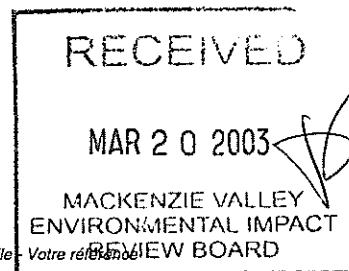




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Your file - Votre référence

Our file - Notre référence

14 March 2003

Mr Alan Ehrlich
A/Manager of Environmental Impact Assessment
Mackenzie Valley Environmental Impact Review Board
P.O. Box 938
5102-50th Avenue
Yellowknife, Northwest Territories
X1A 2N7

Re: Canadian Zinc Corporation's Comments on Gartner-Lee's Review of the "Historical Water Quality of the Prairie Creek Project Area"

Dear Mr Ehrlich,

I am writing in response to the letter 17 February 2003 from Canadian Zinc Corporation to the MVEIRB regarding the Peer Review done by Gartner Lee on the report "Historical Water Quality of the Prairie Creek Project Area" by DIAND Water Resources.

The discussion of the Prairie Creek Historic Water Quality report and the peer review by Gartner Lee is plagued by the same problem which the original report faced: there is a dearth of current water quality data for the site and surrounding area. Some of the data being discussed are over 20 years old. While the discussion of values and limits in the reports is important, the nature of the project is such that it is difficult to infer which limits are appropriate to reference. Given this, it is possible to interpret the available data in many ways. This does not change the fact that there are concerns about the quality of the water discharging from the 870 metre portal and from the minesite, especially with regard to heavy metals like zinc.

The following comments are limited to the matters discussed by Canadian Zinc Corporation in their 17 February 2003 letter to the MVEIRB.

1. Ammonia. CZN states that "ammonia has not 'frequently exceeded the CPFAL guideline' in waters to which the guideline applies. This is correct.

In the original DIAND report (Beavers, 2002) the CPFAL guidelines were used to provide a context for ammonia levels. When it is stated that the CPFAL guidelines were frequently exceeded at the settling pond discharge, station 932-4, it means the ammonia concentration in the sample was greater than the guideline value. In this particular case, there is no legal implication to an exceedence. The CPFAL guidelines are designed for application to water bodies, not effluent discharges. The

purpose of the comparison to the CPFAL guideline was to provide a reference to interpret the ammonia values being discussed. In the DIAND report, it is stated that in 4 of the 12 samples taken at the settling pond discharge point, the laboratory values for total ammonia nitrogen were greater than the CPFAL guideline of 0.40 mg/L (open water). The only sample taken at this site by CZN and tested for ammonia (June 2002), did not have a concentration which exceeded the CPFAL guideline.

2. Cadmium. CZN states that there have been no exceedances of licence limits for cadmium. This is correct for the settling pond discharge. The former license limits for cadmium at Prairie Creek are 15 µg/L for the maximum average concentration and 30 µg/L maximum grab sample concentration. The DIAND report states that the 870 m portal discharge had cadmium levels greater than 30 µg/L in 9 of 29 samples.

The water licences for the lead-zinc mines at Nanisivik and Polaris have cadmium limits of 5 µg/L (average) and 10 µg/L (grab). The DIAND report states that one sample was greater than 10 µg/L at the settling pond discharge at the Prairie Creek site (15 µg/L in May 1982 sample). CZN's letter states the July 1981 sample had a cadmium level of 20 µg/L; this sample was actually below the detection limit of 20 µg/L and was not reported as an exceedance in the DIAND report.

The recent samples of the settling pond discharge (August 2001 and June 2002) have had cadmium levels in the range of 0.7 to 1.7 µg/L.

3. Lead. The DIAND report shows one exceedance of the license limit at the settling pond discharge. The CZN letter reports this same observation (for the May 1982 sample). CZN then states that the data for May 12, 1982 sample is likely suspect. There was nothing in the files to indicate these data were unreliable.

The DIAND report continues the discussion with reference to the CPFAL guideline of 7.0 µg/L for lead. The report states that the lead concentrations were greater than the CPFAL guideline in 15 of 26 samples of the settling pond discharge. When CZN contradicts this, they are referring to lead concentrations at the sample site on Prairie Creek at the confluence with Galena Creek.

4. Zinc. In CZN's discussion, samples from the early 1980s are criticized (as in the discussion of Lead) and called suspect. These data were used in the DIAND report as they corresponded to the period of greatest on-site activity. Also, they provide additional data in a poor historic record. Since 1991 when CZN started working at the Prairie Creek site, there are data for 13 water samples taken at the settling pond discharge. These samples show that zinc is elevated in the settling pond discharge.


In the water licence, the Maximum Average Concentration is the average of the last four analytical results from the Surveillance Network Program. The former water license maximum average concentration and maximum grab sample limits are 0.3 and 0.6 mg/L, respectively, for zinc. The MMR maximum monthly mean concentration and maximum grab sample limits are 0.5 and 1.0 mg/L, respectively for zinc. The lower limit is the Maximum Authorized Monthly Arithmetic Mean Concentration.

The concentration of zinc in the settling pond discharge (Station 932-4) samples are:

Collected by:	Laboratory	Sample Date	Total Zinc mg/L	Average Conc. (last 4)
DIAND Inspector	Taiga	08 Jul 1991	0.006	na
DIAND Inspector	Taiga	30 Jun 1992	0.02	na
DIAND Inspector	Taiga	02 Jun 1993	0.045	na
DIAND Inspector	Taiga	13 Jul 1993	0.12	0.048
DIAND Inspector	Taiga	15 Sep 1993	0.52	0.176
DIAND Inspector	Taiga	23 Jun 1994	0.504	0.297
Rescan	?	31 Jul 1994	0.443	0.397
DIAND Inspector	Taiga	18 Oct 1994	0.851	0.579
DIAND Inspector	Taiga	15 Jun 1995	0.538	0.584
DIAND Inspector	Taiga	03 Aug 1995	0.492	0.581
DIAND Inspector	Taiga	28 Sep 1995	0.547	0.607
Canadian Zinc	? ALS	30 Aug 2001	0.591	0.542
Canadian Zinc	ALS	28 Jun 2002	0.483	0.528

The four-point moving average for the last 7 samples shows values that exceed the former license maximum average concentration of 0.3 mg/L.

Sincerely,



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Manager
Water Resources Division

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cc. Peter Campbell, Canadian Zinc Corporation