



Northwest
Territories Local Government

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K. BLOWER

MAY - 8 1984

February 14, 1984

Mr. Ken Blower, P. Eng.
General Manager
Giant Yellowknife Mines Ltd.
Bag 3000
Yellowknife, N.W.T.
X1A 2H2

Dear Ken:

As we very briefly discussed on the N.W.T. Air flight to Winnipeg last week, I sit as a member of the Federal Provincial Working Group on Drinking Water Quality.

A formal review of the 1978 Guidelines for Drinking Water Quality and the supporting documentation is currently underway. The information on arsenic is being reviewed to determine whether changes to the existing recommendations are warranted.

A "draft" document on arsenic was presented to the Working Group during the recent meetings in Ottawa. Your thoughts and comments on the reference to Yellowknife's mining community on page 4 would be appreciated. The reference cited, which reports levels of arsenic in lakes of the Yellowknife area, is an older one (1978) and seems to attribute the elevated levels of arsenic to the release of arsenic trioxide to the environment as a by-product of gold roasting.

Perhaps you may wish to suggest the addition of a sentence or two to the effect that steps have now been taken to mitigate the arsenic released to the environment. Simply bringing this section up to date may be all that is required.

I shall pass your comments on to Health & Welfare and provide you with a revised document when available.

② Ken Blower,

I HAVE ASSUMED YOU
HAVE NO COMMENTS.

OTHERS
R. B. M.

①

I have taken the liberty of passing the draft section to Brian Wilson of EPS for his information.

Thank you for your assistance.

Yours truly,

Bob Milburn, P. Eng.
Senior Planning Engineer
Community Planning &
Development Division

ccc. Dr. Brian Wilson
EPS, Yellowknife

c.c. Dr. Vic Armstrong
NH&W, Ottawa

MILBURN/jv

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natural or industrial sources of arsenic contamination. Data from NAQUADAT indicate that only two (both in Newfoundland) of all surface waters surveyed across Canada during the years 1979-1982 recorded levels greater than 50 ug/l (Environment Canada, 1983). Levels of arsenic in lakes of the Yellowknife area (where arsenic trioxide is released to the environment as a by-product of gold roasting) have been reported to range from 0.7 to 5.5 ppm (Wagemann et al, 1978). Similarly, levels in some rivers and lakes in Ontario range up to 300 ug/l (Ontario Ministry of the Environment, 1983).

Arsenic levels in raw water sources may be reduced during conventional drinking water treatment processes such as alum or iron coagulation and lime softening (EPA, 1977). The degree of removal depends primarily on the valence of the arsenic; pentavalent arsenic is more readily removed than trivalent arsenic. Removal is also a function of the pH of the treated water, the coagulant dose, and the initial arsenic concentration, with pH being the most important factor. Trivalent arsenic is removed more effectively from water if it is first oxidized to the pentavalent state by conventional chlorination disinfection processes.

Data available from provincial agencies indicate that levels of arsenic in Canadian drinking water supplies are generally less than 5 ug/l. However, elevated concentrations (mainly in ground water) have been recorded in the vicinity of natural or industrial sources; for example, levels as high as 80 ug/l have been recorded in well water of the Chelmeford, Ontario area (Ontario Ministry of the Environment, 1983) and one well in Nova Scotia reportedly contained 5 mg/l of arsenic (Grantham and Jones, 1977).

ROUTING - REQUEST

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FORWARD

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RETURN

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KEEP OR DISCARD

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REVIEW WITH ME

Date

5 May 84

From

KOST
Do we have any
better info for
them?
him