Memorandum

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Project:	Jericho Project Advisory	**File No.:**	04006
From:	Rick Pattenden	**Date:**	23 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 Concerns – Intake design		

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. Drawings of the revised water intake design by HATCH™ that conforms to DFO requirements are attached. To maintain consistency with the original water license application drawing (Appendix S SRK Drawing W6), the revised design has been submitted as Alternative #2. (The original design is illustrated by Alternative #1). Please note that the Alternative #2 design will be incorporated into the Jericho Project Description.

Also attached are two sets of calculations by HATCH™. The first were used to develop screen dimensions that adhere to the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline (DFO 1995). The second set provides a summary of water velocities expected to occur at the surface of the rock infiltration structure under Alternative #1. These revised values are meant to replace data presented in Appendix Q Mainstream Memorandum B.

DFO Statement

Water Intake

2. Water Intake Design – As discussed, the current design (intake embedded within a perforated water well) does not meet the basic criteria outlined in the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline in that it is essentially buried in the bottom substrate (side slopes of the causeway are considered an fish habitat enhancement to encourage resident fish to spawn under the No Net Loss Plan) and drawing water within. We discussed several options including:

   a. An assessment of the risk to fish eggs and larvae due to the predicted water velocity, along with the implementation of appropriate mitigation and monitoring measures to verify predictions; or,

   b. Redesigning the water intake to a buried pipe option (no harmful impact to fish and fish habitat) or floating pump house (no harmful impact to fish and fish habitat); or,

   c. Redesigning the causeway and water intake, such that the intake pipe will extend from the causeway into sufficiently deep water.

Next Steps: **If the last option (c) is the preferred approach, please provide updated plans indicating the change in causeway length and location and design of the water intake, along with revised calculations indicating compliance with the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline.**

In the event, the other options are to be implemented, demonstration that the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline will be met along with the provision of a plan to construct, operate, maintain and abandon the structure.

Tahera'sResponse
Tahera's preference is Option C. The revised drawing and calculations are attached. Please note that the causeway length and configuration remains similar to the original design. The causeway length remains the same in order to access the required water depth. The terminus of the causeway remains the same in order to accommodate the water intake infrastructure and to facilitate vehicle access.

Literature Cited
Department of Fisheries and Oceans. 1995. Freshwater Intake End-of-Pipe Fish Screen Guideline. 27 pp.