To:  
Michael McDavit  
Product Manager #61  
Registration Division (TS-767C)  

From:  
Joseph C. Reinert, Chief  
Special Review Section  
Exposure Assessment Branch  
Hazard Evaluation Division (TS-769C)  

Attached please find the EAB review of...  

Reg./File No.: _______________________  
Chemical: Chlordane  

Type Product: Termiticide  
Product Name: Gold Crest Termide®  
Company Name: _______________________  
Submission Purpose: Air Monitoring Study - Interim Report  

Date In: 04/10/86  
Date Completed: 07/08/86  
ACTION CODE: _______________________  
EAB #: 6495 6511 6511  
Days: 6  

Deferrals To:  

_____ Ecological Effects Branch  
_____ Residue Chemistry Branch  
_____ Toxicology Branch  
_____ Benefits and Use Division  

Monitoring study requested by EAB [X]  
Monitoring study voluntarily conducted by registrant: [ ]
1.0 INTRODUCTION

In February 1984 the Agency issued a Data-Call-In Notice for the determination of air concentrations of chlordane and heptachlor in homes treated with these compounds for subterranean termites. The registrant, Velsicol Chemical Corporation, responded with a protocol for an indoor air monitoring study. The protocol, after several revisions, was approved by EAB on 1 July 1985. The current submission (Record Number 17115, Identification No. 058201, Accession No. 262190) is an interim report on the first 90 days of the study.

2.0 DESCRIPTION OF STUDY

The study was conducted in Missouri and Texas. At each location 10 houses of slab and 10 houses of crawl space construction were treated with Gold Crest Termide® (EPA Reg No. 876-233) termicide according to label instructions. Termide is an emulsifiable concentrate consisting of 39 percent technical chlordane and 20 percent heptachlor as the active ingredients. One gallon of the concentrate is mixed with 99 gallons of water to form an emulsion of approximately 0.75 percent. Application is by injection into the soil or by trenching around the foundation. Drilling into the foundation or slab is sometimes required. Only soil injection methods were used for the homes in this study.

Air in the homes was collected from the living room, a bedroom, and the kitchen of the homes before treatment and 1, 7, 14, 28, and 90 days after application. Air was drawn, at 1.5-2 liters per minute, through collection tubes containing Chromosorb 102 as the trapping agent using calibrated personal sampling pumps. Samples were collected for 2 hours.

Sample tubes were eluted with pentane, concentrated, and diluted with hexane. The extract was then treated with concentrated sulfuric acid to remove interfering compounds and brought to a definite volume of 10 ml with hexane. The components of technical chlordane and heptachlor were then quantified by gas chromatography using an electron capture detector. The levels of detection were 0.04 ug/m³ and 0.2 ug/m³ for heptachlor and chlordane, respectively.

3.0 RESULTS AND CONCLUSIONS

The registrant provided 2 tables summarizing the air levels of chlordane and heptachlor (Copies of these Tables, 1 and 2, are attached). A table of raw data values from the contract laboratory was also submitted. The components of chlordane presented in this table were; Compound C, Compound E, Gamma Chlordane, Alpha Chlordane, and t-nonachlor.
EAB has not been able to verify the summary values calculated for chlordane from the raw data. No sample calculations or explanations were provided. Until this discrepancy can be explained by the registrant, the summary tables must be rejected and no estimate of exposure can be obtained. EAB will again review the report when such information becomes available.

David Jaquith
Special Review Section
Exposure Assessment Branch
Hazard Evaluation Division
Table 1. Chlordane air levels (µg/m³) in homes treated for termite control.

<table>
<thead>
<tr>
<th>Day</th>
<th>Crawlspace</th>
<th>Slab</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Missouri</td>
<td>Texas</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Std</td>
</tr>
<tr>
<td>Pre-</td>
<td>&lt;0.2</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>1.32</td>
<td>0.229</td>
</tr>
<tr>
<td>7</td>
<td>1.436</td>
<td>0.173</td>
</tr>
<tr>
<td>14</td>
<td>1.267</td>
<td>0.141</td>
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<tr>
<td>28</td>
<td>1.487</td>
<td>0.160</td>
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<tr>
<td>91</td>
<td>1.325</td>
<td>0.109</td>
</tr>
<tr>
<td>Average except Pre</td>
<td>1.367</td>
<td>0.074</td>
</tr>
</tbody>
</table>

1/ Std = Standard error
2/ N = Number of observations
Table 2. Heptachlor air levels (µg/m³) in homes treated for termite control.

<table>
<thead>
<tr>
<th>Day</th>
<th>Crawlspace Missouri</th>
<th>Texas</th>
<th>Slab Missouri</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std₁/</td>
<td>N²/</td>
<td>Mean</td>
</tr>
<tr>
<td>Pre-</td>
<td>&lt;0.04</td>
<td>-</td>
<td>55</td>
<td>&lt;0.04</td>
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<td>0.097</td>
<td>60</td>
<td>0.566</td>
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<tr>
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<td>0.067</td>
<td>297</td>
<td>0.448</td>
</tr>
</tbody>
</table>

1/ Std = Standard error
2/ N = Number of observations