



Central Valley Regional Water Quality Control Board

9 January 2026

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APPROVAL OF SACRAMENTO VALLEY WATER QUALITY COALITION'S ADDENDUM TO SURFACE WATER QUALITY MANAGEMENT PLAN FOR HYALELLA AZTECA TOXICITY IN ULATIS CREEK: SURFACE WATER QUALITY MANAGEMENT PLAN FOR WATER COLUMN PYRETHROID PESTICIDES IN ULATIS CREEK

Thank you for submitting the *Addendum to Surface Water Quality Management Plan for Hyalella azteca Toxicity in Ulatis Creek: Surface Water Quality Management Plan for Water Column Pyrethroid Pesticides in Ulatis Creek* (SQMP Addendum) for the Sacramento Valley Water Quality Coalition dated 17 October 2025 and revised 13 November 2025.

Staff have reviewed the SQMP Addendum and determined it satisfies the applicable requirements of Waste Discharge Requirements General Order R5-2014-0030-12 and the associated Monitoring and Reporting Program.

The SQMP Addendum to manage pyrethroid pesticides in Ulatis Creek and represented watersheds is approved. Please ensure staff comments regarding data collection, progress tracking, and reporting are addressed during implementation.

If you have any questions, please contact Olivia Mathews by phone at (530) 224-3215 or by e-mail at Olivia.Mathews@waterboards.ca.gov.

Patrick Pulupa
Executive Officer

Enclosure: Review of Sacramento Valley Water Quality Coalition's Addendum to Surface Water Quality Management Plan for *Hyalella azteca* Toxicity in Ulatis Creek: Surface Water Quality Management Plan for Water Column Pyrethroid Pesticides in Ulatis Creek

Cc: Bruce Houdesheldt, Northern California Water Association



Central Valley Regional Water Quality Control Board

To: Petra Lee
Senior Environmental Scientist
Irrigated Lands Regulatory Program

FROM: Olivia Mathews
Environmental Scientist
Irrigated Lands Regulatory Program

DATE: 23 December 2025

SUBJECT: REVIEW OF SACRAMENTO VALLEY WATER QUALITY COALITION'S ADDENDUM TO SURFACE WATER QUALITY MANAGEMENT PLAN FOR *HYALELLA AZTECA* TOXICITY IN ULATIS CREEK: SURFACE WATER QUALITY MANAGEMENT PLAN FOR WATER COLUMN PYRETHROID PESTICIDES IN ULATIS CREEK

On 17 October 2025, the Sacramento Valley Water Quality Coalition (Coalition) submitted an addendum to its Surface Water Quality Management Plan for Ulatis Creek (SQMP Addendum). The SQMP Addendum focuses on pyrethroid pesticides found in the water column and expands the scope of the existing Surface Water Quality Management Plan in place to address toxicity to *Hyaella azteca*.

On 13 November 2025, the SQMP Addendum was revised and resubmitted by the Coalition. Central Valley Water Board staff have reviewed the updated addendum to ensure it meets the Monitoring and Reporting Program (MRP) requirements of Waste Discharge Requirements General Order R5-2014-0030-12 (Order). The following sections provide background and a summary of the document, along with staff comments and recommendations.

BACKGROUND

The Coalition prepared this addendum to the existing *Surface Water Quality Management Plan: Hyaella Toxicity in Ulatis Creek* (dated 22 November 2019) to include pyrethroid pesticides in the water column. There were two (2) recent water column exceedances (December 2024 and May 2025) of the aquatic life protection-based concentration triggers (prohibition triggers) established by Resolution R5-2017-0057 (Pyrethroid Control Program), triggering a management plan for pyrethroid pesticides in the water column. Because the existing Surface Water Quality Management Plan for *Hyaella azteca* focuses on pyrethroid pesticides, it already

contained much of the necessary framework for a management plan for pyrethroid pesticides in the water column. The SQMP Addendum proposes coverage for both *Hyaella azteca* sediment toxicity and pyrethroid pesticides in the water column in Ulatis Creek and represented watersheds in one management plan to streamline efforts to address the related issues.

SUMMARY OF SQMP ADDENDUM

Introduction and Background

The Order requirements implement conditional prohibitions and pyrethroid numeric triggers contained in the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan), referred to as the Pyrethroid Control Program. The Pyrethroid Control Program established a conditional prohibition of pyrethroid pesticide discharges to Central Valley waterbodies at concentrations above specified prohibition triggers. The prohibition triggers for pyrethroid pesticides are based on additive chronic and additive acute concentration goal units (CGU) of 1 (a unitless value). The additive CGU is calculated using the detected concentrations of six (6) pyrethroid pesticides (bifenthrin, cyfluthrin, lambda-cyhalothrin, cypermethrin, esfenvalerate, and permethrin) and contemporaneous measurements of particulate total organic carbon and dissolved organic carbon; the formulas for the additive chronic and additive acute CGUs are specified in the Pyrethroid Control Program. If the additive chronic or additive acute CGU exceeds the prohibition trigger of 1, an Irrigated Lands Regulatory Program (ILRP) exceedance is triggered. A management plan is required should two (2) exceedances occur within a three (3) year period at the same surface water monitoring site. At the Ulatis Creek at Brown Road monitoring site, exceedances of the additive chronic CGU observed in December 2024 and May 2025 triggered the requirement to develop a management plan for pyrethroid pesticides in the water column.

Ulatis Creek at Brown Road is a representative surface water monitoring site located in the Cache Slough drainage in the Solano Subwatershed. Based on review of Pesticide Use Reporting (PUR) data from the California Department of Pesticide Regulation (DPR), irrigated agriculture is a probable contributing source to the pyrethroid exceedances observed at the Ulatis Creek at Brown Road monitoring site.

The management plan covers the Cache Slough drainage as well as the drainages represented by the Ulatis Creek at Brown Road monitoring site, including Putah Creek South, Southwest Yolo Bypass, and Sacramento River – Solano. A map of the management plan boundary is included as Figure 1 of the SQMP Addendum and is the same as the boundary for the *Surface Water Quality Management Plan: Hyaella Toxicity in Ulatis Creek*.

Physical Setting and General Information

The Coalition reviewed Table II-1 of the Basin Plan to determine the beneficial uses for Cache Slough and represented drainages. These uses are summarized in Table 4 of the SQMP Addendum. The major crop types grown in the management plan area which may apply pyrethroid pesticides include alfalfa, almond, corn (as grain), dried bean, melon, processing tomato, sorghum milo, sunflower, uncultivated agriculture, and walnut. The irrigation season extends from April through October and the storm season extends from November through March.

The Coalition has conducted 34 monitoring events for the analysis of water column pyrethroid pesticides in Ulatis Creek from February 2018 through August 2025. There have been five (5) previous exceedances of the additive chronic and/or additive acute CGU at the Ulatis Creek at Brown Road monitoring site. Only one (1) of the five (5) exceedances appears to have been influenced by rainfall runoff. The exceedance influenced by rainfall was the December 2024 exceedance, the first of the two (2) recent exceedances which triggered the management plan. The second pyrethroid pesticide exceedance, that led to the requirement for the management plan, was observed in May 2025. During the December 2024 monitoring event, bifenthrin, cyfluthrin, esfenvalerate, and lambda-cyhalothrin were detected and the additive chronic CGU was 3. During the May 2025 monitoring event, bifenthrin was detected and the additive chronic CGU was 2.

Based on review of PUR data, agricultural applications of pyrethroid pesticides in the Cache Slough drainage peak in May and July-August. There are also non-agricultural applications of pyrethroid pesticides recorded, which peak in April and October. The December 2024 exceedance occurred at a time when very few irrigated crops were treated with pyrethroid pesticides; as previously stated, this exceedance was likely influenced by rainfall runoff. The May 2025 exceedance did occur during a month of peak pyrethroid pesticide application to irrigated agriculture in the Cache Slough drainage, with the largest number of acres treated with bifenthrin and lambda-cyhalothrin during the months of April and May.

There are many best management practices (BMPs) which the Members in the management plan area already employ to reduce the risk of pyrethroid pesticide mobilization. The Coalition provides a baseline inventory of BMPs employed by Members in the management plan area. The data was obtained using the 2023 management practice implementation report (MPIR) data collected for the *Surface Water Quality Management Plan: Hyalella Toxicity in Ulatis Creek*. The baseline will be used for comparison to future percentages of BMPs implemented under the management plan.

Management Plan Strategy

The management plan strategy includes tasks and measurable goals to achieve receiving water limitations within three (3) years of approval of the SQMP Addendum. This meets the Order requirement to address the water quality problem triggering the management plan as soon as is practicable and not exceeding 10 years from the date the management plan is submitted. The management plan strategy for the *Surface Water Quality Management Plan: Hyalella Toxicity in Ulatis Creek* already aims to reduce the discharge of pyrethroid pesticides to receiving waters in the Cache Slough and represented drainages, so the same approach will continue. Members will continue to complete the MPIR required by the *Surface Water Quality Management Plan: Hyalella Toxicity in Ulatis Creek* and the same data will be used to track implementation of the SQMP Addendum as well.

The Coalition proposes three (3) performance goals to track the successful implementation of the SQMP Addendum. Each performance goal also identifies the mechanisms of achieving the goal, the quantitative measure of progress, and a schedule for achieving the goal. The three (3) performance goals include outreach and

education, implementation of BMPs, and avoidance of water column pyrethroid pesticide exceedances at the Ulatis Creek at Brown Road monitoring site. The duties and responsibilities of the individuals and groups responsible for implementing each task associated with the SQMP Addendum are identified along with an organizational chart.

Three (3) consecutive years of no exceedances must be demonstrated before a management plan can be approved for completion. If no additional exceedances are observed for pyrethroid pesticides in the water column, the Coalition may document water quality and management practices implementation and effectiveness in a submittal to the Water Board to request completion in August 2028. If additional exceedances are observed for pyrethroid pesticides, the Coalition must take the appropriate actions identified in the SQMP Addendum and continue to monitor for three (3) consecutive years of no pyrethroid pesticide exceedances.

Monitoring Design

Management plan monitoring will be the same employed during assessment monitoring, while targeting December and May as these are the months during which the two (2) exceedances that triggered the management plan occurred. The Coalition will collect water column samples from the Ulatis Creek at Brown Road monitoring site for analysis of pyrethroid pesticides, total organic carbon, and dissolved organic carbon. The management plan monitoring schedule will be included in the annual Monitoring Plan Update (MPU) submitted August 1 for the upcoming water year.

Data Evaluation

The effectiveness of the management plan will be evaluated through:

1. review of progress made toward implementation of outreach and education activities proposed to maintain awareness of water quality issues as they pertain to pyrethroid pesticide application;
2. assessment of agricultural management practices known to limit the transport of agriculturally-applied pyrethroid pesticides to surface water; and
3. collection of pyrethroid pesticide water quality data to determine effectiveness of BMP implementation in reducing the exceedances of the Pyrethroid Control Program prohibition triggers in the Cache Slough drainage.

Ultimately, continued lack of pyrethroid pesticide exceedances along with documentation of implemented BMPs in the management plan area will link the observed water quality improvements to Member actions. Status and effectiveness will be reported annually in the Management Plan Progress Report (MPPR) through a tabular summary of annual outreach and education performed, a tabular summary of BMPs implemented under the management plan compared to the baseline, and time series plots of additive CGUs calculated from water column pyrethroid pesticide chemistry data collected at the Ulatis Creek at Brown Road monitoring site.

Records and Reporting

Management plan monitoring at the Ulatis Creek at Brown Road monitoring site will be identified in the MPU submitted annually for the upcoming water year on August 1. Additionally, the Coalition will summarize progress made toward successful

implementation and completion of the SQMP Addendum in the MPPR submitted annually for the previous water year on May 1.

STAFF COMMENTS

Per the trend monitoring requirements associated with the Pyrethroid Control Program and clarified for implementation in the ILRP by the Water Board letter dated 3 October 2025, monitoring for *Hyalella azteca* water column toxicity is required at sites with active management plans for pyrethroid pesticides twice per water year, once during storm season and once during irrigation season. At the time of this review, the 2026 MPU does include the required *Hyalella azteca* water column toxicity monitoring to meet the trend monitoring requirements. Future management plan monitoring at this site must include the required trend monitoring for *Hyalella azteca* water column toxicity as well.

Results of management plan monitoring must be summarized in the Annual Monitoring Report submitted annually for the previous water year on May 1.

MPIR data collected from Members in the management plan area must be summarized in the Annual Management Practice Implementation and Nitrogen Management Report submitted annually for the previous water year on November 30. Please ensure it is clear that the MPIR data collected is for both the *Surface Water Quality Management Plan: Hyalella Toxicity in Ulatis Creek* and this SQMP Addendum for pyrethroid pesticides in the water column.

Though the same MPIR data will be used for both, the baseline data and schedules for the *Surface Water Quality Management Plan: Hyalella Toxicity in Ulatis Creek* and this SQMP Addendum for pyrethroid pesticides in the water column are different. Please ensure implementation and progress toward completion of both are clearly tracked and reported in the annual MPPR.

STAFF RECOMMENDATIONS

Staff recommends approval of the SQMP Addendum. Please ensure the above Staff Comments are addressed for the 2026 water year and moving forward for the duration of the SQMP Addendum.