
Central Valley Regional Water Quality Control Board

24 November 2015

Mr. Mike Wackman
San Joaquin County and Delta Water Quality Coalition
3422 W. Hammer Lane, Suite A
Stockton, CA 95219

APPROVAL OF THE 2015 SURFACE WATER QUALITY MANAGEMENT PLAN – SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

Thank you for the timely submittal of the 1 May 2015 San Joaquin County and Delta Water Quality Coalition's (Coalition) Surface Water Quality Management Plan (SQMP), as required by the Waste Discharge Requirements General Order R5-2014-0029-R1 (Order). The SQMP includes a compliance time schedule for each specific constituent with irrigated agriculture as a known source and provides a timetable for addressing constituents requiring source identification studies and workplans.

Based on staff's review of the Coalition's 1 July 2014 Management Plan Amendment Request, I approve the Coalition's request to use the Basin Plan objectives for dissolved oxygen and specific conductance as triggers, as discussed in the attached memorandum. The Coalition has been applying more limiting triggers to simplify data management but can modify the triggers so they are consistent with the appropriate Basin Plan objectives.

The Coalition also requested the removal of dissolved oxygen triggers at seven sites. To demonstrate compliance with the Irrigated Lands Regulatory Program, the Coalition has elected to monitor waterways and conveyances accepting discharges from irrigated lands; typically upstream of main stem waterways. While some of these conveyances may not have dissolved oxygen objectives, the dissolved oxygen objective of the downstream waterways must be considered when evaluating the triggers. Therefore, to ensure protection of downstream beneficial uses, the triggers for dissolved oxygen must be maintained at these locations. The Coalition has the option of proposing alternative dissolved oxygen sampling locations for board consideration that would better evaluate the impacts of irrigated lands discharges on existing dissolved oxygen objectives.

The Coalition's SQMP also proposes to develop a workplan for an *E. coli* source identification study. In a February 2012 letter, I directed Central Valley Coalitions to develop a joint approach for *E. coli* management plans and still believe that a collaborative approach will result in more cost effective, consistent, and technically sound results. Therefore, the Coalition is not required to develop a source identification study workplan for *E. coli* until I approve a joint *E. coli* management plan approach for the Central Valley Coalitions.

Based on the information in the submitted documents and staff memo, and after consideration of comments provided by other interested stakeholders, I approve the Coalition's SQMP with some stipulations.

By the next deliverable, the boundary shape files will need to be updated. In addition, current Dissolved Oxygen (DO) and Specific Conductance (SC) management plan activities must continue until the DO and SC management plans are updated. Finally, to rely on CV-SALTS in your SC management plans, the Coalition must be actively participating in the CV-SALTS process as determined by the CV Salinity Coalition.

Any other proposed changes to the management plan 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 SQMP
SQMP Checklist

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: 6 October 2015

SUBJECT: SURFACE WATER QUALITY MANAGEMENT PLAN – SAN JOAQUIN
COUNTY AND DELTA WATER QUALITY COALITION

The Central Valley Water Board received the Surface Water Quality Management Plan (SQMP) from the San Joaquin County and Delta Water Quality Coalition (Coalition) by the 1 May 2015 deadline. The Waste Discharge Requirements General Order R5-2014-0029 (Order), Appendix MRP-1, specifies the required management plan elements to be discussed in the SQMP. Attached to this memorandum is a checklist that itemizes each management plan element where staff notes if the element has been satisfactorily addressed.

The SQMP was made available for public comment prior to staff review. Staff received one comment letter concerning the SQMP and took the comments into consideration while reviewing the SQMP to determine compliance with requirements pursuant to the Order. The commenter's main concern was the SQMP's lack of management practices for a groundwater recharge system. As described in the Order's Attachment B, section IV.A.2, groundwater recharge will be discussed in a component of the Groundwater Quality Management Plan that is due 60 days after the Executive Officer approves the Groundwater Quality Assessment Report.

An overview of the main elements of the SQMP is presented below, followed by staff recommendations. The memorandum section titles and numbers correspond to item numbers in the attached SQMP Checklist. The attached checklist provides the more substantive review, while the following comments regard elements staff believed important to highlight.

Item A. Introduction and Background

In April 2015, the Central Valley Water Board approved revisions to the Order. Figure 1 in the SQMP describes the Coalition Zone boundaries and Core sites. One of the revisions included changes to the Coalition's southern boundary to match boundary changes to the East San Joaquin County Water Quality Coalition northern boundary. The boundary modifications were approved slightly before the SQMP May deadline. The Coalition's SQMP preparation was near completion at the time the revised Order was approved, and the acreage affected in the revision is not significant enough to change the processes described in the SQMP or necessitate the

Coalition to revise its SQMP at this time. However, the boundary modification will need to be taken into account in the next SQMP revision and all other deliverables going forward.

Item B. Physical Setting and General Information

Page 19 of the SQMP identifies how the Coalition has been evaluating dissolved oxygen (DO) and specific conductance (SC) exceedances. The Coalition has applied a DO water quality trigger limit of 7.0 mg/L and a SC trigger of 700 μ mhos/cm to all sites, which in some cases is more limiting than the Basin Plan objectives. Historically, the Coalition chose to use the most limiting trigger to simplify data management. On 1 July 2014, the Coalition submitted a Management Plan Amendment request that proposes to apply the applicable Basin Plan DO objectives. Staff compared the Coalition's July Management Plan Amendment request to the Basin Plan objectives and determined that lower DO triggers are appropriate at some sites, as shown in Table 1 below.

Table 1. Staff supports Coalition requested modifications to DO triggers

Monitoring Site	In Legal Delta?	DO Criteria mg/L	Rationale
Duck Creek @ Hwy 4	No	5	Site outside Delta waterways and designated as WARM Aquatic Life BU; WQTL of 5 mg/L acceptable.
Kellogg Creek along Hoffman Ln	Yes	5	Kellogg Creek is designated as COLD Aquatic Life BU. However, the location is in a section of the creek that is within the legal Delta boundary; WQTL of 5 mg/L acceptable.
Light House Restaurant @ West Brannon Island Rd	Yes	5	The WQTL is 5 mg/L in all Delta waters east of Antioch bridge
Littlejohns Creek @ Jack Tone Rd	No	5	Site outside Delta waterways and designated as WARM Aquatic Life BU; WQTL of 5 mg/L acceptable.
Lone Tree Creek @ Jack Tone Rd	No	5	Site outside Delta waterways and designated as WARM Aquatic Life BU; WQTL of 5 mg/L acceptable.
Old River @ the West End of Clifton Court Rd	Yes	5	The WQTL is 5 mg/L in all Delta waters east of Antioch bridge.
San Joaquin River @ West Neugerbauer Rd	Yes/SDWSC	5 or 6	For Stockton Deep Water Ship Channel, the WQTL for DO is 6 mg/L between September 1st and November 30th and 5mg/L all other times of the year.
Sand Creek @ Hwy 4 Bypass	No	5	Site outside Delta waterways and designated as WARM Aquatic Life BU; WQTL of 5 mg/L acceptable.
Unnamed Drain to Lone Tree Creek @ Jack Tone Rd	No	5	Temple Creek drains to Lone Tree Creek; Temple Creek is assigned WARM Aquatic Life BU based on the tributary rule; WQTL of 5 mg/L acceptable.
Walthall Slough @ Woodward Ave	Yes	5	The WQTL is 5 mg/L in all Delta waters east of Antioch bridge.

Staff constructed Table 1 based on information obtained from the July amendment request, which also proposed that there are sites where no DO objectives apply. This proposal is based on the following language in the Basin Plan (page III-5.00) regarding the DO objective for waterbodies within the Delta:

"...5.0 mg/L in all other Delta waters except for those bodies of water which are constructed for special purposes and from which fish have been excluded..." and "...For surface water bodies outside the legal Delta....The dissolved oxygen concentrations shall not be reduced below....Waters designated as WARM 5.0 mg/L...COLD 7.0 mg/L"

In the July Management Plan Amendment request, the Coalition identified a number of the monitoring sites as waterbodies constructed for special purposes where fish are excluded from entering the water body, identified in Table 2. Based on the information provided by the Coalition, staff supports further evaluation of triggers at these sites, with the goal of ensuring protection of downstream beneficial uses. Since water quality trigger limits were developed in part to ensure the protection of beneficial uses in downstream water bodies, additional

information regarding downstream DO conditions is needed to determine the applicable trigger limit.

Table 2. Additional Information needed to evaluate appropriate DO trigger

Monitoring Site	
1)	Drain @ Woodbridge Rd
2)	Drain to Bishop Cut @ North Rio Blanco Rd
3)	Empire Tract @ 8 Mile Rd
4)	Grant Line Canal @ Clifton Court Rd
5)	Grant Line Canal near Calpack Rd
6)	Roberts Island @ Whiskey Slough Pump
7)	Terminus Tract Drain @ Hwy 12

In addition, the Coalition has applied a SC of 700 $\mu\text{mhos/cm}$ water quality trigger limit to all sites, which in some cases is more limiting than the Basin Plan objective. Historically, the Coalition chose to use the most limiting SC trigger to simplify data management, but could use the Basin Plan's seasonal 700 $\mu\text{mhos/cm}$ objective from April through August, and 1000 $\mu\text{mhos/cm}$ from September through March. Staff supports using SC triggers that are aligned with the Basin Plan objectives.

In addition, the Order no longer requires monitoring for total dissolved solids (TDS). All sites previously in management plans for TDS will be placed in management plans for SC. This allows the Coalition to continue with its management plans and compliance schedule developed in coordination with the CV-SALTS process.

Current DO and SC management plan activities should continue until updated DO and SC management plans are submitted.

The results of the Farm Evaluation Plans listing management practices from growers in high vulnerability areas were received in June 2015 after this report was prepared, and will be summarized in the May 2016 Annual Report. As per the Order, a general requirement is to provide, "A baseline inventory of identified existing management practices in use within the management plan area that could be affecting the concentrations of the COCs in surface water and/or groundwater (as applicable) and locations of the various practices." Consequently, the Coalition will provide a complete baseline in the May 2016 Annual Report.

Item C. Management Plan Strategy

The Coalition developed a strategy to address constituents across site subwatersheds to facilitate compliance within the Order's time schedule. The management plan objectives match the Order's requirements. If sources for exceedances are not known (i.e. nitrate, copper, arsenic, molybdenum, cadmium, lead, zinc, pH, DO, SC, *E.coli*, DDE), the Coalition proposes to conduct further source analysis and develop a workplan in accordance with the Time Schedule for Compliance.

The Order requires the Coalition to include a management practices schedules and milestones. The Order reads (MRP-1, I.C.4.d), "...and a timetable for implementation of identified management practices (e.g., at least 25% of growers identified must implement management practices by year 1; at least 50% by year 2)." Performance Goals timetable are found in SQMP

Tables 15-19. The overall time schedule for compliance is consistent with the Order's requirements.

Item D. Monitoring Design

In September 2015, the Executive Officer approved a reduced monitoring schedule which allows the Coalition to participate in the Delta Regional Monitoring Program. In July 2015, staff coordinated with the Coalition to reduce some elements of the surface water monitoring requirements that would instead provide funding and/or in-kind support to an approved RMP. Any changes to the monitoring schedule will not affect management plan monitoring or management practice implementation or tracking.

Item E. Data Evaluation

All elements of this item were satisfactorily addressed.

Item F. Records and Reporting

All elements of this item were satisfactorily addressed.

Item G. Source Identification Study Requirements

Table 18 describes the proposed source identification studies including a proposed compliance schedule for pH, DO, SC, *E.coli*, arsenic, cadmium, lead, nitrate, copper, zinc, DDE, DDT, dieldrin, and HCH. The Executive Officer issued a letter on 17 February 2012 requesting the Coalition, and 6 other Central Valley Coalitions to develop a joint approach to address *E.coli* management plans. The Executive Officer stated that a collaborative approach among the Coalitions will result in more cost effective, consistent, and technically sound results. Therefore, staff recommends not requiring development of a workplan until Central Valley Water Board approves a joint approach among the Coalitions for addressing *E.coli* management plans.

STAFF RECOMMENDATIONS

Staff recommends approval for the SQMP with stipulations. The SJDWQC will need to update the boundary shape files as approved in the April 2015 revised Order. The acreage affected is not significant enough to change the processes described in the SQMP or necessitate the Coalition to revise its SQMP at this time.

Based on staff findings discussed in this memorandum, the Coalition's July 2014 request to revise the management plan triggers consistent with the Basin Plan objectives for DO and SC is recommended for Executive Officer approval. Additional information is needed to potentially revise the DO triggers for the seven sites in Table 2 above. The use of triggers aligned with Basin Plan objectives for DO and SC will reduce the number of DO and SC management plans.

Staff also supports the Coalition's approach of relying on the CV-SALTS process for its TDS/SC management plans. However, staff recommends that the Coalition fully participate in the CV-SALTS effort as determined by the CV Salinity Coalition, in order to rely upon it as its management effort.

SJDWQC Surface Water Quality Management Plan (SQMP)			Reviewer Name: Chris Jimmerson				
Submittal Date: 05/01/2015			Review Date: 07/16/2015				
Item No.	Management Plan Component	Acceptable	Unacceptable	Incomplete/Not Included	Not Applicable	Page Number	Comments
A Introduction and Background							
1	Discussion of the COCs that are the subject of the plan.	✓				Pages 16, et al	21 COC across 18 sites. Detailed discussion of agricultural sources of constituents of concern (COCs) is found in pages 16, et al.
2	Water quality triggers requiring the management plan.	✓				Pages 19, 22-26	Table 7 lists current Water Quality Trigger Limits (WQTLs) of constituents and parameters measured during monitoring.
3	Boundaries covered by management plan (narrative and map), including how the boundaries were delineated.	✓				Page 6, et al, Appendix I, page 50	Figure 1 describes the Coalition Zone boundaries and Core sites. Figures 2- 8 describe management plan boundaries. Figure 15 references ESJWQC in the footer. The SJDWQC boundary is not using the correct boundary shape files as approved in April 2015. The acreage affected is not significant enough to revise the plan. But the correct boundaries will need to be taken into account in all deliverables going forward.
B Physical Setting and Information							
1	Physical conditions that affect surface water and existing data are discussed.	✓				Various	Discusses Delta islands and seepage. Islands require pumping to move water. Discusses impact of urbanization on the ag land.
a	Land use maps identify crops in the SQMP watershed (ArcGIS shapefiles).	✓				Pages 9-15	Land use maps of all site subwatersheds on a zone basis are provided in Figures 2-8. Provides a distribution of ag land. Required shapefiles included in the Surface Water Quality Management Plan.
b	Potential irrigated agricultural sources of the COC(s) are identified; if sources unknown, a study is proposed (see part G).	✓				Pages 40-46, 65	Sources include agriculture, dairies, urban areas, and vector control. The latter two should not be over emphasized since the Coalition has positioned their monitoring points to avoid non-ag influences. The Coalition proposes to conduct preliminary analysis and/or develop work plan to determine the potential sources. Tables 17 and 18 contains a timetable for preliminary analysis requiring source identification studies and workplans. Some of these are TBD, pending EO approval. The text could benefit from a description of the table.
c	Designated beneficial uses are listed.	✓				Pages 47-50	Beneficial uses of the major rivers and primary waterbodies within the coalition are given in Tables 10 and 11.
d	A baseline inventory and location of existing management practices that could be affecting the concentrations of the COCs.	✓				Pages 52-56	Management practices documented and recommended is given Table 13. Figure 16 displays targeted acreage of categories of management practices implemented before and after the Coalition outreach in the first through fourth priority subwatersheds. The results of the Farm Evaluation Plans listing the management practices were received after this report was due. These results will be made available in the May 2016 report.
e	Water quality data for the COCs are summarized and discussed.	✓				Page 19, Appendix I	See item B in memo concerning DO and SC criteria. Also, surface water quality data from individual site subwatersheds with management plans are summarized and discussed in Appendix I.
2	Watershed areas and associated COC are described.	✓				Appendix I	Individual Site Subwatershed Analysis including discussions of specific water quality impairments are described in Appendix I.
3	For each water body that is representative of other water bodies, represented areas are identified.	✓				Page 30-36	Waterbodies representing other waterbodies for each zone are listed in Table 9.
C Management Plan Strategy							
1	Management plan approach and strategy for implementation are described.	✓				Pages 57 - 60	Coalition developed a strategy to address constituents across site subwatersheds to facilitate compliance within Order time schedule. Objectives match Order's objectives. If sources for exceedances are not known, Coalition proposed to conduct further analysis and develop a workplan.

Item No.	Management Plan Component	Acceptable	Unacceptable	Incomplete/Not Included	Not Applicable	Page Number	Comments
	a Discussion of the prioritization process and proposed schedule if multiple constituents of concern (COCs) are included.	✓				Pages 60, Apdx I.	All analytes currently prioritized to become High Priority will be addressed by the 2018 WY; Table 15; the end of the Time Schedule for Compliance in the Order. The SJCDWQC 1 May 2015 Annual Report High Priority Analyses (Appendix I and Appendix II) included a complete detailed list of site's exceedances, discussions of specific water quality impairments, sourcing analysis, recommendations of management practices to improve water quality, as well as specific schedules for outreach, and a complete evaluation of management practice effectiveness.
	b Prioritization of multiple management plan areas is listed (or continue to utilize the priority in the approved Management Plan Strategy).	✓				Page 64-65	Coalition continue to utilize prioritization of management plan areas in the approved management plan. Schedule for addressing each site subwatershed with a detailed, focused Management Plan approach is listed in Table 15-17.
	c Prioritization of COCs and areas are consistent with the Time Schedule for Compliance (WDR section XII).	✓				Pages 63-65	Constituents with known agricultural sources are addressed within 10 year compliance time limit; by 2025.
2	The plan includes actions and tasks to:						
	a Educate Members (sources, prevention, protection, and remediation efforts that can maintain and improve water quality).	✓				Pages 60-66	Outreach to growers, grower meetings, member mailers are methods to be implemented for disseminating information on relevant management practices.
	i Outreach to growers, method for disseminating information on relevant management practices to be implemented, description on how the effectiveness of the outreach efforts will be evaluated	✓				Page 61, et al	Outreach program occurs through group and individual meetings, through mailings and workshops. Coalition website provides information.
	b Identify, validate, and implement management practices to reduce loading of COC's.	✓				Pages 62, 67, et al	Mgt. Practices gathered through Farm Evaluations and nitrogen management plans. Some management practices are less technically feasible on some crops, e.g. drip irrigation in alfalfa. Some practices may be technically feasible but for some members, the practices may be at the edge of economic feasibility.
	i Management practices that are technically and economically feasible, and are proven to be effective are identified, or a timeline to identify new management practices to meet the receiving water limitations is estimated.	✓				Page 62, Table 13	Technically feasible and economically feasible management practices that are effective in eliminating discharge from farming operations have been developed by groups such as Natural Resource Conservation Service (NRCS) and UC Cooperative Extension.
	ii Practices that growers will implement, along with a schedule and milestones are outlined.			✓		Pages 67, et al	Table15-19 include schedules for implementing management practices. See memo.
	c Achieve compliance with the Order's receiving water limitations.	✓					
	i Measureable performance goals aligned with the management plan strategy are established (performance goals include specific targets and identify the expected progress).	✓				Pages 71, et al	Table 20 describes the Performance Measures associated with each Performance Goal.
3	Duties and responsibilities of the individuals/groups implementing SQMP are identified.					Pages 71, et al	Table 20 provides group implementing performance goals.
	a Key individuals involved in major aspects of the project (e.g., project lead, data manager, sample collection lead, lead for stakeholder involvement, quality assurance manager) are identified.	✓				Page 81	Individuals identified satisfactorily.
	b Each individual's responsibilities are discussed.	✓				Page 81	
	c An organizational chart with identified lines of authority is included.	✓				Page 82	Figure 17 describes Coalition's organization chart
	d Entities or agencies that will be contacted to obtain data and assistance are identified.	✓				Pages 72-73	

Item No.	Management Plan Component	Acceptable	Unacceptable	Incomplete/Not Included	Not Applicable	Page Number	Comments
D Monitoring Design							
1	The location(s) of the sites and schedule (including frequencies) for monitoring are chosen to be representative of the COC discharge to the watershed.	✓				Page 75-76	Each year the Coalition submits a Monitoring Plan Update (MPU) report that outlines locations, constituents, and frequency of sample collection and analysis for the following water year (WY).
2	Monitoring system designed to measure effectiveness at achieving the goals and objectives of the SQMP	✓				Page 79	Annual Monitoring Plan Update reports on effectiveness of metrics.
3	Proposed strategy capable of determining whether management practice changes made in response to the management plan are effective and can comply with the terms of the Order.	✓				Page 81-82	
4	Surface water monitoring data are submitted electronically.	✓					CEDEN comparable water quality data are submitted electronically quarterly.
E Data Evaluation							
1	Methods to evaluate monitoring data and to evaluate the effectiveness of the implemented management practices are described.	✓				Page 79	Water quality data will be summarized with simple descriptive statistics for presentation in the Management Plan Progress Report submitted as part of the Annual Report.
a	Methods to analyze data (graphical, statistics, modeling, index computation, or some combination thereof) are included.	✓				Page 79	Graphical and tabular. Water quality data summarized using descriptive statistics.
b	Information necessary to quantify program effectiveness is identified.	✓				Pages 68-70	Mgt. practices tracked in a dbase. Field studies scheduled. Effectiveness determined by performance goals and performance measures and table 20.
c	The process for tracking implementation of management practices is described, including the type and how the information will be collected from growers, and how the information will be verified and reported.	✓				Pages 78, et al	Farm Evaluation Plans and supplemental information during farm visits. Tracked in a database. Mgt practices verified with members identified as potential source of discharge to surface water.
d	The approach for determining the effectiveness of the management practices is described (e.g. field studies of management practices at representative sites and modeling or assessment to associate the degree of management practice implementation to changes in water quality).	✓				Pages 78, et al	Coalition maintains a relational database that associate management practices with water quality data. Field studies TBD, but scheduled.
F Records and Reporting							
1	Schedule for Management Plan Progress Reports that summarize the progress in implementing management plans follows the WDR requirements.	✓				Page 78,79	Progress report submitted in the 1 May annual monitoring report.
G Source Identification Study Requirements* (optional; see part B)							
1	At the minimum the following components are included:						
a	An evaluation of the types of practices, commodities, and locations that may be a source.				✓		To be preseneted when source study is submitted.
b	Continued monitoring at the management plan site/area and increased monitoring, if appropriate.				✓		To be preseneted when source study is submitted.
c	An assessment of the potential pathways through which waste discharges can occur.				✓		To be preseneted when source study is submitted.
d	A schedule for conducting the study.	✓				Pages 64-65	Tables 16 and 18 describes timetable for addressing constituents requiring source identification studies and workplans. Coalition proposed to submit preliminary analysis and/or develop workplans after approval of SQMP.
2	An approach to approximate the contribution of irrigated agriculture is proposed. At the minimum, the feasibility of field studies is evaluated, and option a <u>or</u> b is selected.	✓				Page 43	Coalition proposed to submit preliminary analysis and/or develop workplans after approval of SQMP. Will statistital anlaysis

Item No.	Management Plan Component	Acceptable	Unacceptable	Incomplete/Not Included	Not Applicable	Page Number	Comments
	a Field studies are proposed: a reasonable number and variety of field study sites that are representative of the particular commodity or management practice being evaluated are identified.	✓					Coalition proposed to submit preliminary analysis and/or develop workplans after approval of SQMP.
	b Field studies are not proposed: a demonstration is included of how the alternative source identification method will produce information that will enable the determination of contributions from irrigated agricultural operations to the water quality problem.				✓		
* Should the third-party conduct a Source Identification Study to comply with this Order, the third-party must first receive approval from the Executive Officer. Once approved, the third party may proceed with its study.							