
Central Valley Regional Water Quality Control Board

26 October 2015

Mr. Tim Johnson
California Rice Commission
1231 I Street, Suite 205
Sacramento, CA 95814-2933

APPROVAL OF RICE-SPECIFIC NITROGEN MANAGEMENT PLAN TEMPLATE

Thank you for submitting the draft template for the rice-specific Nitrogen Management Plan, as required by the Waste Discharge Requirements for Sacramento Valley Rice Growers, General Order R5-2014-0032 (General Order), on 19 November 2014. The General Order requires that Sacramento Valley rice growers complete a nitrogen management plan describing the type, amount, and method of nitrogen applied to rice acreage that may impact surface water and groundwater quality by 1 March 2016, and update it by 1 March annually.

The California Rice Commission developed the template for the rice-specific Nitrogen Management Plan in collaboration with agronomists, rice experts and rice farm advisors, the University of California Davis, and the University of California Cooperative Extension. Rice growers will use a web-based information system to complete the Nitrogen Management Plan. No comments were received on the proposed Nitrogen Management Plan template during the public review and comment period from 3 June through 3 July 2015.

The proposed template complies with the requirements of the General Order, and I approve the use of the rice-specific Nitrogen Management Plan template. The rice-specific Nitrogen Management Plan shall be maintained or be available electronically at the rice grower's farming operations headquarters or primary place of business. A copy of the plan must be made available for inspection, upon request, to Central Valley Water Board staff.

If you have questions regarding this letter, please contact Ashley Shaddy at (916) 464-4857 or by email at Ashley.Shaddy@waterboards.ca.gov.

Sincerely,

Original Signed by Adam Laputz for

Pamela C. Creedon
Executive Officer

CC: Ms. Roberta Firoved, CRC

Central Valley Regional Water Quality Control Board

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

FROM: Ashley Shaddy, PE
Water Resource Control Engineer
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

DATE: 21 October 2015

SUBJECT: REQUEST FOR APPROVAL OF RICE-SPECIFIC NITROGEN MANAGEMENT
PLAN TEMPLATE – CALIFORNIA RICE COMMISSION

The California Rice Commission is required to submit a nitrogen management plan (NMP) template as per the Waste Discharge Requirements for Sacramento Valley Rice Growers, General Order R5-2014-0032 (General Order). The Central Valley Regional Water Quality Control Board (Central Valley Water Board) received the draft rice-specific NMP template from the California Rice Commission on 19 November 2014. The NMP template was made available for public review and comment on the Central Valley Water Board website from 3 June through 3 July 2015. No public comments were received. In addition to a NMP template, the General Order also requires a NMP summary report template be submitted when high vulnerability areas are identified and nitrate is the constituent of concern. No high vulnerability areas have been identified for rice, so a NMP summary report template is not required at this time.

Staff reviewed the NMP template for compliance with the requirements outlined in the General Order and the Monitoring and Reporting Program Attachment B (MRP Order). The NMP template prepared by the California Rice Commission is specific to irrigated rice production in the Sacramento Valley. As such, the NMP template considers the factors needed to determine the appropriate nitrogen application rates for rice such as crop yield, planting date, and straw and water management. The NMP template does not include nitrogen removed, available nitrogen carryover in soil, nitrogen in irrigation water, and total nitrogen credits, which is acceptable given the unique growing conditions of rice.

Historical soil sample results have demonstrated that the amount of nitrogen remaining in the soil at the conclusion of the growing season is poorly correlated to the yield response of rice because nitrogen undergoes nitrification in aerobic (dry) conditions and the nitrates generated are rapidly lost to the atmosphere as nitrogen gas under anaerobic (flooded) conditions, utilized on rice farms during the growing season. This is different from other crops where flooding is not utilized. In addition, over-fertilization of rice results in reduced grain yield, so growers are incentivized to avoid excessive application of nitrogen fertilizers.

The NMP template prepared by the California Rice Commission is a web-based tool that will provide better access to the NMP template for growers, minimize the effort needed to process and manage data, maintain (through reference) historical data input in previous years to refine the output of the tool, and automate calculations, wherever possible, reducing the potential for errors. The NMP template utilizes nitrogen response curves, based on multiple rice studies, which show the anticipated grain yield for different nitrogen application rates and functions in an iterative fashion considering the previous year's nitrogen application rate, type, and yield to determine the next annual application rate. The nitrogen response curves account for the excluded nitrogen elements on an average basis because the curves are based on real field data.

As required in the MRP Order, the NMP template was developed in consultation with the Central Valley Water Board, University of California Cooperative Extension, and the University of California Agriculture and Natural Resources publication, Rice Nutrient Management in California. The NMP template will allow growers to document how their fertilizer use management practices minimize excess nutrient application relative to crop consumption. The proposed NMP template satisfies the requirements for a NMP template as outlined in the General Order and described in Section VI.B of the MRP Order.