23 January 2018

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SACRAMENTO VALLEY WATER QUALITY COALITION – CONDITIONAL APPROVAL OF THE 2018 MONITORING PLAN UPDATE

Thank you for submitting the 2018 Assessment Year Monitoring Plan Update (MPU) for the Sacramento Valley Water Quality Coalition, which was last revised and submitted on 21 December 2017. This schedule provides detailed plans for monitoring water quality constituents at Representative and Integration monitoring sites as required by the Monitoring and Reporting Program Order No. R5-2014-0030-R1 (Order). This plan also presents the monitoring schedule for Special Project sites including all monitoring required for Total Maximum Daily Loads (TMDLs) and Management Plans in the Coalition area.

Central Valley Water Board staff has reviewed the monitoring plan and supporting documentation, including the Pesticide Evaluation. The Coalition's MPU is approved, provided the following conditions are met:

1. Dioxin- the Coalition requested to exclude dioxin monitoring in the MPU, based mainly on a 2006 EPA report about sources of dioxin-like compounds[1]. Although information in this report raises questions regarding the ILRP's current dioxin monitoring requirements, further information on the current levels of dioxin in 2,4-D formulations is needed.

    a. If the Coalition would like to pursue the option of suspending dioxin monitoring and/or updating the PEP conversion factor (1.1 ng/g), the Coalition has until **20 April 2018** to provide additional information to justify their request. Dioxin monitoring will be temporarily suspended until the Central Valley Water Board has reviewed the submitted information.

    b. If the Coalition chooses not to pursue this option, the 2018 MPU must be updated to include dioxin monitoring. Please update the Pesticide Evaluation to include dioxin, identify congeners and monitoring locations and develop a monitoring schedule for each identified location.

[1] USEPA, 2006. An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the United States for the Years 1987, 1995, and 2000. EPA/600/P-03/002F November 2006.

2. Lower Colusa Drain**-** The 2018 MPU for the Lower Colusa Drain Integration Site must be updated to include the following:

Constituent	Month
Cypermethrin	Late Season Irrigation Event (August)
Ethalfluralin	Early Season Irrigation Event (May)
Metribuzin	Early Season Irrigation Event (May)
Paraquat Dichloride	January-March Storm Event
Pendimethalin	January-March Storm Event
Pyraclostrobin	February-March Storm Event (if planned)

3. Lower Feather River**-** The 2018 MPU for the Lower Feather River Integration Site must be updated to include the following:

Constituent	Month
Cypermethrin	Late Season Irrigation Event (August)
Dimethoate	Late Season Irrigation Event (August)
Esfenvalerate	January-March Storm Event
Lambda-cyhalothrin	Late Season Irrigation Event (August)
Pendimethalin	January-March Storm Event

4. The 2018 MPU must be updated to include all 2018 monitoring that has already been conducted, including all monitoring in October 2017, November 2017, December 2017, and January 2018. Please include all changes requested via email and phone calls.

Please submit an amended MPU which includes the above changes for items 1b (if chosen), 2, 3, and 4 by **6 February 2018**. Should you decide to pursue Item 1a, you must provide notification and commitment in the 6 February 2018 amended MPU. Item 1a (if pursued) is due **20 April 2018**. Additional information on the above conditions is included in the attached staff memo. Staff determined that the plan is otherwise consistent with the Surface Water Quality Monitoring Requirements (Section III) of the Order.

Any additional revisions or updates to the 2018 MPU will require Executive Officer approval prior to implementation of any such changes. If you have any questions or comments, you may contact Rebecca Tabor at (530) 226-3458, or by email at rebecca.tabor@waterboards.ca.gov.

Original signed by

Pamela C. Creedon
Executive Officer

Enclosure: Staff Review of Monitoring Plan Update for 2018 Water Year

cc: Bruce Houdesheldt, NCWA

TO: Susan Fregien
Senior Environmental Scientist
Irrigated Lands Regulatory Program

FROM: Rebecca Tabor
Water Resource Control Engineer
Irrigated Lands Regulatory Program

DATE: 16 January 2018

SUBJECT: MONITORING PLAN UPDATE FOR 2018 WATER YEAR – SACRAMENTO VALLEY WATER QUALITY COALITION

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a 2018 Monitoring Plan Update (MPU) from the Sacramento Valley Water Quality Coalition (Coalition) on 1 August 2017, as required by Monitoring and Reporting Program (MRP) Order R5-2014-0030-R1 (Order). Several revisions were submitted with the latest revision submitted on 21 December 2017. The MPU report provides the proposed surface water monitoring schedule for the period 1 October 2017 through 30 September 2018 (2018 water year).

Staff reviewed the 2018 water year (WY) MPU to determine compliance with requirements pursuant to the MRP Order. An overview of the main elements of the proposed monitoring plan is presented below, followed by staff recommendations.

Monitoring Requirements and Schedule

The monitoring plan for the 2018 water year includes the required Representative monitoring sites, Integration sites, and Special Project sites. The MPU consists of an Excel workbook, including a series of worksheets providing site-specific monitoring details, a monitoring summary table, and a monitoring schedule. All sites are identified in the 2018 Monitoring Year (MY) Summary Table, as well as in the Site Specific Monitoring Table.

Representative Sites (REP): Assessment monitoring is scheduled at 14 (of 17) Representative sites for WY 2018, the first year of the required two-year assessment period. Representative monitoring sites are selected to be representative of all types of irrigated agriculture within the designated represented watersheds. Three (of 17) Representative sites are located in subwatersheds which are enrolled in the Reduced Monitoring/Management Practices Verification Option (RMO) and do not require assessment monitoring during WY 2018. The subwatersheds enrolled in the RMO include El Dorado, Lake, and Napa subwatersheds.

Integration Sites (INT): Three Integration sites are included in the 2018 MPU and are used to identify cumulative effects and long-term trends of drainages in the Sacramento River Watershed. Assessment monitoring is scheduled twice during irrigation season and twice

during the storm season, with one storm sample collected between October-December and the second collected between January-March.

Special Project Sites (SP): Special Project (non-representative) sites are additional sites selected to evaluate management practice-specific effects on identified water quality problems, to identify the source of a problem, and to monitor the status of an identified water quality problem. The 2018 MPU includes the required monitoring for 9 Special Project sites. Special Project sites include sites monitored for compliance with Total Maximum Daily Load (TMDL) requirements, as well as sites monitored in association with a management plan (MP).

Representative and Integration Site Monitoring

Assessment monitoring is scheduled at Representative sites and Integration sites for general water quality parameters, nutrients, pathogen indicators, water column and sediment toxicity, pesticides, and metals. A monitoring schedule was identified for each site and constituent per the MRP Order.

Pesticides: The Coalition utilized the Pesticide Evaluation Protocol (PEP) to select the pesticides proposed in the MPU. The pesticides proposed for monitoring in each subwatershed depend on pesticide use and prioritization of monitoring (ranking of pesticides) based on aquatic life and human health reference values. In addition, environmental fate factors, available monitoring data, availability of analytical methods, and site specific considerations (monthly use, management plan status, etc.) were evaluated when selecting the pesticides proposed for the 2018 MPU. Staff conducted a thorough review of the implementation of the PEP steps. Staff concurs with the proposed pesticide monitoring provided the conditions discussed below in the Staff Recommendations section are met.

Metals: The Coalition utilized the PEP to determine the monitoring frequency of applied metals (boron, copper, zinc). For the remaining metals (cadmium, lead, molybdenum, nickel, and selenium), the Coalition based monitoring decisions on regionally elevated metals concentrations and historical monitoring data. Staff concurs with this approach and with the proposed metals monitoring.

Aquatic and Sediment Toxicity: As this is the first year of the assessment monitoring period, the Coalition proposes to conduct water toxicity monitoring for *Ceriodaphnia dubia*, *Pimephales promelas*, and *Selenastrum capricornutum* and sediment toxicity monitoring for *Hyalella azteca*. Water column toxicity monitoring is based on an evaluation of pesticide and metal applications that were identified through the PEP process and assessment of whether the test species are sensitive to pesticides or metals that warrant monitoring. If the target species is not sensitive to the pesticides associated with a given site and month, the Coalition then assesses past toxicity occurrences of the species at the site. If toxicity has not occurred within the past three years, the test species is not proposed for monitoring. Staff concurs with this approach and the proposed toxicity monitoring, under the condition that water toxicity testing of the species at a site during a given month is resumed after a period of 6 years of no monitoring, even if the pesticide evaluation suggests a low risk of toxicity to the species.

Special Project Site, Management Plan, and TMDL Monitoring

Special Project monitoring includes, but is not limited to, specific targeted monitoring for implementation of Total Maximum Daily Load (TMDL) requirements or implementation of a

Management Plan due to exceedances. Monitoring is designed to evaluate the effectiveness of changes in management practices on water quality for the constituents of concern.

Management Plan monitoring for *E. coli* at all Special Project sites is not scheduled because *E. coli* management plan deliverables were temporarily suspended by the Executive Officer in 2011, pending the development of a regional approach. The Coalition is currently developing an *E. coli* management plan strategy and plans to submit the final plan with the 2017 Annual Report (due 1 May 2018) as directed by the EO June 2017 letter.

Management Plan monitoring for dissolved oxygen (DO), pH, and salinity (designated as low-priority Management Plan constituents by the Coalition) at Special Project sites is also not included in the 2018 MPU. Instead, monitoring will take place at Representative locations that will address the regional issues associated with these parameters. Management at the non-representative locations will abide by the management actions determined for Representative sites. An exception is that monitoring for these parameters will continue at non-representative sites where concurrent Management Plan monitoring for higher priority constituents is scheduled.

Management Plan monitoring is generally conducted to support source identification or to assess the effects of management practice changes, and may include surveys of agricultural practices as well as water column or sediment sampling. The 2018 MPU includes the recommended monitoring schedule for locations where Management Plans are currently required and TMDLs are in place. TMDL monitoring is included for chlorpyrifos, diazinon, legacy organochloride (OC) pesticides, Group A OC pesticides, pyrethroids, and nutrients. Staff concurs with the proposed special project monitoring.

Staff Recommendations

1. **<u>Monitoring Requirements for Dioxin</u>**
   The Coalition submitted a request to omit all dioxin monitoring with the latest MPU revision (submitted 21 December 2017). The request included references to a 2006 United States Environmental Protection Agency (USEPA) report. Staff inquired with the California Department of Pesticide Regulations (CDPR) and the USEPA regarding the current levels of dioxin in 2,4-D formulations. According to the USEPA, there is currently no regulatory cap on acceptable amounts of dioxin in 2,4-D formulations; however, most producers report non-detects at detection levels of 0.1 parts per billion (ppb) for 7-10 congeners. The California Toxics Rule (CTR) human health (HH) criterion is significantly lower than the detection level used for the USEPA reporting (CTR HH = 0.000000013 ppb). At this time, further information on the current levels of dioxin in 2,4-D formulations is needed.

   a. Staff recommends that if the Coalition would like to pursue the option of suspending dioxin monitoring and/or updating the PEP conversion factor (1.1 ng/g), they should provide additional information to justify the request. This information should include data about the current levels of dioxin in 2,4-D formulations and justification to either suspend dioxin monitoring or update the conversion factor in the PEP used for determining the amount of dioxin present in 2,4-D formulations. Information provided could also include historical surface water monitoring data, if available. Dioxin monitoring will be temporarily suspended until the Central Valley Water Board has reviewed the submitted information.

   b. If the Coalition chooses not to pursue this option, the 2018 MPU must be updated to included dioxin monitoring. The Coalition must update the PEP to include dioxin,

identify congeners and monitoring locations, and develop a monitoring schedule for each identified location.

2. **Monitoring Requirements at Lower Colusa Drain Integration Site- Colusa Basin Drain above Knights Landing (COLDR)**
The following need to be added to the 2018 MPU:
   - Cypermethrin- Pesticide has a high use in late summer. A late irrigation season monitoring event (August) should be conducted to capture summer use.
   - Ethalfluralin- The majority of pesticide use is in March, April, and May. An early irrigation season monitoring event (May) should be conducted to capture spring use.
   - Metribuzin- The majority of pesticide use is in March, April, and May. An early irrigation season monitoring event (May) should be conducted to capture spring use.
   - Paraquat Dichloride- Pesticide is used fairly consistently every month. A January-March storm event sample should be conducted to capture winter use.
   - Pendimethalin- Pesticide has high use in January and February. A January-March storm event sample should be conducted to capture winter use.
   - Pyraclostrobin- Pesticide has a high use in February. A storm event sample should be conducted to capture winter use (if storm sampling is planned in February or March).

3. **Monitoring Requirements at Lower Feather River Integration Site- Sacramento Slough Bridge near Karnak (SSKNK)**
The following need to be added to the 2018 MPU:
   - Cypermethrin- Pesticide has a high use during summer months. A late irrigation season monitoring event (August) should be conducted to capture summer use.
   - Dimethoate- Pesticide has a high use during summer months. A late irrigation season monitoring event (August) should be conducted to capture summer use.
   - Esfenvalerate- Pesticide has a high use in January. A January-March storm event sample should be conducted to capture winter use.
   - Lambda-cyhalothrin- Pesticide has a high use during summer months. A late irrigation season monitoring event (August) should be conducted to capture summer use.
   - Pendimethalin- Pesticide has high use during winter months. A Jan-Mar storm sample should be conducted to capture winter use.

4. **Monitoring Requirements for October-January**
Staff recommends that the Coalition update the 2018 MPU to include all monitoring conducted in October 2017, November 2017, December 2017, and January 2018, including all changes requested via email and phone calls.

5. **Water Column Toxicity Monitoring**
The water column toxicity monitoring strategy is appropriate, under the condition that toxicity monitoring should be conducted on a recurring basis, even if the pesticide evaluation suggests a low risk of toxicity to the test species.

6. **Conditional Approval**
Staff recommends conditional approval of the Monitoring Plan Update.