

Issues	Recommendations	HBML Action
AANDC		
Issue 1: Closure Cost Estimate The submitted plan provides a \$7.5 million cost estimate to close the Doris North Project. This amount is supported by a series of tables that outline the direct costs associated with activities considered necessary for the closure and reclamation of outstanding land and water liabilities. It is noted that this estimate includes a 20% contingency to account for uncertainties that may require attention during the plan's implementation.	Although the submitted cost estimate appears to be complete and was approved by the professional engineers who prepared the plan, HBML should provide the following information:	
	1. Identify the model used to calculate the cost estimate (the recognized methodology for calculating reclamation costs for purposes of financial security assessment is the RECLAIM or other similar, appropriate models);	Our consultant, SRK, used their own spreadsheet to calculate reclamation costs. It closely resembles the RECLAIM model. A memo comparing SRK's model to the RECLAIM model was submitted to the NWB with the closure estimate calculations on Jan. 14, 2013.
	2. Confirm that the estimate is based on the principle of having the necessary reclamation work implemented by a third party;	The estimate is based on having the reclamation work implemented by a third party.
	3. Identify the individuals who prepared this cost estimate and their qualifications; and,	The estimate was prepared by Tom Sharp (Ph. D, P. Eng), and reviewed by Maritz Rykaart (Ph. D, P. Eng), both with SRK Consulting.
	4. Provide a revised copy of the cost estimate signed and sealed by a professional engineer.	The closure estimate has been signed and stamped by SRK. Copies of the closure estimate calculations were provided to the NWB Jan. 14, 2013.
Issue 2: Infrastructure scheduled to be left on-site The submitted plan makes several references to leaving certain project infrastructure in place to support (potential) future industrial development of the Hope Bay Belt and the surrounding area. This infrastructure includes roads, bulk fuel storage facilities, the all-weather airstrip, the Roberts Bay port/ jetty, and rock pads. It	1. AANDC recommends that the NWB not allow HBML to leave bulk fuel storage facilities in place for potential future use by other parties. This type of infrastructure should be maintained and authorized through a water licence or be adequately reclaimed (i.e., removed from site). AANDC understands the practicality of limiting the reclamation of the airstrip, all-	Taking into consideration the mineral potential of the Hope Bay belt (including that the Doris deposit has not yet been mined), it is extremely likely that another company be interested in mining in the area in the future. With the high cost of infrastructure development in Nunavut, maintaining certain key infrastructure post-closure, such as bulk fuel storage facilities, keeps the belt attractive for future investment. This is a priority of both the territorial and

<p>should be noted that bridges and arch culverts associated with the airstrip and all-weather roads will be removed.</p>	<p>weather roads, and rock fill pads to the removal of culverts and surface regrading / crowning to ensure positive drainage and prevent any permanent pooling of water.</p>	<p>federal governments.</p> <p>Bulk fuel storage facilities at Doris North would be completely drained, secured with the berm breached at closure, thereby posing no spill risk. Then, in the event that another company wishes to reopen the site, the tanks would be re-inspected and re-commissioned prior to use and berms reconstructed. This is consistent with Government of Canada positions on the need to maintain infrastructure for re-use.</p>
<p>Issue 3: Care and maintenance planning The submitted plan does not include details associated with the project's current care and maintenance status. Such details include the implementation of required monitoring programs, corresponding mitigation measures, and infrastructure maintenance (e.g., The updated water quality model assumes that 80% of the annual snowfall will be removed from the Doris Camp pad. This assumption impacts the volume of effluent discharged from the Pollution Control Pond to the Tailing Impoundment Area).</p>	<p>1. AANDC recommends that HBML submit a stand-alone Care and Maintenance Plan to the Board for review and approval. This plan should address how the project's licensed monitoring program is being implemented, describe mitigation measures that will be applied, if necessary, to protect surrounding water sources, and how infrastructure (such as, but not limited to, accommodation units, office facilities, all support buildings, sewage treatment plant, waste management facility at jetty, tank farm and fuel distribution infrastructure at jetty) will be maintained until final closure and reclamation activities commence. This stand-alone plan should complement the project's Closure and Reclamation Plan.</p>	<p>HBML will be occupying Doris North on a seasonal basis during freshet and the open water season every year until a decision to resume the project, or to close and reclaim the site, is made. Opening the site during this time of year will allow HBML to maintain compliance with its licences. As requested by the AANDC inspector, HBML updated the Monitoring and Follow-Up Plan for care and maintenance and the inspector has accepted this updated plan as HBML's Care and Maintenance Plan. It is available at: ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH0713%20HBML/3%20TECH/9%20MONITORING%20%28J%29%28K%29/K5%20Updated%20Monitoring%20and%20Follow%20up%20Plan/</p> <p>It is important to note that HBML has an environmental management system for Hope Bay. All management plans have been updated to take into account a care and maintenance</p>

		<p>phase for the project. For examples, please refer to the NWB ftp site where all NWB required plans are posted. As HBML had begun working toward ISO 14001 certification prior to the project being placed in care and maintenance, it is imperative that information not be duplicated across multiple management plans (as required by ISO 14001). The site is managed using management plans specific to each function instead of through an overarching camp management plan, such as the one requested by AANDC in Issue 3. Any information included in this type of plan would be duplicated from all other management plans and would not be acceptable at an ISO 14001 certified facility.</p> <p>It is HBML's opinion that a stand-alone Care and Maintenance Plan is not an effective method of managing permitting and regulatory requirements. In an effort to reduce administrative burden for the NWB, HBML suggests that management plans currently required by licence 2AM-DOH0713, and recently updated for care and maintenance, be reviewed and approved by regulators, prior to the NWB requiring HBML to provide a Care and Maintenance Plan. Furthermore, it is HBML's belief, based on our understanding of NWB procedures that the licence would have to be amended to include a new requirement such as a Care and Maintenance Plan. HBML has indeed requested that the licence be amended such that a Care and Maintenance section be</p>
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		<p>included. Please refer to Part M of the marked-up water licence submitted as part of the most recent water licence renewal/amendment application for details: ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH0713%20HBML/1%20APPLICATION/2012%20Amend%20Renew/120810%202AM-DOH0713%20A4%20h%20Appendix%20F%20Licence%20Blackline-IMLE.pdf).</p>
<p>Issue 4: Decommissioning of Water Management Structures</p> <p>Section 2.2.5 of the submitted plan states that, “existing water management structures will be maintained until post-closure water quality objectives are met. Until these objectives are met, impacted site runoff will be managed according to the current water management plan. The primary sources of constituent loading are the waste rock and ore piles. Structures for managing seepage or runoff from the waste rock and ore piles will be maintained until final closure of the waste rock and ore stock piles.” All water management structures will be decommissioned, breached, or removed to restore natural drainage paths where possible once runoff from the Doris Camp pad meets licensed water quality objectives. Water management structures include the Sedimentation Pond, Pollution Control Pond, Temporary Pond, Sumps #1 and #2, and Diversion Berm.</p>	<p>1. AANDC recommends that prior to breaching any ponds HBML remove collected sediment and install sedimentation curtains downstream to prevent the release of suspended sediment into the receiving environment.</p>	<p>As per Newmont standard practice, a work plan for breaching ponds will be prepared and signed off by a professional engineer before any work is started. The work plans will meet regulatory standards and comply with all applicable laws and regulations, such as the Fisheries Act.</p>

<p>Issue 5: Remediation of hydrocarbon impacted soils</p> <p>The submitted plan outlines the remediation alternatives that HBML intends to implement on hydrocarbon impacted soils. These alternatives include in-situ bioremediation of localized areas with limited contamination, excavation and off-site disposal of large contiguous areas of contamination (if found), and, “encapsulation of impacted soils in place should it be demonstrated that hydrocarbon risk is minimal and/or remediation methods are ineffective or inappropriate for a given area.”</p> <p>The Nunavut Environmental Guideline for Contaminated Site Remediation’s Tier 1 criteria-based approach for Industrial land use, coarse-grained soils will be used to determine if soil remediation is required.</p>	<ol style="list-style-type: none"> 1. AANDC recommends that HBML describe their planned in-situ bioremediation method (e.g., aeration, application of nutrients, etc.) and the criteria that will be followed to determine whether hydrocarbon impacted soils will be subjected to in-situ bioremediation or excavation and disposal at a licensed off-site facility. Metal concentrations should also be evaluated. Furthermore, prior to encapsulating any contaminated soils, HBML should submit a written proposal to the NWB and obtain their written approval 	<p>Prior to closure, assessment of contamination will be undertaken following the GN <i>Environmental Guideline for Contaminated Site Remediation</i>. This assessment will determine which method of remediation is most appropriate. HBML will notify the NWB of the results of the assessment and provide a remediation proposal for their approval.</p>
<p>Issue 6: Using wood waste for reclamation purposes</p> <p>The submitted plan states that non-hazardous wood waste will be chipped and used for reclamation purposes (i.e., mixed with drill cuttings, overburden, or other material for fill material).</p>	<ol style="list-style-type: none"> 1. AANDC recommends that HBML clarify what types of wood wastes can be considered as hazardous and non-hazardous. As a minimum, wood treated with pentachlorophenol, inorganic preservatives, lead paint, or PCB-amended paint should be classified as hazardous wastes. 	<p>In terms of deciding whether wood waste is considered hazardous or non-hazardous waste, HBML will follow the GN <i>Guideline for the Burning and Incineration of Solid Waste</i> and the <i>Environmental Guideline for Industrial Waste Discharges</i> (particularly Schedules III and IV). Wood that meets the criteria for burning and landfilling will be considered for use in reclamation. Any wood waste that meets the criteria outlined in the <i>Guideline for the General Management of Hazardous Waste in Nunavut</i> will be considered hazardous waste and will be remove from site for disposal at a facility that accepts hazardous waste.</p>

<p>Issue 7: Post-closure revegetation considerations</p> <p>Section 2.2.1 of the submitted plan states that revegetation of the project's rock fill pads is not practical because they cannot support vegetation.</p>	<p>1. AANDC recommends that HBML follow the post-closure revegetation considerations presented in the project's October 2005 Preliminary Mine Closure and Reclamation Plan. Where appropriate, the crushed rockfill surfaces of building pads, the airstrip, and roadways should be regraded, contoured, and scarified to promote moisture retention and natural revegetation.</p>	<p>The 2005 plan was included for reference only. It will be replaced by the 2012 plan once approved. HBML will reword the 2012 Closure Plan to clarify revegetation goals and remove the 2005 Preliminary Closure Plan from the plan.</p> <p>In terms of general pad/road infrastructure, decisions for exactly how these will be reclaimed will be made in discussion with the landowner, the Kitikmeot Inuit Association, when a closure decision is made by Newmont. For the time being, the pad/road infrastructure retains value for the property and may be of interest to a potential buyer. For these reasons, the infrastructure will remain as-is in case of property redevelopment.</p>
<p>EC</p>		
<p>1. Section 3.1.5 Overburden Dump and Sedimentation Berm, page 10 states: <i>"The top of the Overburden Dump was covered with a layer of crushed rock and was used as overflow vehicle parking area. The 2H:1V side slopes are constructed of oversize rock and are stable. All materials and waste will be collected and disposed of as appropriate. The safety berms will be breached to allow free drainage. The top surface will be regarded to ensure positive drainage. The sedimentation berm will be breached to original ground level to restore natural flow paths."</i></p>	<p>Without knowing whether the waste rock used to construct the berms were characterized for acid rock drainage (ARD), EC recommends the Proponent ensure that the re-grading and breeching of the berm does not expose potentially acid generating (PAG) rocks to air and water, which could results in the generation of acid. If the Proponent is uncertain of the waste rock ARD potential, it is recommended that the waste rock either be characterized to determine if it is PAG or find non-PAG materials as a cover for the areas after re-grading.</p>	<p>HBML is aware of the ARD potential of rock at Doris. Please refer to the Waste Rock and Ore Management Plan (ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH0713%20HBML/3%20TECH/4%20WASTE%20DISP%20%28G%29/101209%202AM-DOH0713%20SRK%20Final%20Waste%20Rock%20and%20Ore%20Management%20Plan-IMLE.pdf) for more information about the geochemistry of the waste rock. The waste rock is generally considered non-PAG. Also refer to the Quarry A, B, D Management and Monitoring Plan for additional details (ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH0713%20HBML/3%20TECH/4%20WASTE%20DISP%20%28G%29/101209%202AM-DOH0713%20SRK%20Final%20Waste%20Rock%20and%20Ore%20Management%20Plan-IMLE.pdf)</p>

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<p>2. Section 3.6.8 Waste Rock and Ore Piles, page 15 states: <i>“Part of the waste rock will be used for the 15 m thick backfill for sealing the underground workings. Waste rock and ore management options will be assessed for the remaining material. One option is consolidating, contouring and covering the piles with an impermeable liner and a 0.3 m thick protective layer, or leaving the waste rock and ore in place. Additional options may also be considered. All above ground storage options are subject to approval. A design and/or description of the final waste rock and ore disposal or storage alternative will be included in the application for approval.”</i></p>	<p>EC seeks clarification on whether or not the waste rock characterized for metal leaching (ML)/ARD. <i>If the Proponent is uncertain if waste rock characterization was completed, EC recommends the Proponent substantiate that 0.3 m crushed rock would be enough to prevent infiltration of water and oxygen that would react with sulphitic materials if present and potentially generate acid.</i> EC supports the Proponent’s idea of using an impermeable liner; however, the duration of time that the impermeable liner will remain impermeable is uncertain. <i>Therefore, EC recommends that the overlying cover should be thick enough to be able to prevent seepage of water into the consolidated waste rock should the impermeable liner become permeable over time.</i></p>	<p>Please refer to the Waste Rock and Ore Management Plan for more information about ML/ARD classification of waste rock. The waste rock has a low potential for ML/ARD.</p> <p>The 0.3 m of crushed rock will be enough to prevent infiltration of water.</p>
<p>3. Section 4 Post Closure Monitoring and Maintenance, page 17 states: <i>“Monitoring to confirm that the closure objectives are met includes the following:</i></p> <ul style="list-style-type: none"> <i>The site should be visually inspected by</i> 	<p>EC notes that the Proponent uses the phrase “should be” when listing the monitoring activities to confirm the closure objectives are met. EC requests clarification whether this is a suggestion that should be</p>	<p>In this case we have used the words “should be” because the plan is providing general direction in the closure process. As with all plans, content is used to provide general direction but may require modification. Here</p>

<p><i>a Professional Engineer annually for three consecutive years to ensure that permafrost degradation areas have stabilized.</i></p> <ul style="list-style-type: none"> <i>• The ore and waste rock covers should be regularly inspected by a qualified inspector to ensure the physical integrity of the cover is maintained.</i> <i>• The site should be inspected by an Arctic vegetation specialist to confirm suitability of the re-vegetation efforts. Inspections should be completed at the following intervals, unless otherwise recommended by the vegetation expert: Year 1, Year 3, Year 7 and Year 10 post closure.</i> <i>• Annual seep sampling program should be continued to detect any changes in the leachate chemistry downstream of the remediated areas.</i> <p><i>Post closure monitoring will be conducted every two years for ten years. Maintenance will be performed on areas that monitoring identifies as needing repairs."</i></p>	<p>done or a commitment that will be done.</p> <p><i>EC recommends the Proponent commit to completing these monitoring activities and modify the wording of "should be" to "will be".</i></p>	<p>we use "should be" with the intent that we will be doing the listed items.</p>
<p>4. No background</p>	<p><i>EC recommends the Proponent ensure all closure and reclamation activities do not expose any PAG material that could in time generate acid.</i></p>	<p>HBML will not expose any PAG material during closure and reclamation activities that could in time generate acid.</p>