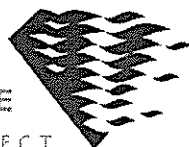


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S N A P L A K E
DIAMOND PROJECT



De Beers



MINUTES OF MEETING

Date/Time: April 10, 2003; 1:00pm **File No:** :
Location: Various - telecon **Written By:** G. Oryall
Subject: Water Treatment Plant **Project No.:** U638A
Project Title: Snap Lake Diamond Project **Date Issued:** April 10, 2003

Present: Environment Canada: Anne Wilson; Mark Dahl
DFO: Dave Balint
INAC: Don MacDonald; Sevn Bohnet(part time)
De Beers: Robin Johnstone; Colleen English
AMEC: Tom Higgs; Greg Oryall

Other Distribution: MVEIRB Public Registry

Purpose: Discuss EC's unresolved issue that "it remains unclear if the treatment plant will be equipped to remove dissolved metals."

ITEM NO	ITEM	ACTION BY	DUE DATE	REVISED DUE DATE
1.	AMEC clarified the following points: (a) The benchscale pilot testwork conducted to evaluate water treatment processes found that treatment for removal of suspended solids was sufficient to meet water quality objectives. The level of actual dissolved metals in the feed and discharge water was very low, controlled by their very low solubility limits under the pH and temperatures of the minewater. (b) Removal of actual dissolved metals below the levels observed in the pilot testwork program is not practical. (c) Although it was not experienced in bench-scale pilot testwork, it is possible that during mine operations very fine colloidal (clay) material could be present in the feed, and could assay as apparent dissolved metals. This is because standard assay practice reports any suspended particles smaller than a 0.45 micron sieve size as "dissolved".			

Snap Lake Project Team
AMEC

111 Dunsmuir Street, Suite 400 Vancouver, B.C. V6B 5W3
Tel (604) 664-4315 Fax (604) 664-4134
www.amec.com

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ITEM NO	ITEM	ACTION BY	DUE DATE	REVISED DUE DATE
	<p>(d) In the event colloidal particles are present, the addition of a coagulant in the treatment process would be an effective means of removal. (The reason coagulation did not yield improved results in the bench-scale testwork was because only very low levels of colloidal particles were present in the feed samples collected and tested.)</p> <p>(e) As a conservative precaution, equipment for coagulant addition (ferric sulphate and lime for pH balance) will be installed at the outset in the WTP, with a supply of the chemicals on hand. In this way, if colloidal particles become an issue, they can be removed.</p>			
2.	<p>The question was asked whether a multi-stage treatment process would be required in the event that elevated levels of dissolved metals were experienced.</p> <p>AMEC responded that, based on the measured pH of the feed, elevated levels of dissolved metals could not occur because of their low solubility limits under these conditions. If the pH were to shift outside the acceptable range, it could be readjusted to the desired set point using either ferric sulphate or lime addition, both of which will be on hand.</p> <p>Environment Canada stated that they were not looking for a parameter by parameter approach to the treatment process, but rather assurance that treatment possibilities have been considered.</p>			
3.	<p>Specific hypothetical questions were raised about potentially elevated levels of dissolved chromium and aluminum.</p> <p>AMEC responded that in such cases, it is highly probable that these would be present in colloidal form, and therefore removeable by coagulation. If due to pH shift, then it would be corrected as in 2, above.</p>			
4.	<p>A question was asked about plant control systems and the establishment of a database which would correlate turbidity to metal levels.</p> <p>AMEC responded that continuous automated monitoring of pH and turbidity would be included. Chemical addition for pH adjustment would be automatic. Turbidity would be calibrated to assayed TSS and metals values, to establish</p>			

ITEM NO	ITEM	ACTION BY	DUE DATE	REVISED DUE DATE
	the on-stream control criteria for compliance with permit limits.			
5.	<p>A question was raised by DFO regarding reasons for the difference between the "EA Assessed" and "Expected" chromium concentrations (0.0020 ppb and 0.0046 ppb respectively) presented in Table 12c of Golder's February 28, 2003 Technical Memorandum entitled "Snap Lake Diamond Project Mine Water Assessment and Variability". A more thorough explanation of DFO's concerns is also highlighted on page 7 of their Technical Report Addendum submitted 14 March 2003.</p> <p>This issue was recommended for discussion with De Beers and Golder, and could not be resolved during this telecon.</p>	De Beers/ Golder	16 April 2003	
6.	<p><u>Conclusion:</u> At the conclusion of the telecon, all parties stated the issue of dissolved metals treatment has been resolved to their satisfaction.</p> <p>Environment Canada requested a written response to their March 12th e-mail from Mark Dahl as further clarification of today's discussion.</p>	De Beers/ AMEC	16 April 2003	