APPENDIX G. ECOTOX Study Evaluation

Chemical Name: Telone (1,3-Dichloropropene)

CAS No: 542-75-6

ECOTOX Record Number and Citation: Berry, D. L., W. F. Campbell, J. C. Street, and D. K. Salunkhe. 1980. Uptake and metabolism of 1,3-dichloropropene in plants. Journal of Food Safety 4:247-255. ECOTOX Record Number: **93862**.

Purpose of Review (DP Barcode or Litigation): Litigation

Date of Review: April 30, 2008

Summary of Study Findings: Three dicotyledonous species (bush bean [*Phaseolus vulgaris* cv. Tender Green], carrot [*Daucus carota* cv. Royal Chantenay], tomato [*Lycoperscion esculentum* cv. VF-7][1]) were exposed to ^{14}C-labeled 1,3-dichloropropene (telone) (0.0001 M solution) and its metabolite 3-chloroallyl alcohol (0.0003 M solution). Exposure occurred via applications to vermiculite and topical applications, lasting 0.5 and 120 hours, at which times the parent compound and metabolites were extracted and quantified. The 1,3-dichloropropene was metabolized into 3-chloroallyl alcohol. The 3-chloroallyl-alcohol was metabolized into intermediate products (3-chloro-1-propanol and 3-chloroacrylic acid) before being broken down into normal plant products. The authors concluded that the parent telone and 3-chloroallyl alcohol had short half-lives and were not detectable in the plant by 120 hours after initial treatment. The paper does not note any effects on plants.

Description of Use in Document (QUAL, QUAN, INV): QUAL

Rationale for Use: This study provides further information about the effects of telone on plants. Dicots were shown to be more sensitive than monocots in guideline studies. EFED's use of the TerrPlant model to estimate risk may be inappropriate for a chemical like telone that is highly volatile. The assessment concluded that risk to plants is low, and this work does provide some support for that conclusion (however, see limitations).

Limitations of Study: Based on information provided in the methods, there is no way to know how the concentrations tested in this study compare to exposures that would occur in the field. It is possible that higher concentrations could not be metabolized as rapidly, resulting in deleterious effects.

[1] Scientific names are as reported in the text of the paper. Any updates to these names have not been included.

Primary Reviewer: S. Borges (OPP/EFED/ERB2)

Secondary Reviewer (required if study results are used quantitatively): N /A