



Environment Canada Environnement Canada

Environmental Protection Operations Directorate (EPOD)
Prairie & Northern Region (PNR)
5019 52nd Street, 4th Floor
P.O. Box 2310
Yellowknife, NT X1A 2P7

October 9, 2015

EC File: 5100 000 012/015
MVEIRB File: EA1314-01

Chuck Hubert
Senior Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
5102 50th Ave.
P.O. Box 938
Yellowknife, NT X1A 2N7

Via email submission

RE: EA1314-01 – Dominion Diamond Ekati Corporation – Jay Project – Undertaking #15 Response

Attention: Chuck Hubert

Please find below Environment Canada's response in full to EA1314-01 Jay Project Environmental Assessment Undertaking #15.

Undertaking #15:

"Environment Canada will approach their wildlife toxicology expert and determine if, based on the water quality predictions for Misery Pit and the Jay project mixing zone, they anticipate any harm to migratory birds under the *Migratory Bird Convention Act*."

Response:

Modelled water quality predictions for Misery Pit and Jay Pit were examined for potential risk to migratory birds. The potential chemical exposure routes for birds would be through drinking the pit water or feeding on aquatic biota in the pits. The predicted concentrations of metals are relatively low in the pit waters and no harm to migratory birds is anticipated from the loadings of metals. Further, the water hardness will be high in the pit waters, which tends to dampen the toxicity and bioavailability of some metals. Total dissolved solids will be elevated in the pit waters due to inputs of major ions (mainly sodium, chloride, calcium). These major ions are generally non-toxic to wildlife unless the concentrations are exceptionally high. The modelled concentrations of total dissolved solids and major ions in the two pits are lower than levels where toxicological

effects to waterfowl have been observed, and therefore, no harm is anticipated to migratory birds. Nitrate concentrations will also be elevated in the pit waters (particularly 99th percentile spikes in concentration), although the predicted exposure is below a level of concern for migratory birds. Based on this evaluation of the water quality predictions, no harm is anticipated to migratory birds from the pit waters.

EC's specialist advice is provided pursuant to the *Canadian Environmental Protection Act, 1999*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act, 1994*, and the *Species at Risk Act*.

Should you require further information, please do not hesitate to contact me at (867) 669-4707 or Bradley.Summerfield@ec.gc.ca.

Sincerely,

A handwritten signature in black ink, appearing to read "Bradley Summerfield". The signature is fluid and cursive, with the first name "Bradley" being more prominent than the last name "Summerfield".

Bradley Summerfield
Environmental Assessment Coordinator

cc: Sarah-Lacey McMillan, A/Head, Environmental Assessment North (NT and NU),
PNR-EPOD