

Health and Welfare
Canada

Santé et Bien-être social
Canada

Health Protection
Branch

Direction générale de la
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OTTAWA, Ontario

ENVIRONMENT CANADA
ATLANTIC REGION

November 9, 1986

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Mr. K.G. Hamilton
A/Director, Air & Water Branch
Environmental Protection Service
Conservation and Protection
5th Floor, Queen Square
45 Alderney Drive
Dartmouth, Nova Scotia
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Dear Mr. Hamilton:

This is further to my letter of July 31, 1986, concerning the report entitled "Heavy Metal Content of Food and Water in the Belledune Region".

Officers in the Bureau have now completed their evaluation of the data contained in the above-mentioned report and the following comments are offered for your consideration.

The reported results of the analyses of well water, vegetables, human and bovine milk and deciduous teeth do not provide evidence to suggest that a health hazard exists as a result of past heavy metal contamination in the Belledune Region. Nevertheless, it is difficult to draw definite conclusions from these data for the following reasons:

1. The sensitivities of the methods that were used in this survey were generally very high in comparison to results reported in the literature. For example, the methodology utilized in the analysis of human milk has limits of detection for lead, arsenic and cadmium which are several orders of magnitude higher than recent literature values. A similar situation, albeit not to the same extent, would apply to the result for lead, arsenic and cadmium in bovine milk and cadmium in well water.

2. As stated by the authors of the report, the number of vegetable samples was limited and, consequently, may not accurately reflect the heavy metal content of vegetables from these regions. In addition, there is no indication whether the vegetable results were presented on a wet or dry weight basis. Such information is necessary to ensure accurate interpretation of the results.

While this report certainly provides useful information in connection with the heavy metal content of food and water from the Belledune Region, it is suggested that additional monitoring work be undertaken to confirm these results.

As part of such a monitoring program, it would be useful to include the following:

- a) a re-analysis of well water from all locations for cadmium content (utilizing improved methodology);
- b) a re-analysis of well water from locations 5 and 13 (Belledune) for lead;
- c) a larger sampling of individual vegetables grown in the Belledune Regions for lead, arsenic and cadmium content. (The findings should be clearly expressed on either a wet or dry weight basis and it is suggested that all samples be washed prior to analysis as would normally be done in the home);
- d) a re-analysis of both human and bovine milk using more sensitive methodology.

We trust that these comments are useful to you and would be pleased to provide further comments upon receipt of additional data.

Yours truly,

D.C. Kirkpatrick

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Director
Bureau of Chemical Safety