
Central Valley Regional Water Quality Control Board

3 August 2018

David Guy, President
Northern California Water Association
455 Capitol Mall, Suite 335
Sacramento, CA 95814

APPROVAL OF MANAGEMENT PLAN COMPLETION FOR LEGACY ORGANOCHLORINE PESTICIDES IN WILLOW SLOUGH BYPASS AT POLE LINE ROAD

Thank you for your 15 June 2018 request to approve completion of the management plan for the legacy organochlorine (OCL) pesticide dichlorodiphenyldichloroethylene (DDE) in Willow Slough Bypass at Pole Line Road (Willow Slough). The Sacramento Valley Water Quality Coalition's (Coalition) primary basis for this request is that the extensive implementation of management practices in the Willow Slough represented drainages have been effective in preventing agricultural contributions to sediment-associated legacy pesticide discharges. Additionally, Willow Slough meets the water quality objectives for DDE and other OCLs.

The management plan for DDE in Willow Slough was originally triggered by two exceedances observed in April and July 2007, with subsequent exceedances in August and September 2007, and April and May 2008. There have been no DDE exceedances in the 15 samples collected since the last exceedance in May 2008.

The Coalition has documented extensive outreach and education to members, and growers have implemented management practices to reduce sediment discharges to surface waters. The lack of DDE exceedances since 2008 demonstrates the effectiveness of the management practices in resolving the water quality problem. For these reasons, I have determined that the management plan for DDE in Willow Slough drainage and represented areas is complete. The Coalition should continue to collect and analyze samples from representative monitoring site Willow Slough according to the annual monitoring plan.

If you have any questions regarding this approval letter, please contact Rebecca Tabor at rebecca.tabor@waterboards.ca.gov or (530) 226-3458.

ORIGINAL SIGNED BY

Patrick Pulupa
Executive Officer

Enclosures: Staff Review Memo

cc: Bruce Houdesheldt, Northern California Water Association
Mike Trouchon, Larry Walker Associates

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
IRRIGATED LANDS REGULATORY PROGRAM

FROM: Rebecca Tabor, P.E.
Water Resource Control Engineer
IRRIGATED LANDS REGULATORY PROGRAM

DATE: 31 July 2018

SUBJECT: REVIEW OF THE SACRAMENTO VALLEY WATER QUALITY COALITION'S
MANAGEMENT PLAN COMPLETION REQUEST FOR LEGACY
ORGANOCHLORINE PESTICIDES IN WILLOW SLOUGH BYPASS AT POLE
LINE ROAD

On 15 June 2018, the Sacramento Valley Water Quality Coalition (Coalition) submitted a request to approve completion of the management plan for the legacy organochlorine (OCL) pesticide dichlorodiphenyldichloroethylene (DDE) in Willow Slough Bypass at Pole Line Road (Willow Slough), the Coalition's representative monitoring site in the Yolo subwatershed.

The request was submitted in accordance with Waste Discharge Requirements General Order for Growers within the Sacramento River Watershed that are Members of a Third-party Group Order R5-2014-0030-R1 (Order) and Appendix B, Attachment MRP-1 to the Order.

Management plans may be completed in one of two ways: irrigated agriculture is demonstrated not to be causing or contributing to the water quality problem, or the improved management practices have resolved the water quality problem and the water quality data show at least three years of compliance. This request is based on the Coalition's finding that 1) Willow Slough is meeting the water quality objectives (WQOs) for DDE; and 2) agricultural management practices in the Willow Slough drainage and adjacent represented areas have been effective in preventing agricultural contributions to sediment-associated legacy pesticide discharges.

The request was reviewed to determine if the key components required for completion have been met. These requirements are:

- a) Demonstration through evaluation of monitoring data that the water quality problem is no longer occurring (i.e., 3 or more years with no exceedances during the times of the year when previous exceedances occurred) or demonstrated compliance with the Order's surface and groundwater receiving water limitations.
- b) Documentation of third-party education and outreach to applicable Members in the watershed where water quality impairment occurred.
- c) Documentation of Member implementation of management practices that address the water quality exceedances.
- d) Demonstration that the management practices implemented by Members are effective in addressing the water quality problem.

Recommendation

Staff recommends that the management plan for DDE in Willow Slough and the adjacent represented areas be deemed complete. The above requirements have been met based on the information presented in the request. Information provided in support of management plan completion is summarized below.

Monitoring Data

The management plan for DDE in Willow Slough was originally triggered by two DDE exceedances observed in April and July 2007, with subsequent exceedances in August and September 2007, and April and May 2008. Exceedance concentrations are listed below:

- 0.0043 µg/L on 17 April 2007
- 0.0040 µg/L on 17 July 2007
- 0.0056 µg/L on 21 August 2007
- 0.0037 µg/L on 19 September 2007
- 0.0039 µg/L on 21 April 2008
- 0.0082 µg/L on 21 May 2008

There have been no DDE exceedances in the 15 samples collected since the last exceedance in May 2008 (Figure 1). Monitoring was largely conducted during irrigation season, with two storm season events in February and March 2011.

Potential Sources

Source identification sediment sampling for legacy and current use OCL pesticides was conducted at the Willow Slough monitoring site in 2009. The source identification results did not indicate or exclude specific discreet agricultural sources of DDE, nor did it indicate the need for additional spatial sampling for the management of OCLs.

Legacy OCL pesticides are a regional issue with the detection of DDT and its degradation products, DDE and DDD, likely due to applications prior to 1972, when DDT was banned in California. These compounds bind to particles of soil and sediment and breakdown slowly, persisting for many years. Due to its widespread historic uses, DDT and its breakdown products are widely detected in the environment. While DDT is not currently used in agricultural operations, practices that result in movement of organochlorine-contaminated sediment into waterways may cause or contribute to water quality impairments.

Third-party Outreach and Education

At the time the management plan was triggered, growers in the subwatershed were made aware of the DDE management plan, the consequences of any DDE exceedances, transport and transfer pathways, and recommended management practices. In 2007 and 2008, the Yolo County Farm Bureau Education Corporation provided information on the water quality risks, recommended practices, and circumstances regarding legacy OCL pesticides in their outreach and education.

Recent related outreach and education efforts have focused on Sediment and Erosion Control Plan self-certification. This has provided growers with significant exposure to irrigation practices and sediment and erosion control practices that limit the discharge of soils into receiving waters.

Related Outreach and Education in Yolo County between 2008 and 2018 include the following:

- 10 Grower meetings focusing on irrigation practices and sediment and erosion control practices.
- 4 Irrigated lands seminars discussing water quality exceedances, program requirements, and management practices.
- 4 Sediment and Erosion Control Self-Certification Workshops.

Management Practice Implementation

The 2017 Farm Evaluation Survey shows a high rate of implementation of management practices in the areas represented by Willow Slough. Approximately all (100%) of the member parcels represented by Willow Slough implement at least one management practice in each of the following practice categories:

- Irrigation Practices
- Irrigation Practices for Managing Sediment and Erosion
- Cultural Practices for Managing Sediment and Erosion

Specific irrigation practices for managing sediment and erosion implemented throughout the represented drainages, quantified by percent of total acres reported, include the following:

- Use drip or micro-irrigation to eliminate irrigation drainage (58.0%).
- Shorter irrigation runs are used with checks to manage and capture flows (44.1%).
- In-furrow dams are used to increase infiltration and settling out of sediment prior to entering the tail ditch (30.5%).

Specific cultural practices for managing sediment and erosion implemented throughout the represented drainages, quantified by percent of total acres reported, include the following:

- Soil water penetration has been increased through the use of amendments, deep ripping and/or aeration (70.7%).
- Minimum tillage incorporated to minimize erosion (60.5%).
- Crop rows are graded, directed, and at a length that will optimize the use of rain and irrigation water (58.8%).

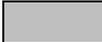
Conclusion

The agricultural practices implemented by growers in the Willow Slough drainage and represented areas have been effective in preventing agricultural contributions to DDE exceedances, as demonstrated by the monitoring results shown in Figure 1.

Figure 1. DDE Monitoring Results in Willow Slough Bypass at Pole Line Road

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018												
2017												
2016												
2015												
2014												
2013												
2012												
2011												
2010												
2009												
2008				0.004	0.008							
2007				0.004			0.004	0.006	0.004			

Legend:

	Not Sampled		Sampled, No Exceedance		Exceedance, (ug/L)
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Note: Results of monitoring are shown by year (rows) and month (columns). Each cell represents one month, and the cell fill indicates if monitoring took place and if results were in compliance with the water quality objective.