| ID | Reviewer Comment | Recommendation | Proponent Response |
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| **1** | **GNWT-ENR** | | |
| a | **Annual Reporting of Groundwater Monitoring Results:** Déline's Closure and Reclamation Plan (CRP) specifies that it will be crucial to establish trends in groundwater quality to evaluate whether a decrease in contaminant concentrations occur. As such, the CRP provides details of the Groundwater Monitoring Program proposed at seven existing wells (up-gradient and down-gradient) for a minimum of 3 years, after which it will be revised for optimization. Contingency actions are also planned in case the number of exceedences would increase or concentrations remain above guidelines limits (section 7.3).<br><br>This section also specifies that upon receipt of the analytical results, the data will be reviewed, tabulated and compared to applicable guidelines (e.g., CCME Water Quality Guidelines for Protection of Aquatic Life [PAL] (Freshwater, Marine) and that when sufficient data is available, control charts will be prepared and a suitable trend analysis applied (e.g., Mann-Kendall) to establish trends in groundwater quality. Section 7.3, p. 30, also specifies that "The results will be reported yearly as part of the Charter Community of Deline Water Licence S12L3-006".<br><br>As the conditions of Water Licence S12L3-006 do not currently require post-closure monitoring results to be reported in Déline's Annual Report, ENR recommends the CRP to be revised to prevent any confusion regarding groundwater data reporting. Section 7.3 should be revised as follows "An annual groundwater monitoring report containing tabulated data compared to applicable guidelines (e.g., CCME Protection of Aquatic Life (fresh water) [PAL] or Federal Interim Groundwater Quality Guidelines) will be prepared yearly and submitted on March 31st with the Charter Community of Déline Annual Report." | 1) ENR recommends reference to CCME-FAL in the CRP to be revised to CCME-PAL.<br><br>2) ENR recommends section 7.3 of the Closure and Reclamation Plan to be revised as outlined above. | Agreed, we will include these changes in the addendum and all future documents |

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| b | **Time Schedule vs. Implementation Schedule:** Déline's Water Licence, Part G Item 1 c), refers to an "Implementation Schedule" as a required component of the CRP. The Water Licence also refers to a "Time Schedule" (Part G, Item 4) where "The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Sahtu Land and Water Board".<br><br>The current CRP provides an Implementation Schedule, Section 8, outlining the general steps to be followed by a general qualified contractor once the plan has been approved. However, ENR notes that timeline (referred to as "time schedule" above) is currently missing from the CRP.<br><br>Timing components are important in order to establish the order in which different closure operations will take place, as well to assess if closure and reclamation operations are being completed as planned and on time. This is required in order to meet Part G Items 3 & 4 requirements in the Water Licence. | 1) ENR recommends that a "time schedule", as specified in Part G Item 4 of the Water Licence be established and added to the CRP. This time schedule should specify a date/year in which each closure component is planned to occur. References to this time schedule should be made throughout the CRP where appropriate. As a time schedule is not available at this present time, the board may wish to work with the community to determine a date by which a time schedule can be submitted for review and approval. | The implementation schedule is to be developed following approval of the plan by the SLWB and the securing of funding. A draft schedule is under development and will be submitted with the addendum |

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| c | **Treatment of Contaminated Soils Excavated from APEC4-5 at the Hazardous Waste Storage Site:** Section 4.2.1 on soil contamination specifies that an estimated ~ 300 m3 of impacted soil from APEC 4 & APEC 5 will be excavated and treated in a biopile within the hazardous waste storage cell for one summer season only. It is also specified that while this treatment is not expected to reduce lube oil contamination significantly, it will likely reduce lighter-end hydrocarbons that are more susceptible to leaching after being placed in a capped landfill.<br><br>Biopile treatment usually requires construction of a soil treatment pad specifically constructed and lined to prevent further contamination of the surrounding environment. Page 5 of the ESA specifies that both the hazardous wastes storage area and an adjacent battery storage area "were surrounded by a soil berm at least 0.5 m in height except for the vehicle access points at the north end of the unlined cells. However, it is likely that these areas are not lined.<br><br>While ENR understands that most of the contaminated soil to be treated (~ 220 m3) originates from the hazardous waste storage area, ENR recommends the CRP provide details on the construction/designs details to be used to prevent contaminates from leaching underneath the biopile area during remediation and further contaminating local groundwater. | 1) ENR recommends the CRP provide details on the construction/designs details to be used to prevent contaminates from leaching underneath the biopile area during remediation and further contaminating local groundwater. Note liners are typically used during biopile treatment to prevent leachate migration. | Treatment of soils in the hazardous waste storage cell should be considered more of an in-situ treatment than a constructed bio-pile. In-situ soil treatment has been demonstrated to be a very successful and economic way to reduce hydrocarbon contamination in the NWT (Colomac Mine, former NTPC Fuel Facility in Tuktoyaktuk). The spread of additional contamination is likely to be negligible and the final site is to be cleaned up. Groundwater monitoring will be occurring on the site and soil sampling will be completed. Additional details on protocols to reuse contamination spread will be included in the tender documents. |

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| d | **Bulk Metal Storage Containing Derelict Vehicle and Heavy Equipment etc.:** The CRP specifies that as Tetra Tech EBA conducted a verification of derelict vehicle and heavy equipment storage area, they noted that these vehicles still contained automotive fluids such as engine oil, transmission fluid, power steering fluid, brake fluid and suspected to contain also gear oil in the axle differentials (section 4.0). This section also specified that the Community is using spare parts from old vehicle and snowmobiles stored at the site for repairs.<br><br>The CRP should clarify planned procedures to be undertaken to ensure all automotive fluids have been removed from all types of vehicles prior to final closure and covering. While the community wishes to keep certain vehicle for spare parts, it is recommended that the CRP specify where these vehicles use for spare parts will be managed and ultimately disposed. | 1) ENR recommends the CRP to be updated to include details relating to vehicle fluids removal and disposal, as well as the lifecycle of vehicles used for spare parts. Ultimately, all waste and old vehicles will require disposal. | Details will be provided in the tender documents and will follow similar protocols to the Manual for the preparation and Disposal of End-of-Life Vehicles in Nunavut. (http://env.gov.nu.ca/sites/default/files/final_-_elv_program_manual_-_jan_10_2011_0.pdf) |
| e | **Part 1: 3.2 Contaminated Site Remediation:** Both cells have not had sludge removal to date; therefore, a significant accumulation of solids is anticipated at this time. Most solids should have been retained in the primary cell. The lagoon cells shall be inspected after being drained to confirm the extent of solids accumulation. Tetra Tech EBA recommends to excavate a minimum of 0.3 m of the base and side slopes of both lagoons. The solids shall be stored/stockpiled adjacent to the lagoons. Typically any sludge or solids removed from the lagoon during reclamation is mixed with soil on-site and used to create a topsoil layer which will support vegetation and minimize erosion. Samples should be analyzed and compared to "Guidelines for the Application of Municipal Wastewater Sludges to Agricultural Land, Alberta ESRD, March 2001" to determine if the material is suitable for use or if it should be disposed of at an approved facility. | 1) Tetra Tech EBA to provide research and documents that the remediation of solids on site around the Charter Community of Deline will work in the expected/average climate conditions in this area. | We believe providing site-specific research on sewage sludge decomposition is an unnecessarily onerous request. The sludge poses little environmental risk and will naturally stabilize over time. Detailed research into the decomposition would be a purely academic endeaver and should be considered outside of the scope of a C&R Plan. Risks to human health will be managed by appropriate protocols outlined in the tender documents. |
| **2** | **Environment Canada** | | |
| | No comment | | |
| **3** | **Fisheries and Oceans Canada - Fisheries Protection Program** | | |

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| a | The Town of Deline (the Applicant) should seek input from Environment Canada regarding effulent quality as it relates to pollution prevention provisions of the *Fisheries Act* | | The only effluent expected is from lagoon dewatering and that will follow the requirments currently outlined in Deline's water licence. Environment Canada had no specific comments (see 2(a)). |