



March 22, 2023

Manager of Licensing  
Nunavut Water Board  
PO Box 119  
Gjoa Haven, NU X0B 1J0

**Re: Cambridge Bay Soil and Water Treatment Facility Renewal  
Response to reviewer comments**

KEL has received and reviewed the comments from the Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and Environment and Climate Change Canada (ECCC). Please find below KEL's response to the comments and associated revised Management Plans V2.2 and a support letter from the Hamlet attached.

Please do not hesitate to contact KEL if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Katie Oliver", with a long horizontal flourish extending to the right.

Katie Oliver  
General Manager, Environmental Consulting  
780.451.7779  
regulatory@kblenv.com

1. Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

Comment	Recommendation	KEL Response
In the text of the letter provided the following is detailed in the motion contained within the letter. <b><i>“Now therefore, be it resolved that the Hamlet Council supports the project in principal and are interested in soil remediation, but will reserve final approval pending the Environmental screening processes by NIRB and the Nunavut Water Board.”</i></b> The letter of support was provided in 2016 before the completion of the above noted screenings.	(R-01) CIRNAC recommends that The Hamlet be approached for a follow up letter acknowledging their continued support of the project in the community.	Please find a letter from the Hamlet attached.
The department and title INAC has been replaced by the new Department referred to as Crown Indigenous Relations and Northern Affairs Canada (CIRNAC). All listed Plans under Reporting should update this information.	(R-02) CIRNAC recommends that the proponent update the Name of the department in all of its submitted plans.	Acknowledged. Management Plans references to INAC have been updated to CIRNAC.
Step 12 under reporting notes that INAC staff (CIRNAC), will be notified of the spill following the submission of the spill report and in subsequent updates. This is fine but the proponent should be aware that as a licensed Facility all spills are to be reported to the CIRNAC manager of field operations so that an inspector	(R-03) CIRNAC recommends that as soon as the proponent becomes aware of a spill that as soon as it is safe to do so that when filing the spill report, the Manager of Field Operations, CIRNAC	The Spill Contingency Plan has been updated to include CIRNAC Manager of Field Operations Notification in Step 7, Part 8.

may be assigned to the file as lead on the file. This should be done at the same time as the spill report is filed not in subsequent updates on the spill.	should be notified of the spill.	
--	----------------------------------	--

## 2. Environment and Climate Change Canada (ECCC)

Comment	Recommendation	KEL Response
<p>Closure and Reclamation Plan, Section 6.0</p> <p>Section 6.0 (Closure and Reclamation) of the Closure and Reclamation Plan describes the steps to be taken upon closure of the Soil and Water Treatment Facility, including steps for soil analysis. Steps 4 and 5 of this section indicate that soil samples will be analyzed for petroleum hydrocarbons. ECCC notes that soil analysis should be more extensive to monitor for additional contaminants that may be present in contaminated soils.</p>	<p>Regarding the Closure and Reclamation Plan, ECCC recommends rewording Steps 4 and 5 of Section 6.0 (Closure and Reclamation) to incorporate additional parameters into the text as follows: "...laboratory analysis of petroleum hydrocarbon (F1 to F4), BTEX, PAHs, and totalmetals..."</p>	<p>KEL has added additional details for petroleum hydrocarbons analysis to include petroleum hydrocarbon (F1 to F4), BTEX, PAHs and total metals.</p>
<p>Closure and Reclamation Plan, Section 6.1, Section 6.2, Section 6.3</p> <p>Section 6.1 (Biotreatment Facility) of the plan describes how material not meeting reuse criteria at the Biotreatment Facility will be managed. However, the sections describing closure and reclamation for the Water Treatment Pond and Hazardous Waste Storage Area (Sections 6.2 and 6.3, respectively) do not specify how material not meeting reuse criteria at those locations will be managed. Additionally, Section 6.3 does not describe inspection or sampling procedures.</p>	<p>ECCC recommends that Sections 6.2 and 6.3 (Water Treatment Pond and Hazardous Waste Storage Area, respectively) include a statement that soil/material not meeting reuse criteria will be disposed of at an approved location. ECCC also recommends that Section 6.3 contain a description of inspection and sampling procedures, including parameters to be analyzed, for the Hazardous Waste Storage Area.</p>	<p>A statement that soil/material not meeting reuse criteria will be disposed of at an approved location has been added to Sections 6.2 and 6.3 (Water Treatment Pond and Hazardous Waste Storage Area, respectively).</p> <p>A description of inspection and sampling procedures, including parameters to be analyzed, for the Hazardous Waste Storage Area has been added to Section 6.3</p>
<p>Closure and Reclamation Plan, Section 7.0</p>	<p>ECCC provides the following recommendations regarding Section 7.0 (Post-Closure Monitoring and Reporting)</p>	<p>Section 7.0 has been updated to add total metals to the groundwater monitoring parameters listed and to clarify that ongoing monitoring and remediation</p>

Cambridge Bay Soil and Water Treatment Facility Renewal  
KEL Response to Reviewer Comments

<p>The Closure and Reclamation Plan does not discuss the potential need for ongoing monitoring and remediation, should groundwater quality be degraded.</p>	<p>of the Closure and Reclamation Plan: Add 'total metals' to the groundwater monitoring parameters listed; and Update this section to clarify that ongoing monitoring and remediation would be provided, as required, if post-closure groundwater monitoring results indicate elevated parameter concentrations. Include a discussion of response options to address the potential scenario that groundwater quality is degraded relative to baseline conditions.</p>	<p>would be provided, as required, if post-closure groundwater monitoring results indicate elevated parameter concentrations.</p> <p>Response options to address the potential scenario that groundwater quality is degraded relative to baseline conditions are dependent on the contaminant of concern, levels observed, and source of contamination. KEL would engage a third-party hydrogeologist to review the results and make recommendations in the event further action is required, which may include further monitoring, remediation, or treatment options.</p>
<p>NWB Water Licence No. 1BR-CST1723 (issued March 2017)</p> <p>ECCC notes that the effluent discharge criteria for Monitoring Station CST-1 do not include total petroleum hydrocarbons. As this parameter is relevant to facility operations, it would be appropriate to include it in the effluent discharge criteria, rather than Oil and Grease, which is more relevant where biological lipids are present.</p>	<p>ECCC recommends adding the parameter 'Total Petroleum Hydrocarbons' to the current water licence effluent discharge criteria for Monitoring Station CST-1.</p>	<p>KEL agrees with the recommendation to remove Oil and Grease from the discharge criteria for Monitoring Station CST-1 and include total petroleum hydrocarbons.</p>
<p>NWB Water Licence No. 1BR-CST1723 (issued March 2017) Environmental Protection Plan Operations and Maintenance Plan Closure and Reclamation Plan</p> <p>The management plans for this facility do not indicate how the monitoring parameters set out in Part K, Item 5 of the water licence are incorporated into the monitoring program, nor how such monitoring results are used.</p>	<p>ECCC recommends that relevant management plans (e.g., Environmental Protection, Operations and Maintenance, and Closure and Reclamation) describe how the monitoring parameters set out in Part K (Conditions Applying to Monitoring Program), Item 5 of the water licence are incorporated into the monitoring program for Stations CST-1, CST-2, CST-3 and CST-4, and clarify how the results of such monitoring informs facility plans and operations.</p>	<p>The Operations and Management Plan, Section 8.0 (Groundwater Monitoring) has been updated to describe how the monitoring parameters set out in Part K (Conditions Applying to Monitoring Program), Item 5 of the water licence are incorporated into the monitoring program for Stations CST-1, CST-2, CST-3 and CST-4, and clarify how the results of such monitoring informs facility plans and operations. Corrective Actions in the event of exceedances have also been described.</p>

<p>Operations and Maintenance Plan</p> <p>ECCC notes that there is no groundwater sampling information provided in the plan; nor is Quality Assurance/Quality Control (QA/QC) information provided in relation to water sampling.</p>	<p>ECCC recommends updating the Operations and Maintenance Plan to include:</p> <p>(1) Information regarding groundwater sampling and analyses, and (2) QA/QC information for surface and groundwater sampling, analogous to the QA/QC information provided for the soil sampling section.</p> <p>ECCC recommends that surface and groundwater sampling events incorporate QA/QC samples (e.g., sample blanks, travel/trip blanks, replicate samples), and measurement/recording of field parameters (e.g., pH and water temperature) and field notes (e.g., weather conditions, water conditions) at the time of sampling. Field measurements, field notes, and QA/QC sample results should be used to support interpretation of monitoring results and included in future annual reports.</p>	<p>The Operations and Management Plan, Section 8.0 (Groundwater Monitoring) has been updated to describe information regarding groundwater sampling and analyses, and QA/QC information for surface and groundwater sampling, analogous to the QA/QC information provided for the soil sampling section.</p>
<p>Operations and Maintenance Plan Environmental Protection Plan</p> <p>Per Section 3.6 (Water/Snow Storage Pond) of the Operations and Maintenance Plan, water meeting discharge criteria is "discharged to surface". However, the Environmental Protection Plan provides the following more detailed description of discharge: "Treated effluent is batch discharged to the ground surface through a dedicated hose wherein the water will flow overland to natural drainage". All plans should provide a detailed and consistent description of the effluent discharge.</p>	<p>ECCC recommends that the effluent discharge description in the Operations and Maintenance Plan, and in other applicable plans, be updated to be consistent with the more detailed description provided in the Environmental Protection Plan.</p>	<p>An effluent discharge description, similar to the Environmental Protection Plan, has been added to Operations and Maintenance Plan Section 3.7 (Water Treatment Plant) and Waste Management Plan Section 6.3 (Reuse and Disposal).</p>

<p>Appendix A of Waste Management Plan Operations and Maintenance Plan</p> <p>Canada-Wide Standards for Petroleum Hydrocarbons in Soil (CCME) Environmental Guidelines for the Management of Contaminated Sites (Government of Nunavut)</p> <p>With respect to soil criteria tables in the Waste Management Plan (Appendix A) and the Operations and Maintenance Plan, Table A1 (Soil Acceptance and Re-Use criteria for Petroleum Hydrocarbons, Industrial Use) and Table A2 (Soil Acceptance and Re-Use criteria for metals, Industrial Use) do not indicate the source of the parameter criteria presented in those tables. Such information should be provided in table footnotes. Additionally, ECCC notes that the soil reuse criteria values for parameters PHC(F1) and PHC(F2) in Table A1 are higher than the Canada-Wide Standards for Petroleum Hydrocarbons in Soil (CCME) and the Environmental Guidelines for the Management of Contaminated Sites (Government of Nunavut) and should be updated to reflect the current guideline values.</p>	<p>ECCC provides the following recommendations regarding the soil criteria tables located in the Waste Management Plan (Appendix A) and the Operations and Maintenance Plan, namely Table A1 (Soil Acceptance and Re-Use criteria for Petroleum Hydrocarbons, Industrial Use) and Table A2 (Soil Acceptance and Re-Use criteria for Metals, Industrial Use):</p> <ul style="list-style-type: none"> <li>• For Tables A1 and A2, provide footnotes indicating the source(s) for the criteria values; and</li> <li>• For Table A1, reduce soil reuse criteria values for parameters PHC(F1) and PHC(F2) to align with the CCME's Canada-Wide Standards for Petroleum Hydrocarbons in Soil and the Government of Nunavut's Environmental Guidelines for the Management of Contaminated Sites.</li> </ul>	<p>Tables A1 and A2, Appendix A of the Waste Management Plan and the Operations and Maintenance Plan have been updated with the requested changes to the soil reuse criteria values for parameters PHC(F1) and PHC(F2) and to provide footnotes indicating the source(s) for the criteria values.</p>
<p>Appendix A of Waste Management Plan Operations and Maintenance Plan</p> <p>Table A4 (Treated Water Discharge Guidelines) is provided in both the Waste Management Plan (Appendix A) and the Operations and Maintenance Plan but is not discussed in either plan, so the intended purpose of this table is unclear.</p>	<p>ECCC recommends updating the Operations and Maintenance Plan and the Waste Management Plan to include a discussion of Table A4, so it is clear how these guidelines affect operations and maintenance and waste management.</p>	<p>Operations and Maintenance Plan Section 3.7 (Water Treatment Plant) has been updated to tie the guidelines in Table A4 to operations and maintenance activities.</p> <p>Waste Management Plan Section 6.3 (Reuse and Disposal) has been updated to tie the guidelines in Table A4 to waste management activities.</p>