

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Chlorodifluoromethane (CAS # 75-45-6)

FROM: Robert Sills, AQD Toxics Unit Supervisor

SUBJECT: Chlorodifluoromethane ITSL justification and change in the averaging time from 24 hrs to annual

DATE: December 14, 2016

The current ITSL for Chlorodifluoromethane is 50,000 ug/m<sup>3</sup>, with annual averaging time (AT).

Previously, the ITSL was established on November 2, 1993 at 50,000 ug/m<sup>3</sup> with 24 hr averaging time. The averaging time (AT) assigned to the ITSL at that time was 24 hours, as per the default methodology at that time (Rule 232(2)(b)). The ITSL was based on and consistent with an EPA (1993) Reference Concentration (RfC) of 50,000 ug/m<sup>3</sup>, which EPA derived from a chronic (2 year) rat inhalation bioassay. The critical effects were increased kidney, adrenal, and pituitary weights. EPA (1993) applied a total uncertainty factor (UF) = 100, which consisted of a UF = 3 for interspecies extrapolation, UF = 10 for intraspecies variability, and UF = 3 for database deficiencies, including lack of a two-generation reproductive study. EPA (1993) noted that a rat inhalation developmental study found that maternal body weight gain was significantly reduced in a dose-dependent fashion, and the incidence of eye abnormalities was significantly increased in the high exposure group of fetuses. Therefore, this review finds that the EPA (1993) application of UF<sub>db</sub> is justified based on chemical-specific data. The current file review also concludes that the AT for the ITSL may appropriately be set at annual, based on the nature and duration of the key study and the ITSL value derivation, as allowed under Rule 229(2)(b).

**References:**

EPA. 1993. Integrated Risk Information System (IRIS database). Chemical file for Chlorodifluoromethane. Inhalation RfC assessment last revised 11/1/93. Still current as of 12/9/16.