



Snap Lake Environmental Monitoring Agency
Main Floor, Lahm Ridge Tower
4501 Franklin Avenue
P.O. Box 95, Yellowknife, NT X1A 2N1
Phone: 867-765-0961 FAX: 867-765-0963
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Marc Casas
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O.Box 2130
Yellowknife, NT X1A 2P6

File: Water Licence MV2011L2-0004

January 16, 2014

Re: Amendment Application for TDS Limit

Dear Mr. Casas,

Snap Lake Environmental Monitoring Agency (SLEMA) preliminarily reviewed the above Amendment Application, and would like to make the following comments.

De Beers developed a Site Specific Water Quality Objective (SSWQO, 684 mg/L) for TDS, and proposed the change of the approach for managing TDS, i.e. the in-lake compliance limit (350 mg/L) be removed from the Water Licence and replaced with the end-of-pipe limits (Effluent Quality Criteria):

- The average TDS concentrations from samples collected over a 30-day period in treated effluent should remain below 684 mg/L (the Average Monthly Limit, AML) and
- The maximum concentration in any grab sample should remain below 1,003 mg/L (the Maximum Daily Limit, MDL).

Effluent TDS data in the past few years (2009 to 2013) indicate that there are no TDS values above the proposed MDL, but there are a few TDS values above the proposed AML (as shown in Table 1 and 2, and Figure 1).

The existing Water Treatment Plant (WTP) was designed to remove particulates through flocculation, sedimentation, and filtration, and does not remove TDS. A cost-benefit analysis of best available technologies to reduce TDS loadings to minewater is provided in the TDS Response Plan.



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Table 1. Effluent TDS Data from March 11 to April 28, 2013

Date	11-Mar-13	11-Mar-13	17-Mar-13	23-Mar-13	29-Mar-13	4-Apr-13	10-Apr-13	10-Apr-13	16-Apr-13	22-Apr-13	28-Apr-13
Grab Sample, mg/L	712	916	772	594	525	750	775		619	700	621
Rolling Monthly Average, mg/L							688	722	673	661	665

Note: 1) There are two values on March 11 due to Multi-Agency Duplicate.
 2) The average for the calendar month of April 2013 is 693 mg/L.

Table 2. Effluent TDS Data from August 20 to October 25, 2013

Date	20-Aug-13	26-Aug-13	1-Sep-13	8-Sep-13	13-Sep-13	19-Sep-13	25-Sep-13	1-Oct-13	7-Oct-13	13-Oct-13	19-Oct-13	25-Oct-13
Grab Sample, mg/L	735	706	649	778	701	665	728	658	714	657	698	643
Rolling Monthly Average, mg/L							705	697	707	687	687	683

Note: The average for the calendar month of September 2013 is 704 mg/L.

De Beers planned to reduce inflows of water with high TDS concentrations (connate groundwater) with a portable modular water treatment system. However, it is confirmed in the information session for the Amendment Application, dated January 6, 2014, that no TDS removal facility will be installed in 2014. As a result, TDS levels in the treated effluent will remain high.

Therefore, it is very possible that there will be exceedances of the proposed AML until the TDS removal facility is in place and is functioning properly.

It is recommended that De Beers resubmit an appropriate AML with a feasible timeline.



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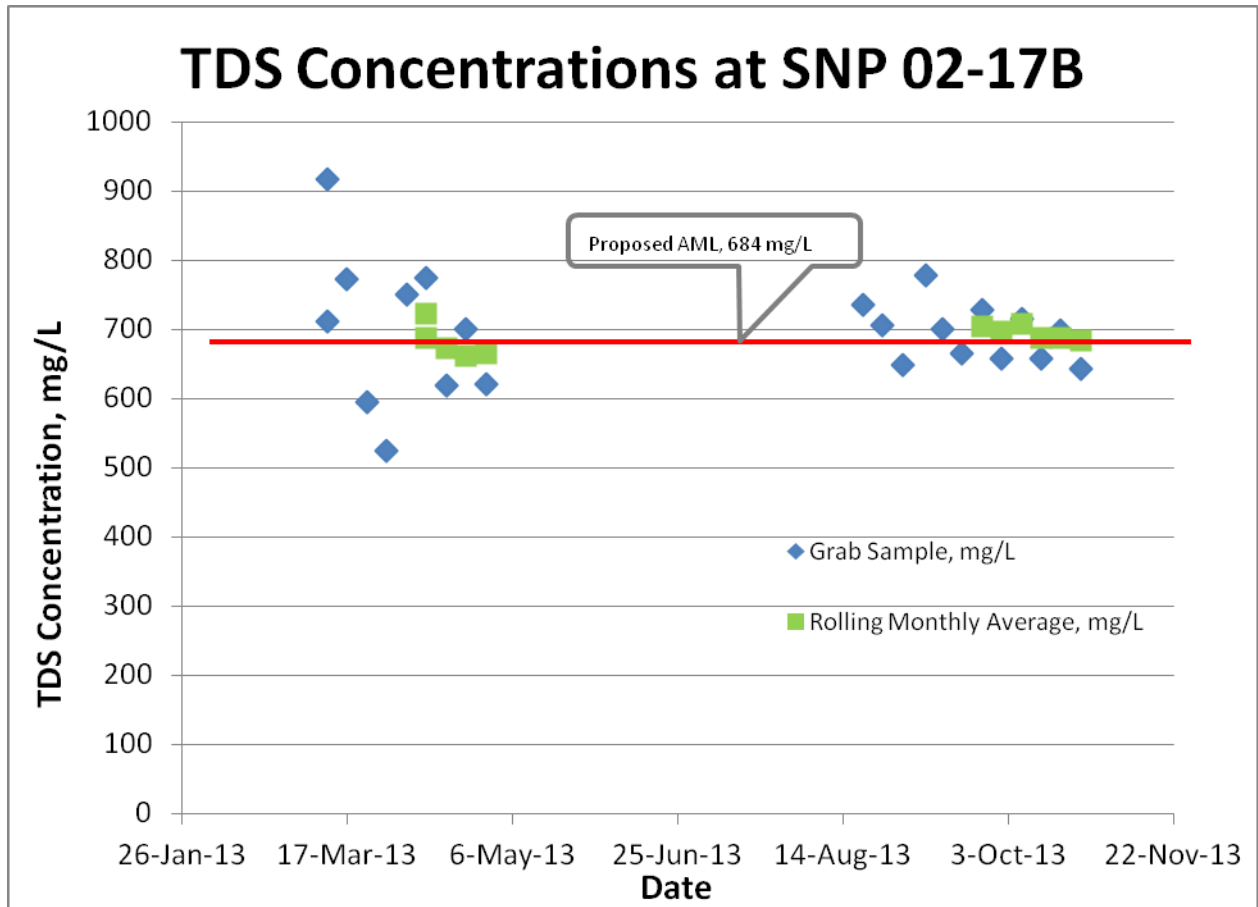


Figure 1. Effluent TDS Data Analysis

If you have any questions whatsoever please feel free to contact Philippe di Pizzo at 867-765-0961 / exec@slema.ca.

Sincerely,

Johnny Weyallon

Chairperson