



California Regional Water Quality Control Board Central Valley Region

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12 March 2008

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EAST SAN JOAQUIN WATER QUALITY COALITION SEMI-ANNUAL MONITORING REPORT REVIEW

Thank you for the timely submittal of the East San Joaquin Water Quality Coalition (Coalition) Semi-Annual Monitoring Report (SAMR). This SAMR was received by the Central Valley Region staff (Staff) on 30 June 2007. Staff has completed the attached review memorandum, which evaluates SAMR compliance with Monitoring and Reporting Program (MRP) Order No. R5-2003-0833.

Staff has noted a variety of improvements in the Coalition's SAMR including the following:

- Submittal of current pesticide use information that is coordinated with the timing and sampling location using ArcGIS to indicate possible sources of exceedances.
- Improved tabulation of monitoring and quality control data that elucidates the high quality work produced by the Coalition's laboratory(ies).
- Consistent and correct application of follow-up to toxicity exceedances through toxicity identification evaluations.
- Improved documentation and tabulation of outreach activities.
- Provided tabulated results of survey responses for management practices.

Staff did identify some areas that require more attention, such as completion of a BOD Analysis study that the Coalition intended to complete in October, and continued monitoring of the *E. coli* at Merced River @ Santa Fe Drive site, until an MRP Plan revision with technical justification for the analyte removal is requested and approved. My recommendation is that both of these matters be resolved through the development of the Coalition's MRP Plan revision and development of Management Plans. The Coalition must also incorporate the exceedances for metals that have been detected at various sites into their Management Plans.

Overall, the consistency and the quality with which the Coalitions' SAMRs are developed and submitted are worth recognizing at this time. In particular, the submittal of monitoring data in SWAMP comparable database format and the Coalition's participation in the Technical Issues Committee through Mike Johnson and Melissa Turner are very much appreciated. Both efforts have been very helpful toward the development of Zone Reports that were presented at

a Board meeting in August 2007 and for development of the Tentative Coalition Group MRP which was adopted by our Board on 25 January 2008. It is anticipated that through this continued cooperation, an exemplary and very effective MRP Plan for the Coalition can be generated and implemented.

If you have any questions or comments regarding the review, or need any further information, please contact Dania Huggins at (916) 464-4843.

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Monitoring and Implementation Unit

JOE KARKOSKI, Chief
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Enclosure: Staff Review of ESJWQC SAMR

Bcc: Pamela Creedon
Ken Landau

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FROM: Dania Huggins
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DATE: 2 January 2008

SIGNATURE: _____

REVIEW OF 30 JUNE 2007 SEMI-ANNUAL MONITORING REPORT – EAST SAN JOAQUIN WATER QUALITY COALITION

On 2 July 2007, the California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) staff received the East San Joaquin Water Quality Coalition (Coalition) 30 June 2007 Semi-Annual Monitoring Report (SAMR).

Regional Water Board staff reviewed the SAMR to evaluate it for the required reporting conditions described in Order No. R5-2005-0833 (Order) and in the Coalition's Monitoring and Reporting Program (MRP) Plan. This memorandum summarizes the review findings. The review is divided into two parts: (A) a discussion of administrative and compliance aspects and (B) a discussion of analytical aspects.

A. ADMINISTRATIVE AND COMPLIANCE

1. Executive Summary

The Executive Summary describes the number of exceedances that occurred during the reporting period. This is consistent with the exceedance tables in the section *Data Interpretation*. In addition, the Executive Summary briefly summarized the Coalition's activities and monitoring results. Although there is a specific component in the SAMR for conclusions and recommendations, this section could benefit from briefly including some of it here.

2. Monitoring Objectives

The report did not include information or a discussion determining the effectiveness of management practices to reduce discharges of waste that impact water quality. Staff notes that as of November 2007, the Coalition is preparing management plans that will include discussions of management practice effectiveness.

3. Monitoring Sites Description

The sample site descriptions, rainfall records, and location maps meet the minimum requirements of the MRP. Staff also acknowledges that the Coalition is conducting Phase II pesticide analysis at all Phase I and Phase II sites.

Page 12, for sample site Merced River @ Santa Fe Drive, the Coalition discontinued monitoring for *E.coli* because two years of sample results reported no exceedances of *E.coli*. Request for monitoring reductions must be requested by the Coalition and approved by the Regional Water Board Executive Officer.

4. Pesticide Use Information

The Coalition submitted Pesticide Use Reports (PURs) for the two months before the sample collection date in which a relevant exceedance occurred. These PUR data are mapped relative to the sample location indicating possible sources of exceedances. This information is very helpful to the reader.

On page 53, the last sentence in the second paragraph reads that this SAMR highlights potential chemicals causing toxicity. Staff needs more information to determine the tables where these highlights identify potential chemicals causing toxicity.

5. Data Interpretation / Interpretation of Results

Staff reviewed and compared Appendix V with the Coalition's submittals and tables 20 through 25 of the Coalition's SAMR. Below is a detailed of this comparison (Table 1):

Table 1. Summary of missing exceedance reports and results discrepancies.

Analyte	Sample Date	ExceeReport Submittal	Value	Site
DO	2/11/2007	Missing	6.17 mg/L (SAMR Table 20)	Dry Creek @ Wellsford Rd
pH	2/11/2007	Missing	6.12 pH Units (SAMR Table 20)	Prairie Flower @ Crows Landing Rd
EC	2/11/2007	02/12/2007 (1)	2694 µS/cm → ExceeReport 2659 µS/cm → Table 20	Prairie Flower @ Crows Landing Rd
<i>Selenastrum capricornutum</i>	03/07/2007	Missing	93.65 (SG)	Dry Creek @ Wellsford Rd

(1) An exceedance report was submitted on 02/12/2007. However, the result is different in the exceedance report when compare with the reported result in table 20 of the SAMR.

The Coalition needs to explain the discrepancies described above and submit and amendment of these sections to the 2007 storm season SAMR report by **21 January 2007**.

6. Water Quality Trigger Limits

Page 54, Table 19, tabulates the Coalition's water quality trigger limits. Revisions to the table are required in the next SAMR to meet the current limits, as tabulated below (Table 2). Staff revised the limit table after the Coalition submitted this SAMR. Therefore, these limits were not applicable at the time of SAMR submittal.

Table 2. Revisions to the ESJWQ Water Quality Trigger Limits

Constituent	Limit	Reference for the Trigger Limit
Pesticides - Carbamates		
Aldicarb	3 ug/L	Basin Plan Chemical Constituents Objective, USEPA Primary MCL (MUN, human health)
Oxamyl	50 ug/L	Basin Plan, page III-3.00, under "Chemical constituents." Drinking Water Standards - Maximum Contaminant Levels (MCLs). California Dept of Health Services. Primary MCL
Pesticides - Organochlorines		
Dicofol	NA	
Pesticides - Organophosphates		
Dimethoate	1.0 ug/L	Basin Plan Toxicity Objective, Notification Level – DHS (MUN, human health). California Notification Levels. (Department of Health Services)
Methamidophos	0.35 ug/L	Basin Plan Toxicity Objective, Drinking Water Health Advisories or Suggested No-Adverse-Response Levels for non-cancer health effects. USEPA IRIS Reference Dose (RfD) as a drinking water level.
Methidathion	0.7	Basin Plan Toxicity Objective, USEPA IRIS Reference Dose (MUN, human health)
Phorate	0.7 ug/L	Basin Plan Toxicity Objective, Drinking Water Health Advisories or Suggested No-Adverse-Response Levels for non-cancer health effects. USEPA IRIS Reference Dose (RfD) as a drinking water level.
Phosmet	140 ug/L	Basin Plan Toxicity Objective, Drinking Water Health Advisories or Suggested No-Adverse-Response Levels for non-cancer health effects. USEPA IRIS Reference Dose (RfD) as a drinking water level.
Pesticides - Pyrethroids		
Biphenrin	110 ug/L	Basin Plan Toxicity Objective, USEPA IRIS Reference Dose (human health)
Cyfluthrin	NA	
Cyhalothrin, lambda, total	35 ug/L	Basin Plan Toxicity Objective, USEPA IRIS Reference Dose (MUN, human health)
Esfenvalerate/ Fenvalerate, total	NA	
Pesticides - Herbicides		
Diuron	2 ug/L	One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water. USEPA Health Advisory. Likely to be carcinogenic to humans (U.S. Environmental Protection Agency, 2005 Guidelines for Carcinogen Risk Assessment). Value modified using more recent information in USEPA Office of Pesticide Programs Registration Eligibility Decisions Documents. From Reference 36. (August 2007 Update Edition of the WQG)
Glyphosate	700 ug/L	Basin Plan Chemical Constituents Objective, page III-3.00, California Primary MCL (MUN, human health)
Metals (c)		
Arsenic	10 ug/L	Basin Plan Chemical Constituents Objective, USEPA Primary MCL (MUN, human health)
Cadmium	variable (see charts at conclusion of table)	Freshwater Aquatic Life Protection - Continuous Concentration, 4-Day Average - Varies with water hardness
Nutrients		
Nitrate as NO3	45,000 ug/L as NO3	California Primary MCL
Nitrite as Nitrogen	1,000 ug/L as N	California Primary MCL

7. Summary of Management Practices

The Coalition provided tabulated results of survey responses in an appendix. Since management practices are a key element of the Irrigated Lands Regulatory Program, staff expects that the Coalition will provide more information about management practices and their effectiveness in upcoming management plans.

8. Outreach and Education

The Coalition provided information on the number of meetings and personal contacts made since the last SAMR. The Coalition held grower meetings in Merced, Modesto, and Madera County in December 2006 and February 2007. The Coalition significantly increased its outreach and education documentation from the previous storm season SAMR.

9. Activities, Events and Deliverables

Table 27, page 74, shows a calendar of deliverables for the Coalition during the period of January – June 2007. Staff verified that the SAMR included the entire storm season Exceedance and Communication Reports, as required.

B. ANALYTICAL ASPECTS

1. Monitoring Results

Load Calculations

The Coalition calculated the loads for all detections during the reporting period and tabulated the results. To inform the reader of the limitations of the calculated load, staff recommends inserting the following paragraph. "The load values calculated and presented for pesticides or other constituents in this report represent instantaneous loads only. These values should not be used to extrapolate loading over any period of time (e.g., weekly, monthly, seasonal or annual). The primary purpose for reporting instantaneous loads is to provide the Regional Water Board with a context for the concentrations of various constituents at the time that samples were collected."

Toxicity Results

The tabulated toxicity results indicate that the Coalition collected all toxicity resamples as required. Where results indicated a 50% or greater difference in test organism mortality between the ambient and laboratory sample, the Coalition conducted all necessary Toxicity Identification Evaluations (TIEs).

On page 18, Table 3, did not include results from the 2/22/07 *Selenastrum* toxicity resample event. Page 23, Table 6, did not include the analytical methods or reporting limits (RL) for toxicity.

Metals

Since the Coalition said that it could not address metal exceedances then it should conduct more background analysis to determine if agriculture is contributing to metal exceedances. Management plans for metals are required at: Ash Slough @ Ave 21 (Cu, Pb), Cottonwood Ck @ Rd 20 (Cu), Deadman Ck @ Gurr Rd (As, Cu), Dry Ck @ Rd 18, Mad Co (Cu, Pb), Dry Ck @ Wellsford Rd, Sta Co (Cu), Duck Slough @ Gurr Rd (Cu, Pb), Duck Slough @ Hwy 99 (Cu, Pb), Hatch Drain @ Tuolumne Ave (As), Highline Canal @ Hwy 99 (Cu, Pb), Highline Canal @ Lombardy Rd (Cu, Pb), Hilmar

Drain @ Central Ave (Cu), Livingston Drain @ Robin Ave (Cu), Miles Creek @ Reilly Rd (Cu),

2. Lab and Field QC Results

The SAMR provided several tables tabulating sample tests within acceptability criteria. The number of samples collected divided by the number of samples analyzed was 99%, meeting completeness requirements. The correct number of toxicity resample events took place and the number of duplicates and field blanks were collected at the required 5% rate. The laboratory precision assessed by laboratory duplicates, method blank, laboratory control spike, laboratory control spike duplicate, matrix spike, and matrix spike duplicate, met acceptability criteria. Where laboratory quality control tests were outside of acceptability criteria range, these samples were "J" flagged. Finally, none of the hold-times for sample testing were violated.

3. Actions Taken to Address Water quality Impacts

The SAMR Section *Actions Taken to Address Water Quality Impacts* includes a discussion of pesticides/toxicity, *E.coli*, DO, BOD/COD, EC/TDS, and pH. This section should also include a discussion of metal exceedances in the SAMR.

Pesticides and Toxicity

Page 68, section *Pesticides and Toxicity*, the Coalition stated that pesticide applications should be identifiable to individual parcels using PURs. However, the SAMR only provides maps and an accounting of PURs and Township Range Section coordinates where use occurred. It does not disclose how the Coalition used individual parcel information to assist with determining the source of exceedances. If the Coalition did associate pesticide use to individual parcels, staff would like to see the follow-up documentation, such as implementation of new management practices at those parcels, outreach efforts, and management practice effectiveness. This type of information will be required for management plans relevant to toxicity or pesticide exceedances.

BOD Analysis section

Page 70, the *BOD Analysis* section includes a discussion of obtaining and analyzing BOD data for the purposes of understanding DO dynamics. The Coalition proposed to submit a report to the Regional Water Board by 30 October 2007. Staff has not received yet received this report. It may be more appropriate to include this as part of a management plan for DO for the relevant sites.

DH: dh