
Central Valley Regional Water Quality Control Board

2 Aug 2017

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2016 ANNUAL MONITORING REPORT REVIEW - SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

Thank you for submitting the San Joaquin County and Delta Water Quality Coalition (Coalition) Annual Monitoring Report (AMR) and Management Plan Progress Report received on 1 May 2017.

Staff has completed a review of each component for compliance with Monitoring and Reporting Program (MRP) Order No. R5-2014-0029-R1, which includes monitoring as described in the Coalition's 2008 Monitoring and Reporting Program (MRP). Staff also reviewed the AMR sections covering the Management Plan Progress Report to determine compliance for the reporting period. The Nitrogen Management Plan Summary section of the AMR will be reviewed under a separate cover.

Please review the attached memorandum and checklist. If you have any questions or comments regarding the review, or need any further information, please contact Chris Jimmerson at (916) 464-4859.

Original signed by:

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

Original signed by:

Sue McConnell, Chief
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Enclosure: Staff memo; memo 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
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DATE: 13 July 2017

SUBJECT: ANNUAL MONITORING REPORT REVIEW – SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION

On 1 May 2017, the Central Valley Water Board received the San Joaquin County and Delta Water Quality Coalition's (Coalition) Annual Monitoring Report (AMR) and Management Plan Progress Report covering the 2016 water year reporting period (1 October 2015 through 30 September 2016).

In this memorandum, staff presents comments pursuant to water quality monitoring under the Order, which includes monitoring as described in the Coalition's approved 2015 Monitoring Plan Update. Staff also reviewed the Management Plan Progress Report to determine compliance for the reporting period.

The review section titles and section numbers below are the same as the titles used in the AMR Checklist (see attached). Staff derived the checklist directly from the Order and it provides an itemized account of the compliance components. Staff used the checklist to document that the content presented in the AMR complies with the Order.

This memorandum provides a discussion if the minimum requirements were not met or items warranted further explanation. Those items requiring further discussion are briefly noted in the attached checklist.

Item 4.2 Executive Summary

The annual August Monitoring Plan Update (MPU) approval date is incorrectly stated as 10/14/16 which is for the 2017 Water Year. The MPU approval date for the time period covered in this AMR is 12/17/15.

Item 6.2 Monitoring Objectives and Design

By 1 August 2017, the Coalition will be required to implement the Pesticide Evaluation Protocol as part of the Monitoring Plan Update. Under the MRP Order, pesticides to be monitored are to be identified by the third-party using the list of pesticides and a set of evaluation factors and an evaluation process provided by the Central Valley Water Board Executive Officer in November 2016.

Item 12.0-12.4 Summary of Quality Assurance Evaluation

All QA and QC analyses met acceptance criteria for the reporting period at a level greater than 90% as shown in Table 2 below.

Table 2: Quality Assurance and Quality Control Percent Acceptance

Hold Time	Field Blank	Field Duplicate	Method or Lab Blank	Lab Control Spike	Lab Control Spike Duplicate	Matrix Spike	Matrix Spike Duplicate	Lab Duplicate	Surrogate Recovery
100.00%	100.00%	97.90%	100.00%	99.40%	96.70%	99.00%	98.50%	100.00%	99.00%

Item 14.2 Pesticide Use Data

At the time the Coalition submitted the AMR, some 2016 year pesticide use report data was not available for San Joaquin County. The Coalition indicated that it will complete an addendum when the PUR information becomes available. Unless the PUR information causes the Coalition to modify the sampling routine in this water year, staff recommends submission of the PUR information in the next AMR rather than providing an addendum.

Item 17.1 Summary of Nitrogen Management Plan Information

On 25 July, the Coalition resubmitted this section under a separate cover as per staff recommendation to accommodate a 30-day public comment period. Staff will review the NMP after the comment period.

Item 20.2.2 New Management Plans

Table 78 lists Littlejohns Creek @ Jack Tone (pH) as an active management plan and should also be presented in Table 77. In addition, South Webb Tract Drain (boron) management plan should be listed in tables 77 and 78 because it is in a management plan.

As a result of exceedances observed during the 2016 WY, seven new management plans were triggered, including one reinstated management plan; algae toxicity at Terminous Tract Drain. New management plans are presented in the table below.

Site Name	Parameter
Coyote Creek Tributary @ Jack Tone Rd	pH
Empire Tract @ 8 Mile Rd	S. CAPRICORNUTUM TOXICITY
Jahant Slough @ Cherokee Ln	SC
Staten Island Drain @ Staten Island Rd	pH
Terminous Tract Drain @ Hwy 12	S. CAPRICORNUTUM TOXICITY
Upper Roberts Island Drain	S. CAPRICORNUTUM TOXICITY
Walthall Slough @ Woodward Ave	S. CAPRICORNUTUM TOXICITY

Item 20.5.3 Evaluation of Management Practice Effectiveness

The Coalition also presented a complete summary of management practices implemented by growers in targeted Focused Outreach subwatersheds (Tables 50-57).

The Coalition evaluated management practices implemented by growers through their Farm Evaluations and/or focused outreach correlated with water quality over time. According to the AMR's Figure 44, the overall percent exceedance for applied metals and pesticides are trending downward over time.

Item 22 Summary and Recommendations

Since the Coalition began focused outreach, the proportion of nutrients, metals, pesticides and toxicity exceedances have remained consistent over the years in the Coalition area. According to Table 1 below, physical parameters and *E.coli* remain a common problem. Last year the Coalition submitted source studies for DO/pH, arsenic, nutrients, and Pb/DDT/DDE; these remain under staff review. In addition to the source studies already prepared, in a 13 June 2017 letter, coalition groups were directed to submit either a detailed management plan strategy or a source identification study work plan to address *E.coli*. The management plan must be submitted no later than the 2018 AMR.

Table 1: Percent Exceedances 2008 through 2016.

Group	Pct. Exceedances									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Physical Parameters	17%	14%	15%	14%	16%	16%	16%	7%	16%	
Nutrients	0%	1%	0%	0%	0%	0%	0%	1%	0%	
Metals	3%	3%	4%	1%	6%	2%	3%	27%	6%	
Pesticides	2%	1%	1%	1%	1%	0%	0%	12%	0%	
Toxicity	19%	4%	6%	6%	7%	5%	5%	8%	7%	
E.coli	36%	12%	18%	19%	18%	6%	19%	15%	37%	

Annual Monitoring Report Review Checklist

Report Name: San Joaquin County and Delta Water Coalition Annual Monitoring Report							
Submittal Date: 1 May 2017, Reporting period Oct 2015 - Sep 2016, WDR Mar 2014							
Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
1 Signed Transmittal Letter							
1.1		Penalty of Perjury Statement	X				
1.2		Signature of Authorized Coalition Representative	X				
1.3		Dated	X				
1.4		Submitted on time	X				
2 Title Page							
2.1		Report title	X				
2.2		Date of the report	X				
2.3		Monitoring date range covered by the report	X				
2.4		Coalition Group name	X				
3 Table of Contents							
3.1		List of sections/chapters, tables, figures, appendices/attachments with page numbers	X				
4 Executive Summary							
4.1		Summary of key results and activities	X			xv-xvi	3 storm events conducted. 2 sediment events conducted. Monitored 29 sites including TMDL.
4.2		Brief summary of conclusions and recommendations	X			xvi-xvii	Page xv incorrectly states 10/14/16 as the MPU approval date. The correct date is 12/17/15 for the 2016 WY in this MPU.
5 Description of the Coalition Group Geographical Area							
5.1		General description of relevant geographic features of the Coalition area, such as location and extent of area, major landforms, land uses, vegetation types, crop types, climate patterns, key waterways, and cities	X			1-11, Apdx IV	Meets requirements.
6 Monitoring Objectives and Design							
6.1		Brief description of monitoring objectives (references to section and page numbers in MRP or QAPP, as appropriate)	X			12	Monitoring objectives found on pages 12.
6.2		Monitoring design aligns with MRP, any deviations from MRP or QAPP are described (references to section and page number in MRP or QAPP, as appropriate)	X			12-16	By Aug 1, Coalition required to implement the Pesticide Protocol in its Monitoring Plan Update.

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
6.2.1	Representative Monitoring: sites, parameters, schedule	X			13	Sites, parameters and schedule provided for the 2016 Water Year in its annual Monitoring Plan Update. AMR aligns with schedule.
6.2.2	Core Monitoring: sites, parameters, schedule	X			13	Sites, parameters and schedule provided for the 2016 Water Year in its annual Monitoring Plan Update. AMR aligns with schedule.
6.2.3	Special monitoring (Management Plan, TMDL, source identification): sites, parameters, schedule	X			13-16, 172,177,178,182	TMDL chlorpyrifos/diazinon in compliance with load capacity. DO, salt, boron, methyl-mercury TMDL monitoring conducted as per Order.
7	Sampling Site Descriptions and Rainfall Records for the time period covered under the AMR					
7.1	Electronic copies of photos clearly labeled with CEDEN comparable station code and date	X			Found in quarterly data submittals	Quarterly surface water monitoring data submittal includes electronic copies of site photos with CEDEN comparable station codes and dates.
7.2	Sampling site name and description (e.g. geographic area, watershed, crop type and drainages that the site represents), or unique information about the site or surrounding area	X			17-24	
7.3	Rainfall records in graphic or narrative form (in inches of precipitation)	X			25-29	The Coalition conducted its two storm monitoring events.
8	Location Maps(s) of sampling sites, crops, and land uses					
8.1	Location maps show sampling sites, crops, and land use with informative level of detail	X			various pgs, ApdxIV	All maps satisfactorily include sufficient level of detail.
8.1.1	Datum identified on map (<u>must be</u> WGS 1984 or NAD 1983)	X			various pgs, ApdxIV	Datum identified as NAD83
8.1.2	Source and date of all data layers identified on map	X			various pgs, ApdxIV	All maps include required layer information.
8.2	Accompanying GIS shapefile or geodatabase of monitoring site and monitoring well information include the CEDEN comparable site code and name (surface water) and GPS coordinates (monitored sites only).	X			Shapefiles File in folder	Shape files provided in AMR attachment. Site Code found in Table 4.
8.3	A list or table indicates: site name, ID/well number, CEDEN site code (if applicable), and GPS coordinates (latitude and longitude in decimal degrees to at least five decimal places)	X			21	Site name, GPS coordinates found in table.
9	Tabulated Results					
9.1	Data are in tabular form, clearly organized and readily discernible	X			ApdxII and Attachment A, various pgs.	
9.2	Previously reported exceedances match exceedances identified in the AMR	X			175?, ApdxI	Reported exceedances match AMR
9.3	All required constituents for each site have reported results	X			Attachment A, various pgs.	
9.4	All necessary re-sampling completed and results reported			X		
10	Data Discussion to Illustrate Compliance					

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
10.1		Results discussed in text agree with tabulated data	X			various pages	Text agrees with tabulated data.
10.2		Discussion illustrates compliance, or if a required component was not met an explanation of missing data or a reason for non-compliance is included	X			65, 66, 101	Several dry monitoring events explained. Not all growers are members consequently RWQCB to conduct enforcement. Amended exceedance reports filed with water board.
10.3		Results are compared to ILRP requirements, water quality standards and trigger limits; toxicity results, TIE's and possible causes of toxicity are discussed	X			67-70	TIE results did not provide information on toxic source.
11	Description of sampling and analytical methods used						
11.1		Description of sampling methods used (e.g. type of collection, collection containers, sample preservation, transportation, handling, field measurements), with references to SOP's if appropriate	X			30-33	Sample container, volume, and holding times found in table.
11.2		Description of analytical methods used	X			34-35	Methods used provided in a table
12	Summary of Quality Assurance Evaluation results						
12.1		Acceptance criteria for all field and laboratory QA/QC measurements identified and in agreement with ILRP requirements; any adjustments to acceptance criteria documented and discussed	X			38-39	Met >90% requirement.
12.2		Summary of accuracy (lab control spike and matrix spike recovery) and precision (RPD for field duplicate, LCS/LCSD and MS/MSD pairs) included for all constituents and tests	X			39-46	Met >90%
12.3		QA/QC results that did not meet acceptance criteria identified in a table or narrative description that is prepared by the Coalition (not laboratories)	X			53-63	Criteria tabulated in various tables.
	12.3.1	Discussion of how the failed QA/QC results affect the validity of the reported data	X			46	Failures did not affect data usability.
	12.3.2	Corrective actions for QA/QC results that did not meet acceptance criteria are described, laboratory exception reports are included when samples are reanalyzed due to exceedance of the linear range	X			46	Corrective actions taken
12.4		Both field and laboratory completeness are calculated and reported; overall Project completeness is determined	X			47-64	Met >90%
13	Flow Monitoring Method(s)						
13.1		The method used to obtain flow measurement at each monitoring site during each monitoring event is listed	X			32	Found in table
14	Summary of Exceedance Reports submitted during the reporting period and related pesticide use information						
14.1		Summary of all Exceedance Reports submitted during the AMR period is included	X			71-95	Summary included. Exceedances matched to staff's records.

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
14.2		Pesticide use data for all pesticide and toxicity exceedances occurring during the AMR time period (unless under a Management Plan): all chemicals applied within the monitoring site subwatershed during the four weeks prior to the measured exceedance	X			ApdxII	Page 36, the PUR data not available for the reporting period can be submitted in the next AMR - See memorandum.
15	Actions Taken to Address Water Quality Exceedances						
15.1		Discussion of actions taken to address water quality exceedances during the time frame of the AMR is included	X			100-113	Provided Performance Goal Updates and management practice and exceedance information via newsletter and many outreach meetings.
15.2		Updates or additional management practices implemented	X			113-121	Mgt Practices listed in tables for watershed.
16	Evaluation of Monitoring Data						
16.1		Identification of spatial trends and patterns in surface and groundwater quality	X			200 - 208	Temporal trends identifiable after Coalition reviewed monitoring data through WY 2016 indicate general improvement. No apparent spatial trend between exceedances and geographical locations.
	16.1.1	Incorporation of pesticide use information, as needed, to assist in data evaluation.	X			191-194, ApdxII	Coalition followed up with growers contributing to pesticide exceedances discovered during PUR review.
16.2		Analyze monitoring data to determine if additional sampling locations are needed. Propose schedule for additional monitoring or source studies	X				Source studies (Do,Ph,As,Nutrient,Pb, DDT/DDE/HCH) provided in other submittals under staff review.
17	Summary of Nitrogen Management Plan information						
17.1		Aggregate information from Nitrogen Management Plan Summary Reports to characterize the input, uptake, and loss of nitrogen fertilizer application by specific crops.			X	141-169, Apdx VI	On 25 July, the Coalition resubmitted this section under a separate cover as per staff recommendation to accommodate a 30-day public comment period. Staff will review the NMP after the comment period.
	17.1.1	Include comparison of farms with same crops, similar soil conditions and similar practices.	X			154, 167, 168, Apdx. VI	Presented in box-whisker plots. Mailed out packets illustrating N usage among growers' neighbors.
	17.1.2	Submittal of aggregate data in an electronic format, compatible with ArcGIS, identified to at least the township level.	X			FE Access dbase	Electronic format is compatible with ArcGIS. See memo.
17.2		Statistical summary of nitrogen consumption ratios by crop or other equivalent reporting units	X			Apdx. VI	Multiple reporting groupings evaluated: soil, MP, crop.
	17.2.1	Estimated crop nitrogen needs for different crop types and soil conditions in percentiles (10th, 25th, 50th, 75th and 90th) and any outliers.	X			Apdx. VI	Presented in box-whisker plots.

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Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
17.3		Quality assessment of collected information by township.	X			146-147, 149, 168	QA based on APN; a higher resolution than township.
17.4		Description of corrective actions for deficiencies in quality of data submitted, if identified.	X			146-147, 149, 166	Some data omitted due to growers misreporting. Corrected some errors, but it's likely data reporting errors remain. Coalition making efforts to educate growers reporting.
18	Summary of Management Practice Information						
18.1		Aggregate and summarize information collected from Farm Evaluations.	X			122-140	Approximately 8% of acreage not returned in Farm Evaluations. Reminder notices sent. Management practices summarized and charted.
	18.1.1	Include quality assessment of the collected information by township (e.g., missing data, potentially incorrect/inaccurate reporting).	X			122, 123	Approximately 85% of members responded representing 92% of acreage.
	18.1.2	Description of corrective actions regarding any deficiencies in data quality.	X			123, 166	The coalition followed up with growers regarding inaccuracies or non-reporting. Coalition is furthering outreach/education. Mailed out packets to growers comparing A/Y values illustrating N use efficiency between growers' neighbors.
18.2		Provide individual data records used to develop summary in electronic format, compatible with ArcGIS to at least township level.	X			In file named 2015 FE Summary Results Database	Data not found in AMR, but are available in a Access database provided in an attachment file. Data was queried to generate the tallies and charts found in the AMR.
18.3		Changes in patterns of implemented management practices	X			114 et seq	Mgt Practices grouped by site subwatersheds found in various tables. Changes documented by listing 'planned' to 'current' mgt. practice.
19	Summary of Mitigation Monitoring						
19.1		Identify measures implemented by Members or Coalition to mitigate effects of program as identified in CEQA mitigation measures	X			209	There were no implemented mitigation measures reported by Coalition members during the 2016 WY. However, member education on use of PAM, and sources of financial assistance (EQIP) funding allowing members to keep farmland in production are mentioned.
19.2		Identify potential impact the mitigation measure addressed, the location of the mitigation measure (township range, section), and any steps taken to monitor the success of the measure.			X		
20	Management Plan Progress Report						
20.1		Background	X			105, 110	

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Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
	20.1.1 Location map(s) and summary of management plans	X			ApdxIV	Map adequate
20.2	Update on exceedances	X			112	
	20.2.1 Table tallying all exceedances for management plans	X			175	Found in Table 78
	20.2.2 List of new management plans triggered since previous report		X		174-175	Discrepancies found in Tables 77 & 78. See memo.
	20.2.3 Status update on new management plans	X			114-121, 176	Tabulated new management plans.
20.3	Monitoring data collected during reporting period	X			74-98?	Tabulated and reported in Attachment A.
	20.3.1 Summary and assessment of management plan monitoring	X			14-15, 173-175	
	20.3.2 Summary and assessment of TMDL monitoring	X			15-16, 177	Monitoring at 4 compliance pts. One storm event in Jan and May through Aug 2016.
20.4	Outreach, education and collaboration activities	X			102-104, Apdx III, VII	Copies of meeting handouts provided in appendices.
	20.4.1 List of outreach activities and information supplied	X			103-104	
	20.4.2 List of collaborative efforts for outreach	X			103-104	Collaboration with County Agricultural Commissioners, Pest Control Advisors and Pesticide Registrants.
20.5	Summary of management practices identified/implemented	X			113 et seq, 149	Summary based on priority site subwatersheds. Page 149, Figure 24 uses a 3-D pie chart to display percent acreage. 3-D pie charts distort the visual area. For example, the area slice for 'Furrow 18%' appears visually smaller than the 'Flood 15%' area slice. Staff recommends that all pie charts should be replaced with a bar chart in future reports.
	20.5.1 Baseline data	X			FE dbase	Summary based on priority site subwatersheds. Access dbase provided based on township.
	20.5.2 Degree of implemented practices	X			112 et seq	Summary based on priority site subwatersheds then by township.
	20.5.3 Evaluation of management practice effectiveness	X			200-208	Demonstrated through meeting focused outreach metric and summarizing percent exceedances. Provided responses to programmatic questions.
20.6	Performance Goal and Schedule Evaluation	X			105-109	Performance goals on track with schedule. Coalition following up with overdue growers' Farm Evaluations.

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	Page # (Section #)	Comments
	20.6.1	Progress in meeting performance goals	X			105-109, 185	Perf goals are being met. Chlorpyrifos/diazinon TMDL compliance load capacity objectives met. Load allocations not met in 3 out of 113 samples.
	20.6.2	Sufficient timeframe to meet scheduled deadlines in Management Plan	X			105-109	
	20.7	Recommendations for changes to Management Plan	X			210-211	
21	Summary of Education & Outreach Activities						
	21.1	Location, dates, and reason for activities.	X			103-104	Table 45 summarizes where, when and details of activities.
	21.2	Summary of the content at each session.	X			103-104	Table 45 summarizes where, when and details of activities.
22	Summary and Recommendations						
	22.1	Summary of the AMR results and conclusions	X			210-211	
	22.2	Recommendations are appropriate and adequately detailed	X			210-211	