

500 Chancery Hall, Edmonton, Alta

November 1 1967

Mr. A. B. Yates,
Assistant Director,
Dept. Indian Affairs & Northern
Development,
Centennial Towers,
400 Laurier Avenue W,
Ottawa 3, Ontario

Dear Mr. Yates:

Re: Arsenic Pollution - Yellowknife

I regret the delay in replying to your letter of October 3, 1967 on the above subject but I have been away on tour and have just returned.

As you are aware, we are very concerned about the increasing amount of arsenic pollution in Yellowknife Bay from which the town and mines' water supplies are obtained.

Urgent action is necessary to correct the situation but before a definite decision is made to divert the tailings effluent to Baker Creek and to place the intake at the north end of the bay below the mouth of the Yellowknife River, I would like to have definite answers to the following questions:

- (a) Can we depend on an earthen dam to prevent the effluent from Bow Lake entering the mouth of the Yellowknife River? Has it not been our experience that the existing dams around Bow Lake disintegrate during break-up and allow effluent to escape?
- (b) What is the topography of the land between Bow Lake and the north end of Yellowknife Bay? Is there sufficient continuous height of land to prevent effluent from Bow Lake entering the northern section of the Bay during break-up and times of heavy rainfall?

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- (c) What is the arsenic concentration in the soil between Bow Lake and Yellowknife Bay? My reason for asking this question is that some years ago when I was involved in the disposal of arsenic wastes from tanneries into deep wells, we found that the arsenic tracked through the ground and got into a river bed one half mile away. Is it possible that the whole soil on the west bank of the northern end of Yellowknife Bay is polluted with arsenic and that this may be causing a significant amount of water pollution?
- (d) If the intake of the proposed water supply is placed at the northern end of Yellowknife Bay, do we know that pollution will not occur from wind currents from the south? Is it possible to do studies to determine this possibility?
- (e) What will be the external pressure on the water pipe lying at the bottom of Yellowknife Bay? Will this pressure be greater than the pressure inside the pipe? If so there would be a leakage of polluted water through the joints, many of which are bound to develop leaks.

I know nothing about engineering but there are points which come to mind when I go over the proposed plan. I feel we must ensure that if Government and the Mines are to spend over a million dollars on a pipeline we must be pretty certain that we will have a potable safe water supply. If we cannot be certain that the water at the river mouth will be below the recommended limits, perhaps the pipeline should be extended up into the river. We are looking at a water supply for the capital of the Territories to last for the next fifty years at least and the expenditure of an extra \$100,000 to ENSURE a safe water supply would be money well spent.

It is an engineering problem but as Chief Medical Health Officer of the Territory I would want to have an assurance from the Engineers that the points I have made have been considered and that the proposed water intake will ensure that we will have a water supply which will remain below the recommended limits for arsenic and

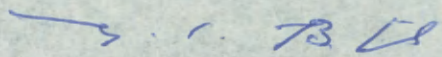
Mr. A. B. Yates

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which will not require constant expensive checking of arsenic content over the next fifty years.

With reference to the second point of your query, I do not think there will be any panic among the Yellowknife population. They know already that they have had this problem for years and we have had to advise that water be distributed to houses when the arsenic content rose to 0.3 parts per million. We have also carried out a health survey in the town in 1966 and while we played down the arsenic investigation part of the survey, most people knew that the survey was associated with this problem.

Yours sincerely,


G. C. Butler, B.C., B.Ch., D.P.H.
Chief Medical & Health Officer

cc - Director General, M.S.

Could a copy of this letter please be sent to Public Health Engineering?

- Commissioner, N.W.T.

- Mr. J. Grainge

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