Independent Environmental Monitoring Agency
P.O. Box 1192, Yellowknife NT X1A 2R2 ▪ Phone (867) 669 9141 ▪ Fax (867) 669 9145
Website: www.monitoringagency.net ▪ Email: monitor1@monitoringagency.net

July 7, 2017

Violet Camsell-Blondin
Chair, Wek'eezhii Land and Water Board
#1-4905 48th St, Yellowknife, NT
X1A 3S3

Re: Ekati 2016 Aquatic Effects Monitoring Plan (AEMP) Annual Report

Dear Mrs. Camsell-Blondin,

The Independent Environmental Monitoring Agency (Agency) has reviewed Dominion Diamond Ekati Corporation's (DDEC) 2016 AEMP Annual Report and provides the following comments.

Water Quality in Koala and King-Cujo Watersheds

The following trends were identified in the AEMP Annual Report:

- Iron concentrations spiked above CCME guidelines under ice in Kodiak Lake (Fig. 6.1-34);
- Fluoride concentrations under ice (Fig. 6.1-8) rose above CCME guidelines in Cujo Lake downstream from the Misery Pit. Excess fluoride is a growth inhibitor in some zooplankton species and possibly in juvenile salmonid fish; and,
- Zinc spiked above CCME in one Lac de Gras site (S3), but it seems to be an anomaly amongst the four Lac de Gras sample stations reported (Fig. 6.1-47).

Unfortunately, the iron, fluoride and zinc exceedances of guidelines are not explained in the text as none of them are an evaluated variable and therefore are not required to be described**.**

Recommendation: If fluoride, iron and zinc continue to be elevated at, close to, or above CCME guidelines in Koala or King-Cujo watersheds in 2017, these should all become statistically evaluated variables that will have to be discussed in more detail in the 2017 AEMP.

Water Quality Reporting

Graphical Illustrations: DDEC's response to the Agency's AEMP Re-Evaluation review comment #15, states that it "*would be willing to consider any specific examples of figures that IEMA finds challenging to interpret and suggestions for improvement to those figures for inclusion in the 2016 AEMP Annual Report*" (emphasis added). The Agency finds that several of the figures tracking yearly trends in water quality variable concentrations (Figs. 3.2-1, 3.2-7, 3.2-10, 3.2-11 3.2-13 and 3.2-18) and for biota (Phytoplankton - Fig. 3.3-1; Zooplankton Fig. 3.3-9; Benthos – Fig.3.3-2 for lakes, Fig. 3.3-18b for streams) for the Koala watershed are now too "busy" and cluttered to read easily. Temporal trend lines and confidence limit bars are being obscured by the large number of

overlapping lines and bars. One possible solution is to break apart the monitored lakes part of each variable graph into three separate graphs. For example, to improve clarity, each of the above mentioned figures could be split into three separate graphs as follows: Grizzly Lake (1 lake + 3 reference lakes), Proximal to LLCF or PDC (Kodiak, Leslie, Moose, Nema lakes + reference lakes), Distal to LLCF (Slipper, Lac de Gras sites + reference lakes).

Recommendation: To improve readability and clarity the above mentioned graphs should be separated into two or three graphs, with Grizzly Lake, lakes proximal to mine components and those further away as three separate graphs for each chemical variable and biological metric.

Cumulative Impacts on Lac de Gras

Although not referenced in the 2016 AEMP report, the Agency is pleased to learn that DDEC has committed to adjusting water quality laboratory methods to better synchronize Ekati and Diavik aquatic effects monitoring of Lac de Gras (*Jan. 10, 2017 letter from DDEC to WLWB responding to IR on AEMP detection limits*). To address possible cumulative effects on Lac de Gras from the two diamond mines, methodological consistency is identified as crucial. To accommodate this principle, DDEC agreed to lower six of its detection limits for water quality variables to match lower Diavik limits. While this is welcome news, the Agency would also expect that how to treat measurements below the detection limits would also be harmonized by the two mines (at Ekati, measurements below detection limits are replaced with values equal to half the detection limit).

Recommendation: DDEC should ensure that statistical methods for incorporating measurements below detection limits into statistical analyses are the same for both the Ekati and the Diavik AEMPs.

Should you have any questions concerning these comments, the Agency is pleased to discuss these at your convenience.

Sincerely,

Kim Poole
Secretary Treasurer

Cc: Dominion Diamond Ekati Corporation – April Hayward
Tlicho Government - Jessica Hum
Yellowknives Dene First Nation – Alex Power
Lutsel K'e Dene First Nation – Ron Griffith
North Slave Metis Alliance – Shin Shiga
Kitikmeot Inuit Association – Jared Ottenhof
Government of the Northwest Territories – Laurie McGregor
Indigenous and Northern Affairs Canada – Jennifer O'Neil