



Giant Mine Environmental Assessment

IR Response

Round One: Information Request – North Slave Métis Alliance #16

May 31 2011

INFORMATION REQUEST RESPONSE

EA No: 0809-001

Information Request No: NSMA IR #16

Date Received:

February 28 2011

Linkage to Other IRs:

Date of this Response:

May 31 2011

Request

What was the detection limit relevant for each time period of the reported arsenic level in fish tissue data? Is there a temporal trend in the data – please illustrate.

Reference to DAR (relevant DAR Sections):

S.7.4.2.5 Arsenic Concentrations in Fish

Reference to the EA Terms of Reference

S.3.4.2 Health and Human Safety

S.3.5.2 Fish and Aquatic Habitat

Summary

The detection limit of arsenic in fish tissue was 0.05 µg/kg, on a wet weight basis, and was the same for each time period. The concentrations of arsenic in fish tissue data in Yellowknife Bay are similar between 1996 and 2004 and therefore the data do not support the development of a temporal trend.

Response

The data presented for fish in Table 7.4.6 of the DAR had a reported detection limit of 0.05 µg/g wet weight (ww). In Baker Creek and Resolution Bay, none of the samples were below the detection limit, while in Yellowknife Bay only 9 samples out of a total of 408 were below the detection limit.

The mean measured concentrations of arsenic in fish have not changed with time; in Yellowknife Bay, the mean concentration of arsenic in fish tissue (muscle) in 1996 was 0.20 mg/kg ww while in 2004 it was 0.21 mg/kg ww. These results do not support an evaluation of temporal trends in the data. It should be noted that the arsenic levels in fish from Yellowknife Bay are similar to those in fish in Northern





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Saskatchewan, where the mean arsenic concentration was 0.18 mg/kg ww for fish in water with less than 4 µg/L arsenic. Data from Northern Saskatchewan has been used in this comparison for four reasons: i) arsenic is one of several constituents of concern in the vicinity of a number of large mining operations in the province; ii) there is a large fish chemistry database collected at these operations; iii) fish are exposed to a range of arsenic levels which provides a good database for assessing the effects of a range of exposure levels on fish tissue levels; and, iv) the chemistry of water in Northern Saskatchewan are fairly similar to those in the NWT.

