MRH#305763

The Dow Chemical Company
Midland, Michigan 48674
USA

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June 25, 2007

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UPDATE OF PREVIOUS DIOXIN MORTALITY STUDY,8EHQ-0398-14151

Dear Sir/Madam:

The following information is being submitted by The Dow Chemical Company (Dow) pursuant to current guidance issued by EPA indicating EPA's interpretation of Section 8(e) of the Toxic Substances Control Act. Dow has made no determination as to whether a significant risk of injury to health or the environment is actually presented by the findings.

Submission of 8EHQ-0398-14151 provided information from a probe study preliminary to a study designed to validate exposure estimates from Dow health studies of chemical workers potentially exposed to dioxins at one manufacturing facility. The report of that study was provided to EPA as an update to 8EHQ-0398-14151 on July 5, 2006.

The purpose of this communication is to share with you the results of an updated health study as part of Dow's ongoing surveillance of 2,192 Michigan Operations employees who were involved in the manufacture of trichlorophenol and pentachlorophenol, or the formulation of 2,4,5-T, Silvex™, Erbon™, and Ronnel™ between 1937 and 1982.

This updated study adds 9 more years of data to the follow-up period and includes measurements of dioxin levels in the blood to better estimate exposure.

This updated study measured the blood dioxin levels of 385 randomly selected volunteers who worked in departments where

high dioxin exposure may have occurred (about 18% of the total study group). For comparison to unexposed people, this study also measured blood dioxin levels of 37 randomly selected workers who did not work in chlorophenol departments. This blood study is the largest ever to examine dioxin levels in chlorophenol workers.

In the current study, the dioxin blood data were used to improve the exposure estimates for all 2,192 chlorophenol workers. It is important to accurately define past exposures so to determine if risk of disease increases with exposure. The new study finds:

1. For the most part, Michigan Operations chlorophenol workers had blood dioxin levels that were higher than background levels.
2. The most common cause of death was heart disease. However, heart disease rates were the same as in the US population. Lung cancer, the most common cancer in the study, occurred at lower rates than expected.
3. Compared to the US population, chlorophenol workers had equal rates of deaths from all cancer types combined.
4. The rates for some specific causes, such as prostate cancer and stomach cancer were higher than the US population. However, these rates have declined since the previous study. Diabetes deaths also occurred more frequently than expected. In all of these diseases mentioned, the more highly exposed workers did have lower disease rate than the lesser-exposed workers. This indicates that these diseases were not related to dioxin.
5. As in the previous Dow study, there were more deaths than expected from soft tissue sarcoma and non-Hodgkin's lymphoma. However, there were only a few deaths from these causes and too few to determine if they were related to dioxin levels.

In summary, Dow has monitored the health of chlorophenol workers in many studies collecting health statistics back over 70 years. Previous studies of these workers have associated chloracne, a temporary skin condition, with dioxin exposure. Other than chloracne, previous studies found no health effects related to dioxins. The results of the current study provides

continued reassurance that Dow chlorophenol employees have experienced rates of mortality that are similar to the general population even though their dioxin levels were greater. No convincing evidence of links between specific cancers, heart disease or diabetes and potential dioxins exposure were found.

No written report of these results is yet available.

Questions may be addressed to the undersigned.

Sincerely,

Linda C Burgert

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