

from the following sources: the U.S. Geological Survey (USGS) National Water Quality Assessment (NAWQA) database, the US EPA STORET data base, the Acetochlor Registration Partnership (ARP) data base, and two USGS Reservoir Monitoring studies.

The acute estimated environmental concentration (EEC) of 77.6 parts per billion (ppb) was selected from the NAWQA database, and the chronic EEC of 4.3 ppb was selected from the maximum annual time weighted mean from the NAWQA data. These values are representative of the estimated concentration of parent metolachlor/*S*-metolachlor in monitored ambient surface water, and are supported by the metolachlor concentrations from the National Contaminant Occurrence Database representing analysis of treated drinking water, as well as from model predictions using PRZM/EXAMS.

Acute and chronic concentrations of parent metolachlor/*S*-metolachlor in ground water were modeled using SCI-GROW. SCI-GROW estimates the high-end ground water concentrations of pesticides likely to occur when the pesticide is used at the maximum allowable rate in areas with ground water vulnerable to contamination. Estimates were based on two applications to corn/turf for a total of 4 lbs ai/acre (the maximum application rate). In comparison to the SCI-GROW estimate of 5.5 ppb in shallow ground water, the Iowa NAWQA data have a maximum concentration of 15.4 ppb. However, it should be noted that the second highest concentration of parent metolachlor/*S*-metolachlor in the Iowa NAWQA data is 1.7 ppb. Since the detections in the National NAWQA data (32.8 ppb) and in the Iowa NAWQA data (15.4 ppb) were single values outside the range of the rest of the data, EPA determined that use of SCI-GROW was more appropriate for the risk assessment.

Additionally, recent data collected by the Suffolk County, New York Department of Health Services, Bureau of Groundwater Resources indicate that both metolachlor and *S*-metolachlor, and its degradates, have been detected in ground water. In data collected between 1997 and 2001, metolachlor/*S*-metolachlor was detected in 60 well samples with a maximum concentration of 83 ppb. No information was available on frequency of detection and only summary statistics were provided on these data; therefore, these data were not used quantitatively in the risk assessment. However, these data suggest that the SCI-GROW estimates for metolachlor/*S*-metolachlor are not overestimating the potential impact of

metolachlor/*S*-metolachlor use on ground water. The SCI-GROW estimate of 5.5 ppb in ground water is appropriate for risk assessment purposes.

ii. *EECs for metolachlor ESA and OA degradates.* Only two small data sets were available on the ESA and OA degradates from the Iowa and Illinois NAWQA data. In the absence of more robust monitoring data for the degradates, upper-bound Tier I estimates for ESA and OA based on FIRST and SCI-GROW modeling were used to calculate EECs for the degradates. The modeling used conservative assumptions of selected fate parameters (aerobic soil metabolism rate constant and soil partitioning coefficient) as well as the maximum application rate of 4 lbs ai/acre on turf/corn.

Acute and chronic estimates of metolachlor ESA in surface water (based on FIRST modeling) are 31.9 ppb and 22.8 ppb, respectively. Acute and chronic estimates of metolachlor OA in surface water are 91.4 ppb and 65.1 ppb, respectively. The Agency notes that the application rate used for metolachlor ESA and OA in the model runs was estimated by converting maximum label rates for each use by the maximum percentage of degradate found in fate studies. In addition, each application rate was corrected for molecular weight differences of each degradate. However, a statistically significant relationship between parent metolachlor and degradates could not be established; therefore, the amount of degradate is an uncertainty in this assessment. This uncertainty was addressed in the screening level assessments using FIRST and SCI-GROW with conservative assumptions for model inputs. The model predictions for ESA and OA compare with the limited monitoring data available. The screening level predictions were higher than the available data suggesting that the predictions were likely upper bound and conservative. EPA determined that these upper bound predictions will not underestimate the potential exposures for infants and children from the use of metolachlor.

Acute and chronic estimates of metolachlor ESA in ground water (based on SCI-GROW modeling, turf/corn scenario) are not expected to exceed 65.8 ppb. This value is considered representative of both peak and long-term average concentrations because of the inherent transport nature of ground water (generally slow movement from the source of contamination both laterally and horizontally). Acute and chronic estimates of metolachlor OA in

ground water (also based on the turf/corn scenario) are not expected to exceed 31.7 ppb. The Agency notes that these values exceed those detected in the Iowa NAWQA study (63.7 ppb for metolachlor ESA and 4.4 ppb for metolachlor OA), and also exceed those values detected in two PGW studies (metolachlor ESA was detected at a maximum concentration of 24 ppb while metolachlor OA was detected at a maximum concentration of 15.6 ppb). In addition, recent data collected by the Suffolk County, New York Department of Health Services, Bureau of Groundwater Resources indicate that both metolachlor and *S*-metolachlor, and its degradates, have been detected in ground water. In data collected between 1997 and 2001, metolachlor ESA was detected in 296 well samples with a maximum concentration of 39.7 ppb, while metolachlor OA was detected in 228 wells with a maximum concentration of 49.6 ppb. No information was available on frequency of detection and only summary statistics were provided on these data; therefore, these data were not used quantitatively in the risk assessment.

iii. *Drinking water levels of comparison (DWLOCs).* In the absence of chemical-specific monitoring data, the Agency uses drinking water levels of comparison to calculate aggregate risk. A drinking water level of comparison, or a DWLOC, is a theoretical upper limit on a pesticide's concentration in drinking water in light of total aggregate exposure to a pesticide in food, drinking water, and through residential uses. In other words, the DWLOC value represents the maximum theoretical exposure a person may have to pesticide residues through drinking water, after their exposure to the pesticide's residues through food and residential exposure have been taken into consideration. The Office of Pesticide Programs uses DWLOCs internally in the risk assessment process as a surrogate measure of potential exposure associated with pesticide exposure through drinking water. DWLOC values are not regulatory standards for drinking water; however, they do have an indirect regulatory impact through aggregate exposure and risk assessments.

DWLOCs are calculated for each type of risk assessment as appropriate (acute, short-term, intermediate-term, chronic, and cancer) and compared to the appropriate estimated concentration of a pesticide in surface and ground water. If the DWLOC is greater than the estimated surface and ground water concentration, (i.e., if the DWLOC > EEC), the Agency concludes with