
Central Valley Regional Water Quality Control Board

13 Aug 2018

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2017 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) 2018 Annual Report. The Annual Report includes the Annual Monitoring Report, Management Plan Progress Report, Nitrogen Management Plan Summary Report, and Farm Evaluation data summary. Staff reviewed the Annual Report for compliance with Monitoring and Reporting Program (MRP) Order No. R5-2014-0029-R1.

As noted in the attached memorandum and checklist, the Coalition generally complied with all MRP Order monitoring and reporting requirements in the Annual Report. The 2016 Nitrogen Management Plan Summary data will be reviewed in a separate staff memo. The 2017 Nitrogen Management Plan Summary data is due to the Central Valley Water Board by 30 November, per the approved June 2018 Monitoring and Reporting Plan revision.

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
Irrigated Lands Regulatory Program

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
Irrigated Lands Regulatory Program

DATE: 7 August 2018

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

On 1 May 2018, 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 2017 water year reporting period (1 October 2016 through 30 September 2017).

In this memorandum, staff presents comments pursuant to water quality monitoring under the Order, which includes monitoring as described in the Coalition's approved 2016 Monitoring Plan Update. Staff also reviewed the Management Plan Progress Report to determine compliance for the reporting period.

Overall, the AMR complies with the terms and conditions of the MRP Order. The Coalition presents information and discusses compliance with water quality standards, evaluates management practices implemented in the subwatersheds, assesses the status of management plans for each Coalition zone, and uses the collected water quality information to address the key programmatic questions. The Annual Report also includes a summary of Groundwater Quality Management Plan activities and performance goals.

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 requirements were not met or items warranted further explanation. Those items requiring further discussion are briefly noted in the attached checklist.

Item 2.1 Report Title

Staff recommends that the AMR’s reporting period be clearly noted under the report title.

Item 9.2 Previously reported exceedances match exceedances identified in the AMR

The Coalition’s Attachment B, Exceedance Tally, does not match the exceedance counts found in Attachment A or match Staff’s records. Diuron counts in Attachment B should be three, not two. Arsenic counts in Attachment B should be seven, not six. Atrazine counts, in Attachment B should be one not zero.

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
99.3%	100.00%	97.2%	99.8%	95.9%	100.0%	96.6%	94.4%	100.00%	91.2%

Item 17.1 Summary of Nitrogen Management Plan Information

The Executive Officer revised the Coalition’s NMP Summary Report due date from May to November because the Coalition’s members are required to submit their NMP summaries to the Coalition after the May AMR is submitted to the Central Valley Water Board. Consequently, staff will review the 2017 crop year NMP Summary Report after 30 November is due. Staff will review the 2016 crop year summary information provided in the AMR in a separate memo.

Item 20.5.3 Evaluation of Management Practice Effectiveness

The Coalition 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 31, the overall percent exceedance for applied metals and pesticides are trending downward over time (Table 1). Percent exceedance for physical parameters and *E.coli* are trending upward.

Item 22 Summary and Recommendations

According to the AMR, physical parameters and *E.coli* remain a common problem (Table 1). The Coalition submitted source studies for DO/pH, arsenic, nutrients, Pb/DDT/DDE, and *E.coli*; these are under staff review.

Table 1: The Percent Exceedances 2008 through 2017

Group	Pct. Exceedances																							
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	08	09	10	11	12	13	14	15	16	17				
Physical Parameters	17%	14%	15%	14%	16%	16%	16%	7%	16%	32%														
Nutrients	0%	1%	0%	0%	0%	0%	0%	1%	0%	1%														
Metals	3%	3%	4%	1%	6%	2%	3%	27%	6%	7%														
Pesticides	2%	1%	1%	1%	1%	0%	0%	12%	0%	0%														
Toxicity	19%	4%	6%	6%	7%	5%	5%	8%	7%	4%														
E.coli	36%	12%	18%	19%	18%	6%	19%	15%	37%	41%														

Annual Monitoring Report Review Checklist

Report Name: San Joaquin County and Delta Water Coalition Annual Monitoring							
Submittal Date: 1 May 2018, Reporting period Oct 2016 - Sep 2017, WDR Mar 2014							
Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First 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			xiv	
4.2		Brief summary of conclusions and recommendations	X			xv	
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			1-10, Apdx III	Meets requirements. Groundwater abandoned wells identified in Table 67.

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name			Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
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			11		
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			11-15		
	6.2.1	Represented Monitoring: sites, parameters, schedule	X			11		Sites, parameters and schedule provided for the 2017 Water Year annual Monitoring Plan Update. AMR aligns with schedule.
	6.2.2	Core Monitoring: sites, parameters, schedule	X			12		Sites, parameters and schedule provided for the 2017 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			14		TMDL chlorpyrifos/diazinon in compliance with load capacity. DO, salt, boron, methyl-mercury TMDL monitoring conducted 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			16		
7.3		Rainfall records in graphic or narrative form (in inches of precipitation)	X			24		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, monitoring wells, crops, and land use with informative level of detail	X			various pgs, ApdxIII		All maps satisfactorily include sufficient level of detail.

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
	8.1.1	Datum identified on map (<u>must be</u> WGS 1984 or NAD 1983)	X			various pgs, ApxIII	Datum identified as NAD83
	8.1.2	Source and date of all data layers identified on map	X			various pgs, ApxIII	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 on disk	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			20	Site name, GPS coordinates found in table.
9	Tabulated Results						
	9.1	Data are in tabular form, clearly organized and readily discernible	X			Attachment A, various pgs.	
	9.2	Previously reported exceedances match exceedances identified in the AMR		X		Attachment B.	See memo, several exceedances not reported in Attachment B
	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			37	Attempts to resample an event failed due to locked gate during hunting season
10	Data Discussion to Illustrate Compliance						
	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			37, 64	Several dry monitoring events explained. Not all growers are members; consequently RWQCB to conduct enforcement. Attempts to resample failed due to locked gate.
	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			88	

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
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			28	Sample container, volume, and holding times found in table.
11.2	Description of analytical methods used	X			32	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			37	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			59	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				Criteria tabulated in various tables.
	12.3.1 Discussion of how the failed QA/QC results affect the validity of the reported data	X				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			47	Corrective actions taken
12.4	Both field and laboratory completeness are calculated and reported; overall Project completeness is determined	X			48	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			29	Found in table

Annual Monitoring Report Review Checklist

Item No.	AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments	
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		81	Monitoring results are correct, but several exceedances inaccurately tallied. See Item 9.2 and memo.	
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			Apdx. I	Page 36, All PUR data for the Water Year provided.	
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			91	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			105	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			167	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			Apdx I	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 (E.coli, Do,Ph,As,Nutrient,Pb, DDT/DDE/HCH) provided in other submittals under staff review.	

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Item No.	AMR Component Name		Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
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		To be reviewed under a separate staff review.
	17.1.1	Include comparison of farms with same crops, similar soil conditions and similar practices.			X		To be reviewed under a separate staff review.
	17.1.2	Submittal of aggregate data in an electronic format, compatible with ArcGIS, identified to at least the township level.			X		To be reviewed under a separate staff review.
17.2		Statistical summary of nitrogen consumption ratios by crop or other equivalent reporting units			X		To be reviewed under a separate staff review.
	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		To be reviewed under a separate staff review.
17.3		Quality assessment of collected information by township.			X		To be reviewed under a separate staff review.
17.4		Description of corrective actions for deficiencies in quality of data submitted, if identified.			X		To be reviewed under a separate staff review.
18	Summary of Management Practice Information						
18.1		Aggregate and summarize information collected from Farm Evaluations.	X			114-127	Approximately 5% 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			115	Approximately 95% of members responded representing 97% of acreage.

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Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
	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. Approximately 5% of the total Management Units with returned NMP Summary Reports could not be resolved with the grower. 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			168	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				No mitigations implemented this reporting period.
20	Management Plan Progress Report						
	20.1	Background	X			96	
		20.1.1 Location map(s) and summary of management plans	X			12, 22	Map adequate
	20.2	Update on exceedances	X			135	

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Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
	20.2.1	Table tallying all exceedances for management plans	X			135	Found in Table 72
	20.2.2	List of new management plans triggered since previous report	X			135	Three new management plans added; one pH and two algae
	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			64	Tabulated and reported in Attachment A.
	20.3.1	Summary and assessment of management plan monitoring	X			96	Summarized performance goals and steps.
	20.3.2	Summary and assessment of TMDL monitoring	X			136	Monitoring at 4 compliance pts. One storm event in Jan and May through Aug 2017.
20.4		Outreach, education and collaboration activities	X			Apdx II	Copies of meeting handouts provided in appendices.
	20.4.1	List of outreach activities and information supplied	X			94	Table 44 lists activities
	20.4.2	List of collaborative efforts for outreach	X			94-96	Collaboration with County Agricultural Commissioners, Spray Safe, Nitrogen Mgt certification, Pest Control Advisors and Pesticide Registrants.
20.5		Summary of management practices identified/implemented	X			106-113, 120	Summary based on priority site subwatersheds.
	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			98 -113	Demonstrated through FE dbase and tables in AMR text. Summary based on priority site subwatersheds then by township.
	20.5.3	Evaluation of management practice effectiveness	X			159	Demonstrated through meetings, focused outreach metric and summarizing percent exceedances. Provided responses to programmatic questions.
20.6		Performance Goal and Schedule Evaluation	X			96-100	Performance goals on track with schedule. Coalition following up with overdue growers' Farm Evaluations.
	20.6.1	Progress in meeting performance goals	X			141-146	Perf goals are being met. Chlorpyrifos/diazinon TMDL compliance load capacity and load allocation objectives met.

Annual Monitoring Report Review Checklist

Item No.		AMR Component Name	Meets Requirement	Incomplete Not Included	Not Applicable	First Page # (Section #)	Comments
	20.6.2	Sufficient timeframe to meet scheduled deadlines in Management Plan	X			105-109	
	20.7	Recommendations for changes to Management Plan	X			169	
21	Summary of Education & Outreach Activities						
	21.1	Location, dates, and reason for activities.	X			94-95	Table 44 summarizes where, when and details of activities.
	21.2	Summary of the content at each session.	X			94-95	Table 44 summarizes where, when and details of activities.
22	Summary and Recommendations						
	22.1	Summary of the AMR results and conclusions	X			169	
	22.2	Recommendations are appropriate and adequately detailed	X			169	