

EA-SnapLake

From: Glenda Fratton [gfratton@gartnerlee.com]
Sent: Thursday, January 30, 2003 11:47 AM
To: geonorth@theedge.ca
Subject: technical session comments part 1

Lisa

As per my voice mail, please find attached Gartner Lee's comments up to and including Day 8. I will send Day 9 and 10 comments a little later on today - okay?

Call me at the Review Board if you have any questions 766-7053

Glenda

Comments on Snap Lake Technical Sessions

Day 2: Water Quality and Quantity

- a) Bottom of page 8, under “De Beers Response”, states:

“Yes, there is an allowance for an increased footprint, however we do not anticipate it, but we have extra capacity.”

Comment:

This comment referred to treatment capacity only, DeBeers said they have enough space to build a larger treatment plant, but no footprint for extra water storage requirements.

- b) Bottom of page 12, under “De Beers Response”, states:

“Have discussed the Diavik sewage treatment plant with Diavik operators. Diavik’s phosphorous removal is chemical (precipitate P using Al). We have no opinion on why it does or does not meet their limits. However we will have two sewage treatment plants and we are very confident we will meet our limits due to a two-stage process and use of ferric sulphate – that is the current set up at the exploration camp presently at Snap Lake.”

Comment:

Suggest adding the shaded sentence to the above paragraph

“Have discussed the Diavik sewage treatment plant with Diavik operators. Diavik’s phosphorous removal is chemical (precipitate P using Al). And DDMI (Diavik Diamond Mines Inc.) use different treatment processes – they use an RBC (Rotating Biological Contactor) and extended aeration processes – De Beers use a Sequencing Batch Reactor (SBR) We have no opinion on why it does or does not meet their limits. However we will have two sewage treatment plants and we are very confident we will meet our limits due to a two-stage process and use of ferric sulphate – that is the current set up at the exploration camp presently at Snap Lake.”

- c) Bottom of page 14, under “DFO Concern”, states:

“Two questions: one is it possible to remove TDS from effluents and two is this expensive?”

Comment:

This was an MVEIRB question from Neil Hutchinson

Comments on Snap Lake Technical Sessions

Day 3: Water Quality & Quantity

- a) Bottom of page 5, attributes the following concern to Dogrib:

“The graph of volume of water from mine to treatment plant – translates to model inflow. The value on graph is the expected value, but did you run the model with one to two standard deviations higher than expected?”

Comment:

This concern was actually a comment from Environment Canada (Steve Harbicht)

- b) Centre of page 9, attributes the following concern to DFO:

“Regarding the 230 m mixing zone - is there any way to reduce that 1% zone? What treatment can be applied to reduce that zone?”

Comment:

This concern was actually a comment by Environment Canada (Mark Dahl)

Day 5: Wildlife and Wildlife Habitat

Page 4 states:

“Baseline studies found no active bear dens in the regional study area because it was restricted to eskers??? –confusing???”

Comment:

Please delete ‘??? –confusing??’, and replace with ‘Please explain if surveys for dens was done off esker.’

Comments on Snap Lake Technical Sessions

Day 7: Geotechnical

Page 9 states:

“MVEIRB Comment: Tailings tend to be wetter than what De Beers is expecting and rates of freezing are slower than expected from modeling. The calibration in the top 10 m appears to be off in comparison to measured ground temperatures in all four seasons (related to freezing rates). Concerns are shared with DIAND with respect to the thermal model and freeze-back timeframes (may be longer than timeframe estimated by De Beers). It is very positive that you are starting out with a strong containment section. Based on monitoring and instrumentation, there is much to learn about the rate of freeze-back and seepage and pore pressures associated with that (which is valuable information for De Beers). In summary there is not so much of an issue but support for DIAND’s concerns on the accuracy of the thermal model and rate of freeze-back”

Comment:

For clarification purposes, we recommend replacing the above statement with the following:

“MVEIRB Comment: *In EBA’s arctic experience with other mine tailings, that are slightly wetter than what De Beers is expecting, EBA has observed rates of freezing that were slower than were expected from other geothermal modelling.*

Also, the De Beers geothermal model calibration results, predict ground temperatures for the top 10 m below ground surface, that appear to be up to 3 Celsius Degrees colder than the measured ground temperatures. This difference between predicted and measured ground temperatures was observed for all four seasons. Therefore we would expect the De Beers geothermal model to predict higher rates of freeze-back of the North Pile than may actually occur.

With regard to the slope stability of the North Pile, it is very positive that De Beers is starting out with a strong containment shell. We would expect that any proposal to construct the shell differently than described in your presentation today, would be based on new information and the results of monitoring and instrumentation. There is much to learn from field measurements about the rate of freeze-back, as well as seepage and pore pressures associated with the North Pile construction.

In summary, the MVEIRB does not wish to raise a new issue with respect to this subject but does wish to express that we share DIAND’s concerns about the accuracy of the De Beers geothermal model and rate of freeze-back predictions for the North Pile.”

Comments on Snap Lake Technical Sessions

Day 8: Geotechnical, A&R and Air Quality

Page 7, MVEIRB Concern states:

“With respect to production rates: it was previously stated (IR) that De Beers was re-examining the host rock dilution at 20%. If dilution increases, the amount of the waste rock to north pile would be greater.”

...and De Beers responds:

“The mining method is constantly being refined. At the time of the EA we were forecasting 23 million tonnes of rock being processed (at 20% dilution). Now we are forecasting 26 million tonnes of rock being processed (at close to 30% dilution). Capacity within the north pile is situated such that the impact on surrounding landforms (due to the increased height) will not be great. The resource is not defined 100% and the north pile design can extend to the west boundary and there is room for perimeter expansion in the north pile.”

Comment:

This concern is considered “Resolved” in the opinion of Gartner Lee (on behalf of the MVEIRB).