Responses to Major Comments on the Technical Support Document

Public Health Goal

For

1,2,4-Trichlorobenzene

In Drinking Water

Prepared by

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TABLE OF CONTENTS

INTRODUCTION

The following are responses to major comments received by the Office of Environmental Health Hazard Assessment (OEHHA) on the proposed public health goal (PHG) technical support document for 1,2,4-trichlorobenzene as discussed at the PHG workshop held on October 6, 1998, or as revised following the workshop. Some commenters provided comments on both the first and second drafts. For the sake of brevity, we have selected the more important or representative comments for responses. Comments appear in quotation marks where they are directly quoted from the submission; paraphrased comments are in italics.

These comments and responses are provided in the spirit of the open dialogue among scientists that is part of the process under Health and Safety Code Section 57003. For further information about the PHG process or to obtain copies of PHG documents, visit the OEHHA web site at www.oehha.org. OEHHA may also be contacted at:

Office of Environmental Health Hazard Assessment
301 Capitol Mall, Room 205
Sacramento, California 95814
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RESPONSES TO MAJOR COMMENTS RECEIVED

U.S. EPA, Office of Water

Comment 1: "Are there sufficient data to estimate total human exposure from air, soil, water and food?"

Response 1: Not adequately.

Comment 2: Referring to the text on Absorption (under Metabolism and Pharmacokinetics), "Fecal elimination, per se, does not give any clue as to whether the chem was absorbed or not."

Response 2: This is true. However, since there is so little quantitative information available on the absorption of 1,2,4-TCB, including the information in this context is useful here.

Comment 3: Referring to the text on Excretion (under Metabolism and Pharmacokinetics), "Somewhat similar to comment #2, the use of the word excretion in fecal elimination implies that the chem was absorbed. It could have been egested."

Response 3: This is true.

Comment 4: Referring to the Acute Toxicity section (under Toxicological Effects in Animals), "give + and - values for LD_{50s}."

Response 4: This level of detail is not necessary for the purpose of the document.

Comment 5: Referring to the Subchronic Toxicity section (under Toxicological Effects in Animals), "In Kociba et al (1981), exposures of 0, 223 or 742 mg/m^3 for 7 hr/day, 5 days/wk for 44 days, while in Watanabe et al (1978;[abst]), exposures are 0, 22.3, or 74.2 mg/m^3 for 6 hr/day, 5 days/wk for 90 days. Assuming these exposures were correct, was lack of effects given as reason for 10-fold increase in 1,2,4-TCB."

Response 5: The concentrations were confirmed to be correct. It is not completely clear, but it appears that the lower doses were used in the follow-up study to determine a level which would not increase the excretion of urinary porphorins in rats, as seen in the 1981 paper. (The study reported in the 1981 paper appears to have been conducted before the study that was reported in the abstract.)

Comment 6: Referring to the 2nd paragraph under Subchronic Toxicity (Toxicological Effects in Animals), "Abbrev of mg/kg_{bw}-day used in two places (?)"

Response 6: "mg/kg_{bw}-day" has been changed to "mg/kg-day on a body weight basis" so as not to be confused with kg of diet.

Comment 7: Referring to the Relative Source Contribution in the PHG calculation, "My personal feeling is that use of the 4 L/day as DW exposure is probably too high. However, it is CA's work.

Response 7: Thank you for the comment. As explained in the document, we believe that net exposures to VOCs in water could be higher than estimated using the default of 2 L/day for daily water consumption, due to inhalation of vapors and dermal exposure during showering or bathing. U.S. EPA estimates that for VOCs, bathing/showering could add an exposure equivalent equal to drinking 2 L/day. Therefore, the total estimate for water intake in the PHG calculation is 4 liter equivalents per day (Leq/day).

Comment 8: Regarding references --

a. Put ref in order, e.g., US EPA 1991a and US EPA 1991b are separated by US EPA 1993a and US EPA 1997.

b. Use standard abbrev for ref., e.g., Cheng et al. (1993) ref is abbrev but Black et al. (1988) ref is written out as are most of ref.

c. Some ref have three authors and et al. (See Lingg et al. 1982), while others (Black et al. 1988) have all four listed.

d. Ref on p. 7 (US EPA 1994b #1160) is not listed on in Ref on p. 20. See also p. 10, lines 10-11. A similar type of cite for US Air Force, 1989 #1190 on p. 8. Same for US EPA 1996#1180 on p. 12. See also p. 14 last line for US EPA 1996.

Response 8: The references have been standardized.