
Central Valley Regional Water Quality Control Board

2 October 2017

Mr. Michael Wackman
San Joaquin & Delta Water Quality Coalition
3294 Ad Art Road
Stockton CA 95215

APPROVAL OF THE 2018 WATER YEAR MONITORING PLAN UPDATE – SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

Thank you for timely submittal of the 1 August 2017 San Joaquin County and Delta Water Quality Coalition's (Coalition) Monitoring Plan Update (MPU), as required by the Monitoring and Reporting Program (MRP) of Waste Discharge Requirements General Order R5-2014-0029-R1. The MPU includes a monitoring frequency and schedule for Core, Represented, TMDLs, and management plan monitoring for each specific constituent.

Staff determined that the Coalition's proposed schedule includes monitoring of constituents during application periods, or the time when constituents of concern affected water quality in the past, and that the proposed monitoring plan complies with the MRP requirements (see attachment). Pesticides were identified using the approved pesticide evaluation protocol as required in MRP, Section III.C.3. The proposed monitoring schedule is consistent with the requirements of the Order, and I approve the 2018 water year Monitoring Plan Update. Note that trigger limits for previously untested pesticides will be developed by the Central Valley Water Board staff through a process involving coordination with the Department of Pesticide Regulation and Stakeholder input.

Based on the attached staff memorandum, I approve the Coalition's Monitoring Plan for the 2018 water year. Please review the attached staff memo including the Staff Recommendations. Any proposed changes to the MPU must be approved by the Executive Officer prior to implementation.

If you have questions regarding this letter, please contact Chris Jimmerson at (916) 464-4859 or by email at Chris.Jimmerson@waterboards.ca.gov.

Sincerely,

Original signed by:

Pamela C. Creedon
Executive Officer

Enclosure: Staff Review of MPU

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

FROM: Chris Jimmerson
Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

DATE: 22 September 2017

SUBJECT: MONITORING PLAN UPDATE FOR 2018 WATER YEAR – SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

As required by Order R5-2014-0029-R1 Monitoring and Reporting Program (MRP), the Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a Monitoring Plan Update from the San Joaquin County and Delta Water Quality Coalition (Coalition) on 1 August 2017. The Monitoring Plan Update (MPU) report provides the proposed surface water monitoring schedule for the period 1 October 2017 through 30 September 2018; the 2018 water year. On 1 September, the coalition provided revisions that were based on informal staff comments.

Based on the Order requirements, the Monitoring Plan Update shall identify the appropriate monitoring periods and frequency for all parameters that require testing at each site that is scheduled to be monitored. This includes a discussion of the rationale to support the proposed schedule. Staff reviewed the MPU to determine compliance with requirements pursuant to the Monitoring and Reporting Program.

The Coalition approached the very complex assessment of monitoring sites and parameters in a systematic and logical way by providing flow charts and discussion facilitating the decision making process. An overview of the main elements of the proposed monitoring plan is presented below, followed by staff recommendations.

Monitoring Sites, Parameters, Schedule and Frequency

The monitoring design for the 2018 water year includes six Core sites for seven zones in the Coalition region (one Core site represents zones 5 and 6), 19 Represented sites, and four sites established for diazinon and chlorpyrifos Total Maximum Daily Load compliance in the Delta. The MRP requires that the Coalition apply the pesticide evaluation process to obtain a specific set of pesticides for each site scheduled to be monitored, select appropriate monitoring periods, and include a discussion of the rationale to support the proposed schedule.

The MPU's monitoring schedule is an Excel workbook providing the Zone, site, analyte, and monitoring month. Staff evaluated the schedule for inconsistencies between the worksheets and

the Coalition's previously submitted monitoring data and schedules. On 1 September the Coalition reconciled the inconsistencies staff noted by providing an updated Monitoring Plan Update. It included *Pimephales promelas* monitoring trades as part of the Delta Regional Monitoring Program, updated lab methods for new pesticides resulting from the pesticide evaluation, updates to Attachment A Monitoring Schedule, and additional diuron monitoring at Unnamed Drain that was requested by staff during an informal comment period.

In addition to the revisions noted above, the Coalition will need to evaluate monitoring results through September 2017 along with other applicable criteria to complete the 2018 water year monitoring schedule. The Coalition said it will include an addendum by 15 January 2018. The addendum will be based on results from June through September 2017 that were not available at the time the MPU was prepared. Staff agrees that a January addendum will be appropriate.

1. Core Site Monitoring

Surface water assessment monitoring will be conducted at Core sites per Attachment B, section III.A.1 of the Order. Monitoring includes field measurements, nutrients, field and general physical parameters, metals, pesticides, and sediment toxicity, meeting the requirements in the Order. The MPU's Attachment A lists the monthly monitoring schedule in the water year, including the approved Delta Regional Monitoring Program (RMP) trades to support the RMP.

Delta Regional Monitoring Program Trades

The Delta RMP trades of *P. promelas* toxicity testing will provide a monetary contribution while toxicity monitoring will continue at Lone Tree Creek (2 analyses) and Bacon Island Pump (1 analysis). Core sites with *P. promelas* toxicity testing trades have sufficient monitoring data with no statistically significant toxicity in the past five years.

Pesticides The Coalition evaluated and identified pesticides that warrant surface water monitoring in accordance with the 22 November 2016 pesticide evaluation protocol that is largely based on workgroup discussions and materials.

Consistent with the pesticide evaluation, 41 new analytes (Table 1) were added to the monitoring schedule and 14 analytes (Table 2) were discontinued from the previous monitoring year. The Coalition documented the reason for each pesticide that was added or removed from the monitoring schedule.

Since a large portion of the new analytes do not have a water quality trigger limit to apply, the Central Valley Water Board will develop trigger limits per the Order:

"Trigger limits will be developed by the Central Valley Water Board staff through a process involving coordination with the Department of Pesticide Regulation (for pesticides) and stakeholder input. The trigger limits will be designed to implement narrative Basin Plan objectives and to protect applicable beneficial uses. The Executive Officer will make a final determination as to the appropriate trigger limits."

Although water quality trigger limits may not be available yet, the Coalition will need to monitor all the new pesticides and report results in their Annual Report.

Table 1**New pesticides added to the 2018WY as a result of the evaluation**

2,4-D Acids & Salts*	Cypermethrin*	Iprodione	Prodiamine
Acetamiprid	Cyprodinil	Isoxaben	
Azoxystrobin	Dioxin*	Lambda-Cyhalothrin*	
Bifenthrin*	Endosulfan	Mancozeb	
Boscalid	Esfenvalerate*	Metribuzin	
Bromacil	Ethalfuralin	Norflurazon	
Chloropicrin	Fenpropathrin*	Oryzalin	
Chlorothalonil	Flumioxazin	Oxyfluorfen	
Clothianidin	Hexazinone	Pendimethalin	
Cyfluthrin*	Imidacloprid	Permethrin	

*Adopted numeric criteria in Basin Plan

Table 2**Pesticides discontinued from the previous water year as a result of the evaluation**

Aldicarb	Demeton-s	Oxamyl
Azinphos-methyl	Dichlorvos	Parathion, methyl
Boron (Total)	Disulfoton	Phorate
Carbofuran	Methamidophos	Phosmet
Cyanazine	Methidathion	

Based on the pesticide evaluation protocol, the pesticide monitoring schedule found in the MPU complies with the Order.

Metals: To identify the metals monitoring frequency and schedule, the Coalition followed an evaluation process shown in Figure 4 of the MPU, which takes into account previous monitoring results, pesticide use information, geologic conditions, and Basin Plan requirements satisfying the Order's requirements. Staff reviewed the Coalition's decision process and concurs with their metals monitoring plan.

Aquatic and Sediment Toxicity: The Coalition surface water monitoring includes monthly water column toxicity monitoring on two test species (*C. dubia* and *S. capricornutum*). *P. promelas* monitoring has been changed from 58 analyses to three to support the approved Delta RMP. The primary considerations used to determine the *P. promelas* monitoring schedule included sufficient monitoring history and no statistically significant toxicity within the last five years. The Coalition also proposes to sample sediment toxicity to *Hyalella azteca* twice a year, once during the irrigation (March – October) and storm season (March – April) according to MRP section III.4.b. Additional sediment chemistry analyses for chlorpyrifos, piperonyl butoxide (PBO) and pyrethroids will be conducted on sediment samples as needed.

2. Represented Site Monitoring

Attachment B, Section III.C states, "...monitoring periods shall be determined utilizing previous monitoring results, knowledge of agricultural use patterns (if applicable), pesticide use trends, chemical characteristics, and other applicable criteria." The proposed represented monitoring schedule complies with this section based on the pesticide evaluation protocol, including: a) previous water quality trigger limit exceedances, b) analyzing pesticide use, and c) scheduling monitoring events when management plans are already in place at the representative Core site.

The Coalition monitors the Represented site according to Attachment B, section III.A.2 of the Order. It requires monitoring at Represented sites when there is potential risk to water quality.

When an exceedance occurs at an associated Core site, risk is evaluated by reviewing pesticide use for water quality impairments at Represented sites.

To evaluate the potential for risks or threats to water quality at the Represented sites based on Core site monitoring results, the Coalition considered pesticide use information including pounds of active ingredient and pesticide use trends, previous monitoring results, and acres treated.

Staff concurs with the rationale and monitoring decisions provided in the MPU for all constituents.

3. Management Plan Monitoring

The Coalition proposes to follow the evaluation process (MPU Figure 1) flow chart for constituents (pesticide, toxicity) to complete the management plan. A course of decisions determine if the management plan will be addressed through specific workplans, continued outreach, or continued monitoring ending in management plan completion.

To address the management plans that may require source identification workplans, the Coalition submitted preliminary analyses for analytes with potential irrigated agriculture sources that need further evaluation. These include preliminary source identification studies (DO, pH, SC, ammonia, *E.coli*, lead, DDE, arsenic, molybdenum, and nitrate/nitrite). Staff is reviewing and will coordinate with the Coalition to schedule the next steps.

4. TMDL Monitoring

To ensure compliance with the Diazinon and Chlorpyrifos Total Maximum Daily Load (TMDL) requirements, the Coalition will monitor four sites that represent the Delta Waterways (Table 3) and sites outside and nearest to the Delta to assess compliance with the load allocation.

Table 3. TMDL diazinon and chlorpyrifos waterbody areas with the represented location name.

TMDL Waterbody Areas	Location Name
San Joaquin River (Stanislaus River to Delta Boundary)	Walthall Slough at Woodward Ave.
Delta Waterways (Stockton Ship Channel)	San Joaquin River at West Neugerbauer Rd.
Delta Waterways (export area, southern and western portions)	Old River at the west end of Clifton Court Rd.
Delta Waterways (central and eastern portions), Mosher Slough and Five Mile Slough	Light House Restaurant at West Brannon Island Rd.

Chlorpyrifos and diazinon samples will be collected once during the winter storm season (January or February or March) rain event, and monthly from May through August when applications are highest.

Agriculture has been identified as a contributing source to low dissolved oxygen in the Stockton Deep Water Ship Channel. The Coalition will review DO monitoring results in the Stockton Deep Water Ship Channel gathered from the California Data Exchange Center, Rough and Ready Island station, and from within its tributaries to assess compliance with the DO water quality objectives required in the TMDL.

5. 303(d) Constituents

The MRP requires monitoring of 303(d) listed constituents if irrigated agriculture is a contributing source and if monitoring is requested by the Executive Officer. At this time, the Executive

Officer is not requesting additional 303(d) monitoring beyond the current schedule of 303(d) constituents found in the Core and Representative monitoring.

STAFF RECOMMENDATIONS

- A MPU addendum will be submitted by 15 January 2018 to address monitoring results from July through September 2016 that were not available at the time the MPU was prepared. Those results may require revisions to the monitoring schedule, as part of the pesticide evaluation.
- Staff reconciled the monitoring schedule inconsistencies with the Coalition prior to this memo. Consequently, the Coalition submitted a revised 1 September MPU correcting the inconsistencies.
- The Central Valley Water Board Executive Officer approved the proposed *P. promelas* monitoring trades to support the Delta Regional Monitoring Program. The Coalition revised its monitoring schedule based on the approval.
- The Central Valley Water Board will develop trigger limits in coordination with the Department of Pesticide Regulation and input from stakeholders for those pesticides without a water quality trigger limit.