

INTERGOVERNMENTAL
GENERAL REVIEW STATEMENT
For The
ENVIRONMENTAL IMPACT ASSESSMENT
On The
PROPOSED ELECTROLYTIC ZINC REDUCTION PLANT
In
BELLEDUNE, NEW BRUNSWICK

February 1981

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General Review Statement

There is an air of overstated optimism in this report which is neither in keeping with the purpose of an EIA nor with the facts which pertain to the existing problem at Belledune. Much of this optimism is based upon improvements being made to effluent treatment at the existing lead smelter which have nothing to do with the added stress that the proposed zinc industry will place on the local environment.

The electrolytic zinc reduction plant will be superimposed on what is already a highly contaminated local environment; one which conservatively cannot be expected to improve through natural processes for many decades. We also know that cadmium uptake is influenced by other metals so any additional contribution of heavy metal contamination to the area is of concern.

Brunswick Mining and Smelting Corp. Ltd. (B.M.&S.) is on one hand the owner and operator of the existing lead smelter and on the other hand the proponent for the proposed zinc reduction plant. Therefore, it must assume major responsibility for the present contamination of the Belledune area and additionally they are required to convince the regulatory agencies that the project being proposed will not further deteriorate an already "stressed" environment.

If the facts represented in the EIA regarding process effluents and emissions from the zinc plant are valid and can be verified (this is not presently possible for reasons of information deficiencies outlined below)

then the proposed zinc reduction plant will be as environmentally "acceptable" as present technology allows.

The process description was presented reasonably well, except for the omission of a material balance schedule. Related project facilities and activities were less adequately described, and in some cases this lack of information was cause for concern.

The description of the existing environment was deficient and suspect in several areas the most important of which are outlined below.

The seriousness of the "environmental stress" in the Belledune area is downplayed and the reader is not provided with an honest appreciation of the gravity of the situation. The present levels of heavy metal contamination in the Belledune Harbour are unacceptable. Uptake by lobster and other marine biota has become a serious concern to provincial and federal agencies. In 1980 the Harbour was closed to lobster fishing and it will remain closed indefinitely.

The facts outlined regarding previous and future discharges into the Belledune Harbour are summarized in a manner that incites the reader to wrong conclusions. This section should more clearly represent the situation as follows: Prior to 1980 the existing lead smelter discharged 89,000 m³/day of wastes (containing 78.9 kilogram per day of Cadmium) into the Belledune Harbour. The lead smelter now has a new recycle system designed to reduce the quantity of waste effluent and a new treatment system designed to remove 99% of the heavy metals content in the waste. Furthermore the effluent pipe has been relocated so that all the waste is presently discharged outside

the Harbour. The target concentration for cadmium concentration in the effluent is 0.05 mg/l.

Presently there is no waste being discharged inside the contaminated Belledune Harbour.

Thus, change this statement would retro-

The proposed zinc industry (for no stated reason) has chosen to discharge its process waste inside the Belledune Harbour. As such, this industry will become the most significant, if not the only, source of additional heavy metal contamination in a presently over-saturated area. The Department of Fisheries and Oceans has indicated that heavy metal levels have already caused a major problem for fisheries (particularly regarding lobster) by their presence in the sediments. The situation will only worsen if input continues even on a reduced scale. There is no reason to suspect that heavy metal contamination in the Harbour will disappear in the short term.

Air emission levels from the operation of the B.M.&S. lead smelter continues to be a concern for provincial regulatory agencies. In the EIA, the analysis of ambient air conditions was based on the examination of STAR data which is very unreliable where surface snow cover exists and does not account for phenomena such as sea breezes. These factors are significant in the Belledune area and could significantly alter the accuracy of the results.

Sufficient information was not provided to allow the government to perform independent analysis using available dispersion models to verify the results reported in the text. (Specific deficiencies are outlined in more detailed in the appended text).

The December 1980 monthly air quality report from Brunswick Mining and Smelting indicates SO₂ levels south of the B.M.&S. lead smelter exceeding maximum permissible ground level concentrations for a period of four hours. Preliminary information from B.M.&S. indicate that the monitoring system was operating correctly and that the acid plant was operating normally, i.e., it was not on startup. Similar incidents had occurred in 1979 at ENB monitoring sites. The 1980 B.M.&S. monitoring results had lulled us into the belief that the smelter operations were improving to the extent that the air quality was acceptable. This is apparently not the case. The Department of the Environment is very concerned that they may not be able to issue an Air Quality Approval for the zinc reduction industry proposed by B.M.&S. unless some action is taken to improve the existing conditions in the Belledune airshed.

action required?

The existing lead smelter presently withdraws 33,000 m³/day of water from the Jacquet River. Existing withdrawal regimes from this river have resulted in a failure to allow the minimum required maintenance flow rates particularly in the period between July and November. The Federal Department of Fisheries and Oceans maintains that, contrary to what is suggested in this text, excessive water withdrawal may be directly linked to declines in salmon returns to the spawning grounds and thus survival of the salmon run on the Jacquet River.

Using a new water recycle procedure, the lead smelter has recently succeeded in reducing its water intake by 20 percent. This is commendable.

However there must be an additional commitment from B.M.&S. that the minimum flow requirement of the Jacquet River will not be violated because of industrial water withdrawal. An alternate source of water supply should be identified.

The scope of sampling done does not permit the report to conclude that "population, variety and abundance of species have not been affected by industrial operations". Furthermore, the implied suggestions that CFDD guidelines ^{for} ~~from~~ cadmium are not exceeded in fish flesh are misleading. Presently we do not know the impacts on bony fish because the appropriate tissues (liver and kidney) where Cadmium concentrates in the species have not been analysed nor have the proper toxicological, physiological and biochemical studies been carried out.

The statement that "No significant environmental stresses on the fauna and flora in the Belledune Planning District have been recently reported" is misleading. It is true that no recent measurements have been made. However, measurements were made between 1972 and 76 and they suggested excessive and increasing lead, cadmium and other heavy metal levels in soil, garden produce, forage and other flora-fauna species surrounding operation and the fertilizer plant.

That there will be "no significant influx of workers: into the community" was contested. Socio-economic cost benefit analyses carried out by Gary MacEwen of the Provincial Department of Natural Resources and Dr. F. Martin of the University of Montreal and McGill forecast an average labour force during construction of 600 (1,500 ~~at~~ maximum ~~at~~ at peak). During production the

* Dygdale, P.J. and Hummel, B.L. "Cadmium in the Lead Smelter at Belledune: Its Association with Heavy Metals in the Ecosystem" Brunswick Mining and Smelting Corporation and Noranda Research Center Ltd. Belledune, N.B. Canada

work force will be 400 jobs. It is estimated that 58 of these positions will be filled by people from outside the New Brunswick labour force. Based on an average New Brunswick family of four, this implies $58 \times 4 = 232$ as the increased in population in the project area. Most of these would be managerial and professional people and their families.

Having determined where the document did not adequately describes the existing environment it follows that the related impacts from the proposed zinc industry were not assessed to a satisfactory degree.

Important questions will require answers and compromises may become necessary before approvals and permits can be obtained from regulatory agencies.

Detailed deficiencies are outlined in the appended text.