b> No comment.</p>	
13	Topic 10: Municipal Water Supply	<p><b>Comment</b> ENR understands from the proposed Municipal Water Supply Operations and Maintenance Plan that no facility designs or drawings have been submitted. This information is required as per Section 4 - Facility Design of the Operation and Maintenance template from the Mackenzie Valley Land and Water Board (MVLWB).  <b>Recommendation</b> 1) It is recommended the proponent submits the facility</p>	<p><b>Oct 21:</b> These drawings may be on file with GLWB through a Water Licence obtained for the construction of the water treatment facility coordinated through MACA and/or PWS about 2003.</p>	

		drawings as required or addresses the reason for the exclusion.		
14	Topic 11: Wastewater Treatment System	<p><b>Comment</b> ENR understands from the proposed Wastewater Treatment System Operations and Maintenance Plan that some of the information required under the MVLWB Operation and Maintenance template is missing, under Section 8 - Sludge Management, and Section 10 - Record Keeping. In addition, the current Wastewater Treatment System is missing security and control measures as indicated under Section 3 - Security and Control.</p> <p><b>Recommendation</b> 1) ENR recommends the proponent includes the missing information or address the reason for the exclusions.</p>	<p><b>Oct 21:</b> OMP WWTS Section 8 Sludge has not been removed. No missing information. OMP WWTS Section 10 no sludge has been removed; no modifications or major work on WWTS, no spills or unauthorized discharges to report, to closure or reclamation, no studies requested nor spill training done; hence, no missing information. OMP WWTS Section 3 there is no control at the WWTS Wastewater Truck Discharge Chute; no chemicals used in the treatment process; hence no missing information</p>	
15	None	<p><b>Comment</b> None</p> <p><b>Recommendation</b> 2) ENR recommends the proponent commit to installing further security and control measures at the Wastewater Treatment System such as, but not limited to, proper signage.</p>	<p><b>Oct 21:</b> Section 3.5.4 Signage to warn the public of risks arising from exposure to waterborne pathogens or site hazards including the risk of drowning. If signage is not enough, then increased vigilance of the site may be required such as patrols by by-law enforcement officers or motion detection surveillance that signals an alert of the presence of trespassers.</p>	
16	Topic 12: Solid Waste Facility	<p><b>Comment</b> ENR understands from the proposed Solid Waste Facility Operations and Maintenance Plan that hazardous materials are improperly stored at the solid waste site despite past recommendations made by consultants. The proposed Solid Waste Facility Operations and Maintenance Plan is missing security and control measures as indicated under</p>	<p><b>Oct 21:</b> Compaction of landfilled waste is not done routinely; however, sections or "cells" have been compacted and blanketed with cover material. The active cell requires maintenance and supervision. Equipment available is a bulldozer with blade (Caterpillar D6) (OMP SWF Section 4). A properly constructed and lined HZW area is required.</p>	

		<p>Section 3 - Security and Control. The proposed Solid Waste Facility Operations and Maintenance Plan, Section 12 - Landfilling Operations, indicates that the Charter Community of Tsiigehtchic conducts compaction of landfilled waste. However this document is missing key information in the MVLWB Operations and Maintenance template.</p> <p><b>Recommendation</b> 1) It is recommended that the proponent commit to constructing a new designated area for hazardous wastes as detailed in the recommendation under Subsection 4.5.3 “Hazardous Waste Storage Area.”</p>		
17	None	<p><b>Comment</b> None</p> <p><b>Recommendation</b> 2) It is recommended the proponent commit to installing further security and control measures at the Solid Waste Facility such as, but not limited to, proper signage.</p>	<p><b>Oct 21:</b> Section 4.5.2 The existing fencing that has failed can be relocated to the entrance area. An outer area should be so arranged to provide a temporary storage in order that should residents deposit material for disposal at the SWF the staff can place the material in an appropriate cell for landfill or one of the designated segregation areas (Figure 12). Likewise, the white goods and vehicle compounds should be provided with an eight foot lockable gate. A barricade can be established using stacked tires that are at the site. Signage, temporary barricades and fencing will direct users to deposit the waste in the appropriately designated segregation area (cell areas labelled: Carcass, Hazardous, Bagged Toilet Waste, brush, etc.). The directional signage should be supplemented with signage that is educational about source water</p>	

			protection and that provides practical information on best management practices for the household and the landfill for the proper disposal of paints, cleaners, oil, pharmaceuticals, etc.	
18	None	<b>Comment</b> None <b>Recommendation</b> 3) ENR recommends the proponent provide further detail as required by the MVLWB Operations and Maintenance template.	<b>Oct 21:</b> what does this mean?	
19	Topic 13: Spill Contingency Planning	<b>Comment</b> ENR understands that the proposed Spill Contingency Planning document lists off-site resources for assistance in the event of a spill. In addition, some of the information pertaining to ENR contacts needs to be updated. The proposed Spill Contingency Planning document does not list any facilities under Subsection 2.12 - SCP-Resource Inventory. <b>Recommendation</b> 1) Update the telephone number for the ENR Inspector from (867) 678-0590 to (867) 678-6676 under Subsection 2.6 "Off-Site Resources."	<b>Oct 21:</b> Contact list updated	
20	None	<b>Comment</b> None <b>Recommendation</b> 2) Update the telephone number for the ENR Water Resource Officer from (867) 678-6650 to (867) 678-6676 under the Tsiigehtchic Contact List for Spill Contingency Plan.	<b>Oct 21:</b> Contact list updated	
21	None	<b>Comment</b> None <b>Recommendation</b> 3) The proponent must update the list of facilities and provide detail on location and volume. If there are	<b>Oct 21:</b> Section 6.1.2 Table 14 lists the items required. Marjorie Dobson, SAO indicated that these would be ordered and distributed as kits for placement at the	

		no spill kits in any of the facilities, the proponent commit to acquiring a basic spill kit at each facility that is listed under Subsection 2.12 “ SCP-Resource Inventory.	municipal garage and the water treatment plant.	
<b>Gwich'in Tribal Council: Helga Harlander</b>				
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
2	General File	<b>Comment</b> ( <a href="#">doc</a> ) GTC Lands and Resources Cover <b>Recommendation</b>		
1	GTC Lands and Resources - Comments on Application	<b>Comment</b> The application documents identify Deep Water Lake as an alternate water source for the Charter Community of Tsiigehtchic. This is not correct. The Charter Community's current water licence does not specify an alternate water source. Access to Deep Water Lake is over Gwich'in land and is subject to a lease agreement. Should the GLWB consider authorizing Deep Water Lake as an alternate water source for the Charter Community of Tsiigehtchic, please be aware the Charter Community does not currently have an authorization for access to the water source. <b>Recommendation</b> n/a	<b>Oct 21:</b> Section 6.2 Alternate water supply ... two sources are identified: (a) trucked from the Fort Macpherson reservoir, Deep Water Lake and (b) freshwater lakes nearby or the Mackenzie River. What is the process to specify Deep Water Lake as an alternate water source? Can it be integrated in this application or must a separate application be initiated? Is the lease agreement with the Gwich'in Land Use Planning Board or another agency?	