

Response to Comments

Draft

**Statewide General National Pollutant Discharge Elimination
System (NPDES) Permit**

for

**Residual Pesticide Discharges from Vector Control
Applications**

to

Waters of the United States

**State Water Resources Control Board Meeting
March 1, 2016**

Draft Vector Control Permit Reissuance Response to Comments

The State Water Resources Control Board (State Water Board) received a public comment letter regarding the Draft NPDES Permit for Residual Pesticide Discharges from Vector Control Applications (Vector Control Permit) from Heal the Bay, represented by Katherine Pease and Rita Kampalath. The summarized comments and staff responses are shown below.

Heal the Bay Comment 1.01:

Heal the Bay is concerned about the following: 1) toxicity monitoring has been previously removed from the Vector Control and Aquatic Animal Invasive Control Statewide Permits; 2) toxicity monitoring is currently proposed to be removed from the Draft Spray Applications Permit; 3) monitoring on a constituent-by-constituent basis ignores the potential synergistic and complex effects of pesticides on an ecosystem; 4) the reasoning for removing toxicity monitoring is not clear or transparent; 5) a State Water Board “toxicity study” is referenced in the Draft Pesticide Permits that was completed in December 2012. However, the Draft Pesticide Permits lack citations to the study which is only available through a scientific journal article and must be purchased, but is not available on the State Water Board’s website; and 6) Toxicity Study conclusions highlight the importance of toxicity monitoring which is contrary to removal of toxicity monitoring in the Draft Pesticide Permits. Heal the Bay recommends the following: 1) a more holistic approach to monitoring that would examine the health of the stream with a focus on possible biological impacts from pesticides; 2) update the Toxicity Study regularly to examine the toxicity of new pesticides and new mixtures of pesticides; and 3) include a numeric toxicity limit and toxicity monitoring in the Draft Pesticide Permits.

State Water Board Response:

The Draft Vector Control Permit provides a balanced approach to protecting water quality while acknowledging the operational needs of vector control agencies to carry out their control activities to protect public health. These vector control activities prevent the outbreak of vector-borne diseases such as West Nile, Dengue, Chikungunya, and other vector-borne diseases that threaten public health.

Due to the toxic nature of pesticides necessary to achieve vector control objectives, the State Water Board recognizes that there may be toxicity impacts to waters of the United States (U.S.) as a result of pesticide applications for vector control.

The State Water Board concludes that appropriately-managed application of vector control pesticides is unlikely to cause persistent toxicity in the receiving water due to the following factors:

- 1) Pesticide application for vector control is short in duration.
- 2) Vector control agencies are required to apply only the minimal amounts of pesticide for the pesticide to be effective. In addition, most vector control agencies have limited budgets. Thus, they generally apply pesticides prudently.
- 3) The 2011 Vector Control Permit required a Toxicity Study which was completed in December 2012. The July 2013 Draft Toxicity Study Report conclusions based on receiving water data conducted for the Toxicity Study indicate that the toxicity level in receiving waters return to background levels of toxicity shortly after application of pesticides.

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Based on the above factors, the State Water Board concluded in Order 2014-0038-EXEC that: (1) the application of pesticides in accordance with approved application rates does not impact beneficial uses of receiving waters in the long-term; (2) the addition of toxicity monitoring requirements does not provide additional valuable information; and (3) visual observations, monitoring and reporting of pesticide application rates, and reporting of non-compliant applications provide information that is equivalent to existing monitoring and reporting requirements in determining permit compliance and protecting beneficial uses of receiving waters. Thus, the State Water Board did not add toxicity monitoring requirements to the 2011 Vector Control Permit. The proposed permit reissuance carries over the conclusions from Order 2014-0038-EXEC and does not include toxicity monitoring requirements or effluent limitations for toxicity. The proposed permit reissuance continues to require the use of U.S. EPA-approved application rates and appropriate best management practices to ensure public health will be protected while concurrently minimizing toxicity to aquatic life.

Based on the factors that served as the basis for Order 2014-0038-EXEC, the State Water Board found that although the Toxicity Study showed some toxicity from pesticide applications, further toxicity monitoring will not provide additional valuable information. Thus, the State Water Board did not finalize the July 2013 Draft Toxicity Study Report. To accommodate the request of Heal the Bay, the July 2013 Draft Toxicity Study Report has been posted at the State Water Board's website at:

http://www.waterboards.ca.gov/water_issues/programs/npdes/pesticides/docs/vectorcontrol/vcp_tox_study_draft_final_july2013.pdf.

The proposed permit reissuance is consistent with the State Water Board's resolution to reduce the cost of compliance with NPDES permits without compromising water quality protection.

Heal the Bay Comment 1.02:

Heal the Bay is concerned that pesticide applications have become standard accepted practices and that critical cost-benefit analyses on pesticide applications are not routine. The Pesticide Application Plans (PAP) for the Draft Pesticide Permits require "Identification of the Problem." Heal the Bay recommends the following: 1) PAPs should require further justification of the need and efficacy of pesticide applications to protect public and ecological health; and 2) Scientific studies documenting the impacts to public health or ecological health in addition to studies that show efficacy of pesticide application for the specific problem or pest should be required as part of the justification.

State Water Board Response:

The State Water Board believes that the processes outlined in the PAPs are sufficient to justify the pesticide applications under the proposed reissuance of the Draft Vector Control Permit. The Draft Vector Control Permit requires each permittee to submit a PAP that provides the reasoning and approach to vector control pesticide applications. Pesticide applications are made only after a vector problem has been identified. Identification of the problem includes the determination of: (1) the vector species involved through regular surveys; (2) the presence of pathogens in those species; (3) abundance, source, and distribution of the species; and (4) the range of control options available to the vector control districts. Following integrated pest management practices, non-chemical control options are considered and employed when and where

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viable, before chemical control options are used. When pesticide use is necessary, vector control districts apply pesticides following product label requirements and all applicable laws and regulations according to the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Pesticide Regulation (DPR), and in accordance with the Vector Control Permit requirements. State Water Board staff reviews all of the submitted PAPs prior to the Deputy Director's issuance of Notices of Applicability. As a proposed requirement of the Draft Vector Control Permit, a permittee is also required to evaluate and document any changes to its PAP in the submission of its annual reports.

Before a pesticide becomes available for use in California, the pesticide is subject to a rigorous registration process with U.S. EPA and DPR. The registration process includes submission of sufficient scientific data by registrants, evaluation by U.S. EPA and DPR of the efficacy of pesticides and their impacts to public health and the environment, and posting of the proposed pesticide registration by U.S. EPA and DPR. Thus, further documentation of impacts to public health or ecological health in the PAPs is not necessary.

Heal the Bay Comment 1.03:

The Draft Pesticide Permits do not allow discharge of pesticides to waters that are impaired by the same pesticides, which Heal the Bay supports. However, protection should go further to include streams that are moderately contaminated by the same or similar pollutants. The addition of pollutants to a system that is already contaminated has the potential of pushing pollutants over a threshold to a toxic level. Again, monitoring for one constituent or suite of constituents is unlikely to adequately capture the impacts to the entire system of the pesticide discharge.

State Water Board Response:

The Draft Vector Control Permit regulates the point source discharge of biological and residual chemical pesticides resulting from direct and indirect spray applications for vector control. The Draft Vector Control Permit regulates application of larvicides and adulticides. Larvicides are directly applied to surface water; however, U.S. EPA considers them "least toxic." Thus, larvicides are unlikely to cause water quality problems. Although adulticides are more toxic, adulticides are applied at very low rates and are not applied directly to surface water. The adulticide active ingredients used in vector control applications have not been found to contribute to impairment of California's surface water bodies except for malathion. Therefore, the Draft Vector Control Permit does not allow malathion to be applied in those specific water bodies identified as impaired by malathion.

Precluding the application of any DPR-registered pesticides for adult mosquito control in some areas where the waterways are impaired may lead to unwarranted and unacceptable risks to public health without measurable long-term benefit to protection of water quality. Due to the toxic nature of pesticides necessary to achieve their intended purpose, the State Water Board accepts that there may be short-term toxicity impacts to waters of the U.S.

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Published data indicate that the amount of pesticide used statewide for vector control in California is minimal relative to agricultural, homeowner, and many other uses.¹ Pesticide use for vector control has not been identified as a contributing factor to toxicity in waterways in California that results in the listing of an impaired water body. Data suggest that toxicity associated with pesticide use for vector control is of short duration, and synergistic effects are unlikely.^{2,3,4}

Thus, based on the July 2013 Draft Toxicity Study Report conclusions, results from monitoring in 2011 to 2012, and the factors described previously, the State Water Board concludes that the use of vector control pesticides is unlikely to contribute to long-term toxicity in receiving waters.

¹ Howard, T.S., M. Novak, V. Kramer, and L. Bronson. 2010. Public Health Pesticide Use in California: A Comparative Summary. *Jrnl. Amer. Mosq. Ctrl. Assoc.* 26(3): 349-353.

² Weston, D.P., R. Holmes, J. You, M. Lydy. 2005. Aquatic Toxicity Due to Residential Use of Pyrethroid Insecticides. *Environ. Sci. Technol.* 39(24): 9778-9784.

³ Weston, D.P., E. Amweg, A. Mekebri, R. Ogle, M. Lydy. 2006. Aquatic Effects of Aerial Spraying for Mosquito Control Over an Urban Area. *Environ. Sci. Technol.* 40: 5817-5822.

⁴ Schleier III, J. J., R. Peterson. 2010. Deposition and Air Concentrations of Permethrin and Naled Used for Adult Mosquito Management. *Arch. Environ. Contam. Toxicol.* 58: 105-111.