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SUBJECT: UPDATE OF PHG – DALAPON (2,2-DICHLOROPROPANOIC ACID)

Under the Calderon-Sher California Safe Drinking Water Act of 1996, the Office of Environmental Health Hazard Assessment (OEHHA) develops public health goals (PHGs) for regulated chemicals in drinking water and reviews and updates the risk assessments every five years (Health and Safety Code Section 116365(e)(1). This memorandum represents an update of the literature review and evaluation for the existing PHG for dalapon (OEHHA, 1997). Our re-evaluation supports the previous PHG derivation in 1997, and there are no new data to justify a significant change to the document.

The Public Health Goal (PHG) of 790 parts per billion (ppb) for dalapon was developed by OEHHA and published in December 1997. Dalapon is an organochlorine herbicide that was marketed as the sodium salt or as a mixture of sodium and magnesium salts. Dalapon is no longer contained in any registered pesticide products and all uses have effectively been cancelled (U.S. EPA, 1999; HSDB, 2009). It was previously used in controlling grasses in a variety of crops, including fruit trees, beans, coffee, corn, cotton, and peas. Dalapon was also used in

non-crop applications such as lawns, drainage ditches, along railroad tracks, and in industrial areas and rights of way (U.S. EPA, 2006).

A survey of the scientific literature found no new studies that would affect the choice of the critical study used as the basis for the existing PHG value. The PHG is based on a chronic toxicity study by Paynter *et al.* (1960). In this study, albino Carworth rats (24/sex/group) were administered 0, 15, or 50 mg commercial dalapon sodium salt/kg body weight/day in the diet for two years. The critical effect was a statistically significant increase in the kidney-to-body weight ratio of male rats receiving 50 mg/kg-day. The no-observed-adverse-effect level (NOAEL) for this effect was 15 mg/kg-day.

The PHG of 790 ppb is higher than the U.S. Environmental Protection Agency's (U.S. EPA's) maximum contaminant level (MCL) of 200 ppb. The difference results from OEHHA's use of a relative source contribution (RSC) from drinking water of 80 percent versus U.S. EPA's RSC of 20 percent. OEHHA applied the 80 percent RSC because dalapon is not currently in use and the sole source of exposure is expected to be from any residue possibly remaining in drinking water. Environmental Working Group, a non-profit research organization based in Washington, D.C., reports detections of dalapon in the drinking water of two California communities serving approximately 212,000 people between 1998 and 2003. The average levels detected were 0.05 and 1 ppb (EWG, 2009). There were no MCL violations for dalapon in public drinking water supplies reported by the California Department of Public Health in recent analyses (2002-2006).

References

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