

ITEM: 7

SUBJECT: Proposed Basin Plan Amendment and TMDL for the Control of Pyrethroid Pesticide Discharges – *Board Hearing to Consider Adoption*

BOARD ACTION: Consideration of Approval of Substitute Environmental Documentation and Adoption of Proposed Basin Plan Amendment

BACKGROUND: Central Valley Water Board staff has developed a proposed amendment to the Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan) to establish a control program for pyrethroid pesticides that addresses water bodies that are listed as impaired by pyrethroid pesticides on the Clean Water Act Section 303(d) list, as well as potential future impairments.

Pyrethroids are commonly used pesticides and have been found at toxic concentrations in water and sediment in both urban and agricultural areas within the Central Valley region. The main sources of pyrethroids to surface waters are urban runoff and agricultural runoff. Wastewater treatment plant effluents are known to contain pyrethroids, but typically at levels much lower than found in urban or agricultural runoff. There are currently 14 water bodies that are impaired (listed on the 303(d) list of waters not meeting water quality standards) due to pyrethroid pesticide concentrations in sediment and/or water. Wastewater treatment plants do not discharge to any of the water bodies currently listed as impaired by pyrethroids.

Pyrethroid pesticides are toxic to aquatic organisms at very low concentrations. In some cases the level at which they are toxic is below current analytical detection limits. There is considerable uncertainty in the characterization of the extent of the pyrethroid problem, the potential reductions needed, and the effectiveness of management practices and technology to control pyrethroid discharges. The available data indicate that significant reductions would be needed to attain the proposed concentration goals. The feasibility of meeting the proposed numbers, especially in urban environments, is uncertain because of legal limitations on storm water and municipal wastewater dischargers' ability to control the use of pesticides by individuals in their service areas. In these areas, the approach most likely to succeed in attaining adequate pyrethroid reductions would include a combination of dischargers implementing reasonable best management practices and the Board and dischargers coordinating with DPR and USEPA's Office of Pesticide Programs to address pesticide uses/products with high potential to impact surface water.

Because of the uncertainty noted above, the proposed amendment would establish a pyrethroids control program that proceeds in phases. During the first phase (15 years), the Board would gather data, require the implementation of best management practices to reduce pyrethroid concentrations, and emphasize coordination with pesticide regulators. Based on data gathered during that interim period, the Board may consider additional Basin Plan amendments such as revisions to the pyrethroid control program requirements and TMDLs, additional TMDLs, and/or pyrethroids-specific water quality objectives.

To ensure that water quality improvements begin while additional information is being developed, the proposed amendment includes TMDLs for nine urban water bodies already listed as impaired, implementation requirements to support

“category 4b” demonstrations for five water bodies receiving agricultural discharges (i.e. demonstrations that the Board’s existing regulatory programs adequately address impairments in agricultural water bodies), and a conditional prohibition of discharges that exceed identified triggers (discussed below). The proposed amendment would be implemented through existing Central Valley Water Board regulatory programs.

The proposed concentration goals are based on water quality criteria derived via the University of California Davis method, which utilizes laboratory toxicity data to develop a species sensitivity distribution. The proposed concentration goals are based on the lower 5th percentile of the species sensitivity distributions, which is consistent with USEPA guidance. Because pyrethroids have additive toxic effects, the concentration goals proposed for prohibition triggers and TMDL numeric targets are based on an additive formula. In addition, pyrethroids tend to bind to sediments and organic matter rather than remain dissolved in the water column. When they are bound, their toxicity to aquatic organisms is reduced because they are less bioavailable. The proposed concentration goals are expressed as “freely dissolved” concentrations and include a formula to calculate the freely dissolved concentrations to account for bioavailability.

A number of alternatives were considered and concentration goals based on the 5th percentile criteria are recommended, recognizing and considering the need to provide reasonable beneficial use protection, the significant water quality improvements that will be needed to attain these criteria, uncertainty about potential costs and attainability, potential impacts of alternative pesticides, and the proposed phased regulatory approach which allows the concentration goals to be adjusted if needed. Independent scientific peer review supported the use of the 5th percentile, additive toxicity and use of “freely dissolved” concentrations.

The proposed pyrethroid Basin Plan amendment has been in development since 2012. During that time, staff has held nine stakeholder meetings at which regulatory approaches, technical issues and preliminary draft Basin Plan amendment language were discussed. The Board also held a February 2016 workshop on potential regulatory options, a June 2016 information item on monitoring needs and challenges associated with pyrethroids, and an August 2016 workshop on the proposed regulatory approach. The proposed amendment was developed based on input from the stakeholder meetings and workshops.

A draft proposed Basin Plan amendment and the corresponding Staff Report were released for public review on 25 January 2017. A hearing was held on 24 February 2017 to receive comments on the draft proposed amendment. The deadline for written comments was 17 March 2017 and was extended to 24 March. Agenda materials include a final Staff Report with the proposed Amendment, the draft Resolution for adopting the proposed Amendment, public comments received and responses to public comments received within the comment period. All material related to the project is available at:

http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/index.shtml

ISSUES:

Comments were received from eight commenters at the February Board Meeting and fourteen comment letters were received by the 24 March comment deadline from agricultural, urban stormwater, and wastewater dischargers and associated groups, fishing and environmental groups, one researcher, USEPA, the California Department of Fish and Wildlife, and pesticide manufacturers. Main themes of the comments include:

1. Concerns with the proposed bioavailability approach.
2. Application of the pyrethroid triggers in receiving waters rather than directly to discharges and/or ability to use representative receiving water monitoring rather than being required to directly monitor discharges.
3. Recommendations to use lower concentration goals.
4. Limited availability of laboratories capable of performing pyrethroid chemistry and toxicity tests and the need for standard or harmonized protocols for these tests.

RECOMMENDATION Adopt the Proposed Basin Plan Amendment and approve the environmental documentation.

Mgmt. Review JEC
Legal Review ASD
June 8/9, 2017
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