

February 8, 2012

Phyllis Beaulieu
Manager of Licencing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
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Re: 2AM-DOH0713 – Interim Water Management Plan

Dear Ms. Beaulieu,

Please find enclosed with this letter the revised Doris North Project Interim Water Management Plan (Feb 2012) (the “Plan”). The revised Plan is submitted in order to meet the requirement of Part F, Item 1 of Water Licence No. 2AM-D0H0713 (the “Water Licence”) to submit to the Water Board a revised Water Management Plan. The Plan being submitted addresses all of the requirements in Part F, Item 1 which are the following:

- a. A requirement to continuously monitor Doris Lake levels and outflow during the two (2) years of mining and beyond to confirm water balance model predictions;
- b. Requirements for on-going monitoring and calibration of the water quality model;
- c. A strategy to monitor and remove where necessary snow accumulation in the Pollution Control Pond, roads, ditches, and drainage channels; and
- d. The Plan shall consider the monitoring requirements set out in Parts J and K.

The previous draft of the Plan, originally submitted on Jan. 12, 2011, and then resubmitted with comments incorporated on July 29, 2011, has not yet been approved by the NWB. The Plan being submitted today contains substantial revisions over the July 2011 plan and reflects the water management activities for 2012 on ward while the Hope Bay Project is in Care and Maintenance. We ask that the NWB stop its current review of the July 2011 plan, and proceed with the review and approval of this revised Plan. We request that the plan be approved prior to freshet this year.

We have reviewed the comments made by the KIA, INAC, and EC with regard to the July 2011 plan and have incorporated these comments, where applicable, into the revised

Plan. We are also providing a table (see attached) with response to all comments received for the July 2011 plan.

Should you have any questions regarding this submission, please do not hesitate to contact me at chris.hanks@newmont.com.

Sincerely,

Chris Hanks
VP, Environmental Affairs
Hope Bay Mining Ltd.

cc. Luigi Torretti, Geoff Clark, John Roesch, Kitikmeot Inuit Association

Interim Water Management Plan – Comment Responses

DATE	ORG./ NAME	ID#	COMMENT/ISSUE	HOPE BAY MINING LIMITED RESPONSE
8 September 2011	KIA/ Luigi Torretti	2.	HBML did not fully answer the question. We understand that the Interim WMP was written to describe how facilities will be operated before Tail Lake is in service. However, HBML should clarify if the present “as constructed” facilities need to be upgraded once the Interim period has passed, or if they are now sized for operations under the Final WMP.	As-built drawings for the water treatment system were attached to the previous comment response table as requested in Comment ID No. 2. During the previous (July 29, 2011) submittal, construction of the liner and pond modification was ongoing. The drawings included were not “as-built” drawings; they only noted the “as-built” conditions at the time. The IFC drawings for the Sedimentation Pond and Pollution Control Pond were not finalized at the time of the last submittal. Existing water management facilities will be modified and/or additional water management facilities will be constructed to fully comply with the Water Licence when the site is in operation.
8 September 2011	KIA/ Luigi Torretti	3.	<p>The figures attached are not “Issued for Construction Drawings”. However, they do show the “As-Built” key trench for the liners in the Sedimentation Pond and the Pollution Control Pond. It is not clear from these drawings what the extent of the liner is in each Pond. If the liner is not being keyed into permafrost all the way around the perimeter, it is not clear how capture of all the runoff and seepage from the pads above the ponds is being accomplished. It would appear that some seepage could pass underneath the liners and not be tested or treated.</p> <p>c. HBML should confirm then that all pad construction materials were sourced from quarries and not mine (development) waste rock. Note that the NWB did not approve the use of mine waste rock for construction.</p> <p>d. Further to #3 above, it is not clear how a partially lined pond will capture all of the seepage and runoff from the pads, without having some volume pass under the liner. The volume that would pass under the liner would then go untested and untreated.</p>	<p>In the previous (August 2011) submittal, as-built drawings for the water treatment system were attached as requested. Construction of the liner and pond modification was ongoing. The drawings included were not “as-built” drawings; they only noted the as-built conditions at the time. The IFC drawings for the Sedimentation Pond and Pollution Control Pond were not finalized at the time of the last submittal.</p> <p>The Sedimentation Pond is now fully lined and can only intercept surface water runoff and not underflow.</p> <p>The Pollution Control Pond is only lined along the east, west and south portions of the berm. This liner is keyed into permafrost to prevent seepage from the pond. The pond is not lined along the northern pond perimeter. If the pond were lined along the northern perimeter, the pond could only intercept surface runoff. Underflow through the pad would not be intercepted by a fully lined pad.</p> <p>Seepage or underflow from the Pollution Control Pond would be intercepted by Sump1. The 2012 Interim Water Management Plan provides detail on the location of the interception sumps.</p> <p>c. All permanent rockfill pads were constructed using quarried material. The berms for the Temporary Pond located on Pad D were constructed of rock from the Doris North Decline. The Temporary Pond will be removed when the mill is constructed on Pad D. Runoff and underflow from Pad D flows to the Pollution Control Pond.</p> <p>d. As discussed above, a fully lined pond could not intercept and collect underflow from the rockfill pads. The northern perimeter of the Pollution Control Pond is not lined so that the pond can intercept impacted runoff and underflow from the site. Sump 1 is positioned to collect runoff and underflow that is not intercepted by the Pollution Control Pond.</p> <p>The 2012 Interim Water Management Plan describes how the water management will be operated in the upcoming open water season.</p>
8 September 2011	KIA/ Luigi Torretti	4.	This point ties in with KIA’s comment to #2 above. In the original licensing submission, Miramar based pond sizes on the 1:100 year event. HBML should clarify if, in their Final WMP, the 1:100 year event will be used to size structures. If so, do the structures need to be upgraded accordingly, or do the structures already have the capacity to handle 1:100 year events?	HBML will fully comply with the conditions of the Water Licence when the site is in operations. The Final WMP will provide details on how the Water Licence requirements for a 1:100 year event will be met. One potential mode of operation for the Final WMP is to have pumping capacity at the Pollution Control Pond and Sedimentation Pond to convey intercepted runoff and underflow from the 1:100 year storm at a rate greater than the rate at which water accumulates in these ponds.
8 September 2011	KIA/ Luigi Torretti	6.	HBML should check their response. Table 1 of the Interim WMP indicates that Pad R reports to the Pollution Control Pond, not the Sedimentation Pond. However Figure 1 (unnumbered) shows Pad R reporting to the Sedimentation Pond. HBML should make all these references internally consistent.	Pad R is the fuel storage pad and has a perimeter containment berm. Water that collects within the berm would normally be conveyed to the Sedimentation Pond. However, if conditions warrant, or at the operator’s discretion, the water within the Pad R containment berm can be pumped to the Pollution Control Pond. Management of water potentially impacted by hydrocarbons is discussed in the 2012 Interim Water Management Plan.
8 September 2011	KIA/ Luigi Torretti	12.	HBML has not specifically answered the question. Does the 2008 Hydrology Baseline Update include the July 2007 storm event in Kugluktuk?	Yes. The July 2007 precipitation event in Kugluktuk is discussed in the 2008 Hydrology Baseline Update. The following is from page 22 of 2008 Hydrology Baseline Update: “It is noted that while high intensity events are rare in the North, events greater than those presented in Table 2.16 have been recorded in the region. An extreme event took place in Kugluktuk on 21 July 2007, with a 24-hour rainfall of 118.3 mm (Hopkinson 2007). This eclipsed the previously recorded 24-hour maximum values of 63.5 mm (8 June 1948) and 57.2 mm (1 August 1973) recorded at Coppermine and 53.7 mm (12 August 1982) recorded at Kugluktuk A. The 48-hour rainfall for the 2007 event recorded 173.5 mm of rainfall. Environment Canada reports annual rainfall normals of 133.4 mm for Kugluktuk (normals refer to average measurements over a set amount of time.

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				at a specific location).”
8 September 2011	KIA/ Luigi Torretti		It is recommended that the responses addressing the intervener’s comments also be incorporated into the interim plan, to create a stand-alone document rather than being left in two documents. This should include the next round of responses addressing this set of comments.	Comment acknowledged.
8 September 2011	KIA/ Luigi Torretti		The total area of the individual pad areas shown as “Clean Diversion” and “Potentially Contaminated” in Figure 1 (not numbered) does not agree with the 80,000 m ² and 82,000 m ² , respectively, shown on the drawings. HBML should confirm what is being included, or verify the individual pad areas.	<p>The total areas of the Clean Diversion and Potentially Contaminated portions of the Mine Area are correct as shown on Figure 1.</p> <p>The total area on the Clean Diversion side of the Mine Area is 80,386 m². This includes the Sedimentation Pond area and a small area (598 m²) that was not shown on Figure 1. The total area was rounded to 80,000 m² for the purpose of the figure. The actual area was used in the calculations of runoff volumes.</p> <p>The total area on the Potentially Contaminated side of the Mine Area is 81,655 m². This includes the Pollution Pond Area. Also, the area of Pad H/J is mislabeled in the figure; that actual area is 9,758 m². A small unlabeled area just east of Pad H/J is 3,073 m². The total area was rounded to 82,000 m² for the purpose of the figure. The actual area was used in the calculations of runoff volumes.</p>
20 September 2011	INAC/J. Rogers		The revised plan provides adequate provisions for the management of contact and non-contact water associated with facilities in the mine area prior to the commissioning of the project's Tailings Impoundment Area (i.e., use of the Sedimentation Pond, Pollution Control Pond, and Temporary Holding Pond). However, this plan cannot be considered fully complete because it only partially addresses items a), b) and c) of Item F in the water licence. The AANDC Water Resources Division understands that this is an interim plan and as stated in section 2 of the submitted plan, “following the construction of this facility's North Dam, HBML will submit a comprehensive Water Management Plan which will detail the integration of all previously approved components and those that are currently in regulatory process for the Doris North Project involving the conservation, use, reuse, treatment, and release of water to the environment as per the Water Licence and Nunavut Impact Review Board Project Certificate.” This comprehensive Water Management Plan should be approved by the Board prior to any diversion of contact water to the Tailings Impoundment Area.	<p>We agree that when the site is in operation a water management plan will be prepared which complies with all the requirements of the license and amendments to the license for operations.</p> <p>The 2012 Interim Water Management Plan (submitted to the board in January 2012) proposes to discharge contact water to Tail Lake. The water quality model was used to predict water quality for this water management alternative.</p>
20 September 2011	INAC/J. Rogers		The July 29, 2011 cover letter that accompanied HBML's comment response table states that HBML are monitoring Doris Lake water levels and outflows as part of their environmental baseline data collection program. Furthermore, the project's water balance and quality model is calibrated with this data. The AANDC Water Resources Division appreciates this information update and looks forward to reviewing details associated with this monitoring program and calibration of the water balance and water quality model in the Comprehensive Water Management Plan.	Agreed.
20 September 2011	INAC/J. Rogers		The comprehensive Water Management Plan should address the use of water (e.g., domestic, mill requirements, dust suppression) and the management of all effluent types associated with project activities (e.g., treated domestic wastewater and effluent that collects within the landfarm sump, fuel storage sumps, cyanide and reagent storage facility sumps, landfill sump, etc.).	The 2012 Interim Water Management Plan (submitted to the Board in January 2012) addresses water management in facilities outside of the Mine Area catchment. Impacted water from these areas will be collected, treated as necessary using an oil-water separator and then discharged to either the Pollution Control Pond or Surge Pond to be managed in accordance with that plan.
20 September 2011	INAC/J. Rogers		Section 7.2.3 of the submitted plan states that the Pollution Control Pond has a storage capacity of 6,786 m ³ while the storage curve that was provided in a separate supporting document (dated July 29, 2011) indicates that this facility has a storage capacity of 5,097 m ³ . HBML should confirm this facility’s storage capacity and include this value in the log books that are used to record the daily volumes of effluent that collect in the mine area effluent retention ponds (i.e., Pollution Control Pond, Sedimentation Pond, and Temporary Holding Pond).	<p>The Pollution Control Pond volume listed in Section 7.2.3 was a typo; 6,786 m³ is the maximum volume of the Temporary Pond on Pad D (with no freeboard). The Pollution Control Pond has been redesigned and additional work has been conducted on the pond to prevent seepage since the August 2011 revision of the Interim Water Management Plan was submitted. The pond volumes changed during this modification. Currently the Pollution Control Pond has a full storage capacity of 2,992 m³.</p> <p>These values will be included in the log books.</p>

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16 September 2011	Environment Canada/ Paula Smith		Hope Bay Mining Ltd., has submitted a revised Interim Water Management Plan (Plan) for the Doris North Project in accordance with Part F Item 1 of water license 2AM-DOH0713.	Agreed.
16 September 2011	Environment Canada/ Paula Smith		In our review of the revised Plan, we noted that the Sedimentation Pond (i.e., V=2636 m ³) does not have enough volume to accommodate the 1 in 25, 24-h precipitation event (i.e., 3024 m ³). However, we are satisfied that mitigation option 3 under Section 7.2.5 of the Plan should alleviate any concerns related to overflow from the Sedimentation Pond.	<p>The Sedimentation Pond was redesigned and modified during August and September of 2011. This redesign was ongoing when the 2011 Interim Water Management was being revised. The “Issued for Construction” volume of the Sedimentation Pond is now 3,325 m³.</p> <p>It is important to note that the fully lined Sedimentation Pond will only collect direct precipitation and sheet runoff from the upgradient pads. The recently submitted 2012 Interim Water Management Plan describes the water management strategy for 2012 and two water management alternatives that differ from water management during the 2011 open water season.</p>
24 March 2011	Environment Canada/ Paula Smith	13.	As a point of clarification, we also noted that 2 of the ponds have the same volume capacity (i.e., 6786 m ³ for Pollution Control Pond and Temporary Holding Pond) and wanted to confirm that this is the case.	The Pollution Control Pond volume listed in Section 7.2.3 was a typo; 6,786 m ³ is the maximum volume of the Temporary Pond on Pad D. The Pollution Control Pond has been redesigned and additional work has been conducted on the pond to prevent seepage since the August 2011. Currently the Pollution Control Pond has a full storage capacity of 2,992 m ³ .
24 March 2011	Environment Canada/ Paula Smith		Further, using the volumes for each pond sited in the Plan, we determined the combined holding capacity of the 3 ponds is 16,208 m ³ as opposed to 14,513 m ³ (cited in Section 7.2.5 of the Plan).	The current total pond volume (Sedimentation Pond, Pollution Control Pond and Temporary Pond) is 11,816 m ³ . This volume is estimated at the invert elevation of the culverts in each pond. The Temporary Pond volume with 0.3 m of freeboard is 5,499 m ³ .
24 March 2011	Environment Canada/ Paula Smith		We recommend the proponent review the pond volumes and total holding capacities cited in the Plan and update accordingly any accounting errors in the next version of this Plan. For clarity, in the next iteration of this Plan, EC recommends Figure 1 be revised to include the volume capacity of each pond.	We agree to include Pond volumes on Figure 1.