CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2012-0116-R2

ATTACHMENT B TO ORDER R5-2012-0116-R2

MONITORING AND REPORTING PROGRAM

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR GROWERS WITHIN THE EASTERN SAN JOAQUIN RIVER WATERSHED THAT ARE MEMBERS OF THE THIRD-PARTY GROUP

A. Farm Evaluation Template

Should the third-party choose to develop the Farm Evaluation Template per the Group Option outlined in section VIII.C of the Order, the following provisions apply.

The third-party must develop a template or web-based information system to gather Farm Evaluation information from Members for each parcel enrolled. The goal of the template is to gather information on general site conditions and Member management practices in place to protect water quality. At a minimum, the template must be designed to collect the following information.

- Identification of the crops grown and acreage of each crop.
- Location of the farm.
- Identification of on-farm management practices implemented to achieve the Order's farm management performance standards. Specifically track which management practices recommended in management plans have been implemented at the farm.
- Identification of whether or not there is movement of soil during storm events and/or during irrigation drainage events (sediment and erosion risk areas) and a description of where this occurs.
- Identification of whether or not water leaves the property and is conveyed downstream and a description of where this occurs.
- Location of in-service wells and abandoned wells. Identification of whether wellhead protection and backflow prevention practices have been implemented.

As part of its submittal for approval, the third-party must identify the entities that participated in the development of the Farm Evaluation Template.

B. Nitrogen Management Plan Template

Should the third-party choose to develop the Nitrogen Management Plan Template per the Group Option outlined in section VIII.C of the Order, the following provisions apply.

The Nitrogen Management Plan template must be developed by the third-party in consultation with the Central Valley Water Board, and as appropriate, the California Department of Food and Agriculture (CDFA), the University of California Extension, and the Natural Resource Conservation Services (NRCS). In developing the template, the third-party should consider, to the extent appropriate, the major criteria established in Code 590 of the NRCS Nutrient Management document, including soil and plant tissue testing, nitrogen application rates, nitrogen application timing, consideration of organic nitrogen fertilizer, consideration of irrigation water nitrogen levels.

In addition to the Nitrogen Management Plan Template, the third-party must provide a template for the Nitrogen Management Plan Summary Report. The Nitrogen Management Plan Summary Report Template must provide for reporting of the nitrogen consumption ratio for each crop grown for each parcel enrolled by the Member (this MRP requires reporting of this information to the board by township, Member/parcel need not be specified). The Nitrogen Management Plan Summary Report must also gather information required in the Monitoring Report and information needed for the Management Practices Evaluation Program.[15]

As part of its submittal for approval, the third-party must identify the entities that participated in the development of the Nitrogen Management Plan Template.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
ORDER R5-2014-0002

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR GROWERS WITHIN THE WESTERN SAN JOAQUIN RIVER WATERSHED
THAT ARE MEMBERS OF A THIRD-PARTY GROUP

II. Prohibitions

3. The discharge of wastes (e.g., fertilizers, fumigants, pesticides) into groundwater via backflow through a water supply well is prohibited.

4. The discharge of any wastes (e.g., fertilizers, fumigants, pesticides) down a groundwater well casing is prohibited.

B. Groundwater Limitations

1. Wastes discharged from Member operations shall not cause or contribute to an exceedance of applicable water quality objectives in the underlying groundwater or a trend of degradation that may threaten applicable Basin Plan beneficial uses, unreasonably affect applicable beneficial uses, or cause or contribute to a condition of pollution or nuisance.

B. Requirements for Members of the Third-Party Group

4. Each Member shall participate in third-party outreach events, at least annually, if any of the Member's parcels are in a designated "high vulnerability" area or governed by a SQMP/GQMP. The Member shall review outreach materials to become informed of any water quality problems to address and the management practices that are available to address those issues. The Member shall provide annual confirmation to the third-party that the Member has attended an outreach event during the previous year and reviewed the applicable outreach materials.

6. All members shall implement water quality management practices as necessary to protect water quality and to achieve compliance with surface water and groundwater receiving water limitations of this Order (sections III.A and B).

8. All Members shall implement practices that minimize excess nutrient application relative to crop consumption. Members shall prepare and implement a farm-specific nitrogen management plan as required by section VII.D of this Order.

16. Settling ponds, basins, and tailwater recovery systems shall be constructed, maintained, and operated to prevent groundwater degradation, erosion, slope failure, and minimize the discharge of sediment.

b. Minimize percolation of waste to groundwater,

1. All Members within a High Vulnerability Groundwater Area

For Members located within a high vulnerability groundwater area, for which nitrate is identified as a constituent of concern, the Member must prepare and implement a certified Nitrogen Management Plan. The plan must be certified in one of the following ways:
• Self-certified by the Member who attends a California Department of Food and Agriculture or other Executive Officer approved training program for nitrogen plan certification. The Member must retain written documentation of their attendance in the training program; or

• Self-certified by the Member that the plan adheres to a site-specific recommendation from the Natural Resources Conservation Service (NRCS) or the University of California Cooperative Extension. The Member must retain written documentation of the recommendation provided; or

• Certified by a nitrogen management plan specialist as defined in Attachment E of this Order. Such specialists include Professional Soil Scientists, Professional Agronomists, Crop

Advisors

• Certified in an alternative manner approved by the Executive Officer. Such approval will be provided based on the Executive Officer's determination that the alternative method for preparing the Nitrogen Management Plan meets the objectives and requirements of this Order.

Certification of the Nitrogen Management Plan and submittal of a Nitrogen Management Plan Summary Report are not required.

A. Goals and Objectives of the Irrigated Lands Regulatory Program
The goals and objectives of this Order, which implements the long term ILRP in the Western San Joaquin River Watershed, are described below. These are the goals described in the PEIR for the ILRP.[3]
"Understanding that irrigated agriculture in the Central Valley provides valuable food and fiber products to communities worldwide, the overall goals of the ILRP are to (1) restore and/or maintain the highest reasonable quality of state waters considering all the demands being placed on the water; (2) minimize waste discharge from irrigated agricultural lands that could degrade the quality of state waters; (3) maintain the economic viability of agriculture in California's Central Valley; and (4) ensure that irrigated agricultural discharges do not impair access by Central Valley communities and residents to safe and reliable drinking water. In accordance with these goals, the objectives of the ILRP are to:
• Restore and/or maintain appropriate beneficial uses established in Central Valley Water Board water quality control plans by ensuring that all state waters meet applicable water quality objectives.
• Encourage implementation of management practices that improve water quality in keeping with the first objective, without jeopardizing the economic viability for all sizes of irrigated agricultural

operations in the Central Valley or placing an undue burden on rural communities to provide safe drinking water.
• Provide incentives for agricultural operations to minimize waste discharge to state waters from their operations.
• Coordinate with other Central Valley Water Board programs, such as the Grasslands Bypass Project WDRs for agricultural lands total maximum daily load development, CV-SALTS, and WDRs for dairies.

• *Promote coordination with other regulatory and non-regulatory programs associated with agricultural operations (e.g., DPR, the California Department of Public Health [DPH] Drinking Water Program, the California Air Resources Board [ARB], the California Department of Food and Agriculture, Resource Conservation Districts [RCDs], the University of California Extension, the Natural Resources Conservation Service [NRCS], the USDA National Organic Program, CACs, State Water Board Groundwater Ambient Monitoring and Assessment Program, the U.S. Geological Survey [USGS], and local groundwater programs [SB 1938, Assembly Bill [AB] 3030, and Integrated Regional Water Management Plans]) to minimize duplicative regulatory oversight while ensuring program effectiveness."*

1. What are irrigated agriculture's impacts to the beneficial uses of groundwater and where has groundwater been degraded or polluted by irrigated agricultural operations (horizontal and vertical extent)?
2. Which irrigated agricultural management practices are protective of groundwater quality and to what extent is that determination affected by site conditions (e.g., depth to groundwater, soil type, and recharge)?
3. To what extent can irrigated agriculture's impact on groundwater quality be differentiated from other potential sources of impact (e.g., nutrients from septic tanks or dairies)?
4. What are the trends in groundwater quality beneath irrigated agricultural areas (getting better or worse) and how can we differentiate between ongoing impact, residual impact (vadose zone) or legacy contamination?
5. What properties (soil type, depth to groundwater, infiltration/recharge rate, denitrification/ nitrification, fertilizer and pesticide application rates, preferential pathways through the vadose zone [including well seals, abandoned or standby wells], contaminant partitioning and mobility [solubility constants]) are the most important factors resulting in degradation of groundwater quality due to irrigated agricultural operations?
6. What are the transport mechanisms by which irrigated agricultural operations impact deeper groundwater systems? At what rate is this impact occurring and are there measures that can be taken to limit or prevent further degradation of deeper groundwater while we're identifying management practices that are protective of groundwater?
7. How can we confirm that management practices implemented to improve groundwater quality are effective?

A. Groundwater Quality Assessment Report

The purpose of the Groundwater Quality Assessment Report (GAR) is to provide the technical basis informing the scope and level of effort for implementation of the Order's groundwater monitoring and implementation provisions. Three (3) months after receiving an NOA from the Central Valley Water Board, the third-party will provide a proposed outline of the GAR to the Executive Officer that describes data sources and references that will be considered in developing the GAR. The third-party must review and update the GAR to incorporate new information every five (5) years after Executive Officer approval of the GAR.

1. Objectives. The main objectives of the GAR are to:

• Provide an assessment of all readily available, applicable and relevant data and information to determine the high and low vulnerability areas where discharges from irrigated lands may result in groundwater quality degradation.
• Establish priorities for implementation of monitoring and studies within high vulnerability or data gap areas.
• Provide a basis for establishing monitoring workplans developed to assess groundwater quality trends.
• Provide a basis for establishing management practices evaluation program workplans and priorities developed to evaluate the effectiveness of agricultural management practices to protect groundwater quality.

• Provide a basis for establishing groundwater quality management plans in high vulnerability areas and priorities for implementation of those plans.

The vulnerability designations will be made by the third-party using a combination of physical properties (soil type, depth to groundwater, known agricultural impacts to beneficial uses, etc.) and management practices (e.g. irrigation method, crop type, nitrogen application and removal rates, extent of implementation, etc.). If the third-party intends to develop a Basin Plan Amendment Workplan (as described in section VIII.L of the Order), the third-party must identify the areas where a high vulnerability designation results from exceedances due to naturally elevated levels of a constituent. The third-party shall provide the rationale for proposed vulnerability determinations. The Executive Officer will make the final determination regarding vulnerability designations.

Prioritization of high vulnerability groundwater areas. The third-party may prioritize the areas designated as high vulnerability areas to comply with the requirements of this Order, including conducting monitoring programs and carrying out required studies.

B. Management Practice Evaluation Program

The goal of the Management Practice Evaluation Program (MPEP) is to determine the effects, if any, irrigated agricultural practices[9] have on groundwater quality. A MPEP is required in high vulnerability groundwater areas and must address the constituents of concern described in the GAR. This section provides the goals, objectives, and minimum reporting requirements for the MPEP. As specified in section IV.D of this MRP, the third-party is required to develop a workplan that will describe the methods that will be utilized to achieve the MPEP requirements.

[9]

1. *Objectives*. The objectives of the MPEP are to:

• Identify whether existing site-specific and/or commodity-specific management practices are protective of groundwater quality within high vulnerability groundwater areas,

• Determine if newly implemented management practices are improving or may result in improving groundwater quality.

• Develop a quantitative estimate of the effect of Members' discharges of constituents of concern on groundwater quality in high vulnerability areas.

• Utilize the results of evaluated management practices to determine whether practices implemented at represented Member farms (i.e., those not specifically evaluated, but having similar site conditions), are sufficiently protective of groundwater quality or if management practices need to be improved.

Given the wide range of management practices/commodities that are used within the third-party's boundaries, it is anticipated that the third-party will rank or prioritize its high vulnerability areas and commodities, and present a phased approach to implement the MPEP.

2. *Implementation*. Since management practices evaluation may transcend watershed or third-party boundaries, this Order allows developing a MPEP on a watershed or regional basis that involves participants in other areas or third-party groups, provided the evaluation studies are conducted in a manner representative of areas to which it will be applied.

4. *Management Practices Evaluation Report*. No later than six (6) years after implementation of each phase of the MPEP, the third-party shall submit a Management Practices Evaluation Report (MPER) identifying management practices that are protective of groundwater quality for the range of conditions found at farms covered by that phase of the study. The identification of management practices for the range of conditions must be of sufficient specificity to allow Members of the third-party and staff of the Central Valley Water Board to identify which practices at monitored farms are appropriate for farms with the same or similar range of site conditions, and generally where such farms may be located within the third-party area (e.g., the

summary report may need to include maps that identify the types of management practices that should be implemented in certain areas based on specified site conditions).

The report shall include an assessment of each management practice to determine which management practices are protective of groundwater quality. If monitoring concludes that management practices currently in use are not protective of groundwater quality based upon information contained in the MPER, and therefore are not confirmed to be sufficient to ensure compliance with the groundwater receiving water limitations of the Order, the third-party in conjunction with commodity groups and/or other experts (e.g., University of California Cooperative Extension, Natural Resources Conservation Service) shall propose and implement new/alternative management practices to be subsequently evaluated.