

**SEPTEMBER 2014 PRELIMINARY DRAFT FOR DISCUSSION**  
**PYRETHROID BASIN PLAN AMENDMENT LANGUAGE**

**Changes to Chapter III, Water Quality Objectives TABLE III-2A.**

*Add the following to Table III-2A as follows:*

TABLE III-2A

SPECIFIC PESTICIDE OBJECTIVES

PESTICIDE	MAXIMUM CONCENTRATION AND AVERAGING PERIOD	APPLICABLE WATER BODIES
<i>Pyrethroid Pesticides (including all stereoisomers) – Aqueous concentrations</i>		
Bifenthrin	4 ng/L; 1-hour average (acute) 0.6 ng/L; 4-day average (chronic) Not to be exceeded more than once in a three year period.	<b>Waters with designated or existing<sup>1</sup> WARM and/or COLD beneficial uses</b>  Arcade Creek, Chicken Ranch Slough, Curry Creek (Placer and Sutter Counties), Del Puerto Creek, Elder Creek, Hospital Creek (San Joaquin and Stanislaus Counties), Ingram Creek (from confluence with Hospital Creek to Hwy 33 crossing), Ingram Creek (from confluence with San Joaquin River to
Cyfluthrin	0.3 ng/L; 1-hour average (acute) 0.05 ng/L; 4-day average (chronic) Not to be exceeded more than once in a three year period.	
Lambda-Cyhalothrin	1 ng/L; 1-hour average (acute) 0.5 ng/L; 4-day average (chronic) Not to be exceeded more than once in a three year period.	
Cypermethrin	1 ng/L; 1-hour average (acute) 0.2 ng/L; 4-day average (chronic) Not to be exceeded more than once in a three year period.	
Esfenvalerate	20 ng/L; 1-hour average (acute) 3 ng/L; 4-day average (chronic) Not to be exceeded more than once in a three year period.	
Permethrin	10 ng/L; 1-hour average (acute)	

<sup>1</sup> Existing as defined in Title 40 of the Code of Federal Regulations, section 131.3(e)

	2 ng/L; 4-day average (chronic) Not to be exceeded more than once in a three year period.	confluence with Hospital Creek), Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County), Morrison Creek, Mustang Creek (Merced County), Pleasant Grove Creek, Pleasant Grove Creek South Branch, Strong Ranch Slough.
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## Changes to Chapter IV, Implementation

### Under “Regional Water Board Prohibitions”

Add the following:

#### X. Pyrethroid Pesticides Discharges

A discharger is prohibited from discharging pyrethroid pesticides at concentrations that exceed water quality objectives to water bodies identified in Table III-2A unless that discharge is regulated under individual or general waste discharge requirements, a conditional waiver of waste discharge requirements, a national pollutant discharge elimination system (NPDES) permit, or other Regional Board order.

### Under “~~Pesticide Discharges~~ ~~Pesticide Discharges from Nonpoint Sources~~” “Pesticide Discharges”

Add the following:

#### Pyrethroid Pesticides Discharges

1. Regional Board orders that address the control of discharges of pyrethroid pesticides shall include provisions that:
  - a. Ensure attainment of the pyrethroid pesticides water quality objectives in water bodies identified in Table III-2A and total maximum daily load allocations in water bodies identified in Table X;
  - b. Ensure measures that are implemented to reduce pyrethroid pesticides discharges do not lead to an increase in the discharge of other pesticides at concentrations that cause or contribute to exceedances of applicable water quality objectives;
  - c. Encourage implementation of measures or practices by all dischargers that result in concentrations of pyrethroid pesticides in all discharges that are below the water quality objective concentrations.
2. Dischargers are responsible for ensuring that pesticide discharges to surface water and groundwater, including discharges of pesticides used as alternatives to pyrethroid pesticides, do not cause or contribute to exceedance of applicable water quality objectives.

3. **Water Bodies with Known Pyrethroids Pesticides Impairments**

For water bodies specifically named in Table III-2A with known pyrethroid pesticides impairments, attainment of the pyrethroid pesticides water quality objectives and total maximum daily load allocations shall be as soon as practicable. The Regional Board shall establish time schedules in waste discharge requirements or waivers in accordance with existing laws and policies that require reductions in discharge concentrations in order to attain the water quality objectives and allocations. Where no existing law, policy, or permit provision directs the length of the compliance schedule, discharges shall be reduced to ensure attainment of the proposed water quality objectives and allocations no later than [10 years from the effective date of this amendment].

The Regional Board shall ensure that discharges of pyrethroid pesticides are controlled so that the pyrethroid pesticides water quality objectives and total maximum daily load allocations are attained by modifying existing waste discharge requirements and existing waivers (where necessary provisions are not already in place), by adopting new waste discharge requirements or waivers, or by enforcing the pyrethroid pesticides discharge prohibition. If necessary to ensure attainment of water quality objectives and allocations where known impairments exist as of [effective date of this amendment], the Regional Board will ensure that existing waste discharge requirements and waivers will be modified no later than [7 years from the effective date of this Amendment].

4. **Future Exceedances of Pyrethroid Pesticides Water Quality Objectives**

If there is an exceedance of the pyrethroid pesticides water quality objectives after [effective date of this amendment], pyrethroid pesticides in discharges must be reduced so that water quality objectives are attained as soon as practicable. The Regional Board shall establish time schedules in waste discharge requirements or waivers when necessary that require reductions in discharge concentrations so that water quality objectives are attained.

5. The pyrethroid pesticides water quality objectives represent maximum allowable concentrations and exceedance frequencies and the six pyrethroids shall be considered additively as follows:

$$S = \frac{C_{bif}}{O_{bif}} + \frac{C_{cyf}}{O_{cyf}} + \frac{C_{cyp}}{O_{cyp}} + \frac{C_{esf}}{O_{esf}} + \frac{C_{lcy}}{O_{lcy}} + \frac{C_{per}}{O_{per}} \leq 1$$

Where:

$C_{bif}$  = The concentration of bifenthrin in ng/L,

$C_{cyf}$  = The concentration of cyfluthrin in ng/L,

$C_{cyp}$  = The concentration of cypermethrin in ng/L,

$C_{esf}$  = The concentration of esfenvalerate in ng/L,

$C_{lcy}$  = The concentration of lambda-cyhalothrin in ng/L,

$C_{per}$  = The concentration of permethrin in ng/L,

$O_{bif}$  = The acute or chronic bifenthrin water quality objective in ng/L,

$O_{cyf}$  = The acute or chronic cyfluthrin water quality objective in ng/L,

$O_{cyp}$  = The acute or chronic cypermethrin water quality objective in ng/L,

$O_{esf}$  = The acute or chronic esfenvalerate water quality objective in ng/L,

$O_{lcy}$  = The acute or chronic lambda-cyhalothrin water quality objective in ng/L,

$O_{per}$  = The acute or chronic permethrin water quality objective in ng/L,

$S$  = The sum. A sum exceeding one (1.0) indicates an exceedance of the pyrethroid pesticides water quality objectives.

Available samples collected within the applicable averaging period for the water quality objective will be used to determine attainment of the objectives and allocations. Only pyrethroid pesticides results from the same sample will be used in calculating the sum. Concentrations of pyrethroid pesticides must be above limits of quantitation (reporting limits) to be included; concentrations reported as not-detected or as below the limit of quantitation will be considered as zero (0) in the above equation.

This additivity equation for pyrethroid pesticides is consistent with the Policy for Application of Water Quality Objectives (IV-16.00 – 18.00) and the equation specified in the Basin Plan for considering the cumulative impact of pesticides (IV-35.00). The Regional Board shall require additional reductions in pyrethroid pesticides concentrations and exceedance frequencies if such reductions are necessary to account for additive or synergistic effects or to protect beneficial uses.

6. The Regional Board intends to review the pyrethroid pesticides allocations and implementation provisions of the Basin Plan no later than [8 years from the effective date of this amendment.]

7. **Municipal Storm Water Discharges**

Wasteload allocations are equal to the pyrethroid pesticides water quality objectives and are assigned to all permitted municipal separate storm sewer sources that discharge to Table X water bodies.

Municipal separate storm sewer (MS4) NPDES permits shall require implementation of best management practices and control measures. The

responsibilities of the MS4 permittees for addressing applicable pyrethroid pesticides wasteload allocations will be satisfied by complying with the requirements set forth below and permit-related requirements based on them.

Requirements in each MS4 NPDES permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pyrethroid pesticides in urban runoff. Control measures implemented by MS4 permittees shall reduce pyrethroid pesticides in urban runoff to the maximum extent practicable. These requirements shall be included in permits no later than [7 years from the effective date of this Amendment]. If these requirements prove inadequate to meet the water quality objectives and wasteload allocations, the Regional Board will require additional control measures and call for additional actions by other agencies until the objectives and allocations are attained.

The following general requirements shall be implemented through MS4 NPDES permits issued or reissued for urban runoff discharges:

- a. Reduce reliance on pyrethroids and other pesticides that threaten water quality by adopting and implementing policies, procedures, or ordinances that minimize the use of pesticides that threaten water quality in the discharger's operations and on the discharger's property;
- b. Track progress by periodically reviewing the discharger's pesticide use and pesticide use by its hired contractors;
- c. Train the discharger's employees to use integrated pest management techniques and require that they rigorously adhere to integrated pest management practices;
- d. Require the discharger's contractors to practice integrated pest management; and
- e. Study the effectiveness of the control measures implemented, evaluate attainment of the wasteload allocations, identify effective actions to be taken in the future, and report conclusions to the Regional Board.

The following education and outreach requirements shall also be implemented through MS4 NPDES permits issued or reissued for urban runoff discharges:

- a. Undertake targeted outreach programs to encourage communities within a discharger's jurisdiction to reduce their reliance on pesticides that threaten water quality, focusing efforts on those most likely to use pesticides that threaten water quality;
- b. Work with the California Department of Pesticide Regulation, County Agricultural Commissioners, and the University of California Statewide Integrated Pest Management Program to coordinate education and outreach programs to minimize pesticide discharges.

- c. Encourage public and private landscape irrigation management that minimizes pesticide runoff; and
- d. Facilitate appropriate pesticide waste disposal, and conduct education and outreach to promote appropriate disposal.

The following requirements related to regulatory programs shall also be implemented through MS4 NPDES permits issued or reissued for urban runoff discharges:

- a. Track U.S. EPA and California Department of Pesticide Regulation pesticide evaluation and registration activities as they relate to surface water quality and encourage these agencies to accommodate water quality concerns within their pesticide registration processes;
- b. Assemble and submit information (such as monitoring data) to U.S. EPA and California Department of Pesticide Regulation during public comment periods as needed to assist in their pesticide evaluation and registration activities and in ensuring that pesticide applications within the Basin comply with water quality standards; and
- c. Report violations of pesticide regulations (e.g., illegal handling) to County Agricultural Commissioners.

The actions above may be implemented by individual urban runoff management entities, jointly by two or more entities acting in concert, or cooperatively through a regional or statewide approach, as appropriate.

#### 8. **Municipal and Domestic Wastewater Discharges**

Municipal and domestic waste water NPDES permits shall require implementation of best management practices and control measures.

Requirements in each NPDES permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pyrethroid pesticides in wastewater effluents. Control measures implemented by permittees shall reduce pyrethroid pesticides in wastewater effluents to the maximum extent practicable. These requirements shall be included in permits no later than [7 years from the effective date of this Amendment]. If these requirements prove inadequate to meet the water quality objectives, the Regional Board will require additional control measures or call for additional actions by other agencies until the objectives and allocations are attained.

The following general requirements shall be implemented through NPDES permits issued or reissued for wastewater discharges:

- a. Reduce reliance on pyrethroids and other pesticides that threaten water quality by adopting and implementing policies, procedures, or ordinances that minimize the use of pesticides that threaten water quality in the discharger's operations and on the discharger's property;
- b. Track progress by periodically reviewing the discharger's pesticide use and pesticide use by its hired contractors;
- c. Train the discharger's employees to use integrated pest management techniques and require that they rigorously adhere to integrated pest management practices;
- d. Require the discharger's contractors to practice integrated pest management; and
- e. Study the effectiveness of the control measures implemented, evaluate attainment of the water quality objectives, identify effective actions to be taken in the future, and report conclusions to the Regional Board.

The following education and outreach requirements shall also be implemented through NPDES permits issued or reissued for wastewater discharges:

- a. Undertake targeted outreach programs to encourage communities within a discharger's jurisdiction to reduce their reliance on pesticides that threaten water quality, focusing efforts on those most likely to use pesticides that threaten water quality;
- b. Work with the California Department of Pesticide Regulation, County Agricultural Commissioners, and the University of California Statewide Integrated Pest Management Program to coordinate education and outreach programs to minimize pesticide discharges.
- c. Encourage public and private pest management practices that minimize pesticides from entering sewer systems; and
- d. Facilitate appropriate pesticide waste disposal, and conduct education and outreach to promote appropriate disposal.

The following requirements related to regulatory programs shall also be implemented through NPDES permits issued or reissued for wastewater discharges:

- a. Track U.S. EPA and California Department of Pesticide Regulation pesticide evaluation and registration activities as they relate to surface water quality and encourage these agencies to accommodate water quality concerns within their pesticide registration processes;
- b. Assemble and submit information (such as monitoring data) to U.S. EPA and California Department of Pesticide Regulation during public comment periods as needed to assist in their pesticide evaluation and registration activities and in ensuring that pesticide applications within the Basin comply with water quality standards; and

- c. Report violations of pesticide regulations (e.g., illegal handling) to County Agricultural Commissioners.

The actions above may be implemented by individual NPDES permittees, jointly by two or more permittees acting in concert, or cooperatively through a regional or statewide approach, as appropriate.

## 9. **Agricultural Discharges**

Unless a management plan addressing pyrethroid pesticides already exists for the water bodies specifically named in Table III-2A, the Executive Officer will require agricultural dischargers to submit a management plan to control discharges of pyrethroid pesticides in those water bodies no later than [60 days from the effective date of this amendment]. The management plan shall describe the actions that the discharger will take to reduce pyrethroid pesticides discharges to meet objectives by the required compliance date.

At a minimum, management plans must describe:

- a. The causes of the nonattainment of the water quality objective;
- b. The actions that the discharger will take to reduce pyrethroid pesticides discharges and meet the water quality objectives as soon as practicable, but no later than 10 years from [the effective date of this amendment];
- c. A schedule for the implementation of those actions;
- d. A monitoring plan to track effectiveness of pollution control practices;
- e. The process for revising the management plan if the actions do not effectively reduce pyrethroid pesticides discharges or the implemented actions have water quality impacts that must be addressed.

The Executive Officer may allow individual dischargers or a discharger group or coalition to submit management plans. The management plan must comply with the provisions of any applicable waste discharge requirements or conditional waiver of waste discharge requirements. Management plans may address discharges to multiple downstream water bodies for which discharge reductions are required. Management plans may include actions required by state and federal regulations. The Executive Officer may require revisions to the management plan if applicable water quality objectives are not attained.

If a water body that is not attaining the pyrethroid pesticides objectives is being used by the discharger to represent water quality conditions in multiple water bodies, the Executive Officer shall require the submittal of a management plan that addresses pyrethroid pesticides in all of the represented water bodies.

The following requirement applies to agricultural dischargers that are governed by a Regional Board order that does not include management plan submittal requirements triggered by exceedances of water quality objectives. After [effective date of amendment], if the Executive Officer determines that a Table III-2A applicable water body is not attaining the pyrethroid pesticides water quality objectives, the Executive Officer shall require dischargers of pyrethroid pesticides to that water body to submit a management plan. Management plans are due no later than 60 days after the discharger receives notification that such a determination has been made.

**10. Vector Control Discharges**

Discharges of pyrethroid pesticides from vector control applications are subject to the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to waters of the United States from Vector Control Applications. Vector control dischargers are not subject to any additional implementation provisions for attainment of the pyrethroid pesticides water quality objectives.

***Add the following Table in the section “Pyrethroid Pesticides Discharges”***

**Table X. Water Body Segments with Total Maximum Daily Loads (TMDLs) for Pyrethroid Pesticides**

<u>Water Body Segment</u>
<u>Arcade Creek</u>
<u>Chicken Ranch Slough</u>
<u>Curry Creek (Placer and Sutter Counties)</u>
<u>Elder Creek</u>
<u>Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County)</u>
<u>Morrison Creek</u>
<u>Pleasant Grove Creek</u>
<u>Pleasant Grove Creek, South Branch</u>
<u>Strong Ranch Slough</u>

Add to the “Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Financing” section:

**Pyrethroid pesticides discharges into Sacramento River and San Joaquin River basin waters**

Placeholder for cost analysis.

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## Changes to Chapter V, Surveillance and Monitoring

Add the following:

### **Pyrethroid Pesticides Discharges**

The Regional Board will require pyrethroid pesticides dischargers to provide information to the Board. This information may come from the dischargers' monitoring efforts; monitoring programs conducted by state or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices.

If commercial methods are available with limits of quantitation (reporting limits) at or below the pyrethroid pesticides water quality objective concentrations, those methods shall be used for monitoring of pyrethroid pesticides. If methods are not available with limits of quantitation at or below the pyrethroid pesticides water quality objectives, then the chemical analysis method shall be approved by the Executive Officer before monitoring begins.

### **Municipal Storm Water**

The monitoring and reporting program for any waste discharge requirements or conditional waiver of waste discharge requirements that addresses municipal storm water discharges to Table X or Table III-2A applicable water bodies must be designed to collect information necessary to:

1: Determine whether water and sediment are attaining the pyrethroid pesticides water quality objectives and wasteload allocations and the narrative toxicity objective, where applicable. It is generally expected that this requirement would be met by monitoring for pyrethroid pesticides in the water column and sediment toxicity testing with *Hyaella azteca* with chemical analysis of the sediment if the sediment is toxic;

2: Determine whether the implementation of best management practices and control measures are sufficient to meet the pyrethroid pesticides water quality objectives and wasteload allocations; and

3: Determine whether alternatives to pyrethroid pesticides are being discharged at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives. The Regional Board, in consultation with DPR, will assist dischargers in determining if monitoring and reporting programs for alternatives to pyrethroid pesticides are necessary and identifying alternatives for which monitoring might be appropriate with consideration of the commercial availability of analytical methods.

With Executive Officer approval, representative monitoring programs, including coordinated regional monitoring programs, may be used to meet the monitoring requirements listed above. Routine monitoring for pyrethroid pesticides and alternatives can be discontinued upon a discharger showing that the specific pesticide is not found in the effluent at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives; however, the requirement to monitor for pyrethroid pesticides every 5 years as a part of the Report of Waste Discharge will continue to be required at least as long as the pyrethroid pesticides specified in Table III-2A have registered outdoor uses in the source area.

### **Municipal and Domestic Wastewater**

The monitoring and reporting program for any waste discharge requirements or conditional waiver of waste discharge requirements that addresses municipal or domestic wastewater discharges to Table III-2A applicable water bodies must be designed to collect information necessary to:

- 1: Determine whether the discharge causes or contribute to an exceedance of the pyrethroid pesticides water quality objectives, where applicable;
- 2: Determine whether pyrethroid pesticides in the discharge have the potential to cause or contribute to an exceedance of the narrative toxicity water quality objectives by testing effluents with the amphipod *Hyalella azteca*, where applicable;
- 3: Determine whether alternatives to pyrethroid pesticides are being discharged at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives. The Regional Board, in consultation with DPR, will assist dischargers in determining if monitoring and reporting programs for alternatives to pyrethroid pesticides are necessary and identifying alternatives for which monitoring might be appropriate with consideration of the commercial availability of analytical methods.

With Executive Officer approval, representative monitoring programs, including coordinated regional monitoring programs, may be used to meet the monitoring requirements listed above. Routine monitoring for pyrethroid pesticides and alternatives can be discontinued upon a discharger showing that the specific pesticide is not found in the effluent at concentrations with the potential to cause or contribute to exceedances of applicable water quality objectives; however, the requirement to monitor for pyrethroid pesticides every 5 years as a part of the Report of Waste Discharge will continue to be required, at least as long as pyrethroid pesticides specified in Table III-2A are registered for use in the source area. If routine monitoring for pyrethroid

pesticides is discontinued, then toxicity testing of effluents with the amphipod *Hyaella azteca* may also be discontinued.

### **Discharges from Agricultural Operations**

The monitoring and reporting program for any waste discharge requirements or conditional waiver of waste discharge requirements that addresses agricultural pyrethroid pesticides discharges to water bodies specifically named in Table III-2A must be designed to collect information necessary to:

1: Determine whether water and sediment are attaining the pyrethroid pesticides water quality objectives and narrative toxicity objective, where applicable. It is generally expected that this requirement would be met by monitoring for pyrethroid pesticides in the water column and sediment toxicity testing with *Hyaella azteca* with chemical analysis of the sediment if the sediment is toxic;

2: Determine the extent of implementation of management practices to reduce off-site movement of pyrethroid pesticides;

3: Determine whether alternatives to pyrethroid pesticides are being discharged at concentrations that have the potential to cause or contribute to exceedances of applicable water quality objectives; and

Representative monitoring may be used to determine attainment of the water quality objectives. Monitoring shall be representative of water bodies specifically named in Table III-2A, either directly or through a representative monitoring program. Changes in monitoring frequency may result if information such as pesticide use data, pesticide registration status, management practices, runoff potential, or other monitoring studies indicates additional or less monitoring is needed to meet the monitoring requirements, which may include discontinuation of pyrethroid pesticides monitoring.