

## TO WHOM IT MAY CONCERN

Oslo, 31 January 2005

### **Peer review of the Report to the New Zealand Ministry of Health – A Study of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) Exposures in Paritutu, New Zealand**

#### *General Comment*

I have been asked by Dr. Jeff Fowles to review the above report of January 2005 authored by him and co-workers at the Institute of Environmental Science, Limited and Research and Air and Environmental Science, Limited.

In general the report describes the background, the conduct, the analysis and the data evaluation of TCDD non-occupational exposure among residents of Paritutu, a suburb of New Plymouth, New Zealand.

The report lays out in a clear fashion how the participating individuals were recruited and the underlying modelling studies of individual dioxin exposures that were used for this participant selection.

Also, the report presents the analytical data in a logical and illustrative way, of special value is understandably the comparison with projected background levels from the Ministry for the Environment 1997 Organochlorines Programme survey. An interesting finding was that the TCDD contamination was responsible for all elevations seen in TEQ above national means, pointing to fugitive emissions rather than incineration being the source of the exposure for the study population. The analysis of the serum samples has included adequate quality controls.

The results are well discussed and the conclusions are reasonable based on the data and the information available at the time of reporting.

#### *Specific Comments*

The response rate for participation in Phase III was rather low (377 questionnaires returned out of 830 mailed out, i.e. 45%). Since the participants had not been randomly selected, this could result in differences between the responders and the non-responders. It is stated that reminder letters were sent out, but should not the non-responders have been more actively been contacted (e.g. by phone) so that any evidence of difference between the two groups could have been addressed?

On page 23 in the fourth paragraph, the first sentence states that a range of 0 to 225 pg TCDD/g lipid would be attained by varying the half life from 7.1 to 11 years. This appears unclear to the reviewer.

### ***Minor Comments***

The following items in the 'Glossary of Terms' should be considered:

- 'Dioxin': It is rather unusual to include the dioxin-like PCBs in this term
- 'Furan': Suggest to delete the 'but' at the end of the first line
- 'PCB': Insert 'generally' between 'they' and 'have' in the third line
- 'TCDD': Lower case 't' in 'tetrachlorodibenzo-*p*-dioxin'. Insert 'It is the most potent of all dioxin congeners' in the third line
- 'TEQ': 'combined' rather than 'summed' in the second line. Add 'in a sample' after 'PCB congeners' in the third line
- 'Toxicokinetic model': Use 'fate' rather than 'behaviour' (the latter could also include toxicodynamics).

'Silverbeet' is misspelled in the third line of the second paragraph on page 18.

The fact that the incremental increase in blood lipid level is proportional, but not equal to the equation is stated on page 19 both above and below the bullets.

Since soil contamination is not a significant TCDD exposure source, the statement '...elevations in serum TCDD are a function of soil TCDD' in the second bullet on page 24 can be misunderstood. Perhaps write '...are correlated to soil TCDD...'

It is better to write '...in other exposed communities...' in the second to the last line of the last paragraph on Page 25. The exposure conditions in the Seveso incident were quite different than in the present situation.

The list of references should be either alphabetical when the references are cited in the text in the way it is done in the report, or the references should be numbered in the text when the list of references is numerical as here.

Yours sincerely,



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