



Contaminants and Remediation Directorate  
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P.O. Box 1500  
Yellowknife, NT X1A 2R3

June 24<sup>th</sup>, 2015

Ms. Sabrina Sturman, Regulatory Specialist  
Sahtu Land and Water Board  
Box 1  
Fort Good Hope, NT X0E 0W0

**RE: Great Bear Lake Remediation Project – AANDC/CARD Responses to Reviewers Comments on the Water License Application Renewal and Land Use Permit Extension**

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Dear Ms. Sturman:

Please find enclosed a copy of Aboriginal Affairs and Northern Development Canada (AANDC) – Contaminants and Remediation Directorate's (CARD) responses to the Reviewer Comments for the Water License Renewal Application and Land Use Permit Extension, and a Sahtu Land Use Plan Conformity Requirement document, respectfully submitted to the Sahtu Land and Water Board for its consideration.

Should you have any questions or concerns, please do not hesitate to contact me at (867) 669-2461 or by e-mail at [Candace.Decoste@aandc-aadnc.gc.ca](mailto:Candace.Decoste@aandc-aadnc.gc.ca) or Stanley Yee at (867) 669-2452 or by e-mail at [Stanley.Yee@aandc-aadnc.gc.ca](mailto:Stanley.Yee@aandc-aadnc.gc.ca).

Respectfully submitted,

*Candace DeCoste*

Candace Decoste  
A/Project Manager

cc. Carey Ogilvie, Senior Manager, AANDC

Encl. (2) AANDC/CARD Responses to Reviewer Comments for the Water License Renewal Application and Land Use Permit Extension

Sahtu Land Use Plan Conformity Requirement Document for GBL  
Water License Renewal Application

## AANDC/CARD Response to Reviewer Comments on Great Bear Lake Remediation Project – Water License Renewal and Land Use Permit Extension (S15L8 and S09D-001)

**Table 1 – AANDC/CARD Response to Reviewer Comments**

<b>AANDC: Tim Morton</b>			
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>
1	Contact Information	<p><b>Comment</b> (Submitted after Due Date) There is dated contact information in the spill contingency plan and other documents. These contacts should be updated to reflect the changes that occurred after devolution. The site Inspector is no longer in Norman Wells and is currently located in Yellowknife (867) 669-2442.</p> <p><b>Recommendation</b> Update the contact information for all documents.</p>	AANDC/CARD will update the Spill Contingency Plan and will communicate to the contractor the updated contact information for the AANDC Site Inspector now located in Yellowknife (867) 669-2442.
<b>Deline Land Corporation: Gina Dolphus</b>			
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>
1	General File	<p><b>Comment</b> Deline Land Corporation and Deline First Nation Public Hearing Request</p> <p><b>Recommendation</b></p>	<p>As per AANDC/CARD Engagement Plan, CARD is going to Deline on June 24, 2015 to update Leadership on the GBL water license renewal application, the land use permit extension, as well a project update on Port Radium.</p> <p>The sites included in the scope of the water license and land use permit include the Silver Bear Properties,</p>

			<p>which is a collection of former silver, copper and bismuth mines located in the Camsell River area. Terra, Northrim, Norex, Graham Vein, and Smallwood make up the Silver Bear Properties. The Contact Lake Mine is a former silver and uranium mine located on Contact Lake. The El Bonanza and Bonanza sites are former silver mines located on the Dowdell Peninsula on the eastern end of Great Bear Lake. The Sawmill Bay site was originally developed to support timber requirements for the Port Radium mine and is located on the northern part of the Leith Peninsula on the eastern end of Great Bear Lake. The Sawmill Bay site is a relatively small site compared to the Silver Bear Mines but has historical significance as part of the uranium ore transportation route from Port Radium.</p> <p>The Great Bear Lake Remediation project is a</p>
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			<p>complex, large scale project that currently includes multiple sites described above.</p> <p>The scope of the project means it will take at least five years to complete and it would exceed the current Federal Contaminated Sites Action Plan (FCSAP) funding years. To prevent jeopardizing the project, AANDC is looking into options for secured funding for the entire project. AANDC/CARD is committed to keeping the Deline Land Corporation, the Deline First Nation and the Sahtu Land and Water Board up to date as new developments arise.</p> <p>The immediate need to renew the water license and extend the land use permit is to carry out risk management activities at the sites, as well as to ensure no additional regulatory delays occur once we can secure funding.</p>
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Environment Canada: Melissa Pinto			
ID	Topic	Reviewer Comment/Recommendation	Proponent Response
1	General File	Comment EC Cover Letter Recommendation	
2	General File	Comment Table 1 Recommendation	
3	Sewage	<p><b>Comment</b> EC notes that the Water License (WL) renewal application indicates waterless toilets will be used and that the effluent will be incinerated.</p> <p><b>Recommendation</b> EC recommends that toilet wastes not be incinerated; however, if AANDC-CARD (the Proponent) decides to pursue incineration of toilet wastes, the appropriate incinerator will need to be used. The Proponent should provide proof that the incinerator is designed for incinerating sewage and should provide stack testing results demonstrating that the incinerator can achieve the Canada Wide Standards for Dioxins and Furans.</p>	<p>AANDC/CARD is proposing that Part D, sub-part 8 to 11 be amended to support the use of pit latrines or waterless toilets (e.g. Incinolet or Pacto type units would be the preferred option for sewage waste when in close proximity to surface water) for short duration satellite camps when project operations are anticipated to be at or below twenty individuals per site. These materials will be collected and managed in accordance with manufacturer's specifications and regulatory requirements. The Contractor(s) retained for the remediation work will be responsible for the design of the project specific Waste Management Plan, including sewage disposal,</p>

			that will comply with federal, and territorial laws, codes, and regulations before submission to the Board for approval prior to the commencement of site activities.
4	EC Emergency Contact	<p><b>Comment</b> EC notes that the contact emergency contact information for EC located in Appendix 2 of the Spill Contingency Plan is incorrect.</p> <p><b>Recommendation</b> In the case of a spill or emergency, the Northwest Territories 24 Hour Emergency Spill Line should be contacted first, who will then involve EC Emergencies. For information relating to the environmental enforcement and reporting requirements under the Canadian Environmental Protection Act, 1999 and the Fisheries Act please contact the EC Environmental Enforcement 24 Hour Duty Officer at 780-499-2432. EC also has a National Environmental Emergencies Centre (NEEC) whose primary role is to 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. EC helps to identify the environmental protection priorities and provide advice on ways to reduce the pollution's impact on the environment. This advice can include weather forecasts, location of wildlife and sensitive ecosystems, and expertise on spill counter-measure and remediation options. NEEC can be contacted at 849-997-2800</p>	AANDC/CARD will update the Spill Contingency Plan and communicate to the contractor of the updated emergency contact for the Northwest Territories 24 Hour Emergency Spill Line to (867) 920-8130 and included the National Environmental Emergencies Centre (NEEC) (849) 997-2800 for any technical and scientific assistance.
5	Migratory Birds	<p><b>Comment</b> EC is responsible for implementing the Migratory Birds Convention Act, which provides for the protection of migratory birds through the Migratory Birds Regulations, and to develop and implement policies and regulations to ensure the protection of migratory birds, their eggs and their nests. Paragraph 6(a) of the Migratory Bird Regulations states that no one shall disturb or destroy the nests or eggs of migratory birds. Migratory birds, the nests of migratory birds and/or their eggs can be inadvertently harmed or disturbed as a result of many activities including but not limited to clearing trees and other vegetation, draining or flooding land, or using fishing gear. The inadvertent harming, killing, disturbance or destruction of migratory birds, nests and eggs is known as incidental take. Incidental take, in addition to harming individual birds, nests or eggs, can have long-term consequences for migratory bird populations in Canada, especially through the cumulative effects of many different incidents.</p>	The contractor will be informed to inspect the ground and trees for active nesting sites before performing any activities in the area. If an active nesting site is encountered, appropriate mitigation measures will be put in place to minimize any disturbance.

		<p><b>Recommendation</b> If active nests are encountered during project activities, the nesting area should be avoided until nesting is complete (i.e., the young have naturally left the vicinity of the nest). For further information on how to protect migratory birds and their nests and eggs when planning or carrying out project activities, consult EC's Incidental Take web page and the fact sheet "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs" at: <a href="http://www.ec.gc.ca/paom-itmb/">www.ec.gc.ca/paom-itmb/</a>.</p>	
6	Migratory Birds	<p><b>Comment</b> EC notes that there will be field camps set up during project activities.</p> <p><b>Recommendation</b> EC recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.</p>	The Contractor(s) retained for the remediation work will be responsible for the design of a specific Waste Management Plan, which will be submitted to the Board for approval prior to commencement of site activities. Mitigation measures to prevent wildlife from accessing food, domestic wastes, and petroleum-based chemicals will be included in the plan.
7	Migratory Birds	<p><b>Comment</b> Section 5.1 of the Migratory Birds Convention Act prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.</p> <p><b>Recommendation</b> Comment is for Proponent's information.</p>	
8	Species at Risk	<p><b>Comment</b> The following comments are pursuant to the Species at Risk Act (SARA). SARA is directed towards preventing wildlife species from becoming extinct or lost from the wild, helping in the recovery of species that are at risk as a result of human activities, and promoting stewardship. The killing, harming or harassing of listed species; the damage and destruction of their residences; and the destruction of critical habitat is prohibited under SARA. The prohibitions apply to all Threatened, Endangered and Extirpated species listed on Schedule 1 of SARA on federal lands and to Migratory Birds (as defined under the Migratory Birds Convention Act) and aquatic species (as defined under the Fisheries Act) everywhere they are found. Subsection 79(2) of SARA, states that during an assessment of a project, the</p>	The species in Table 1 of COSEWIC, Species at Risk and NWT Species at Risk registries will be reviewed for status reports prior to any project activities. If any Species at Risk are encountered at the sites, appropriate mitigation and

	<p>adverse effects of the project on listed wildlife species and their critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This subsection applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, EC suggests that similar consideration be given to species on other Schedules of SARA and under consideration for listing on SARA, including those designated as “at risk” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The attached Table 1 lists species that may be encountered in the project area that have been designated as at risk by COSEWIC as well as their current listing on Schedules 1, 2 and 3 of SARA (and designation if different from that of COSEWIC). This list may not include all species identified as at risk by the Territorial Government. It does not include aquatic species, which are under the responsibility of Fisheries and Oceans Canada. Project impacts could include species disturbance and attraction to operations</p> <p><b>Recommendation</b> • For any Species at Risk that could be encountered or affected by the project, the Proponent should note any potential adverse effects of the project to the species, its habitat, and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at <a href="http://www.sararegistry.gc.ca">www.sararegistry.gc.ca</a> for information on specific species as well as the booklet "Species at Risk in the Northwest Territories" (2014 Edition) available at <a href="http://www.nwtspeciesatrisk.ca/sites/default/files/pdf/SpeciesatRiskintheNWT_English.pdf">http://www.nwtspeciesatrisk.ca/sites/default/files/pdf/SpeciesatRiskintheNWT_English.pdf</a>. As new species may have been assessed by COSEWIC or added to Schedule 1 of SARA since the booklet was last published, proponents should always check the Species at Risk registry to obtain the most current information. • If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence. • Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the Proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested. • The Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize project effects to species under their management responsibility. • Mitigation and monitoring measures must be taken in a way that is</p>	<p>monitoring plan will be developed in consultation with the appropriate regulatory authorities.</p>
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		consistent with applicable species at risk recovery strategies and action/management plans.	
9	Species at Risk	<p><b>Comment</b> Eskimo Curlew is designated as Endangered and listed on Schedule 1 of the Species at Risk Act. The project falls within the historical range of Eskimo Curlew, however, there have been no confirmed sightings of Eskimo Curlew since 1963, and no unconfirmed sightings on the breeding grounds since 1992. The National Recovery Team for this species has determined that recovery is not feasible at this time. It is EC's view that, in light of its current status, there is no need for further action with respect to Eskimo Curlew.</p> <p><b>Recommendation</b> EC recommends that an appropriate mitigation and monitoring plan be developed with the Proponent if it is established that this species does occur in the area.</p>	AANDC/CARD will inform Environment Canada of any sightings of the Eskimo Curlew at the site and develop an appropriate mitigation and monitoring plan if required.
<b>GNWT – Environmental and Natural Resources: Central Email GNWT</b>			
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>
1	General File	ENR Letter - No Comments or Recommendations at this time.	
<b>SLWB: Sabrina Sturman</b>			
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>
1	Application, Section 10, Predicted environmental impacts of Undertaking and proposed mitigation, pg. 37	<p><b>Comment</b> The application indicates that "Monitoring will be used to determine whether the remedial strategies implemented have been successful and allow us to make modifications to ensure that the environment is being protected. A proposed Water Quality Monitoring Plan is attached and can be found in Appendix G". Appendix G includes a proposed Long-Term Monitoring Program and State of the Environment Program (both post remediation) as well as Construction Monitoring Program but has not been updated since the 2009 submission and does not include details specific to Sawmill Bay. The Construction Monitoring proposes Baseline (annual, tracking overall quality of the receiving environment for all sites, e.g. inactive) and Activity (monthly) monitoring at various sites that was not implemented during Phase I activities.</p> <p><b>Recommendation</b> Please confirm Construction Monitoring was performed during the 2009-2015 period and how results informed planning for future activities. Does CARD plan to update the proposed Water Quality Monitoring Program? Please confirm the timeline for conducting revision and provide recommendation of sites for inclusion into the Surveillance Network Program.</p>	During the 2009 to 2015 period, pre-remediation water quality monitoring was performed at Contact Lake, El Bonanza, and Silver Bear Sites (Terra, Norex, Smallwood, Northrim). Other related studies performed during this period included: Influence of bacteria on the stability, speciation and mobility of arsenic in sediments at Terra Mine (2010/11); site specific target levels for arsenic in the Terra Mine wetland (2014); Mass balance and flux estimates for arsenic loading to Ho Hum Lake and Camsell River

			<p>from the Terra Mine (2015). The monitoring requirements for Sawmill Bay are described in the Remedial Action Plan, submitted to the SLWB in 2010. In 2015/16, AANDC/CARD will undertake follow-up monitoring at the Terra Mine Site and a desktop review of all water quality monitoring studies from Great Bear Lake Sites dating back to 2002 and the GBL Water Quality Monitoring Program submitted as Appendix G. Upon completion of the review, AANDC/CARD will submit a revised Water Quality Monitoring Program which will include a schedule for pre-remediation monitoring, updated monitoring requirements for Sawmill Bay and will identify sites for inclusion into the Surveillance Network Program. The revised plan will be submitted to the Board upon completion.</p>
2	Application,	<b>Comment</b> The application indicates that "At this time, CARD is unable to provide tentative	AANDC/CARD will inform

	Section 13, Proposed time schedule, pg. 45	<p>schedules for the future phases of the remediation program, as they are subject to Treasury Board funding approvals. An update will be provided to the Board once this is more certainty in the project schedule". The Guideline for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT (MVLWB 2013) outlines details that should be included in an Annual Closure and Reclamation Plan Progress Report which include discussion on whether the closure and reclamation planning and implementation remains on schedule and summary of any new scheduling setbacks. These details have not been included in past Annual Reports. The progress reports keep all parties informed about closure progress and allow the Board to confirm that the proponent has remained on schedule.</p> <p><b>Recommendation</b> Please keep the Board informed of changes to the proposed Implementation Schedule and confirm that future Annual Reports will include details of Remediation progress compared to the Implementation Schedule.</p>	the Board of any changes to the proposed Implementation Schedule and will include details of remediation progress in future Annual Reports.
3	Meeting Minutes, pg. 3	<p><b>Comment</b> CARD requests Part B, sub-part 3 (turn around for submittal of laboratory results to the Board and WL Inspector) be amended to include additional time. Justification for the amendment is not included in the renewal application.</p> <p><b>Recommendation</b> Please provide clarification of extension of time requested with rationale.</p>	AANDC/CARD is requesting that the proposed condition in Part B, sub-part 3 (turn around for submittal of laboratory results to Board and WL Inspector) be amended to allow for a 7 day review period from 48 hours previously. To allow AANDC/CARD to complete a comprehensive internal review prior to submitting laboratory results to the Board and WL Inspector. AANDC/CARD acknowledges laboratory results are required by the Board and WL Inspector prior to discharge of treated water.
4	Meeting	<b>Comment</b> CARD requests Part D, sub-part 11-13 (conditions applying to treatment and	AANDC/CARD is proposing

	Minutes, pg. 3	<p>disposal of sewage effluent) be amended to support incineration of black water and pit latrines for short duration satellite camps &lt;20 ppl. Details have not been clarified as suggested in the Minutes and do not specifically identify requested amendment.</p> <p><b>Recommendation</b> Please clarify what amendment to terms and conditions is requested.</p>	<p>that Part D, sub-part 8 to 11 be amended to support the use of pit latrines or waterless toilets (e.g. Incinolet or Pacto type units would be the preferred option for sewage waste when in close proximity to surface water) for short duration satellite camps when project operations are anticipated to be at or below twenty individuals per site. These materials will be collected and managed in accordance with manufacturer's specifications and regulatory requirements.</p>
5	Meeting Minutes, pg. 3	<p><b>Comment</b> CARD requests Part D, sub-part 14 (process water effluent) be amended to remove Toxicity Testing from the License. Justification for the request is not provided in the renewal application.</p> <p><b>Recommendation</b> Please provide rational for the removal of Toxicity Testing.</p>	<p>AANDC/CARD is requesting the removal of toxicity testing as it is not an industry standard and it has not been included in other Water Licenses issued by other regional boards for AANDC/CARD regulated sites with similar activities and scope. Furthermore, results from the toxicity tests in the 2011 Annual Report for the Great Bear Lake Sites Remediation Phase I - Water License</p>

			<p>S09LB-001 was submitted to the SLWB, indicated low toxicity (EC50(15) = &gt;100%; LC50(96) = &lt;50% at SNP Station S09L8-001(3)). Toxicity testing appears inconsistent with the direction from other Boards and will add unwarranted cost and time to the project.</p>
6	Conformity with the Sahtu Land Use Plan	<p><b>Comment</b> It is the responsibility of the Proponent to demonstrate how they meet the requirements of the approved Sahtu Land Use Plan and that the proposed project contains sufficient detail to perform this check. The Board cannot issue a permit without conformity to the Land Use Plan as per Section 61 (1) of the MVRMA.</p> <p><b>Recommendation</b> Please provide information of how the project meets the requirements of the Sahtu Land Use Plan.</p>	<p>AANDC/CARD has included a supporting document which describes how the proposed project meets the conformity requirements in the Sahtu Land Use Plan.</p>

## Sahtu Land Use Plan (SLUP) Conformity Requirements for GBL Water License Renewal Application June 2015

**Table 1 – SLUP Conformity Requirements**

<b>Conformity Requirement</b>	<b>Application Sections of Water License</b>	<b>Supporting Evidence</b>
<i>General Conformity Requirement</i>		
CR #1 – Land Use Zone	N/A	Proposed land use is not prohibited within the project area. Furthermore, the application is exempt from CR #1 as per S. 2.5 of the Plan, as it is related to: F) cleanup of contaminated sites
CR #2 - Community Engagement and Traditional Knowledge	9, 12 and Appendix E	Community Engagement and Traditional Knowledge studies have been carried out and documented in the Engagement Plan and Log as per the Water License Application submission
CR #3 - Community Benefits	3 (personnel), 9, Appendix E and Annex (RAPs)	Project contracts have demonstrated Aboriginal Opportunities Considerations (AOC), and continued commitment to Aboriginal employment and training.
CR #4 - Archaeological Sites and Burial Sites	12 (Studies undertaken) and Appendix I	The Prince of Wales Northern Heritage Centre (PWNHC) was engaged. A burial site was documented and GPS coordinates were taken.
CR #5- Watershed Management	4 and Appendix I	Remediation project activities are not anticipated to have significant impacts on water bodies. Project objective is to decrease the potential influx of deleterious substances to the adjacent water bodies
CR #6 – Drinking Water	4 and Appendix J (Camp Facilities)	Drinking water will comply with Canadian Drinking Water quality guidelines.
CR #7 – Fish and Wildlife	10, Annex (RAPs), Appendix I and J	Project activities not anticipated to impact fish or wildlife species. Camps to be established on impacted areas. Project to benefit fish and wildlife by removal of deleterious substances.
CR #8 – Species Introductions	N/A	Introduction of non-native vegetation or animal species are unlikely to occur.
CR #9 – Sensitive Species and Features	N/A	Program to take place within disturbed areas, unlikely to impact sensitive species.
CR#10 - Permafrost	N/A	Project activities unlikely to have impacts on Permafrost. The sites are in an area of discontinuous permafrost.
CR#11 - Project-Specific Monitoring	10, Appendix G, and SLWB Reviewer comment ID #1	There is on-going water quality monitoring conducted at Terra Mine.
CR#12 - Financial Security	N/A	Federal governments are exempt from security

		post.
CR#13 - Closure and Reclamation	4 and Annex (RAPs)	The Closure and Reclamation Plan was developed in conjunction with community engagement.
CR #14- Protection of Special Values	4	AANDC is aware of the importance of the Great Bear Lake and Mackenzie River and will protect, respect and take into account its values.
CR #15- The Great Bear Lake Watershed	4, 10, Appendix E, and Appendix G	The community of Deline has been engaged as described in the engagement plan in Appendix E. The intent of the remediation project is to restore and protect the surrounding watershed. A site specific monitoring program has been provided in Appendix G.
CR #16- Fish Farming and Aquaculture	N/A	N/A
CR #17- Disturbance of Lakebed	4 and 10	There are minimal environmental impacts expected during excavation of the docks and dock walls. Potential impacts associated with suspended sediment will be mitigated through the use of sediment curtains in all areas where shoreline work is being performed.
CR #18- Uses of Du K'ets'Edi Conservation Zone (Sentinel Islands)	N/A	Not applicable, project not within the Sentinel Islands.
CR #19- Water Withdrawal	N/A	Not applicable, water withdrawal is not occurring from Lac Belot, Stewart Lake or Tate Lake.