Memorandum

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Project:	Jericho Project Advisory	**File No.:**	04006
From:	Rick Pattenden	**Date:**	22 November 2004
To:	Derrick Moggy, Fisheries and Oceans Canada	**Page:**	1 of 2
cc:	Dan Johnson and Greg Missal, Tahera Diamond Corporation		
Re:	Response to DFO –Use of Ponds A, B, and C		

In a letter dated 4 November 2004, DFO outlined concerns with the Jericho Diamond Project that remained following NWB technical session held on 28 October 2004. This was followed by discussions on 10 and 12 November between Tahera Diamond Corporation, its fisheries consultant, and DFO. The intent of the discussions was to provide information to DFO in order to address the concerns or come to an agreement on how to resolve remaining issues. This memo provides information regarding use of the mine site collection ponds A, B, and C.

DFO Statement

Stream C1

3. Water flow in Stream C1 during operation – As a result of water quality from the pit and surrounding waste rock and ore piles which is not likely to meet Canadian Council of Ministers of the Environment (CCME) guidelines, a portion of the watershed will be redirected to the pit through the construction of diversion ditches and subsequently sent to the PKCA for treatment. Furthermore, should Total Suspended Solids (TSS) become a water quality issue, then Ponds A, B, and C will be constructed and water quality will be monitored. In the event, water quality in the ponds meets appropriate water quality guidelines; the water in the ponds will be directed to Stream C1 or Carat Lake via a constructed ditch. If water quality does not meet appropriate water quality guidelines, it will be diverted to the PKCA. While DFO supports a centralized location for water treatment, we would prefer that any water not requiring treatment be directed back to Stream C1 to maintain normal flows to the extent possible. As a result, it is not clear whether the ponds can be constructed at the beginning of operations to ensure that any water meeting appropriate water quality guidelines can be directed to Stream C1 to maintain flows. Although sufficient data was not collected in Stream C1 prior to the construction of the berm across the channel, it is predicted that the change in water flows will not be significantly different then existing conditions. However, the section of Stream C1 where the water reconvenes, upstream of the mouth, is still the same as prior to the berm construction. Therefore the change in fisheries needs to be monitored to verify TDC's predictions, along with the provision of an adaptive management plan to ensure no further impacts to fish habitat.

Next Steps: **Please provide the rationale for not constructing Ponds A, B and C at the beginning of operations to ensure water flows in Stream C1 will be maintained to the extent possible.** Furthermore, please provide an outline of the monitoring proposed at the mouth of Stream C1 and upstream, to ensure changes in fish communities and the use of fish habitat to support TDC's predictions.

Tahera's Response

Tahera stated during discussions on 10 and 12 November that all water flows of suitable quality would be directed to the natural drainage to the greatest extent possible. Tahera described the anticipated requirements and operation of Ponds A, B, and C over the life of the mine. In general, the plan is to allow natural drainage from undisturbed ground to be directed to Stream C1 and Carat Lake to the extent possible. In-pit sumps developed as part of excavation of the mining operations will be used to contain runoff from the initial waste rock dumps (unsuitable water quality) and overland flow patterns disrupted by mining operations. The need for installing ponds A and C can be further assessed prior to the time the ground is disturbed in those areas. In all scenarios, containment of runoffs would occur until such time water quality can be established. The following is a more detailed discussion.

Pond A – This pond is designed to capture runoff from waste dump #1 that would flow naturally into both the lower reaches of Stream C1 and to Carat Lake directly, generally through small drainage rills across the tundra. The development of the waste dumps was rescheduled to construct waste dump #2 first followed by the upper reaches of waste dump #1, thereby directing any runoff by gravity means to the open pit. In the third year, when it becomes necessary to expand waste dump #1 to base contours below the level of the open pit crest, the quantity and quality of any runoff water coming off the dumps will be known, providing criteria for the need and/or sizing of Pond A. Experience at Ekati has shown that virtually no runoff exists from the waste dumps as much of the precipitation in the form of snow is buried in the winter months, and snow melt and rain percolate into the coarse rock voids and freeze within the waste dump as permafrost progressively aggrades into the waste rock pile.

As a result the Tahera mine operation will have a period of time to establish the true need for Pond A.

Pond B – This pond is directly down slope of waste dump #2 and captures runoff from this dump before it enters the pit. As the open pit operation is further down slope of the planned pond B location, any runoff coming from this disturbed ground area will flow into the pit and be handled in the pit sumps. All pit sump water will be pumped to the PKCA. Again over a period of the first two to three years the quantity and quality of actual runoff can be determined. As the pit deepens it may be advantageous to not let the water flow into the pit to save on pumping costs. Secondly, if the water quality from the waste dump #2 disturbed area is acceptable there may be a way to route any water around the pit to stream C1.

The requirement for a collection area is not eliminated in this area but rather the plan is to use the in-pit mine sumps as the collection points for any water that would have been impounded by pond B. The open pit will cut off a portion of the watershed that feeds the lower reaches of Stream C1 and all the water in the pit would be planned to be pumped to the PKCA. Pit contaminated water is likely to contain higher TSS levels due to water flows over mining faces into the pit.

Pond C – This pond is the collection pond designed to take the north flowing runoff from the ore stockpiles and plant facilities. The low grade stockpile is built up over the life of the mine. Tahera has plans to test and possibly treat this material on an ongoing basis rather than stockpile it. This would preserve a portion of the Stream C1 watershed in its natural state and runoff would continue to flow into Lake C1. Any runoff from disturbed facilities and stockpile areas can be initially directed to the two natural sumps in the area, where the water quality would be tested and based on quality results either pumped over to the PKCA or diverted to the C1 watershed. The need for Pond C would only be required once the disturbance area extends beyond the local watersheds of the two natural sumps.

Summary - Overall the requirements for ponds A & B are replaced by the mining pit sumps during the first two to three years of operation allowing time to determine the need for installing Pond A. Likewise, the need for Pond C is replaced initially by the natural sumps until such time the stockpile areas and ground disturbance extend to far to the north. By this time, the operation will have determined the true quantities and qualities of disturbed ground runoff. In the meantime, the natural ground in the areas of the planned ponds A & C will still be undisturbed and all runoff from these areas will continue to flow to Carat Lake and Lake C1 respectively.