
Central Valley Regional Water Quality Control Board

12 December 2017

Mr. Michael Wackman
San Joaquin & Delta Water Quality Coalition
3294 Ad Art Road
Stockton CA 95215

**2017 NITROGEN MANAGEMENT PLAN SUMMARY REPORT ANALYSIS
APPROVAL - SAN JOAQUIN COUNTY AND DELTA WATER QUALITY COALITION**

Thank you for your 1 May 2017 submittal of the San Joaquin County and Delta Water Quality Coalition's (Coalition) Nitrogen Management Plan Summary Report Analysis for the 2015 Crop Year (NMP Analysis). The NMP Analysis was submitted in response to the Waste Discharge Requirements for Growers within the San Joaquin County and Delta Area Order R5-2014-0029-R1 (Order) and Attachment B (Monitoring and Reporting Program) to the Order.

Based on the enclosed staff review, the NMP Analysis meets the requirements of the Order. Therefore, I am approving the NMP Analysis for the 2015 crop year. It was noted in the NMP Analysis that only 72 percent of the Coalition members required to submit a NMP Summary Report did so by the March 1 due date. Effort must be made to gather and include all of the NMP Summary Report data required for member submittals to the Coalition in future annual reports.

In addition, staff will change the Monitoring and Reporting Program's annual NMP Summary Report due date to November 30 so that the Members' previous year's NMP data (due 15 June) can be included in the Coalition's annual NMP Summary Report and the next year's outreach efforts. This change will take effect upon my approval of a revised MRP order.

If you have any questions or comments regarding the review, please contact Chris Jimmerson at (916) 464-4859 or Chris.Jimmerson@waterboards.ca.gov.

Original signed by:

Pamela C. Creedon
Executive Officer

cc: Central Valley Water Board Members
Phoebe Seaton, Leadership Counsel for Justice and Accountability
Deborah Ores, Community Water Center
Jennifer Clary, Clean Water Action

Enclosure: Staff Review of the Nitrogen Management Plan Summary Report Analysis

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: 28 September 2017

SUBJECT: NITROGEN MANAGEMENT PLAN SUMMARY – 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) Nitrogen Management Plan (NMP) Summary Report Analysis for the 2015 crop year. The NMP Analysis was submitted in accordance with Waste Discharge Requirements for Growers within the San Joaquin County and Delta Area Order R5-2014-0029-R1 (Order) and Attachment B to the Order. Since the NMP Summary Report was sent out for a 30-day public comment period, staff is reviewing it separately from the approved AMR.

Attachment B, Section V.C. Report Component (18) describes the requirements for the Coalition's NMP summary analysis. The required report components are:

- Aggregated information from members' Nitrogen Management Plan Summary Reports (NMP Summary Reports)
- An assessment of Nitrogen Management Plan (NMP) information for, at minimum, comparisons of farms with the same crops, similar soil conditions, and similar practices (e.g., irrigation management)
- A statistical summary of nitrogen consumption ratios by crop or other equivalent reporting units and the estimated nitrogen consumed for the different crop types and soil conditions describing the range, percentiles (10th, 25th, 50th, 75th, 90th) and any outliers
- A tabular or graphical presentation of the data approved by the Executive Officer (e.g., box and whisker plot)
- A quality assessment of the collected information by township (e.g., missing data, potentially incorrect/inaccurate reporting), and a description of any corrective actions
- An aggregate of the members' submitted data in an electronic format, compatible with ArcGIS, identified to at least the township level.

Staff released the NMP Summary Report for a 30-day public comment period. One joint comment letter was received from the Leadership Council for Justice and Accountability, Community Water Center, and Clean Water Action (Commenters). The Commenters' concerns focused on the NMP covering the 2015 crop year instead of the 2016 crop year, lack of information that allows calculating the potential nitrogen loading on a township level, the definition of a management unit does not require that it contain the same irrigation and nitrogen practices, and the Coalition's analysis should include irrigation method.

Staff reviewed the NMP Analysis and considered the comments received to determine compliance with requirements pursuant to the Order. An overview of the main elements of the NMP Analysis is provided below and followed by staff recommendations.

Overview

As of March 2017, 1,461 (72%) out of 2,022 members required to submit a NMP Summary Report to the Coalition had done so. The Coalition sent out reminder notices to the recalcitrant growers in June with a final notice in January. The Coalition has made attempts to make contact since then. Surveys received after March 2017 are not included in the NMP Analysis. 70 of the returned surveys were determined to have missing or unlikely data, and were omitted from the analysis. The Coalition is also following up with those growers. Complete data from the members' farmed acreage includes 132,945 out of 171,015 acres that were accepted for inclusion in the NMP Analysis.

The Coalition aggregated the nitrogen management summary information including comparisons of farms with the same crops, similar soil conditions, and similar irrigation practices. The Coalition grouped irrigation practices into two categories, including flood (flood and furrow) and pressurized irrigation (drip, sprinkler, micro-sprinkler). A statistical analysis was completed by township and crop type that identifies outlier nitrogen consumption ratios. Box and whisker plots, by crop type and township, and scatter plots by crop were presented that identify outliers relative to other members, and the N removal factors presented are in Table 4 of the NMP Analysis.

All of the reported data was submitted in an Excel workbook, compatible with ArcGIS.

Outreach is an important component of the Order. The Coalition prepared outreach packets for all members who submitted a NMP Summary Report. An example of the outreach package is included in Appendix II of the NMP Analysis. The outreach package shows the yield and total nitrogen applied to the individual member's crop, relative to all of the other growers of that crop in the Coalition area. The Coalition intends to meet with members that were identified as outliers during the statistical analysis and provide education about appropriate nitrogen application rates and management. A complete outreach plan for communicating NMP Analysis feedback to growers will be included in the Groundwater Quality Management Plan. This outreach plan will provide details regarding how outliers are identified and engaged.

The Coalition recommended that summary statistics be developed by grouping only by crop type to identify outliers in future NMP Analyses, rather than by township. This is because: 1) the differences in A/Y between soil types or irrigation practices are not large enough to justify separate analysis; and 2) grouping crops by township, soil type or management practices will

reduce the sample size, and hence the accuracy of summary statistics, especially for less common crops.

Staff Recommendations

Staff recommends approval of the Coalition's NMP Analysis for the 2015 crop year because the requirements of the Order have been met to the extent that Coalition members have submitted their NMP Summary Reports to the Coalition by the deadline, and in June 2016, the Coalition has conducted multiple follow-up activities with the recalcitrant members.

The Order's current NMP Summary Report due date is resulting in member outreach packets that are not aligned with the most recent crop year information. For example, 2017-2018 outreach is based on the 2015 crop year date. To overcome this problem, the Coalition's annual NMP Summary Report submittal date will be changed so that the Members' NMP Summary reports for the previous crop year are used to prepare outreach for the following crop year. To achieve this, the Coalitions' NMP Summary Report due date will be changed from 1 May to 30 November, with a revision to the Monitoring and Reporting Program.

Staff agrees that the Coalition's NMP Analysis by township demonstrated that data sets were too small to result in meaningful statistics in some cases. The Order does not require that the analyses be conducted on a township basis, but does require that the third-party provide an aggregate of the members' data in an electronic format identified to the township level. Therefore, the Coalition may find that the comparison of farms with the same crop types, similar soils, and similar practices is more statistically valid across the entire Coalition area than at the township level. The analysis and identification of outliers across the entire Coalition area may also be more meaningful.