Proposed Pebble Project
Preliminary Draft Environmental Impact Statement
Review Comments

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Chapter:	Appendix K: Technical Appendices
Section:	Section K4.18 Water and Sediment Quality
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Comments

Section K4.18.1 Water Quality Modeling. K4.18.1.1 Operations. Please refer to Page K4.18-6, second paragraph: As in the main section, this paragraph describes discharge of flows from the WTPs into the NFK, SFK, and UTC watersheds, but is less definitive about the safety of these discharges, stating "*at flows protective of the environment* ***to the extent possible given the capacities of the WTPs and need for process water use onsite***." (emphasis added). This appendix and Section 4.18 should clearly discuss, based on the modeling, to what extent it may not be possible to discharge the water in a manner that is protective of the environment, and in what specific sense the discharges would not be protective of the environment (e.g., low or high flows, metals concentrations, conventional parameters, etc.).

Section K4.18.1.3 Pit Lake. The tables cited in the second paragraph of this section only provide information for the four closure phases, and not for subsequent decades during which pit lake water will need to be pumped and treated in perpetuity. Graphs of water quality parameters that exceed discharge limits in the pit lake water should be provided to show how water quality will change in the pit lake and in the treated water discharged to surrounding watersheds over the long term.

Tables or graphs showing water quality data should include the water quality criterion that applies (as a number in the table or a threshold on the graph), so that the reader does not have to refer to a different section to determine the degree to which the criterion is exceeded.

Water treatment during operations. Would water quality in influent or effluence be more problematic during dry or wet conditions? How will that be addressed to prevent impacts?

Water treatment during closure. It is unclear from this discussion whether personnel would operate the WTPs full-time, or whether the plants would be mainly automated. If an upset

occurs (for example, as described in each of the steps for the main WTP below), what is the worst-case failure mode? How long would it be before personnel could effectively and adequately respond? What capacity is there for water containment while issues at a treatment plant are addressed? While it is helpful to have details of operational plans for normal circumstances, it is failures and emergencies that have the greatest chance of impacting the environment; therefore, potential failures and emergencies need to be emphasized and discussed in all sections.

Section K4.18.2.3 Closure Water Treatment Plant. This section states that "*current preliminary design information . . . does not identify changes in treatment processes*." However, the treatment process for this WTP proposed for during operations relies on disposal of metal sulfides and selenium in the pyritic TSF, which will not be available after Phase 3 of closure. How will the treatment process change at that point, or how will these wastes be otherwise handled and disposed of?

Section K4.18.2.4 Water Quality of WTP Discharge. Concerns identified during the independent review should be squarely addressed in the environmental impact statement (EIS) along with changes to the treatment processes needed to address these concerns. These concerns and necessary changes in treatment processes should not be waved away as part of a theoretical adaptive management process to be developed later.

Table K.4.18-10: Predicted Water Quality of WTP Discharge in Closure. Based on the data in this table, it does not appear that all discharge criteria are predicted to be met post-closure.

Section K4.18.3.2 Surface Water. This analysis is highly insufficient and focuses on what is likely one of the smaller potential source of metals to water bodies. Larger pieces of rock, particles, ore, wastes, and other mining debris are highly likely to become deposited on roadways and soils in the main mining area and will make their way into adjacent water bodies. The analysis should also add in the metals concentrations discharged in treated water to the water bodies to complete a full analysis of the multiple pathways by which metals could enter surface water and sediments.